



LOWER CHURCHILL PROJECT – MUSKRAT FALLS

CH0007; CONSTRUCTION OF INTAKE AND POWER
HOUSE, SPILLWAY AND TRANSITION DAMS

LTR-CH0007001-0446

Muskrat Falls Corporation
350 Torbay Road, Suite 2
St. John's, NL Canada

4th -March-2015

ACI / MFC – 0225

Attention: Mr. Scott O'Brien
Company Representative

Subject: LCP Muskrat Falls Contract No. CH0007
Construction of Intake Powerhouse, Spillway and Transition Dams
I.C.S. Temporary Structure Certificate & Resumption Of Work

Dear Sir,


Contractor writes to notify Company that the I.C.S. Temporary Structure has been inspected and certified as per DPHV design. Works were performed as per the National Building Code of Canada, and complying with all local safety measures.

Analysis and verification of overall stability and integrity of the ICS were conducted by the Designer DPHV, including documentation as per "unfinished" configuration. All DPHV stamped drawings will be submitted via Aconex.

It is the Contractor's intention to resume works on the Powerhouse Unit 1 & Unit 2 as soon as possible, and at the same time re-confirming Contractor's viability to continue with the work.

Yours sincerely,

Astaldi Canada Inc.



Mr. G. Orsatti
Project Manager
Lower Churchill Project – Muskrat Falls

Cc: Mr. R. Hopkins; Mr. Tony Allen; Mr. G. Bader; Mr. E. Bessano; Mr. G. Pani; Mr. Haroon Raza
Nalcor: Mr. A. Kelly; Mr. M. Melhem
GP/RJH – 27.02.2015

March 3, 2015

To Whom It May Concern

Based on the attached Quality Control Report, this certifies that the Power House ICS Steel Structure was fabricated and erected by Proco Inc. as per DPHV design, specifications and drawings. In general the requirements of CAN/CSA-S16 latest edition were met. Additionally, all of our quality control testing activities with regard to the above structure fulfilled the specifications and design requirements according to the results of the quality inspection reports. This attestation applies only to the structure between Axes 0.1 to 13.


The outstanding items 4, 5, 6, 7, 10 & 18 as per attached deficiencies list were considered not critical to the structure's integrity and will be corrected to satisfy CAN/CSA –S16 requirement.

Attachments:

QC Report
Deficiencies list

Regards,

Giosue' Parisi
Technical Manager of Astaldi



Hasan Hasan, P. Eng
Senior Structural Engineer

The list of ICS Drawings from DPHV:

MFA-AT-SD-3300-ST-D99-0001-01, MFA-AT-SD-3300-ST-D99-0002-01, MFA-AT-SD-3300-ST-D99-0002-02,
MFA-AT-SD-3300-ST-D99-0003-01, MFA-AT-SD-3300-ST-D99-0003-02, MFA-AT-SD-3300-ST-D99-0003-03,
MFA-AT-SD-3300-ST-D99-0003-04, MFA-AT-SD-3300-ST-D99-0003-05, MFA-AT-SD-3300-ST-D99-0003-06,
MFA-AT-SD-3300-ST-D99-0003-07, MFA-AT-SD-3300-ST-D99-0004-01, MFA-AT-SD-3300-ST-D99-0004-02,
MFA-AT-SD-3300-ST-D99-0005-01, MFA-AT-SD-3300-ST-D99-0006-01, MFA-AT-SD-3300-ST-D99-0006-01,
MFA-AT-SD-3300-ST-D99-0007-01, MFA-AT-SD-3300-ST-D99-0008-01, MFA-AT-SD-3300-ST-D99-0009-01,
MFA-AT-SD-3300-ST-D99-0009-01, MFA-AT-SD-3300-ST-D99-0010-01, MFA-AT-SD-3300-ST-D99-0010-01,
MFA-AT-SD-3300-ST-D99-0011-01, MFA-AT-SD-3300-ST-D99-0012-01, MFA-AT-SD-3300-ST-D99-0013-01,
MFA-AT-SD-3300-ST-D99-0014-01, MFA-AT-SD-3300-ST-D99-0015-01, MFA-AT-SD-3300-ST-D99-0016-01,
MFA-AT-SD-3300-ST-D99-0017-01, MFA-AT-SD-3300-ST-D99-0018-01, MFA-AT-SD-3300-ST-D99-0021-01,
MFA-AT-SD-3300-ST-D99-0022-01, MFA-AT-SD-3300-ST-D99-0023-01, MFA-AT-SD-3300-ST-D99-0024-01,



MFA-AT-SD-3300-ST-D99-0025-01, MFA-AT-SD-3300-ST-D99-0025-02, MFA-AT-SD-3300-ST-D99-0025-03,
MFA-AT-SD-3300-ST-D99-0025-04, MFA-AT-SD-3300-ST-D99-0026-01, MFA-AT-SD-3300-ST-D99-0027-01,
MFA-AT-SD-3300-ST-D99-0028-01, MFA-AT-SD-3300-ST-D99-0028-01, MFA-AT-SD-3300-ST-D99-0032-01,
MFA-AT-SD-3300-ST-D99-0033-01, MFA-AT-SD-3300-ST-D99-0034-01, MFA-AT-SD-3300-ST-D99-0035-01.

