

# EPCM Services

## First 90 Days - Discussion

04 Feb. 2011

Boundless Energy



# Purpose

- Provide update of EPCM Agreement status
- Provide general overview of what will happen in the first ~ 90 days
- Provide general overview of SNC / PMT org.
- Facilitate discussion / alignment
- Identify gaps / actions and actionees

# Agreement Execution & Mobilization

- Agreement currently with Gilbert and Ed for signing – SNC have signed off
- Assuming signing in the next few days, SNC will commence staffing up next week.
- SNC will deploy corporate Project Set-up teams

# Staging - Agreement is “Staged”

Staging – term itself related to commercial aspects

- Stage 1 – ~ first 90 days
  - at the end of Stage 1, the extent of the Services for Stage 2 based on the defined project will be clearly defined.
- The Consultant’s management plans to be developed (next slide) – workshops to be held to establish alignment between PMT and SNC, per Agreement stipulations.
- The engineering work required to maintain the overall project schedule must be executed to meet the overall Milestone Schedule.
- Staffing / mobilization will occur
- Office facilities will be established.

Section	Document Name	Submittal Date 'Not later than...'
1	Execution Plan (Outline Level)	AA + 45 days
1	Full Execution Plan	AA + 90 days
2	Organization Charts	AA + 30 days
3	Technical Interface Management Plan	AA + 90 days
4	Project Health and Safety Management Plan	AA + 60 days
4	Site Health and Safety Plans	120 days (4)
5	Project Quality Plan	AA + 90 days
6	Overall Purchasing Plan	AA + 90 days (3)
6	Individual Purchasing Plans	As Required
6	Overall Contracting Plan	AA + 90 days
6	Individual Contracting Plans	As Required
6	Materials Management Plan	AA + 120 days
6	Logistics Plan	AA + 120 days
7	Cost Management Plan	AA + 90 days
7	Detailed Cost Estimate for the Stage 2 Services [	AA + 90 days
8	Project Change Management Plan	AA + 60 days
9	Change Control Plan	AA + 30 days
10	Risk Management Plan	AA + 90 days
11	Review Plan for Company Documentation	AA + 60 days
11	Design Verification Plan	AA + 60 days
11	Engineering Management Plan	AA + 60 days
11	Operations and Maintenance Plan	AA + 365
11	Design - Construction Management Plan	AA + 60 days
12	Construction Management Plan (Preliminary)	AA + 120 days
12	Site Security and Access Control Plan	120 days (4)
13	Project Completions Philosophy	AA + 300 days
14	Invoicing and Payment Plan	AA + 30 days
16	Information Management Plan	AA + 30 days
16	Central Document Register (initial)	AA + 60 days
17	Regulatory Compliance Plan	AA + 90 days
17	Environmental Management Plan (EMP)	AA + 180 days
17	Project Environmental Protection Plan (EPP)	120 days (4)
17	Site Specific Environmental Protection Plans	30 days (4)
17	Rehabilitation Plans	AA + 365
18	Schedule Development and Control Plan	AA + 45 days
18	Project Control Schedule	AA + 60 days

# Milestone Schedule

<u>Milestone</u>	<u>Description</u>	<u>Target Date</u>
1.	Award EPCM Agreement for Project	Effective Date
2.	Consultant's Gate 3 Key Deliverables Complete	December 15, 2011
3.	Ready to Commence Bulk Excavation Works (Powerhouse)	July 1, 2012
4.	Muskrat Falls to Churchill Falls Transmission Interconnect – First 345kV HVac Transmission Line Ready for Power Transmission	August 31, 2014
5.	First Power from Muskrat Falls (via Churchill Falls)	October 31, 2016
6.	Labrador-Island Transmission System Ready for Power Transmission	January 30, 2017
7.	Full Power	May 31, 2017

# Staging (cont'd.)

- Stage 2 – end of Stage 1 to Gate 3
  - Consultant's Gate 3 Key Deliverables completed and approved by Nalcor
  - clear definition of Stage 3 effort will be documented
- Stage 3 – end of Stage 2 to completion of balance of Services

