UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

June 17, 1997

EA 97-048

Mr. J. H. Mueller
Site Vice President
Zion Generating Station
Commonwealth Edison Company
101 Shiloh Boulevard
Zion, IL 60099

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY - $50,000
(NRC ROUTINE RADIATION PROTECTION INSPECTION REPORT 50-295/96021(DRS); 50-304/96021(DRS))

Dear Mr. Mueller:

This refers to the inspection conducted from December 3, 1996, through January 22, 1997, at your Zion Generating Station Unit 1 and 2 facilities. This inspection included a review of Zion's program for transportation of radioactive material. The written results of this inspection were provided to you on February 11, 1997. A predecisional enforcement conference was conducted on March 19, 1997.

Based on the information developed during the inspection and the information provided during the conference, the NRC has determined that violations of NRC requirements occurred. These violations are cited in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty, and the circumstances surrounding them are described in detail in the subject inspection report. The violations involved numerous weaknesses in the transportation of radioactive material program and included: failure to train personnel in accordance with procedures; inadequately maintaining radioactive material shipping procedures; inadequately implementing radiation control procedures; and exceeding the radiation limits of 49 CFR 173.425 for a shipment of radioactive materials. These violations taken collectively demonstrate an overall programmatic deficiency and are described below.

First, two of the seven workers authorized to release and approve shipments of licensed radioactive materials were not adequately trained in accordance with station procedures. While the workers attended the appropriate training, they did not pass the associated examination. In addition, the training offered did not address facility instructions or operating procedures. While failing to train authorized personnel was significant, especially since the applicable regulations were substantially revised on April 1, 1996, the radioactive material shipments were reviewed by trained individuals.

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Second, a number of Zion's radioactive waste and material shipping procedures were not properly maintained to meet the April 1, 1996, revisions to applicable transportation regulations. Since a computerized software program was used to accomplish the intent of the procedures, Zion's staff deemed these procedures to be obsolete without properly deleting these procedures, and without addressing or documenting the known procedural deficiencies. While not adequately implementing the station process for revising procedures was significant, the instructions in the procedures were not necessary for processing radioactive material shipments. The instructions in the procedures were for manual determinations of shipment requirements, but manual determinations were no longer being performed.

Third, certain of Zion's radiological control procedures were not implemented. On two occasions Zion's staff failed to analyze waste streams annually to determine radionuclide scaling factors as required by procedures. In failing to implement these procedures, Zion's staff did not provide reasonable assurance that the use of scaling factors to determine nuclide activity could be accurately correlated with actual measurements. This issue is significant because incorrect information could have been provided to the radioactive waste burial site as a result of inaccurate radioactivity estimations. It is unlikely that the difference would have changed the waste classification or would have exceeded the burial site license, but it is important for these activities to be accurate to ensure that waste is properly segregated and is stable. In addition, on January 8, 1997, operations personnel removed a potentially contaminated rod from a posted contaminated area without complying with procedural requirements to contain the rod or to have the rod released by a radiation protection technician. This particular event was not radiologically significant, but improperly removing contaminated items increases the potential of contaminating clean areas and personnel. This event was indicative of the ongoing problems with radiation worker practices at the station.

Finally, problems were observed concerning the December 9, 1996, limited quantity shipment of radioactive material to the Byron Nuclear Station. The Byron staff identified dose rates in excess of the Department of Transportation's (DOT) contact radiation limits for a limited quantity shipment. The original radiological survey of this shipment, conducted by Zion's staff, clearly indicated that the dose rates exceeded the limit of 0.5 millirem per hour. However, the dose rates were incorrectly documented on the shipping papers. These shipping papers had been reviewed by four members of Zion's staff without this error being identified. This issue is not radiologically significant, due to the low dose rates on the package; however, the issue is of regulatory significance because the classification allowed the shipment to be excepted from additional DOT requirements.

While individually each of these issues would not constitute a matter of high safety significance, collectively, these issues are significant because they indicate inadequate implementation and a lack of oversight of the program. We are particularly concerned that problems were identified in virtually every phase of the program. Additionally, an April 1996 audit conducted by Zion's

staff in this area lacked the depth and thoroughness necessary to identify the fundamental program weaknesses. Lack of an effective audit in this area was particularly noteworthy given that a major change to the applicable transportation regulations was made effective April 1, 1996. Coupled with the poor history in radiation protection performance over the past 12 months (violations have been identified concerning inadequate posting of radiological hazards, inadequate contamination control practices, inadequate procedures to control radiation monitors, and failure to perform compensatory actions for inoperable radiation monitors), these issues indicate a breakdown in this program and weaknesses in the ability to perform adequate self assessments. Therefore, these violations are classified in the aggregate in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600, as a Severity Level III problem.

In accordance with the Enforcement Policy, a base civil penalty in the amount of $50,000 is considered for a Severity Level III problem. Because your facility has been the subject of escalated enforcement actions within the last 2 years,[1] the NRC considered whether credit was warranted for *Identification* and *Corrective Action* in accordance with the civil penalty assessment process in Section VI.B.2 of the Enforcement Policy. The NRC determined that no credit for Identification was warranted because this problem was identified by the NRC during a routine inspection, and not identified through Commonwealth Edison Company's self assessment process. The NRC determined that credit for Corrective Action was warranted because corrective actions were timely and thorough. Once these issues were brought to the attention of facility management, all shipments of radioactive material were suspended, and the assistance of the corporate subject matter expert was obtained. Training was completed for appropriate personnel, and the training process was enhanced. All outdated procedures were deleted, and procedural rebaselining was initiated. Considerable efforts were implemented to improve the waste stream analysis process through procedural revisions and additional training, and an emphasis was placed on complying with radiation control procedures. Finally, more descriptive guidelines and expectations were created for the approval of radioactive material shipments.

While your corrective actions were thorough, the initial audit of the radioactive material program was superficial and identified none of the above weaknesses. It is imperative that Commonwealth Edison Company can rely on self assessments to identify program deficiencies, and not depend solely on personnel rationalizations to supersede inadequate procedures to ensure the program is adequately implemented. The administrative barriers

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[1] A Severity Level III Problem with a $100,000 Civil Penalty was issued on March 12, 1997 (EA 96-355); a Severity Level III Violation with a $50,000 Civil Penalty was issued on August 23, 1996 (EA 96-216); a Severity Level III Violation with a $50,000 Civil Penalty was issued on February 21, 1996 (EA 95-283); a Severity Level III Violation with a $50,000 Civil Penalty was issued on November 28, 1995 (EA 95-144); and a Severity Level III Violation with no Civil Penalty was issued on September 22, 1995 (EA 95-118).

to prevent this type of problem eroded to the point that the transportation program was significantly degraded. Poor oversight of the radioactive material shipping program is significant since this program controls radioactive material entering the public domain.

Therefore, to emphasize the importance of procedural compliance, attention to detail, compliance with technical specifications, compliance with radiation limits, and prompt identification of violations, I have been authorized, after consultation with the Director, Office of Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) in the base amount of $50,000 for the Severity Level III problem.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be placed in the NRC Public Document Room (PDR).

Sincerely,

A. Bill Beach
Regional Administrator

Docket Nos. 50-295; 50-304
License Nos. DPR-39; DPR-48

Enclosure: Notice of Violation and Proposed Imposition of Civil Penalty

See attached distribution

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