

David.Nichols

From: Harrington, Tim <tharrington@cahillganotec.ca>
Sent: Sunday, November 12, 2017 10:48 AM
To: Mike.Buckle; John.Henley-PTR
Cc: Lavigne, Charles; Laurie.Hildebrand
Subject: [EXTERNAL] FW: Cold Eyes Review Report No.1
Attachments: Cold Eyes Review Attachments.pdf; Cold Eyes Review Attachments.pptx; Cold Eyes Review Title Page.pptx; Nalcor Balance of Plant Cold Eyes Review # 1.docx; Nalcor Balance of Plant Cold Eyes Review # 1.pdf

Mike / John,

Just circling back on the cold eyes review report prior to our start of construction. I don't believe it was ever finalized and submitted to Nalcor. Last I recall the report still needed a final "scrub" before it could be issued to the client. The last set of JV meeting minutes had your names actioned as those to complete and issue the findings...not sure if this was your understanding or not.

Any thoughts how we can put this one to bed? Let me know thanks.

Tim

Tim Harrington, P. Eng
Project Manager, Cahill-Ganotec, A Partnership.
T 709.793.3313 C 709.770.5174 F 709.368.3502



From: Mike.Buckle [mailto:michael.buckle@kiewit.com]
Sent: September 30, 2017 8:30 PM
To: Charles.Lavigne; Harrington, Tim
Subject: FW: Cold Eyes Review Report No.1

FYI

From: Randy.Hanrahan
Sent: Friday, September 29, 2017 3:18 PM
To: Jim Brown - J1 Construction <jbrown@cahill.ca>
Cc: Mike.Buckle <michael.buckle@kiewit.com>; John.Henley-PTR <jhenley@cahill.ca>
Subject: Cold Eyes Review Report No.1

Good afternoon Jim,

Attached please find the revised Cold Eyes Review Report. I have included the attachments with this email. To allow the documents revision, I have attached the Native and PDF version of the documents as they will need to be revised prior to submission to the client.

At a minimum, there are three points in the executive summary that will need to be revised prior to submission to the Nalcor, noting that they are also down below in the table as well.

It has been good to work with you on this report. If you have any questions please do not hesitate to give me a call.

Regards,



RANDY HANRAHAN, P. Eng.

Project Manager

KIEWIT OFFSHORE SERVICES

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Lower Churchill Project

CH0031-001

Supply and Install Mechanical & Electrical Auxiliaries MF

Cold Eyes Review Attachments



Organizational Update

Organizational Update



Package Number: CH0031
Supply and Install Mechanical and Electrical Auxiliaries - Muskrat Falls

TC006 Project Organization Chart

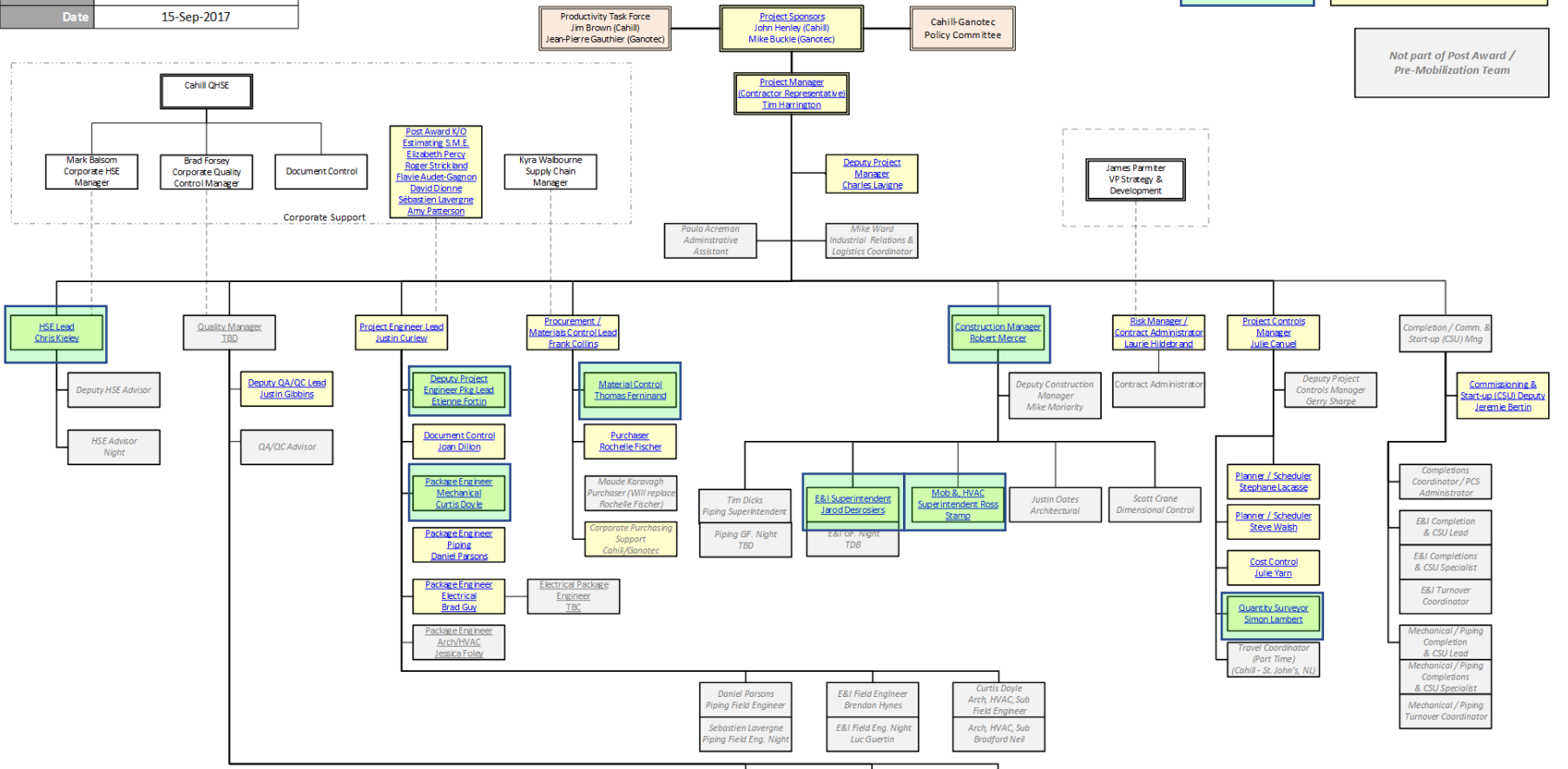
Execution Planning – Sept 2017

Document No.	MFA-CG-SD-3440-PM-A07-0002-01
Revision	A53 Draft
Date	15-Sep-2017

On site in October

Post Award / Pre-Mobilization Phase
 (Join Team July 2017 – September 2017)
 Located in St. John's, NL Team Office

Not part of Post Award / Pre-Mobilization Team



- Notes:**
- 1.) Personnel's time allocation is subject to a project's volume of work.
 - 2.) Deputy positions will provide back-back coverage during turnaround rotations to ensure permanent site presence for the position when necessary.
 - 3.) Package Engineer Team members noted will be assigned to the Field Engineer Team as early engineering & procurement activities ramps down and construction activities ramp up. The individuals noted will transition from one team to the other
 - 4.) Organizational positions may be subject to change depending on project demands.



Mobilization Overview

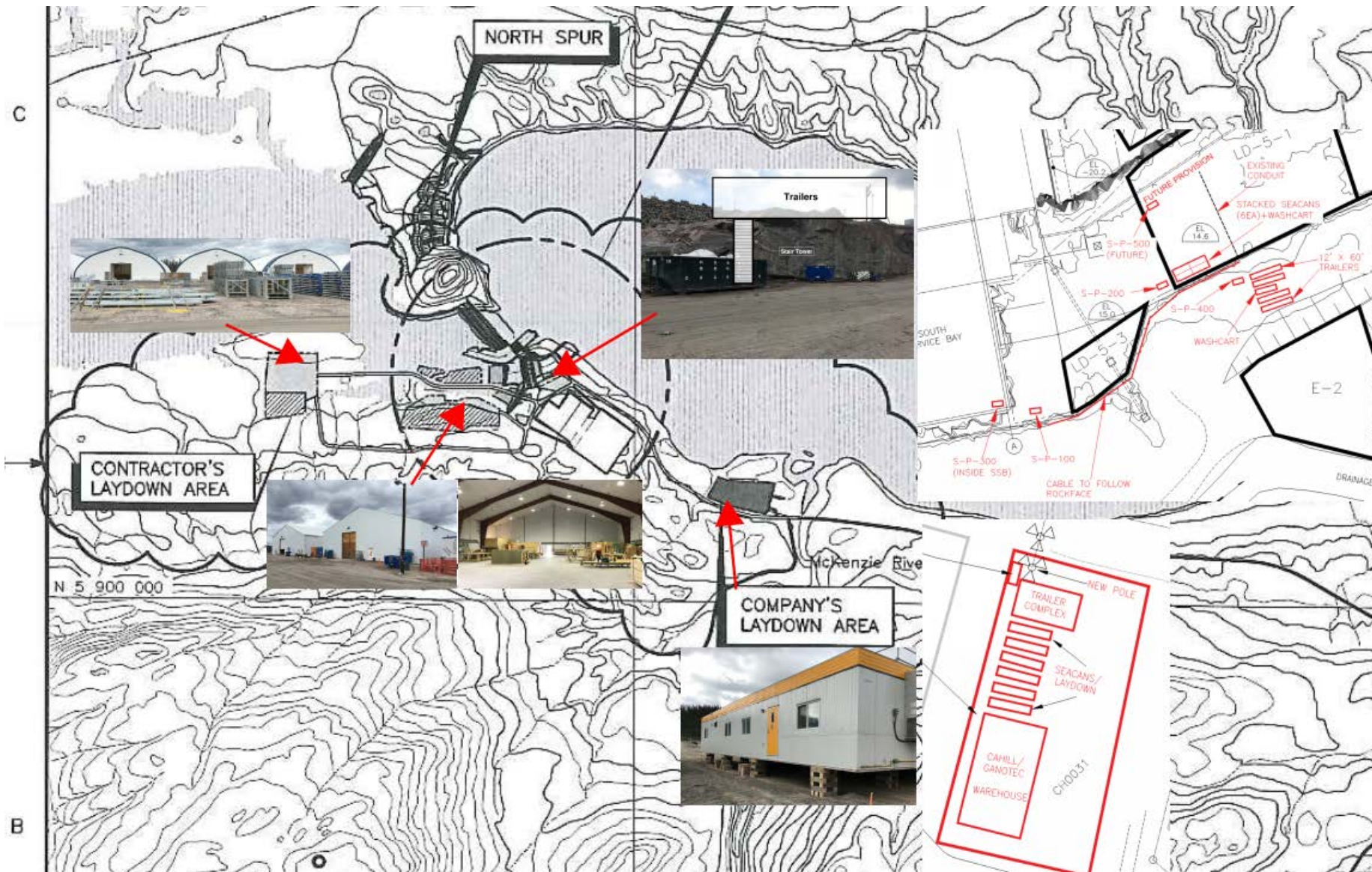
Mobilization Overview

- Power House Construction Progress 14-Sep-2017:



