

Update on ETT West Texas Arms Project June 2019

The purpose of this document is to provide additional insight to the currently posted outage schedule for the ETT CREZ area outages. These outages are in ERCOT's Outage Scheduler software and have not deviated significantly from the previously submitted outages discussed in 2017 through the ERCOT stakeholder process. Due to contract and confidentiality agreements, no commercial terms or confidential information will be answered by ETT.

1. Progress on the repair work

- We are in the clean-up phase of a drone inspection program for the tangent towers on ETT's CREZ lines. The drone program will allow for inspection of lines while they are energized in this cycle and in the future. As defective arms are identified, shorter outages for arm change outs will be required.
- Scaffolding is being deployed for weld repairs for flanges on towers, which improves weld quality, safety and productivity levels. This program has been in place since late August.



- Several process improvements have been accomplished by our contract crews so that our productivity numbers have improved from the upper 30% range to the upper 40% range. Wind outs, rain, and mud continue to be the biggest problems.

2. Other solutions to expedite work considered

ETT has considered doing "hot work" on one side of the line while the other side is de-energized but due to safety issues, extended outage requirements and impact on land owners, we have decided not to pursue this option.

3. How has forecast accuracy been compared to actual times where workers were winded out?

Our forecast accuracy is in the lower 90% range for predicting “wind out days.”

4. Current Statistics

Tangent Structures

Total Tangent Structures Inspected: 2,096 (100% complete)

Total Arms: 16,768

Arms Replaced or Accepted: 15,958 (95.2%)

Arms to be Replaced: 810

Other Structures

Total Other Structures: 647

Structures Complete: 110 (17%)

Total Arms: 5176

Arms Replaced: 1174 (22.7%)

Total Pole Flange Joints: 986 (x2 for top/bottom)

Total Pole Flange Joints Inspected: 471 (47.8% inspected)

Total Base Flanges: 199

Total Base Flanges Inspected: 199 (100% are inspected)

5. What is the standard for considering a repair to be needed and then the repair being acceptable?

Answer: The weld must be in compliance with AWS D1.1 specifications. This is determined by a combination of magnetic particle testing, ultra-sound testing, and visual inspection. Meeting AWS D1.1 ensures the structural integrity of the weld. Any weld not in compliance is then repaired using a qualified weld procedure according to AWS D1.1 specifications. The repaired weld is then subjected to the same requirements as in the original inspection. In layman’s terms, all cracks and any imperfection internal to the weld must be cut out and re-welded to AWS standards.

6. Outage Requests

ETT has entered a series of daily outages to allow for the possibility of a return to service without impacting the entire outage request. In the event of adverse weather or long periods of “wind outs,” ETT anticipates returning lines back into service without impact to our requested outage schedule with ERCOT for continuing work during these periods.