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REVISIONS: UPDATED LEGAL ACKNOWLEDGEMENT FORM. FD MAR '16

DESIGNED J. AGNOLIN	RECOMMENDED  F. DENNERT	ACCEPTED  G. REIMER	ENGINEER OF RECORD 	NOTICE FROM THE EXECUTIVE VICE PRESIDENT TRANSMISSION AND DISTRIBUTION AND CUSTOMER SERVICE	
DISTRIBUTION STANDARDS 		ISSUED: MAR 2016 REPLACES: MAY 2004 ORIGINALLY ISSUED: NOV 1980		PAGE 1 OF 2	ES43/53/54/55/65 A1-01.01 ^R 4

Scope

This manual is one of a series containing standards for construction of the BC Hydro electrical distribution plant within the service area of BC Hydro. A new distribution plant shall be designed, constructed, owned, operated, maintained and repaired to these standards.

Purpose of Standards

BC Hydro objectives require standardization to:

- a) Ensure uniform safety requirements comply with BC statutes and regulations.
- b) Provide uniform system reliability.
- c) Provide uniform operating practices.
- d) Permit economic bulk purchasing of materials.
- e) Achieve optimum life cycle cost of plant construction.
- f) Effect efficient quality assurance.

Responsibility

The Distribution Standards Department prepares these standards and verifies that specified plant and procedures will perform adequately under all normally expected conditions encountered throughout the province of British Columbia. These standards are approved by Professional Engineers. It is the responsibility of BC Hydro Managers to ensure that the standards are followed unless abnormal conditions are encountered that require variations. These variations should be kept to a minimum and their performance shall be the responsibility of the Professional of Record in charge of the project, who will record and seal the variation based on satisfactory qualifications and experience to do so. As per the latest revision of the BC Hydro Distribution Owner's Engineer Guide, these variations must be accepted by BC Hydro's Owner's Engineer.

Use of Stock Materials

The electrical distribution plant covered by these standards is built using stock materials approved by a Professional Engineer as required by law. The use of non-stock materials for special and unusual situations must be approved by Distribution Standards or the BC Hydro Engineer responsible for the project.

Revisions to Manual

These standards are revised from time to time to improve the safety, performance, workability, cost effectiveness or appearance of the plant. The existing plant built to previous standards need not be updated unless so specifically advised by BC Hydro. When maintenance or other work, such as voltage conversion or conductor change is being done, updating plant to current standards is encouraged.

Mailing Addresses

The manual has been issued to a corporation or firm rather than to an individual. The corporation or firm is responsible for the safekeeping of the manual, and for keeping it current. Changes of address or in number of copies required must be reported promptly.

Suggestions for changes in the manual, or required changes of address may be made on the pre-addressed comment sheet included in the Manual and with each issue of revision.

REVISIONS: UPDATED LEGAL ACKNOWLEDGEMENT FORM. FD MAR '16

DESIGNED J. AGNOLIN	RECOMMENDED  F. DENNERT	ACCEPTED  S. REIMER	ENGINEER OF RECORD  F. U. DENNERT PROFESSIONAL ENGINEER BRITISH COLUMBIA	NOTICE FROM THE EXECUTIVE VICE PRESIDENT TRANSMISSION AND DISTRIBUTION AND CUSTOMER SERVICE		
DISTRIBUTION STANDARDS BC Hydro		ISSUED: MAR 2016 REPLACES: MAY 2004 ORIGINALLY ISSUED: NOV 1980		PAGE 2 OF 2	ES43/53/54/55/65 A1-01.02	R 4



Information Bulletin:

Latest Revisions to Standards for Installation of BC Hydro-Owned Switchgear Inside Customer-Owned Buildings

1.0 Items Covered

- ES54 E6-01 BC Hydro Switchgear Vault in Customer-Owned Building, Single Radial Supply
- ES54 E6-02 BC Hydro Switchgear Vault in Customer-Owned Building, Dual Supply