Mobilization Activities

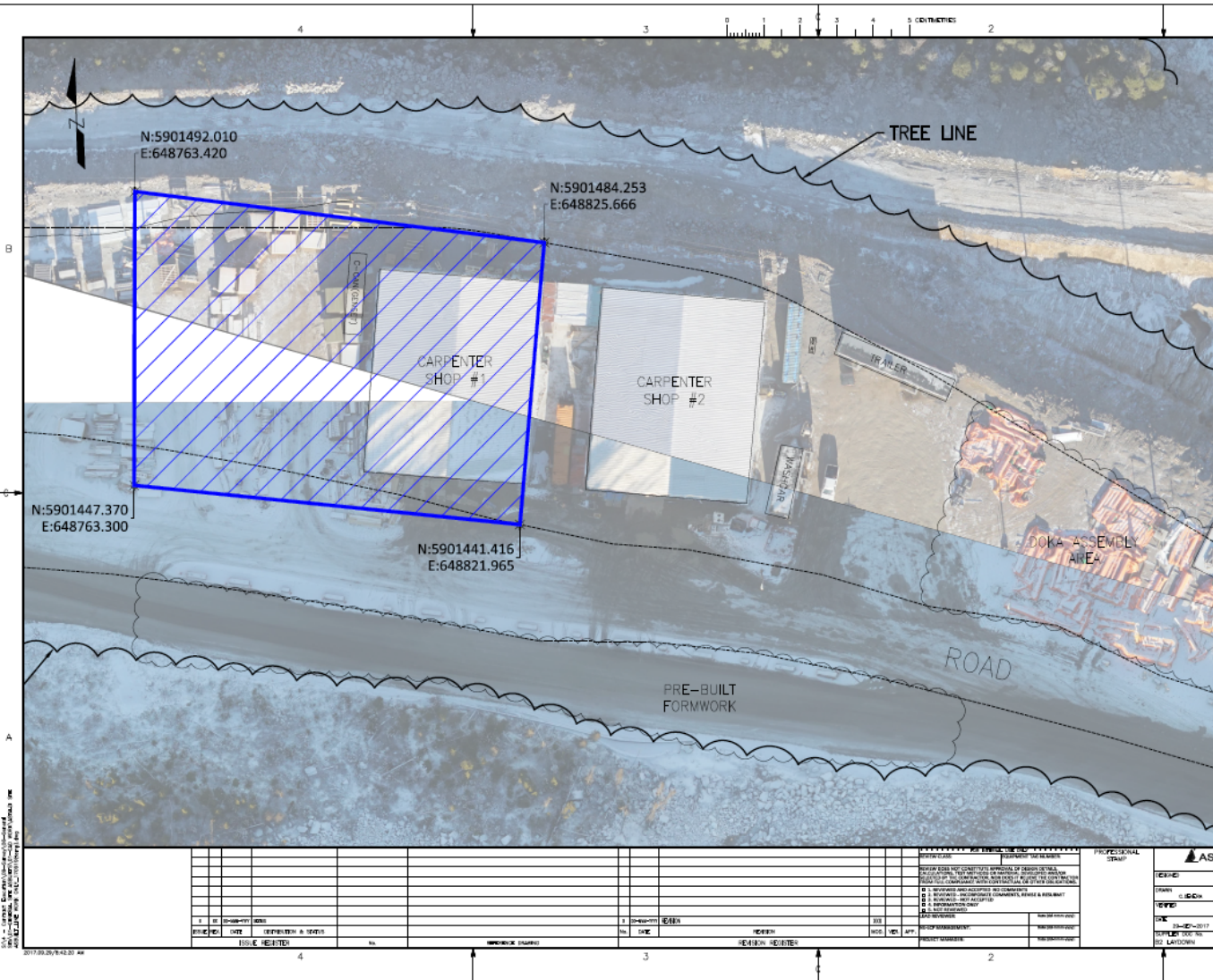
- Key Areas – Site General Arrangement



Mobilization Activities

1.	Office Complex Company's Laydown Area	Office Complex has been placed and is currently being assembled.
2.	Facilities Power House Area	Lunchroom trailers available from Marystown. Need LCP to approve land use permit and confirm where our laydown space will be.
3.	Construction Power	Design and MTO have been firmed up, quotes received yesterday. Orders being placed today for early site needs.
4.	Warehousing	Will not proceed with Megadome. The plan is to utilize space provided by Astaldi in the interim and take over existing warehouses from Astaldi in April. Charles L to firm up agreement this week on site.
5.	Equipment / Tooling	<ul style="list-style-type: none"> • Telehandler and first truck on site September 13, 2017. Lifts and other equipment are being mobilized. Bussing is in place. • Tool crib Containers currently being loaded with available tooling from Cahill Shop at SSR. • Gantry Crane for material movement inside the powerhouse being sourced.
6.	Permitting	<ul style="list-style-type: none"> • Electrical permits secured. • Admin Area permit approved for occupancy / land use. • Powerhouse area permits still outstanding [RISK].
7.	IT Coordination	Network hardware has been ordered by Cahill for IT systems on site. Client has been engaged regarding fiber optic tie-in point. Supervisor tablets have been ordered and received.
8.	Craft payroll	Finance teams working on interface between Cahill payroll and Ganotec POD. Programming is in progress by Kiewit Omaha office but not complete.
9.	Hiring	First mark-up meeting completed for mobilization "Work Teams". Robert Mercer is coordinating early mob activities and hiring. First superintendent is on site, HSE lead mobbing this week. Carpenters are on-site assembling the office complex.

Mobilization Activities - Warehouse



Early Construction

Powerhouse Interior



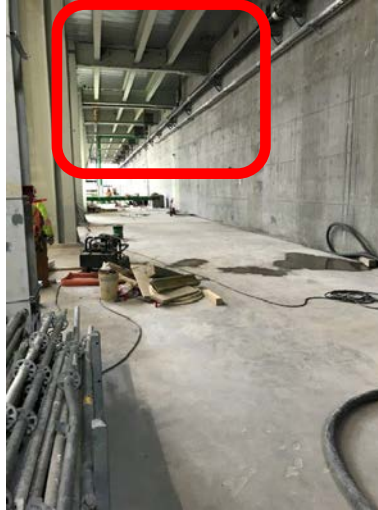
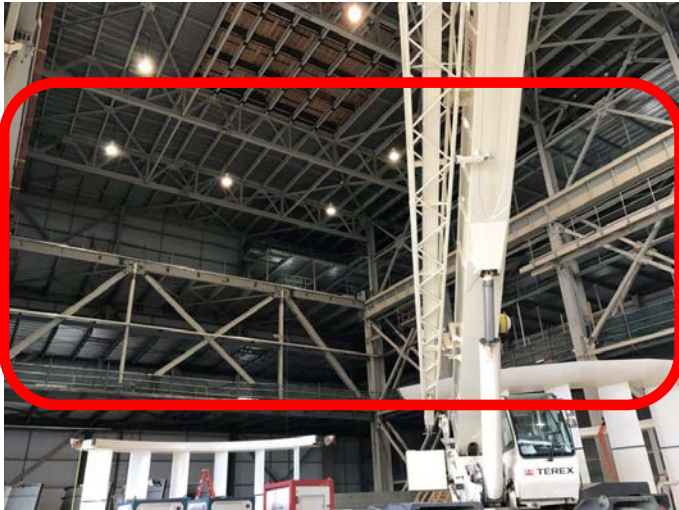
Highly congested Service Bay laydown expected to make material movement within the powerhouse very challenging

Mezzanine areas look ready for C-G construction.

