November 30, 1982

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
CLEVELAND ELECTRIC ILLUMINATING COMPANY, et al.	)	Docket Nos. 50-440 50-441
	)	
(Perry Nuclear Power Plant, Units 1 and 2)	)	

AFFIDAVIT OF MURRAY R. EDELMAN AND RONALD L. FARRELL
IN SUPPORT OF NRC STAFF'S MOTION
FOR SUMMARY DISPOSITION OF ISSUE NUMBER 3

Murray R. Edelman and Ronald L. Farrell, being duly sworn, depose and say as follows:

1. I, Murray R. Edelman, am Manager, Nuclear Engineering and Construction Division of The Cleveland Electric Illuminating Company ("CEI").

2. I, Ronald L. Farrell, am Manager of CEI's Nuclear Quality Assurance Department.

3. Our business address is 10 Center Road, Perry, Ohio 44081. Summaries of our professional qualifications and experience are attached hereto as Exhibit "A." We have personal knowledge of the matters set forth herein and believe them to be true and correct.

4. We have reviewed the "NRC Staff's Motion for Summary Disposition of Issue No. 3", dated October 29, 1982, ("Staff Motion") and supporting documents, including the "Affidavit of James E. Konklin and Cordell C. Williams In Support of Summary Disposition of Issue No. 3" and the "Statement of Material Facts as to Which There Is No Genuine Issue to Be Heard." We agree with the statements contained therein and give this Affidavit in support of the Staff's Motion.

5. We understand that Issue No. 3 in this proceeding asserts that CEI has an inadequate quality assurance (QA) program that has caused or is continuing to cause unsafe construction. We further understand that the issue does not constitute a generalized attack on CEI's entire QA program, but rather is limited to the quality assurance implications of CEI's stop work notice which was the subject of the Staff's letter to Applicants dated February 8, 1978 (a copy of which is attached hereto), to steps taken by CEI to remedy the deficiencies that led to the stop work, and to residual deficiencies related thereto.

6. Issue No. 3 is erroneous. Construction completed as of February 1978 has been found by CEI and the Staff to be acceptable. Since February 1978, CEI has substantially reorganized and upgraded their quality assurance program, and has fully addressed and remedied the eight deficient areas listed in the Staff's February 8, 1978 letter. CEI's QA program since February 1978 has been effective. No programmatic breakdowns or residual deficiencies similar to those

covered in the February 1978 letter have occurred. The QA program has provided the necessary assurance that Perry Nuclear Power Plant ("PNPP") structures and components are in conformance with all applicable standards and requirements, and that the Perry Plant has been and will continue to be safely constructed.

7. As of February 1978, construction of PNPP was less than 15% complete. The majority of the construction as of that date was in the civil area (backfill and concrete), and only 20% of the completed construction was in safety-related areas of the plant. In February 1978, CEI and its consultants employed fewer than 50 quality assurance and quality control (QC) personnel, the majority of whom worked in the civil construction area. Most QA/QC supervisory personnel were located off-site.

8. Extensive inspections performed by a special team of NRC Region III inspectors, completed in January and February 1978, revealed eight areas of programmatic deficiencies in CEI's QA program. As a result of the Staff's findings, CEI's QA personnel by February 8, 1978 ordered that work in most safety-related areas of construction be stopped, including all areas covered by the Staff's findings. Applicants initiated a comprehensive program of corrective action, which was acknowledged in the Staff's February 8, 1978 letter. Applicants' response to the Staff's findings are set forth in Applicants' letters to NRC dated May 1, 1978, August 8, 1978, August 17, 1978 and September 14, 1978, copies of which are attached hereto.

9. Items 1 and 2 of the Staff's February 8, 1978 letter related to deficiencies in safety-related pipe fabrication, yard pipe installation, and plant piping performed by a contractor, Pullman Power Products. Following the stop work notice, modifications to specifications and quality program requirements were instituted under CEI's direction. These modifications included new document and design control procedures; engineering review of Pullman fabrication and erection drawings; a new Pullman procedure for field handling of materials and equipment; and QA monitored indoctrination and training classes on the subject of Pullman QA program requirements. In addition, an NRC-accepted program of 100% surveillance inspection was implemented at Pullman's Williamsport, Pennsylvania shop. Based on the NRC's review and approval of these corrective measures, all Pullman Power Products safety-related work was completely released by CEI on April 14, 1978. As of March 31, 1978 (see NRC I&E Report of that date), all programmatic areas of deficiencies covered by items 1 and 2 were fully addressed and corrected by Applicants, and reviewed and approved by the NRC Staff. Although individual deficiencies in Pullman's work have been identified since February 1978, none reveals programmatic weaknesses in CEI's QA program or areas of unsafe construction.

10. Item 3 of the Staff's February 8, 1978 letter related to fabrication of safety-related embedments and structural steel supplied by CEI's vendor (PBI Industries) and by PBI's subcontractors. CEI stopped work and thereafter instituted a

number of corrective actions, including modification of installation procedures to inspect for American Welding Society ("AWS") Code compliance of embedments and structural steel welds, and a comprehensive surveillance/inspection program by CEI's QC personnel of PBI's site inspection activities. In addition, CEI's vendor assurance program was increased to include 100% surveillance of all embedments and structural steel being fabricated, and the vendor's inspection program was changed to include additional engineering acceptance criteria. PBI and its subcontractors were released to resume shipments in March 1978 after completion of the above corrective action and after all existing inventory was inspected, with all actions reviewed and approved by the NRC Staff. See NRC I&E Report dated March 31, 1978. No programmatic breakdown or residual deficiencies of the type covered by item 3 have occurred since February 1978, and no areas of unsafe construction have been identified.

11. Item 4 of the Staff's February 8, 1978 letter involved safety-related coatings work performed by CEI's contractor, O. B. Cannon & Son, Inc. Problems were identified in the contractor's QA program and in the implementing procedures for verification of materials prior to use, qualification of personnel and performance of audits. As a result of the deficiencies noted by the NRC Staff, CEI's QA personnel on February 8, 1978 issued a stop work notice and corrective action request to O. B. Cannon. The contractor took the

required corrective action, including correction of coating applicators' qualification records in accordance with procedures, inspection status tagging of coating material in storage, location and filing of an inspector's missing physical examination record, revision of the contractor's QC manual to include review and approval of manufacturer's material certification, and performance of an internal audit. After review and approval of the contractor's corrective measures by both CEI and the NRC Staff (see NRC I&E Report dated October 3, 1978), CEI permitted safety-related coating work by O. B. Cannon to resume on February 14, 1978 on a limited basis, subject to CEI's requirement that O. B. Cannon acquire additional qualified personnel in the construction and quality control areas. Between 1978 and late 1980, O. B. Cannon performed coatings work under CEI's close surveillance. Although there were no serious construction deficiencies noted during this period, CEI concluded in 1980 that the contractor was not acquiring a sufficient number of qualified personnel, and in November 1980, CEI terminated O. B. Cannon for convenience. CEI's QA/QC program fully and effectively monitored and identified deficiencies in O. B. Cannon's performance between February, 1978 and November, 1980, when O. B. Cannon was terminated. All work performed by O. B. Cannon was inspected and either found to be acceptable, or corrected so that it was acceptable.

12. Shortly after the termination of O. B. Cannon, CEI hired Metalweld, Inc. to perform safety-related coatings work at the site. From the start of Metalweld's work at Perry,

CEI's QA/QC program has closely monitored Metalweld's coating program. This monitoring identified a number of programmatic deficiencies in Metalweld's QA program. After CEI identified early problems in the first months of Metalweld's QA/QC program implementation, CEI issued a stop work notice in January 1981, in order to assure that Metalweld took appropriate corrective action to improve its QA/QC program and its implementation. After CEI's stop work notice, and consultation between CEI and the NRC Staff regarding corrective measures, the Staff issued an immediate action letter dated January 28, 1981, acknowledging the stop work and corrective action program for Metalweld which CEI had instituted. CEI has assured that all of these deficiencies have been identified and adequately resolved. All work accomplished by Metalweld prior to the stop work notice was inspected by CEI QA/QC and found to be acceptable. See NRC I&E Report dated April 3, 1981. Following completion of the corrective action programs, CEI finally authorized Metalweld to resume all work on April 28, 1981. CEI's continuing QA/QC of Metalweld's work shows that the programmatic deficiencies which lead to the January 1981 stop work notice have been corrected and that Metalweld's QA program is properly identifying and addressing all quality problems arising from Metalweld's coating work. The experience with Metalweld confirms the effectiveness of CEI's upgraded QA program and its implementation. The problems with Metalweld which have occurred to date have been identified and controlled by CEI's QA program, no serious construction deficiencies have

occurred, and routine construction nonconformances have been appropriately corrected.

13. Item 5 of the Staff's February 8, 1978 letter dealt with deficiencies in the placement of safety-related concrete by CEI's site contractors. In response, CEI stopped safety-related concrete placements and made a number of construction and QA program improvements. These included a new slump testing procedure, improvements in concrete vibrator operator indoctrination and training, 100% inspection of contractor placement activities by CEI's QC personnel during the first several months following the stop work order, and detailed audits by CEI of contractors' concrete placement activities. After completion of these actions, and review and inspection of preplacements by NRC inspectors, contractors were individually released between March 17 and April 14, 1978 to place safety-related concrete under continued scrutiny by both CEI's QC and QA personnel. All safety-related concrete that was placed prior to the stop work notice was evaluated by civil/structural engineers to determine whether it met specifications. All placements were determined to be acceptable, a determination agreed to by NRC inspectors. See NRC I&E Reports dated October 3, 1978, October 26, 1978, December 15, 1978, January 24, 1979, March 12, 1979, and May 15, 1979. No unusual or serious concrete construction deficiencies have been identified by CEI or the NRC. Deficient concrete and voids in the bioshield concrete were identified in 1981 by CEI's QA personnel, who were closely monitoring the contractor's

concrete placement program. Bioshield concrete, which has no structural significance, was placed between two steel structures for equipment and maintenance personnel shielding. Bioshield concrete repairs are being made, and no unsafe conditions will result from this problem. Although individual concrete procedural deficiencies have been identified since February 1978, all deficiencies were minor, and no breakdowns in the concrete construction or QA/QC programs of either CEI or its contractors have occurred.

14. Item 6 of the Staff's February 8, 1978 letter required CEI to establish an effective contract specification control system, and to evaluate the acceptability of the placement of concrete batched by CEI's contractor, National Mobile Concrete Co., under a superseded design specification. In response, CEI reviewed and upgraded their contract specification control system. Modifications included a centralized control number distribution system using return receipts; a centralized maintenance system for all specification change documents, including use of a computerized terminal system; updating of all project and contractor files; and new system procedures including training and indoctrination. An evaluation of the changes between the revised and the superseded design specifications was conducted and all concrete batched prior to the stop work notice was determined to meet the revised design specification. See NRC Inspection Reports dated August 16, 1978 and October 3, 1978. Since February 1978, no breakdowns of the type covered by this item have occurred, and CEI's upgraded contract specification

control system has been effective in assuring that contract specification changes are properly controlled.

