

From: [Frank Gillespie](#)
To: scottobrien@lowerchurchillproject.ca
Cc: brucedrover@lowerchurchillproject.ca
Subject: Discussions with Andritz RE: CH0032 Performance to Date
Date: Thursday, March 6, 2014 9:51:58 AM
Attachments: [CH0032 Management Review Feb 28.pdf](#)
[MOM CH0032 Issues Feb 28.docx](#)

Scott

As discussed. This may be a bit wordy but I did not want to rely solely on the MOM issued by Lucio. NOTE: Bob Besaw was here yesterday afternoon and said that Paul Harrington had dropped by to ask about the gates package. Bob reported I was writing a synopsis of the meeting and he said he was meeting with Daniel Carrier this week and would like to be up to speed on the discussions. You may want to update him as well. FYI.

Frank

Discussions with Andritz Hydro on CH0032 Package Issues

A meeting was held 28-Feb-2014 in Andritz Hydro Canada's office to get an update on progress regarding improvements to the management of package CH0032 Hydro-Mechanical Equipment

Andritz Hydro Attendees:

Daniel Carrier - VP Operations Canada

Alois Zeuner - Technical Project Management Lead Linz, Austria

Bill Mavromatis - Project Manager Incoming July 2014 CH0032

Mathieu Bertrand - Current Project Manager CH0032

Joanne Raddatz - Project Manager CH0030

Lucio D'Alessandro - Project Engineer CH0032

Nicole Hu - Contracts Manager CH0032

Michele Castelli - Installation Coordinator CH0032

LCP Attendees:

Scott O'Brien - Component 1 LCP Project Manger

Bruce Drove - Package Lead CH0032

Frank Gillespie - Area Manager Electrical and Mechanical

Discussions were open and productive and yielded a clear action plan addressing the issues raised by LCP. LCP will be tracking progress against the actions and committed dates for implementation.

The key issues discussed are identified below:

Andritz Hydro Team Performance

Cohesion of Team , Reactive not Proactive, Turnover of Key Roles, Late Start of PE and Construction Coordinator

There was much discussion regarding team performance. LCP detailed issues including lack of PM control of the design effort, replacement of key personnel without discussion with LCP team and a disjointed design effort where issues are often identified by LCP not AH. In addition it is felt that the Linz design team are not fully aware of the design requirements for North America vs European clients. The team is not performing at the level expected from Andritz.

Andritz has committing to increasing face-to-face time between Canadian and Austrian personnel to improve communication and ensure processes align with AH Canada and LCP requirements:

- Initially, Gerald Abel (Linz System Engineer aka Design Lead) to work from MTL offices for 2 weeks and the Canadian PM and PE work from the Linz offices for 2 weeks
- Following the initial period, Gerald Abel to work in MTL offices for 1 week per month and Canadian PM and PE work in Linz offices for 1 week per month on an ongoing basis
- Participation in a joint LCP/AH engineering audit of the Linz design office

Effective Leadership

PM Experience level, Top Down Control, Passive Leadership Approach

Feedback to Andritz centered on the lack of experience with the current PM. It is felt that he does not have control of the Linz design team and is unaware of design and deliverables submission requirements and is not fully cognizant of the contract specifics.

Andritz committed to:

- Bring new PM (Bill Mavromatis) on board in short term as coach/mentor until taking over as full time PM July 1, 2014
- Current PM will remain on the project and transition to an Installation Coordinator role.

Design and Quality Management

Lack of attention to detail, drafting deficiencies, specification compliance, constructability review of design prior to issue to client, design leadership structure and control.

Linz QA personnel not engaging, QA often not available for weekly meetings, a lack of

understanding QA requirements

Issues highlighted deliverable submissions that were incomplete and indicative of a lack of a quality check prior to issue to LCP. In addition it was clear that no constructability review was performed as it was left to LCP to advise of constructability issues inherent in the submitted design drawings

Andritz committed to;

- . Assign Wolfgang Stanger (Linz Chief Design Engineer) to provide a weekly engineering design report for review at the weekly project meeting
- . Ensure Michele Castelli(Construction) is engaged in review of future submissions.
- . Initiate an installation review status register
- . Participation in a joint LCP/AH engineering audit of the Linz design office
- . Attend a dedicated weekly quality meeting with LCP

Andritz are currently fabricating the anchors for the Spillway without approved and stamped drawings, there is a risk of rework if drawing changes are required. AH assumes this risk. There appears to be a lack of understanding as to the materials requirements for the project. Drawings standards are not being adhered to.

