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September 28, 1984

Ivan W. Smith, Esquire
Administrative Judge and
Chairman
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
West Tower - Room 439
Bethesda, Maryland 20814

Dr. Richard F. Cole
Administrative Judge
Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
4350 East West Highway
West Tower - Room 439
Bethesda, Maryland 20814

Dr. A. Dixon Callihan
Administrative Judge
Union Carbide Corporation
P.O. Box Y
Oak Ridge, Tennessee 37830

Re: In the Matter of Commonwealth Edison Company
(Byron Nuclear Power Station, Units 1 and 2)
Docket Nos. 50-454 and 50-455 7L

Dear Administrative Judges:

In accordance with the present NRC procedures for Board notification, we are furnishing the following documents on behalf of Commonwealth Edison Company. These documents are relevant to the issue of the adequacy of equipment supplied to the Byron plant by Systems Control Corporation.

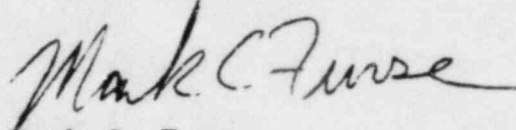
1. Sargent & Lundy summary of inspection of Systems Control Corporation 90° fittings and cable tray connections, undated.
2. Letter from Louis Del George to James Keppler describing the results of the cable pan hanger weld reinspection program and plans for additional reinspections, dated September 26, 1984.

8410020358 840928
PDR ADOCK 05000454
G PDR

DS03

3. Letter from D. L. Farrar to James Keppler, and attached Edison responses to Notice of Violation contained in Inspection Report 454/84-32.

Very truly yours,

A handwritten signature in dark ink, reading "Mark C. Furse". The signature is written in a cursive style with a large, stylized "M" and "F".

Mark C. Furse
One of the Attorneys for
Commonwealth Edison Company

MCF:reg

Enclosures

cc: Service List



Commonwealth Edison

One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

September 26, 1984

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OFFICE OF GENERAL INVESTIGATION
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Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Generating Station Units 1 and 2
Cable Pan Hanger Inspections
NRC Docket Nos. 50-454 and 50-455

Dear Mr. Keppler:

This is to provide the results of the cable pan hanger weld reinspection program which was described in testimony before the Byron ASLB in August, 1984. Our plans for additional weld reinspections are also described.

The reinspection of cable tray hangers furnished by Systems Control Corporation was completed to ensure that no connections had missing portions of weld. All type DV-8 connections and all other accessible connections were inspected. A total of 30,217 connections were inspected for weld presence. Of this total, 12,241 were DV-8s. Thirty-nine DV-8s and forty-four other connections were reported to have missing portions of welds. The worst case was a DV-8 detail where the horizontal unistrut was tack welded to the end channel at four corner locations. Even though a substantial portion of weld was missing, that hanger is still capable of transferring the design loads. In no case did a missing portion of weld have design significance.

The attached Table I shows the results of the reinspection program. When the program was expanded the first time from approximately 300 connections to well over 3000 connections, the 3000+ connections were selected on the basis of identifying those connections that would not be satisfactory with R values of less than 47%. The R value is the actual hanger capacity divided by the design capacity of the hanger. The inspection program was subsequently expanded to include all DV-8 connections and all other accessible connections. As shown in Table I, all DV-8 connections have been reinspected. One DV-1, two DV-3, one DV-7, and four DV-162 connections have R values less than 0.47. The results of the inspections of the remaining types of connection details indicate that none of these had R values less than 0.47. Therefore, reinspection of these remaining inaccessible connections will not be performed. The inaccessible DV-1, DV-3, DV-7, and DV-162 connections will be made accessible and will be reinspected. This effort involves 339 DV-1, 158 DV-3, 1 DV-7, and 52 DV-162 connections.

J. G. Keppler

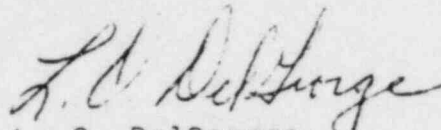
- 2 -

September 26, 1984

Since there have been over 30,000 inspections and only 83 of these had missing portions of welds, none of which were design significant, there is no reason to suspect that anything of significance will be found during these additional 550 inspections. Therefore, the completion of these inspections prior to fuel load is not necessary.

We expect that these additional inspections will take three to six weeks. They will be completed prior to exceeding 5% power. Please advise us if this plan is unsatisfactory.

