

Integrated Project Schedule (IPS) Monthly Schedule and Progress Analysis

Cut off Date: 25 Nov 2015

Boundless Energy



Project Stewardship:
IPS Monthly Schedule & Progress Analysis

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(Attached PDFs)**

Intergrated Project Schedule (IPS)

Current IPS Structure

LCP Project

- 1) LTA - Labrador Transmission Assests
- 2) LITL - Labrador island Transmission Link
- 3) MFG - Muskrat Falls
- 4) Telecom Systems [logic under review](#)
- 5) Start-Up sequence

Nalcor Operations

- 6) Breaker Upgrades
- 7) System Protection and Control Upgrades
- 8) Energy Control center Upgrades
- 9) TL 267 and associated switchyard modifications

Transition to Operations Team

- 10) RFI - Ready for Integration
- 11) RFO - Ready for Operation
- 12) BTPO - Build the Production Organization

Maritime Link

- 13) Maritime Link – [level of detail established and updated](#)

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1.0 Overall Summary Overall Analysis – Information page 1 of 4

1) Target Milestones

- * Target Milestone Overall = LTA Ready for Power Transmission (Power Available) = 04 July 2017
 Tracking Milestone = 18 May 2017 forecast date **(no change this month)**

- * Target Milestone Overall=LITL-1st Power Transfer Lab to Nfld = 9 Sep 2017 (Tracking Milestone)
53 day delay from last month due to delay in Converter completion see page 18

- * Target Milestone Overall = MFGen First Power from Muskrat Falls = **(On hold, see below for details)**
 Tracking Milestone removed pending resolution of CH0007 remediation of schedule

NOTE: A tracking milestone simply indicates this month forecast completion date.

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	2.7%	Cumulative Planned Progress:	47.2%
Period Forecast Progress	2.7%		
Period Earned Progress:	1.9%	Cumulative Earned Progress:	39.6%

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1.0 Overall Summary Overall Analysis – Information page 2 of 4 LTA

1) Target Milestone

Target Milestone Overall = LTA Ready for Power Transmission (Power Available) = 04 July 2017

Tracking Milestone = 18 May 2017 forecast date (no change from last month)

NOTE: A tracking milestone simply indicates this month forecast completion date.

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	3.2%	Cumulative Planned Progress:	60.9%
Period Forecast Progress	3.2%		
Period Earned Progress:	6.2%	Cumulative Earned Progress:	66.5%

3) Critical Path: : no change from last month

- CF Switchyard continues to be on critical path to LTA Power Available forecast for May 2017.

4) Switchyards: no change from last month

- No change to completion date of static commissioning for either switchyard (CF, MF).

5) 315kV HVac Lines CF-MF: no change from last month

- HVac Seg 1/2 - line construction/stringing progressing with no change this month to HVac Seg 1/2 final inspection date which is end of line construction.

6) 735kV HVac CF Interconnection (Bus Extension): no change from last month

- CF 735kV -bus extension - TL construction start (foundations) not planned until June 2016.

1.0 Overall Summary Overall Analysis – Information page 3 of 4**LITL****1) Target Milestone**

- Target Milestone Overall=LITL-1st Power Transfer Lab to Nfld = 9 Sep 2017 (Tracking Milestone)
Delay 53 days from last month due to delay in Converter completion (See page 18)
- Target Milestone Overall=LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland= 11 Nov 2017
Now delayed to 14 Nov 2017 - **Change from last month**

NOTE: A tracking milestone simply indicates this month forecast completion date.

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	3.4%	Cumulative Planned Progress:	35.2%
Period Forecast Progress	3.4%		
Period Earned Progress:	1.7%	Cumulative Earned Progress:	32.5%

3) Critical Path: Change from last month

- MF Converter is driving the LITL critical path .
- MF Converter is delayed 73 days while SOP Converter is delayed 49 days .
- The Start-up sequence is impacted by these delays resulting in a 53 day delay to “1st power transfer”.

4) SOBI Crossing

- Land cable installation continues at Shoal Cove and Forteau Point
- Arrival of cable laying vessel forecast for June 2016

5) HVdc Line

- HVdc Lab Seg 1/2 = no change this month to final inspection dates
- HVdc Nfld Seg 3/4/5 = no change this month to final inspection dates

6) Converters / Switchyards / Sych Cond

- Converters: MF is delayed 73 days while SOP is delayed 49 days driven by forecasted ac filter design and procurement .
- Switchyards: Work progressing with no delay on completion date of static commissioning.
- Sych Cond: Delays to completion of static comm. for Unit 2 = 21 days and Unit 3 = 23 days due to geotechnical conditions in foundation construction. Not on critical path to 1st power transfer.

7) SOP Transmission Line Rebuilds

- Work continues with reliance on outages. (see pages 21 and 41)

8) Transition Compounds / Grounding (Electrode) Stations

- Grounding stations civil/structures work to resume Apr 2016. progressing with no delay on completion date of static commissioning.
- Transition compounds progressing with forecast 52 day earlier completion date of static commissioning

1.0 Overall Summary Overall Analysis – Information page 4 of 4

MFG

1) Target Milestone

Target Milestone: MFGen 1st power from Muskrat Falls = (**On hold**)

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	1.9%	Cumulative Planned Progress:	54.7%
Period Forecast Progress:	1.9%		
Period Earned Progress:	1.1%	Cumulative Earned Progress:	39.6%

3) Critical Path(s):

- [Diversion - River Closure \(priority 1a\) - see page 14](#)
- On schedule for start on 6 July 2016
- [Diversion - Winter Headpond El. 25m \(priority 1b\) - see page 15](#)
- On schedule for start on 26 Oct 2016
- [Diversion - Impoundment Full Supply Level El. 39m \(priority 1c\) - see page 16](#)
- (**On hold**, see below for details)

4) Reservoir Clearing:

- Labour transferred to ROW clearing in LITL, forecast for restart in July 2016 with completion in Dec 2016.

5) North Spur:

- Work progressing with all milestones forecast to be achievable.

6) Spillway

- Spillway: work is progressing for priority p1a- River Closure. Progress behind current plan while commercial discussions are ongoing. Schedule has been modified to achieve diversion until contractor's plans have been approved.

7) Transition Dams/North & South Dams


- Work began on Upstream Cofferdam (5) Groins 1&2 to EL 17m (2015 scope) CH0009.

8) Powerhouse:

- A review of the C1 (Muskrat Falls Generation) work plan is underway, and implementation of an updated C1 schedule will remain on hold pending acceptance of agreed actions and mitigations plan.
- Work progressing on all areas. Removal of ICS (Integrated Cover System) continues.

1.0 Overall Summary = Target Milestone

page 1 of 2


		Integrated Project Schedule				LCP Project Control																						
		030 IPS Target Milestones				Updated: 25-Nov-15																						
Activity Name		Start	Delta-Last Month Start	Finish	Delta-Last Month Finish	2014			2015				2016				2017				2018			2019				
						Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Lower Churchill Project General																												
LCP Overall																												
Target MIL=Overall-LCP Project Phase 1 - Project Sanction			0d	17-Dec-12 A	0d																							
Target MIL=Overall-MFG Bulk Excavation - Construction Start		13-Jan-13 A	0d		0d																							
Target MIL=Overall-LITL-EA Release		21-Jun-13 A	0d		0d																							
Target MIL=Overall-LITL-SOBI Cable Systems - Ready			0d	11-Oct-16	0d																							
Target MIL= Overall-LTA-Ready for Power Transmission (Power Available)			0d	04-Jul-17	0d																							
Target MIL=Overall-LITL-1st Power Transfer Labrador to Newfoundland - Tracking Forecast		09-Sep-17	-53d		-53d																							
Target MIL=Overall-LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland			-4d	14-Nov-17	-4d																							
Target MIL=Overall-Muskrat Falls Powerhouse - First Power from Muskrat Falls			0d	10-Dec-17	0d																							
Target MIL=Overall-LCP Phase 1 - READY FOR SYSTEM INTEGRATION TEST (Final)			0d	27-Mar-18	0d																							
Target MIL=Overall-Muskrat Falls Powerhouse - Full Power from Muskrat Falls			0d	06-Apr-18	0d																							
Target MIL=Overall-LCP Phase 1 - Comm Certificate Issued (Integration Test Complete)			0d	01-Jun-18	0d																							
Target MIL=Overall-LCP Phase 1 - Date Certain			0d	28-Feb-19	0d																							
LTA																												
Target MIL= LTA-Hvac Transmission Line - Right of Way (ROW) Clearing - Start		15-Aug-13 A	0d		0d																							
Target MIL= LTA-Hvac Transmission Line - Construction Complete			0d	12-Oct-16	0d																							
Target MIL= LTA-Muskrat Falls Switchyard - Ready to Energize (Initial)			0d	01-Mar-17	0d																							
Target MIL= LTA-Churchill Falls Switchyard - Ready to Energize (Initial)			0d	01-Mar-17	0d																							
Target MIL= LTA-Ready for Power Transmission (Power Available) - Tracking Forecast			0d	18-May-17	0d																							
LITL																												
Target MIL= LITL-SOBI Landfall Protection (HDD) - Start		19-Nov-13 A	0d		0d																							
Target MIL= LITL-HVdc Transmission Line Right of Way (ROW) Clearing - Start		16-Jun-14 A	0d		0d																							
Target MIL= LITL-SOBI Landfall Protection (HDD) - Complete			0d	20-Oct-14 A	0d																							
Target MIL= LITL-SOBI Cable Systems - Ready for Power Transmission			0d	11-Oct-16	0d																							
Target MIL= LITL-Soldiers Pond Synchronous Condensor - Testing 1/2/3 Complete			-23d	08-Jul-17	-23d																							
Target MIL= LITL-Soldiers Pond Switchyard & Convertor Station - (Stand Alone Testing)			-49d	03-Aug-17	-49d																							
Target MIL= LITL-Muskrat Falls Switchyard & Convertor Station - (Stand Alone Testing)			-70d	25-Aug-17	-70d																							
Target MIL= LITL-HVdc Transmission Line Construction - Complete and Connected			-46d	01-Sep-17	-46d																							
Target MIL= LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland-Tracking Forecast			-53d	14-Nov-17	-53d																							
MF Gen																												
Target MIL= MFG-MF Access Road - Ready for Use		30-Nov-12 A	0d		0d																							
Target MIL= MFG-North Spur Stabilization Works - Start		14-Mar-15 A	0d		0d																							
Target MIL= MFG-Powerhouse Crane - Commissioned			-28d	15-Feb-16	-28d																							
Target MIL= MFG-South Dam - Construction Start		18-Apr-16	0d		0d																							
Target MIL= MFG-River Diversion (priority 1a- River closure) - Complete			0d	05-Aug-16	0d																							
Target MIL= MFG-North Spur - Ready for Winter Headpond (EL 25m)(priority 1b- winter head pond esta			0d	15-Sep-16	0d																							
Target MIL= MFG-South Dam - Construction Complete			0d	31-Oct-16	0d																							
Target MIL= MFG-Reservoir Clearing - Complete			0d	16-Dec-16	0d																							

Under review

Under review

1.0 Overall Summary = Target Milestone

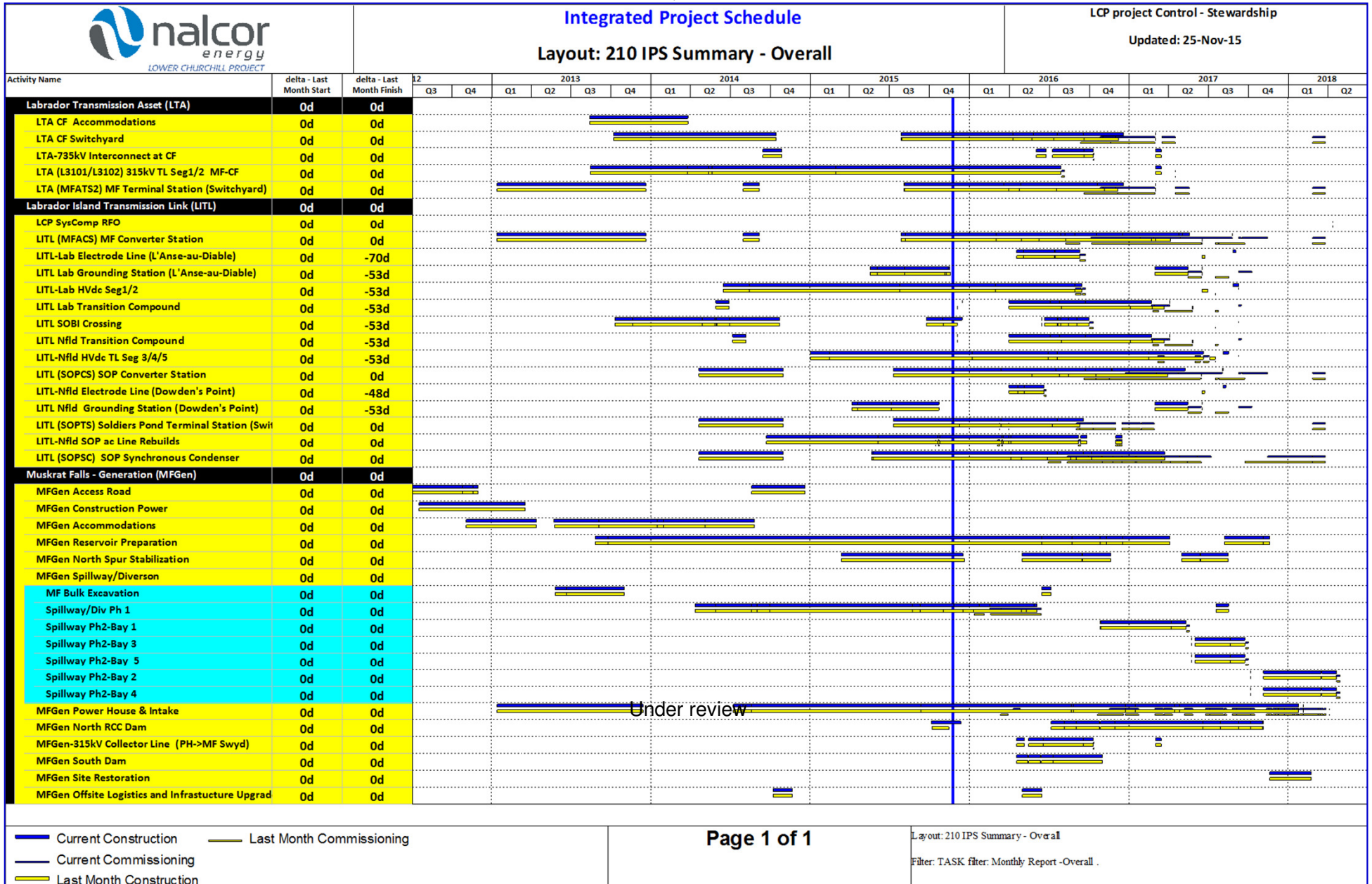
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	Integrated Project Schedule				LCP Project Control																
	030 IPS Target Milestones				Updated: 25-Nov-15																
Activity Name	Start	Delta-Last Month Start	Finish	Delta-Last Month Finish	2014			2015			2016			2017			2018			2019	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Target MIL= MFG-Powerhouse - Unit 1 Ready to Turn		0d	04-Jul-17	0d																	
Target MIL= MFG-North Spur Stabilization Works - Complete		0d	15-Aug-17	0d																	
Target MIL= MFG-North Dam (RCC/CVC) - Complete		0d	03-Nov-17	0d																	
Target MIL= MFG-Reservoir Impoundment EL39m (priority 1c- Impoundment to Full Service Level) - Con		0d	19-Nov-17	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 1 Ready for Operation		0d	10-Dec-17	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - First Power		0d	10-Dec-17	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 2 Ready for Operation		0d	30-Dec-17	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 3 Ready for Operation		0d	25-Feb-18	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 4 Ready for Operation		0d	06-Apr-18	0d																	
Target MIL= MFG-Muskrat Falls Powerhouse - Full Power		0d	06-Apr-18	0d																	

