

BETTER PEOPLE



BETTER BUSINESS

CREATIVE CONTRACTING STRATEGY FOR PROJECT
MANAGERS
A CASE STUDY

April 11, 2019



Creative Contracting Strategy for Project Managers – A Case Study

- The presentation will provide a summary of the types of Contracting Strategies commonly used for Construction Projects and provide one “*Creative Contracting Strategy*” that was successfully used for Electric Utility Substation Construction Projects



Upstream

Midstream

Downstream

**Industrial
and Marine
& Terminal**

Utilities



PROJECT DELIVERY METHODS OVERVIEW

CONTRACTING STRATEGY SELECTION



A Contracting Strategy is selected based on the desired Project Delivery method for a Construction Project.

- Project delivery is a comprehensive process wherein designers, constructors, and various consultants can provide design and construction services to deliver a built project to the Owner based on Stakeholder Goals & Objectives.

It is important define Project Issues and Goals & Objectives, prior to selecting a Project Delivery Method and Contracting Strategy. Typical Issues include:

- Shortening Project Duration by Overlapping Design & Construction to Reduce Bid Time
- Provide Flexibility for Changes during Construction
- Allowing Contractor to Participate in the Design Process
- Provide Incentives for the Contractor to Save Money
- Provide Alternative Financing Methods

Common Delivery Methods Include the following:

- General Contracting
- Design & Build
- Engineer, Procure, Construct (EPC)
- Agency Construction Management
- Program Management



The General Contracting (GC)

- **The most commonly used method based on separate contracts for designer and general contractor. Fixed Lump-Sum Contracts awarded based on competitive bidding.** The Risk is spread equally between both parties. The advantages of this method is that the Owner has complete control over the design, single contractor to deal with, and the total price is known.



Design and Build (DB)

- This approach the **Owner contracts with a single organization to do both the design and construction**. Typically better suited for large complex engineering projects when early delivery of project is desired and technical complexity requires a single point of responsibility.
- Similar to EPC – Engineer, Procure, & Construct, but with **Single Company accepting Financial Responsibility for Project reimbursed with Milestone Payments**



Agency Construction Management (CM)

- In Agency CM the **construction entity is typically retained at the same time as the design team and provides continuous services to the owner without taking on financial risks for the execution of the actual construction.** Selected based on qualifications, and not low bid price, the Agency CM has no vested interest in the project and maintains a fiduciary duty to act on the owner's behalf .



Program Management (PM)

- Used when **Owner needs more external management for projects which are complicated or have multiphase building program.** The Program Manager engaged in the early decision-making stage and the guides the entire design/construction process.

