

Southern California Edison
WODUP A.13-10-020

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

To: ENERGY DIVISION
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Title: Project Engineer
Dated: 05/23/2014

Question ALT-3:

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-3 Please provide a chart of the Sag/Tension (Sag/Ten) characteristics for the Proposed Project's double-bundle 1590 kcmil ACSR conductor.

Response to Question ALT-3:

The requested Sag/Ten chart is attached to this response.

This chart is based on the following parameters:

- Calculated Ampacity of 2,170 Amps @ 275F (LAPWING ACSR) per conductor (or 4,340A 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



6/12/2014

SCE

Data Request No.5 ALT-3
1590 kcmil ACSR Conductor

Conductor: 1590.0 Kcmil 45/ 7 Stranding ACSR "LAPWING"

Area = 1.3350 Sq. in Diameter = 1.504 in Weight = 1.792 lb/ft RTS = 42200 lb
Data from Chart No. 1-1019

English Units
Limits and Outputs in Average Tensions.

Span = 710.0 Feet Calif Light Load Zone
Creep is NOT CONSIDERED Rolled Rod

Design Points				Final			Initial	
Temp °F	Ice in	Wind psf	K	Weight lb/ft	Sag Ft	Tension lb	Sag Ft	Tension lb
25.0	0.00	8.00	0.00	2.053	12.92	10024	12.61	10276
40.0	0.00	18.00	0.00	2.881	15.16	12000	15.16	12000*
25.0	0.00	0.00	0.00	1.792	12.39	9125	11.89	9506
60.0	0.00	0.00	0.00	1.792	14.50	7801	13.66	8281
104.0	0.00	0.00	0.00	1.792	17.01	6654	15.88	7125
275.0	0.00	0.00	0.00	1.792	25.05	4529	23.58	4811

* Design Condition

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