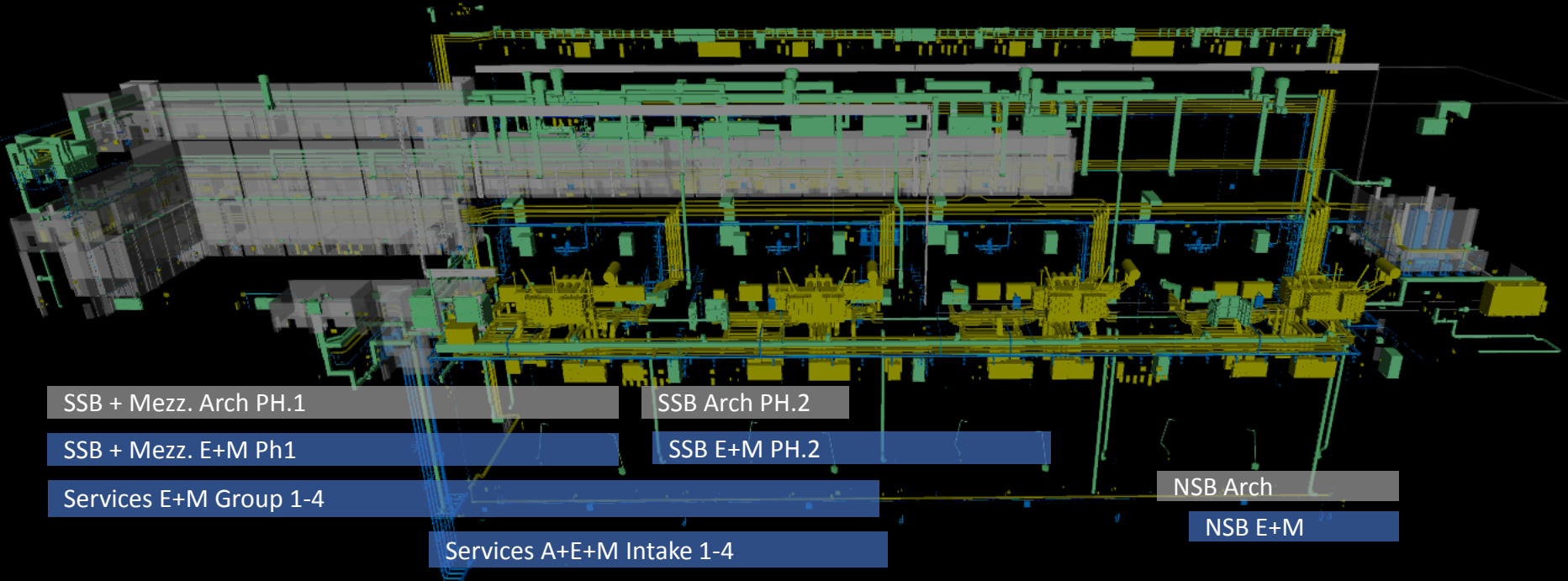
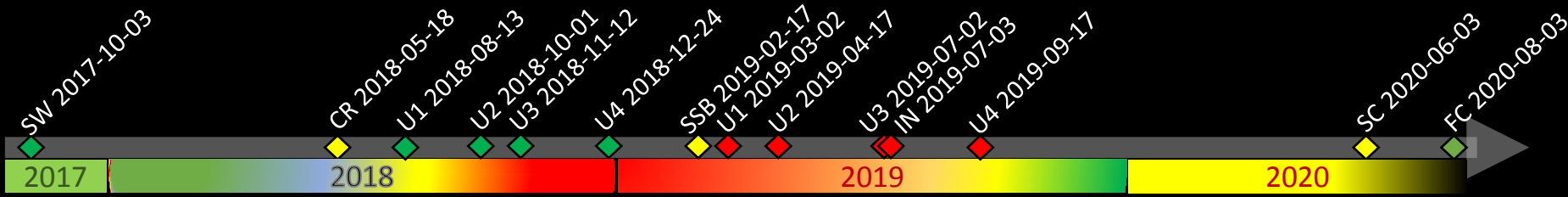
Building envelope still needs significant work by others to make it weather tight.

Schedule Overview – Early works (6 wk)

Discipline	Work description	Zone	Status	Comment
Architecture	Drywalls	SSB - Level 25-34	●	Ready to install Studs with a footprint on Level 15, require heating for insulation and paneling
	Concrete Block Walls	SSB - Level 25-34	●	Require heating
Electrical	Cable Trays / Grounding	SSB - Level 6.5	●	
	Cable Trays / Grounding	U1-U4 Level 6.5	●	
	Cable Trays / Grounding	U1-U4 Level 15.5	●	



Schedule Overview Histogram



SSB + Mezz. Arch PH.1

SSB Arch PH.2

SSB + Mezz. E+M Ph1

SSB E+M PH.2

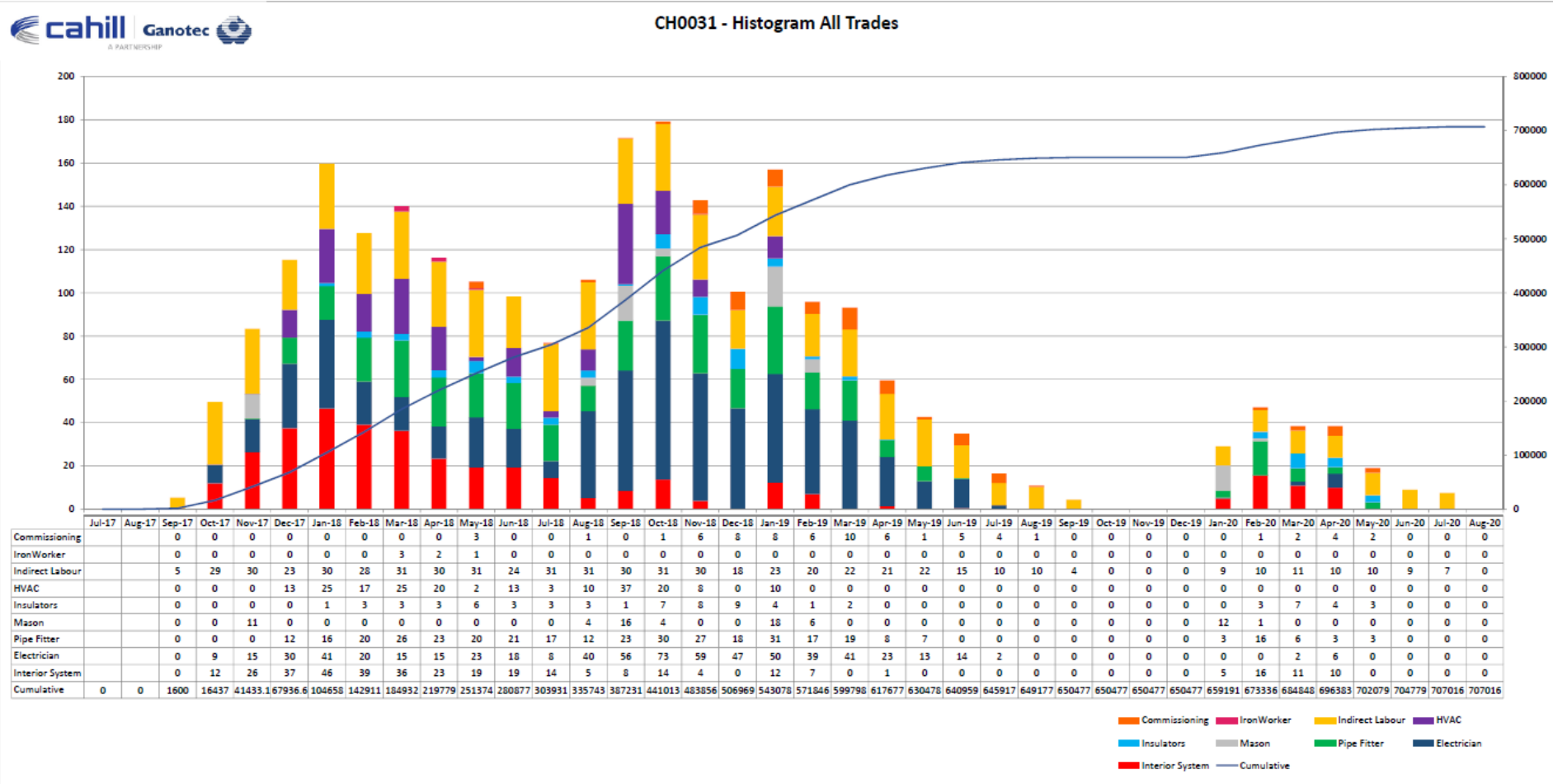
Services E+M Group 1-4

NSB Arch

NSB E+M

Services A+E+M Intake 1-4

Unit 1	36 194 MH
Unit 2	31 098 MH
Unit 3	29 902 MH
Unit 4	35 825 MH



Baseline Control Schedule has been submitted for LCP review. Current labour projections are shown above.



