

Integrated Project Schedule (IPS) Monthly Schedule and Progress Analysis

Cut off Date: 30 Dec 2015

Boundless Energy



Project Stewardship:
IPS Monthly Schedule & Progress Analysis

TABLE of CONTENTS**1.0 Overall Summary**

- a) Overall Analysis – Information
- b) Target Milestone Schedule
- c) Overall Summary Schedule
 - Actual and forecast dates with no baseline
- d) Overall 6 Month Look Ahead
- e) Overall Progress Curve
- f) Overall Progress Table
- h) Float Watch:
 - C1 - Diversion/Head Pond/Impoundment
 - C3/C4 – 1st Power Transfer Lab-Nfld
 - C3 - Converters/Switchyards
 - C4 - Transmission lines/SOP Line Rebuilds

2.0 Labrador Transmission Asset (LTA)

- LTA Analysis – Observations
- LTA Summary Schedule
- LTA Progress Curve
- LTA Progress Table
- LTA Critical Path

3.0 Labrador Island Transmission Link (LITL)

- LITL Analysis – Observations
- LITL Summary Schedule

- LITL Progress Curve
- LITL Progress Table
- LITL Critical Path

4.0 Muskrat Falls Generation (MFGen)

- MFGen Analysis – Observations
- MFGen Summary Schedule
- MFGen Progress Curve
- MFGen Progress Table

**5.0 Entire IPS Schedule – Project based
(Attached PDF)****6.0 Critical/SubCritical Paths for Overall, LTA, LITL
(Attached PDFs)**

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)
No change from last month

- * 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:	2.3%	Cumulative Planned Progress:	49.5%
Period Forecast Progress	1.8%		
Period Earned Progress:	0.9%	Cumulative Earned Progress:	40.5%

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:	2.6%	Cumulative Planned Progress:	63.5%
Period Forecast Progress	4.4%		
Period Earned Progress:	2.5%	Cumulative Earned Progress:	69.0%

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)
No change from last month (See page 16)
- Target Milestone Overall=LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland= 11 Nov 2017 **Now 14 Nov 2017**
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:	2.7%	Cumulative Planned Progress:	37.9%
Period Forecast Progress	3.0%		
Period Earned Progress:	1.3%	Cumulative Earned Progress:	33.8%

Forecast progress variance from last month due to ongoing progress shortfalls in hvdc and converters.

3) Critical Path for 1st Power Transfer Lab to Nfld: No change from last month

- MF Converter is driving the LITL critical path . (see page 30)

4) SOBI Crossing

- Land cable installation completed at both 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 in Sep 2016.
- HVdc Nfld Seg 3/4/5 = no change this month to final inspection dates in March 2017 -> July 2017 period

6) Converters / Switchyards / Sych Cond

- Converters: Review of SOP schedule resulted in a 20 day earlier static commission completion date. Review of MF schedule ongoing.
- Switchyard: No forecasted delay to static commissioning completion date.
- Sych Cond: No change to completion of static comm. for Units 1/2/3.

7) SOP Transmission Line Rebuilds

- Work continues with reliance on outages. (see pages 20)

8) Transition Compounds / Grounding (Electrode) Stations

- Grounding stations work to resume Apr 2016. No delay on completion date of static commissioning.
- Lab Transition compound no change to completion date of static commissioning.
- Nfld Transition compound completion date of static commissioning delayed 66 days – still within float.

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:	56.6%
Period Forecast Progress:	0.2%		
Period Earned Progress:	0.1%	Cumulative Earned Progress:	39.7%

3) Critical Path(s):

- [Diversion - River Closure \(priority 1a\) - see page 13](#)
- On schedule for start on 6 July 2016
- [Diversion - Winter Headpond El. 25m \(priority 1b\) - see page 14](#)
- On schedule for start on 26 Oct 2016
- [Diversion - Impoundment Full Supply Level El. 39m \(priority 1c\) - see page 15](#)
- **(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

- Work continues towards planned river diversion

7) Transition Dams/North & South Dams

- North and South Dams contractor demobilized for winter.

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.

1.0 Overall Summary = Target Milestone page 1 of 2



Integrated Project Schedule

LCP Project Control

030 IPS Target Milestones


Updated: 30-Dec-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
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	0d		0d											
Target MIL=Overall-LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland		0d	14-Nov-17	0d											
Target MIL=Overall-Muskrat Falls Powerhouse - First Power from Muskrat Falls		-10d	20-Dec-17	-10d											
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		-6d	12-Apr-18	-6d											
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		0d	08-Jul-17	0d											
Target MIL= LITL-Soldiers Pond Switchyard & Converter Station - (Stand Alone Testing)		20d	14-Jul-17	20d											
Target MIL= LITL-Muskrat Falls Switchyard & Converter Station - (Stand Alone Testing)		0d	25-Aug-17	0d											
Target MIL= LITL-HVdc Transmission Line Construction - Complete and Connected		0d	01-Sep-17	0d											
Target MIL= LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland-Tracking Forecast		0d	14-Nov-17	0d											
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		-35d	21-Mar-16	-35d											
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



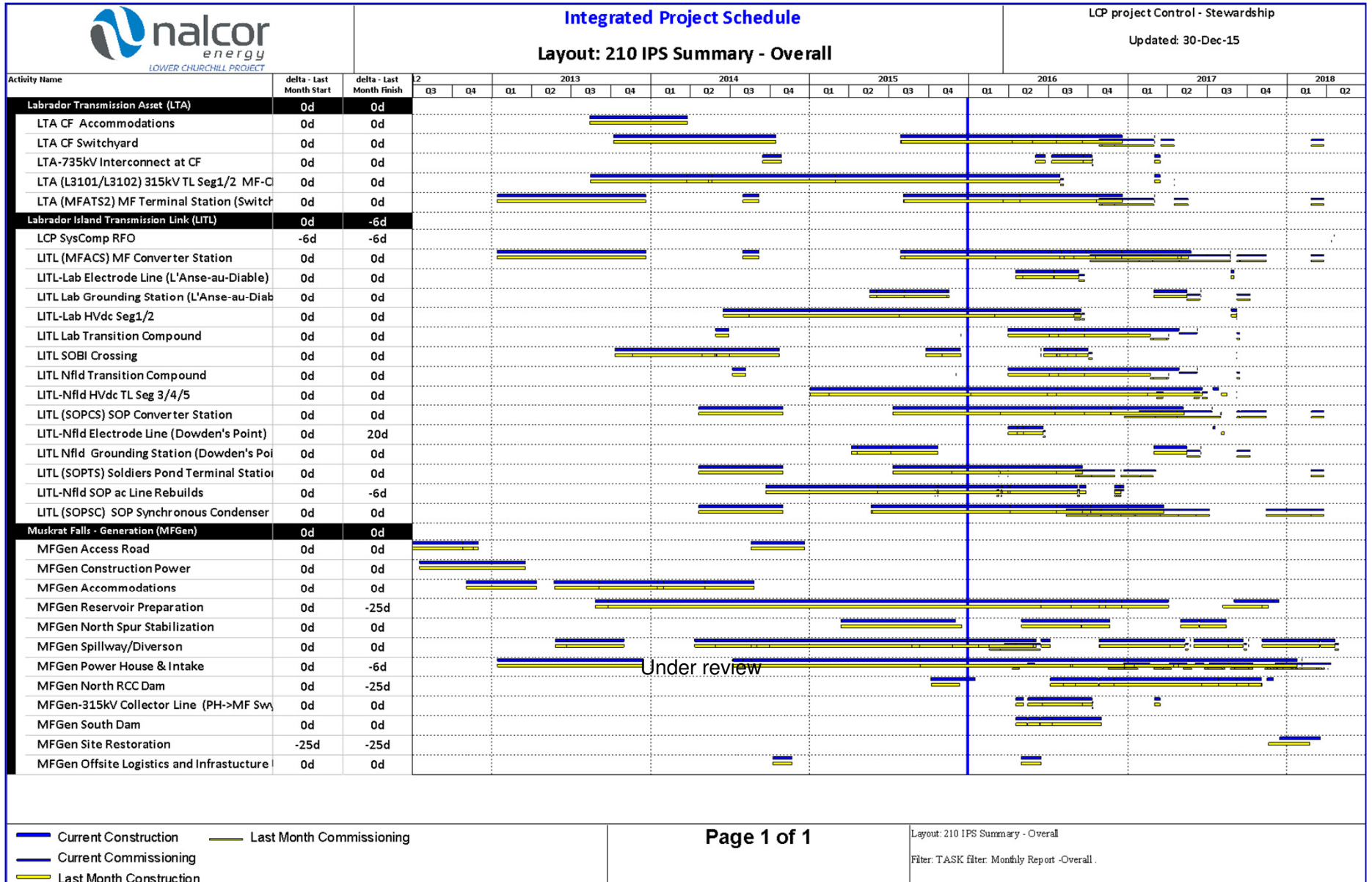
1.0 Overall Summary = Target Milestone page 2 of 2

 LOWER CHURCHILL PROJECT	Integrated Project Schedule				LCP Project Control														
	030 IPS Target Milestones				Updated: 30-Dec-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	
Target MIL= MFG-Powerhouse - Unit 1 Ready to Turn		-13d	17-Jul-17	-13d									17-Jul-17						
Target MIL= MFG-North Spur Stabilization Works - Complete		0d	15-Aug-17	0d									15-Aug-17						
Target MIL= MFG-North Dam (RCC/CVC) - Complete		0d	03-Nov-17	0d									03-Nov-17						
Target MIL= MFG-Reservoir Impoundment EL39m (priority 1c- Impoundment to Full Service Level) - Con		-25d	14-Dec-17	-25d									14-Dec-17						
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 1 Ready for Operation		-10d	20-Dec-17	-10d									20-Dec-17						
Target MIL= MFG-Muskrat Falls Powerhouse - First Power		-10d	20-Dec-17	-10d									20-Dec-17						
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 2 Ready for Operation		-5d	04-Jan-18	-5d									04-Jan-18						
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 3 Ready for Operation		0d	25-Feb-18	0d									25-Feb-18						
Target MIL= MFG-Muskrat Falls Powerhouse - Unit 4 Ready for Operation		-6d	12-Apr-18	-6d									12-Apr-18						
Target MIL= MFG-Muskrat Falls Powerhouse - Full Power		-6d	12-Apr-18	-6d									12-Apr-18						

