newfoundland labrador hydro
a nalcor energy company

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March 5, 2018

Via Email & Courier

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Newfoundland and Labrador Hydro's 2017 General Rate Application – Review of Industrial Customer Specifically Assigned Assets – Revision 1

Please find enclosed an original and thirteen copies of the Review of Industrial Customers Specifically Assigned Assets Report (Revision 1).

Revisions to this report were done to remove the "Total" column from Appendices A-E as this only represented original costs. Details on the specifically assigned asset component parts can be found in Request for Information (RFI) IC-NLH-103.

If you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Geoffrey P. Young
Corporate Secretary & General Counsel

GPY/bds

cc: Gerard Hayes - Newfoundland Power
Paul Coxworthy - Stewart McKelvey Stirling Scales
Denis J. Fleming - Cox & Palmer
Dennis Browne, Q.C. - Consumer Advocate
Dean Porter - Poole Althouse

ecc: Van Alexopoulos - Iron Ore Company
Senwung Luk - Labrador Interconnected Group
Benoît Pepin - Rio Tinto

Review of Industrial Customer Specifically Assigned Assets

December 21, 2017

Revised: March 5, 2018

A Report to the Board of Commissioners of Public Utilities

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a nalcor energy company

Table of Contents

Appendices

1.0 Introduction

As part of the functionalization process in completing its cost of service study, Hydro determines if any of assets in service in Hydro's rate base should be treated as specifically assigned to a customer or a customer class. Assets that function to serve a single customer exclusively are to be specifically assigned to that customer. Any asset that functions to serve two or more customers is to be assigned as common. Costs derived from the Test Year cost of service study related to specifically assigned customers are to be recovered from those customers that benefit from the specifically assigned assets. Costs related to assets assigned as common to a system are to be recovered from all customer classes on that system.

For several of the Island Industrial Customers, there are current specifically assigned charges in place to recover the costs related to the specifically assigned assets assigned to each customer. The specifically assigned charges are updated at each General Rate Application (GRA) based on the approved Test Year cost of service study.

In its response to 2017 GRA Request for Information (RFI) IC-NLH-103 and IC-NLH-147, Hydro committed to undertake a full review of its assets to ensure accuracy of the specifically assigned charges for 2018 and 2019. The purpose of this review was to ensure the accuracy of the existing specific assignments to any customer. This includes identifying if any assets were erroneously specifically assigned during Hydro's functionalization process and to ensure that those assets that are specifically assigned continue to meet the criteria for specific assignment. The findings of this review will form the basis of the specific assignment of expenditures going forward.

2.0 Review Methodology

In order to ensure accuracy and completeness of asset assignments, Hydro undertook a review of all assets in stations interfacing with members of the Island Industrial Group, as well as transmission lines and terminal station equipment feeding these stations. A list of all asset

records meeting these criteria was generated, and the function of each asset was assessed. The results of this review were tabulated in three lists for each Island Industrial Customer:

- Specifically Assigned Assets: A list of any assets that are specifically assigned to that customer, including any assets specifically assigned (additions or deletions) as a result of this review.
- Asset Additions: A breakout of any assets that were not specifically assigned prior to this review, but are now specifically assigned.
- Asset Deletions: A breakout of any assets that were specifically assigned prior to this review, but are now re-assigned elsewhere.

Single line diagrams showing the areas that are specifically assigned, as well as tables showing the above noted lists are included in Appendix A to Appendix E under the appropriate customer.

It should be noted that this assessment was based on the current asset record, and asset additions or retirements planned for 2018/2019 are not noted.

