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1. PURPOSE

- 1.1. This is Chapter 3 of the ACCC® Conductor Installation Guidelines, covering installation training. The Guidelines consist of nine chapters, each written to stand alone to address specific installation subjects. Taken together, the nine chapters comprise the entire Installation Guidelines:
 - 1.1.1. Chapter 1 — General Installation Guidelines
 - 1.1.2. Chapter 2 — Safety
 - 1.1.3. Chapter 3 — Training
 - 1.1.4. Chapter 4 — Reel Handling and Storage
 - 1.1.5. Chapter 5 — Site Considerations and Set-ups
 - 1.1.6. Chapter 6 — Required Equipment
 - 1.1.7. Chapter 7 — Stringing / Pulling
 - 1.1.8. Chapter 8 — Terminations, Sagging, and Suspending
 - 1.1.9. Chapter 9 — Maintenance and Repair
- 1.2. The purpose of the Guidelines is to provide experienced transmission engineers, project managers and planners, field inspectors, utility personnel and linemen with guidelines, recommendations and requirements necessary to safely and successfully install ACCC® composite-core bare overhead conductor and accessories. This document is an overview and guideline covering what to do but not necessarily how to do it. It is not intended to serve as a more intensive training manual or act as a substitute for proper training, required personnel skill sets, or industry experience.

2. SCOPE

- 2.1. These guidelines apply to equipment and techniques required to successfully install all sizes of ACCC® conductor.
- 2.2. These guidelines include additional equipment and techniques that are required for Ultra-Low Sag (ULS) ACCC® conductor sizes.

3. DEFINITIONS

- 3.1. ACCC® is a registered trademark of CTC Global, and is defined as Aluminum Conductor Composite Core, stranded with Aluminum 1350-O (where O stands for fully annealed) or Aluminum 1350-O Z-wire trapezoidal wire.
- 3.2. ULS – Ultra Low Sag. Conductor that has a stronger core and is used for heavy ice conditions along with long spans across rivers, etc.

4. ASSOCIATED DOCUMENTS

- 4.1. IEEE Standard 524™ Guide to the Installation of Overhead Transmission Line Conductors.
- 4.2. OSHA Electric Power Generation, Transmission, and Distribution Standards 1910.269 and 1926.950 or ISO 29.240.20 or local country equivalent.
- 4.3. The remaining Chapters of the Installation Guidelines
- 4.4. CTC Installation Training Slides and accompanying Script (F-750-066)

5. TRAINING

- 5.1. CTC provides an ACCC® specific Installation Training course which consists of approximately 2 to 4 hours classroom instruction, hands-on deadend / splice assembly instruction, and up to 6 days of on-the-job training, for all new projects with previously untrained crews.
- 5.2. Attendance by installation supervisor(s) should be mandatory. CTC strongly recommends that all line personnel, safety inspectors, and construction crew(s) attend the ACCC® Installation Training Course prior to the start of installation. Should a change in crew supervision occur during the course of construction, ACCC® installation training should be repeated before that crew starts work.
- 5.3. Improper installation equipment or methods could result in line damage or failure and are not covered by the CTC Warranty.
- 5.4. An appropriate classroom equipped with digital projector is needed for the classroom instruction portions of the ACCC® Training Course.
- 5.5. A language interpreter may be needed for presentation of training, both classroom and hands-on.
- 5.6. The training course concludes with a written test. Graduates are issued an ACCC® Installation Training Course Diploma.

6. INSTALLATION TRAINING SYLLABUS**6.1. The 3 DIFFERENCES (Classroom only, practical demonstration)****6.2. Conductor Reel Handling (Classroom and Field)**

- 6.2.1. Proper lifting and handling of the new conductor reels
- 6.2.2. Preparation of new reel for stringing

6.3. Site and Equipment Setup (Classroom only)

- 6.3.1. Puller
- 6.3.2. Tensioner
- 6.3.3. Payout Reel

6.4. Conductor Handling (Classroom and Field)

- 6.4.1. Installing first and last structure sheaves
- 6.4.2. Installing tangent structure sheaves along with installing larger or tandem sheaves on structures with over a 30-degree angle
- 6.4.3. Pulling the conductor up to the first structure and attaching to old conductor

6.5. Stringing and Sagging (Classroom and Field)

- 6.5.1. Loading the conductor onto the reel stand
- 6.5.2. Stringing the conductor through the tensioner
- 6.5.3. Core Retainer (Bug) Installation
- 6.5.4. Installing and anchoring wire mesh sock clamp onto conductor, installing swivel and preparing to pull the conductor
- 6.5.5. Paying close attention to any bad angles or long spans
- 6.5.6. Sagging (Cutting Conductor to Length)

6.6. Terminations

- 6.6.1. Installing Deadends and Splices (Classroom and Field)
 - 6.6.1.1. Threaded Collet Hardware
 - 6.6.1.2. Compression Collet Hardware
 - 6.6.1.3. Sleeve Compression
- 6.6.2. Installing Conductor Suspensions and Dampers (Classroom and Field)
- 6.6.3. Installing Terminal Pads and “T” Taps (Classroom and Field)
- 6.6.4. Installing Ancillary Hardware

6.7. Equipment Requirements (Classroom and Field)

- 6.7.1. Sheave Sizes and Types including special rigging for exceptional stringing conditions
- 6.7.2. Core Retainers (Bugs)
- 6.7.3. Presses and Dies
- 6.7.4. Clamps
- 6.7.5. Socks (wire mesh) and Banding
- 6.7.6. Equipment Readiness Review

6.8. The 10 DON'Ts (Classroom and Field)

REVISION HISTORY

REV.	CHANGE REQUEST #	DATE
A	121515-1	15 Dec 2015
B	3.1 Corrected "1350-0" to "1350-O" 5.1 Added "..., and up to 6 days of on-the-job training for all new projects with previously untrained crews." 5.5 Deleted "CTC training is available in English and Spanish only at this time." Deleted 5.7 and 5.8 Changed copyright footer to 2017	7 July 2017