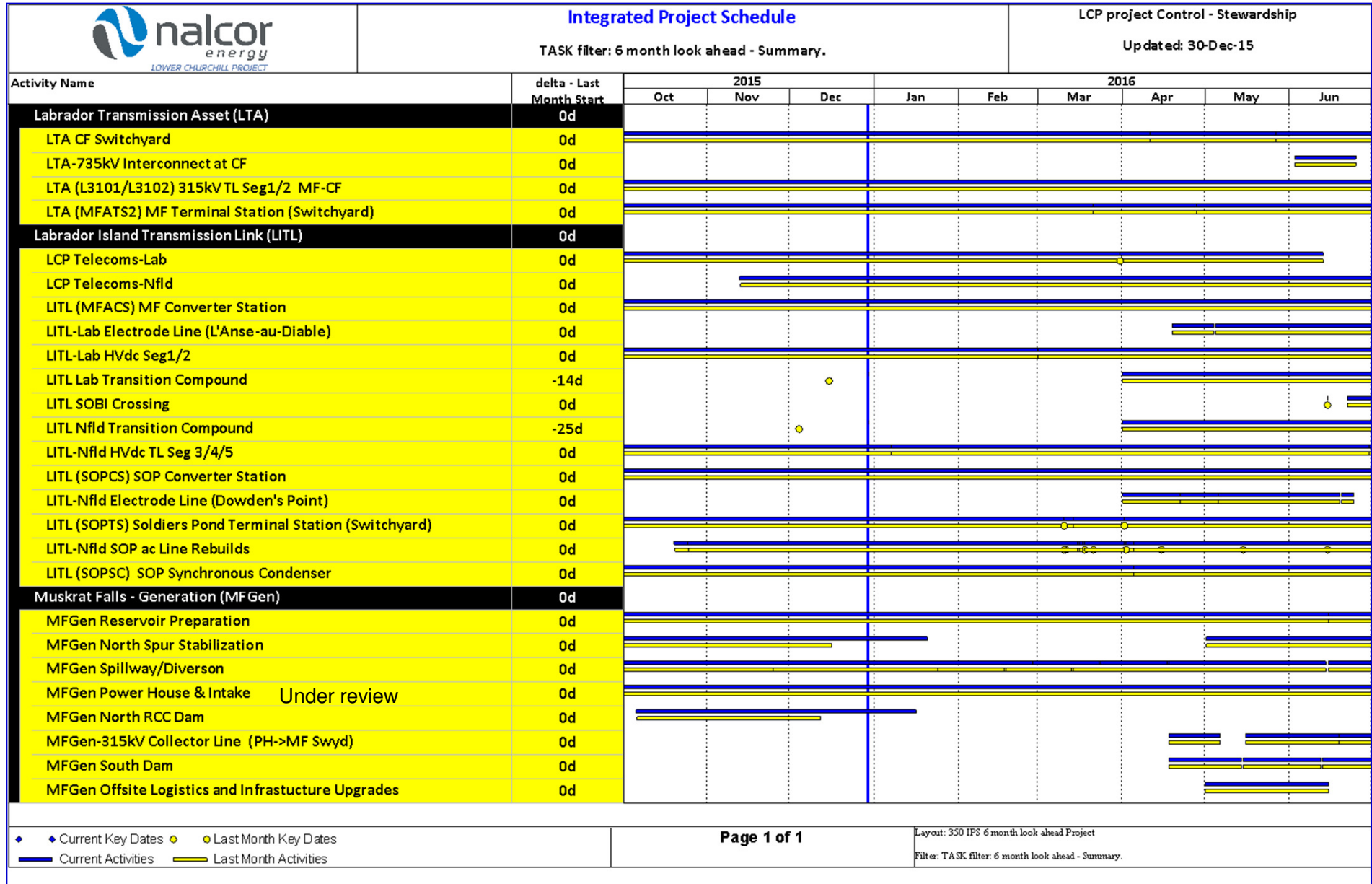
Under review

- ◆ 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



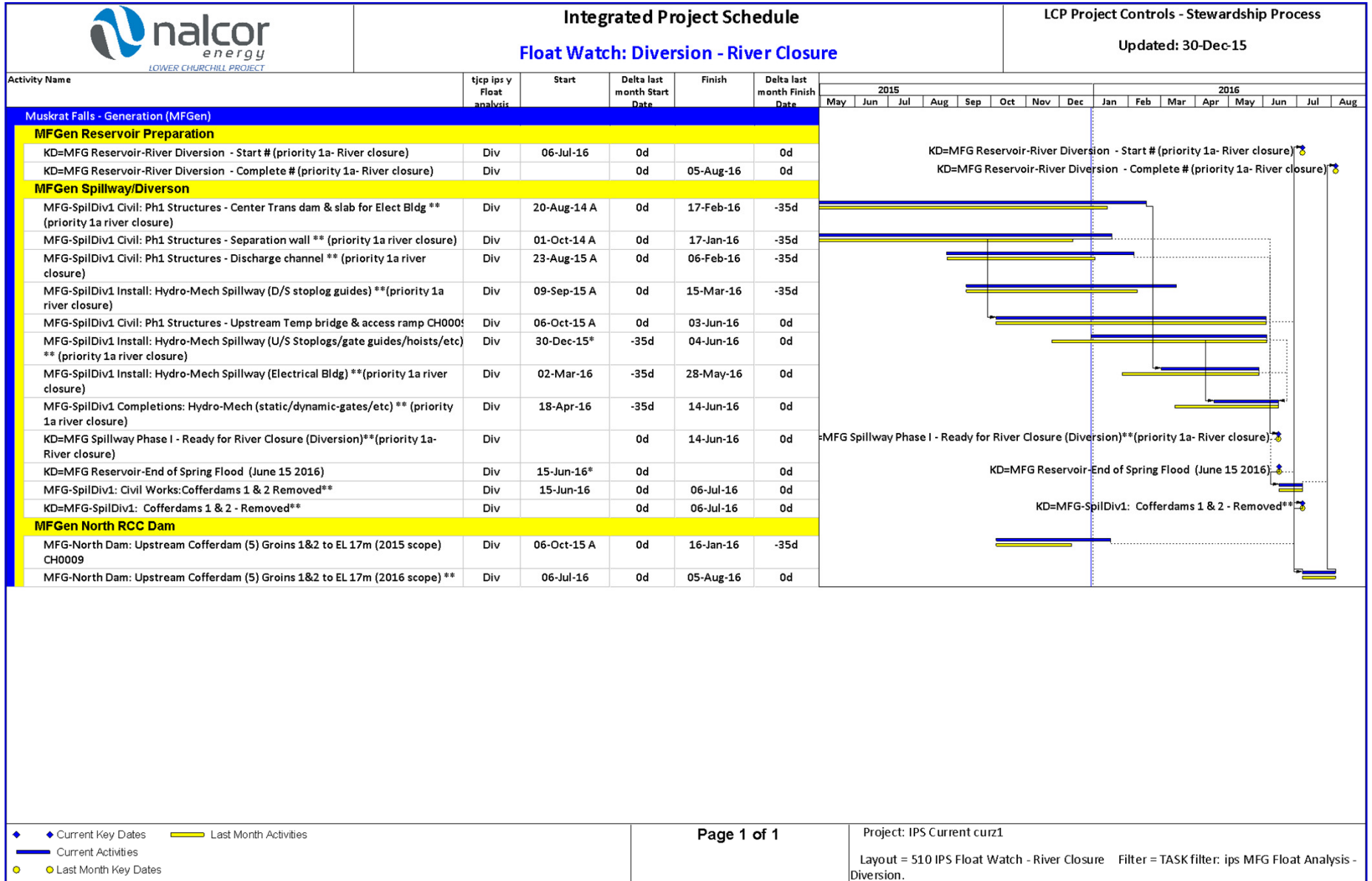
1.0 Overall Summary = Overall Engineering/Construction/Commissioning Progress Curve