15. Item 7 of the Staff's February 8, 1978 letter addressed possible inadequacy of the indoctrination and training program conducted by CEI. Emphasis was placed on deficiencies in the identification, documentation and resolution of nonconformances. In response, CEI restructured the project indoctrination and training programs so as to assure a uniform approach to indoctrination and training for all organizations, including those of contractors. After discussions with the Staff, Applicants' restructured program was approved by Region III. In the area of nonconformance control, CEI reinforced the PNPP policy that all material or hardware-related nonconforming conditions discovered on site are to be formally documented on nonconformance reports. As of July 1978, after review by Region III, it was concluded that nonconforming conditions were being properly documented and dispositioned and item 7 was considered resolved. Since February 1978, CEI's revised indoctrination and training program has worked well, as evidenced by CEI's nonconformance reporting system, with no significant problems in the identification, documentation and resolution of nonconformances.

16. Item 8 of the Staff's February 8, 1978 letter required CEI to evaluate their overall quality assurance program to determine the cause of items 1 through 6, and why the items had not been identified by the responsible organizations. In response, CEI assembled a special QA task force,

including an independent outside QA consultant, to perform a thorough management evaluation of all project QA/QC activities. The Task Force conducted extensive reviews and interviews with project personnel, and made findings and recommendations for QA/QC program improvements. The Task Force found that the underlying causes of items 1-6 in the Staff's letter included: the lack of a single, all-encompassing QA manual defining corporate QA controls and responsibilities; the limited number of CEI personnel physically located at the Perry site (the majority were based in CEI's Cleveland offices); inadequate definition of surveillance/inspection and audit responsibilities of CEI's QA/QC personnel following the 1977 merger of CEI's QA and QC organizations; and inadequate integration of CEI's and contractors' QA programs. In response, CEI made the following changes: the QA department was restructured, with the addition of two experienced supervisors at intermediate management positions; CEI's QA manual was revised to address all QA-related project activities and procedures, and a series of related administration, procedure and instruction manuals was issued to address overall project QA/QC requirements; a QA advisory committee was established to assist CEI's System Engineering and Construction Group Vice-President on key QA program issues; programs for quarterly QA management review meetings were implemented; CEI's audit program was restructured; an integrated inspection/surveillance program of site contractors was established by CEI, and the receiving inspection program was expanded to include quality engineering input.

In addition, important management control adjustments were instituted by CEI, such as the relocation to the Perry site of all of CEI's QA, engineering and purchasing personnel; establishment of a new QA program effectiveness evaluation system; increased senior executive involvement through formal monthly vice-president meetings and quarterly management meetings with the Chief Executive Officer and President. Finally, CEI instituted a project matrix system under which every safety-related contractor is assigned a construction quality engineer, responsible engineer, and contracts administrator from the project organization, which includes CEI and its principal consultants. All of the above corrective measures were reviewed and approved by the NRC Staff, which has closed out item 8 (see NRC I&E Report dated June 19, 1979), and all other items of the Staff's February 8, 1978 letter.

17. We have reviewed Sunflower Alliance Inc.'s responses to Applicants' interrogatories, ("Response of Applicant's Interrogatories By Sunflower et al.", dated November 19, 1981, and "Response of Sunflower Alliance, Inc., et al., To Applicant's Interrogatories And Request For Production of Documents (Third Set)", dated October 29, 1982). Sunflower's October 29, 1982 response to interrogatories 5(a) through (e) stated that it was not aware of any deficiencies in construction other than those identified in Sunflower's previous filings. The only alleged construction deficiency cited by Sunflower is concrete placed in Drywell Wall, Ring No. 2, Containment No. 2, Placement No. RB2-W02-630. (See Sunflower's

November 19, 1981 response to interrogatory 27(b)). This placement was the subject of NRC I&E Report 50-440/80-20; 50-441/80-18 (October 21, 1980), discussed in Sunflower's November 19, 1981 response to Applicants' interrogatory 26. The NRC's findings in question asserted isolated procedural violations by one of CEI's contractors, but did not reflect a generic breakdown in either CEI's or the contractor's QA programs. Nor were concerns raised about unsafe conditions. All NRC findings were closed out in NRC I&E Report 50-440-81-03; 50-441/81-03 (March 3, 1981). The NRC inspectors accepted CEI's determination that there were no nonconformances. Contrary to Sunflower's response to interrogatory 26, these concerns were not resolved through the use of a field variance. Specifications were subsequently clarified for future pours. Thus, no construction deficiencies or unsafe conditions resulted from the concerns in question, which were fully and properly addressed by CEI's QA program.

18. In Sunflower's response to Applicants' interrogatory 27, the only other specific examples cited by Sunflower of alleged defects or inadequacies in CEI's QA program relate to isolated procedural noncompliances noted in NRC I&E Reports 79-05 (June 19, 1979); 80-20/80-18 (October 21, 1980); 79-04 (May 15, 1979); 80-25/80-23 (November 19, 1980); 80-19/80-17 (October 23, 1980); 81-01 (February 27, 1981); 78-08/78-07 (August 16, 1978); 79-03 (August 1, 1979); 79-10 (November 21, 1979); 80-01 (February 26, 1980); 80-06 (May 21, 1980); and 81-03 (March 3, 1981). These noncompliances cited by Sunflower

involved isolated deviations from procedures. No programmatic breakdown in CEI's QA program was evident in any of these cases, no construction deficiencies were involved, and in every case the noncompliances were properly dispositioned by CEI's or the contractor's QA program and, with the exception of 81-03, which is expected to be closed out shortly, all were closed out by the NRC Staff. See NRC I&E Reports dated October 23, 1980 (closing 79-05 items); March 3, 1981 (closing 80-20/80-18 items); September 18, 1980 (closing 79-04 items); April 14, 1981 (closing 80-25/80-23 items); February 11, 1981 (closing 80-19/80-17 items); April 3, 1981 (closing 81-01 items); January 24, 1979 (closing 78-08/78-07 items); September 18, 1980 (closing 79-03 and 79-10 items); February 11, 1981 (closing 80-01 items); and September 17, 1982 (closing 80-06 items).

19. In a nuclear project of the size and complexity of PNPP, indeed in any construction project of this scope, the goal is perfect compliance with all project procedures and requirements. However, there will invariably be procedural deviations and noncompliances found by the utility, its contractors and NRC inspectors. The purpose of CEI's QA program is to assure that procedural and substantive problems at PNPP are being adequately identified and properly addressed. Over 18,000 nonconformances have been identified on the project to date. All have been or are being resolved through repair, rework, scrap or, where engineering design margins have permitted, through use-as is dispositions. More generic areas,

such as Metalweld's early coatings deficiencies, have caused Applicants to take stronger QA measures, such as instituting stop work notifications. Though not utilized often, the stop work notification is an essential element in any sound QA program, and its use reflects a QA program at work, rather than one not working. Stop works were also used by Applicants in connection with work performed by L. K. Comstock (discussed in an NRC I&E Report dated September 17, 1982), and Newport News Industrial Corporation (discussed in NRC I&E Reports dated April 4, 1979, May 15, 1979, August 1, 1979, August 28, 1979, and October 4, 1979). In each of the latter situations, although the NRC did find noncompliances, CEI was closely monitoring the contractor's work as required by its QA program, no programmatic QA breakdowns of the types found in February 1978 existed, and no unsafe conditions resulted. We are not aware of any findings by CEI's or the NRC's inspectors since February 1978 indicating programmatic breakdowns of CEI's QA program or defects in the QA program producing unsafe conditions at PNPP.

20. Construction completed prior to the Staff's February 8, 1978 letter has been reviewed by both Applicants and the Staff. No significant construction deficiencies in any of the affected areas were found.

21. Since February 1978, the Staff has conducted an extensive inspection program at PNPP. This program has been supplemented by the addition of a full-time resident site inspector beginning in 1979. Under the Staff's enforcement

program, which utilizes relative levels of severity (from I, the most serious, to V, the least serious) in inspection findings, the Staff's findings have all been in the severity level IV or V categories, and have not indicated programmatic breakdowns in CEI's QA program or the existence of any uncorrected construction deficiencies at the plant. Since February 1978, construction activity has increased on the Perry Project, with no relative increase in the number or seriousness of discrepancies or noncompliances.

22. Since the Staff's February 8, 1978 letter, CEI's project QA staff has increased from 50 to over 200 quality assurance personnel, with extensive experience in all areas of nuclear plant design and construction. CEI's QA management has been reorganized and centralized at the site. CEI's executive management involvement in the QA program has greatly increased. CEI's QA program and procedures have been reviewed and rewritten to reflect the learning and experience gained from the early period of the project. All of these modifications have greatly improved CEI's QA program. Problems on the project have been identified and resolved and there has been no evidence of serious residual deficiencies related to the February 1978 letter, or of any programmatic weaknesses in CEI's QA program. No areas of uncorrected construction deficiencies have been identified.

23. Based on the above, it is our opinion that CEI's QA program since the issuance of the Staff's February 8, 1978 letter has been significantly strengthened, that the program has functioned effectively, and that it has provided assurance

that the Perry Plant has been, and will continue to be, safely constructed.

Murray R. Edelman

Ronald L. Farrell

STATE OF Ohio)
) ss.
COUNTY OF Lake)

On this 30th day of November 1982, personally appeared before me Murray R. Edelman known to me to be the person who executed the foregoing Affidavit, and stated to me that he signed the same as his voluntary act and deed for the purposes stated therein, and that the information contained therein is true and correct to the best of his knowledge and belief.

WITNESS MY HAND AND OFFICIAL SEAL.

Caroline M. Wilde
Notary Public

My Commission Expires:
April 17, 1985

CAROLINE M. WILDE
Notary Public, State of Ohio
My Commission Expires April 17, 1985
(Recorded in Lake County)

STATE OF Ohio)
) ss.
COUNTY OF Lake)

On this 30th day of November 1982, personally appeared before me Ronald L. Farrell, known to me to be the person who executed the foregoing Affidavit, and stated to me that he signed the same as his voluntary act and deed for the purposes stated therein, and that the information contained therein is true and correct to the best of his knowledge and belief.

WITNESS MY HAND AND OFFICIAL SEAL.

Caroline M. Wilde
Notary Public

My Commission Expires:
April 17, 1985

CAROLINE M. WILDE
Notary Public, State of Ohio
My Commission Expires April 17, 1985
(Recorded in Lake County)

MURRAY R. EDELMAN

Born, 1939, in Trenton, New Jersey. Graduated from New York's Bronx High School of Science. Attended Case Institute of Technology, graduating with a Bachelor of Science Degree in Mechanical Engineering in 1961. Attended Baldwin-Wallace's Cleveland Marshall Law School, graduating with a Juris Doctor Degree in 1965.

Edelman's employment with The Cleveland Electric Illuminating Company began in 1961 as an engineering assistant in the Production Engineering Unit, Civil and Mechanical Engineering Department. His main responsibilities involved evaluation of the effectiveness of major power plant equipment.

In 1965 he was assigned to the Mechanical Engineering Section, Civil and Mechanical Engineering Department. In this capacity he held the position of Engineer assigned to the project group for new fossil generating equipment.

From 1969 through 1972, as Senior Engineer, he had overall project responsibility for all coal-to-oil conversion projects at three generating plants involving some 18 boilers (or about 700 MW) from initial design through test and start-up. In June, 1972, he was assigned as licensing engineer for the Perry Nuclear Power Plant.

