

CONSTRUCTION GUIDELINE

STANDARD
NUMBER:

NSP-120

PAGE: 1 of 7

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13.8 KV PRIMARY WYE SPlice POLYETHYLENE INSULATION

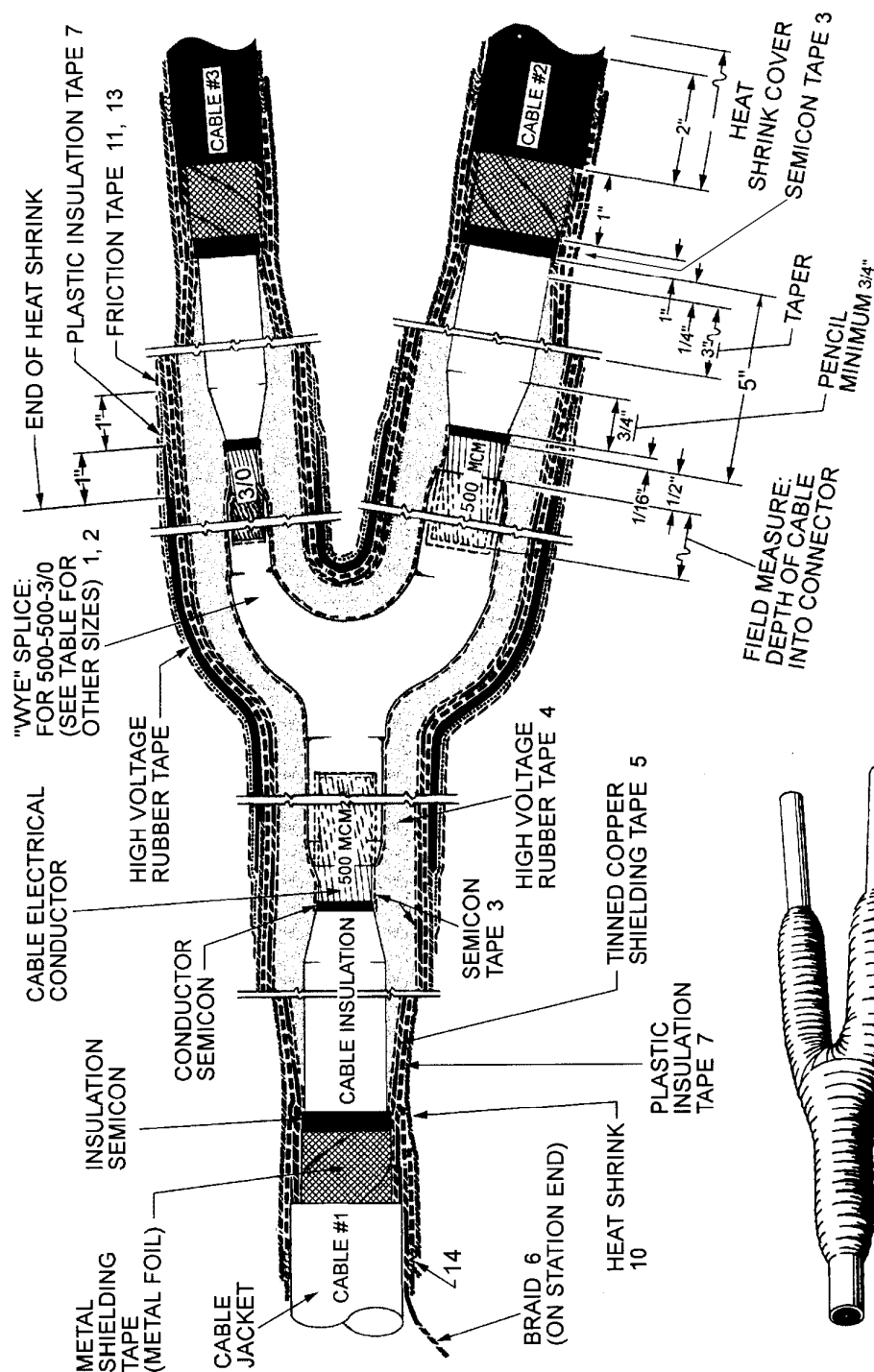


FIGURE A

TAPE SO THAT FLAT SIDES OF YOKE BUILD UP FASTER (CLIMB THE YOKE TAPING) IN THE EARLY STAGES OF HIGH VOLTAGE TAPING. THIS AREA TENDS TO HAVE LESS TAPE PRESSURE DUE TO THE PHYSICAL CHARACTERISTICS OF THE "Y". THE SIDES MUST ROUND OUT.