Overall progress curve will return when
Muskrat Falls Generation review complete

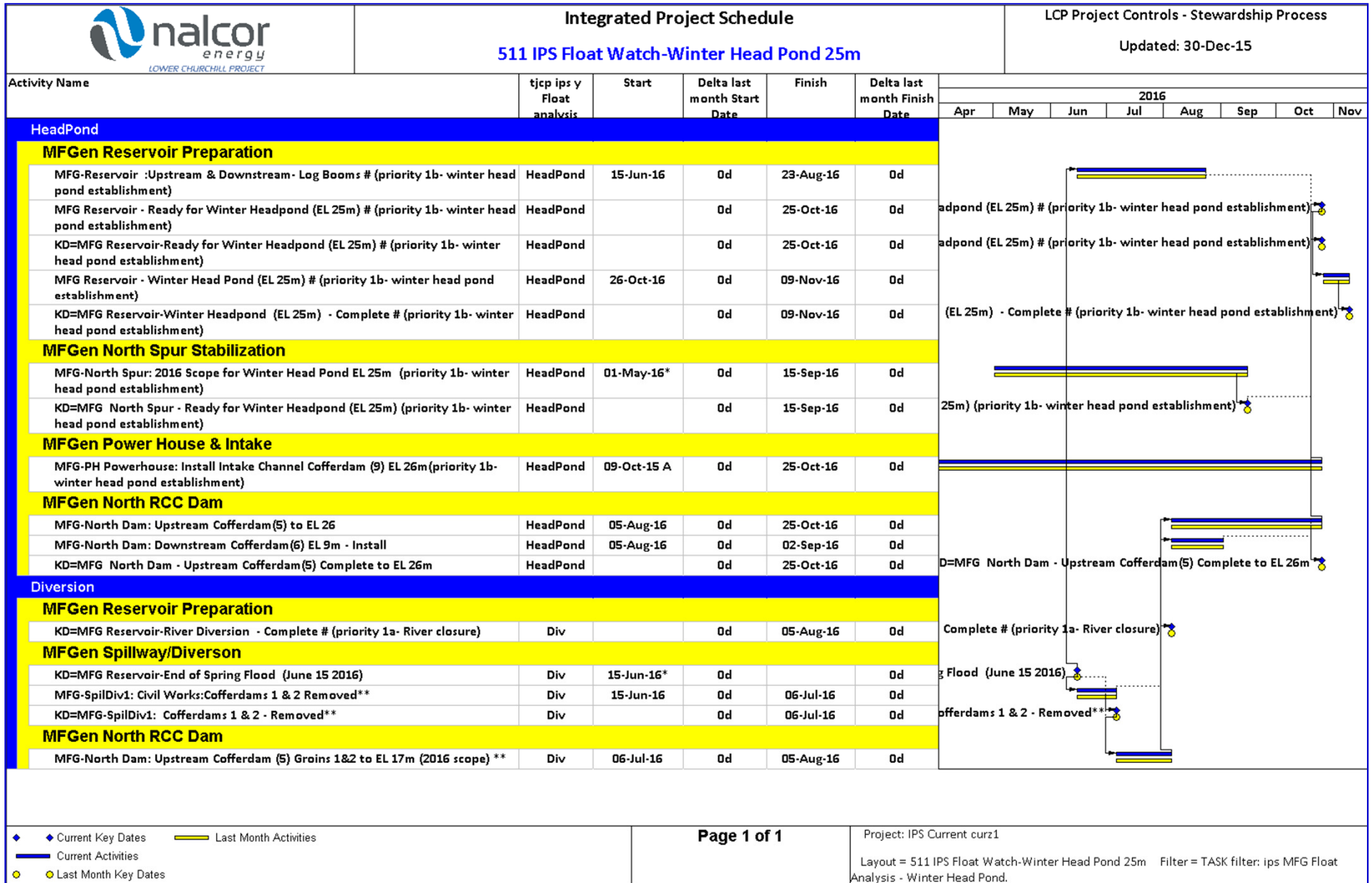
1.0 Overall Summary = Overall Engineering/Construction/Commissioning Progress Table

LCP - Overall 2015 Dec									
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%	2.6%	4.4%	2.5%	-1.9%	63.5%	69.0%	5.5%	1.6%
Labrador Island Transmission Link (LITL)	42.2%	2.7%	3.0%	1.3%	-1.7%	37.9%	33.8%	-4.1%	2.2%
Muskrat Falls Generation (MFGGen)	46.7%	1.9%	0.2%	0.1%	-0.1%	56.6%	39.7%	-16.9%	0.2%
LCP-Overall	100.0%	2.3%	1.8%	0.9%	-1.0%	49.5%	40.5%	-9.0%	1.2%
Last Reporting Period									
	Weight	Period %				Cumulative %			
	Factor %	Plan		Earned		Plan	Earned		
	A	B		C		E	F		
Labrador Transmission Asset (LTA)	11.1%	3.2%		6.2%		60.9%	66.5%		
Labrador Island Transmission Link (LITL)	42.2%	3.4%		1.7%		35.2%	32.5%		
Muskrat Falls Generation (MFGGen)	46.7%	1.9%		1.1%		54.7%	39.6%		
LCP-Overall	100.0%	2.7%		1.9%		47.2%	39.6%		

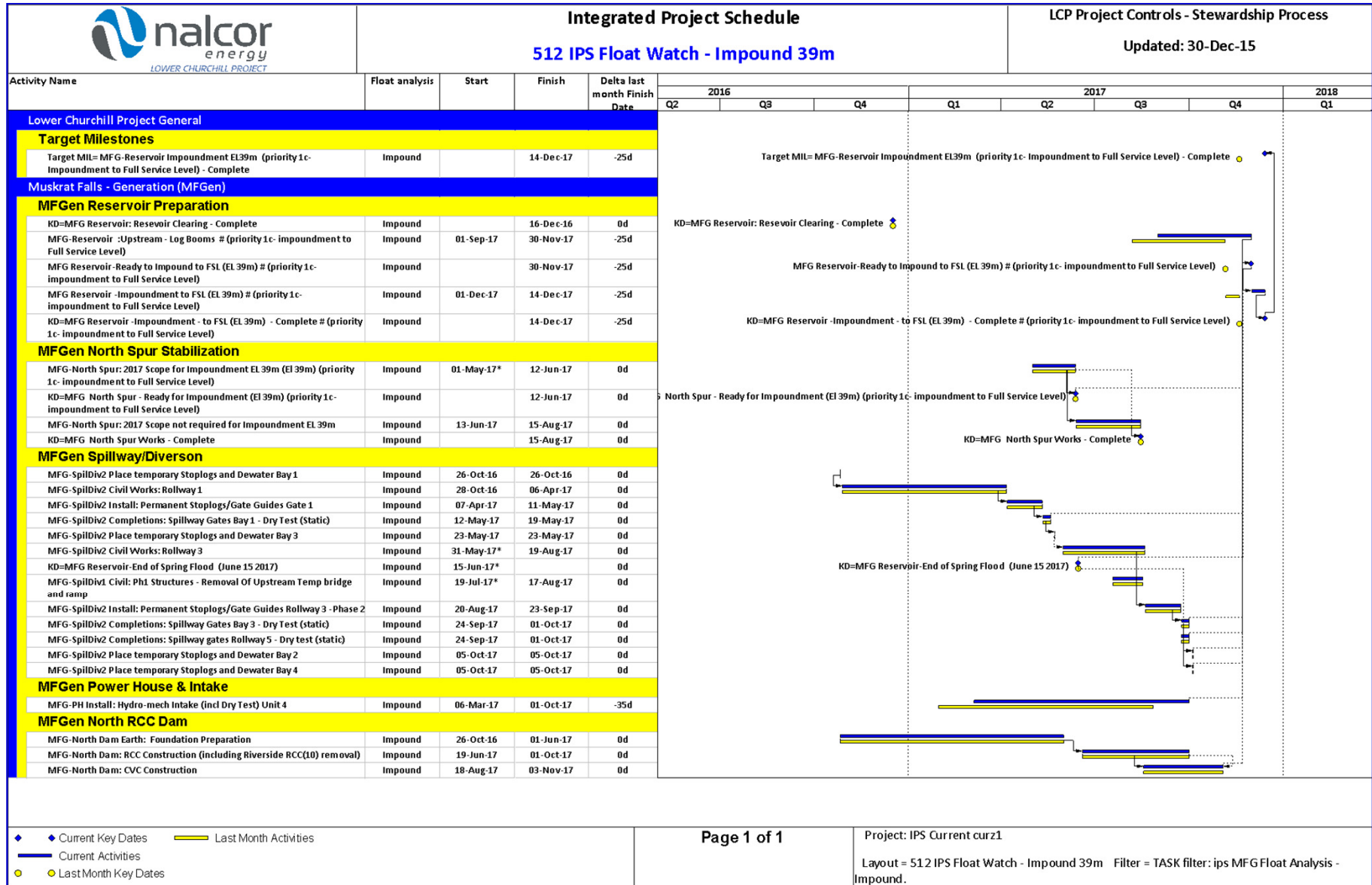
1.0 Overall Summary **Float Watch: C1: Diversion - River Closure - priority P1a**