In October, 1975, he was promoted to General Supervising Engineer of the Licensing and Administration Section of the Nuclear Engineering Department. He was transferred, in April, 1977, to the Production Engineering and Chemical Section of the Civil and Mechanical Engineering Department, as General Supervising Engineer.

Edelman was promoted to Manager of the Nuclear Quality Assurance Department in April, 1978, and given the responsibility of planning and directing those activities affecting the overall quality program for the Perry Nuclear Power Plant located in Perry, Ohio. In June, 1981, he became Manager of the Nuclear Engineering Department.

In April, 1982, he was made Division Manager of the Nuclear Engineering and Construction Division.

"Exhibit A-1"

RONALD L. FARRELL

Name: Ronald L. Farrell, Manager, Nuclear Quality Assurance Department

Formal Education and Training:

B.A. Business Administration, Bowling Green State University, 1954

Master of Science, Industrial Management, Case Western Reserve University, 1962

Experience:

1956 - 1963: The Cleveland Electric Illuminating Company

Joined CEI as an Office Methods Analyst performing various duties related to data processing, administrative procedures and work measurements.

1963 - 1964: Aerojet General

As Senior Systems Analyst, responsibilities included designing and implementing management and financial systems and the technical supervision and training of programming personnel.

1964 - Present: The Cleveland Electric Illuminating Company

Rejoined CEI as Project Industrial Engineer and was later named General Supervisor of the Industrial Engineering Section where responsible for development of information systems and the procedures and practices to be used in the construction of the Perry Plant.

In 1978, was assigned the position of Supervisor of the Procedures and Records Section of the Nuclear Engineering Department responsible for Perry Plant office services, procedures and records management and project-wide information systems.

In 1981, assumed the position of Manager, Perry Project Services Department with responsibility for all PNPP construction buying and expediting activities, site office facilities planning and services, document control and data systems.

In 1981, assumed the position of System Engineering and Construction Manager, Nuclear Quality Assurance Department responsible for the planning and directing of the quality program for the Perry Nuclear Power Plant.

"Exhibit A-2"

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

Docket No. 50-440
Docket No. 50-441

The Cleveland Electric Illuminating
Company
ATTN: Dalwyn R. Davidson
Vice President-Engineering
Post Office Box 5000
Cleveland, OH 44101

Gentlemen:

This refers to the telephone conversations between Mr. D. Davidson and other members of your staff and Mr. Heishman and other members of my staff on February 7 and 8, 1978, relative to our concerns regarding the implementation of your quality assurance program at Perry Nuclear Power Plant, Units 1 and 2, identified during our inspection conducted January 24-26 and February 2-3, 1978.

Based on our telephone conversations, we understand that the Cleveland Electric Illuminating Company (CEI) has taken or will take the actions delineated below and that the status and/or results of these actions will be reported to our office by telephone following their completion. Additionally, we understand that with respect to items 1 through 5 below, these activities will not be resumed until your corrective action has been reviewed and determined to be acceptable by the NRC. In this regard, NRC inspectors will be at the Perry site on February 9, 1978, to review your actions regarding items 3 and 5 prior to the placement of safety related concrete.

1. Field erection of safety related yard piping (SP-47-4549-001) by PPP has been stopped and will not be resumed until:

   a. Deficiencies in PPP's quality assurance program and implementing procedures in the areas of design document control and piping erection and handling have been corrected.

b. The site QA/QC organizations have been provided with clear and specific instructions relative to which drawings and associated instructions (GAI vs PPP) are to be used as the basis for determining that GAI's design criteria have been met.

c. A GAI qualified piping engineer has been sent to the site to review and approve PPP developed procedures and drawings for the erection of piping. GAI approval of all procedures and drawings will be made prior to installation of yard piping. In addition, for the previously placed yard piping procedures and drawings will be reviewed and approved by this engineer. These measures will remain in effect until CEI evaluates GAI's design review requirements defined in SP-47-4549-001 and PSAR, Section 17.1.3.3.b and the results of their evaluation are reviewed by the NRC.

d. 100% GAI resident inspection has been instituted on all safety related pipe being fabricated. These measures will remain in effect until CEI can demonstrate to the satisfaction of the NRC that the existing sampling inspection procedure meets ANSI N45.2, Section 11, as required by PSAR, Section 1.2.3.

2. Field erection of safety related plant piping (SP-44-4549-001) by Pullman Power Products (PPP) has been stopped and will not be resumed until:

   a. Requirements for GAI's review and approval of PPP's drawings and associated instructions for the piping governed by Specification No. SP-44-4549-001 have been reestablished; and

   b. Items 1.a, 1.b and 1.d, above have been completed.

3. Installation of safety related embedments and structural steel, supplied by PBI Industries and its subcontractors, has been stopped. Neither activity will be resumed until the specific material to be used has been evaluated and determined to meet the specified requirements of AWS D.1.1 - 1972 prior to placement. This will be accomplished through performance of one of the following inspections, as applicable:

a. 100% CQC inspection of all material in a proposed concrete pour prior to concrete placement.

b. 100% CQC inspection before any material is released from a site organization storage facility.

c. 100% CQC receiving inspection on all material.

Items a, b and c above will be performed in accordance with approved procedures, as required by the CEI QA Program. Additionally, the program inadequacies which allowed this matter to occur will be evaluated and corrected by CEI and discussed with the NRC before altering the measures established above.

4. Safety related work, performed by your coating contractor, O. B. Cannon & Son, Inc. has been stopped and will not be resumed until deficiencies in their quality assurance program and implementing procedures in the areas of verification of materials prior to use, qualification of personnel and performance of audits have been corrected.

5. Placement of safety related concrete by each of your contractors has been terminated and no contractor will resume this work until:

a. Full time CQC inspectors are assigned to enforce a new slump procedure. (When one truck is out of slump, that will trigger a slump test of every additional truck until the slump is brought within specification. The subsequent slump test failures will result in that concrete being wasted. Once a truck slump is tested within specification the normal testing frequency will be adopted.)

b. Field instruction by CQC inspectors has been given to all concrete vibrator operators, their foreman and the particular contractor QA and QC personnel involved.

c. CQA will audit the performance of items a and b, above.

These measures will remain in effect until the actions described below are taken by CEI and applicable contractors and are reviewed by the NRC.

a. Establish procedures to preclude placement of nonconforming concrete, as identified by excessive slump; and

b. Establish training/retraining requirements to ensure proper consolidation during placement by the correct use of vibrators.

6. CEI will establish an effective contract specification control system and will evaluate the acceptability of the placement of concrete batched by the National Mobil Company to a superseded design specification during the time period from August 5, 1977 until the present date.

7. CEI or an independent agent will perform audits of the onsite organizations covered by the CEI quality assurance program (including the Construction Quality Assurance (CQA) and Construction Quality Control (CQC) Elements) to determine the adequacy of established indoctrination, training and retraining programs, and the implementation of these programs. Additionally, specific emphasis will be placed on the identification and documentation of nonconformances to gainfully utilize your established nonconformance trend analysis system.

8. CEI or an independent agent will evaluate the existing program, procedures and methods governing the activities described below to determine the cause of items 1 through 6 above and to determine why these had not been identified by the responsible corporate/site organizations.

   a. Qualification and program audits of the contractors performing safety related work; and

   b. Verification of compliance with all aspects of the CEI quality assurance plan and the determination of its effectiveness.

   The results of this evaluation will be factored into the CEI quality assurance plan and implementing manuals and procedures which are currently being revised.

With respect to items 6, 7 and 8, your action will be completed by May 1, 1978.

Please inform us immediately if your understanding of these items is different from that stated above.

Sincerely,

James G. Keppler
Director

cc: W. P. Ellis, FC&EB
Lana Cobb, Plans & Analyses
Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC
U. Young Park, Power Siting Commission

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ILLUMINATING BLDG. • PUBLIC SQUARE • CLEVELAND, OHIO 44101 • TELEPHONE (216) 523-1350 • MAIL ADDRESS: P.O. BOX 5000

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Dalwyn R. Davidson
VICE PRESIDENT - ENGINEERING

May 1, 1978

Mr. James G. Keppler, Director
U.S. Nuclear Regulatory Commission
Region III Office of Inspection
and Enforcement
799 Roosevelt Road
Glen Ellyn, Illinois 600137

Dear Mr. Keppler:

This letter is our response to your Immediate Action Letter of February 8, 1978. The Immediate Action Letter addressed eight areas of concern. The first five items have been resolved with the members of your staff, as a result of inspections on site and review of the actions taken on our part. In order that this letter be complete, I have attached as Appendix 1 a brief summary of the first five items and resolution status.

With respect to Items 6, 7 and 8 of your letter, a thorough review was undertaken both internally and with the use of an outside auditing team, in order for us to address these concerns.

Item 6 of the February 8, 1978 Immediate Action Letter in part identifies the need to establish an effective contract specifications control system. In response to this concern, the system was reviewed including auditing of all project and safety-related contractors files.

In the audit of the existing files deficiencies which were found, have been corrected and all files updated including control copies. The "Specifications" include attachment Specifications, Engineering Change Notices, and Field Variance Authorizations.

The system was then reviewed and several modifications were made. In general these consisted of the following:

A. The system now utilizes a control number distribution with return receipts required. All distribution responsibilities are now at the Site Document Control Center.

B. The specifications status system is in part monitored on a computerized/terminal system identified as NEWSPEC. Field Variance Authorizations are presently monitored manually. A maintenance system was established which centralizes the responsibility for inputting of all new or change information through the Site Document Control Center. The

system provides for continuous monitoring of specification status, however, periodically, at a minimum quarterly, a status review will be conducted as spelled out in a project procedure. In addition, audits by Site Quality Assurance will be performed to verify correctness.

C. The project and contractor files were updated including elimination of xerox copies.

D. Procedures were developed to define the system and spell out the mechanics to operate it. In addition, instructions have been developed for personnel operating the system.

E. All project and construction personnel received training and indoctrination presentations. Included were the familiarization with the procedures and scoping of responsibilities.

With the implementation of the above we consider we have in place an effective system for assuring the timely and controlled distribution of specifications. All safety-related construction contracts are included and non-safety and equipment contracts will follow.

An evaluation was performed to determine the acceptability of the concrete batched by National Mobile Company to a superseded design specification during the time period from August 5, 1977 to February, 1978. The result of this evaluation by the cognizant design engineer concluded that the concrete produced to revision VI of SP-14-4549-0000 will satisfy the design requirements. Each of the 31 modifications that were made in revision VII of SP-14-4549-0000, were evaluated. These modifications were in the following general areas:

1. Expansion and clarification to remove redundencies and resolve conflicts.

2. Modification of certain procedural changes that do not affect quality.

3. Modification of certain requirements to facilitate field conditions without sacrificing quality.

Most of these modifications incorporated into revision VII had been previously issued as ECN's applicable to revision VI. It is our opinion and that of the responsible design engineer, that production of quality concrete at the Perry Plant was not affected by any revision of the specification being held by the batch plant contractor.

Item 7A. An evaluation of the indoctrination and training program was made. It was concluded that the program needs improvement. Accordingly CEI will restructure the indoctrination and training program to include a uniform approach to indoctrination and training for various organizations, including contractors. Outlines will be completed by mid-May and the schedule for implementing training sessions will be completed by the third week of May. Regular indoctrination sessions will be started during May and will continue on a regular basis as defined in the indoctrination and training outline.