ONLY ONE PHASE SHOWN; OTHER PHASES IDENTICAL.

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CONSTRUCTION GUIDELINE**MATERIAL LIST**

ITEM	QUANTITY	MATERIAL	STOCK NUMBER
1.	3	CONNECTOR, WYE SPLICE, Copper Compression,	See attached tables for stock number
2	As required	ADAPTER, Copper, Reducing	See attached tables for stock number
3	3 RL	TAPE, Electrical, Semi-conducting 3/4"	736670
	6 RL	TAPE, Electrical, Semi-conducting 1"	736671
4	3 RL	TAPE, High Voltage Insulating, linerless 3/4"	736503
	15 RL	1"	736504
		1-1/2"	736505
	3 RL	TAPE, High Voltage Insulating, with liner 3/4"	736502
	15 RL	1"	736500
		1-1/2"	736501
5.	6 RL	TAPE, Tinned Copper Shielding 2"	736243
6.	As required	BRAID, 5/8" x 3/64" Tinned Copper	618625
7.	10 RL	TAPE, 3/4" Plastic Insulating	736655E
8.	As required	CLEANER, Electrical Insulation	726157E
10.	9	TUBING, Heatshrink 3/0 and Smaller 350 kcmil and larger	737455E 737456E
11.	10 RL	FRICTION TAPE	736400E
12.	1 RL	TAPE Insulating and waterproofing	736470E
13.	1 QT	VARNISH, Insulating	725471
14.	As required	TAPE, red heat shrink, 2"	686541

1. Train cables to final position and cut ends so as to butt squarely together. Do not clog vault or manhole with cable by unnecessary wrapping of hole with cable.
2. Trifurcate each cable in accordance with Guideline NSP-110. (Sand cable jacket)
3. Slide three-inch heatshrink tubing (Stock No. 737456E) over each cable end for later use.
4. From the table, select the proper wye splice connector for use with the conductors being spliced. Use the appropriate reducing sleeve if the connector barrel diameter is larger than the cable. When reducing sleeves are necessary, a maximum of two should be in any one wye splice leg.
5. Remove metal shielding tape from each conductor for a length of 6-1/2" plus the depth of each connector barrel.
6. Remove insulation semiconducting shield from each conductor to within 1" of the metal shielding tape.
7. Remove insulation and conductor semiconducting shield from each conductor for a length of one-half inch plus the splice barrel depth. Pencil insulation for a minimum of three-quarters inch, leaving one-sixteenth inch minimum of conductor semiconducting shield exposed.
8. Attach wye splice connector to conductors with two crimps on each splice barrel and remove any burrs or sharp points. CAUTION: Do not crimp splice barrel within 1/2" of the solid part of the yoke.
9. Clean entire prepared splice area, using clean, lint-free cloths and suitable solvent. Use separate cloths so as not to contaminate the insulation with conducting particles from the semiconducting shield. Wipe from the center of the insulation over the insulation semicon. Throw rag away. Wipe again from the center of the insulation over penciling and throw rag away. Repeat as necessary.