# Offices

- SNC will work in Topsail Rd. BAE/Newplan office until ~ mid-April with approx. 40 persons
- 2 –locations on Torbay Rd. ~ April / May availability
  - Toulon Bldg.
  - Convergys
- “Who goes where” to be flushed out
- Action: Logistics team needs to be put in place to organize and execute Nalcor’s requirements



# Correspondence Protocols

- to be flushed out
- Folders on “R” drive to be set-up
- Mail
- ACTION – EPCM Contract Coordinator - C. Hewitt

# Kick-offs Meetings / Workshops

Consultant shall conduct a series of workshops with Company to establish alignment on Consultant's plans. During these workshops, Consultant shall overview its own methods and procedures for performing, monitoring, and appraising the provision of Services and the overall implementation of the Project Work. Consultant shall participate with Company in identification of any gaps, and shall incorporate results from gap analyses.

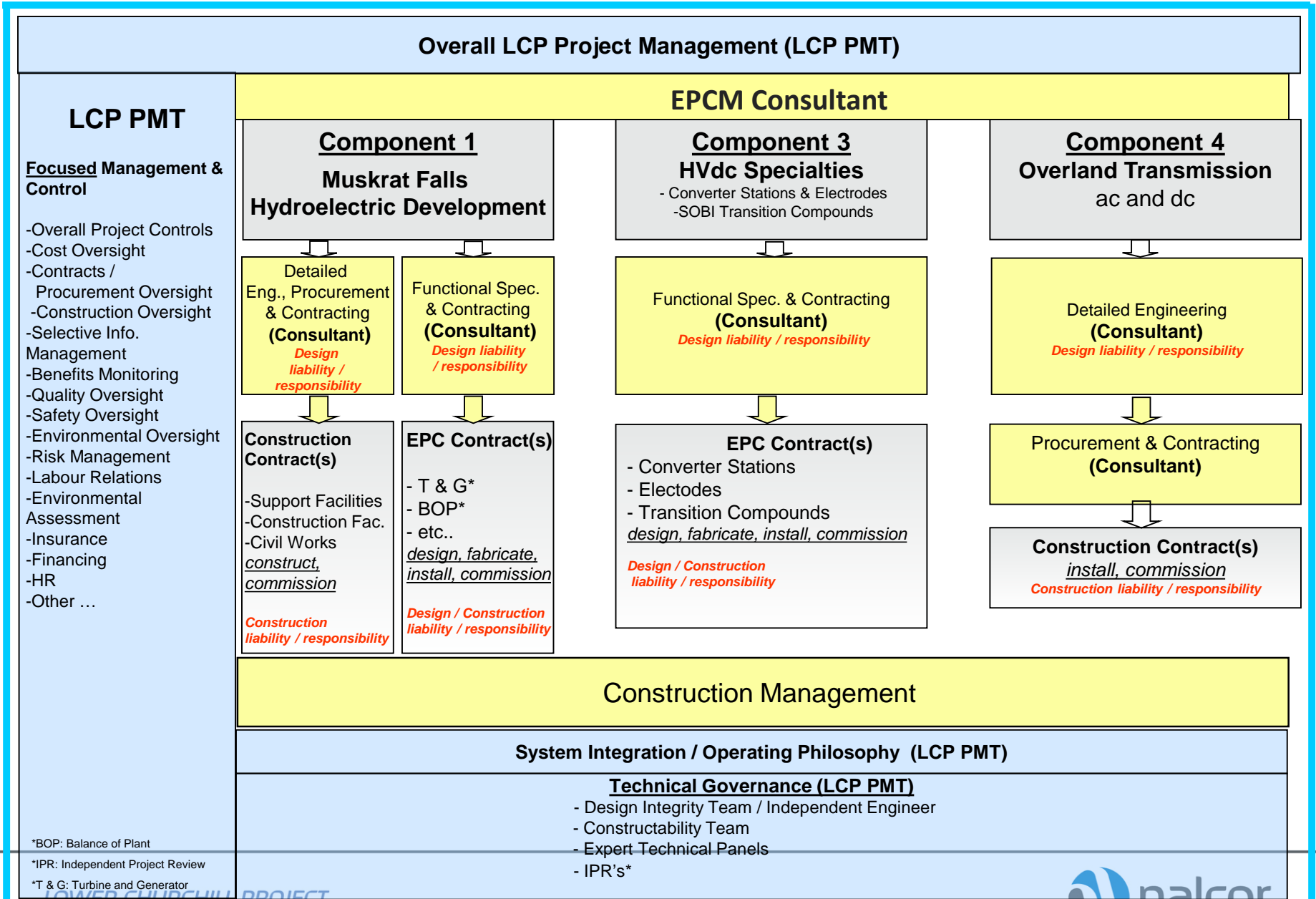
These workshops shall be held as early as possible after Agreement Award but must be completed by the end of Stage 1.

