UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

December 15, 1976

Karl V. Seyfrit, Chief, Technical Assistance Branch
Office of Inspection and Enforcement, Headquarters

SUPPORT OF CONTROL AND INSTRUMENT CABLES ROUTED IN VERTICALLY INSTALLED CONDUIT - (A/I F30248H)
TOLEDO EDISON COMPANY - DAVIS-BESSE UNIT 1 (DOCKET NO. 50-346)

Section 300-19 of the National Electric Code (NEC) requires that "Conductors in vertical raceways shall be supported. One cable support shall be provided at the top of the vertical raceway or as close to the top as practical, plus a support for each interval of spacing as specified in Table 300-19(a)." Spacings for conductor supports and support methods are also provided.

The Toledo Edison Company (TECO) in their Final Safety Analysis Report for Davis-Besse Unit No. 1, committed to use the NEC for Class 1E design and installation. TECO's installation specification appropriately references Section 300-19 of the NEC. During a special electrical inspection, it was noted that Davis-Besse installations did not conform to the above stated criteria. The disposition by TECO of the finding was to revise the installation specification. Originally, the specification read: "Vertical conduit risers of more than 20 feet shall be provided with approved cable clamps or supports." As revised, it reads: "All vertical conduit risers carrying power cables shall have the provision for supporting the cables in accordance with the 1971 National Electric Code, Section 300-19. All vertical conduit risers carrying control or instrumentation cable, which are over 20 feet in length and terminate at the upper end, shall have the cables restrained by wedge grommets or split Kellum Grips at the upper end to prevent strain on the terminals."

IE:III identified the specification change as inappropriate and a deviation from previous commitments (IE Inspection Report No. 050-346/76-18). The basis for this action was:

1. The arbitrary split in requirements between power and control instrumentation cable;

2. The liberal requirement of "terminated at the upper end"; and

3. The lack of assurance that the unsupported cables will maintain all safety, physical, and electrical characteristics and not sustain damage from elongation, expansion, vibration, abrasion, or fraying over the design 40-year plant life.

TECO disagreed with the deviation notice and contend, in their response letter dated November 24, 1976, that the specification change is considered to be appropriate, in accordance with good engineering practice, and meets the intent of the NEC. Further, TECO contends that support for control and instrument cable is solely "for the purpose of termination protection and not related to conductor tension strain."

Answers to the following questions are specifically requested:

1. Is TECO's specification revision appropriate, i.e., in keeping with the intent of NEC Section 300-19?

2. Is the revised design acceptable for support of instrument control cables? If not, what would be considered an acceptable design?

Should you have any questions concerning this matter, please contact Mr. D. W. Hayes or Mr. F. J. Jablonski.

R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch

Attachments:
1. Ltr dtd 11/24/76
   Lowel E. Roe to James G. Keppler
2. Ltr dtd 12/15/76
   R. F. Heishman to TECO

cc: G. W. Roy, IE:HQ, w/attachments
J. G. Keppler, w/o attachments
D. W. Hayes, w/o attachments
C. C. Williams, w/o attachments