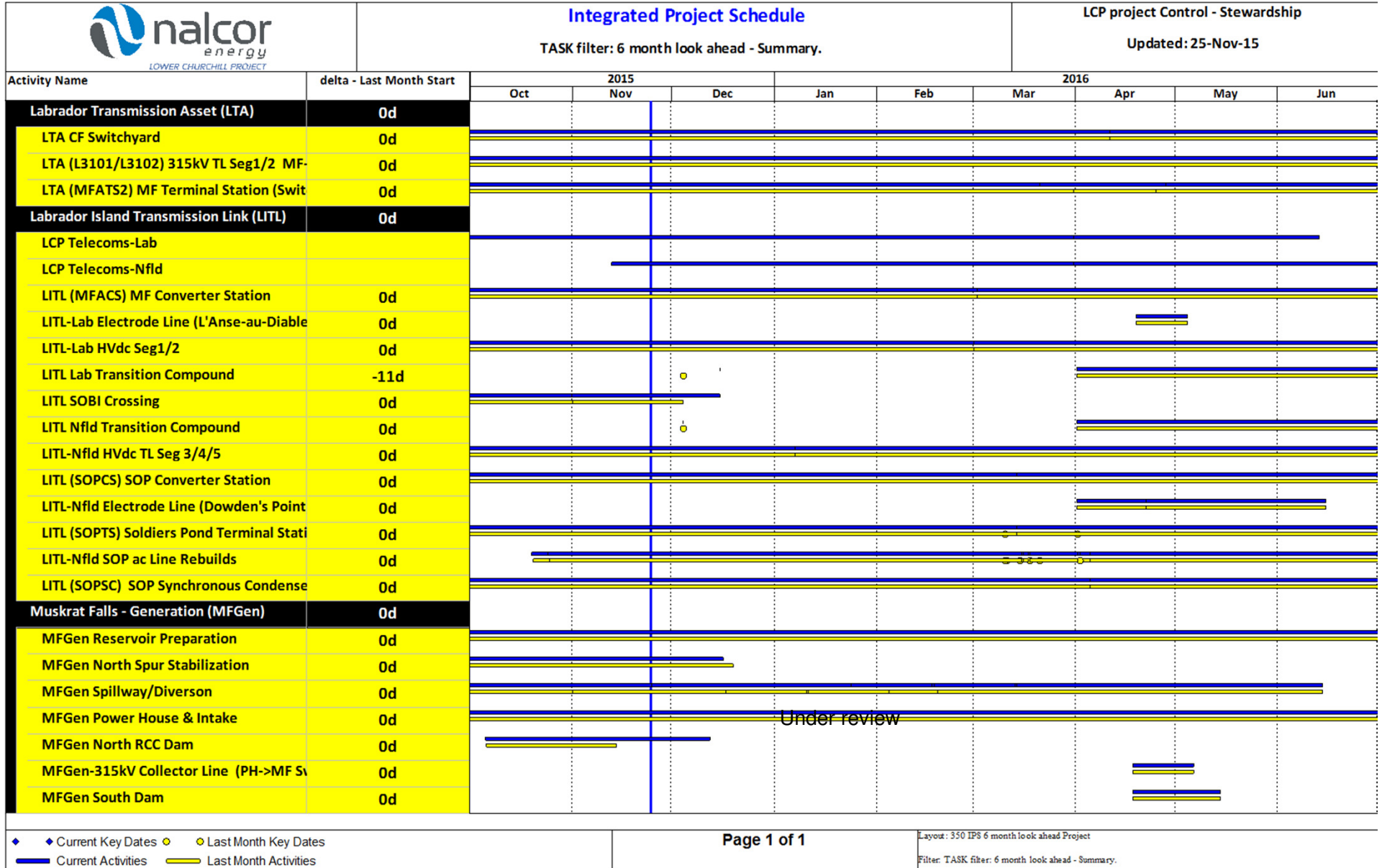
Under review

- ◆ Milestone-Current
- ▼ Milestone - Last Month

1.0 Overall Summary = Overall Summary Schedule - Actual and forecast dates with no baseline



1.0 Overall Summary = Overall 6 Month Look Ahead



1.0 Overall Summary = Overall Engineering/Construction/Commissioning Progress Curve

Overall progress curve will return when
Muskrat Falls Generation review complete


1.0 Overall Summary = Overall Engineering/Construction/Commissioning Progress Table

LCP - Overall 2015 Nov									
This Reporting Period									Next Month
	Weight	Period %				Cumulative % *2			Forecast %
	Factor %	Plan *1	Forecast	Earned	Var-Forecast	Plan	Earned	Variance	Period %
	A	B	B1	C	C-B1	E	F	F-E	G
Labrador Transmission Asset (LTA)	11.1%	3.2%	3.2%	6.2%	3.0%	60.9%	66.5%	5.6%	4.4%
Labrador Island Transmission Link (LITL)	42.2%	3.4%	3.4%	1.7%	-1.7%	35.2%	32.5%	-2.7%	3.0%
Muskrat Falls Generation (MFGen)	46.7%	1.9%	1.9%	1.1%	-0.8%	54.7%	39.6%	-15.1%	0.2%
LCP-Overall	100.0%	2.7%	2.7%	1.9%	-0.8%	47.2%	39.6%	-7.6%	1.8%
Last Reporting Period									
	Weight	Period %				Cumulative %			
	Factor %	Plan		Earned		Plan	Earned		
	A	B		C		E	F		
Labrador Transmission Asset (LTA)	11.1%	3.3%		5.2%		57.6%	60.3%		
Labrador Island Transmission Link (LITL)	42.2%	2.8%		2.0%		31.9%	30.8%		
Muskrat Falls Generation (MFGen)	46.7%	2.0%		1.8%		52.7%	38.5%		
LCP-Overall	100.0%	2.5%		2.2%		44.5%	37.7%		

*1 Plan represents Sep 2015 rebaseline for LTA/LITL and partial MFG. Remaining MFG uses June 2014 baseline

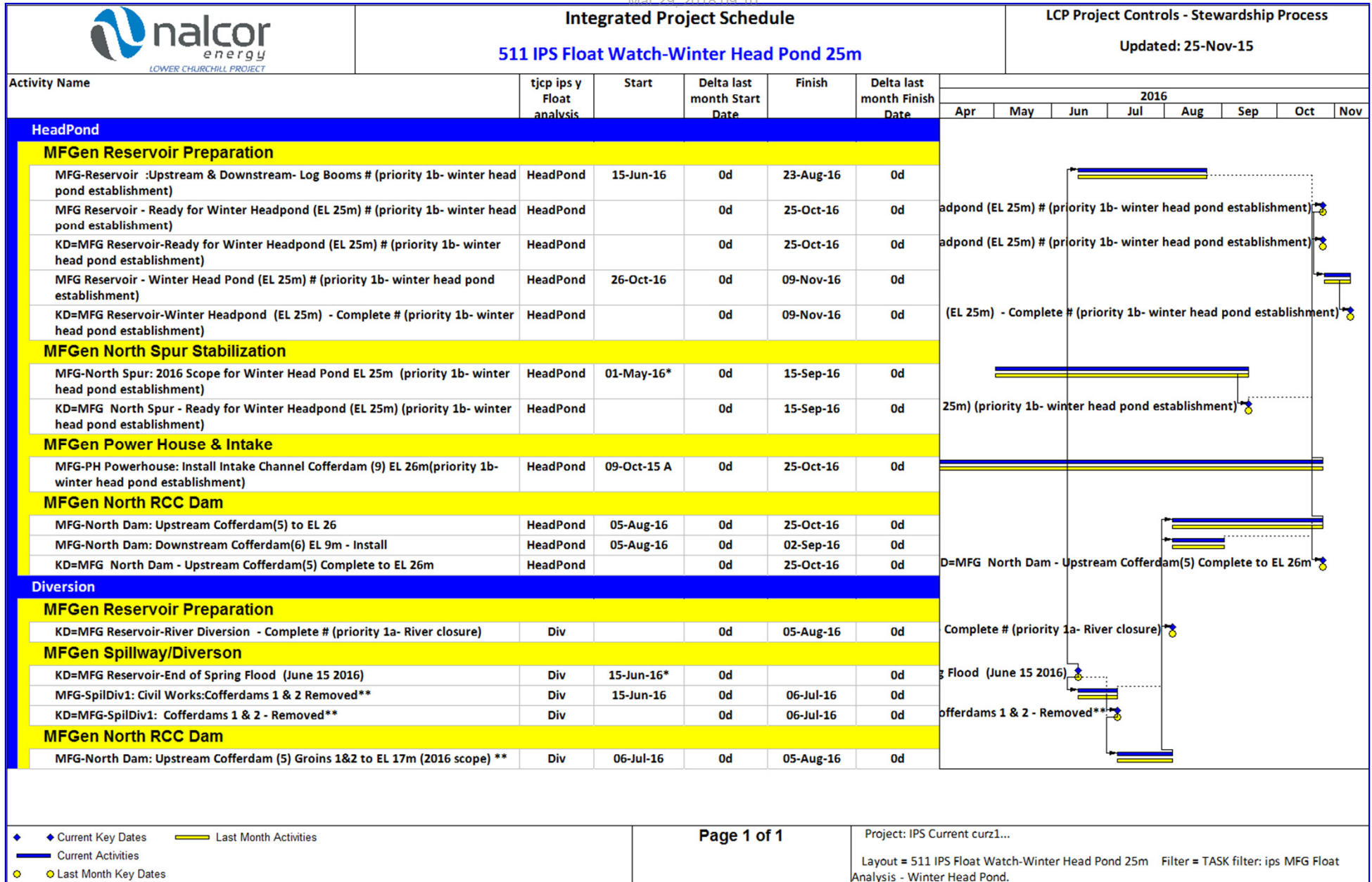
*2 MFG cumulative planned progress uses June 2014 baseline until MFG update available