# Kick-offs Meetings / Workshops

- Initial Kick-off meeting potentially next week
  - limited participants from both parties
  - purpose to introduce players and discuss formal kick-off and workshops
- Main Kick-off / workshops
  - potentially starting week of 14<sup>th</sup> or 21<sup>st</sup>
  - potentially at an offsite location
  - SNC to organize ??
  - details to be finalized

# Organization & Staffing

# Company / EPCM Responsibilities: Interface / Engagement Diagram

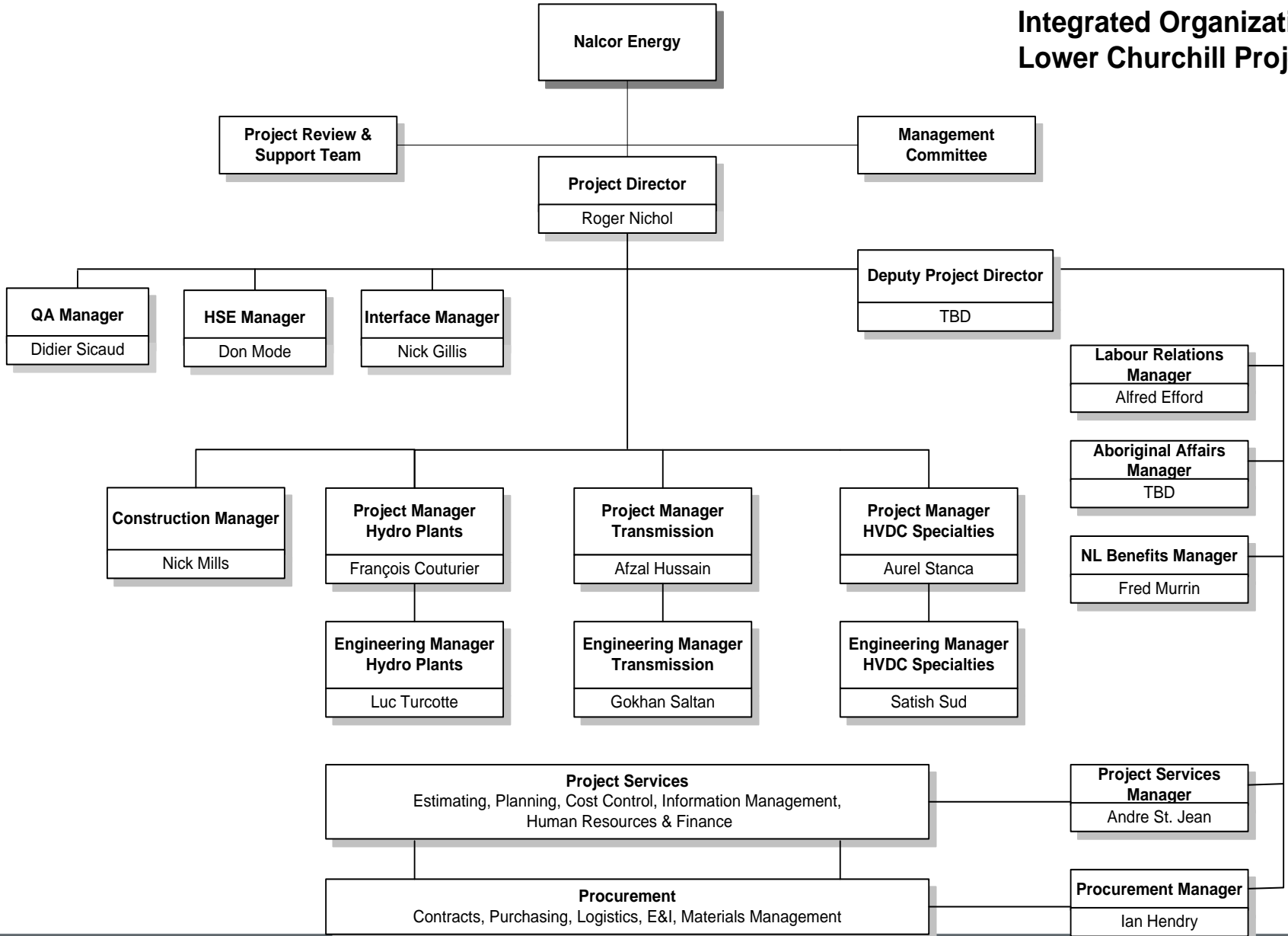