CREATIVE CONTRACTING STRATEGY

A CASE STUDY

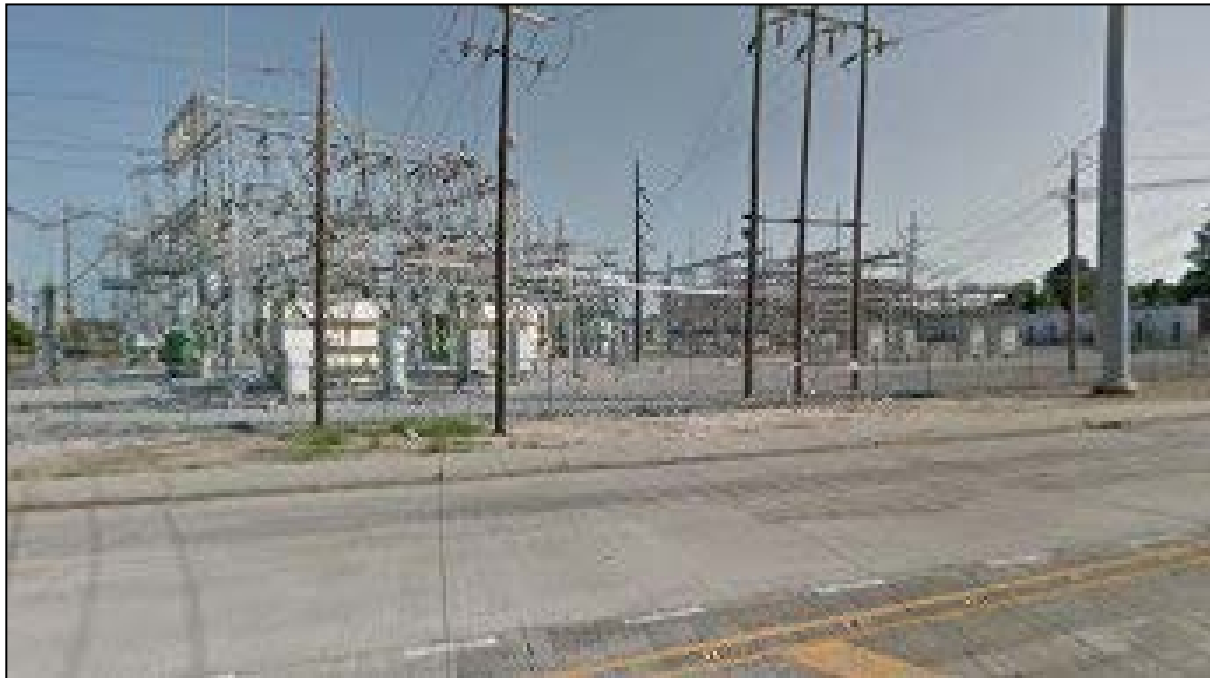


Case Study Overview

- Project Scope
- Projects Opportunities & Challenges
- Standard Project Delivery Method
- Creative Contracting Strategy
- Final Financial Results
- Lessons Learned
- Project Photographs

Harelson Substation Scope

- Breaker failure of Harelson 230 kV breaker 9470
- Resolution Add 2nd Bus Tie Breaker



Milestone Dates

- Kick-Off
03/14/2017
- PEP Approved
07/14/2017
- ISD 06/01/2018

ELECTRIC UTILITY SUBSTATION PROJECTS



Plaquemine Substation Scope

- Correct the overload condition on 69kV line & provide a distribution source to serve the area from Plaquemine 115kV substation.
- Resolution Replace T-1 Transformer and rebuild 3 Distribution Lines



Milestone Dates

- Kick-Off
01/19/2017
- PEP Approved
06/23/2017
- ISD 06/01/2018

Champagne Substation Scope

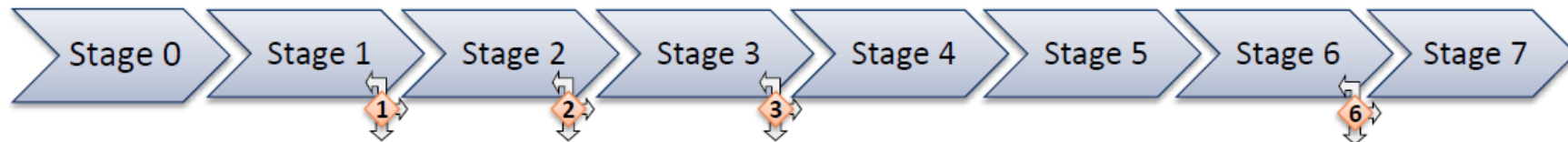
- Low Voltage on 69kV Substations out of Champagne
- Resolution Install an 11MVar Capacitor Bank



Milestone Dates

- Kick-Off
03/29/2017
- PEP Approved
08/14/2017
- ISD 06/01/2018

STANDARD PROJECT DELIVERY MODEL



Gate Objective	Est. business op/need and whether project should be executed to address the need.	Determine feasibility of project options.	Selection of scope that best achieves business goals.	Well defined scope of work & execution plan that meets business goals.	Achieve detailed project design to ensure readiness for construction.	Reach substantial project completion within the budget and schedule.	Reach steady-state operations Turnover to operations.	Resolve all issues and close the project.
Gate Decision	Is the business need legitimate?	Do any feasible options exist?	Is the best option still viable after scoping?	Is the best option still viable given refined estimate?	Is there any reason the project should not be built?	Is the project ready to begin operation?	Is the project ready to be turned over?	Any outstanding issues?