Item 7B. During our evaluation it was determined that the nonconformance reporting system as implemented on the site, is an effective system. There have been occasions however where documents other than nonconformance reports have been used to note problem areas. Effective immediately, a policy statement has been issued that only nonconformance reports will be utilized in defining nonconforming conditions.

Item 8. To evaluate our program effectiveness, a special Quality Assurance Task Force was established consisting of representatives from Gilbert Associates, Inc., Kaiser Engineers, CEI and an independent QA consultant Mr. J. P. Jackson of Management Analysis Company. The Special QA Task Force has performed a thorough evaluation including on-site and off-site audits.

This Task Force issued an Interim and a Final Report evaluating the overall effectiveness of our program. The methodology of the Task Force was to conduct indepth interviews with all key project personnel plus audit selected contractors and site elements (CQA, CQC and FCMD), and the home office departments (NED, Purchasing, and NQAD).

The Task Force then evaluated the results of these audits and interviews with respect to the effectiveness of the program. This translated into specific findings relative to the appropriate 10CFR50, Appendix B criteria and the PNPP PSAR Chapter 17 commitments.

Recommendations were provided and a plan has been established based on these findings in order of priority which addressed relative significance to the action necessary to improve our program effectiveness. The priorities themselves were based on:

a. Those items which were critical to the overall corrective action program and required top management priority,

b. Those actions which were required for QA program implementation,

c. Those actions required for improvement to the QA program.

The following conditions were identified as a result of our evaluations as those that have contributed to the causes of the items identified as Items 1 through 6 in the Immediate Action Letter.

A. The CEI QA Program is defined in many different manuals. There is no single manual that defines critical controls necessary to implement the QA program on a corporate basis. This lack of definition as to who is responsible has resulted in confusion as to primary responsibility in implementing the program.

B. The techniques for resolution of conflicts has not provided timely response to noted problem areas. Additionally, the degree of management involved in resolving problem areas within the CEI QA program has not been commensurate with the need for resolution of QA program issues.

C. The reorganization of 1977 which merged the Site QA/QC activities, created voids in certain areas of the QA program which should have included redefinition of responsibilities, particularly in the area of surveillance/inspection and audits.

D. Each contractor is held totally responsible for total QA program, without consideration for the integration of CEI QA/QC functions with those of those contractors.

Commensurate with the priority of the recommendations CEI has accomplished those items which were identified as critical to the overall corrective action program and required top management priority. The following summarizes the changes initiated and completed.

Item 1 -- The QA/QC organization at the site has been reorganized to unify it under the direction of a General Supervising Engineer. In addition the assignments have been revised so as to provide a single responsible quality engineer for each contractor.

Item 2 -- The Site Quality Manuals are in the process of being consolidated reflecting the redefined responsibilities and procedures of the site QA/QC organization.

Item 3 -- A QA Advisory Committee has been established to assist the CEI Nuclear Quality Assurance Department Manager with inputs and recommendations to key program decisions, orientation of QA concepts and methods as well as accessing overall corporate support by CEI/GAI/KEI to the direction taken by the Nuclear Quality Assurance Department Manager.

This committee will be comprised of Mr. M. R. Edelman, Manager of the Nuclear Quality Assurance Department, Mr. N. R. Barker, Manager of Construction QA at Gilbert Associates, Mr. E. V. Knox, Corporate QA Manager of Kaiser Engineers.

Item 4 -- The Nuclear Quality Assurance Department Manager has established a plan which provides a schedule for completing modification to the QA program. Weekly meetings have been scheduled to track and report progress to upper management.

Additionally, the Nuclear Quality Assurance Department Manager has established a program of quarterly reviews to CEI top management to incorporate the inputs from the Advisory Committee, as well as, review the QA program through evaluation of audits, corrective action reports and other management tools.

Item 5 -- The Nuclear Quality Assurance Department has been reorganized to reflect the findings and recommendations of the Audit Task Force. Attachment 2 depicts the revised organization and lists the primary responsibilities of the key individuals involved.

Item 6 -- CEI has established a schedule for the restructuring of the audit program, both at the Site, our contractors and our QA agents.

Item 7 -- CEI has established and has started the implementation at the Site of an integrated inspection/surveillance program. The program includes witness points tied to contractors inspection planning documents and includes in-process surveillance inspections, as well as, surveillance inspection of completed work. The surveillance inspection planning will be approved by a responsible Quality Engineer. Complete implementation is anticipated by mid-June.

Item 8 -- The receiving inspection program has been expanded beyond a count and damage check and is now based on input of quality engineering to determine on a case by case basis the necessary inspection required. Implementation has been started with complete implementation anticipated by mid-June.

Item 9 -- The NQAD Manager will use the formal management chains to resolve conflicts, with the corporate QA program clearly indorsing his authority to resolve quality issues. The corporate quality assurance management committee has been redefined as a communication vehicle.

In addition, actions that were identified by the Task Force and deemed necessary, but not yet completed, are as follows:

1. CEI has strengthened our quality assurance program, by completing the items described previously. In addition we purpose to reissue our Corporate Quality Assurance Manual to reflect these improvements as well as clearly define the interfaces between all departments performing quality related functions. This manual will reiterate the strong CEI commitment to the QA program indicating that the manual must be followed by all persons involved with respect to the Perry Project, and that changes will be considered and processed immediately if the situation warrants. The manual will clearly provide guidance on how CEI will address with Regulatory Guides identified in the PSAR. Scheduled completion date for issuance of this manual is August, 1978.

2. CEI will evaluate the effectiveness and expertise of presently available in-house personnel, consistent with the revised departmental organization. CEI will employ experienced quality assurance personnel in the key supervisory roles as defined on the revised organization chart as shown in Attachment 2 of this letter. This evaluation will be completed by June 1. CEI will continue to draw upon Gilbert Associates and Kaiser personnel for support as deemed necessary by the Nuclear QA Department Manager.

3. CEI will restructure the audit program and coordinate the audit review reports from all elements. The audit program will cover all aspects of the program including agents, design activities, construction activities as well as internal CEI activities. This revised audit program will serve as the backbone for the Nuclear Quality Assurance Department Manager as a tool to access the effectiveness of our overall QA program. This is anticipated to be implemented by June 1.

4. CEI will provide direct support to selected contractors in the QA/QC area where it is determined by the responsible quality engineer that such support is needed. This will prevent demands on contractors to establish QA programs that are beyond their capabilities to implement effectively. This will be implemented on as needed basis.

5. Additional detailed recommendations for improvement in the CEI QA Program based on the Special QA Task Force have been reviewed and will be included as appropriate in the revised QA Manual. These are anticipated to be completed by August 1, 1978.

In summary the three month accessment made of our program by the outside auditing team plus our own evaluations as to our effectiveness have provided beneficial input to all parties involved. Significant improvements have been made and will continue to be made to make our program overall more effective. I will provide close attention to the development of the revised QA Manual and review the effectiveness of our overall quality assurance program. With the commitments that we have made and, the changes that have been implemented, we feel that our quality assurance program will provide a effective means of controlling quality on the Perry Project to insure the plant is built to applicable standards and designs.

Very truly yours,

Dalwyn R. Davidson

Dalwyn R. Davidson
Vice President - Engineering

DRD:ge
Attachments

ATTACHMENT 1

SUMMARY OF ACTION TAKEN ON IMMEDIATE ACTION LETTER ITEMS 1-5

BACKGROUND

Based on concerns noted in Items 1-5 of the NRC Immediate Action Letter of February 8, 1978, numerous actions have been taken and these actions have received concurrance during various NRC inspections. The following is provided as a summary of these activities. NRC letter of March 31, 1978 Inspection Report No. 50-440/78-03, 50-441/78-02 provide additional detail and NRC evaluation on these actions.

Item 1 and 2. Safety-Related Piping Fabrication and Installation

Deficiencies noted by the NRC, prompted CEI QA Elements to stop work on Pullman Power Products in the areas of safety-related pipe fabrication, yard piping installation, and plant piping. Several modifications to the specifications and the quality program requirements were initiated by CEI, GAI, and PPP. These measures included Pullman initiating procedures for "Document Control" and "Design Control" which were submitted to and approved by the CQA Element. Pullman fabrication and erection drawings have been submitted to GAI Design Engineer for review and approval in accordance with these procedures. Gilbert Engineering has issued an ECN to SP-44 which establishes the requirements for the Design Engineer's review of contractor's piping drawings. This area has been monitored by CQA to assure that these requirements are being met.

Pullman has implemented a procedure for "Field Handling of Materials and Equipment" which was approved by the CQA Element. CQA has witnessed Indoctrination and Training classes conducted by Pullman on QA Program Requirements. These classes were documented and are to continue on a regular basis. Pullman has since employed a training officer on site to conduct these classes.

One hundred percent surveillance inspection was implemented by the GAI Resident Inspector at Pullman's Williamsport, Pennsylvania shop. On March 16, 1978, Mr. R. L. Spessard of NRC Region III approved the use of a sampling plan per MSP-033, Rev. 3, and CEI letter dated March 9, 1978.

CEI letter dated February 18, 1978 established the requirement for the GAI Design Engineer to:

1. Review 100% safety Class I spool drawings.

2. Sampling per MSP-033, Para. C.3d applied to spool drawings only for safety Class II and III.

Subsequent NRC review of these corrective action measures resulted in the release of Pullman Power Products for safety-related work.

Item 3. PBI Industries Safety-Related Structural Steel and Embedments

The installation procedural controls on safety-related embedments and structural steel have been modified to assure compliance to AWS D.1.1-1972 prior to placement. The CQC element has superimposed an inspection program of 100% verification of the vendor's and our manufacturing assurance inspection programs.

These additional inspection measures include 100% receiving inspection of all new embedments and structural steel delivered to the site, 100% inspection of all embedments and structural steel currently in inventory prior to their issuance to contractors, and for those items previously issued, 100% inspection of all embedments and structural steel prior to their placement.

These currently established measures have been reviewed and found acceptable by NRC inspectors as indicated in the March 31, 1978 report (50-440/78-03, 50-441/78-02).

To establish compliance at the vendor's facilities the CEI vendor assurance program has been increased to include 100% surveillance of all embedments and structural steel being fabricated. Finally, the vendor's inspection program has been altered to include the additional detailed acceptance criteria provided by the Design Engineer.

When PBI and its subsidiaries are released to resume shipments, and all existing inventory has been inspected, an evaluation shall be performed to determine the future procedural controls for assuring compliance to AWS D.1.1-1972. This evaluation and recommended course of action shall be discussed with the NRC prior to being implemented.

Item 4. O. B. Cannon Nuclear Coatings

As a result of the deficiencies noted by the NRC, CQA issued a Stop Work Notice and Corrective Action Request (CAR) to O. B. Cannon. The CAR identified five deficient conditions in their QA program and implementing procedures in the areas of verification of materials prior to use, qualifications of personnel, and performance of audits.

The contractor's response to the Corrective Action Request included:

> (1) the correction of coating applicators' qualification records in accordance with O. B. Cannon procedures; (2) the inspection status tagging of all cans and cartons of coating materials in the storage area; (3) the missing physical examination record was returned to O. B. Cannon's site QC file; (4) the O. B. Cannon QC manual was revised to include the review and approval of manufacturers' material certification; and (5) the contractor's first internal project audit was performed.