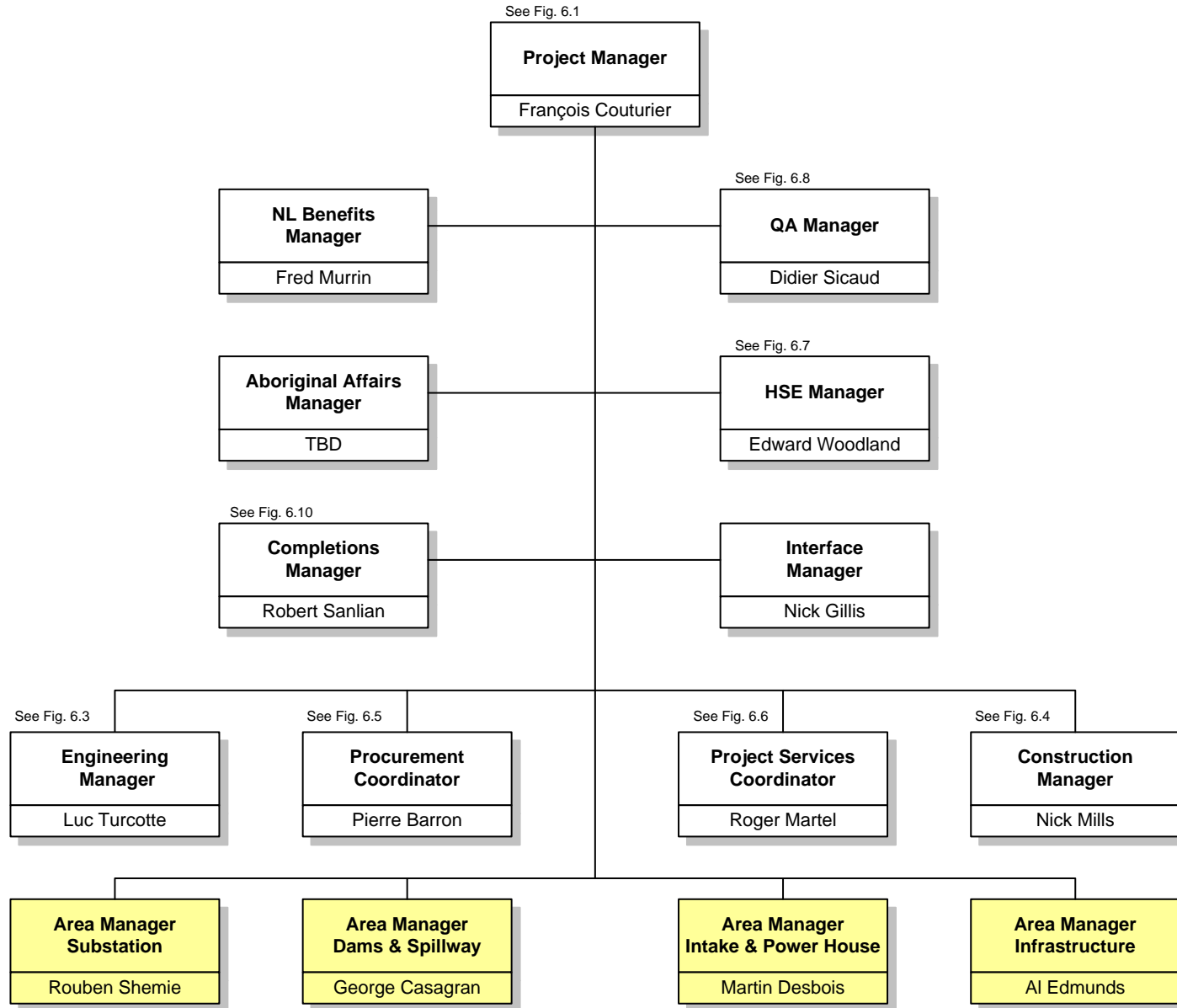
\*BOP: Balance of Plant

\*IPR: Independent Project Review

\*T & G: Turbine and Generator

**Integrated Organization  
Lower Churchill Project**





See Fig. 6.2

**Engineering Manager**  
Luc Turcotte

See Fig. 6.8

**QA Lead**  
Ken Morrison

Site Engineering Organization

**Area Manager Substation**  
Rouben Shemie

**Area Manager Dams & Spillway**  
George Casagran

**Area Engineer Intake & Power House**  
Martin Desbois

**Area Manager Infrastructure**  
Al Edmunds

**Lead Engineer Mechanical**  
Ugo Velicogna

- Turbines
- Gates
- Balance of Plant
- Elevators/Cranes
- Bldg. Services

**Lead Engineer Electrical**  
Robert Sanlian

- Generators
- Balance of Plant
- Building Services
- Substation Design
- Control & Protection
- Auxillary Systems
- System Studies

**Lead Engineer Hydraulics**  
Michel Tremblay

- Diversion
- Hydraulic Passages
- Spillway

**Lead Engineers Structural**  
Steel: Todd Smith  
Concrete: Fazal Rahman

- Power House/Intake
- RCC Dams & Spillway
- Transitions
- Bulkhead Dam
- Substation
- Architectural Finishes

