

<b>LOWER CHURCHILL PROJECT</b>	<b>CHANGE ORDER AUTHORIZATION</b>
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Agreement No:	CH0032001	CHA No.:	010
Agreement Title:	Supply & Install Powerhouse and Spillway Hydro-Mechanical Equipment	Date:	10-Nov-15
Company:	Muskrat Falls Corporation	DAN No.:	N/A
Contractor/Supplier:	Andritz Hydro Canada, Inc.	PCN No.:	0545

Description of Change:  
Company directs Contractor to accelerate the installation of the spillway hydro-mechanical equipment to meet the river diversion requirements on/or before 15 June 2016.

Justification of Change:  
Required to complete hydro-mechanical work to support river diversion due to Astaldi Canada Inc.'s delay in completing the Spillway Milestones M4a and M4B.

Type of Change:	New Contract Scope: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/> Lump Sum <input type="checkbox"/> Estimate	Change Include:
<input type="checkbox"/> Unit Price	<input checked="" type="checkbox"/> Price
<input type="checkbox"/> Reimbursable	<input checked="" type="checkbox"/> Schedule

WBS (Code of Account) for this change: 5.3.523.3330.1030.15.02	Included in Budget: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Contract Commitments:			
Total Current Requisition:	CAD 236,844,811	Original Contract :	CAD 122,932,996.00 Euro 60,880,279.00
Contract Final Value Forecast:	CAD 236,844,811	Authorized Change Orders :	CAD 20,601,203.64
Remarks: Contract Final Value Forecast to Date in CAD includes the Contract amounts in Euros converted in CAD, this change request and the potential incentive payment. Prior to release of change order requisition must be approved.	Backcharges:		0
	Change Orders Authorizations in process:		0
	This Change Order Authorization:		CAD 3,370,314.00
	Requested Contract Commitments to Date:		CAD 146,904,513.64 Euro 60,880,279.00

Impact on Control Schedule:  
Revised Finish Date: For river diversion 15 June 2016, for completion of Spillway work 31 October 2016

	Name	Signature	Date
Prepared by Contract Administrator	Bruce Hallock		12 Nov 15
Recommended by Supply Chain Manager	Pat Hussey		12 Nov 2015
Approved by:			
Area Construction Manager \ Package Lead	Frank Gillespie		12 Nov 2015
Project Controls Manager	Carlos Fernandez		13 Nov 15.
Authorized by:			
Site Manager			
Additional Authorizations for Amounts Above \$ 250,000 CAD			
Approved by Area Manager	Frank Gillespie		12 Nov 2015
Authorized by Project Manager	Scott Obrien		12 Nov 2015
Additional Authorizations for Amounts Above \$2,000,000 CAD			
	Ron Power		13-Nov-2015

<b>LOWER CHURCHILL PROJECT</b>	<b>CHANGE ORDER Between Muskrat Falls Corporation and Andritz Hydro Canada Inc.</b>
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Agreement No:	CH0032-001	CHO No.	010
Agreement Title:	Supply & Install Powerhouse and Spillway Hydro-Mechanical Equipment	Rev. No:	00
Company:	Muskrat Falls Corporation	CHR No.	N/A
Contractor/Supplier:	Andritz Hydro Canada Inc.	Date:	10-Nov-15
Change Title:	Acceleration of Spillway Installation Schedule to Meet River Diversion Requirements On/Or Before 15 June 2016		

**Description of Change:**

Company directs Contractor to accelerate the installation of the spillway hydro-mechanical equipment, in accordance Attachment 1, Scope of Work - Partial Completion Ready for River Diversion, to meet the river diversion requirements on/or before 15 June 2016. This change order covers all additional costs for the acceleration of Andritz's baseline schedule installation logic and durations, including but not limited to the costs for:

1. Increased staff, supervision, and indirect expenses;
2. Additional labour, including sub-contractor costs and overtime;
3. Additional small tools, PPE and consumables;
4. Additional equipment hours; and
5. Lost productivity due to winter working conditions and all other productivity impacts associated with the acceleration.