The contractor's implementation of these corrective actions was verified by CQA and a partial stop work release for Class II coating work (non-safety related) was issued.

Then February 18, 1978, the NRC reviewed O. B. Cannon's QA program and procedural improvements and observed the corrective actions taken. As a result of this review and observation, the NRC inspector concluded that safety-related coating work could be permitted to resume. Subsequentially, a full stop work release was approved and issued by CQA.

Item 5. Safety-Related Concrete Placement

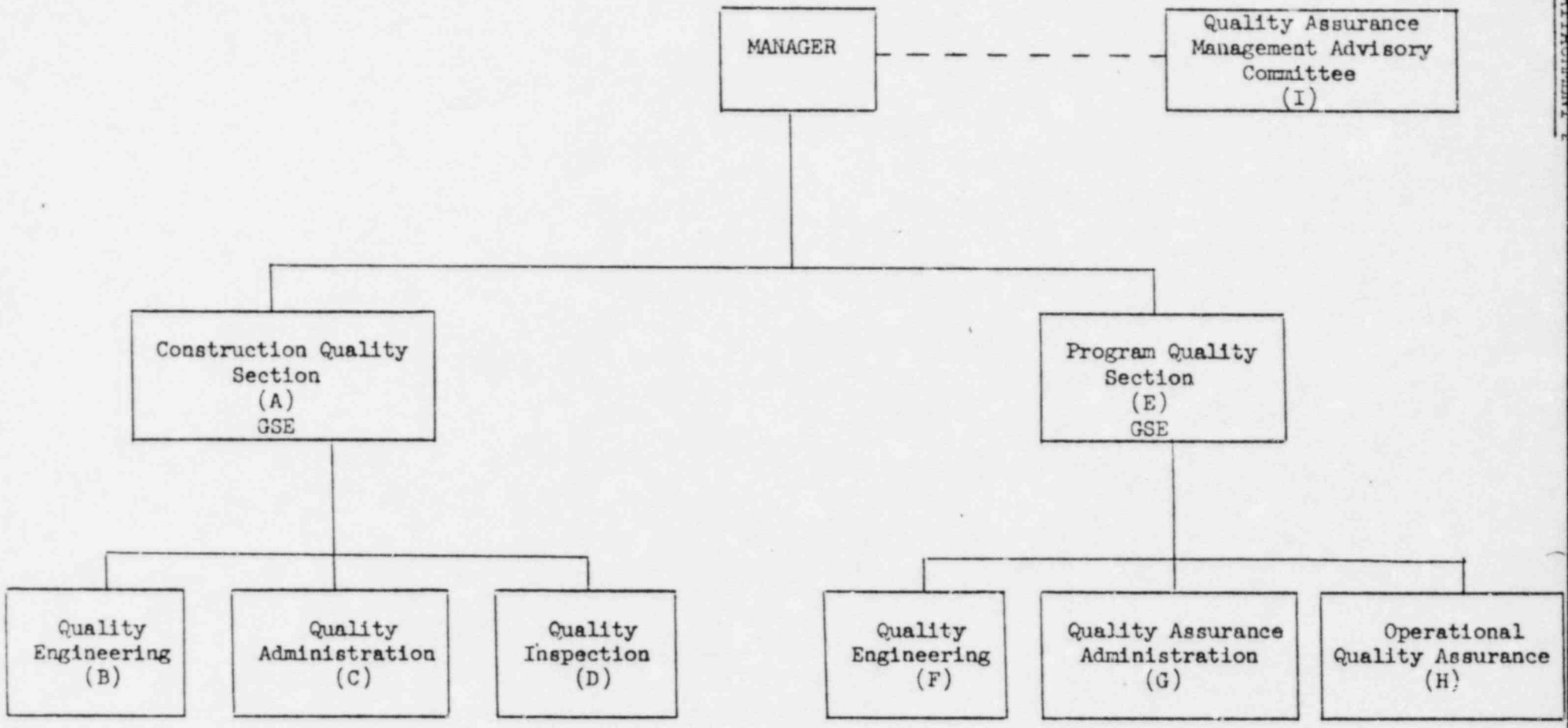
Prior to resuming safety-related concrete placement by each of our four placement contractors, several QA program adjustments were made. These changes included a new slump testing procedure which requires, upon detection the high/low slump, the suspension of placement and the sampling of each truck until slump is back within specified limits. An indoctrination and training meeting was held with contractor's vibrator operators and a procedural requirement was added to rebrief and provide attestation of vibration operator training prior to each placement. The CQC detailed procedures and inspection plans were revised to reflect implementation of 100% CQC inspection of contractor preplacement inspection activities. CQA performed detailed program audits of each contractor and CEI management met with contractor management to emphasize their contractural obligations with respect to quality control.

Upon completion of these activities, and the review and inspection of preplacements by NRC inspectors, contractors were individually released to place safety-related concrete. Then, in addition to continued 100% CQC inspection, CQA performed audits of preplacement and placement activities by both the contractor and CQC on all safety-related pours.

A subsequent CQA evaluation of these audits was reviewed by and agreed to by the NRC on April 14, 1978 and the CQA audit frequency on two of the contractors (National Engineering and Great Lakes) was reduced to one audit per week.

As of this response date, the other two contractors (S & M and DICK Corporation) shall continue under the CQA audit of every placement program until several pours can be made by each organization and a level of confidence is established.

NUCLEAR QUALITY ASSURANCE DEPARTMENT



ATTACHMENT 2

ORGANIZATIONAL RESPONSIBILITIES

(A) Construction Quality Section - GSE

1. Coordinate all site quality functions
2. Primary contact Nuclear Regulatory Commission inspections
3. Responsible for all line supervisory functions

(B) Quality Engineering (Construction Quality Section)

1. Contractor quality assurance programs
2. Establishing inspection requirements
3. Coordination and disposition of nonconformance reports
4. Obtain correction action
5. Contractor; procedure review
6. Receiving inspection plan
7. Audit contractors/Site Organization
8. Review procurement documents
9. Analysis and reports trends
10. Establish site quality assurance records requirements
11. Coordinator off site quality information requests

(C) Quality Administration (Construction Quality Section)

1. Audit tracking
2. Indoctrination and training
3. Quality manual control
4. Quality assurance records
5. Nonconformance Report control

(D) Inspection (Construction Quality Section)

1. Surveillance inspection
2. Receipt inspections
3. Documentation of inspections
4. Prepare Nonconformance Reports

(E) Program Quality Section - GSE

1. Coordinate all design, procurement, manufacturing activities
2. Responsible for agents quality assurance efforts, inc. Primarily GAI/QA Program
3. Responsible for all line supervisory functions

(F) Quality Engineering (Program Quality Section)

1. Review of contracts
2. Vendor preaward meetings
3. Support audit program
4. Quality engineering support to Nuclear Engineering Department
5. Quality engineering support to Purchasing
6. Safety Analysis Report reviews

(G) Quality Assurance Administration (Program Quality Section)

1. Audits
2. Indoctrination and training
3. Procedures
4. Records
5. Scheduling and expediting

(H) Operational Quality Assurance (Program Quality Section)

1. Operations quality assurance program planning
2. Startup and Test quality assurance support

(I) Quality Assurance Advisory Committee

1. Input on quality assurance program policy
2. Input on quality assurance methods and techniques
3. Quality assurance management for GAI/KEI support

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Dalwyn R. Davidson
VICE PRESIDENT - ENGINEERING

August 8, 1978

Mr. James G. Keppler, Director
U.S. Nuclear Regulatory Commission
Region III
Office of Inspection and Enforcement
799 Roosevelt Road
Glen Ellyn, Illinois 600137

Dear Mr. Keppler:

As indicated in our May 1, 1978 response to your Immediate Action Letter of February 8, 1978, we have revised and reissued our Quality Assurance Manual. It was released August 7, 1978 and will become effective with issuance and training completed of all applicable sub-tier procedures and instructions. Formally designated the "Corporate Nuclear Quality Assurance Program," it addresses the Perry Project's policy and posture on activities in sufficient detail to provide guidance for all sub-tier procedure and instruction development.

A supplement to the Corporate Nuclear Quality Assurance Program, and organized to the 18 criteria, will be the Project Administration manual containing administrative policies and procedures applicable to all project activities.

A series of procedure manuals will be issued to include procedures describing interdepartmental or intercompany flow. These procedures shall avoid clerical details where such details are covered by intra-element instructions.

At the lowest level will be instruction manuals. Such manuals will be generated to accommodate intra-element clerical details as required by procedures.

The instruction and procedure manuals will be interfaced, codified and controlled through a review process to be detailed in the Project Administration Manual to readily identify implementation of the Corporate Nuclear Quality Assurance Program requirements and responsibilities.

All elements will be instructed to continue working to all existing approved procedures and instructions until they have been properly reviewed, approved with training completed to this, the Corporate Nuclear Quality Assurance Program Manual.

All existing procedures and instructions will be cross-referenced through a published matrix to show the application of the Corporate Nuclear Quality Assurance Program Manual to the procedure and instruction level, and to provide the basis for revision of existing procedures and instructions and preparation of new documents. Revision of existing documents should be accomplished by November, 1978. All new documents should be completed and effective by February, 1979.

Very truly yours,

Dalwyn R. Davidson

Dalwyn R. Davidson
Vice President - Engineering

DRD:ge

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Dalwyn R. Davidson
VICE PRESIDENT - ENGINEERING

August 17, 1978

Mr. J. G. Keppler
Director
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Keppler:

This letter is to acknowledge receipt of your inspection report number 50-440/78-02 and 50-441/78-01 attached to your letter of July 13, 1978, which I received on July 17, 1978. This report identifies areas examined during the inspections conducted January 24 - 26, 1978 and February 2 and 3, 1978 by Messrs. I. T. Yin, K. R. Naidu, G. F. Maxwell, and C. C. Williams.

Attached to this letter is our response to the eleven (11) items of noncompliance described in Appendix A, Notice of Violation. This response is in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations.

As indicated in the third paragraph of your letter, we have, in several instances, referenced corrective steps which we described to you in previous correspondence and which have been observed through your subsequent inspections at the site. We trust that this approach, as well as our direct responses, will satisfy our obligation to respond to each item identified in the Notice of Violation.

In addition, your letter, in paragraph (5), identified a specific concern regarding the adequacy of embedments placed in safety-related concrete poured prior to the stop work actions associated with the Immediate Action Letter of February 8, 1978. Due to the complexity involved with providing a thorough and comprehensive analysis, we will respond to this concern in a separate report. Analysis of these embedments has been initiated by Gilbert Associates, our architect engineer. At this time we anticipate submitting the results of this analysis for your review by December 1, 1978.

Should there be any questions or concerns, please do not hesitate to call.

Very truly yours,

D. R. Davidson

D. R. Davidson
Vice President - Engineering

DRD:par
Attachment

cc: Quality Assurance Management Committee
J. W. Fenker
G. W. Groscup
R. H. McNeal
W. R. Ossman
P. B. Perry
J. J. Waldron

RESPONSE TO ENFORCEMENT ITEMS

Listed below are the responses to the noncompliances identified in Appendix A, Notice of Violation, of the United States Nuclear Regulatory Commission IE Report No. 50-440/78-02; 50-441/78-01.