3.0 Review Results

3.1 Corner Brook Pulp and Paper

3.1.1 Frequency Converter

Description of Current Asset Status: The Corner Brook Frequency converter was constructed between 1966 and 1967, to convert 60 Hz to 50 Hz, for use by multiple customers having 50 Hz load requirements. The frequency converter consists of two physically-coupled 6.6 kV rotating machines, one serving as a motor and one serving as a generator. Power is transmitted on both sides of the frequency converter at 66 kV, and is stepped down to the intermediary voltage of 6.6 kV via two power transformers, T1 and T2. Prior to 2001, the Corner Brook Frequency Converter was assigned to the Common Cost of Service group. In Hydro's 2001 General Rate Application, Hydro requested that the Board approve Hydro's proposal to specifically assign the entirety of the Corner Brook Frequency Converter to Corner

Brook Pulp and Paper, on the basis that the converter serves only that customer. The Board approved this proposal in Order No. P.U. 7(2002-2003).

Justification for Assignment: Hydro maintains that the frequency converter exists solely to serve the industrial customer, and as such, the entire frequency converter is specifically assigned to Corner Brook Pulp and Paper.

Review Findings: Transformer T2 failed in October 2014, and was replaced by the customer's spare transformer. This spare transformer remains in this role today. There are a number of Hydro assets associated with T2 that have not yet been retired and have net book value remaining.

Appendix A provides the single line diagram, and the full list of specifically assigned assets, asset additions, and asset deletions for Corner Brook Pulp and Paper.

3.1.2 Assets at Deer Lake Power

Description of Current Asset Status: Deer Lake Power (DLP) has one transmission line from the Deer Lake Power Generation station to the Massey Drive Terminal Station (L1), and two lines that connect the Massey Drive Terminal Station and the Corner Brook Pulp and Paper frequency converter (L16 and L17). DLP's Lines L1, L16, and L17 are connected to Bus B4 at Massey Drive. The disconnect switches B4L16-1, B4L17-1, and B4L1-1 are currently specifically assigned to Newfoundland Power.

Review Findings: Currently, disconnect switches for these lines (B4L1-1, B4L16-1 and B4L17-1) are all specifically assigned to Newfoundland Power. Hydro wheels power via DLPs L1 to Newfoundland Power at Marble Mountain and Pasadena; therefore, given that this line serves more than one customer, this disconnect switch should be assigned as common, and not specifically assigned to Newfoundland Power. Since the disconnect switches feeding L16 (B4L16-1) and L17 (B4L17-1) are only used for Deer Lake Power's connection to the frequency

converter, they will be changed from being specifically assigned to Newfoundland Power to be specifically assigned to Deer Lake Power.

Appendix B provides the single line diagram, and the full list of specifically assigned assets, asset additions, and asset deletions for the Deer Lake Power site owned by Corner Brook Pulp and Paper.

3.2 North Atlantic Refining Limited (NARL)

Description of Current Asset Status: The Come By Chance terminal station is a 230 kV terminal station constructed in 1972 to supply electricity to the Come By Chance Refinery. The terminal station bisected TL 207, dividing it into TL 207 and TL 237. The station serves the refinery at 13.8 kV, supplied via two (2) redundant step-down power transformers.

Prior to 2012, the sole purpose of the Come By Chance terminal station was to serve North Atlantic Refining Ltd, and therefore all assets and associated expenditures in the Come By Chance terminal station were specifically assigned to North Atlantic Refining Ltd. In 2012, Nalcor installed four capacitor banks at the Come By Chance terminal station,[1] which improved transmission transfer capabilities to the Avalon, allowing Hydro to delay the start-up of Units 2 and 3 in Holyrood. As a result of the new role of the Come By Chance terminal station, all assets in the station were re-assigned to the Common customer group with the exception of the high-side disconnect switches, automatic ground switches, and all equipment downstream, including transformers T1 and T2, but not including the station service system.

