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

December 22, 1981

Mr. James G. Keppler, Director
Directorate of Inspection and
Enforcement - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Station Units 1 and 2
Braidwood Station Units 1 and 2
Additional Information Regarding
UNISTRUT Coating
NRC Docket Nos. 50-454/455, 50-456/457

References (a): March 26, 1981 letter from J. S. Abel to J. G. Keppler

(b): August 14, 1981 letter from C. E. Norelius to C. Reed

Dear Mr. Keppler:

This is to provide additional information regarding our assessment of coating requirements for spot welds on UNISTRUT hangers which was requested by the NRC in reference (b). Attachment A to this letter contains Commonwealth Edison's response to the questions contained in reference (b). These responses were reviewed on December 15, 1981, in a telephone conversation with Messrs. Hawkins and Naidu of your office.

Please address further questions regarding this matter to this office.

Very truly yours,

T. R. Tramm
for

L. O. DelGeorge
Director of Nuclear Licensing

Attachment

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Attachment A

Responses to Questions on
UNISTRUT Spot Welds

Question A: What is the basis for concluding that the environment inside containment and other areas is less corrosive than a "rural exposure?" We consider the Byron FSAR Table 3.11-2, which provides information regarding conditions inside containment for environment Zone C1 to be the appropriate reference.

Response A: The "rural exposure" that was assumed in determining the corrosion rate was based upon 70% maximum humidity and 130°F temperature. These parameters are more severe than the environment inside Containment for the normal and abnormal conditions and in other areas for all conditions. Environmental conditions are given in FSAR Table 3.11-2.

Question B: What consideration was given to the effects of adverse environmental conditions resulting from accidents (e.g., loss of coolant, steamline break, exposure to chemical corrodents) when superimposed on the expected material degradation during long-term normal operation.

Response B: The environment inside Containment for the adverse environmental condition resulting from an accident exceeds the humidity/temperature basis for a rural exposure. It is Commonwealth Edison Company's intent to perform an inspection following such accident to assess coating deterioration and if any corrective action is required.

Question C: For weld shear test results, was accelerated aging applied to the samples or used in your assumptions, and if so, what methodology was used?

Response C: For weld shear test results, accelerated aging was not applied to the samples. A literature search was performed to establish a corrosion rate for pregalvanized material over a 40 year period. We conservatively assumed 8.5 mils as the corrosion allowance based upon the published literature for uncoated carbon steel in a rural exposure. Unistrut provided actual shear test results from tests performed during the time period in which strut was being produced for Byron/Braidwood. These test results were used to establish the average ultimate shear strength of the spot welds. A reduced allowable shear load was established on the basis of this test data and the 8.5 mil corrosion allowance.

Question D: Regarding your commitment to apply the required protective coating to the unpainted carbon steel components of installed and filled cable tray, what measures have been taken to protect installed components, equipment and electrical cable from damage or deterioration during the surface preparation and painting operations?

Response D: Measures have and are being taken to protect installed components, equipment and electrical cable from damage or deterioration during the surface preparation and painting operations. Mechanical equipment, piping, electrical equipment, cable pans and trays, and electrical cables in the immediate work area are protected by covering, masking and/or wrapping as required to protect the installed equipment

Additional Information:

Corrosion characteristics were established in accordance with the following reference documents:

1) 9th Edition of American Society for Metal (ASM) Handbook, Volume I, Properties & Selections: Iron & Steels

2) R. A. Legault & A. G. Prebam, "Kinetics of the Atmospheric Corrosion and Low Alloy Steels in an Industrial Environment," Corrosion, Volume 31, No. 4, April 1975.

3) R. A. Legault & V. P. Pearson, "Atmospheric Corrosion in Marine Environments," Corrosion Vol. 34, No. 12, December 1978.