

*Southern California Edison*  
**WODUP A.13-10-020**

**DATA REQUEST SET A.13-10-020 WODUP ED-SCE-05**

**To:** ENERGY DIVISION  
**Prepared by:** Scott Lacy, P.E.  
**Title:** Project Engineer  
**Dated:** 05/23/2014

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**Question ALT-4:**

**Alternatives**

**Background for ALT-1 through ALT-4.** The analysis of potential alternatives to the Proposed Project may need to consider increasing the length of tower spans. This could be necessary for alternatives that aim to avoid or reduce environmental impacts at specific tower sites or reduce the overall number of new structures. One way to accomplish greater distances between tower spans, without increasing tower heights, could involve switching from the proposed double-bundle 1590 kcmil Aluminum Conductor Steel-Reinforced (ACSR) to an alternative conductor. Please note that these requests follow-up our Data Request PD-6 (addressing blow-out distance limitations that force the project to have reduced span lengths in Segment 1) we now request this information for all segments of the project.

**ALT-4** Please provide a Sag/Ten table for the following conductors that may be suitable alternatives, under their design conditions: (1) 795 Drake/ACSS (Aluminum Conductor, Steel Supported) conductor with an ampacity of 1,662 amps; and (2) 795 Drake/ACCR (Aluminum Conductor Composite Reinforced) conductor with an ampacity of 1,653 amps.

**Response to Question ALT-4:**

The requested Sag/Ten charts are attached to this response.

These charts are based on the following parameters:

- Calculated Ampacity of 1,663 Amps @ 392F (DRAKE ACSS) per conductor (or 3,326A for double-bundled conductors)
- SCE Standard 220kV WB Tower (Ht=113ft/ Bottom Conductor Attachment Ht=59ft)
- Vertical Ground Clearance = 32ft
- Extreme Wind = 18PSF @ 40F/70F
  
- Calculated Ampacity of 1,691 Amps @ 410F (DRAKE ACCR) per conductor (or 3,382A for double-bundled conductors)
- SCE Standard 220kV WB Tower (Ht=113ft/ Bottom Conductor Attachment Ht=59ft)
- Vertical Ground Clearance = 32ft
- Extreme Wind = 18PSF @ 40F/70F

Please note that the calculated ampacity of these bundled conductors is approximately 1,000A less than the proposed 1590 ACSR conductor (4,340A vs 3,326A or 3,382A), and would therefore significantly limit the transfer capability of the WOD corridor if they were selected.



6/12/2014

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Data Request No.5 ALT-4
795 Drake/ACSS
(Aluminum Conductor Steel Supported)

Conductor: 795 Kcmil 26/ 7 Stranding ACSS "DRAKE/ACSS"

Area = 0.7264 Sq. in Diameter = 1.108 in Weight = 1.093 lb/ft RTS = 25900 lb
Data from Chart No. 3-945
English Units
Limits and Outputs in Average Tensions.

Span = 925.0 Feet Calif Light Load Zone
Creep is NOT CONSIDERED

Table with columns: Design Points (Temp, Ice, Wind, K, Weight), Final (Sag, Tension), Initial (Sag, Tension). Rows show data for various temperatures and conditions.

\* Design Condition

! Exceeds NESC Bare Wire Limit

Certain information such as the data, opinions or recommendations set forth herein or given by Southwire representatives, is intended as a general guide only. Each installation of overhead electrical conductor, underground electrical conductor, and/or conductor accessories involves special conditions creating problems that require individual solutions and, therefore, the recipient of this information has the sole responsibility in connection with the use of the information. Southwire does not assume any liability in connection with such information.

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Data Request No.5 ALT-4
795 Drake/ACCR
(Aluminum Conductor Composite Reinforced)

Conductor: 824.0 Kcmil 26/19 Stranding ACCR "DRAKE"

Area = 0.7510 Sq. in Diameter = 1.128 in Weight = 0.930 lb/ft RTS = 32200 lb

Data from Chart No. 4-1300

English Units

Limits and Outputs in Average Tensions.

Span = 950.0 Feet

Calif Light Load Zone

Creep is NOT CONSIDERED

Rolled Rod

Table with columns: Design Points (Temp, Ice, Wind, K, Weight), Final (Sag, Tension), and Initial (Sag, Tension). Rows show various temperature and wind conditions.

\* Design Condition

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