

Southern California Edison
MESA PTC A.15-03-003

DATA REQUEST SET A.15-03-003 ED-SCE-01 Follow Up

To: ENERGY DIVISION
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Dated: 07/08/2015

Question 18-01:

Coloring of LSTs

Reference: PEA, 4.1 Aesthetics, p.4.1-64, footnote 2

In response to Q.18 SCE states that "The use of any stain or powder coating applied to an exterior surface that may be used to modify the color of steel for LSTs prior to tower assembly would result in the same electrical impedance concern as does the use of paint." However, commercially available darkening stains have been used successfully on galvanized transmission structures. Provide information to support your claim that these stains would result in electrical impedance. In addition, provide examples (photos, locations) of the application of the modified galvanizing process resulting in darker shading of steel described in the response to Q.18.

Response to Question 18-01:

The electrical impedance concern referenced in the original response would be applicable if a darkening stain, paint, or powder-coating were applied to the individual lattice steel members prior to tower assembly. This is a commonly understood electrical principle and is the reason why the National Electrical Code recommends that all grounding connections be "cleaned and free of paint" prior to making the connection.

There is not an electrical continuity concern if a stain or paint is applied to these types of connections after they are made (e.g., after the lattice steel tower is completely assembled). However, it is typically a significant burden, both at the time of initial tower assembly and over the long-term operational lifetime, to incorporate any post-construction stain or paint onto lattice steel towers. The labor involved is extensive, particularly if using a brush technique, and the probability of 'overspray' if using a spray technique can be an environmental concern. For these reasons, post-assembly painting or staining of lattice steel towers is a very uncommon practice within the electrical utility industry.

At least two recent SCE projects have incorporated at least some use of a modified galvanizing process to result in a darker shading for lattice tower steel, namely the TRTP and DCR projects, both of which were requested by representatives of the National Forest Service for use in designated visual areas.

The attached photo provides a sample of the potential color differences, showing SCE's

“standard order” dulled galvanizing version on the left, the darkened version in the center, and a galvanized un-dulled sample on the right. (Be advised that the darkening process is not exact, so the finished product may be slightly different than what is shown here.) Unfortunately, SCE does not currently have ready access to photos of these towers after they were built. If this is still needed by the CPUC for this analysis, SCE can provide them in approximately 2-3 weeks.