Andritz P.Eng is completing the review of the drawings for the first delivery. Expected completion date is March 11.

Project Administration

Use of " Standardized Registers (Action, Change, Monthly Report, MOM etc)

The issues with Andritz are centered around not following accepted protocols as employed on CH0030 package. The correct technical support personnel do not always attend the weekly conference calls on Project Management and Quality.

Andritz committed to:

- . Assign CH0030 PM and Contracts resources to sit in on weekly meetings for CH0030 to ensure Best Practices from CH0030 carry over to CH0032.
- . Co-locate the CH0030 and CH0032 design team in the MTL office to enhance "cross pollination"
- . Initiate a joint " Risk Review" bi-weekly sessions between the AH and LCP PMs to identify and address potential risks

Andritz were requested to issue minutes of the discussion so we can track the commitments and gauge progress over the coming 3-4 weeks. A copy of the presentation and minutes is attached for reference:



CH0032 Management Review Feb 28.pdf



MOM CH0032 Issues Feb 28.docx

Frank Gillespie P. Eng

Area Manager Electrical & Mechanical - Component 1

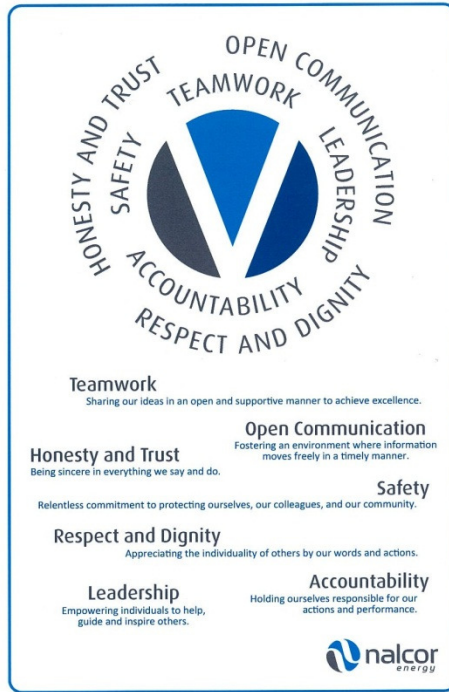
PROJECT DELIVERY TEAM

Lower Churchill Project

t. **709 778-6660** c. **709 770-2929** f. **709 754-0787**

e. FrankGillespie@lowerchurchillproject.ca

w. musktratfalls.nalcorenergy.com



Muskrat Falls Gates Project CH0032 – Management Review

Rob Murray/Alois Zeuner – 28 February 2014

Package CH0032 Management Meeting

AGENDA

11:00 – 11:15 Introductions and Opening Remarks

- Rob (Safety Moment)
- Bruce
- Frank

11:15 – 11:30 Review Issues List

- Bruce Drover e-mail
- Lucio/Malcolm

11:30 – 12:30 Comprehensive Action Plan

12:30 – 1:30 Lunch

- Daniel Carrier
- Malcolm Smith

1:30 – 2:30 Close-out/Actions/Next Meeting

2:30 – 3:00 Closing Remarks/Wrap-up

- Scott/Daniel

Package CH0032 Management Meeting

Safety Moment

Work Area Access – Traction

We have seen recurring instances of slips and falls on ice in non-working areas of the camp sites such as the customer admin office area, the camp, mud-room entrances and worker drop off areas. These areas are not covered by JHAs and they are not designated to particular contractors.

During winter periods, surfaces become compacted with use or iced due to changes in weather.

Our approach on site will be to develop a collaborative approach where these areas get routinely sanded and checked by a designated service provider or by the family of contractors on site on a rotation basis