2.0 Overview

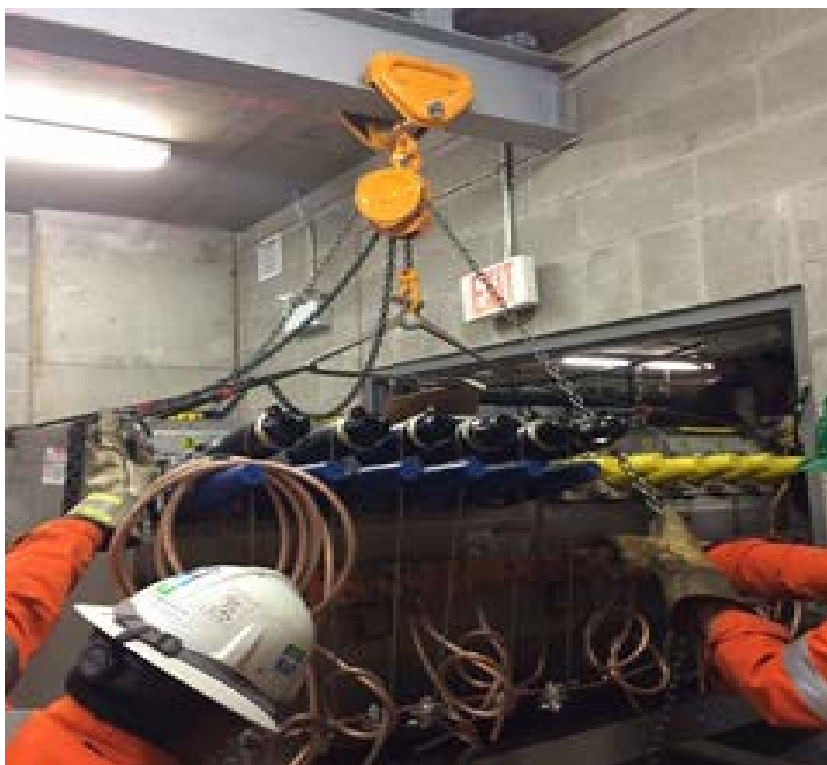


Figure 1 – Inadequate Loading Clearance to Lifting Trolley

This bulletin contains the latest revisions to the above construction standards for the installation of BC Hydro-owned switchgear inside customer-owned buildings. These revisions are the result of BC Hydro crew's field installation experience, as well as the changes in Distribution Planning requiring more 5-way switchgear installations. BC Hydro switchgear installations constitute utility work, according to the BC Electrical Safety Regulation, and are therefore exempt from the BC Safety Authority's jurisdiction.

The following summary describes the latest revisions to the standards:

- a. The switchgear vault height has been increased from 3000 mm to 3300 mm for safer loading clearance between a lifting trolley and the switchgear apparatus. Refer to ES54 E6-01.02 and E6-02.01.
- b. The lifting trolley clearance from the floor of the room has been raised from 2500 mm to 2800 (+/-50 mm), to facilitate safer attachment of the lifting slings and the lifting spreader beams, as demonstrated on Figure 1 above.
- c. The concrete curbs and pre-set concrete inserts previously used for equipment mounting have been deleted, for increased flexibility in positioning the switchgear apparatus and control panels.
- d. The switchgear vault layout shows the relative spacing and dimensions for 5-way switchgear, whereas 4-way switchgear would require a filler plate in the cable well depicted on Figure 2 below.

