

8.06 - IF THE PULLING TENSIONS OR SIDEWALL PRESSURE AS CALCULATED FROM THE CABLE PULLING CHART EXCEED THE VALUES RECOMMENDED IN PARAGRAPH 8.03, THE FOLLOWING GUIDELINES SHALL BE USED.

A - DIRECTION OF PULL: THE EFFECT OF A BEND MAY BE MINIMIZED IF THE DIRECTION OF THE PULL IS SUCH THAT THE BEND IS NEARER TO THE REEL LOCATION. CALCULATE THE PULLING TENSION AND SIDEWALL PRESSURES IF THE DIRECTION OF PULL IS REVERSED AND CHECK IF THE VALUES ARE WITHIN THE LIMITS SPECIFIED.

B - IF THE PULLING TENSION STILL EXCEEDS THE RECOMMENDED VALUE THEN:

- 1 - FOR EXPOSED CONDUIT RUNS, PULL SLEEVES SHALL BE INSTALLED AT INTERMEDIATE POINTS.
- 2 - CONDUIT MAY BE RE-ROUTED AND PULL TENSION RECALCULATED TO ESTABLISH AN ACCEPTABLE ROUTING.

8.07 - WHEN A STANDARD BEND CANNOT BE USED, CONTRACTOR SHALL USE NON-STANDARD BENDS OF LARGER RADIUS.

IF THE PULLING TENSION OR RADIUS IS SUCH THAT INSTALLATION IS NOT FEASIBLE, GUIDELINES OF PARA 8.06 SHALL BE FOLLOWED.

8.09 - TESTING: SHALL BE IN ACCORDANCE WITH SPECIFICATIONS 3240-504 AND 3240-505.

8.10 - SPlicing & TERMINATIONS.

- (1) ALL 13.2 KV AND SOME 4KV MOTORS ARE PROVIDED WITH "QUICK-DISCONNECT" TYPE CONNECTORS, ELASTIMOLD TYPE 650 LR OR EQUIVALENT
- (2) FOR ALL OTHER 4KV MOTORS, A RAYCHEM THERMOFIT HEAT-SHRINKABLE SPLICE TERMINATION OR EQUIVALENT SHALL BE USED. SEE FIG 1 & 2 SH 14 FOR TYPICAL DETAILS.
- (3) ALL 15 & 5KV CABLE CONNECTIONS TO BUS BARS SHALL BE BY RAYCHEM THERMOFIT HEAT-SHRINKABLE TERMINATION OR EQUIVALENT. SEE FIG 3 SH 14 FOR TYPICAL DETAILS.
- (4) ALL 600V TERMINATIONS SHALL BE INSULATED WITH RAYCHEM TYPE WCSF(N) HEAT SHRINKABLE TUBING OR EQUIVALENT IN REACTOR BUILDING ONLY. TERMINATIONS SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- (5) FOR TERMINATION OF CONTROL, LOW LEVEL, AND INSTRUMENTATION CABLES, CONTROL WIRING DIAGRAMS (CWD'S) SHALL BE USED TO DETERMINE TYPE AND METHOD OF TERMINATION.
- (6) WHERE THE EQUIPMENT LEAD IS AN INSULATED COPPER OR ALUMINUM BAR, SUCH AS THE TERMINAL STUD ON A TRANSFORMER OR IN A SWITCHGEAR COMPARTMENT, THE TERMINAL STUD AND THE INCOMING CABLE LEAD SHALL BE COMPLETELY COVERED WITH INSULATING AND JACKETING TAPE.
- (7) TERMINATION OF SHIELDED 5KV AND 15KV CABLE SHALL BE IN ACCORDANCE WITH FIG'S 4 & 5 SH 14A FOR MOTOR LEADS AND BUS BARS. METALLIC SHIELDING TAPES OF SHIELDED 5KV AND 15KV CABLES ARE TO BE BONDED TOGETHER AND GROUNDED AT BOTH ENDS OF THE CABLE RUN. WHERE ZERO SEQUENCE CT'S ARE USED IN 5KV AND 15KV SYSTEMS, CABLE SHIELDS SHALL BE PULLED TO GROUND THROUGH THE CT, IN ACCORDANCE WITH FIG. 5 SH 11E.
- (8) ALL TERMINATIONS SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- (9) CABLES SHALL BE MARKED AT BOTH ENDS OF THE CABLE RUN. SEE PAR 6.03 AND 6.06 FOR DETAILS.
- (10) SPLICES AND TAPS SHALL NOT BE USED, UNLESS OTHERWISE INDICATED ON CONTRACT DRAWINGS. WHERE REQUIRED, SPLICES AND TAPS SHALL BE MADE ONLY IN JUNCTION BOXES, OUTLET BOXES, CONDUIT BODIES AND EQUIPMENT ENCLOSURES.
- (11) CONDUCTORS, INCLUDING SPLICES AND TAPS, SHALL NOT FILL A CONDUIT BODY TO MORE THAN 75 PERCENT OF ITS CROSS-SECTIONAL AREA AT ANY POINT.

8.11 VERTICAL CABLE SUPPORT

A. ALL CABLES IN VERTICAL CONDUIT RISERS SHALL BE SUPPORTED IN ACCORDANCE WITH TABLE BELOW.

SPACINGS FOR CONDUCTOR SUPPORTS

NO. 18 TO NO. 8	NOT GREATER THAN	100 FEET
NO. 6 TO NO. 0	NOT GREATER THAN	100 FEET
NO. 00 TO NO. 0000	NOT GREATER THAN	80 FEET
211,601 CM TO 350,000 CM	NOT GREATER THAN	60 FEET
350,001 CM TO 500,000 CM	NOT GREATER THAN	50 FEET
500,001 CM TO 750,000 CM	NOT GREATER THAN	40 FEET
ABOVE 750,000 CM	NOT GREATER THAN	35 FEET

EXCEPT THAT IF THE TOTAL VERTICAL RISER IS LESS THAN 25% OF THE SPACING ABOVE, NO CABLE SUPPORT SHALL BE REQUIRED.

- B. CABLES SHALL BE SUPPORTED WHEN REQUIRED AS CLOSED TO THEIR HIGHEST POINT AS PRACTICAL AND WHERE REQUIRED BY MEANS OF KELLUM CONDUIT RISER SUPPORT GRIP OR APPROVED EQUAL.
- C. A PULL SLEEVE OR PULL BOX MAY BE USED TO ATTACH THE CABLE GRIP WHERE REQUIRED.

PRC
APERTURE
CARD

DCN-ED-79
INCORPORATED IN REV 3

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4			
3	5-7-82	SP	[Signature]
2	2-17-81	SP	[Signature]
1	8-22-80	EM	[Signature]
REV	DATE	BY	APPROVED

EBASCO SERVICES INCORPORATED	
DIV. ELECT. DR. E.M.	[Signature]
CH. H. CHU	[Signature]
DATE APR 10, 1979	[Signature]

NUCLEAR SAFETY RELATED WPPSS QUALITY CLASS 1, B4G

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
NUCLEAR PROJECTS NO. 3 B 3
GENERAL NOTES, SYMBOLS AND
REFERENCE DRAWINGS

WPPSS-3240
D-5023
REV. 10

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RIDS

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