1.0 Overall Summary Float Watch: C1: Diversion - River Closure - priority P1a

		Integrated Project Schedule Float Watch: Diversion - River Closure					LCP Project Controls - Stewardship Process Updated: 25-Nov-15												
Activity Name	tjcp ips y Float analysis	Start	Delta last month Start Date	Finish	Delta last month Finish Date	2015					2016								
						M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	M	Apr	M	Jun
Muskrat Falls - Generation (MFGen)																			
MFGen Reservoir Preparation																			
KD=MFG Reservoir-River Diversion - Start # (priority 1a- River closure)	Div	06-Jul-16	0d		0d														
KD=MFG Reservoir-River Diversion - Complete # (priority 1a- River closure)	Div		0d	05-Aug-16	0d														
MFGen Spillway/Diverson																			
MFG-SpilDiv1 Civil: Ph1 Structures - Center Trans dam & slab for Elect Bldg ** (priority 1a river closure)	Div	20-Aug-14 A	0d	13-Jan-16	-28d														
MFG-SpilDiv1 Civil: Ph1 Structures - Separation wall ** (priority 1a river closure)	Div	01-Oct-14 A	0d	13-Dec-15	-28d														
MFG-SpilDiv1 Civil: Ph1 Structures - Discharge channel ** (priority 1a river closure)	Div	23-Aug-15 A	0d	02-Jan-16	-28d														
MFG-SpilDiv1 Install: Hydro-Mech Spillway (D/S stoplog guides) **(priority 1a river closure)	Div	09-Sep-15 A	0d	09-Feb-16	-28d														
MFG-SpilDiv1 Civil: Ph1 Structures - Upstream Temp bridge & access ramp CH000!	Div	06-Oct-15 A	0d	03-Jun-16	0d														
MFG-SpilDiv1 Install: Hydro-Mech Spillway (U/S Stoplogs/gate guides/hoists/etc) ** (priority 1a river closure)	Div	25-Nov-15*	-24d	04-Jun-16	-24d														
MFG-SpilDiv1 Install: Hydro-Mech Spillway (Electrical Bldg) **(priority 1a river closure)	Div	27-Jan-16	-28d	28-May-16	-28d														
MFG-SpilDiv1 Completions: Hydro-Mech (static/dynamic-gates/etc) ** (priority 1a river closure)	Div	14-Mar-16	-24d	14-Jun-16	0d														
KD=MFG Spillway Phase I - Ready for River Closure (Diversion)**(priority 1a- River closure)	Div		0d	14-Jun-16	0d														
KD=MFG Reservoir-End of Spring Flood (June 15 2016)	Div	15-Jun-16*	0d		0d														
MFG-SpilDiv1: Civil Works:Cofferdams 1 & 2 Removed**	Div	15-Jun-16	0d	06-Jul-16	0d														
KD=MFG-SpilDiv1: Cofferdams 1 & 2 - Removed**	Div		0d	06-Jul-16	0d														
MFGen North RCC Dam																			
MFG-North Dam: Upstream Cofferdam (5) Groins 1&2 to EL 17m (2015 scope) CH0009	Div	06-Oct-15 A	0d	12-Dec-15	-28d														
MFG-North Dam: Upstream Cofferdam (5) Groins 1&2 to EL 17m (2016 scope) **	Div	06-Jul-16	0d	05-Aug-16	0d														

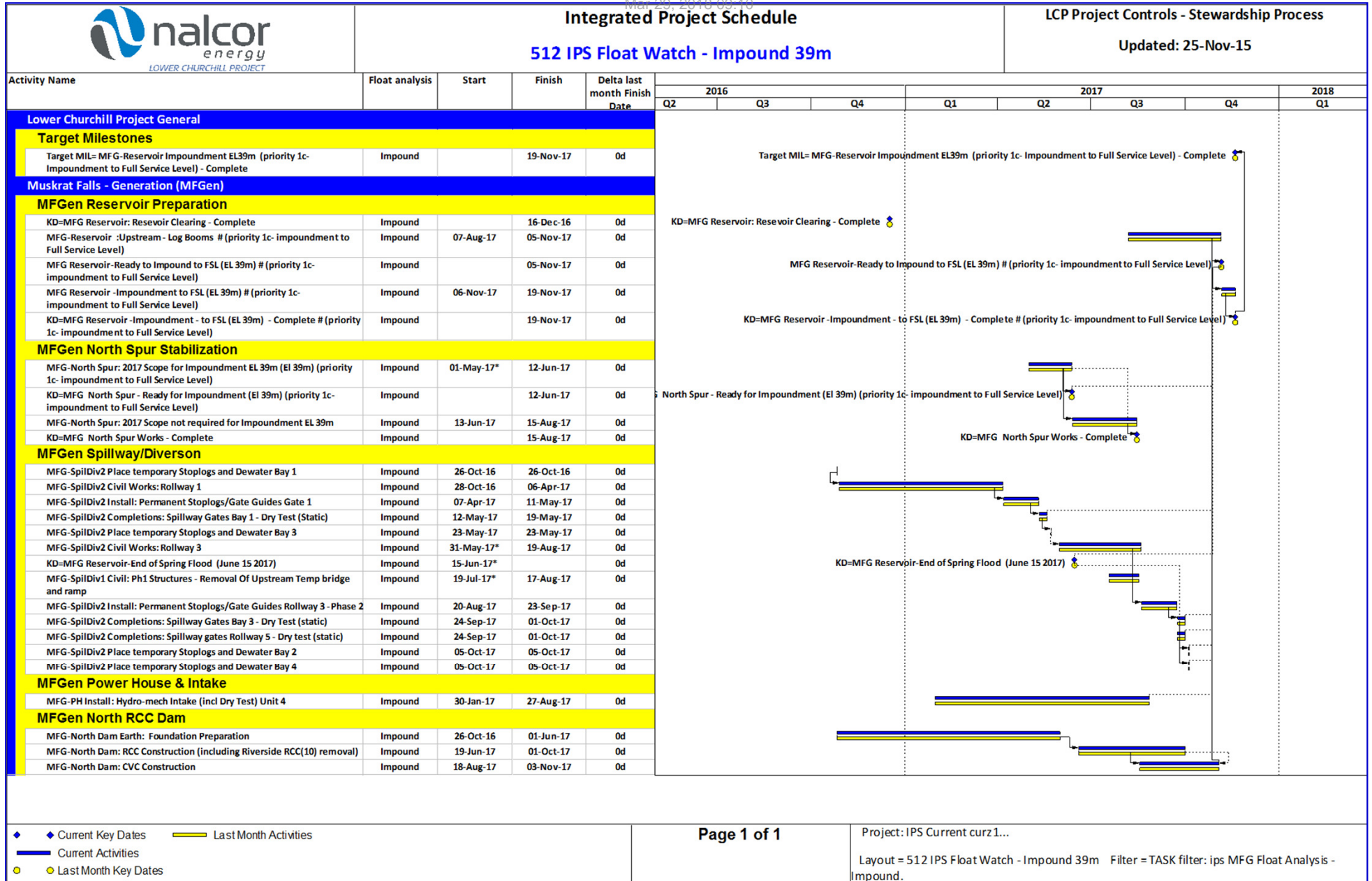
◆ Current Key Dates — Last Month Activities
 — Current Activities
 ○ Last Month Key Dates

1.0 Overall Summary Float Watch: C1: Diversion- Winter Head Pond (25m) Priority P1b



◆ Current Key Dates — Last Month Activities
 — Current Activities
 ○ Last Month Key Dates

1.0 Overall Summary Float Watch: C1: Diversion - Impoundment (39m) Priority P1c




















◆ Current Key Dates ◆ Last Month Activities
 ■ Current Activities ● Last Month Key Dates




1.0 Overall Summary Float Watch: C3-C4 – 1st Power Transfer Lab - Nfld

Activity Name	Start	Variance -Last Month	Finish	Variance -Last Month	2017											
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
LCP Overall																
Target MIL=Overall-LITL-1st Power Transfer Labrador to Newfoundland - Tracking Forecast	09-Sep-17	-53d		-53d												
LITL																
DynCm-3: LITL: Nfld REACTIVE SUPPORT (from SOP Sync Cond)		-21d	08-Jun-17	-21d												
DynCm-3: LITL: SOP & MF CONVERTER STANDALONE TESTING & HVdc LINK COMPLETED	09-Sep-17	-53d		-53d												
LITL-SP Synch Cond																
DynCm-6-Nfld ac: 9b SOP SyncCond #2: dynamic testing	27-Apr-17	-21d	08-Jun-17	-21d												
LITL-HVdc NFLD Seg3 SOBI																
LITL-dcNfSeg3: Conductor/OPGW Install	15-Mar-16*	139d	07-Mar-17	0d												
LITL-dcNfSeg3: Installation Final Inspection Nfld (static)	08-Mar-17	0d	21-Mar-17	0d												
LITL-dcNfSeg3: Connection to Nfld TransCmp (Slack Span>)	04-Aug-17	-31d	17-Aug-17	-31d												
DynCm-3: LITL: LITL-dcNfSeg3: Post Installation Final Inspection & Slack Span Connection		-31d	17-Aug-17	-31d												
LITL MF Converter																
LITL-MFConvert: Static Commissioning	06-Oct-16	1d	24-Aug-17	-70d												
LITL-MF Converter: OTN Communication Established - MFConverter <-> Lab Transition Compound			28-Apr-17													
DynCm-3: LITL: LITL-MFConvert: Static Commissioning Complete		-70d	24-Aug-17	-70d												
DynCm-3: LITL: 7a p1- MF Converter: STATION STAND ALONE TESTING	25-Aug-17	-70d	25-Aug-17	-70d												
DynCm-3: LITL: 7a p2- MF Converter: HVdc LINK ENERGIZATION	09-Sep-17	-53d	15-Sep-17	-53d												
LITL SP Converter																
LITL-SOPConvert: Static Commissioning	23-Dec-16	-94d	02-Aug-17	-49d												
DynCm-3: LITL: LITL-SOP Convert: Static Commissioning Complete		-49d	02-Aug-17	-49d												
DynCm-3: LITL: 8a p1 SOP Converter: STATION STANDALONE TESTING	03-Aug-17	-49d	03-Aug-17	-49d												
DynCm-3: LITL: 8a p2 SOP Converter: HVdc LINK ENERIZATION	09-Sep-17	-53d	15-Sep-17	-53d												
LITL-HVdc NFLD Seg5 SP																
LITL-dcNfSeg5: Conductor/OPGW Install	15-Feb-17	0d	19-Jun-17	0d												
LITL-dcNfSeg5: Installation Final Inspection Nfld (static)	20-Jun-17	0d	03-Jul-17	0d												

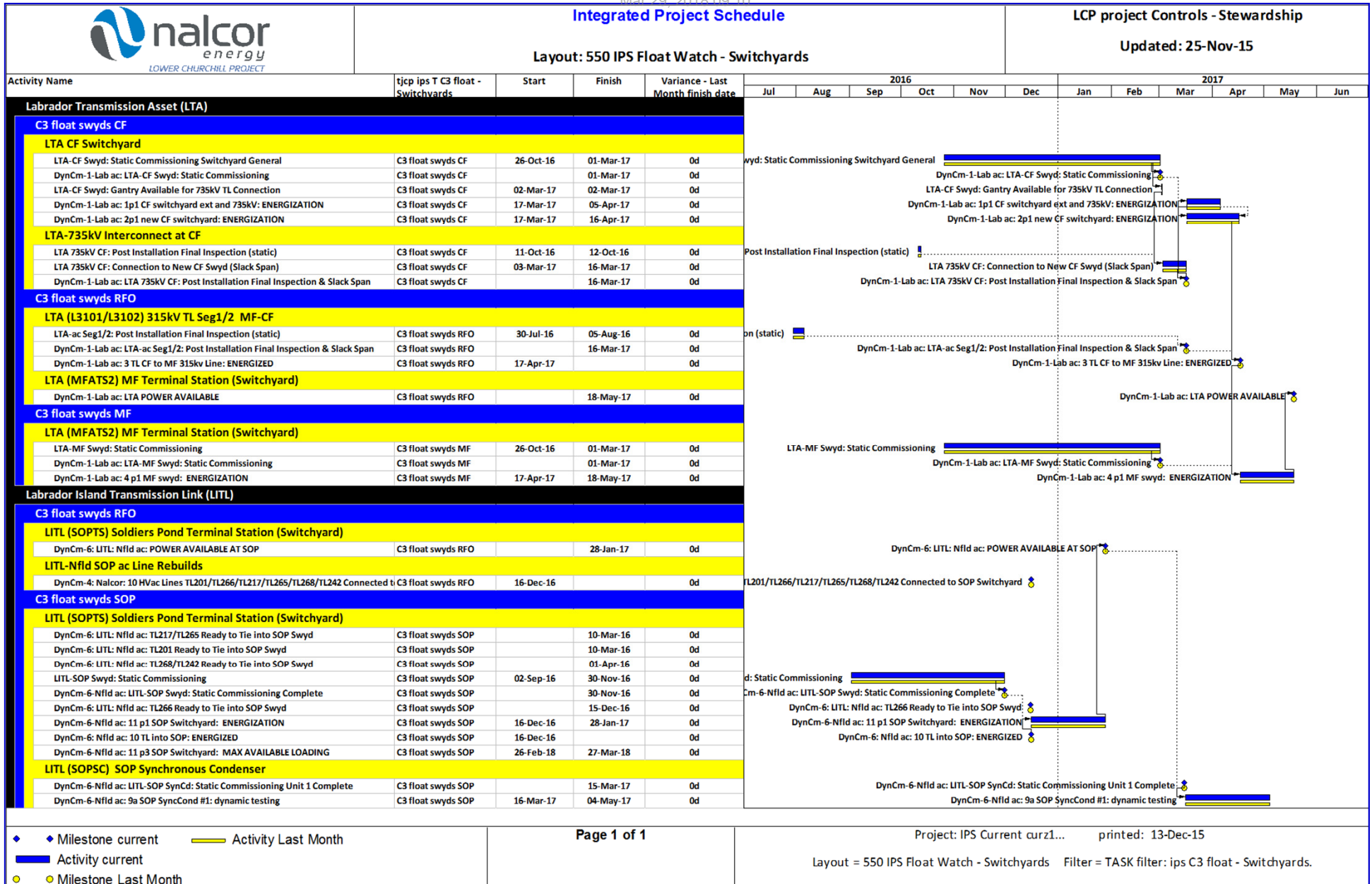
◆ Milestone current — Activity Last Month
 ■ Activity current
 ○ Milestone Last Month