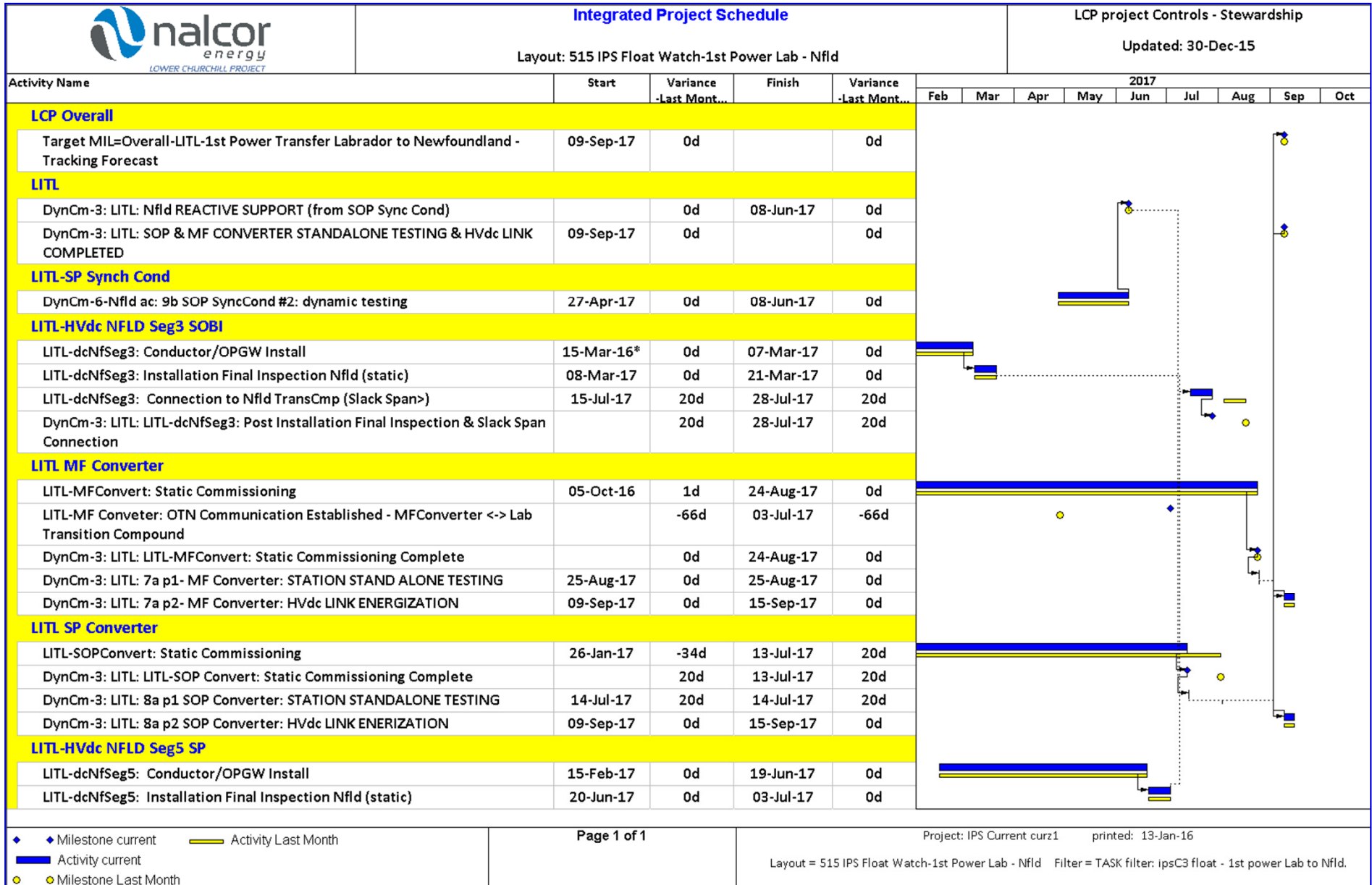
1.0 Overall Summary **Float Watch: C1: Diversion- Winter Head Pond (25m) Priority P1b**




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




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

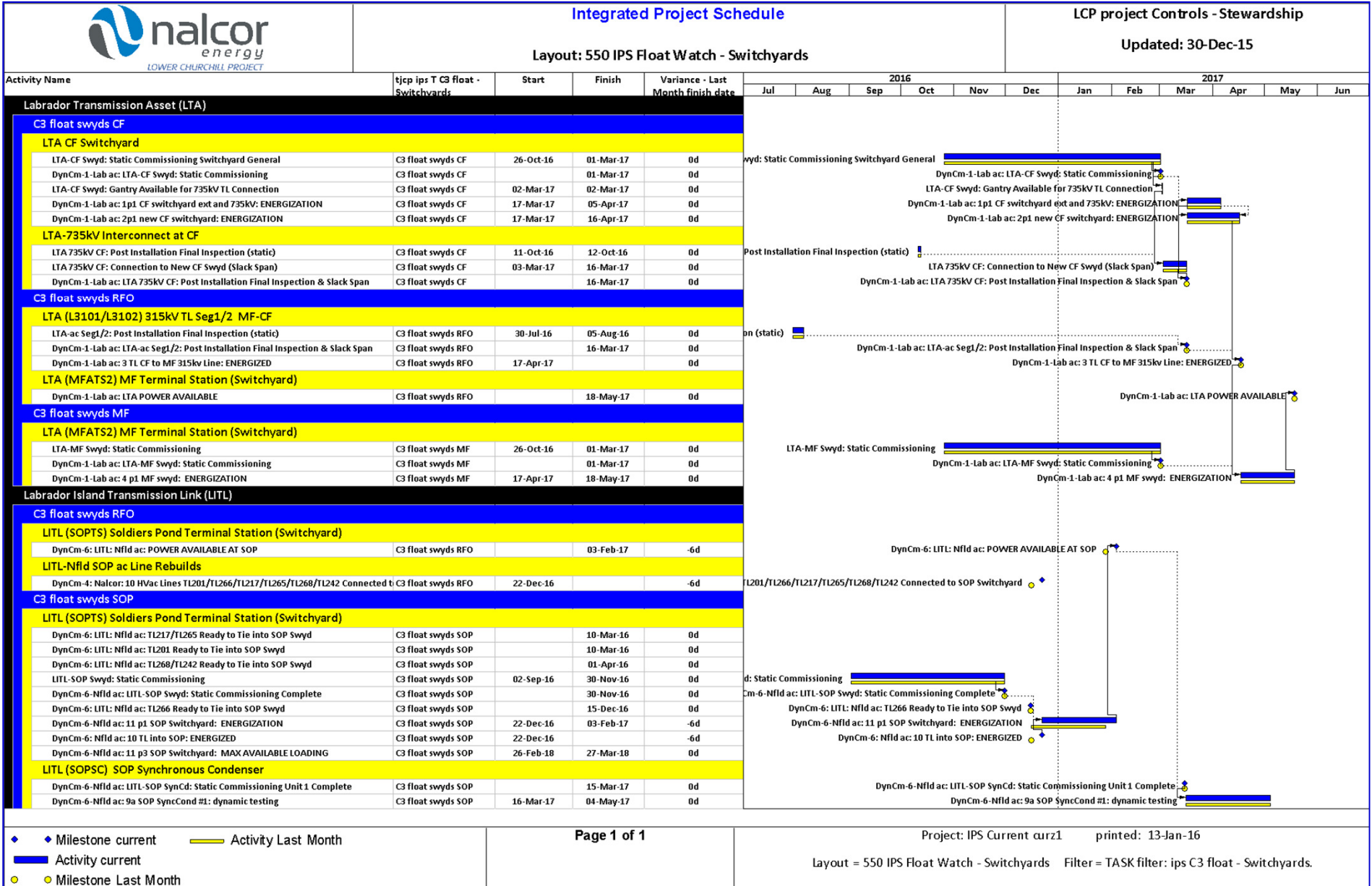


1.0 Overall Summary Float Watch: C3 Converters


	Integrated Project Schedule Layout: 540 IPS Float Watch - Converter_1				LCP project Controls - Stewardship Updated: 30-Dec-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
C3 float-converter-MF																						
f Civil/Structures																						
LITL-MFConvert: Building Foundation/Erect/Outfit	28-Jul-15 A	05-Oct-16	13d																			
LITL-MFConvert: Foundation Outdoor	07-Aug-15 A	26-Oct-16	-65d																			
g Installation																						
LITL-MFConvert: Valve Hall & Control Bldg Install Equipment	08-Jul-16	19-May-17	0d																			
LITL-MFConvert: Outdoor Install ac equipment	01-Aug-16	02-May-17	0d																			
LITL-MFConvert: Install Converter transformers	22-Aug-16	06-Mar-17	-17d																			
LITL-MFConvert: Outdoor Install dc equipment	26-Sep-16	25-May-17	-31d																			
LITL-MFConvert: Gantry available for HVdc Seg1 TL & Lab Electrode TL	25-Aug-17	25-Aug-17	0d																			
j Completions																						
LITL-MFConvert: Static Commissioning	05-Oct-16	24-Aug-17	0d																			
C3 float-converter-SOP																						
f Civil/Structures																						
LITL-SOP Convert: Building Foundation/Erect/Outfit	10-Jul-15 A	23-Aug-16	30d																			
LITL-SOP Convert: Outdoor Foundation	10-Jul-15 A	06-Sep-16	0d																			
g Installation																						
LITL-SPConvert: Outdoor Install ac equipment	08-Jul-16	11-Apr-17	-1d																			
LITL-SPConvert: Valve Hall/Control Bldg Install Equipment	18-Jul-16	05-May-17	0d																			
LITL-SPConvert: Outdoor Install dc equipment	17-Oct-16	11-Apr-17	13d																			
LITL-SPConvert: Converter Transformers Install	23-Nov-16	08-May-17	1d																			
LITL-SOPConvert: Gantry available for HVdc Seg5 TL & Nfld Electr TL	14-Jul-17	14-Jul-17	20d																			
j Completions																						
LITL-SOPConvert: Static Commissioning	26-Jan-17	13-Jul-17	20d																			