**Lead Engineer Geotechnical /Geology**  
Mohammed Afif

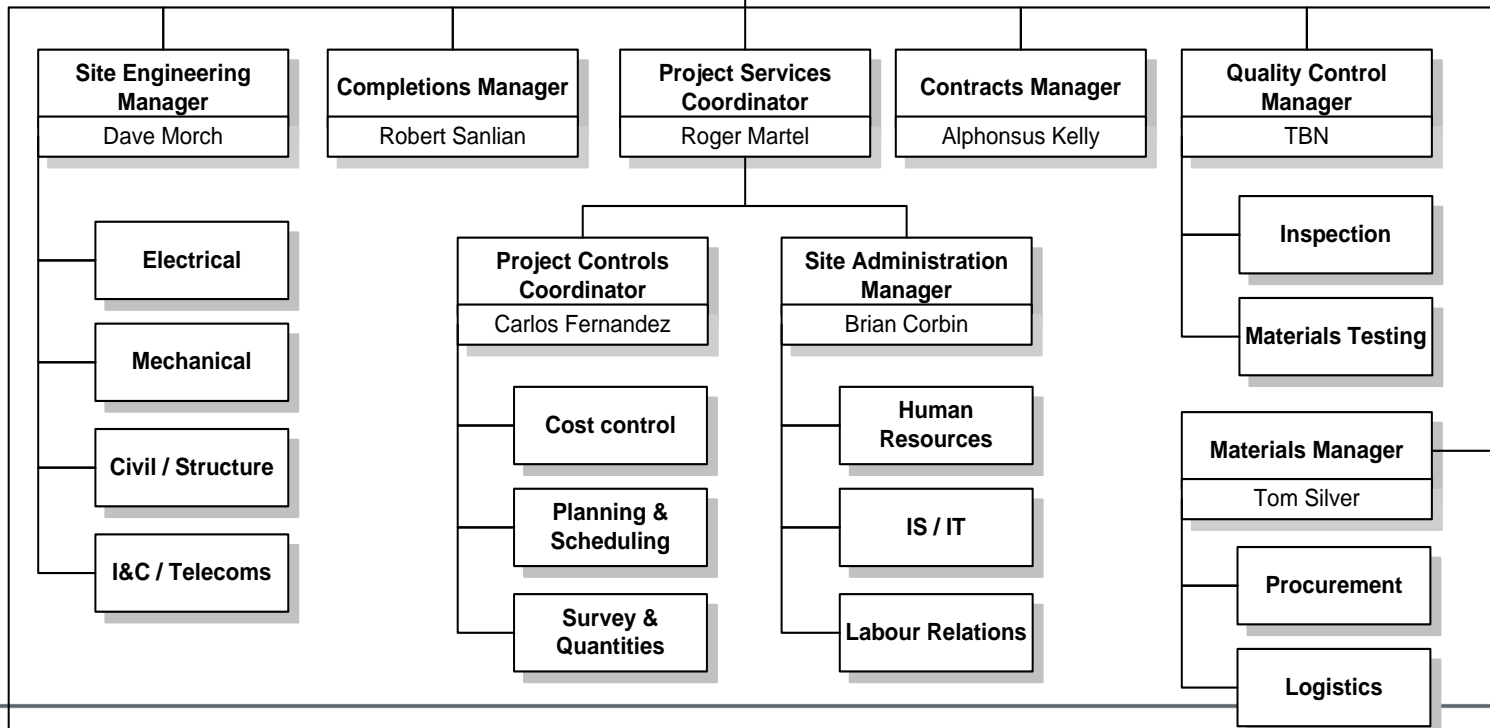
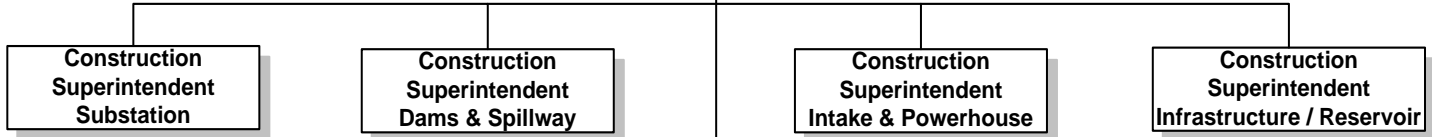
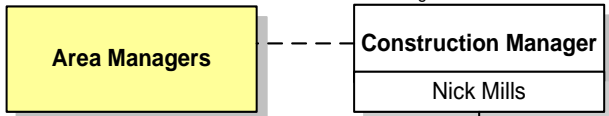
- Excavations
- Foundations
- Slope Stability
- Coffer Dams