I. A. Infraction

10CFR50, Appendix B, Criterion III, states, in part, that "Measures shall be established to assure that applicable regulatory requirements and the design basis . . . are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents . . ."

Paragraph 17.1.3 of the Quality Assurance Program documented in the PNPP PSAR states, in part, that "Specifications shall require vendors to submit drawings, design data, fabrication procedures and test results as necessary. Selected vendor documents will be reviewed by GAI. Vendor drawings will be reviewed by GAI engineers for consistency with technical specification requirements and the GAI design intent."

Contrary to the above, measures were not established to assure vendor drawings and procedures were reviewed to ascertain inclusion of applicable regulatory and quality requirements. For example:

a. Safety Class 1, 2, and 3 piping Specifications SP-44-4549-001 and SP-527-4549-001 did not include the requirement for the piping vendor (Pullman) to submit drawings, design data, and fabrication procedures to GAI, and therefore, these documents were not being reviewed by GAI engineers.

b. Safety Class 3 piping Specification SP-47-4549-001 contains the requirements for the piping vendor (Pullman) to submit shop and erection drawings, data sheets and fabrication procedures to GAI for review and approval. However, drawings and other instructions being used to install Safety Class 3 piping (vendor "take off" drawings SP-47-001 and SP-304-861) were not reviewed and approved by GAI.

B. Response

Corrective actions relative to these matters which were identified in your Immediate Action Letter of February 8, 1978, were reviewed on February 17 and 18, 1978 and found to be acceptable as detailed in United States Nuclear Regulatory Commission IE Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

II. A. Infraction

10CFR50, Appendix B, Criterion V states, "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. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Paragraph 17.1.5 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Each major participant in the project will be required to provide documents which describe the control of their quality-related activities. All participants, including vendors and contractors, shall be required to perform quality-related activities in conformance with approved instructions, procedures, and drawings applicable to their phase of the work. Each instruction and procedure will have a detailed description of the activity including quantitative and qualitative acceptance criteria and provisions for documenting the findings or results . . . CEI shall have the responsibility for overall control of the PNPP quality. Instructions and procedures shall be prepared by CEI or agents to describe the means for achieving the required quality."

Contrary to the above, CEI failed to accomplish activities in accordance with instructions or procedures, failed to require that instructions or procedures include quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished and failed to require that activities affecting quality were prescribed by documented instructions or procedures. For example:

a. On at least twelve (12) occasions since October 1976, CEI Construction Quality Control (CQC) did not document deficiencies in Nonconformance Reports (NR's) as required by the CQC Manual; interoffice memorandums were used instead.

   The CQC Manual, Section 16, Paragraphs 2.1 and 2.2 states, in part, "Items and activities that do not conform to specifications, drawings and other project requirements shall be identified, documented and corrected. Deficiencies which affect the quality status of material and equipment are reported on Nonconformance Reports (NR's) . . ."

b. On approximately twenty (20) occasions since April 1977, Great Lakes did not document storage deficiencies in Nonconformance Reports as required by procedure AQCP-8 and AQCP-9.

   Paragraph 5.1 of AQCP-8 states, in part, "Storage shall be in accordance with ANSI N 45.2.2," and AQCP-9, Paragraph 4.1, states in part, "A nonconformance report shall be initiated when structures, systems, or components do not comply to specifications, drawings, codes, standards and/or any delineated project acceptance criteria."

Great Lakes' failure to follow the requirements of AQCP-8 was cited once previously as an item of noncompliance in IE Inspection Report No. 50-440/77-07; 50-441/77-07.

c. Eighteen (18) containers of coating materials maintained in a Cannon storage area, were not identified with the appropriate quality tags as required by the Cannon QA Program.

The Cannon QA Program, Section I, Paragraph 7.1.6 states, in part, "Accepted materials are tagged "Accepted" and stored for use."

d. The audit checklists, which were utilized by CEI during the pre-award surveys of Pullman and Cannon, contained specific instructions requiring that each block/checkpoint be addressed by the audit personnel and the results documented in the applicable block or beside the applicable checkpoint. At least 60% of the audit checkpoints/blocks were not completed/documented in accordance with the specific audit checklist instructions. The Pullman audit was conducted on June 22, 1976, and the Cannon audit was conducted on April 6, 1976. The Pullman contract for Safety Class 3 piping was awarded on September 28, 1977, and the Cannon contract for application of coating materials was awarded on August 11, 1976.

e. Five (5) DICK Corporation QA inspection personnel, who have been working at PNPP since December 1976, did not receive training and indoctrination as required by procedure FQC-2.1.

Procedure FQC-2.1, Paragraphs 6.1.1 through 6.1.3 state, in part, "The training program shall include: Indoctrination of personnel with the technical objective of the project and the NRC requirements . . . Instructions on the use of the procedures, codes, and standards that will be used . . . The Quality Assurance elements that are to be employed, with guidance regarding the limitations and capabilities."

f. U. S. Testing (the test lab contractor) did not have documented instructions or procedures to assure precision weight scales are properly calibrated and adjusted.

g. National Engineering did not have documented instructions or procedures to prevent the continuous placement of concrete which has excessive slump.

h. The safety-related piping Manufacturing Surveillance Plan No. 033 being used by the GAI inspector at Pullman's fabrication shop did not define lot size and did not make documented reference to a recognized standard practice; thereby not requiring sufficient quantitative or qualitative criteria for determining that important activities have been satisfactorily accomplished.

B. Response

a. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978 were reviewed June 6 - 9, 1978 by Mr J. E. Konklin as detailed in United States Nuclear Regulatory Commission IE Report No. 50-440/78-07; 50-441/78-06, which was attached to your letter dated July 7, 1978. Previously, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

b. Corrective actions relative to this matter were detailed in Mr. Davidson's letter to you dated March 7, 1978, which was sent in response to your letter of February 17, 1978. This letter requested more information about our original response to the first violation identified in IE Report No. 50-440/77-07; 50-441/77-07.

c. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978, were reviewed February 17 and 18, 1978 by Messrs. C. C. Williams and I. T. Yin and found to be acceptable as detailed in United States Nuclear Regulatory Commission IE Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

d. The preaward surveys of Pullman and Cannon were reviewed and determined to adequately evaluate the quality programs. These contractors were both required to submit project-unique programs which were subsequently reviewed by CEI/QA or others. This requirement was established during both preaward surveys.

The specific checklists used for the Pullman and Cannon preaward surveys have been reviewed, and all blank areas evaluated. Future uses of this checklist will comply with instructions on the form.

The particular checklist forms used were designed for auditing manufacturers and were not required to be used by CEI/QA Procedure 8.2, Rev. 2, "CEI/QA Audit Procedure for Contractors" (which was applicable at the time). CEI/QA recognized the difference between auditing an existing manufacturing facility and a proposed construction site operation and issued Quality Assurance Instruction 5.3, "Conducting Contractor Preaward Surveys" on December 3, 1976. (The Pullman audit was conducted in June 1976 and the Cannon audit was conducted in April 1976.)

II. B. Response

e. A review of DICK Corporation's on-Site QC personnel qualifications was performed. The documentation available was in accordance with that required by FQC 2.1, Rev. 0, DICK Corporation has committed to having a more formal indoctrination and training program, including indoctrination to NRC requirements, available on-site by September 10, 1978.

f. U. S. Testing has submitted Calibration Instruction No. 16 "Laboratory Scales and Balances (Mechanical)" for review and approval by Construction Quality Engineering. Resolution of comments was accomplished during a meeting held on August 1, 1978, between the licensee's representatives and U. S. Testing Management. The letter of acceptance will be issued by August 14, 1978.

g. National Engineering & Contracting Co. is revising their procedure QP 10.1 "Concrete Inspection". This revised procedure is to include the wet slump requirements and will be submitted to Construction Quality Engineering for review no later than August 15, 1978. Until this procedure is approved by CQE and implemented by National Engineering, CQC will be performing 100% concrete placing inspection for this contractor.

h. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978 were reviewed February 17 - 18, 1978, by Messrs. C. C. Williams and I.T. Yin and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978 we outlined for your review the actions which had been taken.

III. A. Infraction

10CFR50, Appendix B, Criterion VI states, in part, that "Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are ... used at the location when the prescribed activity is performed."

Paragraph 17.1.6 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "The Field Construction Management Organization Firm shall provide written procedures for the control of documents such as working drawings, specifications, procedures, and instructions to assure that only the latest revisions will be used for construction and erection. Documents will be distributed in accordance with approved distribution lists."

III. A. Infraction, Cont.

Contrary to the above, CEI failed to ensure that National Mobile used design Specification SP-14-4549-00, Revision VII, for batching safety-related concrete, which was the latest applicable revision. Specification SP-14-4549-00, Revision VII was issued on February 15, 1977, approved on June 28, 1977, and received by National Mobile on August 5, 1977, and since the date of receipt, more than 140,000 cubic yards of concrete (batched to SP-14-4549-00, Revision VI) have been placed.

NNIC & NECC The use of out-of-date and/or unapproved procedures by site contractor (~~Great Lakes Construction Co.~~) was cited once previously as an item of noncompliance in IE Inspection No. 50-440/~~78-06~~; 50-441/78-05.
77-06 77-06

B. Response

Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978 were reviewed June 6 - 9, 1978 by Mr. J. E. Konklin and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-07; 50-441/78-06, which was attached to your letter dated July 7, 1978. Additionally, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

IV. A. Infraction

10CFR50, Appendix B, Criterion VII states, in part, that "Measures shall be established to assure that purchased . . . services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents".

Paragraph 17.1.7 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "The procurement of safety class . . . services shall be performed in accordance with written policies and procedures. Appropriate measures will be included to evaluate procurement sources, monitor the activities of vendors and contractors, and confirm that purchased material conforms with procurement documents . . . The programs of all participants shall be in accordance with the CEI Quality Program Specifications, the CEI PNPP QA Plan and 10CFR50, Appendix B."

Contrary to the above, measures established by CEI did not assure that the purchased services of several site contractors conformed to procurement documents in that the QA programs for these contractors were not in accordance with 10CFR50, Appendix B. For example:

a. Great Lakes did not establish an indoctrination and training program as required by contract Specification SP-708-4549-00.

b. PBI Industries did not establish requirements for follow-up action, including reaudit of deficient conditions, to assure that corrective action has been taken.

IV. A. Infraction, Cont.

c. Cannon did not establish receipt inspection requirements to assure that manufacturer's test/product results, for coating materials, conform to procurement documents prior to release of these materials for use.

d. Pullman did not establish measures to control drawings, related design documents and procedures which were being utilized for the installation of safety-related piping. For example:

(1) Pullman personnel identified a Safety Class 3 piping installation as being in accordance with Drawings No. SP-47-001 and No. PP-304-861; these drawings were uncontrolled and unapproved. The Architect Engineer (GAI) drawing on which these drawings were based, did not have a drawing number, and therefore evidence of proper approval and document control could not be demonstrated.

(2) Pullman personnel were using an unapproved checklist to perform receipt inspections of material in an attempt to comply with procedure No. X-5.

(3) Pullman personnel possessed and were using a revision of Specification SP-47-4549-001, dated October 24, 1977. This document was not available in CEI's document control center. Further, this document was incomplete in that drawing control and approval requirements had not been established.