◆ Milestone current  Activity Last Month
 Activity current
 Milestone Last Month

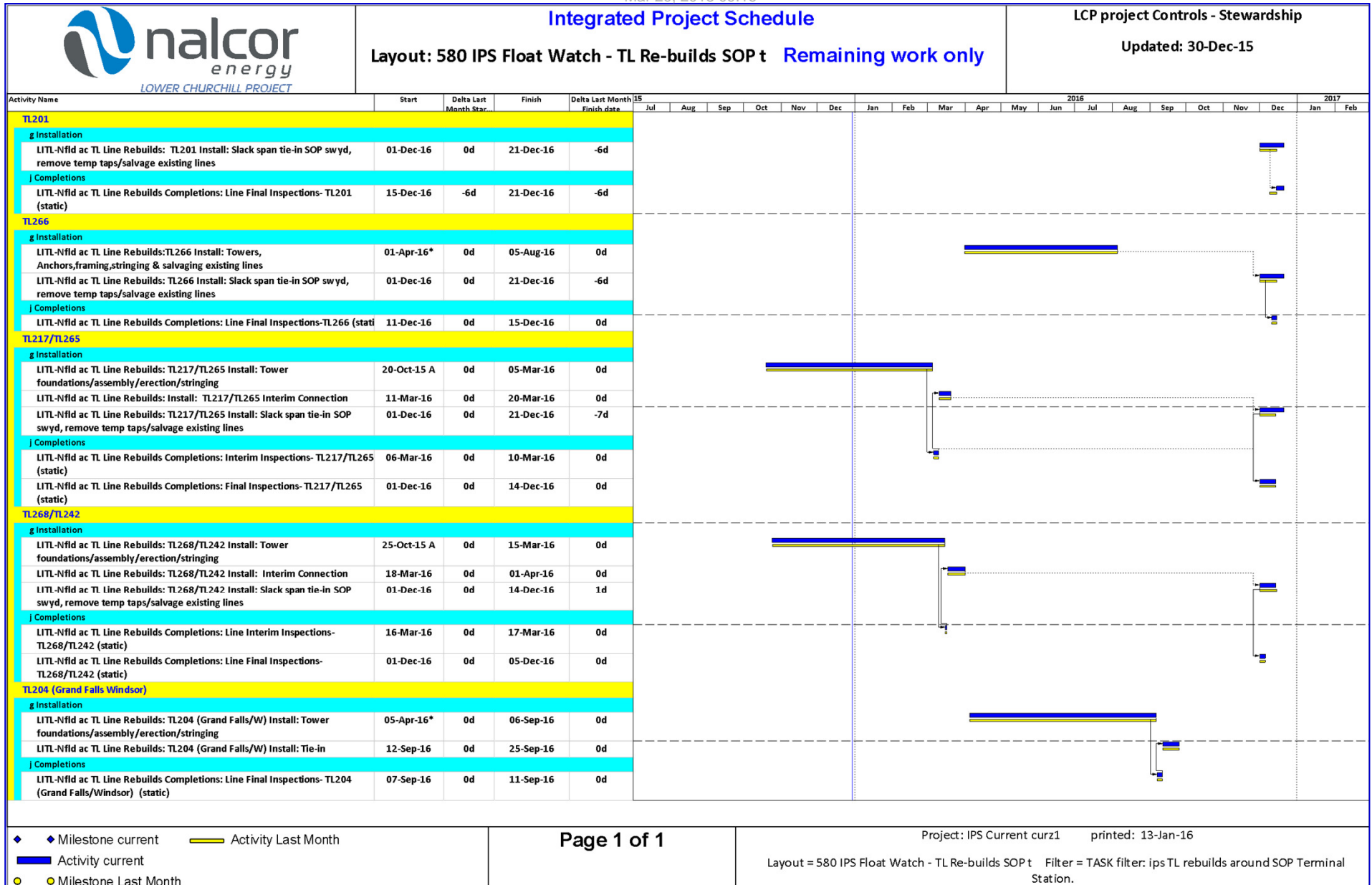
1.0 Overall Summary Float Watch: C3 – Switchyards



1.0 Overall Summary Float Watch: C4 – transmission Lines

		Integrated Project Schedule Layout: 570 IPS Float Watch - Transmission lines				LCP project Controls - Stewardship Updated: 30-Dec-15																												
Activity Name	Start	Finish	Delta Last Month Finish date	2015							2016							2017																
				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	S	O	N		
MFGGen-315kV Collector Line (PH->MF Swyd)																																		
MFGGen-315 PH-SY TL: Post Installation Final Inspection (static)	11-Oct-16	12-Oct-16	0d	TL: Post Installation Final Inspection (static) !																														
MFGGen-315 PH-SY TL: Connection to PH (Slack Span)	03-Mar-17	16-Mar-17	0d	MFGGen-315 PH-SY TL: Connection to PH (Slack Span) ■																														
MFGGen-315 PH-SY TL: Connection to MF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d	MFGGen-315 PH-SY TL: Connection to MF Swyd (Slack Span) ■																														
LTA-735kV Interconnect at CF																																		
LTA 735kV CF: Post Installation Final Inspection (static)	11-Oct-16	12-Oct-16	0d	CF: Post Installation Final Inspection (static) !																														
LTA 735kV CF: Connection to Existing CF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d	LTA 735kV CF: Connection to Existing CF Swyd (Slack Span) ■																														
LTA 735kV CF: Connection to New CF Swyd (Slack Span)	03-Mar-17	16-Mar-17	0d	LTA 735kV CF: Connection to New CF Swyd (Slack Span) ■																														
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	Post Installation Final Inspection (static) ■																														
LTA-ac Seg1/2: Connection to MF & CF Switchyard (Slack Span)	03-Mar-17	16-Mar-17	0d	LTA-ac Seg1/2: Connection to MF & CF Switchyard (Slack Span) ■																														
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	Inspection (static) (from HVdc TL to E Site) ■																														
LITL Lab Electr. TL: Connection to MF Converter/Grounding Site (slack span>)	26-Aug-17	01-Sep-17	0d	LITL Lab Electr. TL: Connection to MF Converter/Grounding Site (slack span>) ■																														
LITL-Lab HVdc Seg1/2																																		
LITL-dcLabSeg2/Electr TL: Post Installation Final Inspection (static)	31-Aug-16	13-Sep-16	0d	Post Installation Final Inspection (static) ■																														
LITL-dcLabSeg1/Electr TL: Post Installation Final Inspection (static)	16-Sep-16	22-Sep-16	0d	Post Installation Final Inspection (static) ■																														
LITL-dcLabSeg1/Electr TL: HVdc Seg 1 & Electrode TL Connection to MF Converter (Slack Span>)	26-Aug-17	08-Sep-17	0d	Electr TL: HVdc Seg 1 & Electrode TL Connection to MF Converter (Slack Span>) ■																														
LITL-dcLabSeg2/Electr TL: Connection to Lab TransCmp (Slack Span>)	26-Aug-17	08-Sep-17	0d	LITL-dcLabSeg2/Electr TL: Connection to Lab TransCmp (Slack Span>) ■																														
LITL-Nfld HVdc TL Seg 3/4/5																																		
LITL-dcNfSeg3: Installation Final Inspection Nfld (static)	08-Mar-17	21-Mar-17	0d	LITL-dcNfSeg3: Installation Final Inspection Nfld (static) ■																														
LITL-dcNfSeg4: Installation Final Inspection Nfld (static)	01-Jun-17	14-Jun-17	0d	LITL-dcNfSeg4: Installation Final Inspection Nfld (static) ■																														
LITL-dcNfSeg5: Installation Final Inspection Nfld (static)	20-Jun-17	03-Jul-17	0d	LITL-dcNfSeg5: Installation Final Inspection Nfld (static) ■																														
LITL-dcNfSeg3: Connection to Nfld TransCmp (Slack Span>)	15-Jul-17	28-Jul-17	20d	LITL-dcNfSeg3: Connection to Nfld TransCmp (Slack Span>) ■																														
LITL-dcNfSeg5: Connection to SP Converter (Slack Span>)	15-Jul-17	28-Jul-17	20d	LITL-dcNfSeg5: Connection to SP Converter (Slack Span>) ■																														
LITL-Nfld Electrode Line (Dowden's Point)																																		
LITL Nfld Electr. TL: Post installation Final Inspection (static)	20-Jun-16	24-Jun-16	0d	Post installation Final Inspection (static) !																														
LITL Nfld Electr. TL: Connection to Grounding Site (slack span>)	15-Jul-17	21-Jul-17	20d	LITL Nfld Electr. TL: Connection to Grounding Site (slack span>) ■																														

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



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:	2.6%	Cumulative Planned Progress:	63.5%
Period Forecast Progress	4.4%		
Period Earned Progress:	2.5%	Cumulative Earned Progress:	69.0%

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.

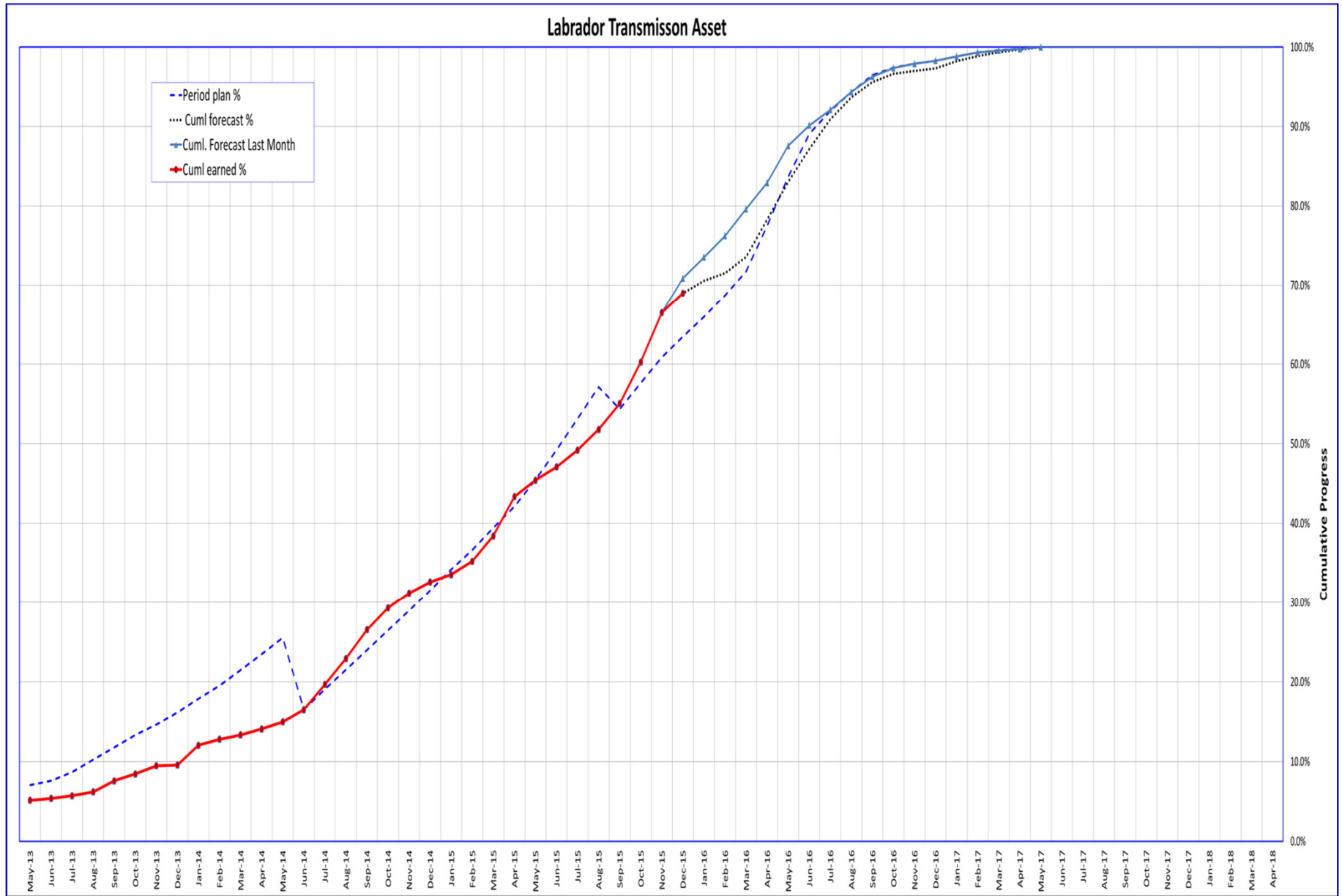
2.0 Labrador Transmission Asset (LTA)