Cause Analysis and Solutions – Approach Project CH0032 – Team Performance

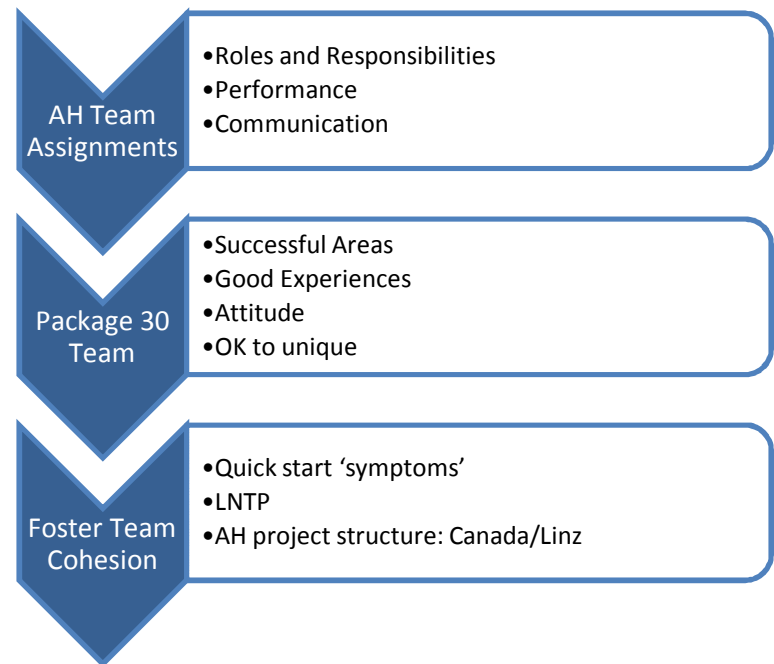
Rob Murray/Alois Zeuner – 28 February 2014

Package CH0032 Project Review – Project Management

Symptoms

Issue	Description/Theme
Team Performance	
Effective Leadership	
Project Administration	
Communication	

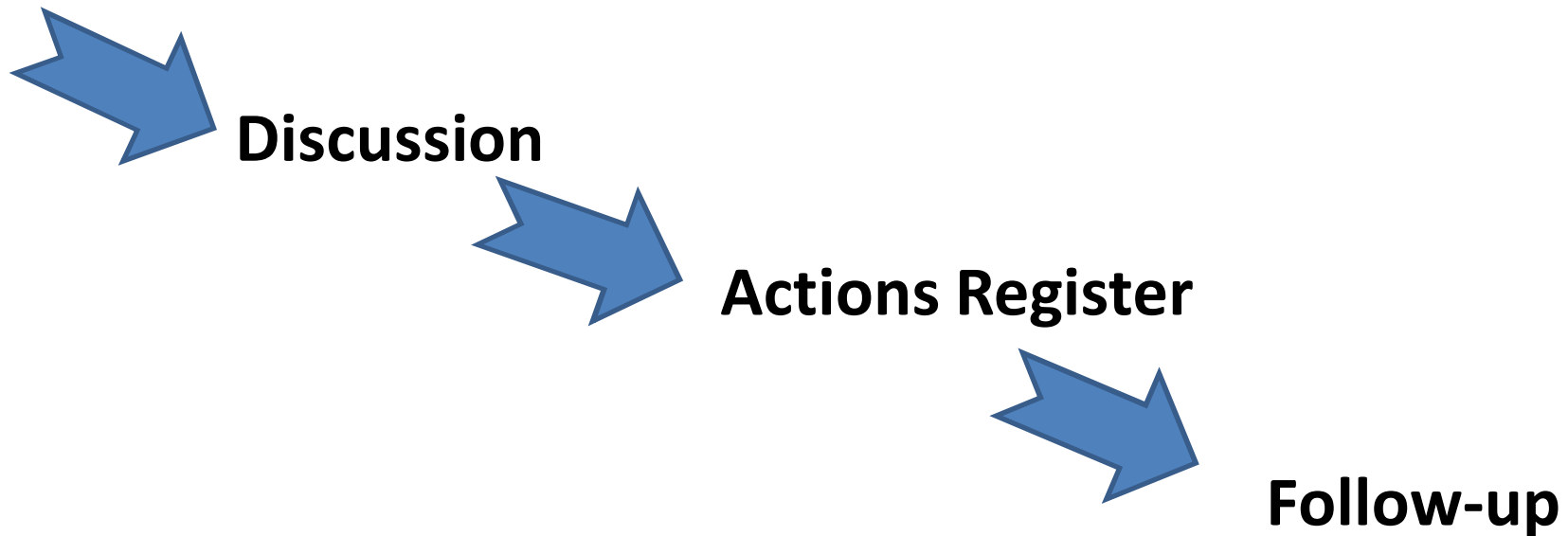
Causes



Package CH0032 Project Review – Project Management

Solutions and Dates

Issue	Description	Action Plan	Resolution Date
<p>Effective Leadership</p>	<ul style="list-style-type: none"> • PM experience level • Top Down Control • Passive leadership approach • Waiting for each other to answer 	<ul style="list-style-type: none"> • Action A • Action B • Action C • Action D 	<p>Completed Planned Future</p>



