

APR 27 1982



Docket No. 50-373

Commonwealth Edison Company  
ATTN: Mr. Cordell Reed  
Vice President  
Post Office Box 767  
Chicago, IL 60690

Gentlemen:

This refers to the special safety inspection conducted by Mr. F. C. Hawkins of this office on March 24 and April 6, 1982, of activities at LaSalle County Station, Unit 1, authorized by NRC Construction Permit No. CPPR-99 and to the discussion of our findings with Mr. C. Schroeder and others at the conclusion of the inspection. This report also refers to the continuation of that inspection conducted by Messrs. F. C. Hawkins, S. P. Chan and R. E. Lipinski at the LaSalle site on April 7, 1982, and at Sargent and Lundy Engineers in Chicago, Illinois on April 8, 1982.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractors) believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within ten (10) days from the date of this letter of your intention to file a request for withholding; and (b) submit within twenty-five (25) days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than seven (7) days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of

8205110640 820427  
PDR ADOCK 05000373 PDR  
G

IEO1  
S  
111

APR 27 1982

the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons which are the bases for the claim that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, a copy of this letter and the enclosed inspection report will be placed in the Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

C. E. Norelius, Director  
Division of Engineering and  
Technical Programs

Enclosure: Inspection Report  
No. 50-373/82-21(DETP)

cc w/encl:

Louis O. DelGeorge, Director  
of Nuclear Licensing  
R. Cosaro, Site Construction  
Superintendent  
T. E. Quaka, Quality  
Assurance Supervisor  
R. H. Holyoak, Station  
Superintendent  
B. B. Stephenson, Project Manager  
DMB/Document Control Desk (RIDS)  
Resident Inspector, RIII  
Mary Jo Murray, Office of  
Assistant Attorney General

RIII  
4/19  
Hawkins/so  
4/19/82

RIII  
Walker

RIII  
Williams

RIII  
Warnick  
4/19

RIII  
Little

RIII  
Norelius

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-373/82-21(DETP)

Docket No. 50-373

License No. CPPR-99

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, IL 60690

Facility Name: LaSalle County Station, Unit 1

Inspection At: LaSalle County Station, Unit 1, and Sargent & Lundy  
Engineers in Chicago, IL

Inspection Conducted: March 24 and April 6-8, 1982

Inspector: *FCH*  
F. C. Hawkins  
March 24 and April 6-8, 1982

4/19/82

Accompanying Personnel: S. P. Chan  
April 7-8, 1982

R. E. Lipinski  
April 7-8, 1982

Approved By: *C. C. Williams*  
C. C. Williams, Chief  
Plant Systems Section

4/19/82

Inspection Summary

Inspection on March 24 and April 6-8, 1982 (Report No. 50-373/82-21 (DETP))

Areas Inspected: Special joint inspection conducted by IE Region III and NRR in response to alleged indiscriminate concrete drilling/coring which resulted in damage to embedded reinforcing steel. This inspection involved a total of 49 inspector-hours by one Region III inspector and two NRR representatives.

Results: No items of noncompliance or deviations were identified.

## DETAILS

### Persons Contacted

#### Commonwealth Edison Company (CECo)

R. Cosaro, Project Construction Superintendent  
L. DelGeorge, Director of Nuclear Licensing  
W. Garrigan, Supervising Staff Auditor  
J. Gieseke, Project Construction Engineer  
J. Harchut, Project Construction Engineer  
\*M. Morris, Structural Engineer  
I. Netzel, Quality Engineer  
T. Quaka, Site Construction QA Manager  
\*C. Schroeder, Nuclear Licensing Administrator  
D. Shamblin, Staff Assistant

#### Sargent & Lundy Engineers (S&L)

\*L. Dolder, QA Coordinator  
\*S. Kazmi, Supervising Design Engineer  
\*K. Kostal, Assistant Manager - Structural Department  
\*T. Longlais, Structural Engineering Department Head  
\*V. Reklaitis, Structural Project Engineer

#### Walsh Construction Company

M. Dougherty, QA Manager

Other personnel were contacted as a matter of routine during this inspection.

\*Denotes those attending the exit interview on April 8, 1982.

### Functional Areas Inspected

This inspection was conducted in response to alleged indiscriminate concrete drilling/coring which resulted in damage to embedded reinforcing steel. Information of the specific concerns were transmitted to the NRC by the Attorney General of Illinois in the form of a 10 CFR 2.206 request. This report addresses only the contention regarding damage to reinforcing steel during drilling/coring activities.

The scope of the inspection was twofold:

Phase I, which was conducted at the LaSalle site by Region III, investigated the programmatic approach to assure control of drilling/coring activities. Specifically, Phase I consisted of review of procedures, interviews with cognizant personnel, and review of quality records.

Phase II, of the inspection was conducted at S&L by Region III and NRR representatives. The expressed purpose of the S&L assessment was to verify proper and complete engineering disposition of field supplied data pertaining to damaged reinforcing steel.

A. Phase I

The scope of work for three site contractors was evaluated: H. P. Foley Co., Commercial Concrete Drilling and Sawing Co. (a Foley subcontractor), and Commonwealth Electric Co.

The contractual relationship between Foley and Commercial Concrete was reviewed. Commercial Concrete acted as the drilling/coring subcontractor to Foley for the period December 1977 through December 1979. During this period Commercial Concrete used the Foley procedures and the applicable S&L Specification to accomplish all drilling/coring work. For that reason, the programmatic appraisal of both companies was based on the review of the H. P. Foley drilling/coring program.