LTA Summary Schedule

		Integrated Project Schedule Layout: 220 IPS Summary - LTA										LCP project Control - Stewardship Process Updated: 30-Dec-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	Q4
Labrador Transmission Asset (LTA)		0d	0d																										
LTA CF Accommodations		0d	0d																										
LTA-CF Camp		0d	0d																										
LTA CF Switchyard		0d	0d																										
LTA-CF Swyd EXT		0d	0d																										
LTA-CF Switchyard		0d	0d																										
LTA-735kV Interconnect at CF		0d	0d																										
LTA-735kV ac Intercon CF		0d	0d																										
LTA (L3101/L3102) 315kV TL Seg1/2 MF-CF		0d	0d																										
LTA (L3101/L3102) 315kV TL Segment 1/2		0d	0d																										
LTA (MFATS2) MF Terminal Station (Switchyard)		0d	0d																										
LTA-MF Switchyard		0d	0d																										

 Current Construction
  Last Month Commissioning
 Current Commissioning
 Last Month Construction

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



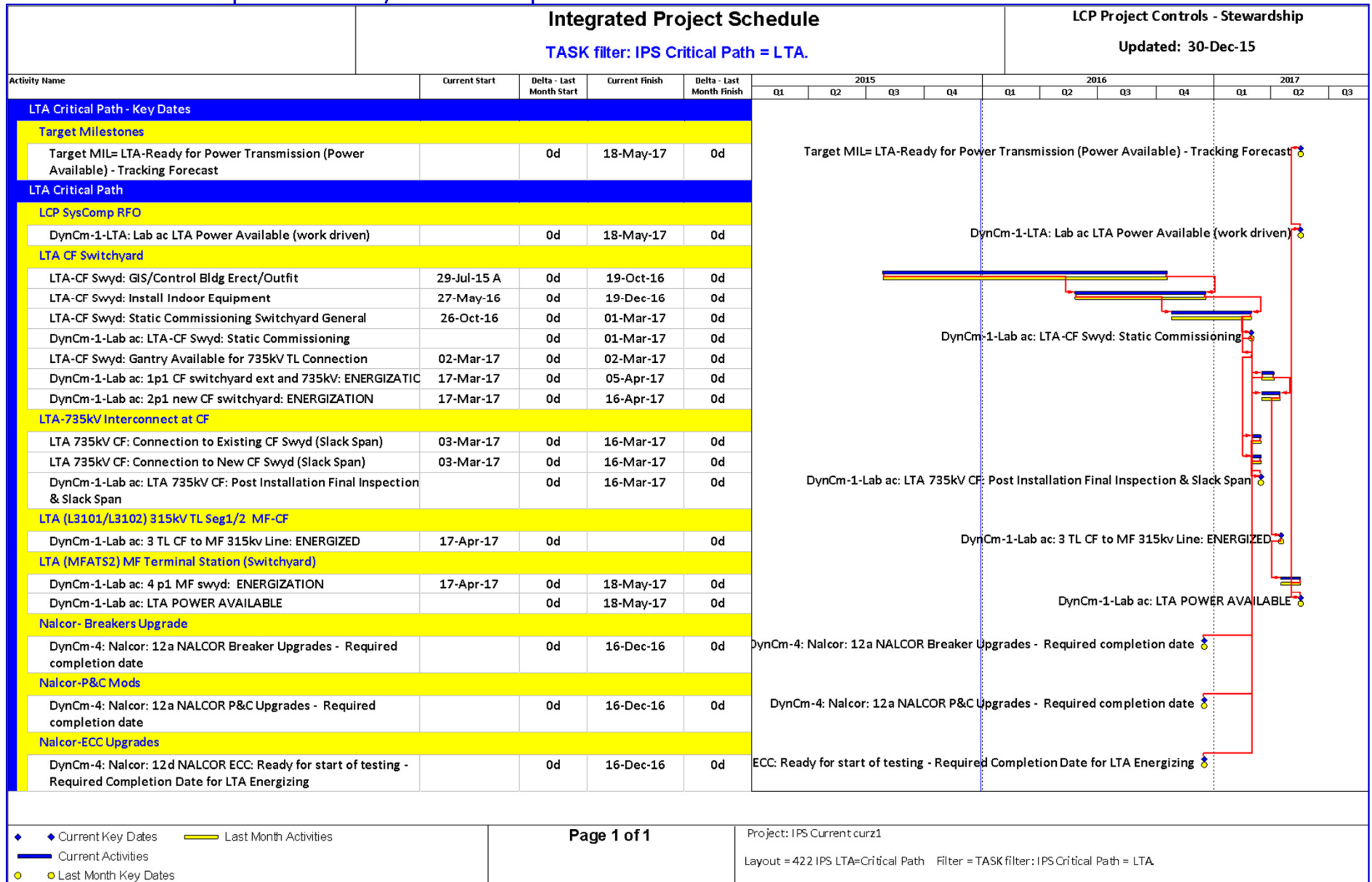
2.0 Labrador Transmission Asset (LTA) - Engineering/Construction/Commissioning Progress Table

LTA Progress Table 2015 Dec								
This Reporting Period								
	Weight	Plan	Period %			Cumulative %		
	Factor %		Earned	Variance		Plan	Earned	Variance
	A		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%	2.3%	-0.8%		79.1%	83.7%	4.6%
LTA Churchill Falls Switchyard	20.9%	1.6%	2.5%	0.9%		35.8%	48.4%	12.6%
LTA Muskrat Falls Switchyard	14.0%	3.3%	4.7%	1.4%		24.1%	26.9%	2.8%
LTA Misc	8.0%	0.7%	0.0%	-0.7%		90.2%	89.2%	-1.0%
LTA TOTAL	100.0%	2.6%	2.5%	-0.1%		63.5%	69.0%	5.5%
Last Reporting Period								
	Weight	Plan	Period %			Cumulative %		
	Factor %		Earned	Variance		Plan	Earned	Variance
	A		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%

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)
No change from last month (See page 16)
- Target Milestone Overall=LITL-Ready for Sustainable Power Transfer Labrador to Newfoundland= 11 Nov 2017 **Now 14 Nov 2017**
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: 2.7% Cumulative Planned Progress: 37.9%

Period Forecast Progress 3.0%

Period Earned Progress: 1.3% Cumulative Earned Progress: 33.8%

Forecast progress variance from last month due to ongoing progress shortfalls in hvdc and converters.

3) Critical Path for 1st Power Transfer Lab to Nfld: No change from last month

- MF Converter is driving the LITL critical path . (see page 30)

4) SOBI Crossing

- Land cable installation completed at both 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 in Sep 2016.
- HVdc Nfld Seg 3/4/5 = no change this month to final inspection dates in March 2017 -> July 2017 period

6) Converters / Switchyards / Sych Cond

- Converters: Review of SOP schedule resulted in a 20 day earlier static commission completion date. Review of MF schedule ongoing.
- Switchyard: No forecasted delay to static commissioning completion date.
- Sych Cond: No change to completion of static comm. for Units 1/2/3.

7) SOP Transmission Line Rebuilds

- Work continues with reliance on outages. (see pages 20)

8) Transition Compounds / Grounding (Electrode) Stations

- Grounding stations work to resume Apr 2016. No delay on completion date of static commissioning.
- Lab Transition compound no change to completion date of static commissioning.
- Nfld Transition compound completion date of static commissioning delayed 66 days – still within float.