Package CH0032 Management Meeting

Assessment Strategy

1. Input

- LCP – Package Leader/Area Manager
- AH Line Management/Senior Management
- AH Project Teams

2. Areas

- Project Management – Canada Office
- Design and Quality – Linz
- Other – no symptoms now

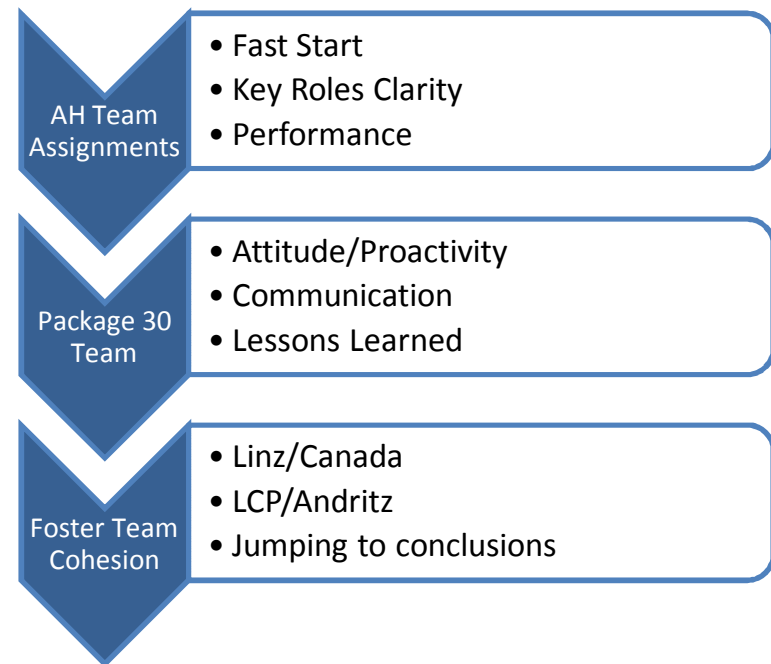
3. Solutions

- Package CH0030 Team
- Communication and Interfaces
- Management Role
- Monitoring and Feedback

Package CH0032 Project Review – Project Management

Issue	Description/Theme
Team Performance	<ul style="list-style-type: none"> • Cohesion of Team • Reactive not proactive • Turnover of key roles (SE, DE – Calc) • Late start of Michele and Lucio
Effective Leadership	<ul style="list-style-type: none"> • PM experience level • Top Down Control • Passive leadership approach
Project Administration	<ul style="list-style-type: none"> • Action register • Change register • Monthly Report • Meeting minutes • Acconex • LCP Package Leader must review draft minutes before they are published
Communication	<ul style="list-style-type: none"> • Conference Calls not effective <ul style="list-style-type: none"> • Can't hear each other • Pauses... • Focus on 'extras' to contract • Extra Costs... (paint inspector) • Rushed LNTP deliverables to 'get paid' • Passive leadership approach <ul style="list-style-type: none"> • Minutes in German • Extra Costs... (paint inspector) • Linz not buying into PM Process/Project Values

Causes



Package CH0032 Project Review – Project Management

Issue	Description	Action Plan	Resolution Date
<p>Team Performance</p>	<ul style="list-style-type: none"> • Cohesion of Team • Reactive not proactive • Turnover of key roles (SE, DE – Calc) • Late start of Michele and Lucio 	<ul style="list-style-type: none"> • Gerald to work from PC for two weeks • MB to work from Linz for two weeks • LCP/AH management design review in Linz • Gerald to travel to Canada one week per month • Lucio and or Mathieu to travel to Linz one week per month 	<p>March 15 - 30 April 1 – 15 w/o April 15 w/o April 22 w/o May 12</p>

Package CH0032 Project Review – Project Management

Issue	Description	Action Plan	Resolution Date
<p>Effective Leadership</p>	<ul style="list-style-type: none"> • PM experience level • Top Down Control • Passive leadership approach • Waiting for each other to answer 	<ul style="list-style-type: none"> • Mathieu to complete deliveries of Primary Anchors • Bill Mavromatis as coach/mentor • Bill M takes over as PM in • MB role to shift to installations coordinator 	<p>Mar - June July 2014 July 2014</p>

