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

January 20, 1984

Mr. R. C. DeYoung, Director
Office of Inspection and
Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Dresden Station Unit 2
Response to Notice of
Violation Inspection Report
No. 50-237/83-17
NRC Docket No. 50-237

Reference (a): J. G. Keppler letter to J. J.
O'Connor dated November 18, 1983.

Dear Sir:

This letter is in response to a special safety inspection conducted during the period June 6 through September 8, 1983 of activities at Dresden Station Unit 2. Reference (a) indicated that certain activities appeared in noncompliance with NRC requirements. The Commonwealth Edison response to the Notice of Violation is provided in the enclosure.

In our review of this issue, we agree with the NRC that the shaft arm seals of the torus-to-drywell vacuum breakers were not procured as safety-related components in accordance with 10 CFR 50, Appendix B. However, the purpose of the NRC enforcement program, as described in 10 CFR Part 2, is to promote and protect the health and safety of the public. Consistent with that aim, the Severity Level of any violation should be characterized by the safety significance of the event. In this matter we do not believe the characterization of the event as a Severity Level III violation is appropriate. This conclusion stems from that fact that, although we exceeded the allowable primary containment leakage rate in Section 3.7.2 of the Technical Specifications, our own conservative calculations showed that had a release occurred it would not have exceeded Part 100 guidelines. The safety significance of this event should be based on 10 CFR Part 100 criteria and not on the conservative limits set within the Technical Specifications. These leakage limits, as noted in the bases of the Technical Specifications, are conservatively derived from Part 100 limits and, therefore, we are being unnecessarily penalized because of conservative Technical Specifications.

In summary, we believe that the safety significance of the event does not warrant a Severity Level III civil penalty. Pursuant to 10 CFR 2.205, we hereby request that the NRC reclassify the event as a Severity Level IV non-compliance.

IE01
1/1

Finally, we were asked to address three unresolved items identified in Inspection Report No. 50-237/83-17. Our response to all three items, as it applies to Dresden Station, is detailed in the attachment to this letter. Two of the items, the requirement to ensure the adequacy of specifications in procurement documents to assure spare/replacement parts are at least equivalent to the original parts, and the use of generic parts classifications, are applicable to all CECo stations. For the first of these two items - the requirement to ensure the adequacy of procurement documents - all sites will review and revise, as necessary, their receiving inspection procedures to include additional guidance as noted in Dresden's response. Additionally, all sites will prepare as required an administrative procedure(s) to ensure the adequacy of our procurement documents for spare/replacement parts. As for the second item, all stations have received a revised generic parts classification list which contains a special caution on the use of the list. We believe this revised generic list will satisfy your concern. All procedure changes will be completed and implementation begun by March 15, 1984 at all the sites.

If you have any further questions regarding this matter, please direct them to this office.

Very truly yours,

Cordell Reed

Cordell Reed
Vice-President

BR/lm

cc: NRC Resident Inspector - Dresden
J. G. Keppler - Region III

Attachment

7954N

ATTACHMENT

COMMONWEALTH EDISON COMPANY

RESPONSE TO NOTICE OF VIOLATION

NRC DOCKET NO. 50-237

The item of noncompliance identified in the enclosure to the NRC letter, dated November 18, 1983 is responded to in the following paragraphs:

ITEM OF NONCOMPLIANCE

10 CFR 50, Appendix B, Criterion II requires, in part, that licensees identify components covered by the Quality Assurance Program and that the program provide control over activities affecting those components to an extent consistent with their importance to safety. The licensee's NRC approved Quality Assurance Program, Topical Report CE-1-A, commits to Regulatory Guide 1.33 (1972) which endorses ANSI N45.2-1971, and ANSI N45.2, Paragraph 2, indicates that the Quality Assurance Program shall identify items to which the program applies and shall provide for the assurance of quality consistent with requirements considering such factors as the importance of malfunction or failure of the items to plant safety.