Very truly yours,



L. O. DelGeorge
Assistant Vice President

lm

9211N

TABLE 1

SYSTEMS CONTROL SHOP WELDS

DETAIL NO.	DV-1	DV-2	DV-3	DV-4	DV-5	DV-6	DV-7	DV-8	DV-22	DV-24	DV-31	DV-32	DV-57	DV-58	DV-120	DV-138	DV-162	OTHER* DETAILS	TOTAL W/O DV-6	GRAND TOTAL
TOTAL INSPECTED	2367	2617	1-52	653	543	406		12,241	-	356	124	55	48	144	754	632	3825	2991	17,976	30,217
MISSING WELDS	4	0	2	0	0	1		39	-	0	0	0	0	2	2	4	6	21	44	53
NO. OF CONN. WHERE MISSING WELDS WERE REPLACED BY TACK WELDS	2	0	0		0	1		9	-	0	0	0	0	0	1	0	0	0	4	13
CONN. WHERE HORIZ. SHOP WELD WAS DELETED PER FOR/NCN	59	71	0	55	22	0		0	-	0	0	0	0	0	0	0	0	0	207	207
R < 0.5	1	0	2	0	0	1		23	-	0	0	0	0	0	0	0	4	0	8	31
LOWEST R VALUES	0.36	0.75	0.157 0.2	0.75	0.75	0.45		0.075 0.17 0.21 0.22 0.23 0.23	0.29 0.30 0.30 0.31 0.31 0.35	1.0 1.0	0.75	0.75	0.75	0.63 0.64	0.75	0.64 0.66 0.74 0.74	0.16 0.16 0.17 0.17	0.68 0.68 0.76 0.92 1.0 1.0	52	1,366
NO. INACCESSIBLE	336	157	158	153	65	1		0	-	15	1	0	3	14	307	5	52	52	1,366	1,366

*Other details include 66 detail types which are infrequently used.



Commonwealth Edison
One First National Plaza Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

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September 18, 1984

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Generating Station Units 1 and 2
I&E Inspection Report Nos. 50-454/84-32
and 50-455/84-25

Reference (a): July 30, 1984 letter from J. F. Streeter
to Cordell Reed.

Dear Mr. Keppler:

Reference (a) provided the results of an inspection at Byron by Messrs. D. Hayes and K. Connaughton from April 26 through July 17, 1984. During that inspection it was found that certain activities were not in compliance with NRC requirements. Attachment A to this letter contains Commonwealth Edison's response to the Notice of Violation which was appended to reference (a). As requested, the response to Violation 3 addresses the effectiveness of previous actions taken to correct deficiencies in components supplied by Systems Control Corporation.

Please address any further questions you may have regarding this matter to this office.

Very truly yours,

T. R. Tramm
for

D. L. Farrar
Director of Nuclear Licensing

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Attachment

ATTACHMENT A

Response to Notice of Violation

VIOLATION 1

Appendix B to 10 CFR Part 50, Criterion XV states, in part, "Measures shall be established to control material, parts or components which do not conform to requirements in order to prevent their inadvertent use or installation." The Byron Safety Analysis Report, Chapter 17 and the Commonwealth Edison Topical Report CE-1-A provide the basis for the Quality Assurance Program at the Byron Station. Section 15, "Nonconforming Material, Parts or Components and Operations," of CE-1-A requires that items or conditions which are found nonconforming to requirements or which are lacking required inadvertent use or installation. It further requires that nonconforming items be identified and documented and, if accepted "as-is" or reworked to an acceptable condition, be identified through documentation records in a manner that will establish the condition as installed. Quality Procedure QP No. 15-1 implements the above requirements.

Contrary to the above:

- a. The licensee failed to establish and maintain documentation of material receipt inspection, identified conditions, and final disposition for nonconforming equipment included in Shipment No. 195 from Systems Control Corporation.
- b. Hatfield Electric Company (HECO) failed to establish and maintain documentation for nonconforming conditions identified and corrective action taken as a result of inspections performed pursuant to HECO QA/QC Memorandum No. 345.

CORRECTIVE ACTION TAKEN

- a. The nonconforming materials identified in Shipment #195 have been evaluated and records of receipt documentation have been reestablished.
- b. As established in the program identified in QA/QC Memorandum No. 345, the welding deficiencies identified were corrected and reinspected. This program was concluded in approximately April, 1983 and inspections are on file in the contractor's QA vault. The repaired components have been installed.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

- a. All site contractors performing safety related work and applicable Commonwealth Edison Departments were notified of this occurrence and it was re-emphasized to them that nonconforming materials, items or components must be properly identified and dispositioned and all safety related materials, items or components must be properly receipt inspected and released for use prior to initiation of fabrication or installation.