3.0 Labrador Island Transmission Link (LITL)

Integrated Project Schedule

LCP project Control - Stewardship

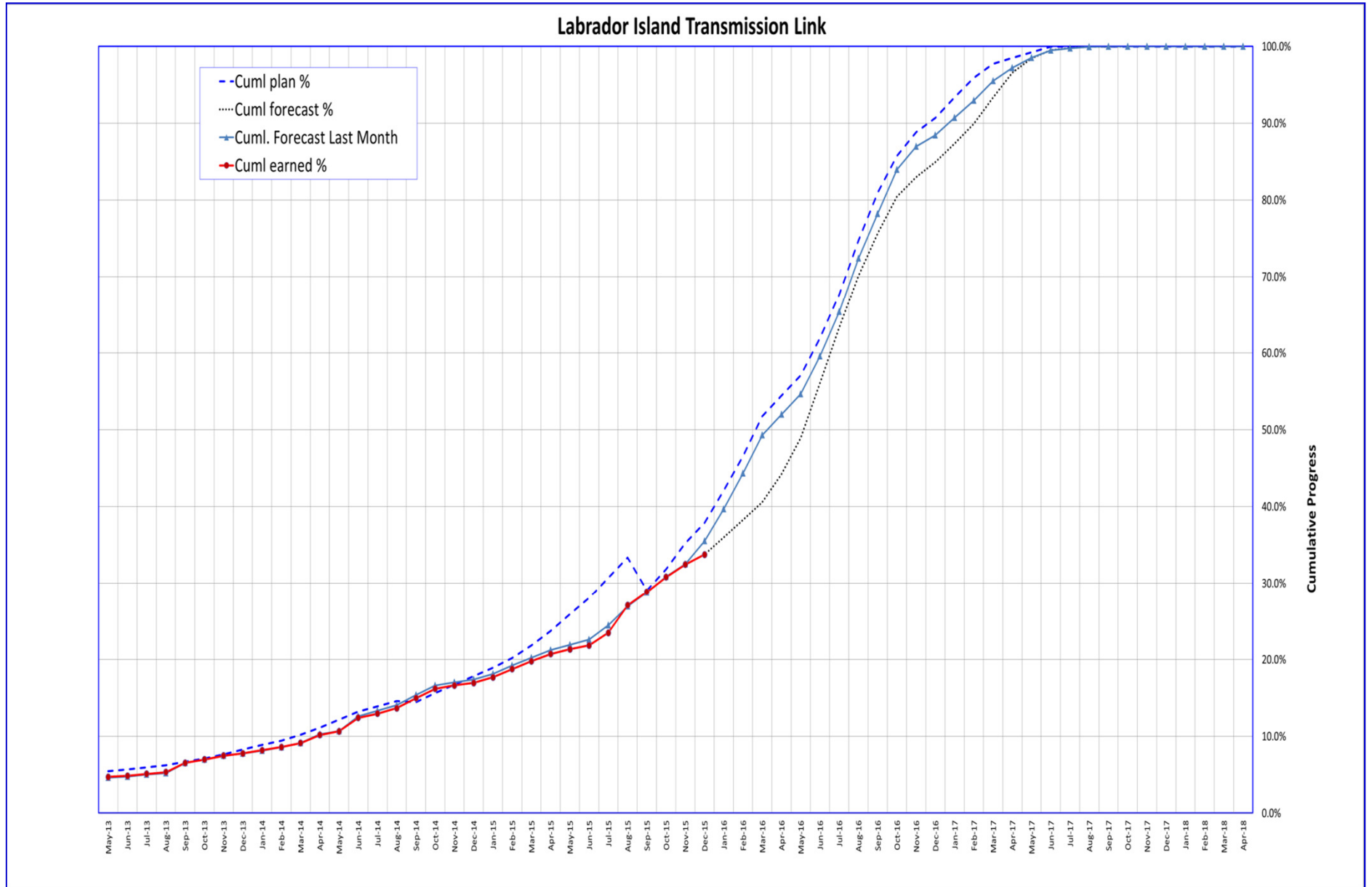
Layout: 230 IPS Summary - LITL

Updated: 30-Dec-15

Activity Name	delta - Last Month Start	delta - Last Month Finish	13		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	-6d																				
LCP SysComp RFO	-6d	-6d																				
LITL (MFACS) MF Converter Station	0d	0d																				
LITL-Lab Electrode Line (L'Anse-au-Diable)	0d	0d																				
LITL Lab Grounding Station (L'Anse-au-Diable)	0d	0d																				
LITL-Lab HVdc Seg1/2	0d	0d																				
LITL-HVdc LAB Seg1 MF	0d	0d																				
LITL-HVdc LAB Seg2 SOBI	0d	0d																				
LITL-HVdc Lab	0d	0d																				
LITL Lab Transition Compound	0d	0d																				
LITL SOBI Crossing	0d	0d																				
LITL Nfld Transition Compound	0d	0d																				
LITL-Nfld HVdc TL Seg 3/4/5	0d	0d																				
LITL-HVdc NFLD Seg3 SOBI	0d	20d																				
LITL-HVdc NFLD Seg4	0d	0d																				
LITL-HVdc NFLD Seg5 SP	0d	20d																				
LITL-HVdc Nfld	0d	0d																				
LITL (SOPCS) SOP Converter Station	0d	0d																				
LITL-Nfld Electrode Line (Dowden's Point)	0d	20d																				
LITL Nfld Grounding Station (Dowden's Point)	0d	0d																				
LITL (SOPTS) Soldiers Pond Terminal Station (Switchyard)	0d	0d																				
LITL-Nfld SOP ac Line Rebuilds	0d	-6d																				
LITL (SOPSC) SOP Synchronous Condenser	0d	0d																				

█ Current Construction █ Last Month Commissioning
█ Current Commissioning █ Last Month Construction

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



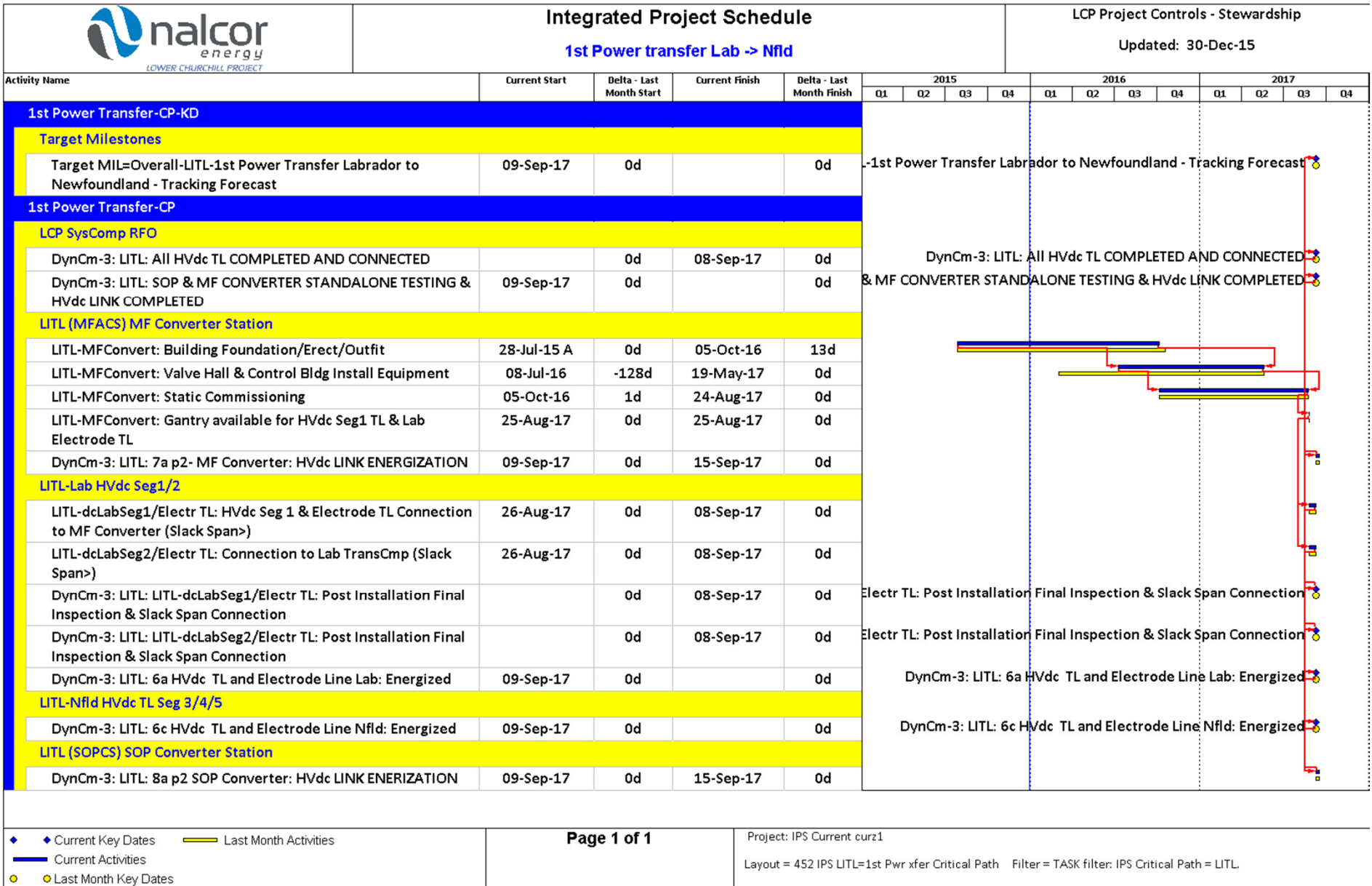
3.0 Labrador Island Transmission Link (LITL) - Engineering/Construction/Commissioning Progress Table

LITL Progress Table 2015 Dec							
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%	1.4%	0.4%	-1.0%	13.4%	8.5%	-4.9%
LITL Soldiers Pond Converter	5.8%	0.8%	0.4%	-0.4%	24.2%	18.2%	-6.0%
LITL HVdc Transmission Line Seg 1/2	19.3%	5.0%	4.9%	-0.1%	47.4%	44.8%	-2.6%
LITL HVdc Transmission Line Seg 3/4/5	35.3%	2.7%	0.4%	-2.3%	14.1%	8.0%	-6.1%
LITL Grounding (Electrode) Sites	1.7%	3.9%	0.0%	-3.9%	73.4%	75.0%	1.6%
LITL Transition Compounds	1.8%	0.0%	0.0%	0.0%	32.9%	32.9%	0.0%
LITL SOBI Cable Crossing	18.0%	1.2%	0.1%	-1.1%	71.7%	70.0%	-1.7%
LITL Soldiers Pond Switchyard	3.2%	2.2%	3.0%	0.8%	37.0%	37.8%	0.8%
LITL Soldiers Pond Synchronous Condensers	4.9%	5.0%	0.0%	-5.0%	42.4%	28.6%	-13.8%
LITL Misc	4.3%	0.0%	0.8%	0.8%	79.1%	81.1%	2.0%
LITL TOTAL	100.0%	2.7%	1.3%	-1.4%	37.9%	33.8%	-4.1%
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%	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%

3.0 Labrador Island Transmission Link (LITL)

LITL Critical Path 1st Power transfer Lab-> Nfld

NOTE: For complete Critical / Subcritical path schedule see attachment



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:	56.6%
Period Forecast Progress:	0.2%		
Period Earned Progress:	0.1%	Cumulative Earned Progress:	39.7%

3) Critical Path(s):

- [Diversion - River Closure \(priority 1a\) - see page 13](#)
- On schedule for start on 6 July 2016
- [Diversion - Winter Headpond El. 25m \(priority 1b\) - see page 14](#)
- On schedule for start on 26 Oct 2016
- [Diversion - Impoundment Full Supply Level El. 39m \(priority 1c\) - see page 15](#)
- **(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

- Work continues towards planned river diversion

7) Transition Dams/North & South Dams

- North and South Dams contractor demobilized for winter.

