SEATTLE CITY LIGHT
CONSTRUCTION GUIDELINE

STANDARD NUMBER: **U4-3.7/NCI-90**
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SUPERCEDING: May 21, 1999
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FIRE AND ELECTRIC ARC PROOFING OF CABLES

1. **Scope of Application:** The purpose of fire and electric arc proofing any electric cable is to limit damage resulting from cable faults to the adjacent cable. This protection is necessary only where the failure of one cable would result in the probable failure of other cables. Any cables within 18″ of each other are considered to be exposed.

   When specified, primary cables on the network system shall be fire and electric arc proofed.

2. **Separation:** It is recommended that where possible and in addition to the application of fire and electric arc proofing tape, the cables be physically separated by a minimum of 12 inches.

3. **Application:** Fire and electric arc proofing tape (Stock No. 736525 or 736527, Material Standard 7365.2) shall be applied in two half-lapped layers, so that each cable is covered with a total of four layers of tape. Overlap the last 6 inches of protected cable when starting new roll of tape.

4. **Securing Band:** The wrapped fire and electric arc proofing tape shall be secured by a band, consisting of two layers (the second wrapped directly over the first) of glass cloth electrical tape (Stock No. 736632E).

5. **Tape Coverage:** Determine the quantity of tape required to cover cables with two half-lap wraps using the formula below or from the table:

Cable OD, in.	Tape Width, in.	Number of 20-Foot Rolls Needed to Cover 100 Feet of Cable with Two Half Lap Wraps, rolls
1	1-1/2	42
1-1/4	1-1/2	54
1-1/2	1-1/2	64
1-3/4	3	38
2	3	42
2-1/4	3	48
2-1/2	3	54
2-3/4	3	58
3	3	64
3-1/2	3	74
4	3	84
4-1/2	3	96

Formula:

$$\text{number of rolls of tape required} = \frac{2(C)(LC)}{(LT)(W)}$$

Where:
D = cable OD in inches
C = cable circumference $(C = \pi D)$
π = 3.14
LC = length of cable in inches
W = one-half width of tape in inches
LT = length of tape in inches

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