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10. Fill crimp indents with either red sealant mastic (Stock No. 686541) or cut strips of semi-con tape (Stock No. 736670) to fill indents so that connector is rounded out.
11. Apply semiconducting tape (Stock No. 736670) to exposed conductor, connector, and over-lapping cable conductor semicon. When applying, half-lap and stretch tape in accordance with manufacturer's instructions packed with each roll of tape. Be sure the surface is smooth when finished. Build up semicon tape on conductor as shown on drawing. See Page 7.
12. Wrap high voltage, ozone-resistant tape (linerless or with liner), half-lapping and stretching per manufacturer's recommendations over the connector and over the insulation to within one-quarter inch of the insulation semiconducting shield. This tape should be applied to a thickness of three-eighths inch over splice and tapered toward the end of the splice as shown. It is important that this tape is stretched per manufacturer's recommendations. Build up sides of yoke early so a "ball" forms for later taping to keep pressure on sides so tape bonds together. See Figure A.
13. Wrap one half-lapped layer of shielding tape (Stock No. 736671) over splicing tape, extending it over the insulation semicon.
14. Wrap one half-lapped layer of electrical shielding tape (Stock No. 736244 or 736243) over semiconducting tape, overlapping the metal shielding tape 1" at each end. Apply shielding tape in three pieces, wrapping from center toward each end. Overlap at the center and solder in place at the center and to the metal shielding tapes. Spot solder the turns together. Be sure of continuity across splice and pull shielding tape so it conforms to splice.
15. On station end of splice, solder ground strap (braid) to metal shielding tape of each phase and extend out from joint as shown. Braid should be soldered solid where it exits the heat-shrinkable tube to prevent wicking. Connect ground braids together and connect to the ground bus. Wrap Red heat shrink sealant around solder blocked braid.
16. Apply one half-lapped layer of plastic insulation tape from jacket to jacket.
17. If cable is compact sector, apply splice belt per NSP-115.
18. Slide three-inch heat-shrink tubing over each leg toward crotch and shrink into place. Do not apply heat onto crotch area. If need be, temporarily shield the exposed crotch area from direct flame.
19. Apply four one-half-lapped layers of highly stretched high voltage tape (Stock Nos. 736500 or 736504) over shielding tape and onto the heatshrink tubing for a length of one inch on each leg. Put aqua seal under tape over heat-shrink.
20. Wrap two half-lapped layers of plastic tape (Stock No. 736655E) over high voltage tape and (two inches) onto the heat-shrink tubing.
21. Apply one half-lapped layer of friction tape (Stock No. 736400E) over plastic tape to prevent raveling.
22. Paint all friction taped areas with insulating varnish (Stock No. 725472).

CONSTRUCTION GUIDELINE**TABLE 1 - 1000 kcmil, WYE SPLICE CONNECTORS & ADAPTERS**

CABLE NO.	SIZE	Y CONNECTOR (Per Splice)	STOCK NO.	ADAPTER (Per Phase)	STOCK NO.
1	1000			None	
2	750	1000-750-350	663567	None	
3	350			None	
1	1000			None	
2	750	1000-750-750	663565	None	
3	750			None	
1	1000			None	
2	750	1000-750-750	663565	None	
3	500			750 – 500	679790
1	1000			None	
2	1000	1000-1000-3/0	663563	None	
3	3/0			None	
1	1000			None	
2	1000	1000-1000-3/0	663563	None	
3	#1			3/0 - #1	679775

TABLE 2 - 750 kcmil, WYE SPLICE CONNECTORS & ADAPTERS

CABLE NO.	SIZE	Y CONNECTOR (Per Splice)	STOCK NO.	ADAPTER (Per Phase)	STOCK NO.
1	750			None	
2	750	750-750-350	663559	None	
3	350			None	
1	750			None	
2	500	750-750-350	663559	750-500	679790
3	350			None	
1	750			None	
2	500	750-750-350	663559	750 - 500	679790
3	3/0			350 - 3/0	679780
1	750			None	
2	500	750-750-350	663559	750 - 500	679790
3	#1			350 - #1	679778
1	750			None	
2	350	750-750-350	663559	750 - 350	679789
3	350			None	
1	750			None	
2	350	750-750-350	663559	750 - 350	679789
3	3/0			350 - 3/0	679780
1	750			None	
2	350	750-750-350	663559	750 - 350	679789
3	#1			350 - #1	679778

CONSTRUCTION GUIDELINE**13.8 KV PRIMARY WYE SPLICE POLYETHYLENE INSULATION****TABLE 3 - 500 kcmil, WYE SPLICE CONNECTORS & ADAPTERS**

CABLE NO.	SIZE	Y CONNECTOR (Per Splice)	STOCK NO.	ADAPTER (Per Phase)	STOCK NO.
1	500	500-500-500	663544	None	
2	500			None	
3	500			None	
1	500	500-500-500	663544	None	679785
2	500			None	
3	350			500 - 350	
1	500	500-500-3/0	663538	None	
2	500			None	
3	3/0			None	
1	500	500-500-3/0	663538	None	679775
2	500			None	
3	#1			3/0 - #1	
1	500	500-500-3/0	663538	None	679785
2	350			500 - 350	
3	3/0			None	
1	500	500-500-3/0	663538	None	679785 679775
2	350			500 - 350	
3	#1			3/0 - #1	
1	500	500-500-3/0	663538	None	679783
2	3/0			500 - 3/0	
3	3/0			None	
1	500	500-500-3/0	663538	None	679783 679775
2	3/0			500-3/0	
3	#1			3/0-#1	