Justification for Assignment: While the Come By Chance terminal station as a whole no longer serves only the industrial customer, the sole purpose of transformers T1 and T2 is to step the 230 kV transmission voltage to 13.8 kV for use by the refinery. The same justification applies for the transformer's ancillary devices, such as protective relays, as well as the transformers bushings, surge arrestors, and fall-arrest equipment. The high and low-side disconnect switches provide a means of

[1] The capacitor banks were installed to allow power from the Exploits generation units to be transferred to the Avalon Peninsula.

visual isolation allowing the transformers to be safely removed from service during maintenance or repairs, and serve no useful purpose to the island interconnected grid as a whole. The high-speed ground switches B1AG and B2AG exist solely as part of the transformer protection scheme, and as such are specifically assigned to the industrial customer.

Review Findings: A number of assets in the Come By Chance terminal station were not re-assigned following the installation of the capacitor banks and have been re-assigned to common as a result of this review.

Appendix C provides the single line diagram, and the full list of specifically assigned assets, asset additions, and asset deletions for North Atlantic Refining Ltd.

3.3 Vale Newfoundland & Labrador Limited (Vale)

Description of Current Asset Status: The Voisey's Bay Nickel terminal station was constructed in 2011 to serve the Long Harbor Nickel Processing Plant (LHNPP), owned by Vale. The station consists of a single 230 kV bus arrangement, which provides power at 13.8 kV via two step-down power transformers. The station is fed from the Western Avalon terminal station by the radial 230 kV transmission line TL 208. TL 208 includes the original transmission line that used to serve a different industrial customer, and a new extension built in 2011. The entirety of the Voisey's Bay Nickel terminal station, TL 208, and the Western Avalon Terminal Station breaker B1L08 and associated disconnect switches, structures, foundations, and protection, control, and monitoring equipment is specifically assigned to Vale.

Justification for Assignment: TL 208, its protective equipment, and the entire Voisey's Bay Nickel terminal station serve Vale exclusively. As such, the assets and associated expenditures are specifically assigned to that customer.

Review Findings: Three assets related to B1L08 were identified as common; however, these assets should have been specifically assigned to Vale. It should be noted that in 2018, once TL 208 is moved to the new gas insulated ring bus, which is a common asset, B1L08 will be retired, and therefore there will be no additional reassignment to Vale for these three items.

Appendix D provides the single line diagram, and the full list of specifically assigned assets, asset additions, and asset deletions for Vale.

3.4 Teck Resources Limited

Description of Assets: The Duck Pond terminal station was constructed in 2006 to serve the Duck Pond Mine, owned by Teck Resources Ltd (formerly Aur Resources). The station is fed from the Buchans terminal station by the radial 66 kV transmission line TL 264 via breaker B2L64 in the Buchans terminal station. The entirety of the Duck Pond terminal station, TL 264, breaker B2L64 and associated disconnect switches and protection, control, and monitoring equipment is specifically assigned to Teck Resources Ltd.

Justification for Assignment: TL 264, its protective equipment, and the entire Duck Pond terminal station serve Teck Resources Ltd exclusively. As such, the assets and associated expenditures are specifically assigned to that customer.

Review Findings: No issues found with the specifically assigned assets for Teck Resources. Appendix E provides the single line diagram and the full list of specifically assigned assets for Teck Resources.

4.0 Future Monitoring of Specifically Assigned Expenditures

During the proceedings for Hydro's 2018 Capital Budget Application, the Island Industrial Customers expressed concern with the lack of communication between Hydro and the individual customers regarding capital projects that would impact specifically assigned charges. In Hydro's final submission for the 2018 Capital Budget Application, Hydro recognized the concerns raised by the Island Industrial Customers and Hydro committed to engage further with the individual customers on this matter.

Hydro believes this engagement should include discussions with the affected customers on the selection criteria for specifically assigned assets, and what assets are assigned to the individual members. As well, Hydro is committed to clearly identifying capital expenditures

that it will be proposing be specifically assigned in advance with each customers, as well as in specific project proposals in all future capital budget applications.