Model Challenges

- All Projects Initiated & Executed Independently
- Stage Gate Approvals Limit Early Activity Start Dates
 - Project Contracts Bid & Awarded Independently
- The traditional process flow of Design, Bid, and Construct would push the Plaquemine Project ISD to 9/26/18. (3-1/2 Months Late)

Summary Statement

- THE PROPOSED CONTRACTING STRATEGY IS BID THE CONSTRUCTION SERVICES SCOPES OF WORK FOR **THREE (3) PROJECTS IN A PORTFOLIO OF PROJECTS** WHICH INCLUDE:
 - F1PPUX4899-Plaquemine Replace T1
 - F1PPU51141-Harelson Install 230kV Breaker
 - F1PPU51077 Champagne Add 14MVar CapBank.
- THESE PROJECTS WERE **SELECTED DUE TO THE GEOGRAPHICAL LOCATION OF THE SUBSTATIONS AND THE NEED TO EXECUTE CONSTRUCTION SERVICES IN THE SPRING OF 2018.**



Business Case Statement

- **THE BUSINESS DRIVERS FOR THIS CONTRACTING STRATEGY ARE THE SCHEDULE CONSTRAINTS FOR THE PLAQUEMINE REPLACE T1 PROJECT WHICH HAS AN ISD OF JUNE 1, 2018 AND THE OPPORTUNITY TO LEVERAGE THE SMALLER DOLLAR SCOPES OF WORK FOR THE HARELSON INSTALL 230KV AND CHAMPAGNE ADD 14VAR CAPBANK PROJECTS.**
- **THE CONTRACTING STRATEGY GOAL IS TO LEVERAGE THE MONETARY VALUE AND THE SEQUENCING OF THE CONSTRUCTION ACTIVITIES TO ENHANCE COSTS AND SCHEDULE ASSURANCES AND TO SECURE THE NEEDED CONTRACTOR RESOURCES DURING WHAT IS EXPECTED TO BE A VERY BUSY PERIOD FOR CONSTRUCTION SERVICES IN SOUTH LOUISIANA.**

Sourcing Strategy

- THE CONTRACTING STRATEGY PLAN WILL SOURCE AND **SELECT CONSTRUCTION CONTRACTOR** FOR EACH OF THE FOLLOWING SCOPES OF WORK BASED ON **THE MOST COMPETITIVE PROJECT BUDGETARY CLASS 3 COST ESTIMATE (+/- 15% ACCURACY)** AND OTHER REQUIREMENTS DEFINED IN THE REQUEST FOR PROPOSAL (RFP):
 - Site & Foundation
 - Steel & Electrical
 - RELAY
- **ALLOWS AWARD BASED ON CONTRACTOR BUDGETARY ESTIMATE WITHIN AN AGREED UPON TOLERANCE**

Fixed Firm Fee

- Upon the completion of the Detailed Design Package for each project the Successful Contractor will have the opportunity to **review and adjust their original Project Budgetary Class 3 Cost Estimate (+/- 15% Accuracy) proposal**. The original proposal price will be honored if the revised price is within the +/- 15% tolerance - no further adjustments will be required.
- In the event the **revised price is greater than +15%, the Owner reserves the right consider an alternative bid** and negotiate pricing based on the original bid event. It is noted that **changes in scope during the Detailed Design Phase will not count against the +15% accuracy**.
- In the event the **revised price is less than -15%, the Owner reserves the right to request a price discount**. It is noted that changes in scope during the Detailed Design Phase will not influence the -15% accuracy.

Scope of Construction Services

- The dollar values for the Construction Services Scopes of Work based on the Project Scoping Class 3 Estimates are illustrated in the table below:

	Site & Foundation Labor & Materials	Steel & Electrical Labor & Misc. Materials	Relay Labor & Misc. Materials	Totals
Plaquemine Replace T1	\$200,000 (Excluding Helical Piles)	\$455,000	\$155,000	\$810,000
Harelson Install 230 kV Breaker	\$75,000	\$85,000	\$98,000	\$258,000
Champagne Add 14MVar CapBank	\$290,000	\$130,000	\$69,000	\$489,000
Totals	\$565,000	\$670,000	\$322,000	\$1,557,000

PRELIMINARY BID RESULTS – SITE & FOUNDATION PACKAGE



Bidders	Tech. Score	Com. Score	Total Score	Quoted Costs	Class 3 Est. Costs	% Estimated Savings
Bidder No. 1	5.20	6.90	6.05	\$698,676	\$565,000	+21%
Bidder No. 2	5.30	5.85	5.58	\$823,220	\$565,000	+31%
Bidder No. 3	2.90	1.95	2.43	\$980,140	\$565,000	+42%
Bidder No. 4	4.70	6.75	5.73	\$549,077	\$565,000	-3%