1.0 Overall Summary Float Watch: C3 Converters


	Integrated Project Schedule Layout: 540 IPS Float Watch - Converter_1				LCP project Controls - Stewardship Updated: 25-Nov-15																										
Activity Name	Start	Finish	Variance -Last Month Finish	2015					2016					2017																	
				M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A
C3 float-converter-MF																															
f Civil/Structures																															
LITL-MFConvert: Building Foundation/Erect/Outfit	28-Jul-15 A	18-Oct-16	-172d																												
LITL-MFConvert: Foundation Outdoor	07-Aug-15 A	22-Aug-16	36d																												
g Installation																															
LITL-MFConvert: Valve Hall & Control Bldg Install Equipment	02-Mar-16	19-May-17	-66d																												
LITL-MFConvert: Outdoor Install ac equipment	29-Jul-16	02-May-17	-27d																												
LITL-MFConvert: Install Converter transformers	08-Aug-16	17-Feb-17	14d																												
LITL-MFConvert: Outdoor Install dc equipment	29-Aug-16	24-Apr-17	-62d																												
LITL-MFConvert: Gantry available for HVdc Seg1 TL & Lab Electrode TL	25-Aug-17	25-Aug-17	-70d																												
j Completions																															
LITL-MFConvert: Static Commissioning	06-Oct-16	24-Aug-17	-70d																												
C3 float-converter-SOP																															
f Civil/Structures																															
LITL-SOP Convert: Building Foundation/Erect/Outfit	10-Jul-15 A	22-Sep-16	-97d																												
LITL-SOP Convert: Outdoor Foundation	10-Jul-15 A	06-Sep-16	62d																												
g Installation																															
LITL-SPConvert: Outdoor Install ac equipment	14-Mar-16	10-Apr-17	-34d																												
LITL-SPConvert: Valve Hall/Control Bldg Install Equipment	18-Jul-16	05-May-17	-45d																												
LITL-SPConvert: Outdoor Install dc equipment	17-Nov-16	24-Apr-17	-55d																												
LITL-SPConvert: Converter Transformers Install	23-Nov-16	09-May-17	-41d																												
LITL-SOPConvert: Gantry available for HVdc Seg5 TL & Nfld Electr TL	03-Aug-17	03-Aug-17	-49d																												
j Completions																															
LITL-SOPConvert: Static Commissioning	23-Dec-16	02-Aug-17	-49d																												

◆ Milestone current  Activity Last Month
 Activity current
 Milestone Last Month


1.0 Overall Summary Float Watch: C3 – Switchyards



1.0 Overall Summary Float Watch: C4 – transmission Lines

 LOWER CHURCHILL PROJECT	Integrated Project Schedule Layout: 570 IPS Float Watch - Transmission lines												LCP project Controls - Stewardship Updated: 25-Nov-15																										
Activity Name	Start	Finish	Delta Last Month Finish date	2015												2016												2017											
				Jul	A	Sep	Oct	N	Dec	Jan	Feb	M	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	M	Apr	M	Jun	Jul	A	Sep									
MFGen-315kV Collector Line (PH->MF Swyd)																																							
MFGen-315 PH-SY TL: Post Installation Final Inspection (static)	11-Oct-16	12-Oct-16	0d																																				
MFGen-315 PH-SY TL: Connection to PH (Slack Span)	03-Mar-17	16-Mar-17	0d																																				
MFGen-315 PH-SY TL: Connection to MF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d																																				
LTA-735kV Interconnect at CF																																							
LTA 735kV CF: Post Installation Final Inspection (static)	11-Oct-16	12-Oct-16	0d																																				
LTA 735kV CF: Connection to Existing CF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d																																				
LTA 735kV CF: Connection to New CF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d																																				
LTA (L3101/L3102) 315kV TL Seg1/2 MF-CF																																							
LTA-ac Seg1/2: Post Installation Final Inspection (static)	30-Jul-16	05-Aug-16	0d																																				
LTA-ac Seg1/2: Connection to MF & CF Switchyard (Slack Span)	03-Mar-17	16-Mar-17	0d																																				
LITL-Lab Electrode Line (L'Anse-au-Diable)																																							
LITL Lab Electr. TL: Post installation Final Inspection (static) (from HVdc TL to E Site)	10-Sep-16	23-Sep-16	0d																																				
LITL Lab Electr. TL: Connection to MF Conveter/Grounding Site (slack span>)	26-Aug-17	01-Sep-17	-70d																																				
LITL-Lab HVdc Seg1/2																																							
LITL-dcLabSeg2/Electr TL: Post Installation Final Inspection (static)	31-Aug-16	13-Sep-16	0d																																				
LITL-dcLabSeg1/Electr TL: Post Installation Final Inspection (static)	16-Sep-16	22-Sep-16	0d																																				
LITL-dcLabSeg1/Electr TL: HVdc Seg 1 & Electrode TL Connection to MF Converter (Slack Span>)	26-Aug-17	08-Sep-17	-70d																																				
LITL-dcLabSeg2/Electr TL: Connection to Lab TransCmp (Slack Span>)	26-Aug-17	08-Sep-17	-70d																																				
LITL-Nfld HVdc TL Seg 3/4/5																																							
LITL-dcNfSeg3: Installation Final Inspection Nfld (static)	08-Mar-17	21-Mar-17	0d																																				
LITL-dcNfSeg4: Installation Final Inspection Nfld (static)	01-Jun-17	14-Jun-17	0d																																				
LITL-dcNfSeg5: Installation Final Inspection Nfld (static)	20-Jun-17	03-Jul-17	0d																																				
LITL-dcNfSeg3: Connection to Nfld TransCmp (Slack Span>)	04-Aug-17	17-Aug-17	-31d																																				
LITL-dcNfSeg5: Connection to SP Converter (Slack Span>)	04-Aug-17	17-Aug-17	-31d																																				
LITL-Nfld Electrode Line (Dowden's Point)																																							
LITL Nfld Electr. TL: Post installation Final Inspection (static)	20-Jun-16	24-Jun-16	0d																																				
LITL Nfld Electr. TL: Connection to Grounding Site (slack span>)	04-Aug-17	10-Aug-17	-48d																																				

1.0 Overall Summary **Float Watch: C4 – Line Rebuilds Soldiers Pond Area**

 LOWER CHURCHILL PROJECT	Integrated Project Schedule Layout: 580 IPS Float Watch - TL Re-builds SOP t Remaining work only				LCP project Controls - Stewardship Updated: 25-Nov-15																				
Activity Name	Start	Delta Last Month Start	Finish	Delta Last Month Finish date	2016													2017							
					Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	
TL201																									
TL201																									
LITL-Nfld ac TL Line Rebuilds: TL201 Install: Slack span tie-in SOP swyd, remove temp taps/salvage existing lines	01-Dec-16	0d	15-Dec-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Line Final Inspections- TL201 (static)	09-Dec-16	0d	15-Dec-16	0d																					
TL266																									
TL266																									
LITL-Nfld ac TL Line Rebuilds: TL266 Install: Towers, Anchors, framing, stringing & salvaging existing lines	01-Apr-16*	0d	05-Aug-16	0d																					
LITL-Nfld ac TL Line Rebuilds: TL266 Install: Slack span tie-in SOP swyd, remove temp taps/salvage existing lines	01-Dec-16	0d	15-Dec-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Line Final Inspections- TL266 (static)	11-Dec-16	0d	15-Dec-16	0d																					
TL217/TL265																									
TL217/TL265																									
LITL-Nfld ac TL Line Rebuilds: TL217/TL265 Install: Tower foundations/assembly/erection/stringing	20-Oct-15 A	0d	05-Mar-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Interim Inspections- TL217/TL265 (static)	06-Mar-16	0d	10-Mar-16	0d																					
LITL-Nfld ac TL Line Rebuilds: Install: TL217/TL265 Interim Connection	11-Mar-16	0d	20-Mar-16	0d																					
LITL-Nfld ac TL Line Rebuilds: TL217/TL265 Install: Slack span tie-in SOP swyd, remove temp taps/salvage existing lines	01-Dec-16	0d	14-Dec-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Final Inspections- TL217/TL265 (static)	01-Dec-16	0d	14-Dec-16	0d																					
TL268/TL242																									
TL268/TL242																									
LITL-Nfld ac TL Line Rebuilds: TL268/TL242 Install: Tower foundations/assembly/erection/stringing	25-Oct-15 A	0d	15-Mar-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Line Interim Inspections- TL268/TL242 (static)	16-Mar-16	0d	17-Mar-16	0d																					
LITL-Nfld ac TL Line Rebuilds: TL268/TL242 Install: Interim Connection	18-Mar-16	0d	01-Apr-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Line Final Inspections- TL268/TL242 (static)	01-Dec-16	0d	05-Dec-16	0d																					
LITL-Nfld ac TL Line Rebuilds: TL268/TL242 Install: Slack span tie-in SOP swyd, remove temp taps/salvage existing lines	01-Dec-16	0d	15-Dec-16	0d																					
TL204 (Grand Falls Windsor)																									
TL204 (Grand Falls Windsor)																									
LITL-Nfld ac TL Line Rebuilds: TL204 (Grand Falls/W) Install: Tower foundations/assembly/erection/stringing	05-Apr-16*	0d	06-Sep-16	0d																					
LITL-Nfld ac TL Line Rebuilds Completions: Line Final Inspections- TL204 (Grand Falls/Windsor) (static)	07-Sep-16	0d	11-Sep-16	0d																					
LITL-Nfld ac TL Line Rebuilds: TL204 (Grand Falls/W) Install: Tie-in	12-Sep-16	0d	25-Sep-16	0d																					

◆ Milestone current — Activity Last Month
 ■ Activity current
 ○ Milestone Last Month

2.0 Labrador Transmission Asset (LTA) LTA Analysis – Observations

1) Target Milestone

Target Milestone Overall = LTA Ready for Power Transmission (Power Available) = 04 July 2017

Tracking Milestone = 18 May 2017 forecast date (no change from last month)

NOTE: A tracking milestone simply indicates this month forecast completion date.

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	3.2%	Cumulative Planned Progress:	60.9%
Period Forecast Progress	3.2%		
Period Earned Progress:	6.2%	Cumulative Earned Progress:	66.5%

3) Critical Path: : no change from last month

- CF Switchyard continues to be on critical path to LTA Power Available forecast for May 2017.

4) Switchyards: no change from last month

- No change to completion date of static commissioning for either switchyard (CF, MF).

5) 315kV HVac Lines CF-MF: no change from last month

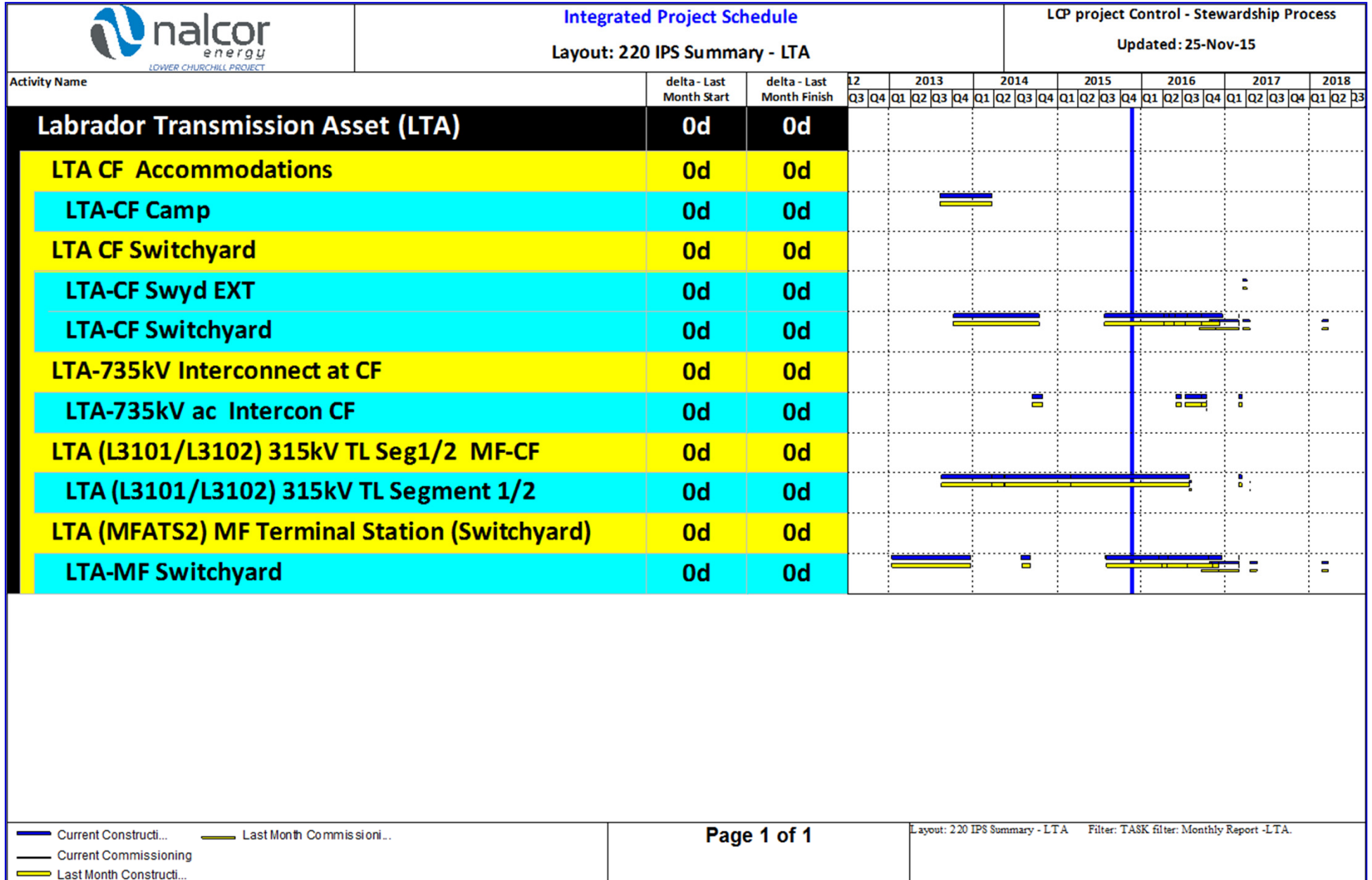
- HVac Seg 1/2 - line construction/stringing progressing with no change this month to HVac Seg 1/2 final inspection date which is end of line construction.