Payment to cover the cost of the acceleration shall be on a lump sum basis and shall be made progressively based on the physical progress of the Work.

If completion of the installation of the spillway hydro-mechanical equipment for river diversion is achieved on/or before 15 June 2016, Company will issue a separate Change Order to pay Contractor an incentive payment of \$2,000,000. If Contractor fails to achieve the date of 15 June 2016 for any reason whatsoever, Company will have no obligation to make the incentive payment. This incentive payment is in addition to the Incentive Payment set forth in Section 11.2, Item No. 1, of Exhibit 2 to the Agreement.

**Supporting information that forms part of this Change Order:**

Attachment 1: Scope of Work - Partial Completion Ready for River Diversion.

Change Includes:	<input checked="" type="checkbox"/> Price	<input checked="" type="checkbox"/> Schedule	Original Contract Price:	CAD 122,932,996.00
				Euro 60,880,279.00
Adjustment Type:	<input checked="" type="checkbox"/> Lump Sum	<input type="checkbox"/> Unit Rate	Previous Change Orders Price	CAD 20,601,203.64
	<input type="checkbox"/> Fixed Amount	<input type="checkbox"/> Estimate	Backcharges	None
	<input type="checkbox"/> Reimbursable		This Change Order Price	CAD 3,370,314.00
			Total Contract Price to Date	CAD 146,904,513.64
				Euro 60,880,279.00

<b>LOWER CHURCHILL PROJECT</b>	<b>CHANGE ORDER Between Muskrat Falls Corporation and Andritz Hydro Canada Inc.</b>
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Impact on Control Schedule:  
Contractor will accelerate completion date for the Spillway Hydro-Mechanical Equipment to meet the river diversion requirements by 15 June 2016.

Revised Finished Date:  
Completion of the Spillway Hydro-Mechanical and Electrical Systems (including Trash Cleaner Hoist), commissioned and fully operational, Milestone M4: 31 October 2016.

This Change Order shall form and be read and construed as an integral part of the above-noted Agreement. The above adjustment to the Contract Price constitutes full compensation (including all impacts costs) to the Contractor/Supplier for the above Change.

**APPROVAL**

Issued by Company:		Acknowledgement of Contractor/Supplier Receipt: Contractor/Supplier Representative Name:  <hr/> Signature:  <hr/> Date:
Supply Chain Manager: Pat Hussey		
Signature:	Date:	
Company Representative Name: Scott O'Brien		
Signature:	Date:	

ATTACHMENT 1  
SCOPE OF WORK - PARTIAL COMPLETION READY FOR RIVER DIVERSION  
Change Order No. 010, Rev.00

The scope of work for river diversion includes but is not limited to the following:

**Requirements for River Diversion**

- 1) Five spillway gates dry testing completed. Gates can be raised and lowered by manual controls and temporary power.
  - a) Embedded guides (S1, S2, Spillway Roller Gate (SRG), S4) installed, embedded, and finished to tolerance;
  - b) Repair of all embedment anchors as required;
  - c) SRG sections installed, assembled, dry tested, tolerance confirmed;
  - d) SRG towers (tower cladding can be later), bridge, hoist house, hoists installed;
  - e) SRG hoists assembled and reeved; and,
  - f) SRG and Hoists mechanically complete.
- 2) Mechanical and electrical hoist protection systems are operational.
  - a) Gate MCC's and Gate local control panels installed with power and control cabling to SRG hoists (cable from Spillway Electrical Building can be installed later);
  - b) Connection of Gate MCC's to temporary power (portable generator) or partial permanent power (25kV Construction Power or Backup Diesel Generator);
  - c) Hoist power, control, and protection systems tested and operational.
- 3) Spillway stop logs dry testing completed.
- 4) Re-engineering and any additional engineering to support the temporary configuration to support the river diversion scope of work until the balance of the work to meet Milestone M4 is completed.
- 5) Design, supply and installation of all temporary facilities.

