OUTSOURCING SUBSTATION & TRANSMISSION LINE ENGINEERING AND DESIGN WORK

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AGENDA

• Why use consultants?
• Forming the team
• Evolution of the Team
• Partnership
• Workload
• Technology
WHY USE CONSULTANTS?
WHY USE CONSULTANTS?

• For expertise you do not have internally
• For additional resources
• For special projects/tasks
• For an "outside" view
• "Instant" availability
• No "long term" employee commitment
SOME HISTORY

• In the 1990s workload outpaced our internal staff
  – Our engineering/design staff had been allowed to recede in numbers and experience
  – Downturn in generation projects allowed the company to invest in more transmission assets
  – End of life issues grew in number and complexity
  – Use of consultants impacted other projects

1992 – Consultant Project Team (CPT) formed
  – Dedicated individual engineers and designers for substation projects
  – Added other stakeholders (Construction, Testing, PM)
  – Expanded to include T-line Projects and resources
SO WHAT DID WE CONCLUDE IN 1993?

• You need a long-term approach
• You need well-documented Procedures & Standards
• You need to communicate your expectations
• There are three critical aspects for successfully working with consultants:
  Scoping
  Scoping
  Scoping
  Scoping
  Scoping
WHAT MAKES US DIFFERENT?

DEVELOPMENT OF A DEDICATED TEAM

2010 – formalization of the Engineering & Design Outsourcing Department
  – Advent of the Consultant Management Team (CMT)

• Growth driven by more Transmission initiatives
  – Wind generation
  – CAPX2020
  – Steel for Fuel
EVOLUTION OF THE TEAM
HOW HAS THE TEAM EVOLVED?

2011

– Team expanded to encompass all operating companies in Xcel Energy
– Added another manager
– Defaulted to a North/South alignment
– Separate teams for CMT internal engineers North and South
– Consultants tended to dedicate resources on this North/South alignment
– A single set of rules (CMT Guidelines)

2020

– **North Team**: Manager, 4 Engineers (sponsors), 3 support staff
– **South Team**: Manager, 8 Engineers (sponsors), 2 support staff
– Approximately 750 on-boarded consultants
Evolution of CMT
CURRENT STED ORGANIZATION MIX

- Internal Employees
- Consulting Resource
THE CMT MODEL

- Team consists of experienced project engineers capable of making correct and quick decisions
- Engage the consultant early in scope development of the project, help lead them through internal processes for the life of the project
- Develop project ownership by the consultant project team
- Support staff to assist with:
  - Contract Processing
  - Invoicing
  - Technology
  - On-board/Off-board
MUST HAVE DETAILED PROCESSES FOR:

- Technical direction/ standards
- Contract administration
- Process control
- Training
- “QA/QC”
- Performance review/improvement
CMT PROJECT GUIDELINES

Established to ensure consistency of the delivered packages that are prepared by different consultants for Xcel Energy.

Cover various aspects of project implementation from recognition of need, initial contracting setup and preliminary scope development through detailed design and engineering support of construction.
The main points of the guidelines are:

- Establish performance measurement criteria and methods
- Clarify work assignments with specific processes
- Set up proper expectations for both the consultant and internal support staff
- Manage administrative details such as on-boarding for security/electronic access, contract releases, invoicing/payment
- Develop and train on specific procedures required to perform the work
The ultimate goal of managing consultant-based projects is:

- Ensuring that projects are implemented in accordance with Xcel Energy standards, current industry practices

- Projects result in well-built, trouble-free facilities which operate reliably and safely

- All projects completed by consultants shall be done in such a way that the end product or construction package prepared by consultants is indistinguishable from those prepared by Xcel Energy in-house staff
TECHNOLOGY

Connectivity:
- On-boarded consultant resources access virtual machines allowing access to internal systems/programs
  - Historically issued company laptops to on-boarded consultants
- Connectivity is integral in the success of CMT

Communication:
- CMT SharePoint website
- Monthly Update emails
- Quarterly Newsletter
- Web/Video Conferencing
THE PARTNERSHIP
A TRUE PARTNERSHIP

The purpose of the Consultant Management Team (CMT) is to strengthen the partnership between substation and transmission line engineering & design consultants and Xcel Energy staff, and guide the efforts of consultants in the development and execution of capital substation and transmission line projects assigned to the CMT.
BUILDING THE PARTNERSHIP

- Integrate the firms into the organization
- Provide access to internal systems and project locations
- Include on internal stakeholder meetings
- Continuous Improvement calls
- Open communication
THE WORKLOAD
Capital Workload Split

Internal Engineering  CMT
CMT WORKLOAD

2020

• 1,253 Active Projects
• Just under $1 Billion in active capital projects

Future

• Continue to utilize consultant resources to balance workload as it ramps up and down
EVOLUTION ON PROJECT PORTFOLIO

• **Historically:**
  – Large greenfield substations and transmission lines
  – Filled in the gap of the experienced engineers internally
  – Somewhat easy assignments

• **Today:**
  – Still executing large greenfield substations and transmission lines
  – However have seen an increase in smaller, more complicated projects
  – Compressed schedules
  – Heavily involved in project development, estimating
KEYS TO SUCCESS

• Increased Resources
• Expanded capabilities
• Standards and Processes
• Dedicated Staff
• Partnership
QUESTIONS?