



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

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)

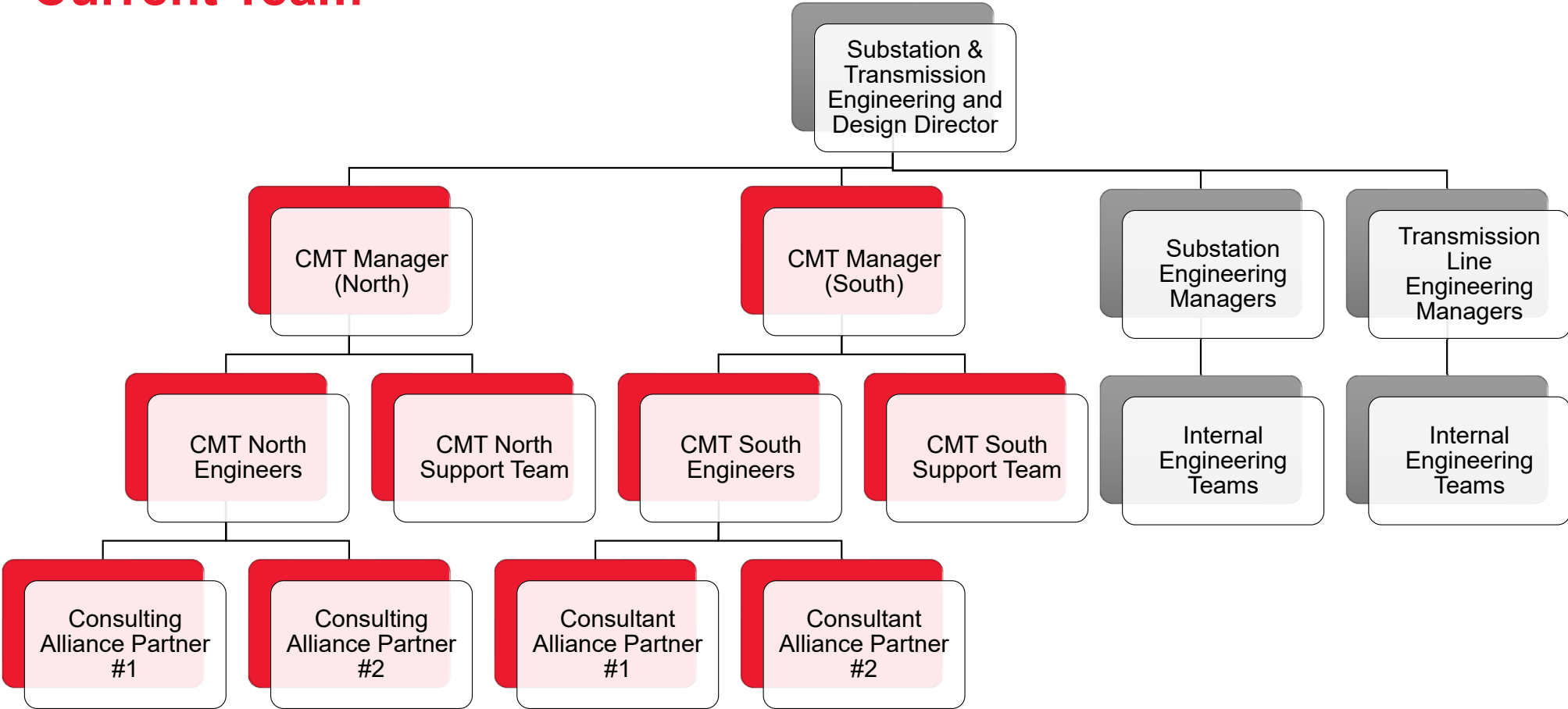
2020

- **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

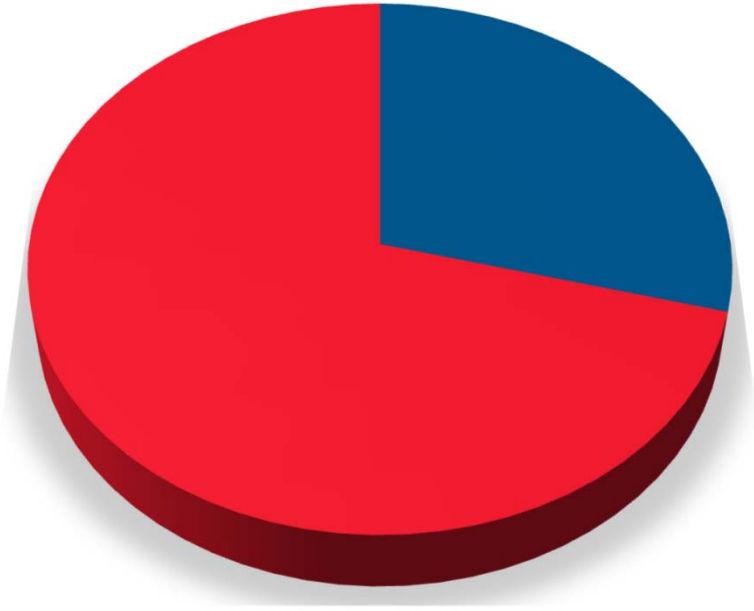


Current Team



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

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

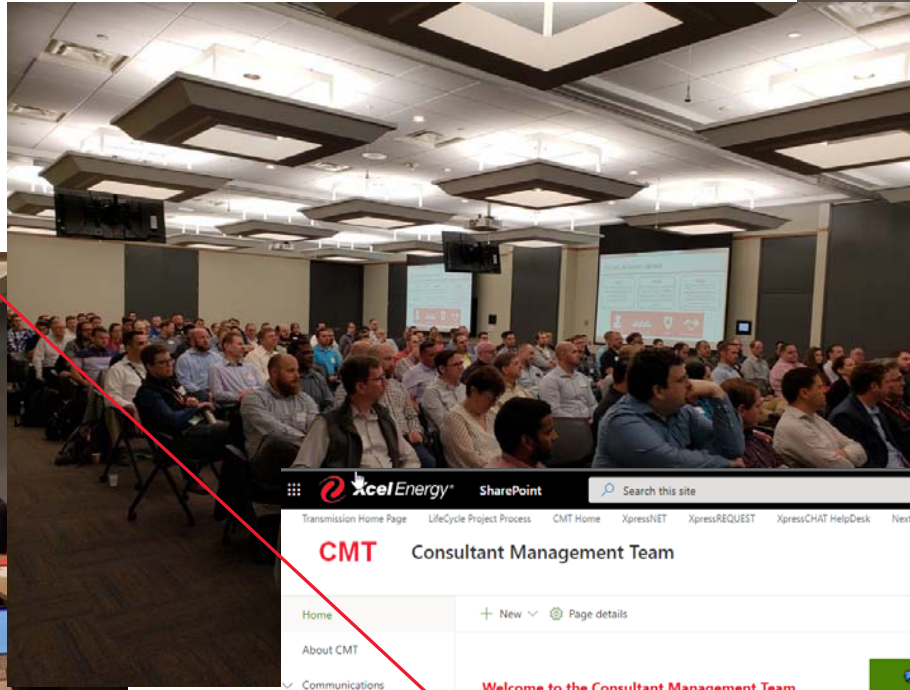
Communication:

- 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.



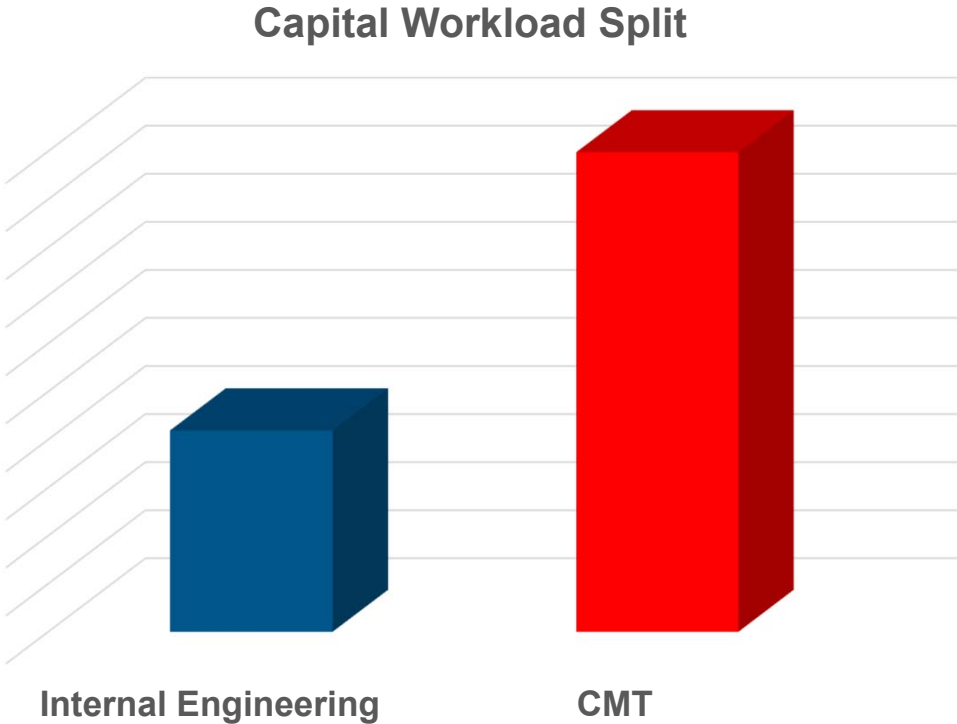
The screenshot shows the Xcel Energy SharePoint site for the Consultant Management Team (CMT). The page title is "CMT Consultant Management Team". The navigation menu includes: Home, About CMT, Communications, Contacts, Performance, Photos, Project Info Updates, Resources, Summit, and Training. The main content area features a welcome message: "Welcome to the Consultant Management Team SharePoint site" followed by the text: "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." To the right of the text are several green tiles with icons: "Connect Remotely", "Directory - WFH", "Consultant Directory", "CMT Guidebook", "Project Updates", "Forms & Templates", "Training", "Value Added Engineering", "Org Chart - North", and "Org Chart - South". The page is published on 9/17/2020.

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

CMT WORKLOAD



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?