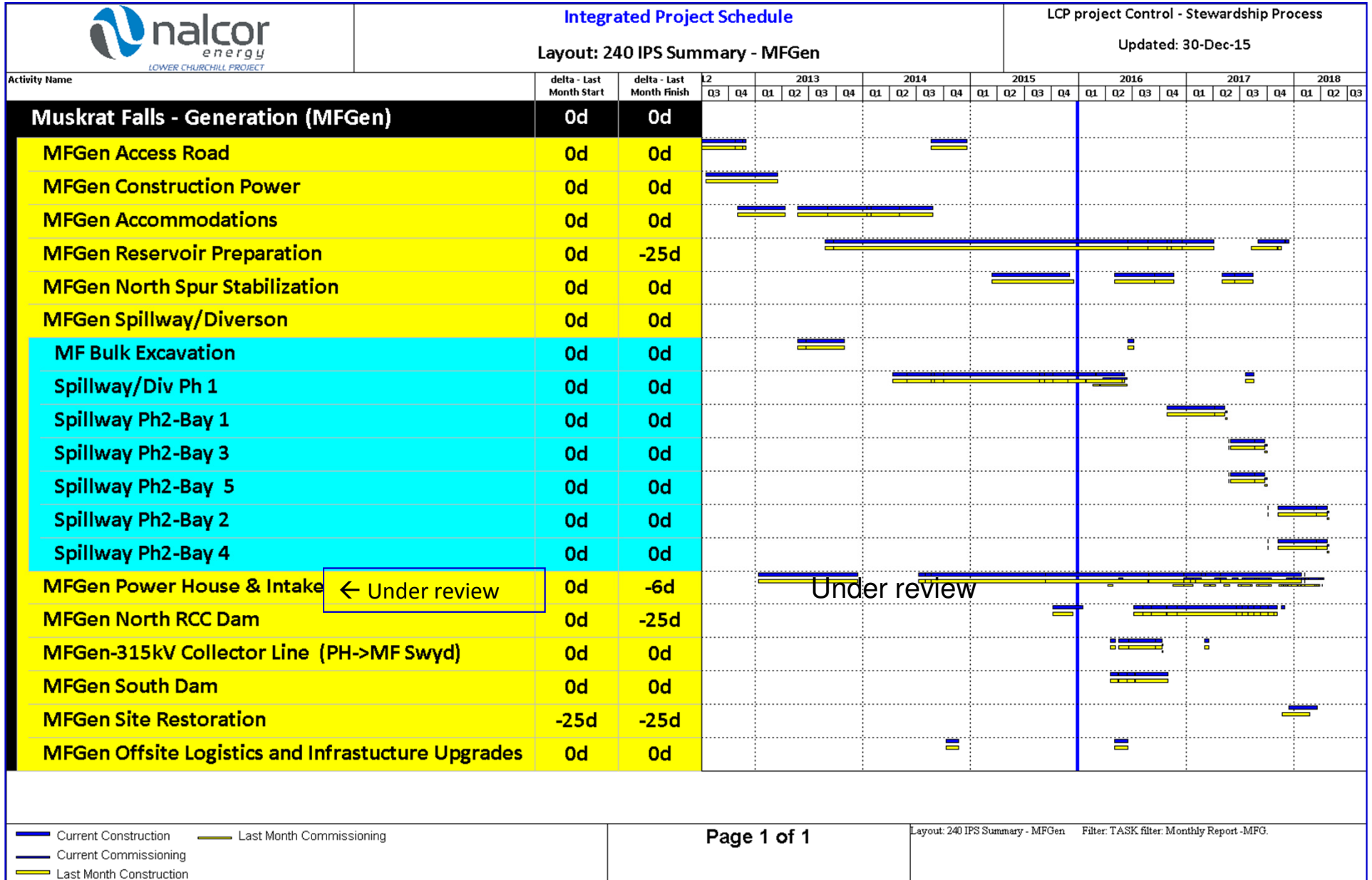
8) Powerhouse:

- 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.

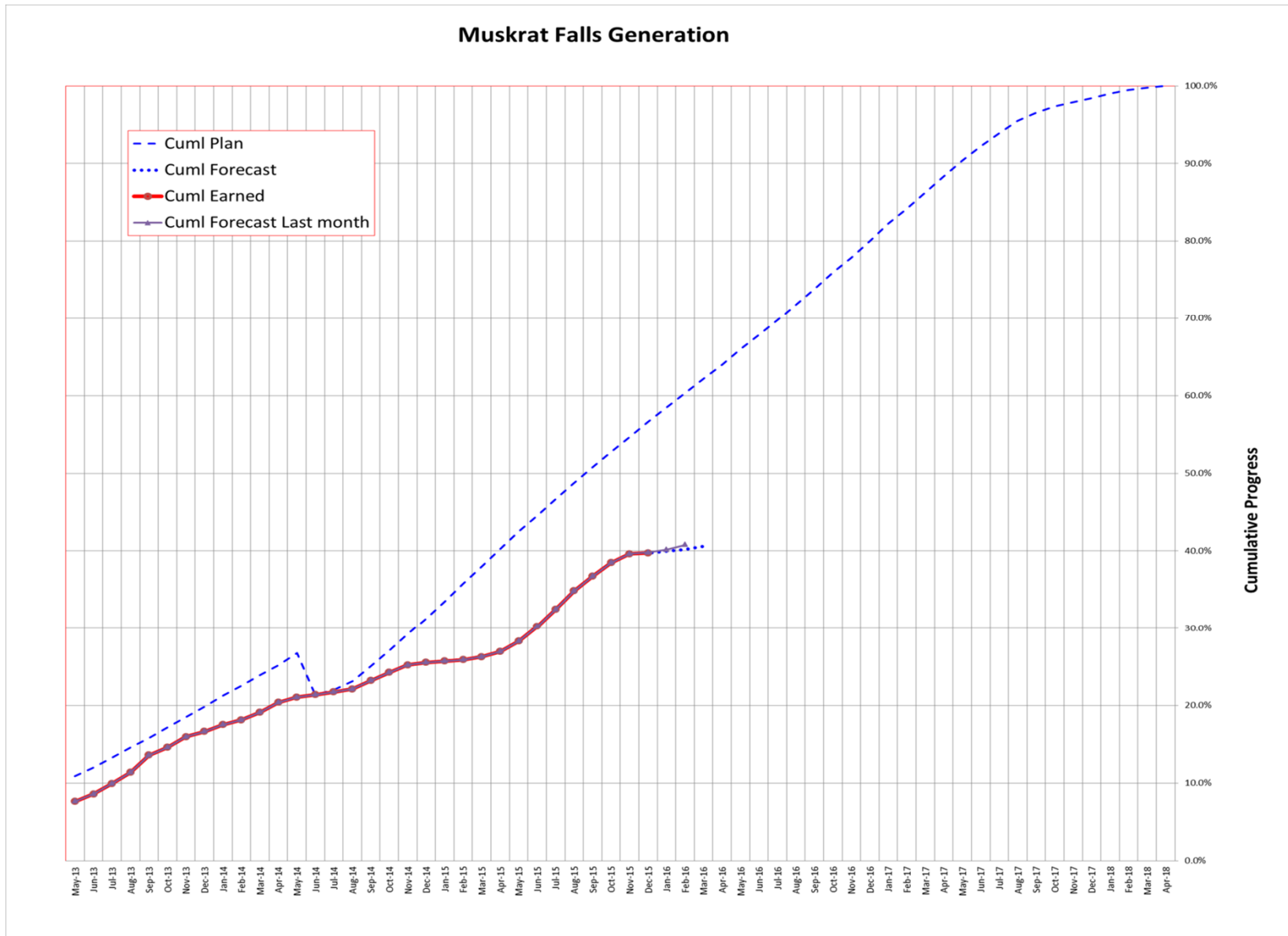
4.0 Muskrat Falls Generation (MFGGen)

MFGGen Summary Schedule

confidential
Corinne Russell
McInnes Cooper
Mar 29, 2018 09:16



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 Dec								
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%	2.0%	0.3%	-1.7%	63.0%	66.1%	3.1%	
MFG North Spur Stabilization	4.2%	2.2%	0.3%	-1.9%	39.2%	43.6%	4.4%	
MFG North Dam (incl North Transition Dam)	7.5%	0.0%	0.0%	0.0%	0.0%	4.1%	4.1%	
MFG Powerhouse & intake	54.9%	2.5%	0.1%	-2.4%	52.2%	23.2%	-29.0%	
MFG South Dam (incl South Transition Dam)	1.1%	0.0%	1.9%	1.9%	0.0%	9.1%	9.1%	
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%	0.1%	-1.8%	56.6%	39.7%	-17.0%	
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%	2.1%	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%	4.1%	4.1%	
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%	7.2%	7.2%	
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%	

End of Report

Lower Churchill Project Delivery Team Project Controls