6) 735kV HVac CF Interconnection (Bus Extension): no change from last month

- CF 735kV -bus extension - TL construction start (foundations) not planned until June 2016.

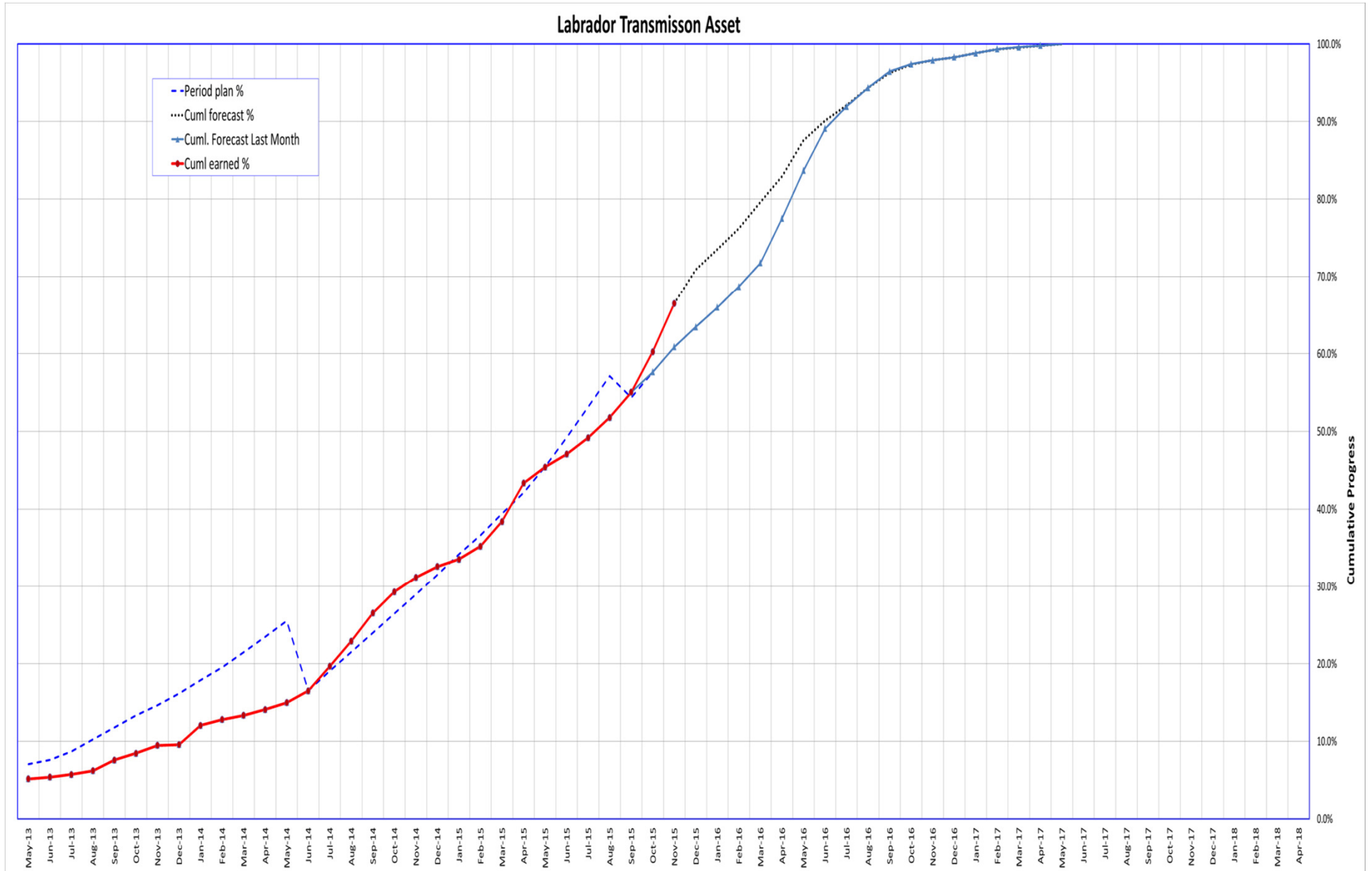
2.0 Labrador Transmission Asset (LTA)

LTA Summary Schedule



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2.0 Labrador Transmission Asset (LTA) - LTA Engineering/Construction/Commissioning Progress Curve



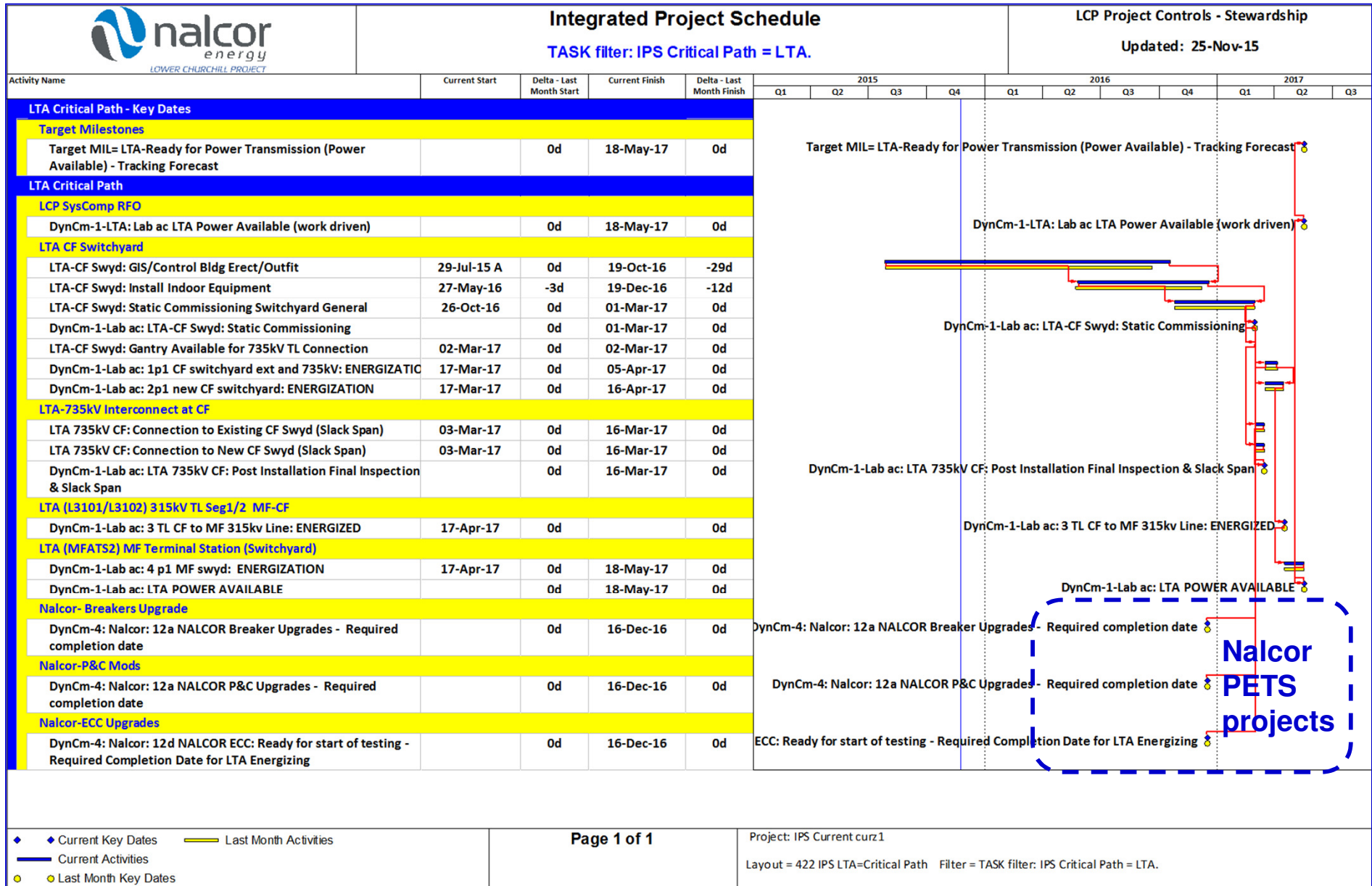
2.0 Labrador Transmission Asset (LTA) - Engineering/Construction/Commissioning Progress Table

LTA Progress Table 2015 Nov									
This Reporting Period									
	Weight		Period %				Cumulative %		
	Factor %		Plan	Earned	Variance		Plan	Earned	Variance
	A		B	C	C-B		E	F	F-E
LTA CF Accommodations	1.1%		0.0%	0.0%	0.0%		100.0%	100.0%	0.0%
LTA HVac Transmission Line Seg1/2 - MF to CF	56.0%		2.9%	5.5%	2.6%		76.0%	81.4%	5.4%
LTA Churchill Falls Switchyard	20.9%		2.7%	10.7%	8.0%		34.2%	45.9%	11.7%
LTA Muskrat Falls Switchyard	14.0%		7.1%	6.5%	-0.6%		20.9%	22.2%	1.3%
LTA Misc	8.0%		0.3%	0.0%	-0.3%		89.5%	89.2%	-0.3%
LTA TOTAL	100.0%		3.2%	6.2%	3.0%		60.9%	66.5%	5.6%
Last Reporting Period									
	Weight		Period %				Cumulative %		
	Factor %		Plan	Earned	Variance		Plan	Earned	Variance
	A		B	C	C-B		E	F	F-E
LTA CF Accommodations	1.1%		0.0%	0.0%	0.0%		100.0%	100.0%	0.0%
LTA HVac Transmission Line Seg1/2 - MF to CF	56.0%		3.1%	6.2%	3.1%		73.1%	75.9%	2.8%
LTA Churchill Falls Switchyard	20.9%		4.4%	7.2%	2.8%		31.5%	35.2%	3.7%
LTA Muskrat Falls Switchyard	14.0%		4.5%	1.7%	-2.8%		13.8%	15.7%	1.9%
LTA Misc	8.0%		0.0%	0.0%	0.0%		89.2%	89.2%	0.0%
LTA TOTAL	100.0%		3.3%	5.2%	1.9%		57.7%	60.3%	2.6%

2.0 Labrador Transmission Asset (LTA)

LTA Critical Path

NOTE: For complete Critical / Subcritical path schedule see attachment



3.0 Labrador Island Transmission Link (LITL) LITL Analysis – Observations

1) Target Milestone

- Target Milestone Overall=LITL-1st Power Transfer Lab to Nfld = 9 Sep 2017 (Tracking Milestone)
Delay 53 days from last month due to delay in Converter completion (See page 18)
- Target Milestone Overall=LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland= 11 Nov 2017
Now delayed to 14 Nov 2017 - Change from last month

NOTE: A tracking milestone simply indicates this month forecast completion date.

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	3.4%	Cumulative Planned Progress:	35.2%
Period Forecast Progress	3.4%		
Period Earned Progress:	1.7%	Cumulative Earned Progress:	32.5%

3) Critical Path: Change from last month

- MF Converter is driving the LITL critical path .
- MF Converter is delayed 73 days while SOP Converter is delayed 49 days .
- The Start-up sequence is impacted by these delays resulting in a 53 day delay to “1st power transfer”.

4) SOBI Crossing

- Land cable installation continues at Shoal Cove and Forteau Point
- Arrival of cable laying vessel forecast for June 2016

5) HVdc Line

- HVdc Lab Seg 1/2 = no change this month to final inspection dates
- HVdc Nfld Seg 3/4/5 = no change this month to final inspection dates

6) Converters / Switchyards / Sych Cond

- Converters: MF is delayed 73 days while SOP is delayed 49 days driven by forecasted ac filter design and procurement .
- Switchyards: Work progressing with no delay on completion date of static commissioning.
- Sych Cond: Delays to completion of static comm. for Unit 2 = 21 days and Unit 3 = 23 days due to geotechnical conditions in foundation construction. Not on critical path to 1st power transfer.