**Completion**

For the activities listed above defined as being required for partial completion of the spillway for river diversion the following minimum scope is required:

- 1) Work scopes / sub-systems must be clearly defined in the Project Completions System with processes to support formal Company acceptance as being Complete.
- 2) All installation / testing activities are supported by installation / pre-commissioning checks and / or Dynamic Commissioning procedures as agreed with Company.
- 3) All above work scopes are considered Mechanically Complete, Commissioned and available for Handover as per the Project Completions System.
- 4) Re commissioning will be required after the spillway electrical building has been completed to test and prove electrical and controls systems operation between the electrical building and the hoist house.
- 5) Load testing requirements as per the contract remain in effect. Company may agree to load testing after river diversion if Contractor can provide Company suitable supporting documentation that load testing can be completed safely.
- 6) All construction equipment and temporary facilities shall be removed from the upstream and downstream spillway channels.

**Remaining Scope**

Partial completion requirements for river diversion do not change the scope of work for Contractor. All requirements as defined in the Contract shall be completed as per the approved schedule to meet Milestone M4 no later than 31-October-2016. The following systems can be completed after river diversion but must be completed prior to 31-Oct-2016.

- 1) Gate Heating System; all components are installed in gates prior to river diversion readiness but are not operational (guide heaters can be installed later).
- 2) Electrical Load Management System.
- 3) Spillway Electrical Building.
- 4) Hoist house building electrical and mechanical services completed.

ANDRITZ HYDRO CANADA INC.  
ACCELERATION CHANGE REQUEST

Description	Company Accepted Amounts
<b><u>Downstream</u></b>	
Direct Labour Winter Working	49,941
Subtotal Downstream	49,941
<b><u>Upstream</u></b>	
Winter Working	236,304
Learning Curve	86,614
Overstaffing & Crowding	350,820
Heating and Hoarding	1,001,952
Subtotal Upstream	1,675,690
<b><u>Indirect Labour</u></b>	
Staff Costs	371,048
Subtotal	371,048
<b><u>Equipment</u></b>	
Over \$1500	295,159
Fuel	181,440
Lifting Equipment	152,963
Subtotal	629,562
<b><u>Inflation Credit</u></b>	
Credit	-
Subtotal	-
<b><u>Total &amp; Mark-up</u></b>	
Subtotal Costs	2,726,240
Contingency (7.5%)	204,468
Total	2,930,708
Markup (15%)	439,606
<b>Grand Total</b>	<b>3,370,314</b>

Up. team

Month	Contract	February	March	April	May	June	July	August	September	October	November	December	January	Total
Foreman														
Contract Schedule		280	280	560	1050	840	840	700	280	700	280	210	140	6160
Accelerated		1210	970	970	810	320	320				590	320	650	6160
Delta		930	690	410	-240	-520	-520				310	110	510	
Craft														
Contract Schedule		1120	2240	3360	5600	4480	4480	3850	1960	3920	2240	1260	560	35070
Accelerated		6480	5190	5190	4460	2270	1840				3160	2590	3890	35070
Delta		5360	2950	1830	-1140	-2210	-2640				920	1330	3330	
Teamster/Operator														
Contract Schedule		560	560	560	700	560	560	350	280	420	560	420	560	6090
Accelerated		980	790	790	490	390	280				790	790	790	6090
Delta		420	230	230	-210	-170	-280				230	370	230	
	Accelerated	November	December	January	February	March	April	May	June	July	Nil	Nil	Nil	
Foreman														
Contract Schedule	Contract Start	1	1	2	4	3	3	3	1	3	1	1	1	
Accelerated	Mon/Mon	4	3	3	3	1	1	0	0	0	2	1	2	
Delta	Start to Start	2	1	2	4	3	3	3	1	1	0	0	0	
Craft														
Contract Schedule	Contract Start	4	8	12	20	16	16	14	7	14	8	5	2	
Accelerated	Mon/Mon	23	19	19	16	8	7	0	0	0	11	9	14	
Delta	Start to Start	11	9	14	23	19	19	16	8	7	0	0	0	
Teamster/Operator														
Contract Schedule	Contract Start	2	2	2	3	2	2	1	1	2	2	2	2	
Accelerated	Mon/Mon	4	3	3	2	1	1	0	0	0	3	3	3	
Delta	Start to Start	3	3	3	4	3	3	2	1	1	0	0	0	

