BURNS McDONNELL

CASE STUDY / **UPGRADING PIPELINE INFRASTRUCTURE**

EXTENSIVE PLANNING TO PERFORM WORK IN EIGHT STATES HELPS MEET DEADLINES

Construction deadlines were being challenged by delays in engineering and design. To get back on track, the pipeline company turned to an experienced team for process optimization yielding a systematic approach to scoping, estimating and designing multiple projects.

EXPERIENCE IN EXECUTING MASSIVE PROGRAMS BUILDS TRUST

When volumes of work tested the client's capacity, collaboration with specialists gave confidence and provided support.

PROJECT STATS

CLIENT
Williams Companies, Transcontinental Gas Line (Transco)

LOCATION
Texas to New York

COMPLETION DATE
January 2020

20K
MAN-HOURS OF WORK

100
PROJECTS DESIGNED

60
PROJECTS ESTIMATED

CHALLENGE

Williams Transco is one of the largest and oldest gas pipeline companies in the U.S. It transports approximately 15% of the nation's natural gas through its 10,000 miles of pipeline system from South Texas to New York City. To remain competitive and enhance its services, the company initiated a multiyear program designed to retrofit the pipeline system, enable a bidirectional flow, improve reliability and increase integrity management requirements for safety. A traditional engineering approach in which each project is designed and executed individually did not support the volume and schedules required. Additionally, project cost estimates remained inconsistent, which caused budget impacts.

Based on past successful engagement and our experience executing engineer-procure-construct (EPC) projects, Williams onboarded Burns & McDonnell to help get work back on schedule.

SOLUTION

Within a week of hiring, we deployed four teams comprising engineers, construction specialists and estimators in the eight states where the work was to be carried out. Each team's project engineer served as a single point of contact for Williams. The teams performed construction estimating, engineering design and constructability assessments for projects including valve replacements, pig trap replacement and modifications, and hydrostatic testing. Our scope included all mechanical, civil and electrical design calculations and drawings, necessary permit drawings and required land documents.

Williams needed to mobilize quickly to scope potential projects for construction within the program. We organized estimating teams to visit the sites with owner personnel and provided construction estimates within four weeks of project initialization. During design, we worked closely with owner personnel to understand existing conditions and piping configurations. We were able to convert many sites with two-dimensional drawings and survey to 3D piping models for future maintenance purposes.

We designed 100 projects and estimated 60 of those, preparing them concurrently for construction in a six-month time frame. The condensed schedule for construction required projects to be designed and procured simultaneously. With the wide geographic territory, projects were designed for a range of terrains and topography as well as local permitting agencies that each required unique considerations throughout engineering and construction phases.

RESULTS

Williams involved us in this program at the peak of its workload. Our collaboration helped Williams scope and design more than 100 projects and meet its estimated deadline. It also resulted in reduced cost for individual projects and streamlined the design time.

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