7) SOP Transmission Line Rebuilds


- Work continues with reliance on outages. (see pages 21 and 41)

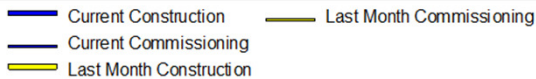
8) Transition Compounds / Grounding (Electrode) Stations

- Grounding stations civil/structures work to resume Apr 2016. progressing with no delay on completion date of static commissioning.
- Transition compounds progressing with forecast 52 day earlier completion date of static commissioning

3.0 Labrador Island Transmission Link (LITL)

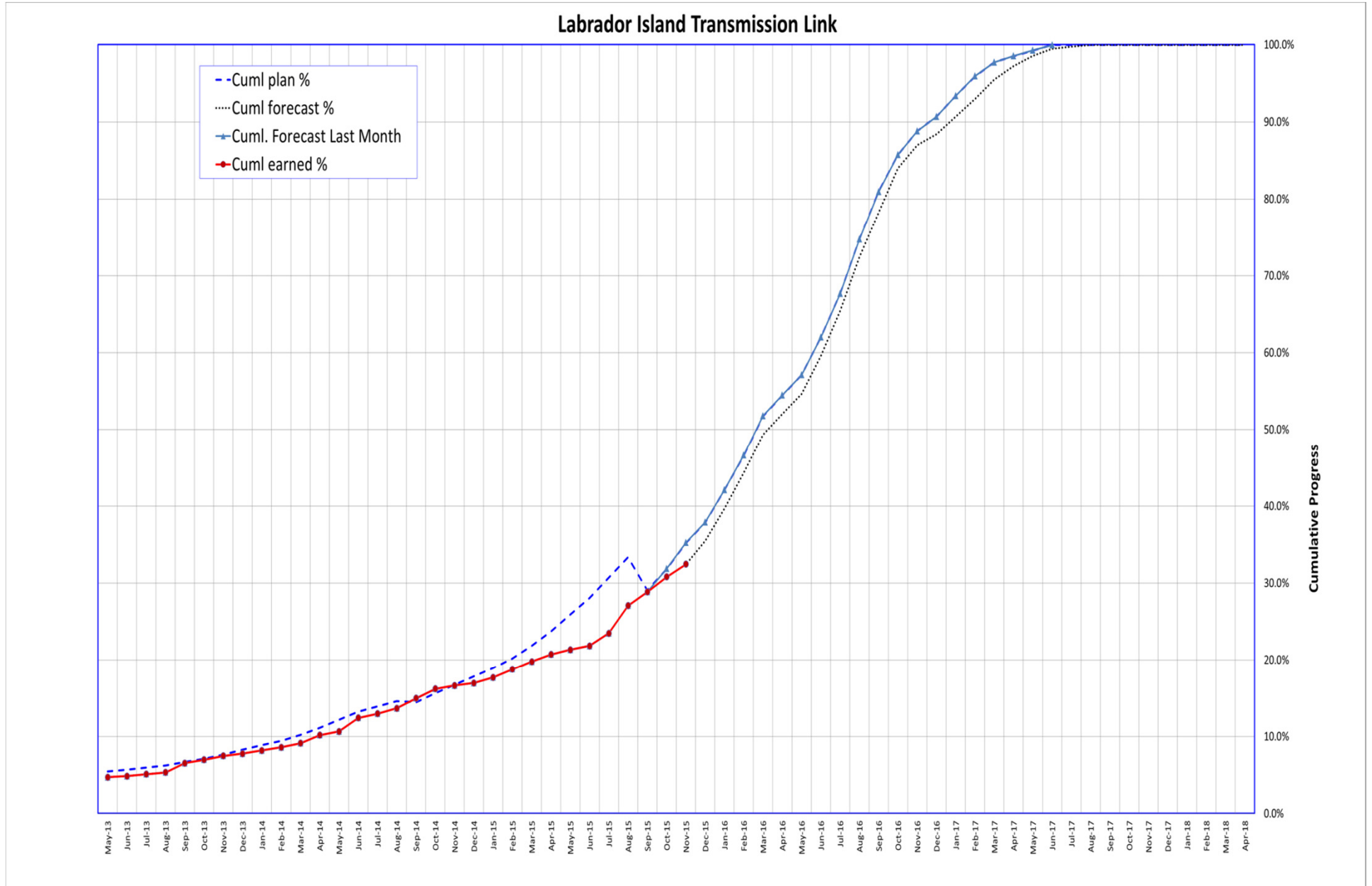
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LITL Summary Schedule
Mar 29, 2018 09:10

		Integrated Project Schedule Layout: 230 IPS Summary - LITL												LCP project Control - Stewardship Updated: 25-Nov-15									
Activity Name		delta - Last Month Start	delta - Last Month Finish	2013		2014				2015				2016				2017				2018	
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Labrador Island Transmission Link (LITL)		0d	0d																				
LCP SysComp RFO		0d	0d																				
LITL (MFACS) MF Converter Station		0d	0d																				
LITL-Lab Electrode Line (L'Anse-au-Diable)		0d	-70d																				
LITL Lab Grounding Station (L'Anse-au-Diable)		0d	-53d																				
LITL-Lab HVdc Seg1/2		0d	-53d																				
LITL-HVdc LAB Seg1 MF		0d	-70d																				
LITL-HVdc LAB Seg2 SOBI		0d	-70d																				
LITL-HVdc Lab		-53d	-53d																				
LITL Lab Transition Compound		0d	-53d																				
LITL SOBI Crossing		0d	-53d																				
LITL Nfld Transition Compound		0d	-53d																				
LITL-Nfld HVdc TL Seg 3/4/5		0d	-53d																				
LITL-HVdc NFLD Seg3 SOBI		0d	-31d																				
LITL-HVdc NFLD Seg4		0d	0d																				
LITL-HVdc NFLD Seg5 SP		0d	-31d																				
LITL-HVdc Nfld		-53d	-53d																				
LITL (SOPCS) SOP Converter Station		0d	0d																				
LITL-Nfld Electrode Line (Dowden's Point)		0d	-48d																				
LITL Nfld Grounding Station (Dowden's Point)		0d	-53d																				
LITL (SOPTS) Soldiers Pond Terminal Station (Switchyard)		0d	0d																				
LITL-Nfld SOP ac Line Rebuilds		0d	0d																				
LITL (SOPSC) SOP Synchronous Condenser		0d	0d																				



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3.0 Labrador Island Transmission Link (LITL) - LITL Engineering/Construction/Commissioning Progress Curve



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3.0 Labrador Island Transmission Link (LITL) - Engineering/Construction/Commissioning Progress Table

LITL Progress Table 2015 Nov

This Reporting Period

	Weight	Period %			Cumulative %		
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance
	A	B	C	C-B	E	F	F-E
LITL Muskrat Falls Converter	5.7%	2.4%	1.0%	-1.4%	12.0%	8.1%	-3.9%
LITL Soldiers Pond Converter	5.8%	3.0%	2.2%	-0.8%	23.4%	17.8%	-5.6%
LITL HVdc Transmission Line Seg 1/2	19.3%	5.8%	3.7%	-2.1%	42.4%	39.9%	-2.5%
LITL HVdc Transmission Line Seg 3/4/5	35.3%	3.4%	0.9%	-2.5%	11.4%	7.6%	-3.8%
LITL Grounding (Electrode) Sites	1.7%	4.3%	4.6%	0.3%	69.5%	75.0%	5.5%
LITL Transition Compounds	1.8%	0.0%	0.0%	0.0%	32.9%	32.9%	0.0%
LITL SOBI Cable Crossing	18.0%	1.4%	0.6%	-0.8%	70.5%	69.9%	-0.6%
LITL Soldiers Pond Switchyard	3.2%	3.5%	6.7%	3.2%	34.8%	34.8%	0.0%
LITL Soldiers Pond Synchronous Condensers	4.9%	6.1%	0.5%	-5.6%	37.4%	28.6%	-8.8%
LITL Misc	4.3%	0.0%	0.2%	0.2%	79.0%	80.2%	1.2%
LITL TOTAL	100.0%	3.4%	1.7%	-1.6%	35.2%	32.5%	-2.7%

Last Reporting Period


	Weight	Period %			Cumulative %		
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance
	A	B	C	C-B	E	F	F-E
LITL Muskrat Falls Converter	5.7%	3.0%	0.9%	-2.1%	9.6%	7.1%	-2.5%
LITL Soldiers Pond Converter	5.8%	4.8%	2.1%	-2.7%	20.4%	15.6%	-4.8%
LITL HVdc Transmission Line Seg 1/2	19.3%	5.3%	5.4%	0.1%	36.7%	36.2%	-0.5%
LITL HVdc Transmission Line Seg 3/4/5	35.3%	1.7%	0.7%	-1.0%	8.0%	6.7%	-1.3%
LITL Grounding (Electrode) Sites	1.7%	5.9%	7.0%	1.1%	65.2%	70.4%	5.2%
LITL Transition Compounds	1.8%	0.0%	0.0%	0.0%	32.9%	32.9%	0.0%
LITL SOBI Cable Crossing	18.0%	1.3%	1.8%	0.5%	69.1%	69.3%	0.2%
LITL Soldiers Pond Switchyard	3.2%	5.1%	5.0%	-0.1%	31.3%	28.1%	-3.2%
LITL Soldiers Pond Synchronous Condensers	4.9%	4.9%	1.1%	-3.8%	31.4%	28.1%	-3.3%
LITL Misc	4.3%	0.0%	0.6%	0.6%	79.0%	80.0%	1.0%
LITL TOTAL	100.0%	2.8%	2.0%	-0.8%	31.9%	30.8%	-1.1%

3.0 Labrador Island Transmission Link (LITL)

LITL Critical Path 1st Power transfer Lab-> Nfld

NOTE: For complete Critical / Subcritical path schedule see attachment

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		Integrated Project Schedule 1st Power transfer Lab -> Nfld				LCP Project Controls - Stewardship Updated: 25-Nov-15											
Activity Name	Current Start	Delta - Last Month Start	Current Finish	Delta - Last Month Finish	2015				2016				2017				
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1st Power Transfer-CP-KD																	
Target Milestones																	
Target MIL=Overall-LITL-1st Power Transfer Labrador to Newfoundland - Tracking Forecast	09-Sep-17	-53d		-53d	Power Transfer Labrador to Newfoundland - Tracking Forecast												
1st Power Transfer-CP																	
LCP SysComp RFO																	
DynCm-3: LITL: All HVdc TL COMPLETED AND CONNECTED		-53d	08-Sep-17	-53d	DynCm-3: LITL: All HVdc TL COMPLETED AND CONNECTED												
DynCm-3: LITL: SOP & MF CONVERTER STANDALONE TESTING & HVdc LINK COMPLETED	09-Sep-17	-53d		-53d	F CONVERTER STANDALONE TESTING & HVdc LINK COMPLETED												
LITL (MFACS) MF Converter Station																	
LITL-MFConvert: Building Foundation/Erect/Outfit	28-Jul-15 A	0d	18-Oct-16	-172d													
LITL-MFConvert: Valve Hall & Control Bldg Install Equipment	02-Mar-16	0d	19-May-17	-66d													
LITL-MFConvert: Static Commissioning	06-Oct-16	1d	24-Aug-17	-70d													
LITL-MFConvert: Gantry available for HVdc Seg1 TL & Lab Electrode TL	25-Aug-17	-70d	25-Aug-17	-70d													
DynCm-3: LITL: 7a p2- MF Converter: HVdc LINK ENERGIZATION	09-Sep-17	-53d	15-Sep-17	-53d													
LITL-Lab HVdc Seg1/2																	
LITL-dcLabSeg1/Electr TL: HVdc Seg 1 & Electrode TL Connection to MF Converter (Slack Span>)	26-Aug-17	-70d	08-Sep-17	-70d													
LITL-dcLabSeg2/Electr TL: Connection to Lab TransCmp (Slack Span>)	26-Aug-17	-70d	08-Sep-17	-70d													
DynCm-3: LITL: LITL-dcLabSeg1/Electr TL: Post Installation Final Inspection & Slack Span Connection		-70d	08-Sep-17	-70d	TL: Post Installation Final Inspection & Slack Span Connection												
DynCm-3: LITL: LITL-dcLabSeg2/Electr TL: Post Installation Final Inspection & Slack Span Connection		-70d	08-Sep-17	-70d	TL: Post Installation Final Inspection & Slack Span Connection												
DynCm-3: LITL: 6a HVdc TL and Electrode Line Lab: Energized	09-Sep-17	-53d		-53d	DynCm-3: LITL: 6a HVdc TL and Electrode Line Lab: Energized												
LITL-Nfld HVdc TL Seg 3/4/5																	
DynCm-3: LITL: 6c HVdc TL and Electrode Line Nfld: Energized	09-Sep-17	-53d		-53d	DynCm-3: LITL: 6c HVdc TL and Electrode Line Nfld: Energized												
LITL (SOPCS) SOP Converter Station																	
DynCm-3: LITL: 8a p2 SOP Converter: HVdc LINK ENERIZATION	09-Sep-17	-53d	15-Sep-17	-53d													

◆ Current Key Dates — Last Month Activities
 — Current Activities
 ○ Last Month Key Dates

4.0 Muskrat Falls Generation (MFGGen) MFGGen Analysis – Observations

1) Target Milestone

Target Milestone: MFGGen 1st power from Muskrat Falls = (**On hold**)

2) Overall Engineering/Construction/Commissioning Progress

Period Planned Progress:	1.9%	Cumulative Planned Progress:	54.7%
Period Forecast Progress:	1.9%		
Period Earned Progress:	1.1%	Cumulative Earned Progress:	39.6%

3) Critical Path(s):

- [Diversion - River Closure \(priority 1a\) - see page 14](#)
- On schedule for start on 6 July 2016
- [Diversion - Winter Headpond El. 25m \(priority 1b\) - see page 15](#)
- On schedule for start on 26 Oct 2016
- [Diversion - Impoundment Full Supply Level El. 39m \(priority 1c\) - see page 16](#)
- (**On hold**, see below for details)

4) Reservoir Clearing:

- Labour transferred to ROW clearing in LITL, forecast for restart in July 2016 with completion in Dec 2016.

5) North Spur:

- Work progressing with all milestones forecast to be achievable.

6) Spillway

- Spillway: work is progressing for priority p1a- River Closure. Progress behind current plan while commercial discussions are ongoing. Schedule has been modified to achieve diversion until contractor's plans have been approved.

7) Transition Dams/North & South Dams

- Work began on Upstream Cofferdam (5) Groins 1&2 to EL 17m (2015 scope) CH0009.


8) Powerhouse:

- A review of the C1 (Muskrat Falls Generation) work plan is underway, and implementation of an updated C1 schedule will remain on hold pending acceptance of agreed actions and mitigations plan.
- Work progressing on all areas. Removal of ICS (Integrated Cover System) continues.