**Lead Engineer Services**  
Terry McCarthy

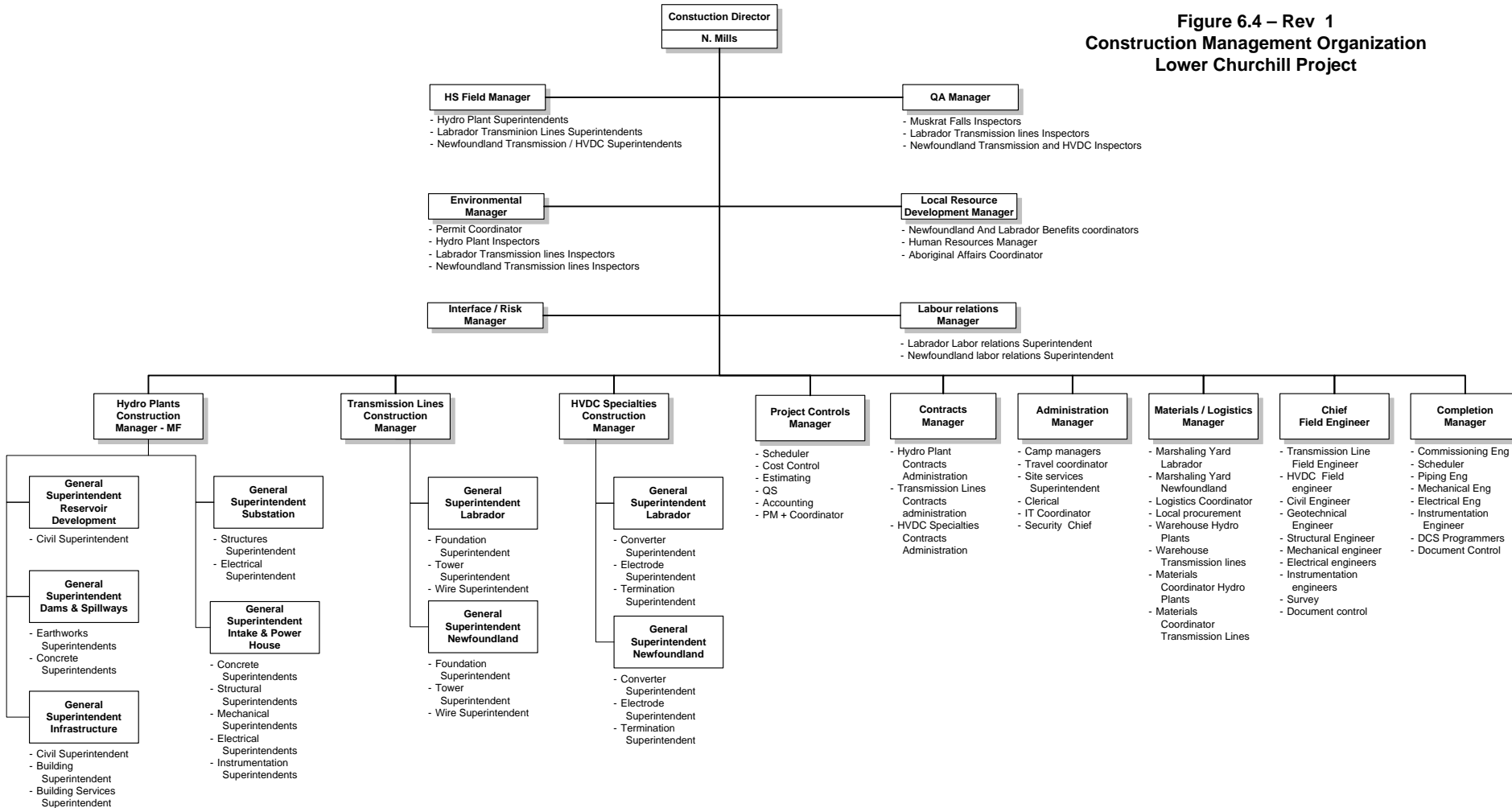
- Roads & Parking
- Laydown Areas
- Site Buildings
- Temporary Power
- Water & Sewage
- Reservoir Clearing
- Site Services