1.15625 1.1577381 1.1571429 1.1584821 1.1584821 1.1584416 1.1581633 0.4693878 0 0 0

		February	March	April	May	June	July	August	September	October	November	December	January	Total	Rate	Amount
Winter Conditions		42.50%	27.50%	15%	7.50%	0.00%	0.00%	0.00%	5.00%	7.50%	17.50%	35%	50%			
		2851.75	1064.25	370.5	-119.25	0	0	0	0	0	255.5	633.5	2035	7,091	89.46	634,383
Learning Curve		9561.75	4934.25	2840.5	-1709.25	-2900	-3440	-4900	-2520	-5040	1715.5	2443.5	6105			
		8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	577	89.46	51,639
		778.32645	401.64795	231.2167	-139.13295	-236.06	-280.016	-398.86	-205.128	-410.256	139.6417	198.9009	496.947			
Shift Differential		3,630	1,466	602	(258)	(236)	(280)	(399)	(205)	(410)	395	832	2,532			
		8,670	6,950	6,950	5,760	2,980	2,440	-	-	-	4,540	3,700	5,330	12.5%		
		20.9%	10.5%	4.3%							4.4%	11.2%	23.8%	4.729	89.46	423,020
		1,815	733	301							198	416	1,266			
Heating and Hoarding																
G Carp		2240	2240	2240	2240	2240					2240	2240	2240	17920		
2 O/E														17,920	89.46	1,603,123
Indirect Labour	Engr	3,360	2,380	980	104.00	101,920										
	Supv	3,360	2,380	980	137.31	134,564										
	HSE	3,360	2,380	980	137.31	134,564								371,048		
		7,685	4,439	3,143	1,982	2,004	(280)	(399)	(205)	(410)	2,833	3,489	6,038	30,317		2,712,165
														0.640681913		3,003,213

349440 247520 101920  
461361.6 326797.8 134563.8  
461361.6 326797.8 134563.8

Upstream

DIRECT CRAFT LABOUR ADJUSTMENTS FOR ACCELERATION

Description	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Total Hours	Rate	Amount
Contract Manpower		352	2,814	2,629	5,061	4,184	4,401	3,431	3,990	3,896	4,184	3,199	1,412	458	40,011		
Accelerated		352	3,658	3,418	6,579	5,439	5,721	6,579	5,187	3,077					40,011		
Delta		-	844	789	1,518	1,255	1,320	3,148	1,197	(819)							
Winter Working		7.50%	17.50%	35%	50%	42.50%	27.50%	15%	7.50%	0.00%							
		-	148	276	759	533	363	472	90	-					2,641	89.46	236,304
Learning curve		8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%	8.14%							
		-	81	87	185	146	137	295	105	(67)					968	89.46	86,614
Heating and Hoarding			2,240	2,240	2,240	2,240	2,240								11,200	89.46	1,001,952
Shift Differential		-	228	363	945	679	500	767	195	(67)					3,610	89.46	322,918
		0.0%	6.2%	10.6%	14.4%	12.5%	8.7%	11.7%	3.8%	-2.2%						7.73	27,902
Staffing		-	3	3	5	4	5	11	4								
			1	1	1	1	1	2	1								
			280	280	280	280	280	560	280						2,240	89.46	200,390
Totals:		-	2,977	3,245	4,409	3,878	3,520	2,094	669	(133)					20,659		1,876,080

INDIRECT LABOUR ADJUSTMENTS FOR ACCELERATION

Indirect Labour

Position	Contract	Accelerated	Variance	Rate	Total
Engr	3,360	2,380	980	104.00	101,920
Supv	3,360	2,380	980	137.31	134,564
HSE	3,360	2,380	980	137.31	134,564
TOTAL					371,048