(4) Pullman personnel could not determine, from their records and documents, whether or not they possessed the correct revisions to all of the drawings maintained by them.

(5) Pullman personnel were installing Safety Class 3 piping without having the applicable drawing(s) available in the area where the work was in progress. Moreover, these personnel were not knowledgeable as to which drawings were applicable.

B. Response

4. a. Great Lakes Construction Company has issued AQCP-16, Rev. 1, dated April 10, 1978, entitled "Indoctrination and Training of Personnel". This procedure was accepted by CEI Construction Quality Assurance on April 19, 1978.
Great Lakes has begun implementation of their training program as described by this procedure.

Full compliance has been achieved.

B. Response, Cont.

4. b. Corrective Action Request CQA 0434 was issued on February 8, 1978 to PBI to withdraw CEI Quality Assurance approval of PBI's safety-related QC/QA program Field Supplement for Erection of Structural Steel. This CAR accompanied Stop Work No. CQA-78-3.

The revised program document dated May 11, 1978 was subsequently approved by CEI Quality Assurance personnel on May 15, 1978, and a Stop Work Release was issued to PBI (SP-85) Section X, Item B.4., of PBI's revised program states in part, "A reaudit of deficient areas shall be performed within 45 days of the initial audit."

Full compliance has been achieved.

c. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978, were reviewed by Mr. G. F. Maxwell and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

d. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978, were reviewed April 13 - 14, 1978 by Mr. J. E. Konklin. Based on his evaluation, CEI issued a Stop Work Release on April 14, 1978 to Pullman Power Products which covered SP-44. With this action, the conditions which necessitated Stop Work Notice CQA-78-01 to be issued to Pullman Power Products on February 8, 1978, were considered to be corrected. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

V. A.4 Infraction

10CFR50, Appendix B, Criterion IX states, in part, "Measures shall be established to assure that special processes, including welding . . . and nondestructive testing, are controlled and accomplished by qualified procedures in accordance with applicable codes, standards, specifications, criteria . . ."

Paragraph 17.1.9 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Special processes to be used during the manufacture and installation of equipment shall be established and controlled in accordance with approved procedures. Welding, . . . nondestructive examinations and other processes which require unusual care or close control shall be performed in accordance with appropriate written procedures. Procedures . . . will be established to meet the requirements of applicable codes and standards . . . or to meet the requirements of special process specifications which will be produced for the Perry Nuclear Power Plant Project."

Specification SP-667-4549-00, titled "Fabrication and Delivery of Safety-Related Embedded Steel" in Paragraphs 2:04.2 and 2:10.2 specified that the welding activities should be performed and inspected respectively to requirements of AWS D1.1-72.

Contrary to the above, on February 3, 1978, fifteen safety-related embedments and structural steel columns were found with weldments which did not meet the requirements of the applicable code (AWS D1.1-72). For example, identification marks were not on parts or joints showing that a welding inspector had inspected and accepted the welds; Nelson Stud Welds, which had been repaired by stick welding, were not tested with a hammer stroke and bent to an angle of 15 degrees for its original axis; welds were of poor quality as exhibited by inadequate size, excessive porosity and excessive gouging as defined by the code.

B. Response

A 10CFR50.55(e) was reported to N.R.C. Region III on February 4, 1978 and corrective actions relative to these matters are identified below:

(1) As a result of your findings relative to the embedment and structural steel columns, we contacted N.R.C. Region III and reported the situation as a significant deficiency under 10CFR50.55(e) on February 4, 1978. Our March 6, 1978 Interim Report on Nonconforming Safety-Related Embedment and Structural Steel identified corrective actions initiated relative to this matter.

(2) Additional corrective actions relative to this matter were detailed in Mr. Davidson's letter to you dated May 1, 1978 which was sent in response to your Immediate Action Letter of February 8, 1978.

Since that time 100% inspection of all safety-related embedments in stock has been completed and 100% receiving inspection of all current shipments of imbedments to the job-site is being performed. CQC Detailed Procedure DP 11.1.5, "First Line Inspection of Fabricated Embedments", including the checklists, are being utilized to conduct embedment inspections was reviewed by Messrs. W. Hansen and G. Phillips on June 9, 1978 with no problems noted.

Insofar as the structural steel is concerned, the 17 reactor building columns are being repaired and 100% magnetic particle testing of fillet welds has been initiated. The control complex steel, which has already been erected, has been visually inspected by Quality Inspection. In addition to that, 20% of the steel is being magnetic particle tested by PBI under Quality Inspection supervision and utilizing a Gilbert sampling plan. The annulus platform steel has been visually examined and 20% of it has been selected for 100% magnetic particle testing at Levinson Steel.

VI. A. Infraction

10CFR50, Appendix B, Criterion X states, in part, that "A program for inspection of activities affecting quality shall be established and executed . . . to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity . . . Examinations . . . shall be performed for each work operation where necessary to assure quality."

Paragraph 17.1.10 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Each organization's inspection program will adhere to the following general requirements: . . .Documented and approved procedures will be used to control methods and describe acceptance standards . . . Quality will be controlled by inspection or process control or a combination of both as necessary.

Paragraph 3.8.1.6.1.5 of the PNPP PSAR states, in part, that "Requirements for placing and consolidating concrete are as detailed in ACI 301."

Contrary to the above:

a. On January 24, 1978, the inspectors observed that the QC inspection being performed by CEI and Great Lakes personnel during concrete Pour No. CCO-S1/S6-599 did not verify conformance with documented instructions and procedures (ACI 301-1972, Chapter 8.3.4; Construction Quality Control Inspection Plan No. C-01, Revision 2, SP-20, Checklist Accpetance Criterion II.F; and Construction Quality Control Guideline No. C-4, Section IV, Revision 0) in that improper use of vibrators was not identified and corrected.

b. On January 25, 1978, the inspectors observed that the QC inspection being performed by National Engineering personnel during concrete Pour No. IBO-S1-599 did not verify conformance with documented instructions and procedures (ACI 301-1972, Chapters 3.5 and 8.3.4; Construction Quality Control Inspection Plan No. C-01, Revision 2, SP-20, Checklist Acceptance Criteria II.D and II.F; and Construction Quality Control Guideline No. C-4, Section IV, Revision 0) in that improper use of vibrators and the use of concrete with excessive slump were not identified and corrected.

B. Response

Corrective actions relative to these matters which were identified in your Immediate Action Letter of February 8, 1978, were reviewed by Messrs. E. J. Gallagher and K. R. Naidu and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated 3/31/78

Subsequently in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

VII. A. Infraction

10CFR50, Appendix B, Criterion XIII, states, in part, that "Measures shall be established to control the handling, storage, shipping, cleaning, and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration."

Paragraph 17.1.13 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "A program of procedures shall be implemented to prevent damage or deterioration of material or equipment during shipping, storage, and handling. Measures established will provide assurance of quality preservation, from fabrication through installation, to preclude deterioration or damage which could adversely affect quality."

Paragraph 4.4.2 and 5.1 of Great Lakes procedure AQCP-8 states, in part, "Material identification tags shall be affixed to bundles, packs, boxes, cans, or individual parts or pieces in such a manner as to assure positive identification of the material . . . Storage shall be in accordance with ANSI N 45.2.2."

Contrary to the above:

a. On January 24, 1978, approximately 20(safety-related) nut and bolt assemblies (concrete embedments) and 1/2 pound of weld wire were examined. Both were found to be inadequately stored. For example, the weld wire was laying on a wet floor and the nut and bolt assemblies were submerged in water and were in a rusty condition, contrary to Paragraph 2.7.4 of ANSI N 45.2.2-1972. Additionally, the nut and bolt assemblies were not identified with a material identification tag as required by Great Lakes Procedure AQCP-8.

   The improper storage of materials by site contractors (National Engineering, Pullman and Kaiser) was cited once previously as an item of noncompliance in I.E. Inspection Report No. 50-440/77-07; 50-441/77-07 .

b. Great Lakes has not established instructions for inspecting safety related components in storage as required by Paragraph 6.4.2 of ANSI N 45.2.2.

   CEI's failure to establish an instruction for inspecting materials (reinforcing steel) in storage was cited once previously as an item of noncompliance in I.E. Inspection Report No. 50-440/76-01; 50-441/76-01.

c. Pullman has not established pipe and component lifting and handling procedures for site construction activities in progress.

VII. B. Response

a. Great Lakes Construction Co. has revised their Procedure AQCP-16 "Indoctrination and Training of Personnel". This procedure now addresses more fully the necessity of recognizing improper storage of safety-related materials and the necessity of maintaining the material identification tagging system on all items other than reinforcing steel and embedded items, which are controlled as described in VII.B.b below.

In addition, the Construction Quality Section will initiate an evaluation of Nonconformance and Action Requests to determine any trends associated with storage problems. Based on the results obtained, the need for additional audit and/or surveillance of this area will be determined and implemented as necessary to assure that storage problems do not persist.

b. Great Lakes Construction Company AQCP-16, Rev. 1, now specifically addresses storage. Page 4 of Attachment 3 dated February 15, 1978 comprises a Reinforcing Steel Placement Checklist. Page 5 of Attachment 3 comprises an embedded Metal Placement Checklist.

Additionally, GLC hired a full-time QC inspector to handle rebar, instituted a minimum sample plan of 30% on all bars to be increased as conditions warrant. It was determined that although these provisions constituted full address of the described problems, these measures were still not adequate to provide full control. Therefore, on July 1, 1978, a subcontract was let to Wahib Steel which included receipt inspection of rebar for GLC. Since Wahib Steel has approved procedures and has performed effectively for other site contractors and has sufficient manpower to effectively control rebar receipt, full compliance has now been achieved.

c. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978, were reviewed on February 17 - 18, 1978 and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

VIII. A. Infraction

10CFR50, Appendix B, Criterion XV, states, in part, that "Measures shall be established to control materials, parts or components which do not conform to requirements . . . These measures shall include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations."

Paragraph 17.1.15 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Measures shall be included in the CEI PNPP QA Program to control nonconforming materials, parts or components. . . QA Programs shall be required of vendors and contractors of safety class equipment and will include measures for identification, documentation, segregation, disposition and notification to affected organizations of nonconforming materials, parts or components."

Paragraph 6.1.4 of National Engineering procedure QP 15.1 states, in part, "Nonconforming items shall be tagged and segregated where ever possible per Section 6.6."

Contrary to the above:

National Engineering failed to document voids on concrete placement IBO-W-43-597 (intermediate building) on a Nonconformance Report (NR) and identify the specific area with a nonconformance tag or other means. Furthermore, the following areas where voids existed and which were documented on NRs had not been identified with nonconformance tags or other means: Section 26-26, at approximate elevation 580 feet; Section 22-22, at approximate elevation 581 feet - 6 inches; and Pour No. IBO-W-15-597.

B. Response

Nonconformance Reports NECC 92, dated January 25, 1978, and NECC 98, dated February 11, 1978, were issued to document the conditions described above. Additionally, on major wall surface defects, hold tags are being attached to the exposed rebar and the nonconforming portions are being painted.

NECC Procedure QP 15.1, "Nonconformance Report Control", has been revised, approved by Construction Quality Engineering, and implemented by the contractor. In part, this revision provides greater emphasis on the necessity of tagging for the purpose of establishing status of nonconforming items.