Package CH0032 Project Review – Project Management

Issue	Description	Action Plan	Resolution Date
<p>Project Administration</p>	<ul style="list-style-type: none"> • Action register • Change register • Monthly Report • Meeting minutes • Acconex • LCP Package Leader must review draft minutes before they are published 	<ul style="list-style-type: none"> • Lucio D’Alessandro to lead CH0032 efforts on minutes and registers • Assign CH0030 PM team – Joanne Raddatz and Jeanne Li to attend CH0032 project meeting • Dominic Morin to attend CH0032 weekly Manufacturing Quality meetings • Agree on common practices between CH0030 and CH0032 • Weekly AH internal Meeting • Resolve issue of LCP concession request form (consistent with CH0030) • Resolve issue of LCP concession request form (consistent with CH0030) 	<p>Feb 10</p> <p>Feb 17</p> <p>Feb 17</p> <p>tbd</p> <p>Feb 17</p>

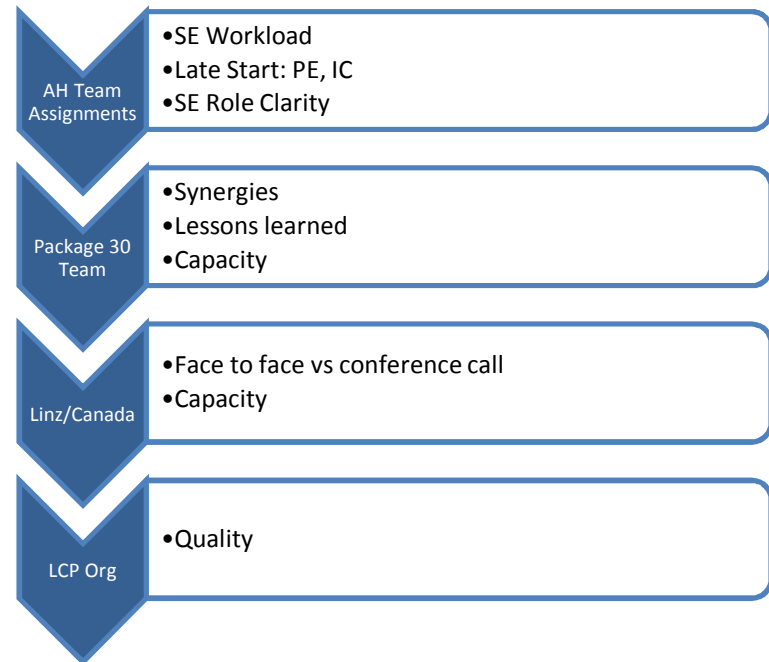
Package CH0032 Project Review – Project Management

Issue	Description	Action Plan	Resolution Date
<p>Communication</p>	<ul style="list-style-type: none"> • Conference Calls not effective <ul style="list-style-type: none"> • Can't hear each other • Pauses... • Focus on 'extras' to contract • Extra Costs... (paint inspector) • Rushed LNTP deliverables to 'get paid' • Passive leadership approach <ul style="list-style-type: none"> • Minutes in German • Extra Costs... (paint inspector) • Linz not buying into PM Process/Project Values 	<ul style="list-style-type: none"> • Wolfgang Stanger to provide weekly design progress report • Co-locate the CH0030 and CH0032 teams in PC office 	

Package CH0032 Project Review – Design, Quality Management

Issue	Description
<p style="text-align: center;">Design</p>	<ul style="list-style-type: none"> • Lack of attention to detail • Drafting deficiencies • Specification compliance • Constructability reviews – tracking, rigor • Design leadership, structure and control • Linz DE to disposition NCS • P. Eng stamping <ul style="list-style-type: none"> • Spillway primary anchors • Intake anchors • Remainder
<p style="text-align: center;">Quality Management</p>	<ul style="list-style-type: none"> • Linz QA person often not available for calls • Linz QA person not engaged/coordinating • Lack of technical expertise – Linz QA • Linz not used to this level of advance planning on QA/QC • ASTM standards for material – Chinese standard steel plate not acceptable • Code of construction for fabrication across multiple locations to be determined and reviewed with LCP QA