Contrary to the above, the licensee failed to (1) identify the shaft arm seals of the torus-to-drywell vacuum breakers as components covered by the Quality Assurance Program and (2) provide controls over those components commensurate with their importance to safety. As a result, in 1981, replacement seals were not procured and installed in accordance with the requirements of Appendix B. In 1983, those seals failed during a containment integrated leak rate test. After that failure, the licensee again procured replacement seals which did not meet the requirements of Appendix B.

Admission or Denial of Alleged Violation

Commonwealth Edison admits that, in 1981, replacement vacuum breaker actuation arm shaft seals were not procurred totally in accordance with the requirements of 10 CFR 50, Appendix B, Criterion II. However, upon review of the severity categories as described in 10 CFR 2, Part VI, Supplement I (Part 50 - Facility Operations), it appears that severity category IV is most applicable, particularly since calculations indicated that 10 CFR 100 limits were not exceeded given a design basis accident even though the Limiting Condition of Operation (LCO) in Technical Specification Section 3.7.2 was exceeded.

REASON FOR THE VIOLATION

Two distinct reasons were evident for this event. First, the original equipment manufacturer (OEM) Atwood and Morrill Co., Inc. who has an approved Q.A. program, supplied three (3) different sets of shaft arm seals to Dresden during the past several years under the same part number. Secondly, Dresden Station misinterpreted the Station Nuclear Engineering Department (SNED) safety-related parts list for use in safety-related components.

The shaft arm seals installed during the 1981 Unit 2 Refueling Outage on six (6) vacuum breakers consisted of 3 pieces (2 end pieces and 1 internal chevron). The 3 piece seals were supplied by the OEM under the same part number as the original 4 piece seals. A six (6) piece set was also received from the OEM under the same part number but was never used. The 3 and 6 piece sets were later determined to be more applicable to high pressure than to low pressure applications although no specific vendor qualifications for the seals were available. The valve drawing specifies the 4 piece set. All seals were ordered by part number and a certificate of conformance certifying the part number was received with the 3 piece and 6 piece sets.

On May 8, 1975, Commonwealth Edison's Station Nuclear Engineering Department (SNED) issued a spare parts and materials guideline for safety-related equipment. As part of this guideline, packing materials were inappropriately considered to be generically classified as non-safety related. As a result, the torus-to-drywell vacuum breaker actuation arm shaft seals were classified as non-safety related.

On December 29, 1982, a meeting was held at the Commonwealth Edison Company (CECo) Corporate Office to discuss the procedures for review of the classification of all parts if they are used in safety-related components. It was agreed that each operating station would develop procedures which would outline the proper methodology for: (1) performing technical reviews of spare parts, (2) determining their classification in accordance with criteria provided by SNED, and (3) providing administrative control of a spare parts classification list. Dresden Station implemented station procedures for these items as of May 1, 1983.

To clarify on a generic basis the non-safety related parts that could be used in safety-related components, SNED issued a partial list on February 9, 1983. Packing was not included until the total list was reissued on March 2, 1983. Packing was then included on the list but identified as material that might be safety-related in some applications. In such cases, the production stores parts listing was expected to be examined prior to ordering the part to determine if a safety-related stores item number existed for a part having a similar application. If the part was found listed in the production stores list and had a safety-related stores item number, the part classification was to be reviewed for correctness. Dresden Station implemented this guidance in July, 1983 after a thorough review of its effect on station procedures.

Corrective Actions Taken and Results Achieved

As a result of this event, Dresden Station reclassified the vacuum breaker shaft seals as safety-related on July 8, 1983, and adopted a new interpretation of the generic parts list for material such as packing using a failure mode analysis.

On August 2, 1983, SNED again revised the list of generic non-safety related parts for use in safety-related components. This revision, in addition to the changes described above, included special instructions for using the generic list. A Caution was also applied to the list on October 3, 1983, which was issued to each CECo Nuclear Power Station for implementation.