Full compliance has been achieved.

IX. A. Infraction

10CFR50, Appendix B, Criterion XVI, states in part, that "Measures shall be established to assure that conditions adverse to quality, such as . . . deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Paragraph 17.1.16 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "A plan for corrective action has been established for the PNPP to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Participant's programs shall be in accordance with the CEI PNPP QA Plan and 10CFR50, Appendix B. In the case of significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and that corrective action will be taken to preclude repetition".

Contrary to the above, Great Lakes weekly storage inspection records reveal continuing storage problems since April, 1977, (a period of 10 months) and measures were not taken to assure the cause of this problem was determined and corrective action taken to preclude repetition. For example, storage problems were found relating to embeds on 15 weekly reports, to reinforcing steel on 11 weekly reports, and to anchor bolts on 2 weekly reports.

B. Response

Corrective action relative to this matter were detailed in Mr. Davidson's letter to you dated March 7, 1978 in item 1, which was sent in response to your letter of February 17, 1978.

The March 7, 1978 response was in answer to a similar problem which you had identified in your December 19, 1977 report. The current problem identified in this report was observed during your January 24 - 27, 1978 and February 2 - 3, 1978 inspections. We trust that our response of March 7, 1978 will be satisfactory for both cases.

X. A. Infraction

10CFR50, Appendix B, Criterion XVIII, states, in part, that "The audits shall be performed in accordance with the written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited . . . Follow-up action including reaudit of deficient areas, shall be taken where indicated".

Paragraph 17.1.18 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Audit procedures will include: responsibilities assigned, audit frequencies, reporting criteria and levels of management to receive and assess audit findings . . . Findings will be noted and response checked to ensure resolution of the findings . . . CEI procurement documents shall require that contractors and vendors provide for audit of safety class items within the scope of the activities. These will be internal audits intended to provide evaluation of their functions."

Contrary to the above:

a. Cannon did not conduct an internal project audit within the first three months of operation at PNPP, as required by the Cannon QA Program.

The Cannon QA Program, Section IV, Paragraph 4.1.1.1 states, in part, "The first internal project audit is scheduled within the first three months of operation of the project in order to assure the Project Quality Control Program is being effectively administered to assure quality."

b. Three Audit Action Requests pertaining to U.S. Testing which were written by CEI, did not have sufficient follow-up action to assure that prompt corrective action was taken. For example, follow-up action by CEI was not taken until 10 months after the date of the audit (October 7, 1976) and as of the date of this inspection (16 months after the audit), follow-up action by CEI was still incomplete. CEI had specified an action due date of October 21, 1976, for these items.

c. CEI failed to conduct an audit to verify that the recommended corrective action has been taken relative to National Engineering NR's No. 67 and No. 76. In both cases, the cause of the nonconformances was identified to be inadequate vibration and recommended action to prevent recurrence was to instruct the foreman and inspection personnel how to properly use vibrators. This same condition was observed by the RIII inspectors during concrete pours CCO-S1/S6-599 and 1BO-S1-599.

CEI's failure to verify that the recommended corrective action had been taken by a site contractor (Pullman) was cited (against Criterion XVI) once previously as an item of noncompliance in I.E. Inspection Report No. 50-440/77-07; 50-441/77-07.

X. B. Response

a. Corrective actions relative to this matter which was identified in your Immediate Action Letter of February 8, 1978, were reviewed by Messrs. C. C. Williams and I. T. Yin and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

b. All Audit Action Requests open since 1976 are now closed out. On March 31, 1978, a policy statement was issued by the Senior Engineer in charge of Construction Quality Assurance. This statement described the follow-up actions which would be necessary to close overdue Audit Action Requests. On June 20, 1978, all Quality Engineers were issued a memo describing a method of closer tracking which would necessitate a bi-monthly review of open Audit Action Requests.

CQSP 1603, dated May 1, 1978, requires a monthly review of the applicable Action Request Status logs by the Quality Control Supervisor and the Quality Engineering Supervisor to insure follow-up activities are being performed in a timely manner.

Full compliance has been achieved.

c. As a result of this infraction, vibrator indoctrination and training has been performed for each safety-related concrete placement at Perry Nuclear Power Plant by the Site Organization Construction Quality Control element since February 28, 1978. This activity will be continued until the applicable contractors adequately address this subject in their QA programs.

Additionally, in accordance with the CEI commitment in their response to your Immediate Action Letter of February 8, 1978, Construction Quality Engineering has audited this area in their audits of concrete placements.

XI. A. Infraction

10CFR50, Appendix B, Criterion XVII, states, in part, that "Sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include . . . the results of reviews, inspections, tests, audits . . . The records shall also include closely related data such as qualifications of personnel".

Paragraph 17.1.17 of the Quality Assurance Program documented in the PNPP PSAR states, in part, "Approved procedures shall establish and control the QA records program of each participant responsible for quality. The QA records relating to qualification of procedures, equipment and personnel will be retained in addition to the results of inspection, tests, reviews, audits and material certifications".

Contrary to the above:

a. QA records relating to qualification of one of Cannon's personnel, who had been applying coating materials to safety-related structures, were incomplete in that they were not signed off by designated company individuals.

b. The physical examination records for the Cannon site quality control manager, who has been performing inspection functions at Perry Units 1 and 2, were not on file in the site quality assurance office as required by the Cannon QA Program.

The Cannon QA Program, Section V, Paragraphs 17.1.1, 17.1.1.14, and 17.1.3 state, in part, "Quality Assurance Records Generated on the Perry Nuclear Power Plant site are ... OBC-N-25 . . . Physical Examination Records . . . The original of all records are stored in a locked fire-proof cabinet in the site Quality Assurance office."

The failure to maintain onsite the qualification records of a site contractor's (National Mobile) QA/QC manager was cited once previously as an item of noncompliance in I.E. Inspection Report 50-440/76-01; 50-441/76-01.

B. Response

Corrective actions relative to these matters which were identified in your Immediate Action Letter of February 8, 1978, were reviewed on February 17 - 18, 1978 and found to be acceptable as detailed in United States Nuclear Regulatory Commission I.E. Report No. 50-440/78-03; 50-441/78-02, which was attached to your letter dated March 31, 1978. Subsequently, in our letter dated May 1, 1978, we outlined for your review the actions which had been taken.

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Dalwyn R. Davidson
VICE PRESIDENT - ENGINEERING

September 14, 1978

Mr. J. G. Keppler
Director
United States Nuclear Regulatory
Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

This letter is intended to provide more information relative to our response to your Inspection Report number 50-440/78-02 and 50-441/78-01 attached to your letter of July 13, 1978. On August 30, 1978 Mr. Konklin indicated to Mr. Lastovka that our response dated August 17, 1978, did not describe changes to the management control system that have been implemented or planned to ensure that the Perry Nuclear Power Plant can be built safely and according to requirements, nor did we provide sufficient information relative to Item 4, Appendix A, Notice of Violation.

In our May 1, 1978 letter responding to your Immediate Action Letter dated February 8, 1978, we described, on pages 3 through 5, various actions which had been taken to improve the management control system as part of our response to Immediate Action Letter, Item 8. Specifically, these items cover the following areas:

a) A special QA Task Force of objective experts to audit and evaluate our program and recommend corrective action.

b) A revised QA Manual.

c) A restructured QA Department with authority to resolve problems.

d) A revised and consolidated Site Quality Manual.

e) A QA Advisory Committee established to guide QA policy.

f) Scheduled quarterly reviews with CEI top management on quality program progress.

Also, on page 6 of our letter, we outlined actions deemed necessary, but not completed as of May 1, 1978.

With reference to number 1 on page 6, the Corporate Nuclear Quality Assurance Manual was issued with an effective date of August 7, 1978. A Project Administration Manual is under development to supplement the corporate program. The Project Administration Manual is scheduled, to be issued in late September 1978.

With respect to number 2, a total restructuring of Nuclear Quality Assurance Department supervisory personnel has been completed which ranges from Department Manager to First-Line Supervisors. Including two intermediate management positions filled with experienced supervisory personnel to provide line supervision and improve coordination of interface with other departments.

In addition to the changes in department organization and personnel, important adjustments (Items 3, 4 and 5), have been made in the management control systems to provide closer management direction, improved program effectiveness evaluation, and tighter, more consistent control of procured items and services.

These adjustments include:

a) Relocation of all CEI Perry Project management and personnel in Nuclear Engineering, Plant and Substation Engineering, Quality Assurance, and Purchasing to the construction site.

b) Establishment of a Quality Assurance Advisory Committee consisting of QA Managers from GAI, KEI, to perform investigations, evaluations, and program management advice to the NQAD Manager.

c) Establishment of an NQAD Program effectiveness evaluation system consisting of information/analysis input from three sources: QA department supervision, Quality Administration overview and trend analysis, and QA Advisory Committee investigations and studies.

d) Increased executive management involvement has been effected by:

- Monthly meetings of the Vice-President of Engineering with the NQAD Manager and the QA Advisory Committee.

- Monthly meetings of the Executive Vice-President, Vice-President of Engineering, and Vice-President of Administrative Services with the managers of NQAD and NED.

- Quarterly meetings of the Chairman of the Board and President with the Executive Vice-President, Vice-President of Engineering, Vice-President of Administrative Services, and managers of NQAD and NED.

e) The Construction Quality Engineering audit program has been revised to ensure appropriate and consistent address to all the criteria of 10CFR50, Appendix B. The Quality Administration element of the Program Quality Section has been assigned the responsibility of reviewing these and all other CEI audit reports and coordinating the implementation and effectiveness assessment for the audit program.

f) A procedure and records element headed by a general supervisor has been established within NED to effect and implement integrated project policy and assure, through reviews, consistency and appropriate interface in Corporate Procedures and Instructions.

g) A policy of increased flexibility in administering and enforcing contractor quality requirements is being implemented to allow either supplementing contractor corporate quality responsibilities, such as nonconformance trend analysis, or assumption of specific responsibilities, such as first-line inspection. This direct support prevents demands on contractors to establish and implement QA programs beyond their proven capability.

If there are further questions, please do not hesitate to call.

Very truly yours,

D. R. Davidson

D. R. Davidson
Vice President - Engineering

DRD:ge

cc: J. W. Fenker
G. W. Groscup
W. R. Ossman
P. B. Perry
J. J. Waldron

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, et al.	)	Docket Nos. 50-400 50-441
(Perry Nuclear Power Plant, Units 1 and 2)	)	

CERTIFICATE OF SERVICE

This is to certify that copies of the foregoing "Applicants' Answer in Support of NRC Staff's Motion for Summary Disposition of Issue No. 3" and "Affidavit of Murray R. Edelman and Ronald L. Farrell In Support of NRC Staff's Motion For Summary Disposition of Issue Number 3", were served by deposit in the U.S. Mail, First Class, postage prepaid, this third day of December, 1982, to all those on the attached Service List.*/

Harry H. Glasspiegel

Harry H. Glasspiegel

Dated: December 3, 1982.

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*/ Copies of the foregoing were also hand-delivered to the Licensing Board on December 3, 1982.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY	)	Docket Nos. 50-440 50-441
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(Perry Nuclear Power Plant, Units 1 and 2)	)	

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