Duquesne Light
Nuclear Construction Division
Robinson Plaza, Building 2, Suite 210
Pittsburgh, PA 15205

2NRC-4-084
(412) 787-5141
(412) 923-1960
Telecopy (412) 787-2629
June 15, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. George W. Knighton, Chief
Licensing Branch 3
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Unresolved Item 83-05-09

Gentlemen:

The attached information is provided as requested in a meeting held on May 17, 1984, to discuss Unresolved Item 83-05-09, "Cable Tray Fill." This information (Table 8.3-4) will be incorporated in a future amendment to the Beaver Valley Power Station Unit 2 Final Safety Analysis Report.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

GHO/wjs
Attachment

cc: Mr. H. R. Denton (w/a)
Mr. D. G. Eisenhut (w/a)
Mr. E. A. Licitra, Project Manager (w/a)
Ms. M. Ley, Project Manager (w/a)
Mr. C. Anderson, Chief, Plant Systems Section, EPB (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)

B001
1/1

DRAFT COPY

TABLE 8.3-4

X CABLE TRAYS TABLE AND NOTES

CABLE IN TRAYS

To be consistent with the computer program for cable schedules, and to meet certain documentation requirements for nuclear installations, the following identification, cable loadings, and tray fill requirements should be applied when engineering a cable distribution system in trays:

Tray Identification	Voltage	Conductors Size	Conductors Service	Maximum Tray Fill	Notes
H	601 V to 4,160 V	All	Power	1 Layer	Maintained spacing* Conductors produce heat from I^2R losses
L	600 V	All	Power	1 Layer	Maintained spacing* Conductors produce heat from I^2R losses
K***	600 V	No. 8 AWG copper and smaller	Miscellaneous services	50%****	1. No conductor I^2R loss heating or 2. Intermittent service** or 3. Sized and derated in accordance with IPCEA Publication No. P-54-440
C	120-I25-240 V	As required	Control and Alarm	50%****	600V insulation
X	Low Level	As required	Instrument, communication, etc.	50%****	Generally shielded cables

* Maintained spacing of 0.25 to 1.0 cable diameter on both sides of each cable in a tray, cables derated in accordance with IPCEA, Table VII, Line 1.

** Intermittent is understood to mean operation for not more than 40% of the time and for not longer than 30 min. for any one operation.

*** The K tray cables may be composed of any one or any combination of the three types. Only the Type 3 cables need to have a derating factor applied.

**** Specified percent fill can be exceeded upon written approval from Engineers. 50% tray fill is achieved when the sum of the cross-sectional areas of all cables routed in the tray section equals 50% of the available cross-section area of the tray. For this condition, the Design Basis computer system, which calculates tray fill based on 3" deep tray whether 3" or 4" deep tray is used, would report the tray section fill as 100%. In a typical installation, 50% cross sectional fill will result in cable being level with, or below, the top of the tray siderail. Maximun calculated cable depth in "C" and "X" tray will be limited to 1.5" above the top of the tray siderail.