Causes



Package CH0032 Project Review – Design, Quality Management

Issue	Description	Action Plan	Resolution Date
<p>Design</p>	<ul style="list-style-type: none"> • Lack of attention to detail • Drafting deficiencies • Specification compliance • Constructability reviews – tracking, rigor • Design leadership, structure and control • Linz DE to disposition NCs • P. Eng stamping 	<ul style="list-style-type: none"> • Weekly report/update by Lucio, Wolfgang Stanger • Revise and resubmit • PE design review • M. Castelli, ongoing. Status sheet to be developed 	<p>Feb 27th</p> <p>Feb 21</p>
	<ul style="list-style-type: none"> • Spillway primary anchors • Intake anchors • remainder 	<ul style="list-style-type: none"> • See `quality` slide • All Drawings to be stamped by M. Pinard 	<p>March 5</p>

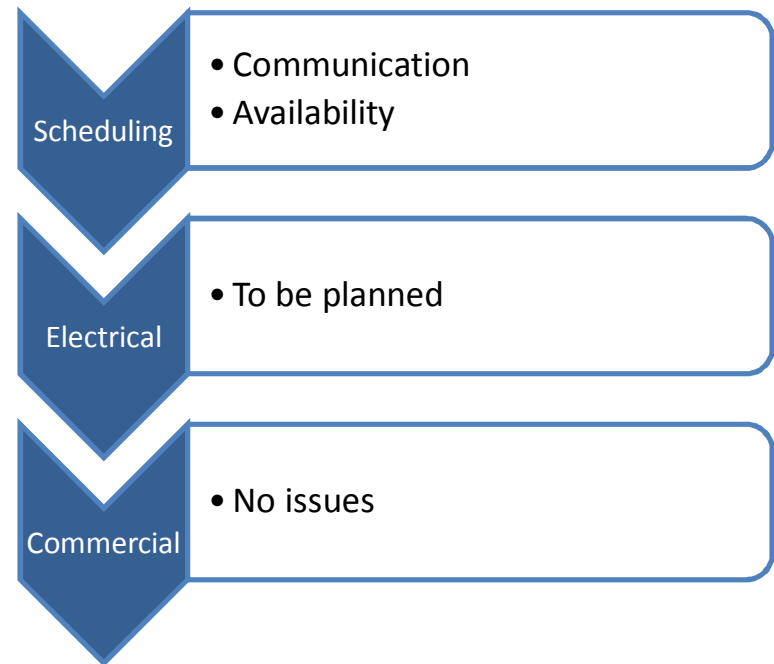
Package CH0032 Project Review – Design, Quality Management

Issue	Description	Action Plan	Resolution Date
<p>Quality Management</p>	<ul style="list-style-type: none"> • Linz QA person often not available for calls • Linz QA person not engaged/coordinating • Lack of technical expertise – Linz QA • Linz not used to this level of advance planning on QA/QC • ASTM standards for material – Chinese standard steel plate not acceptable • Code of construction for fabrication across multiple locations to be determined and reviewed with LCP QA 	<ul style="list-style-type: none"> • Dominic Morin to provide training and system training to Franz • Resolve issue of certification of painting inspector • Additional support for Linz QA • Meet FTF to determine scope/protocol • Captured in ITP • EN Material being discussed • More discussion on ‘code of construction’ 	<p>March 1 – 13</p> <p>asap</p> <p>tbd</p> <p>Ongoing</p>

Package CH0032 Project Review – Electrical, Project Control

Issue	Description
Scheduling	<ul style="list-style-type: none"> • Maryam availability/ability to travel • Engineering process - detail in schedule • Deliveries – detail in schedule
Electrical	<ul style="list-style-type: none"> • No issues at this time
Commercial	<ul style="list-style-type: none"> • No issues at this time

Causes



Package CH0032 Project Review – Electrical, Project Control

Issue	Description	Action Plan	Resolution Date
Scheduling	<ul style="list-style-type: none"> Maryam engagement/availability Engineering process - detail in schedule 	<ul style="list-style-type: none"> FTF meeting with LCP Jonathan March 10,11 (Montreal) 	planned
Electrical	<ul style="list-style-type: none"> No issues at this time 	<ul style="list-style-type: none"> Coordinate with CH0030 Standardize across the two projects 	tbd tbd
Commercial	<ul style="list-style-type: none"> none 	<ul style="list-style-type: none"> none 	

Gates/Stoplogs Sourcing Risk Management

MUSKRAT FALLS / Gate Body - SOURCING CONCEPT						
Component	Qty [to]	As per Appendix A16		Alternative Manufacturer to Tianbao		
		Jiajiang China	Tianbao China	Tianjin Seri China	Pemel *) Portugal	PSP Czech Rep.
Intake Trashracks mov.	1,044	x	x	x		
Intake Bulkhead Gates	125	x	x		x	
Draft Tube Sliding Gates	426	x	x		x	x
Spillway Stoplogs Permanent	318	x	x		x	
Spillway Stoplogs Temporäry	322	x	x	x	x	
Intake Roller Gates	1,312	x	x	x		x
Spillway Roller Gates	983	x	x	x		x

*) Pemel is listed as Manufacturer for Guides in Appendix A16

Resolution Date – June 30, 2014

Other Topics/Open Issues?