> CAUTION: Before applying the generic non-safety related classification to any specific part, consideration should be given to the function of the part. This consideration does not necessarily require a full "safety classification checklist" evaluation; however, some documentation should be maintained. Specific consideration shall be given to determine any unique safety-related function of the generic part in the specific component.

Prompt and extensive corrective actions were taken in response to this event. Both the cause of the event was determined and the replacement seals were demonstrated acceptable for the pressure conditions through a testing program at Dresden coupled with a successful primary containment Integrated Leak Rate Test (ILRT) prior to Unit 2 startup. The seal installation and testing was done under a safety-related work package and per 10 CFR 50, Appendix J requirements.

Additional corrective actions taken following the event are as follows:

1. All twelve (12) Unit 2 torus to drywell vacuum breaker actuation arm seal pairs were disassembled and inspected. The shaft seals on the six (6) vacuum breakers which were observed to be leaking consisted of 3 pieces (2 end pieces and 1 internal chevron). The remaining six (6) vacuum breakers contained the original design 4 piece seal (2 end pieces and 2 internal chevrons).

2. Through a parts inventory of the seals and a Mechanical Maintenance activities review, each of the 3, 4 and 6 piece seal assemblies received at Dresden were dispositioned. At no time was an improper set used on any other drywell to torus vacuum breaker other than the six (6) identified on Unit 2. To ensure the accountability of the seals was correct, three (3) vacuum breakers were randomly selected to be disassembled and inspected

on Unit 3 during an outage of sufficient length (greater than 72 hours). (A successful ILRT was conducted prior to startup of Unit 3 at the conclusion of the last refueling outage.) Examination at a subsequent outage showed the seals to be of the 4 piece set.

3. Upon further investigation it was determined that the seals furnished by the OEM were more suitable for a high pressure application than for low pressure applications. All twelve vacuum breaker shaft seals were replaced with 3-piece teflon seals supplied by the John Crane Company, which are similar to the Atwood-Morrill 3-piece seals but more pliable and suitable for a low pressure application.

4. Following the installation of the John Crane seals, a new LLRT program was established based on experimental results using the Atwood-Morrill 3-piece and 4 piece packing assemblies. It was determined that if the seals were pressurized to 75 psig and held for a period of 15 minutes with no appreciable pressure decay or lubricant leakage, the seals were suitable for service. In addition, the required LLRT and ILRT were satisfactorily completed per 10 CFR 50, Appendix J and Technical Specification 3.7.2.b. The additional LLRT has been incorporated into the appropriate Dresden procedures for future testing at Dresden.

5. A review of all other LLRT (Type B test) boundaries, test time requirements and the type of valve packing being tested was completed to determine if a similar problem might exist. None were identified, and we believe the inadequacy of the original LLRT was an isolated event.

6. A memorandum was issued to maintenance and stores personnel advising them to be alert to differences between old and new stock and differences between parts removed and parts being installed. This memorandum will be incorporated into the appropriate Dresden Administrative Procedure by March 15, 1984.

7. On July 8, 1983 the John Crane Company seals installed on Unit 2 were upgraded to the safety-related classification per the component classification procedure implemented on May 1, 1983. The seal LLRT testing program developed to demonstrate the new seal integrity on Unit 2 prior to the ILRT was incorporated into the evaluation process of the seals.

8. Off-site dose calculations were performed. The results demonstrated that 10 CFR 100 limits would not have been exceeded at the site boundary had a postulated accident occurred.