Lower Churchill Project

CH0031-001

Supply and Install Mechanical & Electrical Auxiliaries MF

Cold Eyes Review Attachments



Organizational Update

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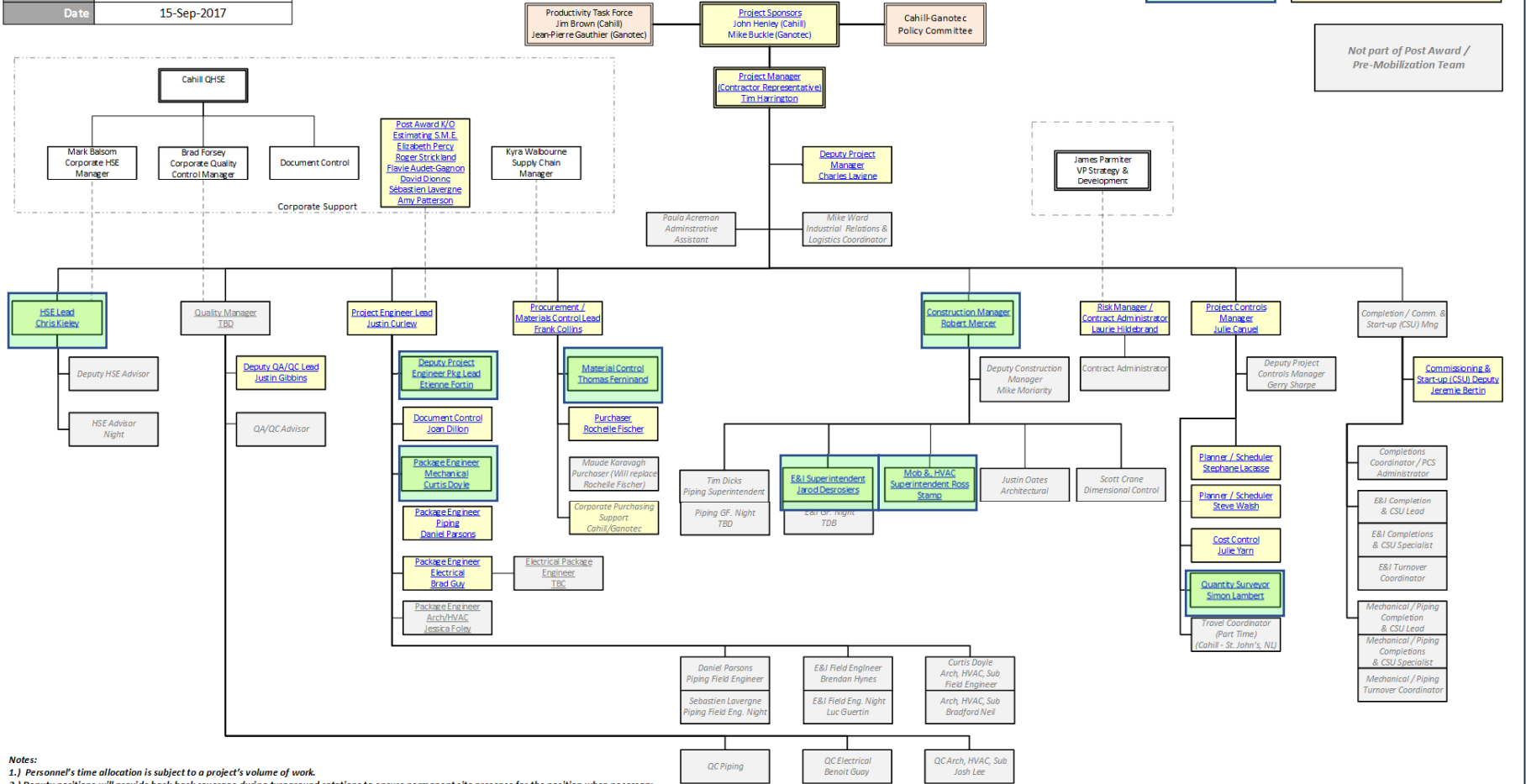
Package Number: CH0031
Supply and Install Mechanical and Electrical Auxiliaries - Muskrat Falls
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Document No.	MFA-CG-SD-3440-PM-A07-0002-01
Revision	A\$3 Draft
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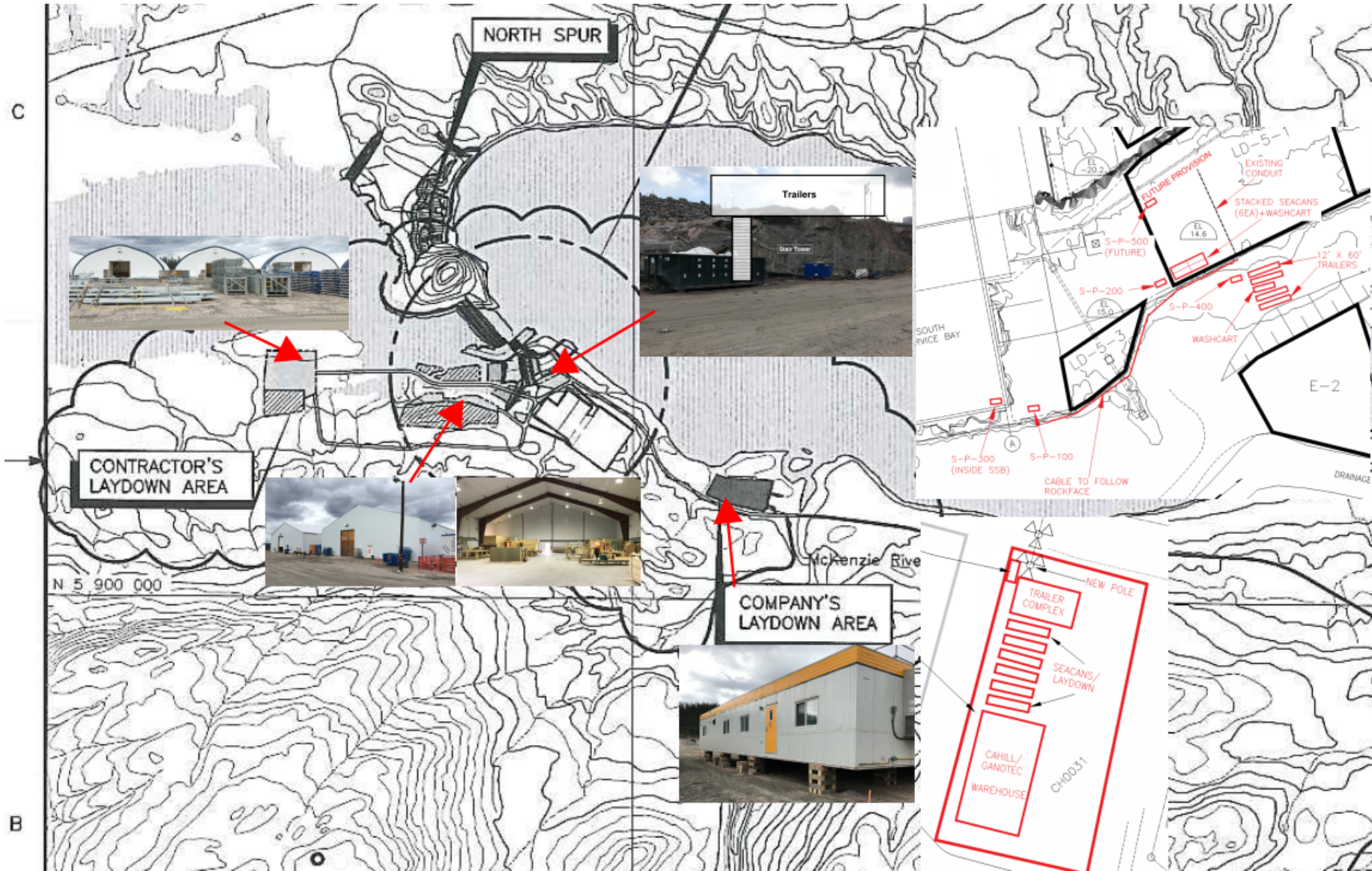
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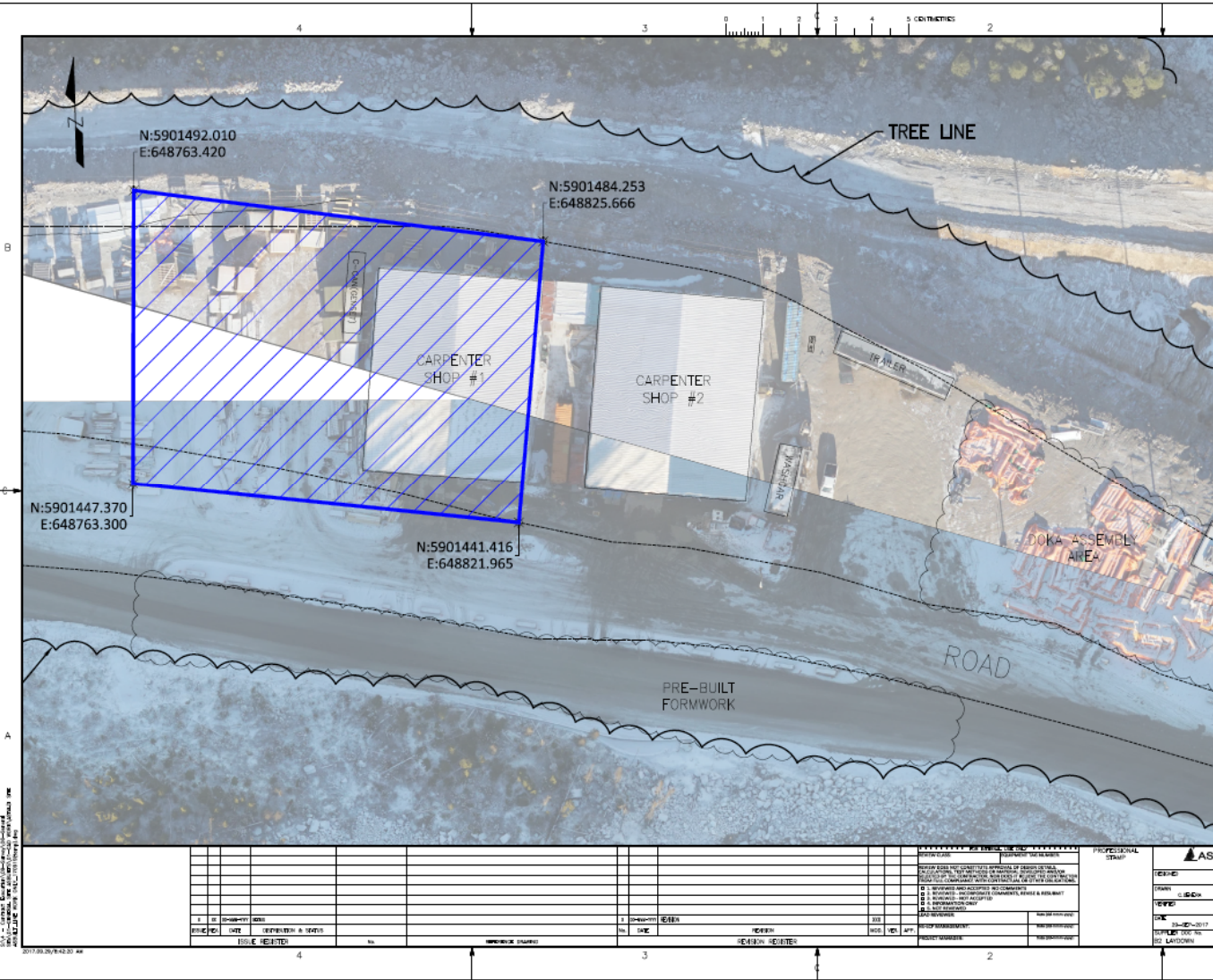
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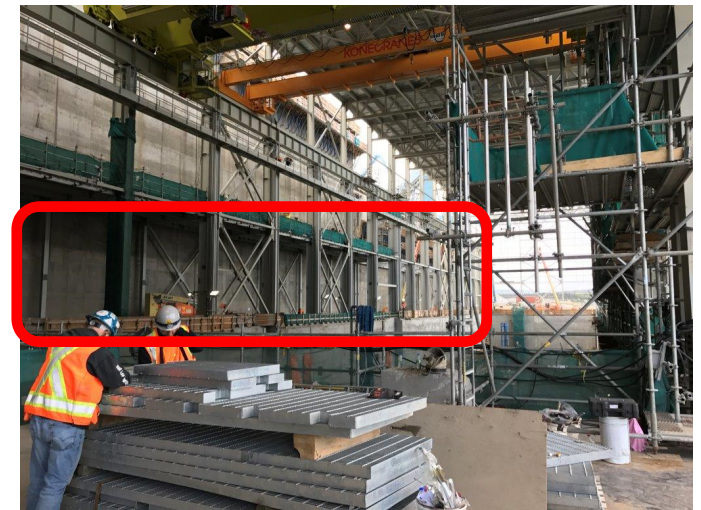
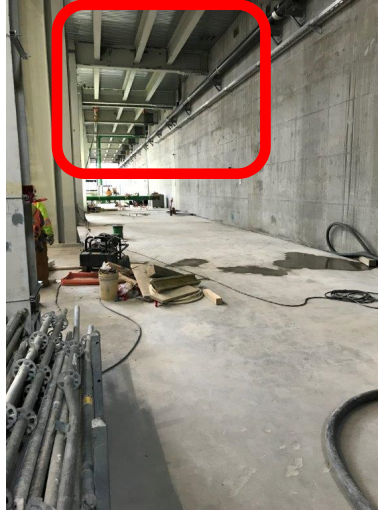
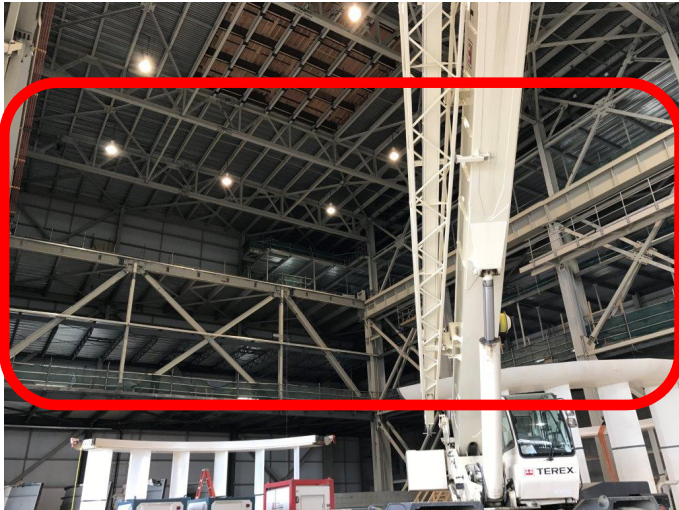
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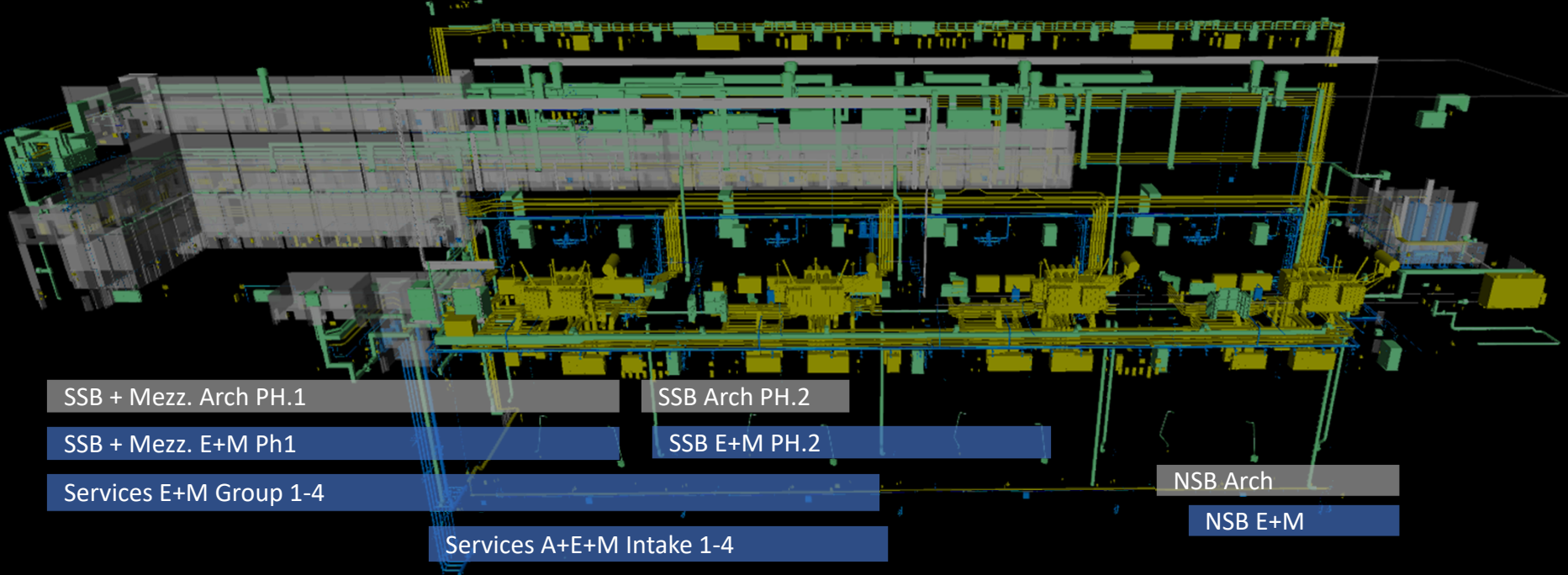
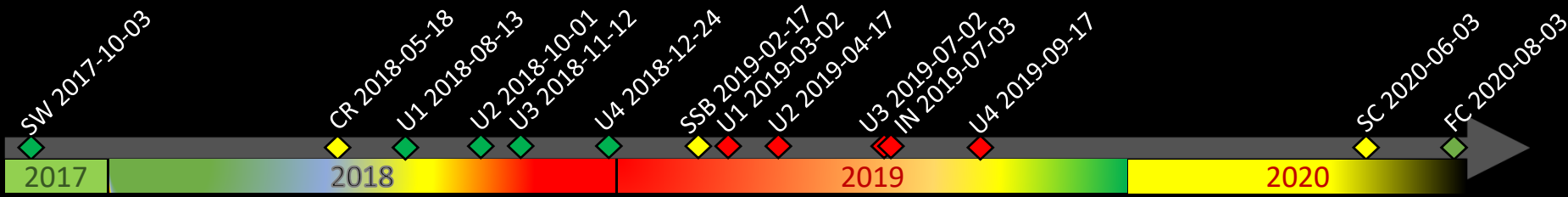
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Schedule Overview Histogram