- b. This item has been discussed with the responsible personnel involved. Should deficiencies be found in offsite vendor supplied material/equipment which require the licensee to utilize its onsite contractor inspectors to execute a reinspection program a CECO NCR shall be initiated delineating program requirements.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

All actions are complete as of September 5, 1984.

VIOLATION 2

Appendix B to 10 CFR Part 50, Criterion VII states, in part, "Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures shall include provisions, as appropriate for source evaluation and selection,...." Commonwealth Edison Topical Report CE-1-A, Section 4 "Procurement Document Control," requires that prospective bidders for each specification be on the Approved Bidders List (ABL) and that where bids are obtained from prospective bidders from other than those listed on the ABL the bidders be evaluated and approved as acceptable prior to award. Edison Purchasing, based upon its evaluation of the bids and the purchase requisition and based upon review and approval of the bids by the Project Engineer and Quality Assurance, shall conduct necessary negotiations and clarifications and make the award to a bidder on the ABL.

Contrary to the above:

- a. The licensee purchased local instrument panels and main control boards and vertical panels from Systems Control Corporation (SCC) but SCC was not on the ABL as a supplier of that equipment.
- b. Safety-related equipment was procured from SCC after it had been removed from the ABL.

a. CORRECTIVE ACTION TAKEN

Although the ABL listed SCC as an approved vendor for only cable pans and hangers, appropriate reviews had been conducted for each type of equipment prior to issuance of each of the Byron/Braidwood purchase orders. Recurring quality control problems with SCC equipment eventually led to suspension of the approval for all types of equipment purchases from SCC.

For the Byron Station, Systems Control Corporation was awarded contracts to supply cable pans and hangers, main control boards, and instrument racks. The specification, purchase order and date of award for each contract is as follows:

Cable Pans and Hangers	F-2815	P.O. 200038	July 14, 1976
Main Control Boards	F-2788	P.O. 207534	February 9, 1977
Local Instrument Racks	F-2809	P.O. 219596	January 5, 1978

Prior to the award of each of the above purchase orders, the Commonwealth Edison engineering department performed (or had Sargent & Lundy perform) a technical evaluation to establish the technical acceptability of the product line. Also, prior to the award of each of the above purchase orders, Commonwealth Edison Quality Assurance performed a documented review to verify that the Systems Control Corporation Quality Assurance Manual was acceptable and applicable for the product line to be purchased.

In addition, early in 1975, in connection with bidding on LaSalle Specification J-2560 for cable pans and hangers, the Systems Control Corporation Quality Assurance Manual was submitted to Commonwealth Edison for review and approval. The Quality Assurance program was reviewed and found to be acceptable and a letter dated July 16, 1975, signed by Quality Assurance and Station Nuclear Engineering was sent to the Purchasing Department recommending that Systems Control Corporation be added to the Approved Bidders List for cable pans and hangers. However, each time an additional product line was approved for purchase from Systems Control Corporation, an additional letter from Engineering/Quality Assurance was not sent to the Purchasing Department identifying the approval of the new product line. It should be noted that the required engineering and quality assurance reviews were properly performed and documented prior to the award of the three referenced purchase orders to Systems Control Corporation. Furthermore, Purchasing issued each purchase order based on a documented Quality Assurance Department sign-off indicating that the technical and quality requirements for the purchase were complete and acceptable.

a. CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

As a result of the incomplete listing of approved product lines on the ABL for Systems Control Corporation, the following corrective actions have been taken:

- 1) Vendors which were reviewed and approved to supply safety-related equipment or services for a single specification and not for generic types of services or equipment have not, in the past, been placed on the ABL. These vendors were "Approved for Spec Only". It is now required that these vendors be added to the ABL and be identified as being approved only for the specification for which review and approval had been obtained.
- 2) A review has been conducted to assure that product lines for which a vendor has been approved are properly listed on the ABL.
- 3) Quality Procedure Q.P. 4-1 was revised on June 26, 1984 to emphasize that safety-related purchase requisitions are to be reviewed, prior to placing the purchase order, to verify that the vendor is on the ABL for the procurement being processed.

a. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Corrective actions were complete as of August 10, 1984.

b. CORRECTIVE ACTION TAKEN

The eight combination indicator light/control switches which were procured per Change Order AN to P.O. 207534 from Systems Control Corporation will be returned to the vendor, even though they were not manufactured by SCC.

b. CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

Commonwealth Edison Company Quality Procedures Q.P. 4-2, Attachment A, Paragraph 4.10, Rev. 2 and Q.P. 4-51, Attachment A, Paragraph 8.0, Rev. 0 have been revised. These procedures address vendors removed from the ABL for work performance reasons and now state that "change orders shall not be issued which add to the original procurement order".

b. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The eight switches were rejected on June 14, 1984. The Quality Procedures were revised on June 26, 1984.