Preferred Bid



PRELIMINARY BID RESULTS – STEEL & ELECTRICAL PACKAGE



Bidders	Tech. Score	Com. Score	Total Score	Quoted Costs	Class 3 Est. Costs	% Estimated Savings
Bidder No. 1	4.05	6.30	5.18	\$491,606	\$670,000	-27%
Bidder No. 2	0.00	0.00	0.00	\$0	\$0	No Bid
Bidder No. 3	4.70	6.75	5.73	\$384,915	\$670,000	-42%
Bidder No. 4	2.15	6.15	4.15	\$408,114	\$670,000	-39%

Preferred Bid



PRELIMINARY BID RESULTS – RELAY PACKAGE



Bidders	Tech. Score	Com. Score	Total Score	Quoted Costs	Class 3 Est. Costs	% Estimated Savings
Bidder No. 1	0.00	0.00	0.00	\$0	\$0	No Bid
Bidder No. 2	5.75	2.25	4.00	\$607,320	\$322,000	+47%
Bidder No. 3	5.50	7.05	6.28	\$287,128	\$322,000	-11%
Bidder No. 4	0.00	0.00	0.00	\$0	\$0	No Bid

Preferred Bid



PRELIMINARY BID RESULTS – PRELIMINARY OVERVIEW



Portfolio
Preliminary
Results
=(+/- 15%)

Projects	Site & Foundation	Steel & Electrical	Relay	Total Quoted Costs	Class 3 Est. Costs	% Estimated Savings
Plaquemine	\$236,502	\$384,915	\$157,310	\$778,727	\$810,000	-4%
Harelson	\$29,525	\$18,615	\$52,426	\$100,566	\$258,000	-61%
Champagne	\$283,050	\$42,000	\$77,392	\$402,442	\$489,000	-18%
				\$1,281,735	\$1,557,000	-18%

Portfolio
Final Price
Results

Projects	Site & Foundation	Steel & Electrical	Relay	Total Quoted Costs	Class 3 Est. Costs	% Estimated Savings
Plaquemine	\$245,797	\$324,300	\$157,310	\$727,407	\$810,000	-10%
Harelson	\$47,381	\$18,615	\$52,426	\$100,566	\$258,000	-61%
Champagne	\$291,150	\$42,000	\$77,392	\$410,542	\$489,000	-16%
				\$1,230,415	\$1,557,000	-21%

Bidder Reluctance

- This Pricing Methodology was new to Bidders and some were reluctant to participate or thought it would fail all together

Preliminary Site & Foundation Information

- Limited design information for Site & Foundation Work generated a number of Bid Clarification Questions – Pre-Design Work could have saved time and confusion

Bid Pricing Template

- Bid Pricing Template did not align with Class 3 Estimate Categories creating additional work to compare bid result to baseline



Change Order Management

- Field Change Orders are to be Expected, the challenge was to separate Actual Scope Changes from Budgetary Estimate Mistakes

Shared Facilities & Equipment

- The Bidding and Award of three Scopes of Work to multiple Contractors eliminated the use of common facilities such as tool storage, portable toilet and the sharing of equipment such as man lifts and fork lifts

Bundled Work Benefited Contractors

- The Bundling of Work allowed Contractors to Efficiently Schedule Resources and Mobilizations



Schedule & Cost Success

- The Contracting Strategy was successful in improving the Plaquemine Schedule and generated cost savings for all three (3) projects
- Two of the Three Projects were put in Service ahead of Schedule
- All Three Projects realized a Cost Savings for Construction Services

HARELSON SUBSTATION – PROJECT PHOTOS



HARELSON SUBSTATION – PROJECT PHOTOS



HARELSON SUBSTATION – PROJECT PHOTOS



CHAMPAGNE SUBSTATION – PROJECT PHOTOS



CHAMPAGNE SUBSTATION – PROJECT PHOTOS



CHAMPAGNE SUBSTATION – PROJECT PHOTOS



CHAMPAGNE SUBSTATION – PROJECT PHOTOS



CHAMPAGNE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



PLAQUEMINE SUBSTATION – PROJECT PHOTOS



CONTACT INFORMATION

MICHAEL J. VAVASSEUR , PMP // SENIOR PROJECT MANAGER

MVAVASSEUR@EDG.NET // 504-455-0858