4.0 Muskrat Falls Generation (MFGen)

MFGen Summary Schedule

confidential
Corinne Russell
McInnes Cooper
Mar 29, 2018 09:10

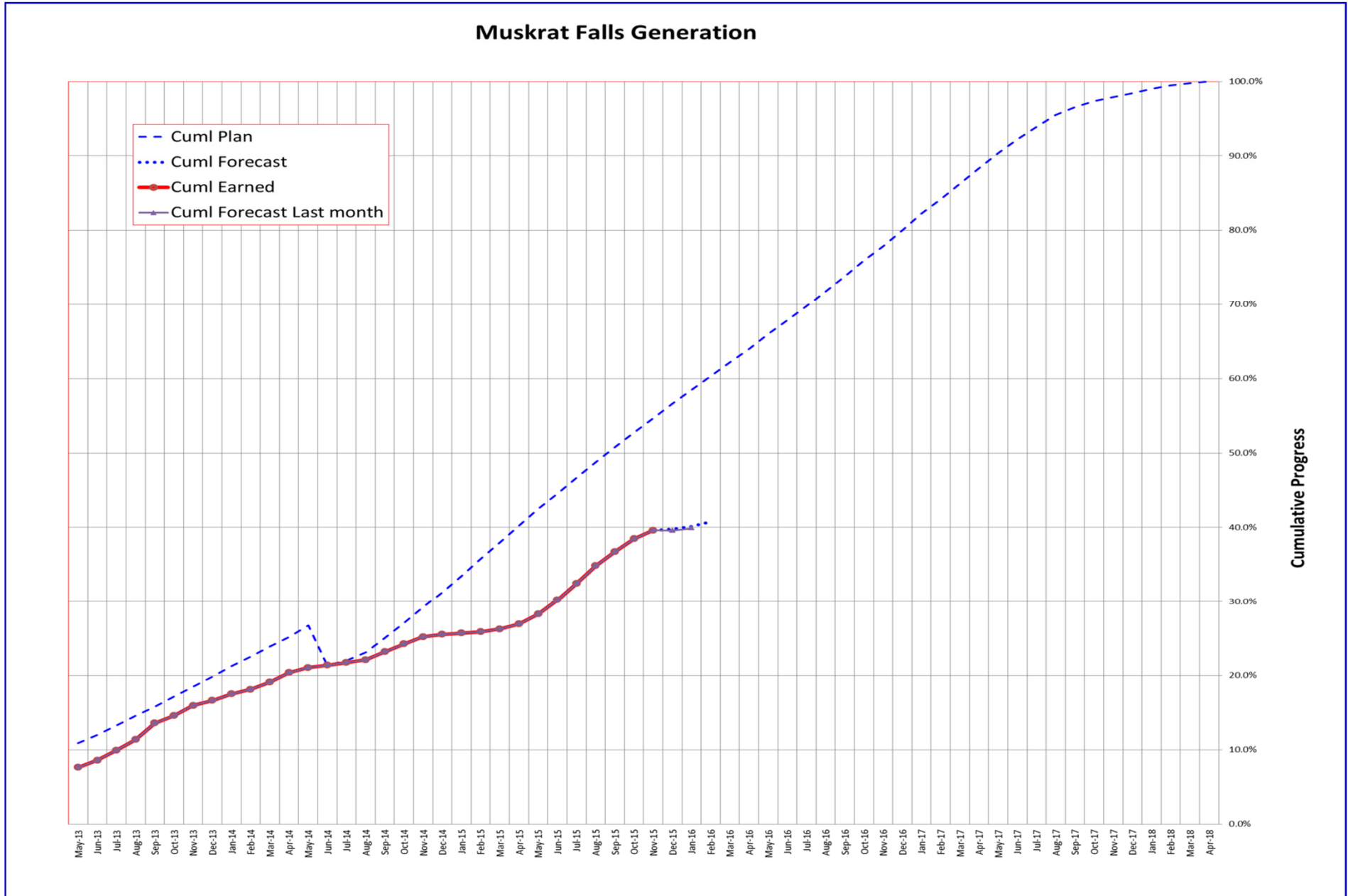
		Integrated Project Schedule Layout: 240 IPS Summary - MFGen												LCP project Control - Stewardship Process Updated: 25-Nov-15													
Activity Name	delta - Last Month Start	delta - Last Month Finish	2012		2013				2014				2015				2016				2017				2018		
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Muskrat Falls - Generation (MFGen)	0d	0d																									
MFGen Access Road	0d	0d																									
MFGen Construction Power	0d	0d																									
MFGen Accommodations	0d	0d																									
MFGen Reservoir Preparation	0d	0d																									
MFGen North Spur Stabilization	0d	0d																									
MFGen Spillway/Diverson	0d	0d																									
MF Bulk Excavation	0d	0d																									
Spillway/Div Ph 1	0d	0d																									
Spillway Ph2-Bay 1	0d	0d																									
Spillway Ph2-Bay 3	0d	0d																									
Spillway Ph2-Bay 5	0d	0d																									
Spillway Ph2-Bay 2	0d	0d																									
Spillway Ph2-Bay 4	0d	0d																									
MFGen Power House & Intake	0d	0d																									
MFGen North RCC Dam	0d	0d																									
MFGen-315kV Collector Line (PH->MF Swyd)	0d	0d																									
MFGen South Dam	0d	0d																									
MFGen Site Restoration	0d	0d																									
MFGen Offsite Logistics and Infrastructure Upgrades	0d	0d																									

← Under review

Under review

— Current Construction — Last Month Commissioning
— Current Commissioning — Last Month Construction

4.0 Muskrat Falls Generation (MFGen) - MFGen Engineering/Construction/Commissioning Progress Curve



4.0 Muskrat Falls Generation (MFGGen) - MFGGen Engineering/Construction/Commissioning Progress Table

MFGGen Progress Table 2015 Nov								
This Reporting Period								
	Weight	Period %			Cumulative %			
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance	
	A	B	C	C-B	E	F	F-E	
MFG Road/Camp/Constr. Power	7.9%	0.0%	0.0%	0.0%	100.0%	99.8%	-0.2%	
MFG Reservoir Preparation	6.5%	0.0%	0.0%	0.0%	60.8%	60.8%	0.0%	
MFG Spillway & Gates	11.4%	2.1%	1.1%	-1.0%	61.0%	65.8%	4.8%	
MFG North Spur Stabilization	4.2%	9.6%	6.1%	-3.5%	37.0%	43.3%	6.3%	
MFG North Dam (incl North Transition Dam)	7.5%	0.0%	0.0%	0.0%	0.0%	2.5%	2.5%	
MFG Powerhouse & intake	54.9%	2.5%	1.1%	-1.4%	49.7%	23.1%	-26.6%	
MFG South Dam (incl South Transition Dam)	1.1%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%	
MFG Misc:Eng/ 315kV/Site Rest./logistic	6.5%	0.0%	0.0%	0.0%	83.5%	83.5%	0.0%	
MFGGen TOTAL	100.0%	1.9%	1.1%	-0.8%	54.7%	39.6%	-15.2%	
Last Reporting Period								
	Weight	Period %			Cumulative %			
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance	
	A	B	C	C-B	E	F	F-E	
MFG Road/Camp/Constr. Power	7.9%	0.0%	0.0%	0.0%	100.0%	99.8%	-0.2%	
MFG Reservoir Preparation	6.5%	0.0%	0.0%	0.0%	60.8%	60.8%	0.0%	
MFG Spillway & Gates	11.4%	2.2%	2.7%	0.5%	58.9%	64.7%	5.8%	
MFG North Spur Stabilization	4.2%	9.4%	9.4%	0.0%	27.4%	37.2%	9.8%	
MFG North Dam (incl North Transition Dam)	7.5%	0.0%	0.7%	0.7%	0.0%	2.5%	2.5%	
MFG Powerhouse & intake	54.9%	2.7%	1.8%	-0.9%	47.2%	22.0%	-25.2%	
MFG South Dam (incl South Transition Dam)	1.1%	0.0%	1.0%	1.0%	0.0%	5.3%	5.3%	
MFG Misc:Eng/ 315kV/Site Rest./logistic	6.5%	0.0%	0.0%	0.0%	83.5%	83.5%	0.0%	
MFGGen TOTAL	100.0%	2.0%	1.8%	-0.2%	52.8%	38.5%	-14.3%	

5.0 Nalcor Operations and Maritime Link

Nalcor Operations

- Breaker Upgrades
- System Protection and Control Upgrades
- Energy Control center Upgrades
- TL 267 and associated switchyard modifications

LCP/Nalcor Operations

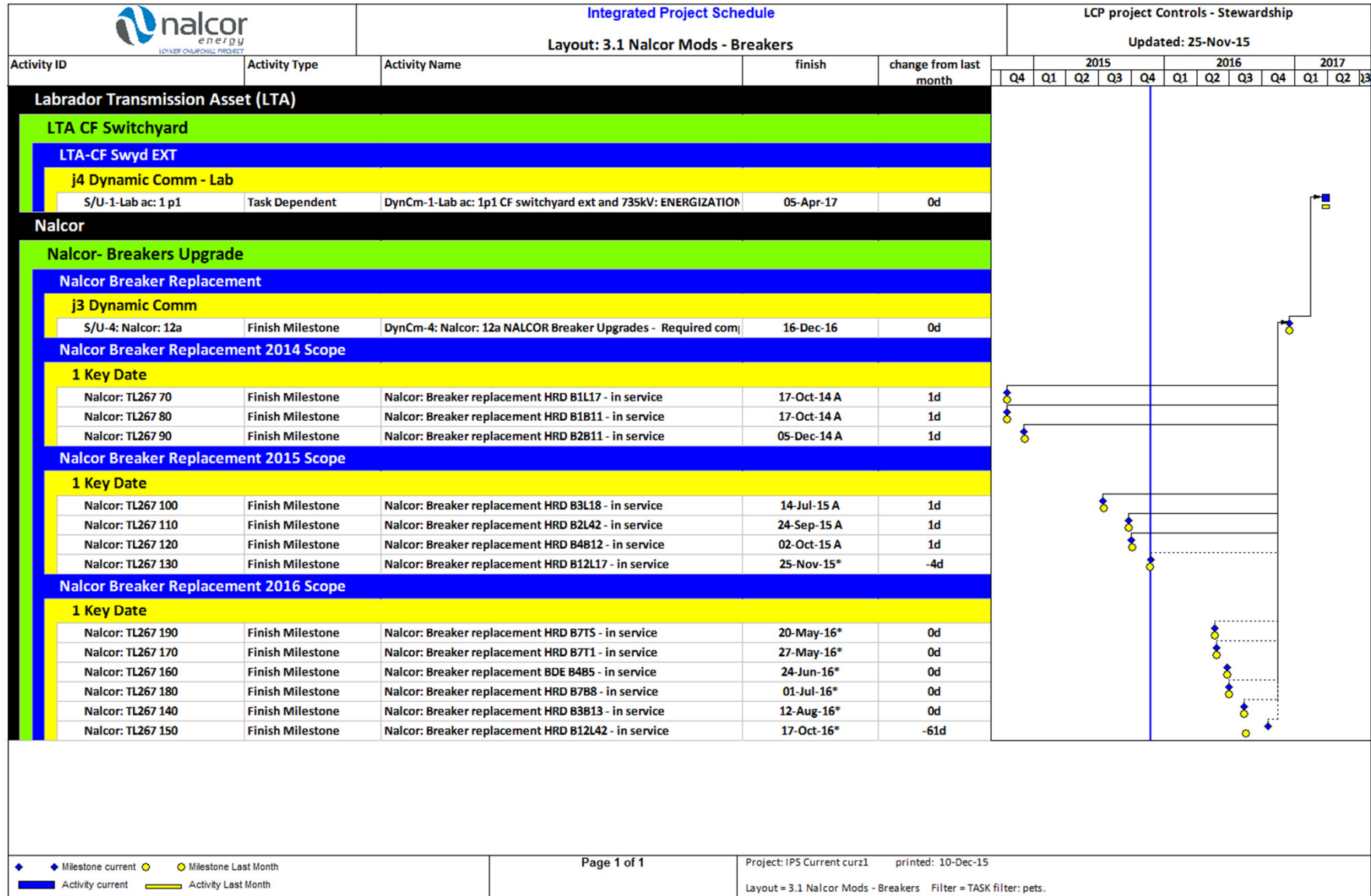
- Line Rebuilds Soldiers Pond Area

Maritime Link

- Maritime Link (update complete but not shown in this report)