VIOLATION 3

Appendix B to 10 CFR Part 50, Criterion XVI states, in part, "Measures shall be established to assure that conditions adverse to quality...are promptly identified and corrected." Commonwealth Edison Topical Report CE-1-A, Section 16, "Corrective Action," requires that a corrective action system be used to assure that defective material and equipment are promptly identified and corrected and to provide followup to assure corrective measures are effective. Quality Procedure QP No. 16-1 implements the above requirements.

Contrary to the above, the licensee failed to take timely and effective actions to ensure deficiencies during the period May 1977 to February 1981 on cable pan hangers supplied by Systems Control Corporation were identified and corrected as evidenced by:

- a. The identification of deficiencies on at least 30 hangers in August 1982 and on at least 60 in August 1983.
- b. The identification of deficiencies in licensee audits, inspections by the electrical contractor, and a previous item of noncompliance issued by NRC Region III in December 1980.
- c. The resolution of NCRs F-850/F-885 failing to consider the possible affect of observed deficiencies (discrepant and/or missing welds) on the adequacy of the most highly stressed hanger connections in the plant.

RESPONSE

In 1980 the NRC found that Commonwealth Edison has not taken effective and timely corrective actions to assure that deficiencies in Systems Control's fabrication activities were corrected. Inspection Report Nos. 50-454/80-04 and 50-455/80-04 referred to a number of audits, surveillances, and inspections; several dealt with welding on cable pans and hangers. Because the NRC's 1980 inspection disclosed deficiencies on local instrument panels which were similar to deficiencies identified in 1977 on cable pan hangers, a Notice of Violation was issued.

In response, Commonwealth Edison indicated that source inspections would be performed under the direction of the CEC Co Q.A. Department on all future shipments of safety-related equipment from Systems Control and that source inspections had been conducted since February 1980. For cable pan hangers shipped to Byron, this commitment was fulfilled with the exception of one hanger which was included in a shipment of cable pans. Improved site receiving inspections were also instituted by the Project Construction Department.

The addition of source inspections was intended to assure the general quality of components accepted at the site. Such inspections, performed on a sample basis, were not expected to provide an independent demonstration that there were no deficient items in a shipment. They were, however, expected to assure that significant deficiencies would be identified and dispositioned.

As described in the inspection report, a relatively small number of weld deficiencies were identified on cable pan hangers over the ensuing months and years. Some of these deficiencies probably existed on hangers which were installed or in storage on site in January, 1981. Some may have escaped detection in the subsequent receiving inspections because not every item was checked. The corrective actions taken were not intended to identify and correct all deficiencies. Rather, they were intended to check the general quality of future shipments. The NRC accepted this approach. This was acceptable because it was then believed that there were only isolated weld deficiencies in SCC supplied cable pan hangers which did not pose a safety concern. In January 1981 the need for the extensive reinspections which have recently taken place was not apparent.

CORRECTIVE ACTION TAKEN

- a) As identified in the inspection report, all of the deficient cable pan hangers were either repaired or analyzed and found acceptable.
- b) All cable pan and cable pan hanger deficiencies identified in licensee audits or inspections by the electrical contractor have been reviewed and dispositioned appropriately.
- c) The disposition of NCR's, F-850 and F-885 required examination of 358 SCC shop-welded connections. This sample covered all commonly used connection types and included 44 connections which were highly stressed. The NRC requested that a more conservative approach be taken. Through analysis, it was shown that the most highly stressed connections could safely accommodate significant weld quality reductions.

CORRECTIVE ACTION TAKEN TO AVOID FURTHER NONCOMPLIANCE

Commonwealth Edison has stopped buying equipment from SCC. As described in the testimony of K. T. Kostal and L. Johnson to the ASLB, extensive reinspections and reanalysis provides assurance of the acceptability of each type of equipment supplied by SCC.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

September 18, 1984.