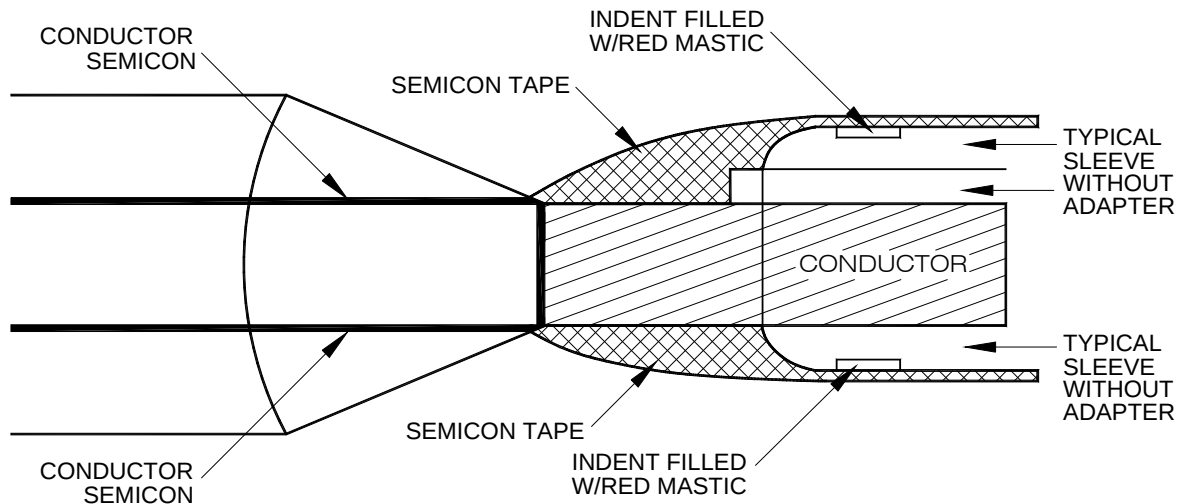
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**TABLE 4 - 350 kcmil & Smaller
WYE SPLICE CONNECTORS & ADAPTERS**

CABLE NO.	SIZE	Y CONNECTOR (Per Splice)	STOCK NO.	ADAPTER (Per Phase)	STOCK NO.
1	350	500-500-500	663544	500 - 350	679785
2	350			500 - 350	679785
3	350			500 - 350	679785
1	350	350-350-3/0	663524	None	
2	350			None	
3	3/0			None	
1	350	350-350-3/0	663524	None	679775
2	350			None	
3	#1			3/0 - #1	
1	350	350-350-3/0	663524	None None	679780 or 679778
2	3/0			350-3/0 or 350-#1	
3	#1			3/0 - #1 None	
1	350	350-350-3/0	663524	None	679778
2	#1			350 - #1	
3	#1			3/0 - #1	
1	3/0	3/0-3/0-3/0	663506	None	
2	3/0			None	
3	3/0			None	
1	3/0	3/0-3/0-3/0	663506	None	679775
2	3/0			None	
3	#1			3/0 - #1	
1	3/0	3/0-3/0-3/0	663506	None	679775
2	#1			3/0 - #1	
3	#1			3/0 - #1	

**TABLE 5
SPLICE REDUCERS**

STOCK	SIZE	LENGTH
679775	3/0 Str to #1 Str	1-1/2"
679778	350 Str to #1 Str	2"
679780	350 Str to 3/0 Str	2-1/2"
679783	500 Str to 3/0 Str	2-1/2"
679785	500 Str to 350 Str	2-1/2"
679789	750 Str to 350 Str	2-1/2"
679790	750 Str to 500 Str	2-1/2"
679791	1000 Str to 750 Str	3"

CONSTRUCTION GUIDELINE**13.8 KV PRIMARY WYE SPLICE POLYETHYLENE INSULATION****SEMICON TAPING AT CONDUCTOR SEMICON TO CONNECTOR SLEEVE**

One or two half-lap layers of semicon tape over connector area.

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