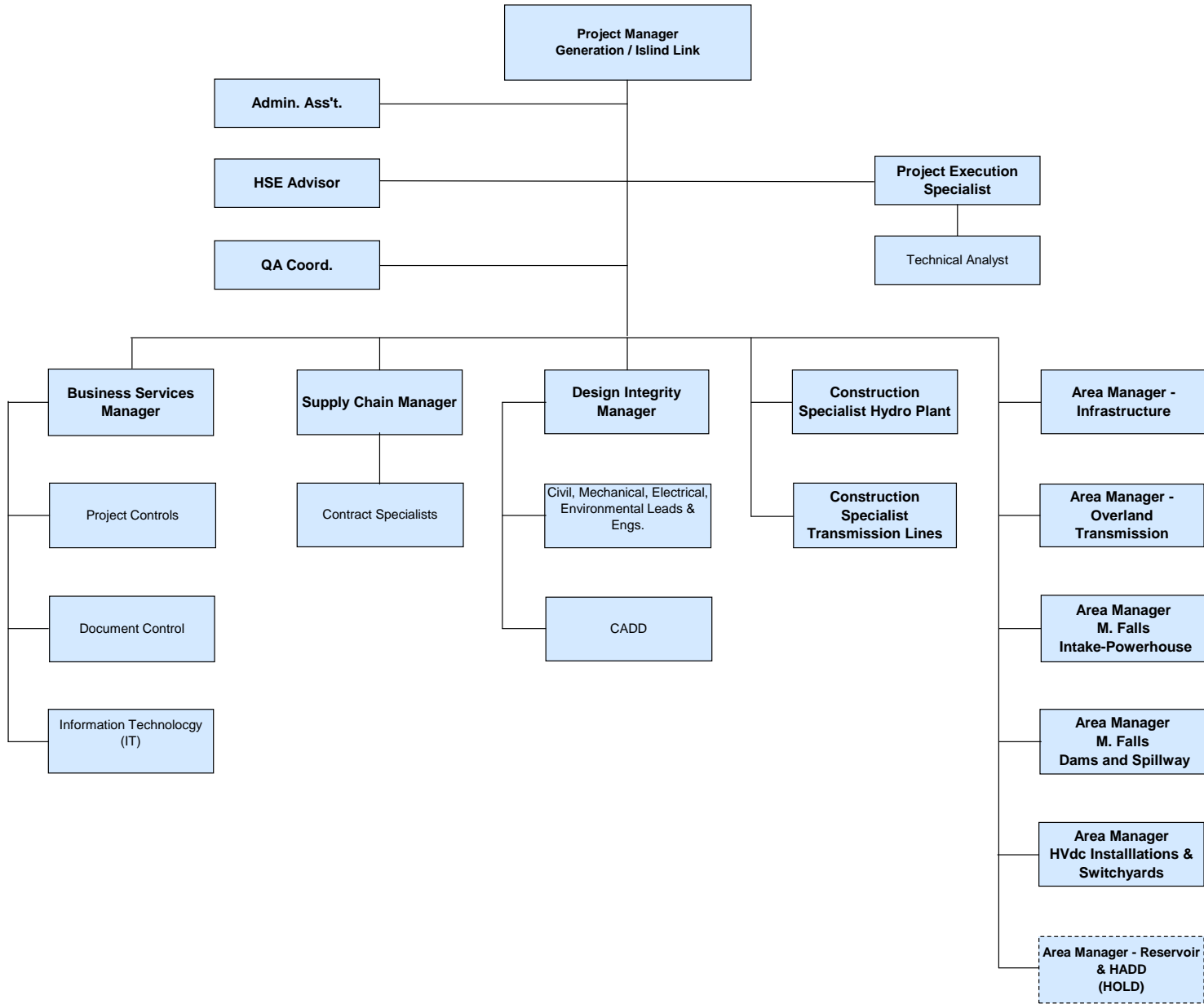


See Fig. 6.2



**Figure 6.4 – Rev 1  
Construction Management Organization  
Lower Churchill Project**





# Themes

- Early construction involvement
- Gate 2 baseline driver / change management / “cost-conscious culture” to be fostered
- Working relationship – PMT / SNC
- Interface of systems
- Staffing

# Conclusion

- We need to have the wherewithal to receive the EPCM deliverables
- We need to understand our respective roles – EPCM Agreement document is the basis - Scope of Services and Coordination Procedures primary tools