1. Secondary Concrete Scope

- a. Time extension
- b. Scaffolding plan
- c. Method statement, scope clarity

2. Challenges...

- Ambitious Schedule for Design Completion - Civil
- Code of Construction

Future...

- Painting Program - China
- QA/QC Management - China
- Shop Safety - China

Questions/Feedback?

Thank-you

	<h2>Minutes of Meeting</h2>	
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Project	Lower Churchill Project	AH Doc. No.	AH-MFG-PM-0118
Prepared by	Lucio D'Alessandro	Date	5-Mar-2014
Meeting Date	28-Feb-2014	Time	11:00 am – 3:00 am (QC)
Location	AH Pointe-Claire office	Room	113
Subject	Lower Churchill Project CH0032 – Supply and Install Powerhouse and Spillway Hydro - Mechanical Equipment Weekly Coordination Conference Call		
	LCP Team (“LCP”)	Andritz Hydro (“AH”)	
Attendees	Scott O’Brien (Project Lead) Frank Gillespie (Area Manager) Bruce Drover (Package Leader)	Rob Murray (GM – Large Hydro) Alois Zeuner (Management Penstock & Gates) Mathieu Bertrand (Project Manager) Lucio D’Alessandro (Project Engineer) Nicole Hu (Commercial Manager) Michele Castelli (Installation Coordinator) Bill Mavromatis (Project Manager – LMRP) Joanne (Project Manager – T&G Package) Daniel Carrier (VP Operations & Project Mgt)	

Item No.	Action Register No.	Topic	Action/Comment	Owner	Status	Due Date	Close Date
1	n/a	Safety Moment	Safety Moment via Rob concerning poor traction at Sites and slip hazards.	n/a (Note)	n/a	n/a	n/a
2	n/a	Presentation	Presentation by Rob and Alois concerning the recent LCP feedback about the AH Project team performance. Refer to the attachment.	n/a (Note)	n/a	n/a	n/a
3	n/a	Status	LCP Management perspective about different project approach between Pointe-Claire and Linz. Package CH0030 PM in 'total' control.	n/a (Note)	n/a	n/a	n/a
4	019.1	Team Performance	Gerald to work in AH Pointe-Claire office for a 2 week period: timeframe Mar 15 till Mar 30.	A. Zeuner	Open	15-Mar-14	
5	019.2	Team Performance	Mathieu and Lucio to work in the AH Linz office for a 2 week period: Timeframe April 1 till Apr 15.	R. Murray	Open	1-Apr-14	
6	019.3	Team Performance	LCP to travel to AH Linz office for a visit and audit of the Eng'g team. Timeframe is planned for Mar 24 but will be reviewed based on the other task and agreed actions.	B. Drover	Open	6-Mar-14	
7	019.4	Team Performance	Gerald to travel to Canada one week per month	A. Zeuner	Open	22-Apr-14	
8	019.5		Mathieu and/or Lucio to travel to Linz one week per month.	R. Murray	Open	12-May-14	
9	019.6	Team Performance	AH to update the 1st Progress Review meeting agenda to include a third day for a Design Coordination & Review dedicated day.	M. Bertrand	Open	6-Mar-14	
10	019.7	Team Performance	LCP to review the Civil interface requirements which AH need to support, so a better understanding of the sequence of the civil works at different elevations can be proposed.	B. Drover	Open	12-Mar-14	
11	019.8	Team Performance	AH to provide a detail AH Eng'g organizational chart.	A. Zeuner	Open	13-Mar-14	
12	n/a	Team Performance	AH to review the description of the roles for the LCP Eng'g team members issued during the Kick-Off meeting and will request more information if required.	n/a (Note)	n/a	n/a	n/a
13	019.9	Effective Leadership	Mathieu to complete the deliveries of the Primary Anchors.	M. Bertrand	Open	30-Jun-14	
14	019.10	Effective Leadership	Bill Mavromatis to support as a coach / mentor to Mathieu.	R. Murray	Open	1-May-14	