No.	Location	Affects	Structural Deficiency	Status	QC Checked - OK	Notes
1	Column B1/1.1	Structure	Lower double H braces missing 1 bolt	Complete	Yes	
2	Column B1/1.1	Structure	Middle double H braces missing 1 bolt	Complete	Yes	
3	Column B1/1.1	Structure	Splice above middle H brace for Column 1 is buckled and missing 8 bolts. No mech	Complete	Yes	
4	Column B1/1.1	Structure	Upper double horizontal braces are not flush nut as per s16.	Outstanding	No	Scaffolding to establish access from crane girder tower on line B.
5	Column B1/1.1	Structure	Roof joist bottom chord is fastened to column using bolts placed in field-drilled holes. Design requires 3 bolts/angle in prefabricated holes. Currently there are 2 bolts per angle.	Outstanding	No	Hasan Hasan to provide disposition for correction. Scaffolding to be set up to access.
6	Column B1/1.1	Structure	Lower Chord of Truss missing two bolts at column B1	Outstanding	No	Identified during Inspection Mar 1/15. Scaffolding to be set up to access.
7	Line 1/1.1	Structure	Upper x-bracing junction missing 4 bolts.	Outstanding	No	Scaffolding to establish access from crane girder tower on line B.
8	Column C1/1.1	Structure	Flange at middle x-bracing missing 12 bolts.	Complete	Yes	
9	Column C1/1.1	Structure	Upper column splice missing bolt. Drift pin left in hole.	Complete	Yes	
10	Column C1/1.1	Structure	Roof joist bottom chord is fastened to column using bolts placed in field-drilled holes. Design requires 3 bolts/angle in prefabricated holes. Currently there are 2 bolts per angle.	Outstanding	No	Hasan Hasan to provide disposition for correction. Scaffolding to be set up to access.
11	Column B6/7	Structure	Lower double H braces missing 1 bolt	Complete	Yes	
12	Column B6/7	Structure	Middle double H braces missing 2 bolts	Complete	Yes	
13	Column B6/7	Structure	Lower chord of roof joist not fastened to column.	Complete	Yes	
14	Line 6/7 Bracing	Structure	Upper x-bracing junction missing 22 bolts.	Complete	Yes	
15	Column C6/7	Structure	Flange at middle x-bracing missing 6 bolts.	Complete	Yes	
16	Column C6/7	Structure	Upper double H braces missing 1 bolt	Complete	Yes	
17	Line 12/13 Bracing	Structure	Upper x-bracing junction missing 5 bolts.	In Progress	No	
18	SSB	Structure	Brace from turss to roof joist not bolted on end attached to roof joist.	Outstanding	No	Access to be provided via SSB crane after setup

Complete + verified	11
Complete - not verified	0
In progress	1
Outstanding	6
% Complete	0.611111111

1	Column C1/1.1	Cranes	Upper Crane girder bolts loose.	In progress	No	
2	Line A6/7	Cranes	Crane girder transition beam hanging from crane girder by loose bolts. Bolting plate missing from girder.	Outstanding	No	To be removed
3	Column B6/7	Cranes	Crane girder transition beam missing bolts - bolts loose	Complete	Yes	
4	Column C6/7	Cranes	Crane girder bolts loose with nuts at end of threads.	Complete	Yes	
5	Column C6/7	Cranes	Crane rail section missing over girder transition beam.	Outstanding	No	section was located yesterday, awaiting installation.
6	Column C6/7	Cranes	Crane transition beam too short. Shims required to torque bolts properly.	Complete	Yes	Mounting brackets adjusted. No shims required.
7	Column B12/13	Cranes	Crane girder bolts loose.	Outstanding	No	
8	Column C12/13	Cranes	Crane girder bolts not flush nut as per s16.	Outstanding	No	
9	Column D12	Cranes	Crane girder mount bolts not flush as per s16.	Outstanding	No	
10	Column D12	Cranes	Crane girder tie bolts loose.	Outstanding	No	
11	Column D12	Cranes	Crane girder tie not torqued flush with column face.	Outstanding	No	
12	Column D12	Cranes	Crane rail bumper missing 1 bolt.	Outstanding	No	

Complete + verified	3
Complete - not verified	0
In progress	1
Outstanding	8
% Complete	0.25



**Professional Engineers and Geoscientists
Newfoundland & Labrador**

PERMIT TO PRACTICE FOR THE YEAR 2015

This is to certify that *ASTALDI CANADA INC.*

*is authorized to practise Professional Engineering in the Province of
Newfoundland and Labrador.*



A handwritten signature in black ink, appearing to be "D. A. A.", written over a horizontal line.

Chair, Board of Directors

A handwritten signature in black ink, appearing to be "Geoff Embury", written over a horizontal line.

Registrar

This Permit requires renewal at the beginning of each calendar year and is liable to cancellation in accordance with the provisions of the Act, Regulations, and By-lays of the Professional Engineers & Geoscientists Newfoundland & Labrador