Downstream

Month	Contract	February	March	April	May	June	July	August	September	October	November	December	January	Total
Foreman														
Contract Schedule								350	560	490	-	-	-	1,400
Accelerated								-	350	560	490	-	-	1,400
Delta		-	-	-	-	-	-	(350)	(210)	70	490	-	-	
Craft														
Contract Schedule								1,750	2,520	2,240	-	-	-	6,510
Accelerated								-	1,750	2,520	2,240	-	-	6,510
Delta		-	-	-	-	-	-	(1,750)	(770)	280	2,240	-	-	
Teamster/Operator														
Contract Schedule								350	280	280	-	-	-	910
Accelerated								-	280	350	280	-	-	910
Delta		-	-	-	-	-	-	(350)	-	70	280	-	-	
Month	Contract	February	March	April	May	June	July	August	September	October	November	December	January	Total
Winter Conditions		42.50%	27.50%	15%	7.50%	0.00%	0.00%	0.00%	0.00%	7.50%	17.50%	35%	50%	
July 2015 Update Hours		-	-	508	2,684	1,608	-	-	508	2,684	1,608	-	-	4,800
July 2015 Base		-	-	76	201	-	-	-	-	201	281	-	-	278
July 2015 Accelerated														483
July 2015 Variance														205
Contract Schedule								-	-	226	-	-	-	226
Accelerated								-	-	257	527	-	-	784
Total Variance								-	-	32	527	-	-	558
July 15 Hours														205
Composite Rate														89.46
Total Cost														49,941.05

6510  
23.25  
2.583333



Description	Qty Contract	Duration	Qty Accel	Duration	Unit Rate	Contract Total	Accel Total	Variance
Scaffolding (Hydro Mobile F-300 Platform)	8	10	12	7	11,000	880,000	924,000	44,000
Shelter panels 10'x45'	108	10	165	7	1,200	1,296,000	1,386,000	90,000
Electrical heaters 600V/30 KVA	8	6	16	6	300	14,400	28,800	14,400
PureHeat system 8 diffuseurs	1	6	2	6	5,850	35,100	70,200	35,100
Oil heater 500 000 Btu	4	6	6	6	770	18,480	27,720	9,240
Electrical distribution center	1	10	2	7	7,143	71,430	100,002	28,572
Micrometer 8 12 4 500	8	10	12	7	500	40,000	42,000	2,000
Welding machine 350A electric	8	10	14	7	408	32,640	39,984	7,344
Feeder LN25	8	10	14	7	245	19,600	24,010	4,410
Hammer drill SDS Max	2	10	3	7	225	4,500	4,725	225
Pick up F-250	3	10	6	7	1,550	46,500	65,100	18,600
12'x60' Complex	2	10	3	7	1,330	26,600	27,930	1,330
Dry house container	1	10	2	7	260	2,600	3,640	1,040
Pickup F-150	4	10	5	7	1,350	54,000	47,250	(6,750)
Bus 15 passagers	1	10	2	7	2,082	20,820	29,148	8,328
Tool box container 8'x20', per month (all tools included)	2	10	3	7	1,500	30,000	31,500	1,500
Electrical container 8'x 20', per month	1	10	2	7	1,000	10,000	14,000	4,000
Manlift 85'	1	10	2	7	7,955	79,550	111,370	31,820
								295,159

L Cost  
 43200 69,120.00  
 86400 112,320.00  
 181,440.00

Fuel

Description	Qty Contract	Duration	Qty Accel	Duration	Unit Rate	Contract Total	Accel Total	Variance
Crane 90 Tonnes	1,098		1,235		200	219,600	247,050	27,450
Crawler 130 Tonnes	1,830		2,059		390	713,700	802,913	89,213
Crawler 2000 Tonnes	660		743		440	290,400	326,700	36,300
Total								152,963

Liftins  
 Equipment