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Docket Nos. 50-254 and 50-265 Licenses Nos. DPR-29 and DPR-30 EA 87-82

Commonwealth Edison Company ATTN: Mr. James J. O'Connor President Post Office Box 767 Chicago, Illinois 60690

Gentlemen:

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY (NRC INSPECTION REPORT NOS. 50-254/86021(DRS); 50-265/86021(DRS)) (NRC INSPECTION REPORT NOS. 50-254/87011(DRS); 50-265/87011(DRS))

This refers to the NRC special inspections conducted on December 9, 1986, and June 8 through July 28. 1987, at Quad Cities Nuclear Power Station, Cordova, Illinois, of activities authorized by NRC Licenses No. DPR-29 and DPR-30. The June 8 through 'y 28, 1987 inspection was conducted by a special environmental out incation (EQ) inspection team to assess the program implemented at Quad Cities Station to meet the EQ requirements of 10 CFR 50.49. This inspection included an examination of E) records to verify that they contained appropriate analysis and documentation to support the environmental qualification of the plant's electrical equipment. Copies of the inspection reports were sent to you by letters dated December 19, 1986 and September 1, 1987, respectively. These issues were discussed on June 4, 1987, during an enforcement conference held in the Region III office between Mr. L. DelGeorge and others of your staff and Mr. C. J. Paperiello and the NRC staff.

The violation described in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) for Quad Cities, Units 1 and 2, involved the installation of numerous AMP nylon-insulated splices, used in low voltage power control circuits without providing documentation of adequate testing and/ or analysis, as specified in 10 CFR 50.49, to support the environmental qualification of these splices before the November 30, 1985 EQ deadline. These splices were used in a moderate number of systems important to safety. During the inspection at Dresden Station, it was identified that AMP nylon-insulated butt splices, used in General Electric FOI containment penetration enclosures in Unit 3, were unqualified for this application, in that the appropriate EC files failed to demonstrate the similarity between the tested and installed components. Severe degradation of these splices apparently due to aging and temperature

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excursions had already been identified by Commonwealth Edison Company at Dresden Unit 2 in September 1985. All the Dresden Unit 2 AMP nylon splices had been replaced with qualified Raychem splices prior to the EQ deadline of November 30, 1985. Although similar unqualified AMP splices were in use at Quad Cities Station, Unit 2 continued in operation until October 11, 1986 and Unit 1 continued in operation until December 6, 1986, at which time the splices were repaired.

Subsequent to the NRC inspection at Dresden, Commonwealth Edison sent four sample plices removed from Quad Cities to Wyle Laboratory to substantiate their qualification for use in a harsh environment. These splices were identical to those in use at Dresden. During the test on December 4-5, 1986 all four samples of AMP nylon splices tested exhibited excessive leakage currents. Details of the test were documented in NRC Information Notice 86-104. Based on the failures of the samples, these splices were declared inoperable and repaired at Quad Cities, Units 1 and 2.

Commonwealth Edison clearly should have knowr that these splices were not qualified because (1) severe degradation of these splices had been identified in January and September 1985 in Dresden Unit 2 due to aging and a high temperature event inside containment (the licensee replaced Dresden Unit 2 splices and initiated a monitoring program for the Dresden Unit 3), (2) the DOR EQ guidelines state that nylon is susceptible to significant radiation and thermal aging damage when exposed to postulated nuclear power plant environmental conditions, and (3) while some vendor EQ test reports used to qualify the penetration and splices existed in the qualification file, these reports were clearly inadequate in that the tests failed to demonstrate that installed nylon AMP splices or a suitable similar material had been tested. The test report and subsequent correspondence described a nylon-type splice, but did not specify the manufacturer nor the formulation and material properties of the nylon which was tested. These factors are considered crucial to demonstrate the similarity of the tested and installed materials. Thus, Commonwealth Edison had no reasonable basis to conclude that the nylon AMP splices installed had similar properties to those tested.

To emphasize the importance of environmental qualification and meeting regulatory deadlines, I have been authorized, after consultation with Director, Office of Enforcement and the Deputy Executive Director for Regional Operations, to issue the Notice of Violation and Proposed Imposition of Civil Penalty (Enclosure 1) in the amount of One Hundred Fifty Thousand Dollars (\$150,000) for the violation described in the enclosed Notice. In accordance with the "Modified Enforcement Policy Relating to 10 CFR 50.49," contained in Generic Letter 88-07 (Enclosure 2), the violation described in the enclosed Notice has been determined to be moderate and to have affected some systems and components, and therefore is

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considered to be an EQ Category B violation. The base value of a civil penalty for an EQ Category B violation is \$150,000.

In determining the civil penalty amount, the NRC considered the four factors set forth in the "Modified Enforcement Policy Relating to 10 CFR 50.49," for escalation and mitigation of the base civil penalty amount. These factors consist of (1) identification and prompt reporting of the EQ deficiencies (±50%); (2) overall best efforts to complete EQ within the deadline (±50%); (3) corrective actions to result in full compliance  $(\pm 50\%)$ ; and (4) duration of a violation which is significantly below 100 days (-50%). With respect to the first factor, escalation of the base civil penalty by 50 percent is appropriate because the NRC identified this violation and the licensee failed to take advantage of the identification of the degrading splices in Dresden Unit 2 to resolve the qualification issue of identical splices installed in Quad Cities, Units 1 and 2. With respect to the second factor, mitigation of the base civil penalty by 50 percent is appropriate for the licensee's best efforts in EQ. While the licensee's EQ program was deficient in resolving the nylon AMP splice issue, the overall EQ program demonstrated the licensee's best efforts to complete EQ within the deadline. With respect to the third factor, while the licensee did shut down Unit 2 on October 11, 1986 and Unit 1 on December 6, 1986 and repair the splices, these actions were not done in a reasonable time in that the unqualified splices were identified at Dresden in May 1986. Therefore, on balance neither mitigation nor escalation is deemed appropriate considering the licensee's corrective actions. With respect to the fourth factor, mitigation is inappropriate because these EQ violations existed in excess of 100 days. Therefore, on balance, an adjustment to the base civil penalty amount is appropriate.

You are required to respond to this letter and should follow the instructions specified in the enclosed Sotice when preparing your response. In your response, you should document the specified actions taken and any additional actions you plan to prevent recurrence. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether or not further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements. Because the problem at Quad Cities is essentially the same as that for which a Notice was issued at Dresden, the NRC intends to defer its response to your June 28 and July 1, 1988 letters concerning the Dresden Notice until your response to this Notice is received.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

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The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

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Sincerely,

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A. Bert Davis' Regional Administrator

Enclosures:

- Notice of Violation and Proposed Imposition of Civil Penalty
- Generic Letter 88-07
  Inspection Reports
  - No. 50-254/86021(DRS);
    - No. 50-265/86021(DRS);
    - No. 50-254/87011(DRS);
    - No. 50-265/87011(DRS)
- See Attached Distribution

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cc w/enclosures: H. Bliss, Nuclear Licensing Manager J. Eenigenburg, Plant Manager, Dresden R. L. Bax, Plant Manager, Quad Cities Licensing Fee Mail-gement Branch Senior Resident Inspector, Dresden Senior Resident Inspector, Quad Cities Richard Hubbard J. W. McCaffrey, Chief, Public Utilities Division PDR LPDR DCD/DCB(RIDS) SECY CA OGPA J. Taylor, DEDRO T. Murley, NRR J. Lieberman, OE L. Chandler, OGC Enforcement Coordinators RI, RII, RIV, RV RAO:RIII PAO:RIII SLO: RIII M. Stahulak, RIII