Corrective Action Taken to Avoid Further Violations and Response to Unresolved Items

Since May 1, 1983 two new Dresden Administrative Procedures (DAPs) were incorporated into the Dresden Station Quality Program: (1) DAP 11-4, "Supplemental Listing of Safety- Related (SR), Non-Safety Related (NSR) and American Society of Mechanical Engineering (ASME) Code-Related Systems, Structures and Components", and (2) DAP 11-5, "Supplemental Listing of Non-Safety Related (NSR) Subcomponents/Parts Used On/In Safety-Related (SR) Systems, Structures and Components". To further enhance this program and to address three (3) unresolved items identified in I.E. Inspection Report no. 50-237/83-17, the following actions are planned:

Unresolved Item #1

The licensee will establish the ability of the currently installed seals and grease in Dresden Units 2 and 3 to perform their safety-related function under service conditions expected during the design basis event. The licensee will complete temperature and radiation qualification during the 1983 Dresden Unit 3 refueling outage. Pending completion of licensee efforts and NRC review, this item is unresolved (237/83-17-02).

Response

At the present time, Commonwealth Edison has initiated a testing program in which the vacuum breaker seals and the grease used with the seals will be qualified under the environmental conditions expected during a design-basis event. These are functional tests which are being performed with a mock-up of the vacuum breaker's stuffing box. The material testing will include the John Crane "3-ring" seal set currently in use in Unit 2, the John Crane "4-ring" seal sets planned for use in Unit 3, and the Dow Corning 111 lubricant. Also samples of the Atwood and Morrill "4-ring" seal sets now installed on Unit 3 will be set aside and scheduled for testing should the feasibility of deleting all of them during the Unit 3 Refueling Outage come into question. Finally, the experimental bronze bushing/EPR O-ring seal will also be prepared and scheduled for testing. This testing will be performed at Argonne National Laboratory and the results will be completed by March 15, 1984.

Unresolved Item #2

The adequacy of specifications in procurement documents in assuring that spare/replacement parts ordered from original equipment suppliers without approved Q.A. programs are equivalent or superior to originally installed components needs to be verified for all CECo nuclear facilities. Pending completion of licensee efforts and NRC review, this item is unresolved (237/83-17-03).

Response

The requirement to ensure the adequacy of specifications for spare/replacement parts purchased from original equipment manufacturers (OEM) without an approved Quality Assurance Program is presently contained in our Quality Assurance Manual Section QP 4-51. In order to increase the effectiveness of the procedures implementing this requirement, two supplemental measures will be taken. Dresden's receiving inspection procedures will be revised to include guidelines that ensure parts are the same as, or equivalent to, those in the original component. Also, the memorandum previously issued by the Maintenance Assistant Superintendent will be incorporated into our procedure for work requests (DAP 15-1) to provide an additional method of identifying spare/replacement parts concerns.

Two additional areas of concern were identified during review of this item. These areas are situations where the original equipment manufacturer (OEM) has changed a safety-related replacement part or when a safety-related spare part is being purchased from an alternate supplier. To ensure the adequacy of spare/replacement parts used in these situations, an administrative procedure will be written to provide a technical review of part adequacy and to ensure an appropriate specification is provided. This procedure will be used in conjunction with the receipt inspection and work request procedures. These corrective actions will be implemented by March 15, 1984.

Unresolved Item #3

The licensee will evaluate for all CECo stations the potential for circumvention of the classification review of non-safety related parts used in safety-related systems by the use of generic classifications. Pending completion of licensee efforts and NRC review, this item is unresolved (237/83-17-04).

Response

The existing SNED generic parts list will be revised at Dresden to only include items which have a low probability of being safety-related. All remaining parts will be subject to individual review as required by Dresden procedure DAP 11-5. In addition, parts which remain on the generic list will receive a review by the Quality Control

Department to determine if any circumstances exist which would require the part to have further review per DAP 11-5. This review will be incorporated into the existing procedure (DAP 15-1) which presently requires that Quality Control determine if a part has been previously evaluted by reviewing the parts classification which includes the generic list. The guidelines for determination of need for further review have been provided by SNED. The generic parts list and DAP 15-1 revisions will be made by March 15, 1984.

Date When Full Compliance Will Be Achieved

All corrective action items identified, if not previously noted, will be completed by March 15, 1984.