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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

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.

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Information Bulletin:

Revised ES54 Section H Duct and Section W Construction Specification Standards

1.0 Items Covered

- ES54 H0-02 Duct General Notes
- ES54 H2-04 Concrete Encasement Minimum Reinforcing Details
- ES54 W1-05 Construction Materials Concrete

2.0 Overview

ES54 H0-02 has been revised to provide clarity regarding the terms elbow and bend:

- a. *Types of Duct* section changed to provide clarity and guidance for situations where RTRC ducts and Schedule 40 ducts may be considered.
- b. *Concrete Encasement* note (d) “duct bends” has been removed to avoid redundant terminology between bends and elbows.
- c. *Root Deflector* section has been renamed to *Separation between Ducts and Tree Roots* to provide better guidance for use of root deflectors or concrete encasement to protect BC Hydro infrastructure in proximity to trees.

ES54 H2-04 has been revised to clarify when concrete encasement is required for duct banks and crossings:

- a. Notes have been rewritten to specify requirements the professional of record shall consider.
- b. Concrete encasement reinforcing details 4x4 duct configuration figure has been removed to avoid misinterpretation of the requirements.

ES54 W1-05 has been revised to accommodate the adoption of general use limestone (GUL) cement in response to the reduced supply of general use (GU) cement:

- a. *Portland Cement* section revised to remove specifications 1, 2, and 3 as GUL cement will become a more widely used product
- b. Aggregate sulfate content specifications have been added. Recycled aggregate will not be accepted.

3.0 Action

The previous standard revisions are in effect until April 30, 2023 and can still be found in FileNet through the Engineering Standards search page. The new revised standards have been posted for information and awareness only. The new revisions become effective May 1, 2023. In-flight designs approved in Passport on or before April 30, 2023 may proceed with the previous (pre May 1, 2023) standard revisions. New designs and designs not approved before May 1, 2023 shall comply with the new revisions. Unique circumstances may exist making it impossible to follow these timelines. Please work with local design management and Distribution Engineering to determine an appropriate solution.

Designers and Engineers

Designers and engineers shall reference the latest revisions of ES54 H0-02, H2-04, and W1-05 when designing ducts for underground residential distribution (URD), underground distribution (UD), and feeder installations.

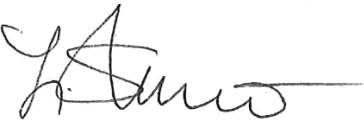
Civil Inspectors

Civil inspectors shall reference the latest revisions of ES54 H0-02, H2-04 and W1-05 when conducting reviews of site-specific conditions. The revised specifications for concrete encasement and cement types may impact the acceptable solutions and procedures that have been previously practiced.

4.0 Distribution Standards Contact

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5.0 Approval

Recommended		Reviewed		Approved	
					
J. Yang		L. Stevanovic		H. Giesbrecht	
Date:	2023-04-24	Date:	2023-04-24	Date:	2023-04-24