Additionally, the examination indicated that Commonwealth Electric was responsible for installation of temporary lighting and had commenced drilling activities on March 7, 1980. The review indicated that Commonwealth Electric had exclusively used carbide-tipped drill bits for the work. Past experience has shown that carbide-tipped drill bits are not capable of inflicting damage to reinforcing steel. Consequently, work performed by Commonwealth Electric is not considered relevant and was not included as part of this inspection.

1. Drilled Holes

Typically, drilled holes are provided for the installation of concrete expansion anchors which vary from 1/4" to 1" in diameter. The corresponding depth for holes of this size varies from 1-1/4" to 8", respectively. Drilled holes penetrate only partially into the concrete section.

To facilitate evaluation of the Foley drilling program, S&L "Standard Specification for Concrete Expansion Anchor Work" (Form LS-CEA) and H. P. Foley "Concrete Expansion Anchor Installation" procedure (No. WI-601) were reviewed. Each revision to both documents contained provisions to control drilling activities and identify reinforcing steel which may have been damaged during work operations. It is our assessment that the extent of control for drilling/coring work was commensurate with the level of activity in progress at all times during construction. The following revisions to each document were reviewed:

WI-601

Revision 0, December 7, 1976  
Revision 1, November 21, 1977  
Revision 2, January 31, 1978  
Revision 3, May 8, 1979  
Revision 4, October 23, 1979  
Revision 5, August 6, 1981

Form LS-CEA

Revision 0, September 30, 1976  
Revision 1, December 7, 1976  
Revision 2, November 29, 1978  
Revision 3, July 20, 1979  
Revision 4, September 7, 1979  
Revision 5, December 10, 1979  
Revision 6, February 13, 1980  
Revision 7, October 27, 1980  
Revision 8, May 13, 1981

Foley Procedure No. WI-601 includes a daily report work form (No. HPFCo-016) on which any reinforcing steel which is damaged during drilling is reported. Following completion of form HPFCo-016, WI-601 requires that the form be forwarded to S&L for engineering review. This is the mechanism through which the necessary engineering assessment is accomplished for each piece of reinforcing steel which is damaged during concrete anchor installation. The specifics of any drilling damage to reinforcing steel is tabulated and plotted by S&L on Reinforcing Hit Schedule (RHS) drawings.

Approximately 200 of the Foley daily reports (No. HPFCo-016) were reviewed. Each was properly completed and in cases where reinforcing steel damage had occurred, proper notation of the damaged area was made on the form by the driller. Transmittal records of the forms to S&L for engineering evaluation were also verified.

## 2. Cored Holes

Cored holes typically range in size from 3" to 12" in diameter. In this application, cored holes pass completely through the concrete section to allow the passage of an electrical component (e.g., conduit). The routing of cored holes for electrical components is determined during the initial design phase (office routed) or in the field by the electrical contractor (field routed).

Office routed cores are designated on the structural design drawings and an engineering assessment is made of the effects of reinforcing steel likely to be damaged during the coring operation. This is accomplished prior to the release of the drawings for construction purposes. Field routed cores are requested by the contractor via a Field Change Request (FCR). The FCR is submitted to S&L prior to the coring operation. Approval of both the field routed core and the office routed core is based on an engineering evaluation by S&L. The core locations are indicated on the structural design drawings. It is important to note that both office and field routed cores are approved by the designer prior to the commencement of any coring operations.

## 3. Audit/Surveillance Activities

Three CECOs audits of H. P. Foley concrete expansion anchor activities were reviewed. The audit numbers were 1-79-72, 1-80-22, and 1-80-45. The results of CECO surveillance inspection Nos. 79-237, 79-462, 79-571, 81-597, and 82-167 were also reviewed. Each audit and surveillance inspection was well planned, the findings well supported, and the resulting corrective actions appropriate.

In addition, a summary of Foley internal audit report Nos. 1 through 5 were reviewed. The summary indicated that the audits were conducted systematically and the findings were of substance.



#### 4. Training

Records of twelve Foley training sessions on concrete anchor installation procedure No. HPFCo-WI-601 were reviewed. Each package consisted of a lesson plan and list of attendees. The training sessions were conducted in a timely fashion by qualified individuals.

#### 5. Personnel Interviews

Interviews with H. P. Foley and CECO personnel were conducted to assess their knowledge of the Foley drilling/coring program and discuss any specific problems which they may have encountered during its implementation. The selected personnel were chosen because of their knowledge of past as well as present drilling/coring practices and policies. Interviews were held with the following personnel:

- Foley Labor Superintendent
- Foley Labor General Foreman
- Three Foley Concrete Drillers
- Foley Quality Assurance Manager
- CECO Quality Assurance Manager
- CECO Quality Engineer

Each individual categorically stated that, in his opinion, concrete drilling/coring by H. P. Foley and Commercial Concrete Companies had and is presently progressing in an orderly and well controlled manner. Each individual was knowledgeable within the scope of his assigned responsibilities.

#### B. Phase II

The documentation of the NRR assessment of S&L on April 8, 1982, is forthcoming and that report will be issued through their office upon its completion.

#### C. Conclusion

Based on the results of our review, we have concluded that (1) adequate procedures to control concrete drilling/coring are and have been in place at LaSalle; (2) these procedures are being successfully implemented; (3) the engineering disposition of damaged reinforcing steel by S&L was proper and complete; and (4) the completed drilling/coring represents no compromise to the structural integrity of the LaSalle plant structures. This issue is considered closed.

#### Exit Interview

The Region III inspector and NRR representatives met with licensee representatives during the conclusion of the inspection on April 8, 1982. The scope and conclusions of the inspection were summarized during the exit interview.