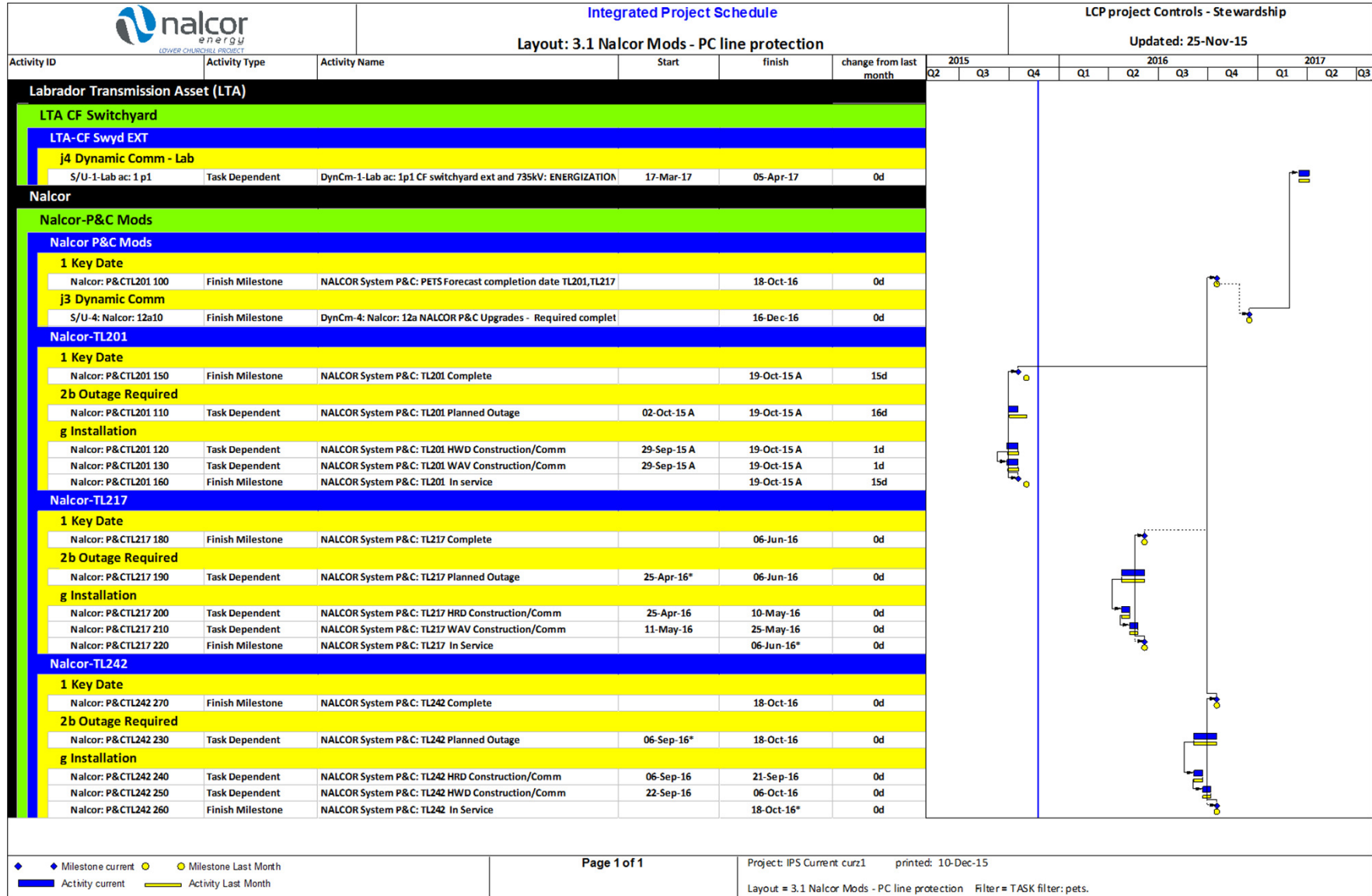
5.0 Nalcor Operations

Nalcor Operations - Breaker Upgrades




5.0 Nalcor Operations

Nalcor Operations - System Protection and Control Upgrades



5.0 Nalcor Operations

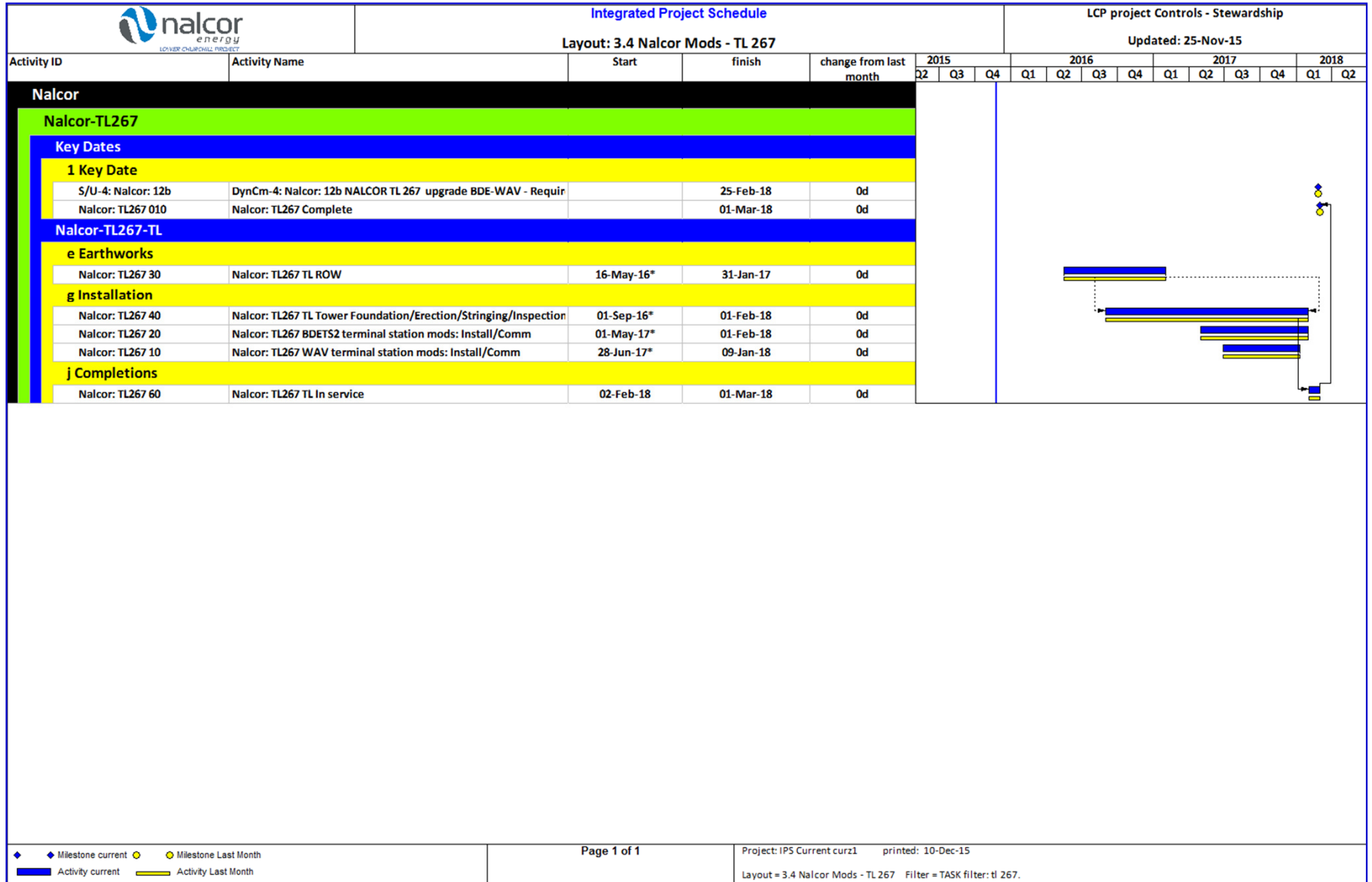
Nalcor Operations - Energy Control center Upgrades

	Integrated Project Schedule				LCP Project Controls									
	Layout: 3.3 Nalcor Mods - ECC Upgrades TASK filter: Nalcor - ECC				Updated: 25-Nov-15									
Activity Name	This Month Start	This Month Finish	change last month finish	2016				2017				18		
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
Nalcor-ECC Upgrades														
Nalcor-ECC Upgrades - LTA														
Nalcor ECC Mods LTA: Receive Final Points List from LCP	28-Jun-16*	17-Nov-16	0d											
Nalcor ECC Mods LTA: Ready for LTA Energizing		02-Dec-16	0d											
Nalcor ECC Mods LTA: ECC Ready for Commissioning		02-Dec-16	0d											
DynCm-4: Nalcor: 12d NALCOR ECC: Ready for start of testing - Required Completion Date for LTA Energizing		16-Dec-16	0d											
Nalcor-ECC Upgrades - LITL														
Nalcor ECC Mods LITL: Receive Final Points List from LCP	18-Mar-16*	29-Nov-16	0d											
Nalcor ECC Mods LITL: Ready for LITL Energizing		14-Dec-16	0d											
Nalcor ECC Mods LITL: ECC Ready for Commissioning		14-Dec-16	0d											
Nalcor: NALCOR ECC: Ready for start of testing - Required Completion Date for LITL Energizing		10-Jun-17	-53d											
Nalcor-ECC Upgrades - MFG														
Nalcor ECC Mods MFG: Receive Final Points List from LCP	27-Feb-17*	28-Sep-17	-1d											
Nalcor ECC Mods MFG: Completion date MFG		13-Oct-17	-4d											
Nalcor ECC Mods MFG: ECC Ready for Commissioning		13-Oct-17	-4d											
Nalcor: NALCOR ECC MFG: Ready for start of testing - Required Completion Date for MFG Energizing To be determined		13-Oct-17	-4d											
Nalcor-ECC Upgrades - Maritime Link														
Nalcor ECC Mods ML: Receive Final Points List from Emera ML	12-Oct-16*	17-Jan-17	0d											
Nalcor ECC Mods ML: Completion date ML		01-Feb-17	0d											
Nalcor ECC Mods ML: ECC Ready for Commissioning		01-Feb-17	0d											
Emera: Ready for start of testing - Required Completion Date -to be determined		01-Feb-17	0d											

◆ Milestone current
■ Activity current

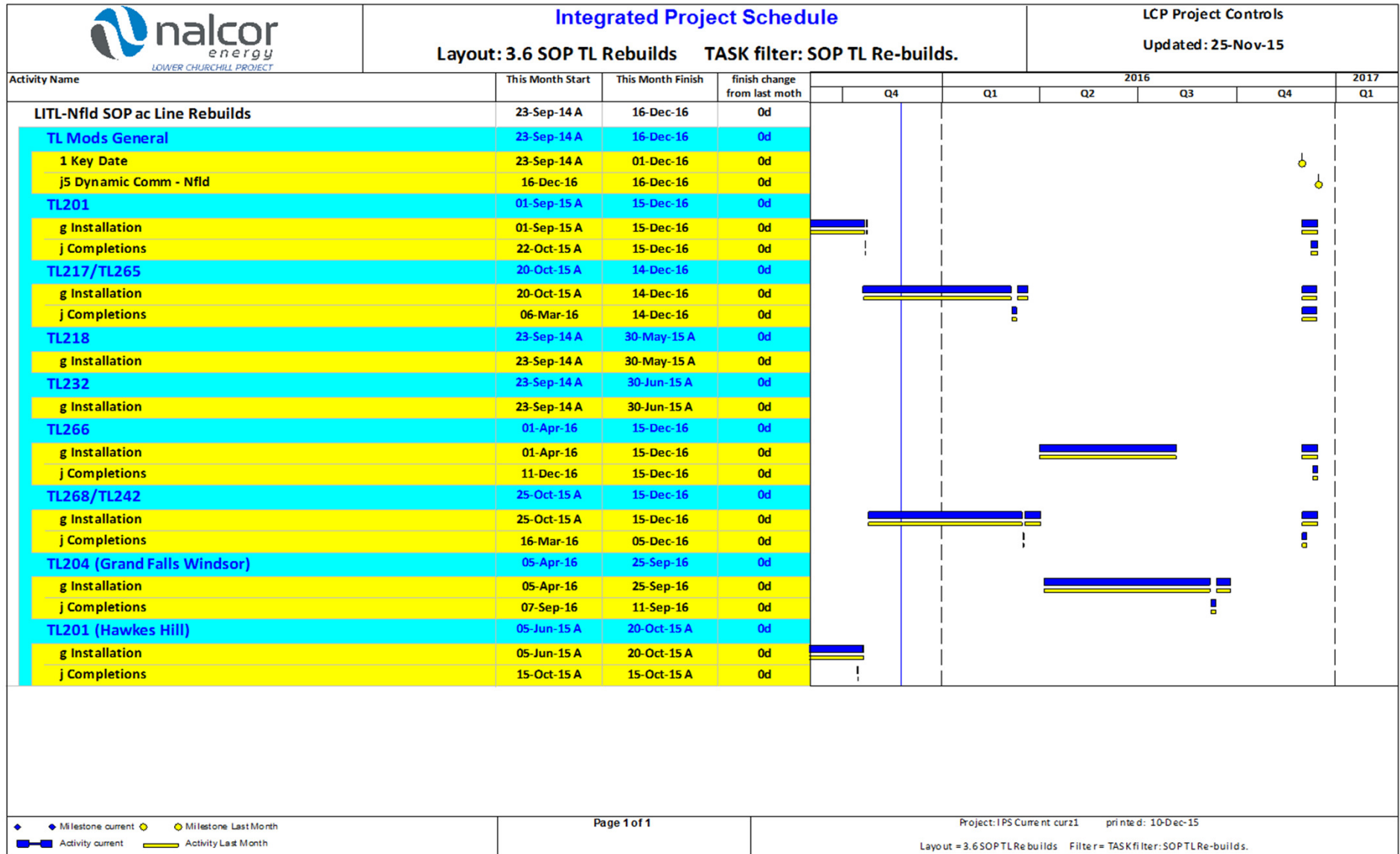
5.0 Nalcor Operations

Nalcor Operations - TL 267 and associated switchyard modifications



5.0 Nalcor Operations

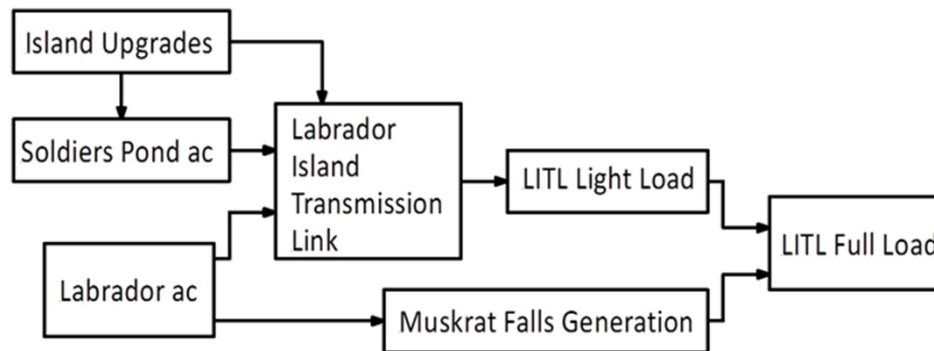
LCP & Nalcor Operations - Line Rebuilds Soldiers Pond Area



6.0 RFO Start-up Sequences

IPS Start-Up Verification - Status of development

The Ready for Operations TIC (Technical Integration Committee) start-up sequence (in simplified block diagram form):



The Ready for Operations TIC (Technical Integration Committee) report concerning the start-up sequence was issued [May 2014](#).

End of Report

Lower Churchill Project Delivery Team Project Controls