15	019.11	Effective Leadership	Bill Mavromatis takes over as PM. Mathieu to shift as Installations Coordinator.	R. Murray	Open	1-Jul-14	
16	019.12	Effective Leadership	Provide LCP with the CV for Martin Pinard, the P. Eng. sealing and stamping the engineering documents.	L. D'Alessandro	Open	11-Mar-14	
17	019.13	Effective Leadership	Review the timing to execute a joint Risk Review informal discussion on a bi-weekly between Mathieu and Bruce.	M. Bertrand	Open	18-Mar-14	
18	n/a	Project Administration	Lucio to lead efforts on minutes and registers.	L. D'Alessandro	Closed	10-Feb-14	10-Feb-14
19	019.14	Project Administration	Assign CH0030 AH PM, Joanne and Jeanne Li to attend CH0032 project meetings	R. Murray	Open	13-Mar-14	
20	019.15	Project Administration	Dominic Morin to attend CH0032 Quality and Manufacturing meetings	M. Bertrand	Open	5-Mar-14	
21	019.16	Project Administration	Agree on common practices between CH0030 and CH0032.	M. Bertrand	Open	28-Mar-14	
22	n/a	Project Administration	Weekly AH internal joint meetings set for Tuesday.	M. Bertrand	Open	21-Jan-14	21-Jan-14
23	019.17	Project Administration	Resolve issue of LCP Concession Request form usage.	N. Hu	Open	3-Apr-14	
24	019.18	Project Administration	Resolve issue of LCP Change Request form usage.	N. Hu	Open	3-Apr-14	
25	n/a	Communication	Wolfgang Stanger to provide weekly design progress report.	A. Zeuner	Open	27-Feb-14	27-Feb-14
26	018.19	Communication	Co-locate the CH0030 and CH0032 teams in Pointe-Claire office.	R. Murray	Open	10-Apr-14	
27	n/a	Design	Wolfgang Stanger to provide weekly design update at the AH/LCP Weekly call.	A. Zeuner	Closed	27-Feb-14	27-Feb-14
28	019.20	Design	Revise & resubmit recent C1 unstamped documents FOR p. Eng. Seal and stamp.	A. Zeuner	Open	11-Mar-14	
29	019.21	Design	Set-up P. Eng. Design review of all A1 documents.	L. D'Alessandro	Open	11-Mar-14	
30	019.22	Design	Develop Installation Review status sheet.	M. Castelli	Open	12-Mar-14	
31	019.23	Quality Management	D. Morin to provide Canada specific training & system training to Franz.	M. Bertrand	Open	13-Mar-14	
32	019.24	Quality Management	Resolve issue of certification of painting inspector.	A. Zeuner	Open	12-Mar-14	
33	019.25	Quality Management	Additional support for Linz QA. Meet face-to-face to determine scope / protocol.	R. Murray	Open	10-Apr-14	
34	n/a	Quality Management	Raw material to be used captured in the ITP. On-going discussions around use of EN materials.	n/a (Note)	n/a	n/a	n/a
35	019.26	Quality Management	Further to the on-going 'code of construction'	M. Bertrand	Open	27-Mar-14	

			discussions, AH will update the Quality Plan with a specific table taking into account that this is not a Hydro Industry know practice.				
36	019.27	Quality Management	LCP recommend executing a joint CH0030 Lessons Learnt review meeting. AH to advise the timeframe.	M. Bertrand	Open	27-Mar-14	
37	019.28	Scheduling	Possible face-to-face meeting with LCP Jonathan is planned for in Montreal.	B. Drover	Open	11-Mar-14	
38	019.29	Electrical	Coordinate with CH0030 and try to standardize across the two projects.	L. D'Alessandro	Open	24-Apr-14	
39	019.30	Sourcing Management	AH presented a list of possible Alternative Vendors for the gates and stoplogs being considered as a risk mitigation plan. AH will submit a package of Vendor info for preliminary review by LCP once a better understanding of factory capacities is understood.	A. Zeuner	Open	28-Mar-14	
40	019.31	Design	AH recommends that the finalized Spillway primary anchor & template drawings be presented to the LCP Civil Contractor for information so that any comments can be reviewed and incorporated.	B. Drover	Open	13-Mar-14	