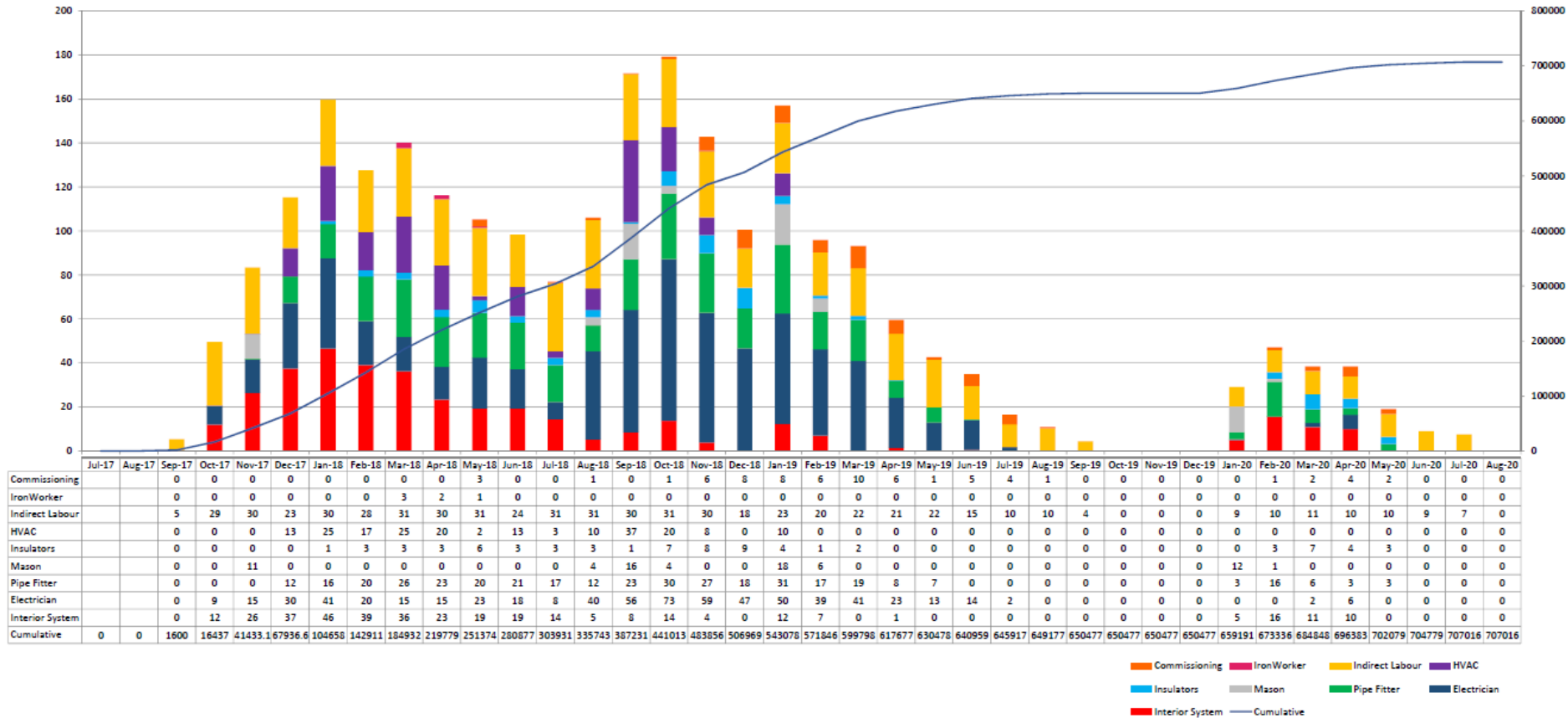


- SSB + Mezz. Arch PH.1
- SSB Arch PH.2
- SSB + Mezz. E+M Ph1
- SSB E+M PH.2
- Services E+M Group 1-4
- Services A+E+M Intake 1-4
- NSB Arch
- NSB E+M

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CH0031 - Histogram All Trades



Baseline Control Schedule has been submitted for LCP review. Current labour projections are shown above.



Lower Churchill Project

CH0031-001

Supply and Install Mechanical & Electrical Auxiliaries MF

Cold Eyes Review No.1

Completed By: Mr. Jim Brown / Mr. Randy Hanrahan

Date: Sept 28, 2017



Introduction:

Cahill Ganotec committed to Nalcor to conduct a series of Cold Eyes Reviews of the Balance of Plant project at critical stages of the project execution. The purpose of the CER is to have senior representatives of both companies, not involved in the project, review the work plans of the project team and assess the adequacy of the plans and their implementation.

The current plan is to conduct a CER at the following project milestones:

- 1) Prior to Construction Start
- 2) 20% Complete
- 3) 50% Complete
- 4) 80% Complete

The following is a report of the Project Cold Eyes Review No. 1 for Contract No. CH0031-001 - Supply and Install Mechanical & Electrical Auxiliaries MF performed by Mr. Jim Brown and Mr. Randy Hanrahan during Week 39, 2017.

Methodology:

The CER will consist of interviews of the various functional team leads to ensure that the project goals and objectives are being met. This will include a review of the Client expectations, functional expertise in place, project planning and execution and project organization. The output of the review will be a concise report identifying the current status of the project and identify areas of strength and weakness and include recommendations to consider alternate processes and procedures to improve the overall project outcome.

The CER was guided by the template below that outlines the project functional areas and suggests subject areas to review.

Executive Summary:

- Good Project Team established that are working well together with all of the key positions filled, noting the quality manager (Perry Snook) was accepted this week and Industrial Relations and Logistics Coordinator (Carol Ann Malloy) was proposed this week.
- Concerned regarding the steep ramp up for the baseline of the work prior to Christmas. With some delays, there is a potential to be behind schedule until 2nd quarter next year. Noting that this ramp up is based on the Owner's interface releases.
- The relationship is pretty good. However, not to the level required for this project. There are some areas of concern:
 - Currently the PM has limited communication with the Owner's project manager (Scott O'Brien) named as the point of contact in the contract.
 - The relationship/communications have been very contractual rather than an open communication looking at best for project solutions.
 - Need the Owner point of contact when the project mobilizes to site.
- A lot of good work has been completed to get the estimate broken out into Hard Dollar. Overall the Control Budget is 85% complete. Plan to fix the control budget prior to month end.
- Some of the largest safety risks are:
 - Cold temperatures / winter conditions
 - Interfaces with other subcontractors / Owner
 - Shared work areas / overhead cranes
 - Congested work areas
- Procurement team plan to have the material waiting to be delivered at the suppliers and then have "Just in Time Deliveries" to site where possible for material packages.
- Early delivery of the pipe and HVAC spools is a concern. The material is on order, shop drawing are being developed, but the Owner has a three week review period, prior to release of this spools for fabrication, which are due to be installed prior to Christmas. May have to proceed at risk without Owner approval for this scope.
- There has been a lot of positive construction input into the construction plan. However we recommend a 1-2 day review be completed by the construction and deputy construction managers prior to setting the baseline schedule.
- An excellent warehouse was purchased from Astaldi with an adjacent laydown area that is close to powerhouse (approx. 3 minutes) setting the team up for success this winter.
- There is a detailed procurement plan in the baseline schedule. There are some critical early work items that are required, namely tray, strut, hardware, architectural, pipe and HVAC material. There are also critical long lead items namely, switchgear, MCC's, fire protection system (design, supply and installation), station services package required.

**Nalcor Balance of Plant
Cold Eyes Review No.1**

- Need to address the contractual basis for the Fire Protection System. It was in the estimate as a lump sum, but the hours are in the reimbursable labour hours currently. Also need to ensure our margin is maintained on this scope. This issue needs to be resolved and agreed with the Owner.
- Need to ensure there is a good orientation / onboarding for the craft and supervision. Set the safety, quality and productivity expectation prior to the start of work at site.

Nalcor Balance of Plant
Cold Eyes Review No.1

CER Outline:

Project Area	Areas to Consider:	CER Comments:
Project Team	Is the Organization Chart suitable for the work?	Yes, see the organization chart attached. There is a good team established with a clear plan for mobilizing to site in October.
	Is the Project Team staffed appropriately for this phase of the work?	Yes. A good Project Team established that are working well together with all of the key positions filled, noting the quality manager (Perry Snook) was accepted this week and Industrial Relations and Logistics Coordinator (Carol Ann Malloy) was proposed this week.
	Are the Team Leads suitable for the work?	Yes, with the added benefit that they have power house construction experience. A strong electrical superintendent may be required.
	Is the Team functioning well?	Yes, it is great to see Tim H., Charles L. and the entire team integrating and working so well together.
Project Management	Is the Project Manager engaged and suitable for the work?	Yes, both Tim H. and Charles L. have power house construction experience.
	Do the PM's priorities meet expectations for this phase of the project?	Yes. Current priorities are procurement, personnel mobilization and site mobilization.
	Does the PM understand the work scope and have a clear vision how to execute the work?	Yes
	Has the PM read the contract & exhibits?	Yes, noting that both referenced a number of sections during our meeting. However
	Does the PM have a professional relationship with the Client PM? Are there any issues to address?	Yes the relationship is pretty good. However, not to the level required for this project. There are some areas of concern: <ul style="list-style-type: none"> • Currently the PM has limited communication with the Owner's project manager (Scott O'Brien) named as the point of contact in the contract. • The relationship/communications have been very contractual rather than an open communication looking at best for project solutions. • Need the Owner point of contact when the project mobilizes to site.
Project Controls	Is a project control budget in place?	Yes, a lot of good work has been completed to get the estimate broken out



Nalcor Balance of Plant
Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
		into Hard Dollar. Overall the Control Budget is 85% complete with a plan to fix the control budget prior to month end.
	Is an objective progress measurement system in place?	Yes
	Is a Project Schedule in place at a suitable level of detail?	Yes. Here is considerable detail in the schedule.
	Is the WBS in the schedule appropriate for the work?	Yes
	Are suitable costs codes in place and are they linked to the WBS	Yes
	Is the invoicing system in place and compliant to the contract.	Yes, however the Owner only agreed to pay for staff on Monday this week. Previously the Owner was insisting on a schedule of values prior to staff payment, but the contract has agreed monthly payments. This has been resolved.
	Is a Change Management system in place?	Yes. 2 CO's submitted to date, but not approved. Project team noted the quick turnaround time required for change requests of 5 days will be onerous, but ECN's are 10 days.
	Is the baseline schedule in place and approved? Do the trade and staff labour curves look reasonable?	Yes. However there is a concern regarding the steep ramp up for the baseline of the work prior to Christmas. With some delays initially, there is a potential to be behind schedule until 2 nd quarter next year. Noting that this ramp up is based on the Owner's interface releases.
	Are the Project periodic reports in place and suitable for the work?	Yes, clear and concise weekly reports are produced.
Health Safety & Environment	Is there a HSE plan for the work?	Yes. Code 1.
	Is the plan suitable for the type of work?	Yes
	Have the key hazards been identified over the project life?	Yes, a risk register established. Some of the largest safety risks are: <ul style="list-style-type: none"> • Cold temperatures / winter conditions • Interfaces with other subcontractors / Owner • Shared work areas / overhead cranes • Congested work areas JHA's are being developed to address these concerns.

Nalcor Balance of Plant
Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
	Does the HSE Lead understand the work?	Yes
	Is the staffing plan compliant with the contract and sufficient for the type of work?	Yes, day and night shift coverage is provided.
	Are there unique environmental factors in this work and are they properly considered in the plan?	<p>There are no unique environmental factors, as they are typical for an architectural, mechanical and electrical project. The work is primarily in the power house with some minor ditching outside. We will have oil containment requirements for vehicles, construction equipment and oil storage tanks. Other hazard materials such as paints, solvents and hydro test mediums will require management.</p> <p>A very detailed environmental plan was developed. Pardy's Waste Management will be responsible for waste disposal, wood is segregated and burned at site, metal is recycled.</p>
	Additional Comments	<ul style="list-style-type: none"> • Safety equipment is on site, also able to leverage other equipment on site. • Incident reporting and emergency response protocol is in place.
Quality	Is there a Quality Plan for the work?	Yes. Currently Code 2 and well received by the Owner. The quality group are incorporating comments.
	Is the plan suitable for the type of work?	Yes
	Are ITPs in place and are they practical?	Yes. Discipline ITP's are submitted for piping and others are under development. Discussion was to keep them practical, with details on the check sheets. Project team commented that the Owner is fairly happy with the ITP submitted.
	Does the Quality Lead understand the work?	Proposed manager not available for personal reasons. Perry Snook was approved by the Owner this week.
	Are the Quality expectations understood by the project team?	The project team has clarified that quality surveillance reports are only required for major packages. Where the Project Team doesn't plan to use work packages to perform the work, they will we need a system to confirm all work is completed.
Engineering / Technical Support	Is there any engineering required for the work?	Yes, for the energy management controls system, service supports and fire protection system. Engineered supports in progress.
	Are the engineering requirements clearly	Yes, no in house design, only field work instructions completed in house.



Nalcor Balance of Plant
Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
	understood?	For the initial pipe and HVAC spool drawings a quicker turnaround time is required from the Owner to release this work for fabrication where it is required on site for installation prior to Christmas. May has to proceed at risk without Owner approval for this scope.
	Are the team members suitable for this type of work?	Yes
	Is the engineering plan suitable?	Yes
	Is the client RFI process understood and the appropriate registers in place?	Yes
	Are the technical boundaries in the contract clearly understood?	Yes
	Is the team looking for opportunities to streamline the work?	Yes, focused on safety, quality, cost and productivity opportunities.
	Is the Document control system in place? Does it ensure only the current rev of a document is available to team members?	Yes, they are using Aconex. DCC is centralized and is completed by the Cahill corporate group.
Procurement	Is the Procurement group in place?	Yes, a larger group than planned has been mobilized, to expedite getting all of the packages procured.
	Is there a Procurement Plan? Is it suitable for the work?	Yes, the procurement team has a comprehensive plan and schedule for tracking and expediting the packages to meet the construction requirement.
	Are the Client specifications understood?	Yes
	Is the EOI/RFP/Award process in place? Is it objective, efficient and suitable for the scope?	Yes, 30 packages currently in play at various stages.
	Is Procurement integrated into the overall project schedule? Are sufficient lead times in place to ensure materials are available for construction?	Yes, there is a detailed procurement plan in the baseline schedule. There are some critical early work items that are required, namely tray, strut, hardware, architectural, pipe and HVAC material. There are also critical long lead items namely, switchgear, MCC's, fire protection system (design, supply and installation), station services package required.
	Is site Material Control in place? Is there a material control plan to track deliveries, expedite to ensure the work teams are not	Yes, there is a Master PO Package List developed that is used to plan and expedite the packages. Tool cribs are being mobilized to site. The plan is to use the SAP inventory system at site. A review needs to be completed



Nalcor Balance of Plant
Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
	waiting on materials or consumables?	to confirm the system has the required capabilities.
	Additional Comments	<ul style="list-style-type: none"> Plan to use Acklands Grainger’s Automatic Tool Room for consumables at site. Plan to grid off the laydown area and maintain the storage locations. Plan to take lots of pictures as the material is received to allow it to be located after it snows. SDRL has been submitted to the Owner. Need to address the contractual basis for the Fire Protection System. It was in the estimate as a lump sum, but the hours are in the reimbursable labour hours currently. Also need to ensure our margin is maintained on this scope. This issue needs to be resolved and agreed with the Owner.
Construction	Is the construction team in place?	Yes, construction manager and 2 superintendents (JD & RS) currently on site. One superintendent in St. John’s (TD)
	Does the Construction Manager understand the work?	Yes, he is coming from the switch yard project.
	Has the Construction team reviewed and approved the sequence?	There has been a lot of positive construction input into the construction plan. However we recommend a 1-2 day review be completed by the construction and deputy construction managers prior to setting the baseline schedule.
	Is the construction plan suitable for the work scope?	Yes. Material handling plan is currently being worked. Need a method / laydown to allow material to be moved onto the two mezzanines safely and efficiently. Potentially use a scaffold platform or cantilevered hanging platform to provide this access. Alternatively, an access platform outside, would eliminate crane sharing and a major interface with Andritz, noting a wall panel would have to be left off for access.
	Is the labour relations plan suitable for the site and labour environment?	Labour productivity plan is submitted. A review is ongoing. Need the site industrial relation and logistic coordinator.
	Are unique risks identified and mitigation plans in place?	Some of the unique risks that have been identified are: <ul style="list-style-type: none"> Installation of the cladding to enclose the building prior to winter. Plan for heating of the work areas. Sharing of the overhead crane



Nalcor Balance of Plant
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Project Area	Areas to Consider:	CER Comments:
		<ul style="list-style-type: none"> Interface with Andritz / other subcontractors
	Are the timesheet systems in place to allow for effective labour tracking?	Yes, Iskeuteu (Cahill) are completing the employee payments. Project team are working on a way to automatically transfer the labour cost into the cost system (SAP).
	Is the equipment plan and site layout of facilities suitable for the scope?	<ul style="list-style-type: none"> An excellent warehouse was purchased from Astaldi with an adjacent laydown area that is close to powerhouse (approx. 3 minutes). One concern is that the space required for the craft lunchrooms and laydown space has not been provided by the Owner. Equipment register is developed and equipment is being mobilized.
	Additional Comments	<ul style="list-style-type: none"> Plan to have a limited night shift operation, but not until the new year. Building is planned to be closed in up to Unit 3 by Oct 30th and Unit 4 by Nov 30th. 180 craft at peak. Need to ensure there is a good orientation / onboarding for the craft and supervision. Set the safety, quality and productivity expectation prior to the start of work at site. Work is released as per the plan attached starting from the south service bay and progressing to the north. The use of Cahill existing facilities has been a benefit for the site team.
Mechanical Completion & Commissioning	Is a Mechanical Completion and Commissioning plan in place?	Not reviewed at this time.
	Have the systems and sub-systems been identified?	Some initial discussions held with the owner.
	Are the client expectations understood and implemented?	Some initial discussions held with the owner.



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Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
	Is the staffing plan adequate for the scope?	Not reviewed at this time.
	Is the project scope clearly understood and incorporated in the overall project schedule.	Not reviewed at this time.
Site Mobilization	Is the Project Team ready to start work at site?	Yes
	Have they met the contractual requirements for project start?	Yes
	Does the schedule show sufficient work fronts to start and maintain a work force on site?	Only minimal work faces available currently. Need a quick turnaround on the shop drawings to release the pipe and HVAC spool fabrication. Also need some early works materials (i.e strut, steel stud, pipe and HVAC spools)
	Are the site facilities and equipment in place, appropriate and ready for construction start?	Need a space for the craft lunchrooms and laydown space. Required equipment is in place. A tool crib is in route. Need a quick action on the warehouse to ensure it is resolution / installation prior to winter, noting it is a 4 week delivery after approval of the building drawings
	Are the project team ready for site work? HSE, Quality, risk assessments etc?	Yes, JHA's being developed at site.
	Does the site layout consider the environmental conditions?	Yes



Lower Churchill Project

CH0031-001

Supply and Install Mechanical & Electrical Auxiliaries MF

Cold Eyes Review No.1

Completed By: Mr. Jim Brown / Mr. Randy Hanrahan

Date: Sept 28, 2017



Introduction:

Cahill Ganotec committed to Nalcor to conduct a series of Cold Eyes Reviews of the Balance of Plant project at critical stages of the project execution. The purpose of the CER is to have senior representatives of both companies, not involved in the project, review the work plans of the project team and assess the adequacy of the plans and their implementation.

The current plan is to conduct a CER at the following project milestones:

- 1) Prior to Construction Start
- 2) 20% Complete
- 3) 50% Complete
- 4) 80% Complete

The following is a report of the Project Cold Eyes Review No. 1 for Contract No. CH0031-001 - Supply and Install Mechanical & Electrical Auxiliaries MF performed by Mr. Jim Brown and Mr. Randy Hanrahan during Week 39, 2017.

Methodology:

The CER will consist of interviews of the various functional team leads to ensure that the project goals and objectives are being met. This will include a review of the Client expectations, functional expertise in place, project planning and execution and project organization. The output of the review will be a concise report identifying the current status of the project and identify areas of strength and weakness and include recommendations to consider alternate processes and procedures to improve the overall project outcome.

The CER was guided by the template below that outlines the project functional areas and suggests subject areas to review.

Executive Summary:

- Good Project Team established that are working well together with all of the key positions filled, noting the quality manager (Perry Snook) was accepted this week and Industrial Relations and Logistics Coordinator (Carol Ann Malloy) was proposed this week.
- Concerned regarding the steep ramp up for the baseline of the work prior to Christmas. With some delays, there is a potential to be behind schedule until 2nd quarter next year. Noting that this ramp up is based on the Owner's interface releases.
- The relationship is pretty good. However, not to the level required for this project. There are some areas of concern:
 - Currently the PM has limited communication with the Owner's project manager (Scott O'Brien) named as the point of contact in the contract.
 - The relationship/communications have been very contractual rather than an open communication looking at best for project solutions.
 - Need the Owner point of contact when the project mobilizes to site.
- A lot of good work has been completed to get the estimate broken out into Hard Dollar. Overall the Control Budget is 85% complete. Plan to fix the control budget prior to month end.
- Some of the largest safety risks are:
 - Cold temperatures / winter conditions
 - Interfaces with other subcontractors / Owner
 - Shared work areas / overhead cranes
 - Congested work areas
- Procurement team plan to have the material waiting to be delivered at the suppliers and then have "Just in Time Deliveries" to site where possible for material packages.
- Early delivery of the pipe and HVAC spools is a concern. The material is on order, shop drawing are being developed, but the Owner has a three week review period, prior to release of this spools for fabrication, which are due to be installed prior to Christmas. May have to proceed at risk without Owner approval for this scope.
- There has been a lot of positive construction input into the construction plan. However we recommend a 1-2 day review be completed by the construction and deputy construction managers prior to setting the baseline schedule.
- An excellent warehouse was purchased from Astaldi with an adjacent laydown area that is close to powerhouse (approx. 3 minutes) setting the team up for success this winter.
- There is a detailed procurement plan in the baseline schedule. There are some critical early work items that are required, namely tray, strut, hardware, architectural, pipe and HVAC material. There are also critical long lead items namely, switchgear, MCC's, fire protection system (design, supply and installation), station services package required.

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- Need to address the contractual basis for the Fire Protection System. It was in the estimate as a lump sum, but the hours are in the reimbursable labour hours currently. Also need to ensure our margin is maintained on this scope. This issue needs to be resolved and agreed with the Owner.
- Need to ensure there is a good orientation / onboarding for the craft and supervision. Set the safety, quality and productivity expectation prior to the start of work at site.

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CER Outline:

Project Area	Areas to Consider:	CER Comments:
Project Team	Is the Organization Chart suitable for the work?	Yes, see the organization chart attached. There is a good team established with a clear plan for mobilizing to site in October.
	Is the Project Team staffed appropriately for this phase of the work?	Yes. A good Project Team established that are working well together with all of the key positions filled, noting the quality manager (Perry Snook) was accepted this week and Industrial Relations and Logistics Coordinator (Carol Ann Malloy) was proposed this week.
	Are the Team Leads suitable for the work?	Yes, with the added benefit that they have power house construction experience. A strong electrical superintendent may be required.
	Is the Team functioning well?	Yes, it is great to see Tim H., Charles L. and the entire team integrating and working so well together.
Project Management	Is the Project Manager engaged and suitable for the work?	Yes, both Tim H. and Charles L. have power house construction experience.
	Do the PM's priorities meet expectations for this phase of the project?	Yes. Current priorities are procurement, personnel mobilization and site mobilization.
	Does the PM understand the work scope and have a clear vision how to execute the work?	Yes
	Has the PM read the contract & exhibits?	Yes, noting that both referenced a number of sections during our meeting. However
	Does the PM have a professional relationship with the Client PM? Are there any issues to address?	Yes the relationship is pretty good. However, not to the level required for this project. There are some areas of concern: <ul style="list-style-type: none"> • Currently the PM has limited communication with the Owner's project manager (Scott O'Brien) named as the point of contact in the contract. • The relationship/communications have been very contractual rather than an open communication looking at best for project solutions. • Need the Owner point of contact when the project mobilizes to site.
Project Controls	Is a project control budget in place?	Yes, a lot of good work has been completed to get the estimate broken out



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Project Area	Areas to Consider:	CER Comments:
		into Hard Dollar. Overall the Control Budget is 85% complete with a plan to fix the control budget prior to month end.
	Is an objective progress measurement system in place?	Yes
	Is a Project Schedule in place at a suitable level of detail?	Yes. Here is considerable detail in the schedule.
	Is the WBS in the schedule appropriate for the work?	Yes
	Are suitable costs codes in place and are they linked to the WBS	Yes
	Is the invoicing system in place and compliant to the contract.	Yes, however the Owner only agreed to pay for staff on Monday this week. Previously the Owner was insisting on a schedule of values prior to staff payment, but the contract has agreed monthly payments. This has been resolved.
	Is a Change Management system in place?	Yes. 2 CO's submitted to date, but not approved. Project team noted the quick turnaround time required for change requests of 5 days will be onerous, but ECN's are 10 days.
	Is the baseline schedule in place and approved? Do the trade and staff labour curves look reasonable?	Yes. However there is a concern regarding the steep ramp up for the baseline of the work prior to Christmas. With some delays initially, there is a potential to be behind schedule until 2 nd quarter next year. Noting that this ramp up is based on the Owner's interface releases.
	Are the Project periodic reports in place and suitable for the work?	Yes, clear and concise weekly reports are produced.
Health Safety & Environment	Is there a HSE plan for the work?	Yes. Code 1.
	Is the plan suitable for the type of work?	Yes
	Have the key hazards been identified over the project life?	Yes, a risk register established. Some of the largest safety risks are: <ul style="list-style-type: none"> • Cold temperatures / winter conditions • Interfaces with other subcontractors / Owner • Shared work areas / overhead cranes • Congested work areas JHA's are being developed to address these concerns.

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Project Area	Areas to Consider:	CER Comments:
	Does the HSE Lead understand the work?	Yes
	Is the staffing plan compliant with the contract and sufficient for the type of work?	Yes, day and night shift coverage is provided.
	Are there unique environmental factors in this work and are they properly considered in the plan?	<p>There are no unique environmental factors, as they are typical for an architectural, mechanical and electrical project. The work is primarily in the power house with some minor ditching outside. We will have oil containment requirements for vehicles, construction equipment and oil storage tanks. Other hazard materials such as paints, solvents and hydro test mediums will require management.</p> <p>A very detailed environmental plan was developed. Pardy's Waste Management will be responsible for waste disposal, wood is segregated and burned at site, metal is recycled.</p>
	Additional Comments	<ul style="list-style-type: none"> • Safety equipment is on site, also able to leverage other equipment on site. • Incident reporting and emergency response protocol is in place.
Quality	Is there a Quality Plan for the work?	Yes. Currently Code 2 and well received by the Owner. The quality group are incorporating comments.
	Is the plan suitable for the type of work?	Yes
	Are ITPs in place and are they practical?	Yes. Discipline ITP's are submitted for piping and others are under development. Discussion was to keep them practical, with details on the check sheets. Project team commented that the Owner is fairly happy with the ITP submitted.
	Does the Quality Lead understand the work?	Proposed manager not available for personal reasons. Perry Snook was approved by the Owner this week.
	Are the Quality expectations understood by the project team?	The project team has clarified that quality surveillance reports are only required for major packages. Where the Project Team doesn't plan to use work packages to perform the work, they will we need a system to confirm all work is completed.
Engineering / Technical Support	Is there any engineering required for the work?	Yes, for the energy management controls system, service supports and fire protection system. Engineered supports in progress.
	Are the engineering requirements clearly	Yes, no in house design, only field work instructions completed in house.



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Project Area	Areas to Consider:	CER Comments:
	understood?	For the initial pipe and HVAC spool drawings a quicker turnaround time is required from the Owner to release this work for fabrication where it is required on site for installation prior to Christmas. May has to proceed at risk without Owner approval for this scope.
	Are the team members suitable for this type of work?	Yes
	Is the engineering plan suitable?	Yes
	Is the client RFI process understood and the appropriate registers in place?	Yes
	Are the technical boundaries in the contract clearly understood?	Yes
	Is the team looking for opportunities to streamline the work?	Yes, focused on safety, quality, cost and productivity opportunities.
	Is the Document control system in place? Does it ensure only the current rev of a document is available to team members?	Yes, they are using Aconex. DCC is centralized and is completed by the Cahill corporate group.
Procurement	Is the Procurement group in place?	Yes, a larger group than planned has been mobilized, to expedite getting all of the packages procured.
	Is there a Procurement Plan? Is it suitable for the work?	Yes, the procurement team has a comprehensive plan and schedule for tracking and expediting the packages to meet the construction requirement.
	Are the Client specifications understood?	Yes
	Is the EOI/RFP/Award process in place? Is it objective, efficient and suitable for the scope?	Yes, 30 packages currently in play at various stages.
	Is Procurement integrated into the overall project schedule? Are sufficient lead times in place to ensure materials are available for construction?	Yes, there is a detailed procurement plan in the baseline schedule. There are some critical early work items that are required, namely tray, strut, hardware, architectural, pipe and HVAC material. There are also critical long lead items namely, switchgear, MCC's, fire protection system (design, supply and installation), station services package required.
	Is site Material Control in place? Is there a material control plan to track deliveries, expedite to ensure the work teams are not	Yes, there is a Master PO Package List developed that is used to plan and expedite the packages. Tool cribs are being mobilized to site. The plan is to use the SAP inventory system at site. A review needs to be completed



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Project Area	Areas to Consider:	CER Comments:
	waiting on materials or consumables?	to confirm the system has the required capabilities.
	Additional Comments	<ul style="list-style-type: none"> Plan to use Acklands Grainger’s Automatic Tool Room for consumables at site. Plan to grid off the laydown area and maintain the storage locations. Plan to take lots of pictures as the material is received to allow it to be located after it snows. SDRL has been submitted to the Owner. Need to address the contractual basis for the Fire Protection System. It was in the estimate as a lump sum, but the hours are in the reimbursable labour hours currently. Also need to ensure our margin is maintained on this scope. This issue needs to be resolved and agreed with the Owner.
Construction	Is the construction team in place?	Yes, construction manager and 2 superintendents (JD & RS) currently on site. One superintendent in St. John’s (TD)
	Does the Construction Manager understand the work?	Yes, he is coming from the switch yard project.
	Has the Construction team reviewed and approved the sequence?	There has been a lot of positive construction input into the construction plan. However we recommend a 1-2 day review be completed by the construction and deputy construction managers prior to setting the baseline schedule.
	Is the construction plan suitable for the work scope?	Yes. Material handling plan is currently being worked. Need a method / laydown to allow material to be moved onto the two mezzanines safely and efficiently. Potentially use a scaffold platform or cantilevered hanging platform to provide this access. Alternatively, an access platform outside, would eliminate crane sharing and a major interface with Andritz, noting a wall panel would have to be left off for access.
	Is the labour relations plan suitable for the site and labour environment?	Labour productivity plan is submitted. A review is ongoing. Need the site industrial relation and logistic coordinator.
	Are unique risks identified and mitigation plans in place?	Some of the unique risks that have been identified are: <ul style="list-style-type: none"> Installation of the cladding to enclose the building prior to winter. Plan for heating of the work areas. Sharing of the overhead crane



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Project Area	Areas to Consider:	CER Comments:
		<ul style="list-style-type: none"> Interface with Andritz / other subcontractors
	Are the timesheet systems in place to allow for effective labour tracking?	Yes, Iskeuteu (Cahill) are completing the employee payments. Project team are working on a way to automatically transfer the labour cost into the cost system (SAP).
	Is the equipment plan and site layout of facilities suitable for the scope?	<ul style="list-style-type: none"> An excellent warehouse was purchased from Astaldi with an adjacent laydown area that is close to powerhouse (approx. 3 minutes). One concern is that the space required for the craft lunchrooms and laydown space has not been provided by the Owner. Equipment register is developed and equipment is being mobilized.
	Additional Comments	<ul style="list-style-type: none"> Plan to have a limited night shift operation, but not until the new year. Building is planned to be closed in up to Unit 3 by Oct 30th and Unit 4 by Nov 30th. 180 craft at peak. Need to ensure there is a good orientation / onboarding for the craft and supervision. Set the safety, quality and productivity expectation prior to the start of work at site. Work is released as per the plan attached starting from the south service bay and progressing to the north. The use of Cahill existing facilities has been a benefit for the site team.
Mechanical Completion & Commissioning	Is a Mechanical Completion and Commissioning plan in place?	Not reviewed at this time.
	Have the systems and sub-systems been identified?	Some initial discussions held with the owner.
	Are the client expectations understood and implemented?	Some initial discussions held with the owner.



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Cold Eyes Review No.1

Project Area	Areas to Consider:	CER Comments:
	Is the staffing plan adequate for the scope?	Not reviewed at this time.
	Is the project scope clearly understood and incorporated in the overall project schedule.	Not reviewed at this time.
Site Mobilization	Is the Project Team ready to start work at site?	Yes
	Have they met the contractual requirements for project start?	Yes
	Does the schedule show sufficient work fronts to start and maintain a work force on site?	Only minimal work faces available currently. Need a quick turnaround on the shop drawings to release the pipe and HVAC spool fabrication. Also need some early works materials (i.e strut, steel stud, pipe and HVAC spools)
	Are the site facilities and equipment in place, appropriate and ready for construction start?	Need a space for the craft lunchrooms and laydown space. Required equipment is in place. A tool crib is in route. Need a quick action on the warehouse to ensure it is resolution / installation prior to winter, noting it is a 4 week delivery after approval of the building drawings
	Are the project team ready for site work? HSE, Quality, risk assessments etc?	Yes, JHA's being developed at site.
	Does the site layout consider the environmental conditions?	Yes