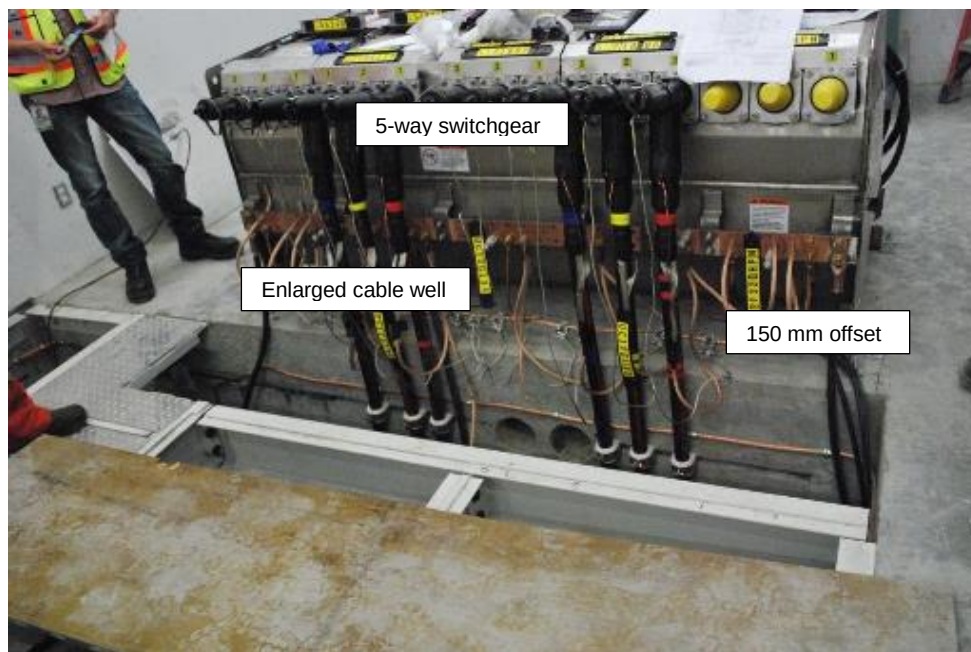


Figure 2 – 5-Way Switchgear with Enlarged Cable Well

- e. Based on the latest changes in Distribution Planning, 5-way switchgear now requires the installation of additional 5"dia (125 mm) duct from the property line, as shown on ES54 E6-01.02 and E6-02.01.
- f. For improved, simplified and more efficient control wiring, BC Hydro now requires a recessed cable trough, 8"W x 4"D (200 mm W x 100 mm D) formed between the switchgear apparatus and the control panel. The exposed portion of the cable

trough shall be covered with a removable checker plate – refer to E6-01.03 and E6-02.02.

- g. A 60 A 120/240 V distribution panel shall be fitted with 2"dia (50 mm) PVC duct, extending to the floor slab and control panel cable trough to facilitate power supply cable connection. For design details, see ES54 E6-01.04 and E6-02.03.
- h. BC Hydro shall complete bonding of all cable pull pit support beams. The customer shall install all flexible bonding jumpers for the removable checker plates, ensuring safety equipotential grounding inside the switchgear vault. For grounding details, refer to ES54 E6-01.05.
- i. For a dual supply switchgear vault, BC Hydro requires the installation of four short duct sleeves in the curb wall separating the two cable pits. These sleeves shall be 5"dia (125 mm) and may be used for temporary cross-wiring between the two supply services - see ES54 E6-02.04.

3.0 Action

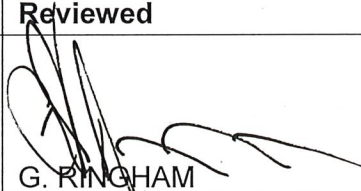
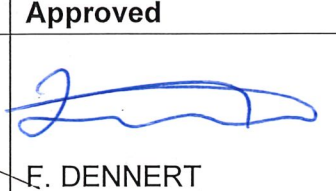
These newly revised standards, ES54 E6-01 R2 and ES54 E6-02 R1, shall be in effect immediately. All new customer building designs shall follow these latest revised standards.

For approved design or pending design of new customer-owned buildings already in progress, contact the BC Hydro Designer or Representative for the area.

4.0 Distribution Standards Contact

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5.0 Approval

Recommended		Reviewed		Approved	
					
M. KELVIN		G. RINGHAM		E. DENNERT	
Date:	2017-08-15	Date:	2017-08-15	Date:	2017-08-15