ILLINOIS POWER COMPANY

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U-0492

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

May 27, 1982

Mr. James C. Keppler
Director, Region III
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Deficiency 82-01
10 CFR 50.55(e)
Design/Construction/Inspection Process and
Records for S/R Electrical Hanger Attachments to Cable Tray

On January 21, 1982, Illinois Power notified Mr. H.M. Wescott, NRC Region III, by letter (Ref: A.J. Budnick memorandum to H.M. Wescott, U-0404 dtd. January 21, 1982) of a potential reportable deficiency per 10 CFR 50.55(e) concerning the design/construction/inspection process and records for safety related electrical hanger attachments to cable tray. On February 26, 1982, Illinois Power submitted an interim report (Ref: W.C. Gerstner letter to J. Keppler, U-0424, dated February 26, 1982) to the NRC Region III informing you that we anticipated approximately ninety (90) days were required to complete an investigation of this matter. Our investigation of this matter is complete, and this letter serves as a final report for this reportable deficiency per 10 CFR 50.55(e)(3).

1. Statement of Reportable Deficiency

Cable tray attachment procedures controlling installation, inspection and rework were found to be inadequate to assure that these activities were performed under suitably controlled conditions. Additionally, deficiencies were identified in permanent plant installation/inspection records, in that these records, in some cases, incorrectly identified cable tray attachments used.

2. Background

Problems associated with cable tray attachment details began to surface June 1, 1981 as a result of an Illinois Power Quality Assurance surveillance of electrical work. This surveillance identified a problem addressing incorrect attachment types identified on a number of travelers that

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had passed through final acceptance. In the course of correcting the noted deficiencies, Baldwin Associates Engineering personnel found additional discrepancies. A decision was made for Quality Control to reinspect all documentation packages. On October 15, 1981, Baldwin Associates Quality Control reported the results of a review of cable tray raceway packages in the Document Record Center. A significant number of problems were found; however, of greater concern was the need for reinspection of all packages in the field. In December, 1981, all packages were withdrawn from the vault by Quality Control to begin a reinspection program.

During January, 1982, a team of inspectors from the NRC reviewed and inspected the implementation of the electrical construction Quality Assurance/Quality Control program. Based on information provided to Illinois Power by the NRC and other known electrical conditions, Illinois Power issued a STOP WORK order on January 15, 1982, to Baldwin Associates on all safety-related electrical work. On January 21, 1982, the Illinois Power Director-Quality Assurance informed the NRC of the potential deficiency addressed in this report.

3. Analysis of Deficiency

Analysis of the described deficiency resulted in the following observations:

1. Baldwin Associates Procedures and Instructions (BAP 3.3.1, "Raceway Installation" and E-004, "Raceway Marking") did not adequately control and document work associated with raceway and raceway attachments.

2. Baldwin Associates Job Instruction E-008, "Electrical Drawing Review" did not adequately control design change review and implementation of changes which may have been associated with cable tray attachments.

3. Previous revisions to BAP 3.3.1 required Quality Control inspectors to identify rather than verify installation of cable tray attachments in the traveler.

4. The distinction between hanger and cable tray attachment details for inspection purposes was not adequately defined.

5. Some deficiencies were handled verbally and informally.

6. Some deficiencies were not promptly corrected, but were allowed to continue because of disagreement over corrective action required.

4. Corrective Action

A number of organizational changes and procedural changes were made that are expected to preclude recurrence of this problem or problems of a similar nature. These changes are also a part of a broader electrical stop work recovery program under close scrutiny by the U.S. Nuclear Regulatory Commission. Corrective actions taken which relate to both this deficiency report and electrical STOP WORK recovery program are outlined in Illinois Power's letter to the NRC Region III, "Response to Confirmation of Action Letter" (W.C. Gerstner to J. Keppler, U-0468, dated April 21, 1982).

Specific corrective actions taken/to be taken as a result of this deficiency are as follows:

1. An Ad Hoc Committee in conjunction with the involved construction and quality groups have rewritten all of the Baldwin Associates Procedures and associated Job Instructions and Quality Control Instructions pertaining to cable tray and hangers. These changes were made to enhance controls over installation and inspection activities, documentation requirements and handling of nonconformances. Specifically, procedural revisions included the following points:

   a) A separate procedure has been generated to control the installation, inspection and related documentation of cable tray and cable tray attachments (BAP 3.3.10, "Cable Tray Installation", and 3.3.11, "Cable Tray Attachment Installation", respectively). Each procedure requires the use of travelers for controlling installation and inspections. The use of travelers for these activities also greatly improves the documentation supporting these activities.

   b) Procedure BAP 3.3.11 requires BA Engineering to document on the traveler the type of tray attachment detail used which is subsequently verified by Quality Control during inspection. This approach should lead to more accurate information regarding "tray attachment used" in the traveler.

   c) Separate instructions which describe BA Engineering responsibilities and requirements in the cable tray, cable tray attachment, and cable tray hanger installation program have been generated (Job Instructions E-013, "Cable Tray Installation Travelers", E-014, "Cable Tray Attachment Travelers", and E-015, "Electrical Hanger Travelers", respectively). These instructions describe such activities as traveler preparation, review, approval, and revision.

d) Separate Quality Control Instructions which describe the responsibilities and requirements in the cable tray, cable tray attachments, and cable tray hanger inspection program have been generated. (QCI 400, "Cable Tray Installation Inspection", and 401, "Raceway Hanger/Support/Fabrication/Installation Inspection", respectively.) These instructions describe such activities as QC traveler review, inspection, and documentation requirements, including the documentation of nonconformances.

e) Job Instruction E-008 has been revised to describe the process for revising fabrication or installation documents, i.e. travelers, due to revision in design documents.

f) The distinction between hanger and attachment details has been adequately defined by the use of travelers for controlling their installation as described in BAP 3.3.11.

2. Training lesson plans have been developed and implemented to assure that personnel involved in the installation and inspection of cable tray and attachments are knowledgeable of the requirements and responsibilities associated with the activities.

3. A 100% reinspection of the completed 1E cable tray and attachments is planned. Travelers which describe this work have been prepared and are presently undergoing review/approval prior to the initiation of the reinspection.

Safety Implication/Significance

Some of the raceway systems involved carry nuclear safety-related cable. Considering the complexity of hypothesizing the numerous combinations of potential failures, it is difficult to evaluate the hazard, if any, to public health and safety had the deficiency gone undetected. Certain potential failures could be very consequential in that the operation of safety-related equipment could be affected. Other potential failures could be inconsequential.

This letter is hereby submitted as a final report in accordance with 10 CFR 50.55(e), and I trust that it is sufficient for your analysis and evaluation of the deficiency and corrective action.

Yours very truly,

W.C. Gerstner
Executive Vice President

WCG/rdc/wp

cc: NRC Resident Inspector
Director-Quality Assurance
Illinois Department of Nuclear Safety
Director, Office of I&E, USNRC, Washington, DC 20555