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# CCL Quantified Additional Costs & Delay Damages

## Stacey Reservoir Dam

### Lawrence, Kansas

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Lacy Steel Company, Inc. a steel manufacturer, had a \$1.1 million contract with Brown & Root, the General Contractor, to fabricate six radial spillway gates for the Colorado River Municipal Authority Stacy Reservoir Dam Project. CCL was retained by CCL to quantify additional fabrication costs and delay damages resulting from change orders on the projects that changed the design of radial spillway gates.



Lacy Steel was to fabricate six radial spillway stop gates including skin plates, backing ribs, rub plates, girders, trunnion arms and yokes, bearings and pins, seal angles, rubber seals and gate rollers. At the outset of preparing shop drawings for fabrication Lacy Steel identified errors in the structural drawings that delayed fabrication. Lacy received direction from the engineer to prepare calculations and re-dimensioning of required changes for fabrication. The engineer reviewed Lacy's calculations and issued redesigned drawings for the gates.

CCL prepared a CPM schedule analysis showing the activities and steps involved in fabrication of the gates at Lacy Steel Company's plant. Manufacturing areas included fabrication of trunnions and machining of the trunnions, fabrication of arms and machining of the arms, fabrication of leafs, set-ups for gate assemblies, and adjustments for bracings and leaf fit. CCL then measured the impact of changes and delays on the fabrication steps using CPM schedule analysis methods.

CCL quantified the schedule impacts and labor inefficiencies due to delays and resequencing of fabrication and determined additional labor costs due to changes in the design. CCL calculated extended overhead costs. The additional cost categories were determined to be shop labor, additional design and engineering costs, additional costs of gate set-up, and extended overhead.

CCL's findings including schedule analysis, diagrams, and photos of the fabrication process were summarized in a claim report submitted to Brown & Root.



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