PROJECT PROFILE

Pipeline Suspension Bridges

In-Depth Condition Assessment | U.S. Gulf Coast

CLIENT

Confidential

BACKGROUND

The subject pipeline suspension bridges carry a natural gas pipeline across two major rivers. Each bridge contains two primary suspension cables with vertical drapes that are supported by the top of a structural steel tower on each side of the river. The bridges also contain two suspension cables with horizontal drapes on each side of the pipeline that are supported by structural steel trusses (wind booms) extending laterally from the main portion of the towers. The structural steel towers are approximately one hundred feet tall above grade and 112 feet wide, including both wind booms.

WJE was retained by a major U.S. energy company to perform an in-depth condition assessment of two pipeline suspension bridges. The objective of the assessment was to better understand the condition of the structural steel towers and develop prioritized repair recommendations with an associated Engineer's Opinion of Probable Cost (EOPC). The remote locations of the tower and overall height of the towers required a unique approach for the structural assessment.

SOLUTION

WJE's in-depth assessment included a visual assessment and a coating evaluation. The coating evaluation included coating thickness measurements and coating adhesion measurements to better understand the coating system.

To avoid requiring boom lifts to be mobilized to the remote locations of the towers, we utilized industrial rope access techniques to perform the assessment of the towers. We utilized Society of Professional Rope Access Technicians on our Difficult Access Team (DAT) to safely perform the assessment. Using industrial rope access techniques also allowed for a more in-depth and comprehensive assessment when compared to access from a boom lift or an assessment done only by drone. Prior to performing the assessment, our DAT and safety groups developed a detailed work plan outlining the assessment steps, potential hazards, and hazard controls.

Upon competition of the assessment, we provided the client a detailed report which included keynoted electronic drawings identifying areas of corrosion and coating related distress. We also provided a prioritized list of conceptual repair recommendations with an EOPC.

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS