

From: Mongili Enrico
To: [Palumbo Mauro](#)
Subject: I: Problems from beginning of project
Date: Tuesday, June 24, 2014 7:18:09 AM
Attachments: [Muskrat Fall - Premob. PP - 06.09.13.pptx](#)
[Answer to the notes from NALCOR - regarding status of mobilization revised final.docx](#)
[Answer to the notes from NALCOR - regarding status of mobilization..docx](#)
[NOTES FOR LUCCHINI - List of problems.docx](#)
Importance: High

Da: Bedard Michel
Inviato: lunedì 23 giugno 2014 22:41
A: Mongili Enrico
Oggetto: FW: Problems from beginning of project
Priorità: Alta

Hello Enrico,

I received the document made by Vittorio Robiati, about the problems meet on the site. I'll take a look also, and will try to use some in our LIST OF EVENTS.

It was great to have you here for 10 days.

Best Regards,

Michel

From: Lucchini Edy
Sent: Monday, June 23, 2014 5:33 PM
To: Bedard Michel
Subject: RV: Problems from beginning of project
Importance: High

Allego lista di potenziali eventi generata da Vittorio , per opportuna valutazione

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De: Robiati Vittorio
Enviado el: lunes, 23 de junio de 2014 02:03 p.m.
Para: Lucchini Edy; Abbafati Mauro

CC: Venturini Guido

Asunto: Problems from beginning of project

Importancia: Alta

Dearest all,

I have put together a list of items that could be possible extra costs and time

We need to set up a meeting when I shall try to explain each point.

Guido who also is the memory of the project may eventually participate and work our ideas of how this could be eventually put together.

The problem may arise when we speak of the 10 days notices.....

Vittorio

Muskrat Fall

Start Up operations

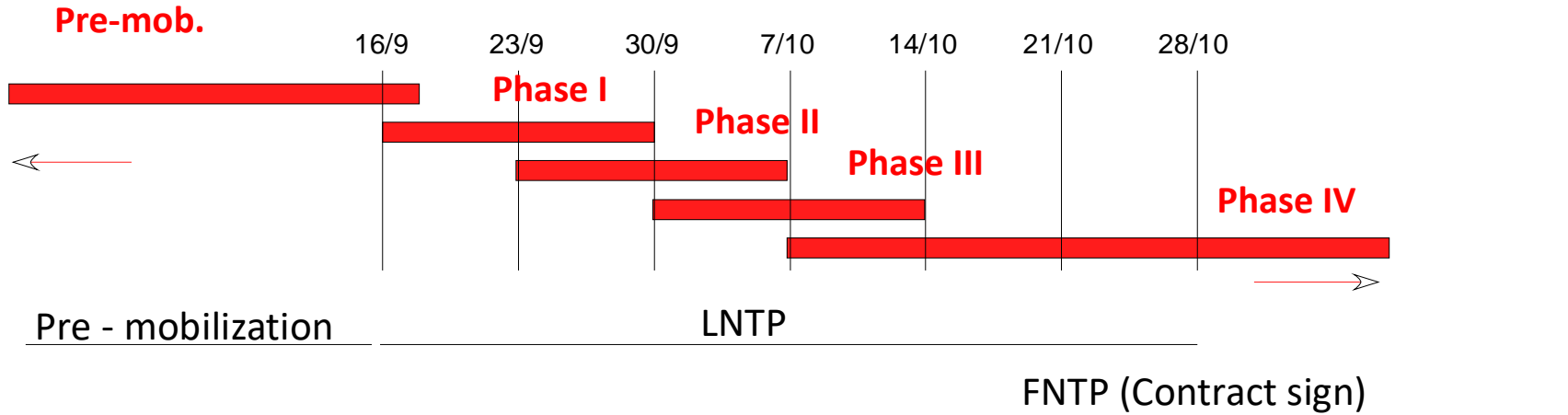


4.

LNTN – Mobilization Phase

5. Pre-mobilization

LNTN sequence



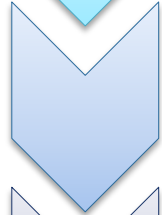


5. Pre-mobilization

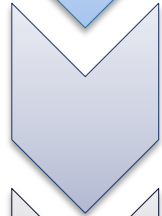
Pre-mob: Actions in progress



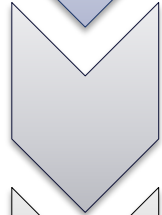
Material and equipment procurement



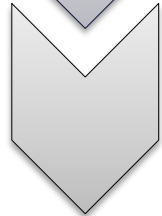
Concrete suppliers negotiation



Integrated Cover System (ICS) Detail Design



ICS Supplier pre-selection



Temporary winter shelters

Material and equipment procurement

- Materials needed in the premobilization phase (6 weeks)
- Gravel or crushed stone for the pads (Offices, parking areas, storage areas etc.) (Patton told at the meeting that there will be available 20,000 sq. Mt. for office area and 80,000 for lay down and storage areas and possible 30,000 sq. for other areas. For a total of 130,000 sq. mt. at various dates to be confirmed at the site visit of Wednesday and Thursday 11th and 12th.
- Lumber and timber
- Design and procure signage for cars and others
- Tool kits – 2 sets
- Sets of shovels, picks, hammers,
- Portable drills , portable saws
- PPE material for 50 people to start with.
- Various sizes steel and/or Nylon cables
- Signages to be designed including entry identification of the project, Astaldi
- Water containers 1 cubic meter.
- Pipes Etc.

Equipment for premobilization

- 6 Ford 150 or equivalent 4 x 4 four doors equipped for winter conditions.
- 3 Ford explorers fully equipped for winter conditions.
- 2 School buses to transport workers to site.
- 2 Rubber tired Cranes 50 tons to load and offload materials.
- 1 Cat 966 equipped with bucket and fork lift,
- 1 Boom truck 25 tons
- 1 Cat 420 back hoe with front bucket and small excavator.
- 2 Dump trucks mach 10 wheel.
- 1 Motor grader cat 140
- 1 Compactor 10 tons. Steel drum.
- 2 Containers 20 feet for materials
- 2 Office trailers
- 2 trailers for the workers as changing rooms, lockers, eating areas.
- 6 Tower lights – 5000 wt.
- 4 portable toilets
- Eventual Trailer, as an office in Goose bay for relations with the public, or a rented office.
- Fuel supply truck.
- Small generators to be defined for the early operations
- Heating equipment generating hot air. Numbers to be decided based on areas to heat.

Office trailers fully equipped.



Concrete suppliers negotiation

- Due to the time required to order, construct, transport and install on site of the 2 concrete plants and respective crushers, 5 months have been estimated by the would be supplier.
- Therefore the limit date to finalize and place the respective order is the end of September.
- We need construction drawings for all the procedures to be submitted to the engineer for all the required approvals including installations.
- This will be done via a task force with the Client for shortcut procedures within 30 days after the partial award of the contract.

Integrated Cover System (ICS) Detail Design

- From what was said at the meeting, the final design of the ICS structure is ongoing.
- Meetings will be necessary with the client to resolve any potential interference with the permanent structure to be able to have quick answers and proceed with the respective order of the ICS structures.

ICS Supplier pre-selection

- In the mean time we need to finalize the selection with the 3 potential suppliers. This preselection is ongoing.

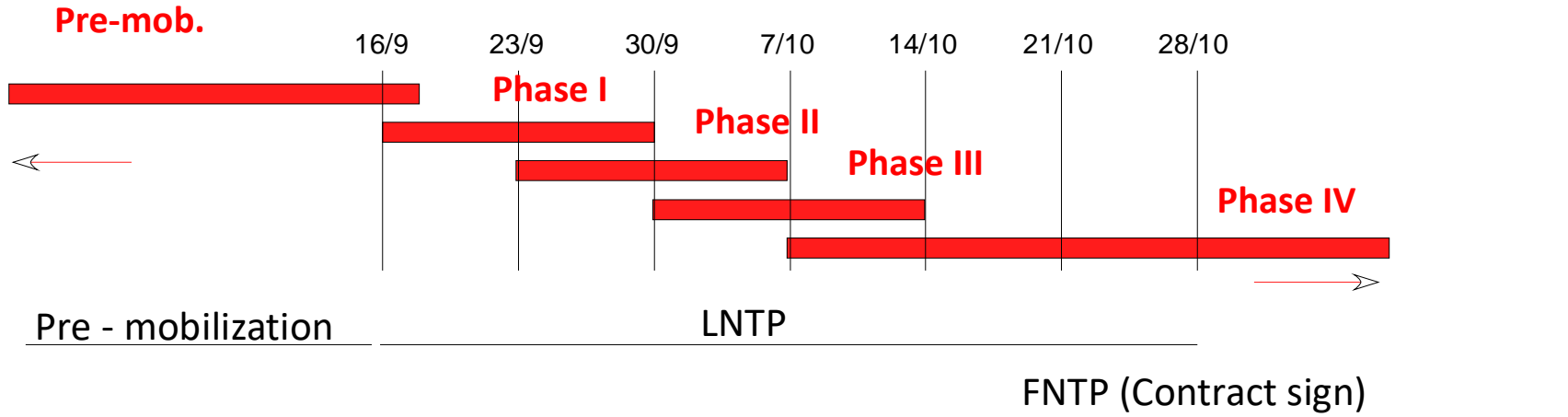
Temporary winter shelters

- Several areas have to be protected between the month of November and April.
- These have to be defined in detail. Tentatively we may have to cover:
 - Possible mud slabs areas for part or most of the foundation of the spillway in case we are able to complete the cleaning, slush grout, dental concrete of the areas where the foundations have to be built.
 - At this point the cover could be put in place for the construction of the foundation during the 5, 6 winter months.
 - There is a possibility to eventually install two half sections of the cover. This is being investigated.
 - Possible ware house, deposits for materials arriving, machinery to be parked.
 - Eventual stockpiles of materials like sand, gravel, crushed stone etc for concrete fabrication and road maintenance.



5. Pre-mobilization

LNTP sequence



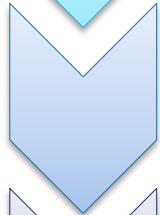


5. Pre-mobilization

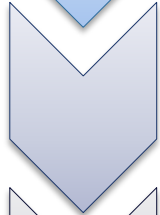
Pre-mob: Actions in progress (continue)



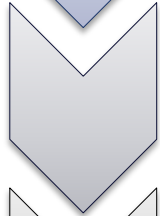
Engineering consultant selection



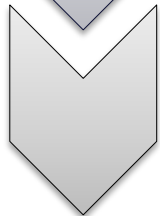
Surveying, test and monitoring services selection



Information technology and communication systems



St. John's offices and guesthouses (pre-contracts)



Goose Bay offices and guesthouses (pre-contracts)

Engineering consultant selection

- This has to be analyzed showing the various trades of the design.
- First of all we need to select the Engineer of NL which will approve and sign all the drawings which require his approval.
- The grades cover:
 - Structural
 - Electrical and mechanical,
 - Temporary installations, including buildings, sheds, scaffolding, forms etc. Etc.
 - Environment
 - Safety
 - Quality

Surveying, test and monitoring services selection

- We need to search, define and select the following:
 - Survey companies
 - Testing (Laboratories)
 - Quality control
 - Specialized services required (to be defined)

Information technology and communication systems

- We have to define the following:
 - Radio systems, including frequency and channel selection
 - Telephones; fixed and Mobile
 - Internet services, wireless and cable,
 - Astaldi Server to be defined and installed.
 - Video recordings of the site activities,
 - Photographic documentation
 - Daily, weekly, monthly reports

We need to set up a team of specialists to define these processes.

St. John's offices and guesthouses (pre-contracts)

- We need to procure necessary office and guest house.

Goose Bay offices and guesthouses (pre-contracts)

- We need to procure office space in Goose bay of 1800sq feet and parking area.
- Guest house or houses for about staff 15 people initially(subject to revision).
- A storage base approximately 40,000sq feet preferably an enclosed area with outdoor lighting .

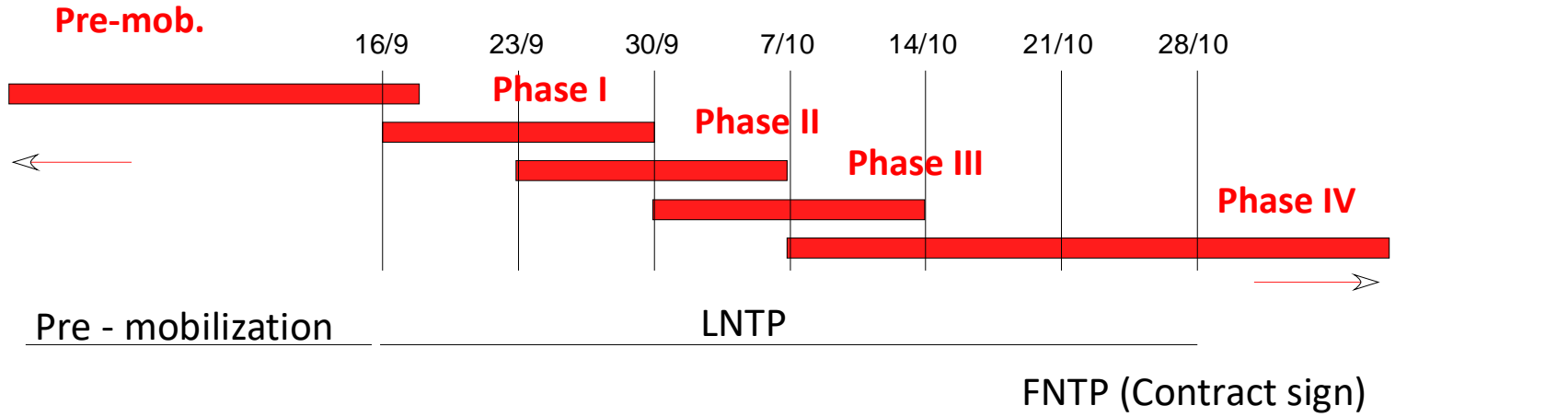


4.

LNTN – Mobilization Phase

5. Pre-mobilization

LNTN sequence



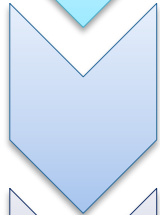


5. Pre-mobilization

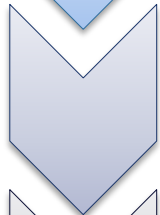
Pre-mob: Actions in progress (continue)



Working visa procedures for Astaldi personnel



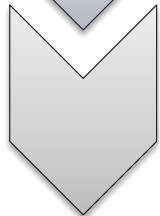
Surety and Bank final negotiations



LC for the LNTP advanced payment



Software and tools for contract communication (Aconex)



Logistics and transportation for peoples and goods

Working visa procedures for Astaldi personnel

- ASTALDI undertakes responsibilities to acquire visas for non canadian employees (expatriates) .
- Already Paul Shelley via Work Global has filled papers for :
- Vittorio Robiati
- Marco Marchetti
- Renzo Raho
- Guido Venturini
- Other names have to be defined and passed over to them to be processed.

Surety and Bank final negotiations

- To be performed by Montreal and Rome offices with surety and bank organizations.

LC for the LNTP advanced payment

- To be performed by Montreal and /or Rome offices.

Software and tools for contract communication (Aconex)

- To be performed by Astaldi Canada and/or site the Administration & Finance Manager,
- Engineering has to involved to define the flowchart details.
- This will also involve document control.

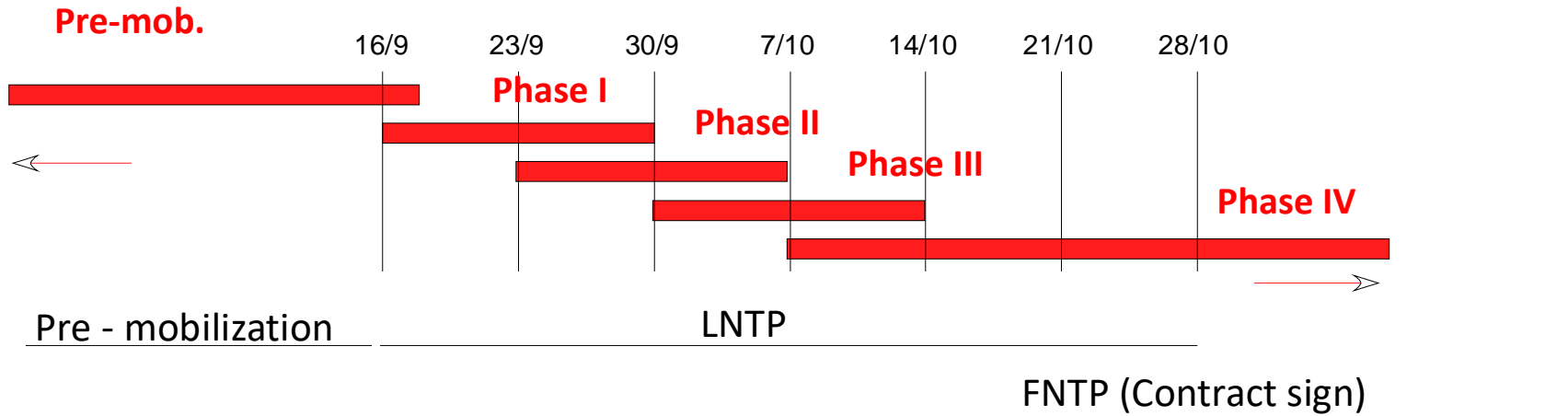
Logistics and transportation for peoples and goods

- To be performed by the Procurement and Administration & Finance departments.



5. Pre-mobilization

LNTP sequence





5. Pre-mobilization

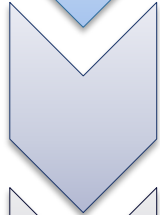
Phase I - Actions from 16/9 to 29/09



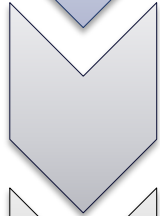
Kickoff meeting with the Company



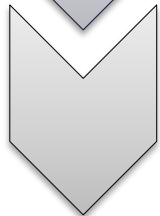
Detailed visit to Job Site



Permits and rules of access to the working areas



Meeting finalized to the working schedule analysis



Meeting finalized to the ICS analysis

Kickoff meeting with the Company

- The date and location of the meeting to be determined after award of the contract within 7days.
- An agenda has to prepared by both parties.
- We have to define who is responsible for this activity from the Astaldi team.

Detailed visit to Job Site

- Presently organized by Nalcor tentatively set for 11 and 12 Sep.2013 subject to confirmation by 6 Sep.2013.
- This visit will be attended by Guido, Ken, Jack, Federico, un named surveyor, Nicola, Astaldi assistant to Construction Manager supervisor.
- Montreal office to arrange travel.
- Goose bay representative to organize lodgings.
- Possibly first day with Nalcor, second day with Beton Provencal and others.

Permits and rules of access to the working areas

- To be arranged by Nalcor.
- This wil have to cover the initial accesses and long term.

Permits and rules of access to the working areas

- To be established by Nalcor and coordinated with the Astaldi local agent.

Meeting finalized to the ICS analysis

- Upon the finalization of our proposed design of the ICS a meeting will be held with Nalcor to present our design for comments or approval in principle.
- It was decided that a working table would be put in place where the two sides finalize the eventual discrepancies to enable Astaldi to proceed with a firm order.

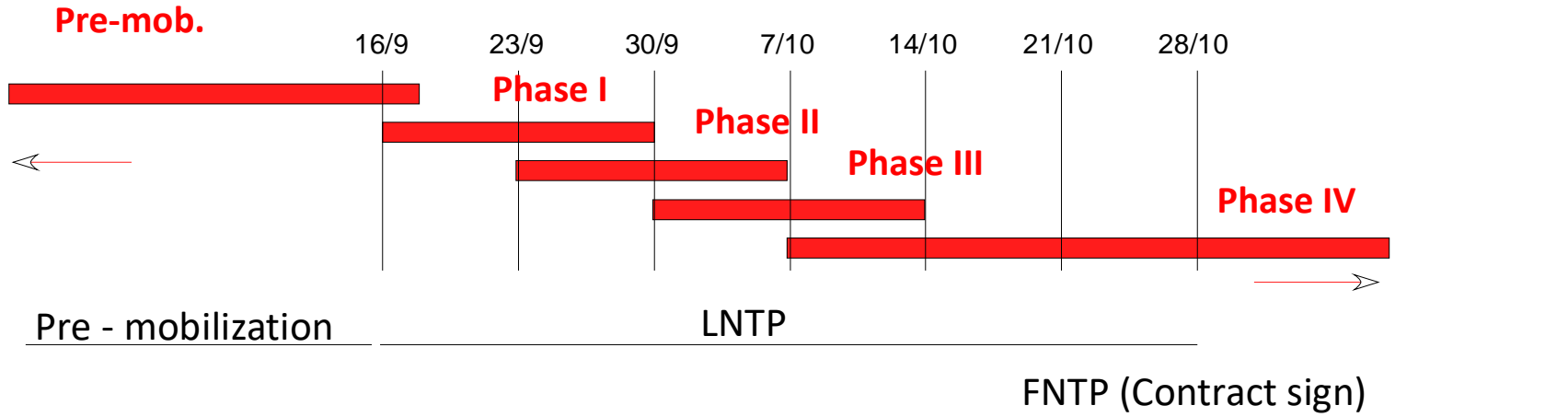


4.

LNTN – Mobilization Phase

5. Pre-mobilization

LNTN sequence





5. Pre-mobilization

Phase I - Actions from 16/9 to 29/09 (continue)



Office in Goose Bay for Innu relations and labour hiring



Meeting with LCP for design/construction coordination



Meeting with LCP for discussion of the LNTP procedures



Access Road Maintenance



Storages, training facilities & accommodations in Goose Bay

Office in Goose Bay for Innu relations and labour hiring

- To be established in Goose bay upon award of contract (restricted access to work areas, about 30th of Sep.2013).
- Rick Lewis, our agent in Goose bay is already looking into this matter.

Meeting with LCP for design/construction coordination

- To be held before 29 Sep.2013.
- Meeting location to be agreed upon.

Meeting with LCP for discussion of the LNTP procedures

- To be held as soon as LNTP has been received.

Access Road Maintenance

- To taken over by the end of Nov. 2013 subject to Nalcor confirmation.
- A decision has to be taken regarding who is going to do it in the early stages and eventually on the long term.
- We have allowed in our machinery list some equipment that can take care of the possible early phase.
- Eventually a local sub contractor could be chosen for this operation.

Storages, training facilities & accommodations in Goose Bay

- Storages and accommodation in Goose bay have been covered in previous slides.
- Training facilities not necessary in phase I.

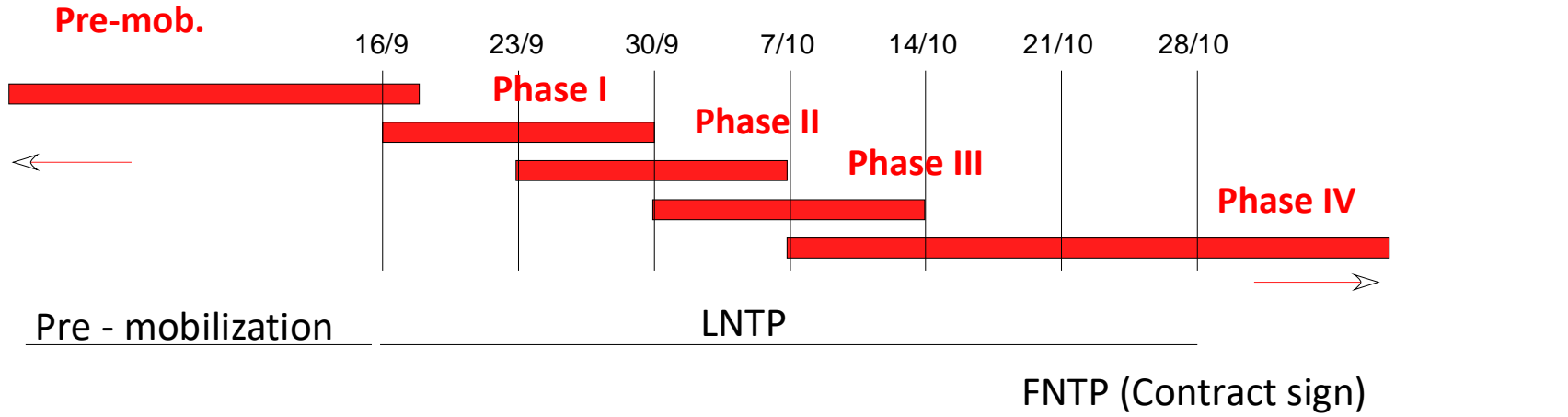


4.

LNTN – Mobilization Phase

5. Pre-mobilization

LNTN sequence



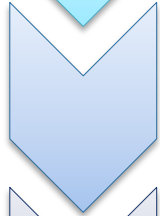


5. Pre-mobilization

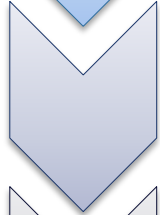
Phase I - Actions from 16/9 to 29/09 (continue)



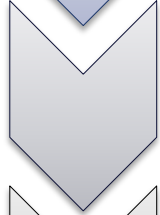
Document transfer and communication procedures



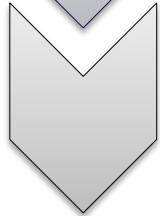
LNTP Working Permits



Introduction meeting with the Unions



Introduction meeting with the Innu and other communities



LNTP QHSE procedures

Document transfer and communication procedures

- All this has to be defined as soon as we can place a team on the site offices or early Goose bay rented space.
- This will have to be taken care by the people involved in the aconex, document control process.

LNTP Working Permits

- This item has to be taken care by Nalcor and Work Global.
- Astaldi has to start preparing the list of the people for which permits have to be procured.
- We have to define within Astaldi who is going to physically do this.

Introduction meeting with the Unions

- To be established by 29 Sep.2013.

Introduction meeting with the Innu and other communities

- To be held on or before 30 Sep.2013.

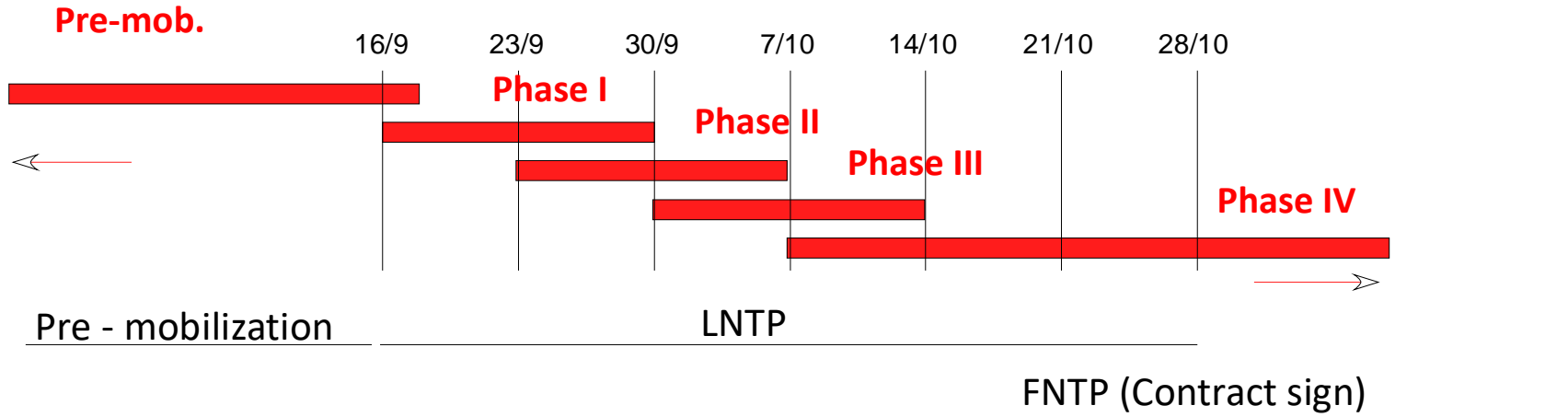
LNTP QHSE procedures

- To be reviewed with Nalcor.



5. Pre-mobilization

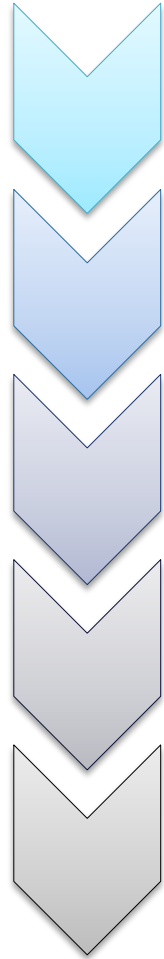
LNTP sequence





5. Pre-mobilization

Phase II - Actions from 22/9 to 06/10



Procurement and delivery of the equipment for the site mobilization

Procurement and delivery of the material for the site mobilization

Labour recruitment for the LNTP

Installation in the existing site facilities (camp, etc..)

Detailed survey for site installation and mobilization

Procurement and delivery of the equipment for the site mobilization

- Procurement and delivery dates to be established for site mobilization as per the equipment listed in phase I.
- The machinery list shown in the technical presentation for the long term operation has to be revised and phased and passed over to procurement.

Procurement and delivery of the material for the site mobilization

- Procurement and delivery of the materials for the site mobilization as per listed in phase I.

Labour recruitment for the LNTP

- Labour will be recruited upon successful meetings with the Union and Innu communities depending on their availability.
- A list of the people to be recruited has to be prepared.
- Each sector of the activity will prepare his own requirement.

Installation in the existing site facilities (camp, etc..)

- Installation work will proceed upon the delivery of site facilities by Nalcor.
- All the installations have to be defined.
- Resources to do the installation have to be defined .
- Procedures and drawings of the installations have to be prepared and submitted together with the Safety, Environment, requirements. The resources to do this have to be defined.
- This will have to take care of all the services:
 - Water,
 - Electricity and exterior lighting
 - Sewage collection and disposal
 - Surface drainage etc. Etc.

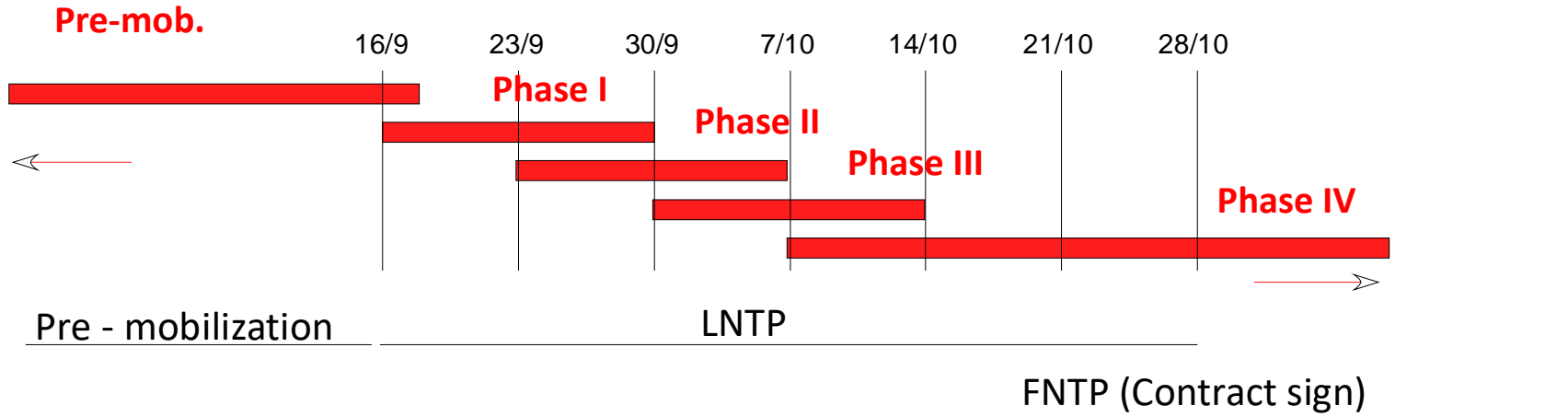
Detailed survey for site installation and mobilization

- Detailed survey will be performed by selected surveying subcontractor starting on or about 1 Oct.2013.



5. Pre-mobilization

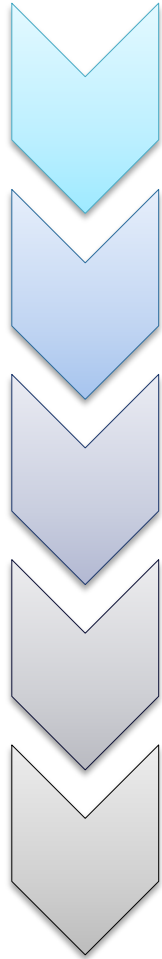
LNTP sequence





5. Pre-mobilization

Phase III - Actions from 30/9 to 13/10



Procurement and delivery of the equipment for the site mobilization (*continue*)

Procurement and delivery of the material for the site mobilization (*continue*)

Access Sand borrow pit and contractor laydown area installation

Temporary shelter installation in the industrial area and in the laydown area

Industrial water supply detailed design and procurement

Procurement and delivery of the equipment for the site mobilization (*continue*)

- See previous slides.

Access to the Sand borrow pit and contractor laydown area installation

- The accesses will have to be inspected during the site visit of early september.
- Inspection and acquisition of knowledge of all possible data of the sand pit has to be done.
- Technical information has to be acquired.
- Resources to do this operation have to be defined. Could be internal, or via exiting contractors running the pit or by an external laboratory.

Temporary shelter installation in the industrial area and in the laydown area

- See previous slides.
- At this point decisions will have to be confirmed for the placement of the respective orders.

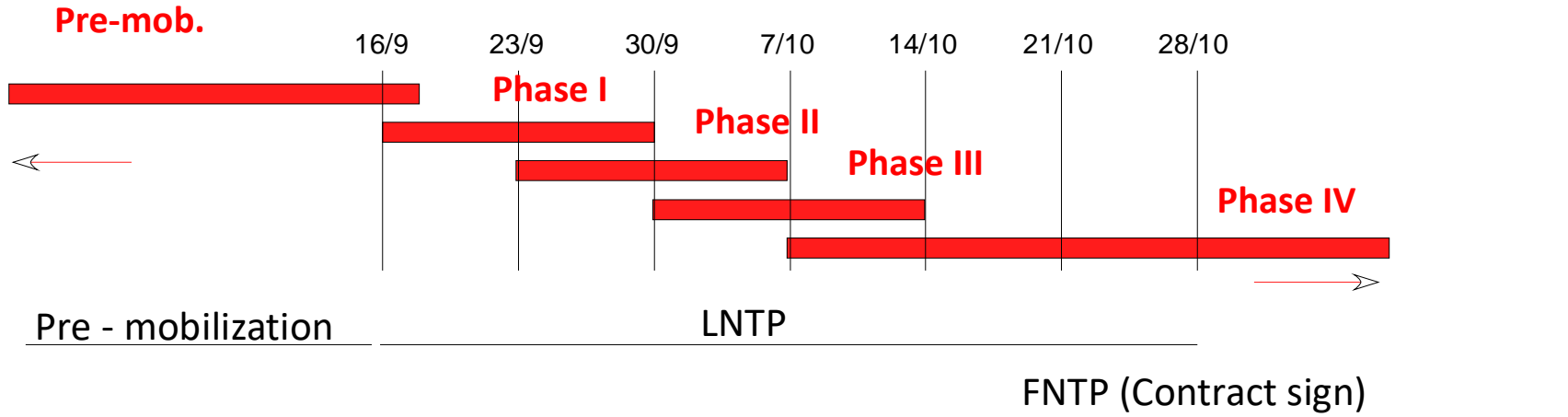
Industrial water supply detailed design and procurement

- Design has to be made. At this point the source of the water supply must be defined to enable the designers to proceed.
- The design team has to be defined. Could be internal team or an external engineering firm.
- Submittal to the Client for approval.
- Eventually the detailed design with the procurement list of materials will be passed over to the procurement department.
- The execution could be done directly or subcontracted. In this case subcontractors have to be selected for the operation and approval obtained from the client.
- Work procedures have to be prepared in parallel with the previous mentioned activities.



5. Pre-mobilization

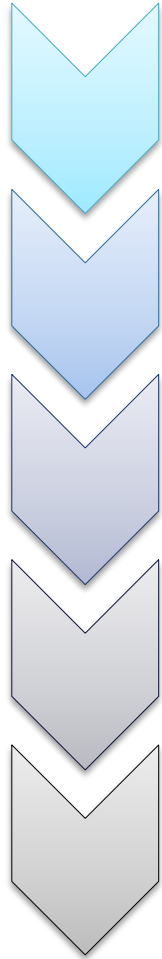
LNTP sequence





5. Pre-mobilization

Phase IV - Actions from 7/10 to 31/10



Procurement Plan for the prosecution of the work

Concrete platforms for site installations (containers, etc.)

Electric power supply network construction (start-up)

Water supply and drainage network contraction (start-up)

Aggregate production testing and start-up

Procurement Plan for the prosecution of the work

- The procurement department will be made aware of all the requirements.
- In the previous slides the main procurement list has been shown. Some detailing may have to be done in the weeks preceeding this phase.

Concrete platforms for site installations (containers, etc.)

- The engineering department put in place by Astaldi Canada, or an engineering external team will have to produce a general plan of all the installations that have to be produced.
- This has to be submitted to the client for approval
- These will be done in gravel, crushed stone or concrete as required.
- Once the plan is in place, we have to decide who is going to build the platforms. We may need to locate a small subcontractor to perform all this, or eventually to do it ourselves with our resources.
- To be able to perform the work we need to prepare the formal submission with the works procedure, and all the other requirements: safety, environment, quality etc.

Electric power supply network construction (start-up)

- Since we shall not be able to make use of the Client energy supply because of the switch gear we shall instal temporary generators.
- These will have to be defined by the engineering department depending on estimated consumption and load.
- The information will be passed over to procurement for possible purchase or rent.

Water supply and drainage network contraction (start-up)

- See previous slides

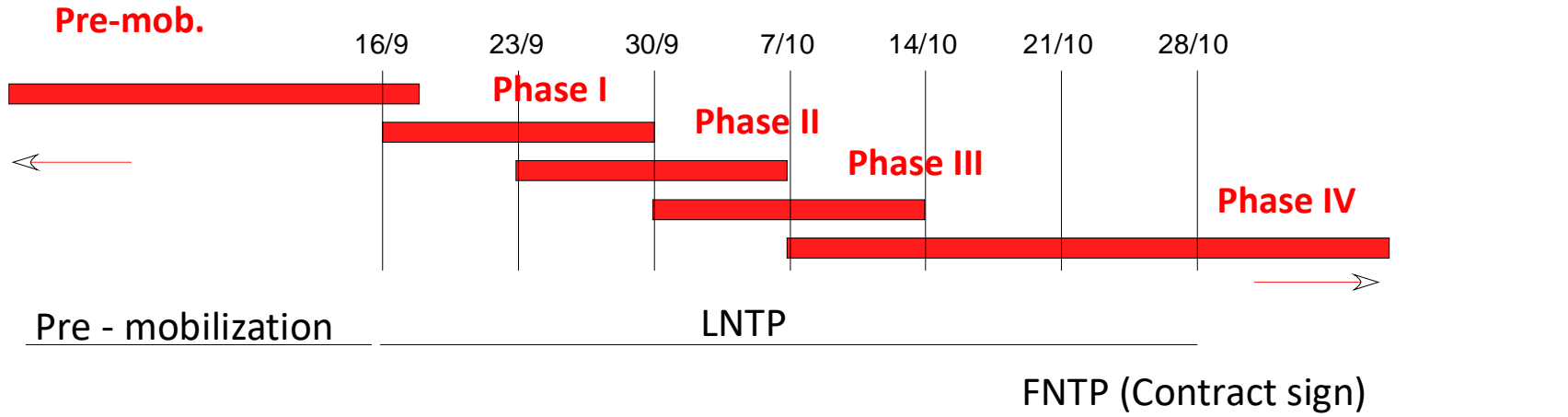
Aggregate production testing and start-up

- Depending on the final decision by the 22nd of September of how we are going to proceed, the whole campaign of production, sampling, testing as required by the specifications will have to be carried out.
- This will probably be done by external laboratories.
- Large size concrete tests will be done as explained to the client by delivering large quantities of aggregates to a similar batching plant that will be used on site, available in Baie Comeau. Here the different designed concrete mixes will be produced and made ready for testing.
- The laboratory or testing firm that will take care of this has to be defined.
- Pumping tests will be possibly in this period to be carried out for the pumpable mixes as well as possible testing pours on the batching plant area.



5. Pre-mobilization

LNTP sequence



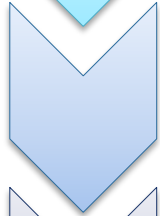


5. Pre-mobilization

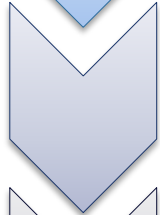
Other Actions of LNTP



Project Presentation to communities



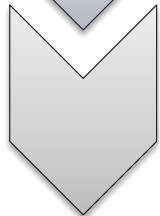
Website and Social Media sites to increase hiring possibilities



Presentation of the Project at the University and other technical institution



Preliminary setup of the training facilities for formworks



Submission of the detailed working schedule of the whole project with resources, equipment and materials

Project Presentation to communities

- Where and when if necessary will be done by our public relation team in conjunction with Nalcor.
- See previous slides.

Website and Social Media sites to increase hiring possibilities

- See previous slides.

Presentation of the Project at the University and other technical institution

- To be defined.

Preliminary setup of the training facilities for formworks

To be defined:

- Location,
- Type of structure under which the training will take place,
- Type of forms for which we are going to do the training etc.
- The training programme shall be written by the eventual forms suppliers.
- Some training will be done outside care of the potential form suppliers.

- This will probably be executed in the early months of 2014 after the set up of all the infrastructures and the selection of the forms to be used.

Submission of the detailed working schedule of the whole project with resources, equipment and material

- In this phase we need to put in place our planning team.
- Meetings will have to be held with the Client and the Electromechanical contractors to review all the milestones.
- This is necessary to be able to optimize the labor resources.
- Then there is the coordination related to the RCC dam requirements and south Rockfill dams.
- Then we shall be able to work on and produce a new revised schedule and detailes schedules etc. Etc.

New items

Staff requirement pre mobilization period

- Project Manager
- Deputy Project manager
- Construction Manager
- 3 Engineers – One will be the chief.
- 2 Autocad operators
- 1 Planner + 1 assistant
- 1 Chief surveyor by Astaldi + subcontractors
- 1 Mechanical engineer
- 1 Procurement manager + 1 assistant
- 1 Subcontract administrator
- 1 Administration and finance manager
- 1 Quality control person
- 1 Safety person
- 1 Human resources person
- 3 Secretaries (Goose bay)
- 3 Clerks (Goose Bay)
- 1 Computer specialist

Labour requirement - pre mobilization period

- 1 Van drivers
- 2 bus drivers
- 2 Dump Truck drivers
- 2 50 ton wheeled Crane operators(
- 2 Riggers (Signal men)
- 1 966 operator
- 1 Boom truck operator + rigger
- 1 Cat 420 Back hoe operator
- 1 Motor grader operator
- 1 10 Ton roller operator
- 1 driver for fuel supply truck
- 6 Common labors
- 4 Carpenters
- 1 steel fixer
- 1 electicians and 2 2 helpers
- 1 Plumber – Pipe fitter

Initial urgent materials and devices
for premobilization period

- Mobile telephones
- Portable computers,
- Fixed computers, plotters
- Office equipment, photocopy machines etc.
- PPE material
- Vehicles – Fully equipped – Winter tyres
- Radios
- Winter clothing
- Identification badges

Long term infrastructure to be set up by the end of the year.
This has to be reviewed based on the tender presentation reviewed.

- Field office complex – 760 square meters
- 4 Satellite field offices – 12' x 60'
- 10 Lunch room for the workers – 12' x 60'
- 4 Portable wash rooms
- Portable toilets – Ongoing ar required
- Folder way garage – Mechanical shop 600 sq. Meters
- Carpenter shop 400 sq. Meters
- Ware House, trailers or a big inflatable
- Formwork supply – Review required and order to be placed
- Curved forms – Review required and order to be placed.
- Plant and machinery – Review required and orders placed.

Documentation

- Contract
 - Estimate
 - Budget
 - Drawings
 - Reports
-
- We need that all the documentation be prepared and delivered to the site office in goose bay to be placed at disposal of the site.
 - This will be in hard copy and electronic format.

Muskrat Falls Generation

(Lower Churchill Project, Labrador, Canada)



Thanks for your attention

Answer to the notes below.

With reference to the concern of Nalcor (Scotto O'Brien) on the submission of the documentation required to allow the start of the on-Site Early works, hereunder we detail the progress made up to now and the follow up:

Site survey

The areas to be surveyed have been visited twice and the last time with Laird Patton on October 22nd. The visit was attended by Ken Chryssolor, Vittorio Robiati, Rick Lewis, Carl Hovey from All North. We all had passes provided some two weeks ago at the entrance safety gate and had done the required induction course on Health and Safety and environment. The paper work to allow the survey team to enter and proceed will be in place tomorrow Friday 25th by 5 pm. The team staff already have the Identifications, they have already performed the Medical test and Drug and Alcohol test. The documentation we are going to submit is presumably complete in accordance with the contract requirements.

Installation of Trailers.

The area where the temporary trailers will be installed has been inspected together with the Nalcor Staff. The place where they are going to be positioned temporarily, since they will be eventually moved to the construction sites once the main camp is in place, has been identified. The non potable water supply could be eventually done via the present water main which is making use of the existing wells. Nalcor is verifying the wells capacity.

All the paper work will be in place including the works procedure by tomorrow, Friday 25th afternoon at 5 pm.

The trailers duly accompanied by the Teamsters in accordance with the procedures have already been parked next to the Nalcor facilities within the 20,000 square meters provided by the owner to the Contractor that have already being marked physically on site by the Nalcor survey team , for which we thank you.

The area supplied to us has been properly leveled and compacted by Nalcor.

The electrical connection will be done as mentioned by a local specialist, which is already involved on site and which papers and documents are being submitted together with the Water waste removal operation once the collector tanks have been installed and connected.

Road maintenance

The road maintenance operation that will have to be taken over by the Contractor on November 30th has been reviewed.

The proposals from various subcontractors already operating in the area are presently under review and a decision will be taken shortly.

All the documentation that will be delivered to Nalcor regarding H&S plan, quality and Environment including the works procedures as well as the selected subcontractor profile has already being completed and ready to be submitted to Nalcor as soon as a decision will be taken to whom the work will be awarded.

Concrete batch plant

The decision regarding the selection of the Company that will do the crushing of the rock, the production of concrete and its delivery to the pouring points has been taken. This work has been assigned to Labrador Ready Mix.

Paper work regarding the whole operation is being prepared and will be submitted as soon as possible.

The logistics of the operation has being reviewed and a visit to the site has been done on Tuesday 22nd; Laird Paton, Ken Chrissyolor, Vittorio Robiati, Rick Lewis and Carl Hovey from All North. We examined both areas C1 with the ongoing operations as well as area B and A. We also located the position of the present water main. We understood that Rock is Rock wether it comes from zone C1 or B. Therefore we examined the conceptual possibility to move the main operation from C1 to B both for crushing and Batching.

We even examined the possibility to modify the present plant to produce the early concrete, specifically the Over Break concrete for the Spillway and the South erection bay.

We are analyzing all this with Labrador Ready Mix reviewing these possibilities in a comprehensive meeting on Friday 25th.

To be able to do a detailed plan of the lay out we need to be able to access the site with our surveyors which hopefully we may have permission next week. Some space may be obtained with the crushing operation of materials in the area that will be made once the RCC operations have been completed.

We shall revert to you on this as soon as all the analysis has been completed.

Site utilities

The original lay out to place our facilities in the main camp area has been reviewed and revised and we are going to place these as follows:

The Astaldi camp installation, will be placed next to the Company Lay Down Area adjacent to Nalcor trailers area, in the 20,000 square meters area already prepared for us.

It will include: Health and Safety, Environment, Quality, General staff office, Engineering, , surveyors, Lunch rooms, Locker room and Lavatories, parking for vehicles with the block heater plugs, Heated ware house, Open covered storage area, Service roads, the area will be adequately lit and serviced with Electricity and non potable water supply.

The other facilities; Mechanical workshops, Carpentry shops, Temporary covered facilities and others, will be positioned near the construction sites. We visited each area on Tuesday 22nd with Mr. Laird Paton, and most of these areas are not yet available to us. At the same time, we defined each area, the respective square meters, when they will be available and for how long, until others may have to come in and possibly share with the areas with us.

Based on this we need to eventually survey each area to enable us to make a comprehensive design of each area and the way it will be utilized positioning on the same plans the respective facility. Hopefully we should be able to carry out the survey next week.

In the mean time, we are plotting on a plan the results of the visit with respective information and photographs to show Nalcor how we intend to make use of these for a better logistics, related to the execution of the various structures.

Eventually for each one we shall define electric connections in line with your installations that are ongoing, usage of decanting facilities for the water pumping as well as road facilities to access all the areas, water supply for industrial use etc. Again, to be able to do a sound engineering we need the survey to be completed.

Waste management

We are currently reviewing the documentation submitted to us by a local Contractor already operating in The Muskrat Fall site. We are going to take a decision about awarding to him the relative works to be done and deliver all the relevant documentation – which we already have in hand – ready to submit to you for your approval.

Further information to pass to Nalcor as requested

We are showing here under the dates by which the following documentation will be provided to Nalcor.

1. Execution Plan for Early Works - 28th evening. *
2. Technical specifications for each component of the Early Works – Ditto *
3. Schedule for Early Works (Ask Pierre)
4. Detailed Work Procedures (Spillway Foundation treatment) 10.11.13
5. Detailed Safety Plans (St. Johns – Same date)
6. Detailed Quality Plans (Only spillway foundation treatment – 10.11.13)
7. Detailed Environmental Plans (St. Johns’ – Same date)
8. Permits (St. Johns’ _ Same date)

* These will be a general description of the activities we want to perform as early works as discussed on site the other day with Lair Paton.

This will give Nalcor a precise idea of how we are going to move in the working sites, once all the preambles are in place and will allow us to move to site with all the necessary resources.

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NOTES FOR LUCCHINI

EVENTS THAT NEED TO BE LOOKED INTO TO SEE IF THEY CAN GENERATE ECONOMIC AND OR PROGRAMME REQUESTS

1 – From Last September when we were given a limit order to proceed and later on when the contract was signed, Astaldi spent a lot of money in Hotel, rented houses, food and drinks and travel. We had opened an office in Goose Bay and had to move up and down from site. No accommodation was available, from Nalcor since the construction of the camp and its facilities were late. This continued down to February March when some accommodation was eventually made available. This, was particularly felt after the contract was signed at the beginning of December

2 – Dewatering. The systems passed over to Astaldi at the beginning of winter were in reality summer dewatering systems. All the pipes and the pumps froze and they had to be all replaced with winter suitable ones heat traced. To do this in the winter conditions was really very messy and costly.

3 – Limited order to proceed. This was started but there was incompatibility between some of the contract restraints and conditions. For example to be able to do a site activity we had to have approved by Nalcor all the H&S documents, Quality, Environment. It was impossible to get this done in the six weeks and therefore many activities could not be performed. See the Power point made at the time related to the activities to be performed under the limited order to proceed.

4 – Crushing using the plant used by Nalcor to build the RCC cofferdams

Crushing operations to produce material for mix designs

When Beton Provencal was crushing to supply the aggregates for the construction of the RCC cofferdam they had no problems with the dust suppression and did nothing to suppress the dust and were never stopped by Nalcor. When we asked to crush for a couple of days or a few hours to produce some aggregate to start doing the mix design studies, we were never permitted because of the dust suppression and some three months passed until a dust suppression system and other check measures were in place.

Nalcor made the production of these aggregates this impossible as to the dust suppression subject. The same to obtain some sand from GD11.

5 – Awarding a contract at the beginning of winter with the Christmas closedown and holidays is incompatible with the real execution of the contract.

For example recruiting staff, building the Spillway cover, making surveys with the areas covered by Ice and snow.

6 – Sand protection of the excavated areas for defrosting

We were asked by the client if we wanted them to proceed under the earthworks contract to place a two meter thick sand layer to protect the rock from frost.

Had they placed the layer it would not have been possible to remove it before May June 2014 delaying the start of the works of the spillway. The sand layer would have then to be removed under the Astaldi contract.

We ordered from Norseman a cover 85 meters long 35 wide and 18 high which would have allowed the construction of the central 3 foundations and 2 lifts of six piers

The cover arrived at the beginning of January but the very severe cold made it impossible to place it at the speed we had planned. Still, the structure was useful for the start of the works earlier than planned.]

We asked verbally to Nalcor to verify if we could receive a contribution against the Norseman structure since they saved costs of placing and removing the layer of sand. If I remember well there was a note in one of the meetings or other documents.

7 – Severe winter.

According to the citizens of Goose Bay this winter has been very heavy with temperatures dropping down to minus 50 with wind conditions.

It is necessary to collect the official information from the meteorology department, compare it with the statistical data and evaluate if there are good reasons for contractually ask for possible extensions

8 – Spillway excavation and foundation treatment. Over break

This story is related to the field order of Nalcor instructed by their designer SNC Lavalin to pour simultaneously the over break concrete with the foundation.

We explained to them with a PP that the original conditions (according to us) were different and we had planned to pour the over break first, form a nice working platform and from there place the steel and forms in a normal condition, we did not need to build kicker start forms to follow the rock profile and place the Doka forms in a more difficult condition, expensive final cleaning through the steel reinforcement etc. walking in a very irregular surface.

The notes from Nalcor are contradictory and some times not true.

We have to evaluate if to request a change order.

9 – Turnover of staff

The Initial turn over was 20/10

The workers and local staff apparently did not accept it and they wanted a turnover of 14/7. The management went therefore with this.

Needs to evaluate if we can put together a request of extra cost and all other items, more people, more logistics, more complication related to this

10 –Accommodation. Very poor

We mentioned in the meetings of July 2003 with Nalcor that the accommodation, with the sharing of a shower would not attract many people and many people would live and there would be a big number of resignations and turn round. Many people would refuse to go there and would ask to stay in Goose Bay.

As a matter of fact we have some 25 people staying in Goose Bay

We asked verbally if we could have a piece of land to erect small camp for families and senior staff as well a possibility to have a canteen of ours where to cook some Italian food for the Italian staff but I understand we were told not to request it because it would be denied.

All this is generating costs, direct and indirect, loss of efficiency, travel to and from Goose Bay, rents of houses, etc. Needs to evaluate the possibility to place a request for extra costs.

Lot of the Nalcor staff refused to go down and live in Goose Bay.

11 – Overbreak concrete story.

When we were handed over the excavation of the spillway in two phases, limited access, unrestricted access, the surface that was produced for how much the cleaning had been done with a small excavator was not what we see today

The excavations have been delivered with great delay. Dario has the dates. The spillway had been excavated with small buckets but not as it can be seen to day. Nalcor sais that the overbrake thickness below the theoretical line was 0-25 cm. They wrote it in the overbreak correspondence for the spillway. So we have a first elevation surveyed both by Nalcor and by us.

From this elevation the real depth, now that the rock is clean can be measured down to a meter.

This volume should be considered excavation and paid at the bill rates.

Then we filled up a little bit more to prepare a working level where we erected the Norseman cover structure and there was a new level. I think that the excavation should be measured starting from this level.

12 Upstream overbreak at spillway. This was very obvious. We should have had a 3 meter vertical cut to pour against it the upstream foundation blocks. In fact we found that it was lower from 1 meter to three meters. We were obliged to do a lot of extra formwork and different phases and pour the overbreak concrete and do a double set of forms inside to outside and then outside to inside.

This should be part of a Change order

13 – Delays obliging to order more resources; equipment, cranes, forms, STAFF, Personnel to finish the spillway before the winter season. Once delays have been ascertained not to be our responsibility then these costs should be reimbursed by Nalcor including the acceleration to finish the spillway in time and possibly before the winter to avoid jumping the 1915 milestones.

1

14 - Access Road Bridges. They are insufficient as for the loads and this has obliged us to reduce the entry loads or to reduce the articulated loads coming from GD8, or have them to stop and travel at 5 km per hr on the Makenzie bridge, or download the crushers a has happened on the 22nd of June, they have been offloaded before the small bailey bridge

15 – ICS structure, excavations, structures.

The ICS design had to be done several times because once the rock could be surveyed properly over excavations made it necessary to modify the design.

Engineering can write the sequence of the meetings and of the redesigns. This also had to do with the construction of the platforms for it erection

The excavations were delivered to us very late and full of Ice and Snow and no clear and exact rock profiles were available or could be made.

Then apart for the costs of redesign and the delays there is the cost for the acceleration.

We should have started the erection at the beginning of March and it will be July.

Plus if we do not finish by November we have to place a vertical division to close in the two first units and the draft tubes will in any case start with some 4 months delay

16 – ICS Overbreaks in the previous excavations and the impossibility to do a proper survey due to ice and snow conditions have made it impossible to determine the exact locations of the rock and therefore complete a proper design. The design had to eventually be modified radically with different columns reduced in length lengthened, eliminated, different foundations and the necessity to do proper working platforms upstream and downstream for the logistics of the erection system of the ICS
The same at the top and bottom of the south service bay and on the north area.

17 – Over excavations, all over, volumes, time extra costs
Nalcor has sent to us dozens of drawings showing how they are going to treat the over excavations. Concrete, steel reinforcement etc.
All this should be part of change orders extra costs and time.

18 – Access road down to power house never completed. Causes delays etc.
It is funny that knowing the ICS would have been erected, they should have used the previous contractors to provide proper access roads and platforms. They were more organized and could have done it faster and avoiding us to do it, reducing delays and problems.

19 – Cell telephone system inefficient causes a lot of extra costs walking out of offices to be able to communicate.

20 – IT systems often out of order causing inefficiency

21 – Makenzie bridge diversion was requested to us obliging us to divert resources for this work from other urgent works.

22 – Union supplied labour when is of no good quality. We had a problem with the erection of the Norseman cover in the spillway. The 5 iron metal workers sent to us proved not to be suitable, had to sent back and replaced with others. We lost two weeks in the erection, cost us money of wages, travel, accommodation for the incoming team and the cost to bring in the new team.

23 – Exceptional bad weather winter conditions. The local people say it has been an exceptional bad year. We should get the official meteo information and see if we can put in a request for delays. Certainly it has delayed the erection of the cover for the spillway etc.

24 – The uncompleted road obliges to a reduced travel speed with loss of time, this for a whole year. The 60 speed will be probably introduced in August once finished the completion works.

25 – Electric supply points were given to us late obliging to delay the distribution system and using mobile generators

26 – Wash rooms - Supply and maintenance
These are to be supplied by Nalcor. We bought a few to cover the requirement. Maintenance is at Nalcor cost but we are doing out and should be paid Back.

27 – Gate entrance. Continuous change of rules continue to cause to us extra costs.