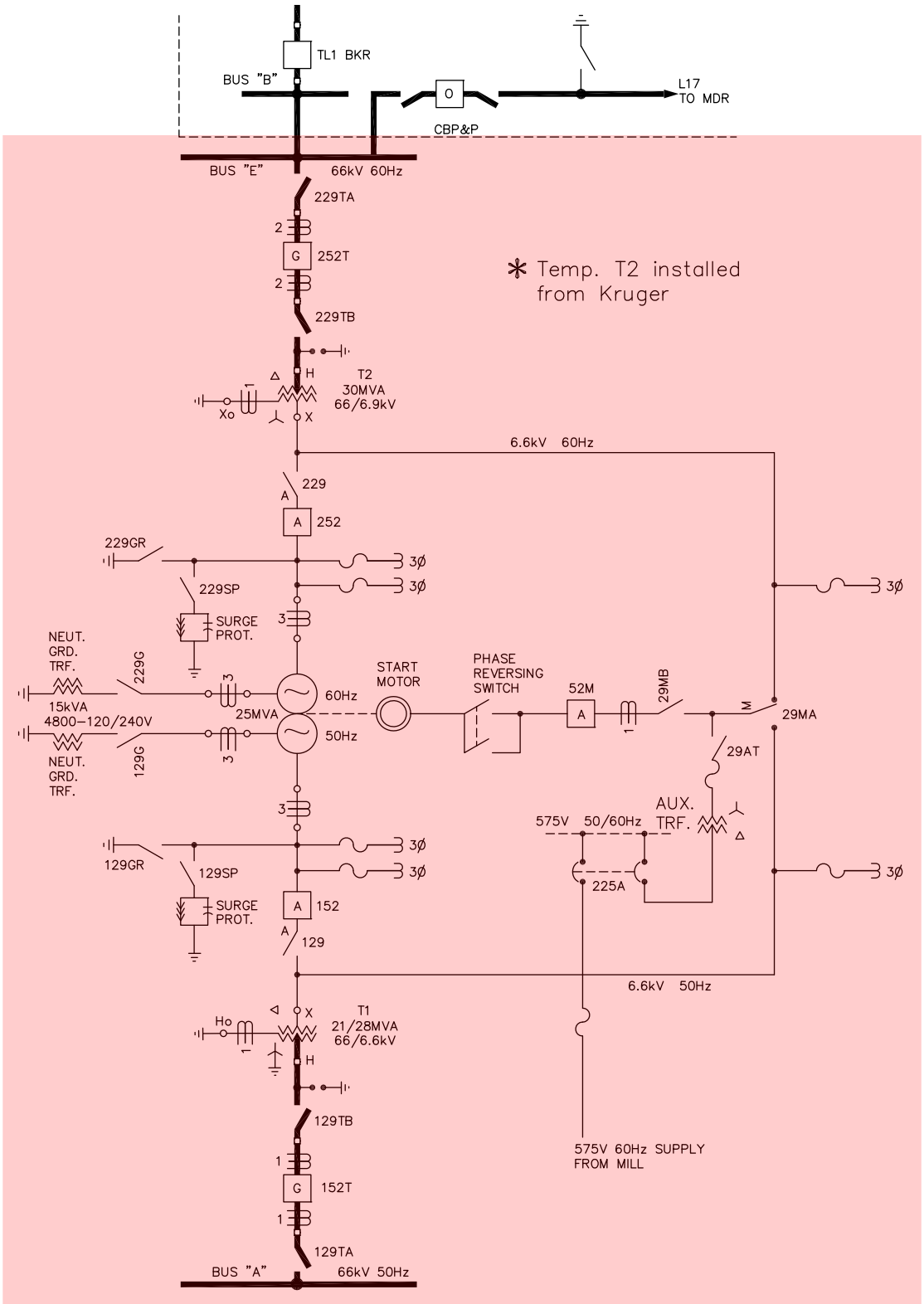
5.0 Customer Impacts of Revised Assignments

Hydro will incorporate the impacts of the corrections in assignments resulting from this review in its compliance filing at the conclusion of the GRA. Hydro will also revisit the 2015 Test Year Cost of Service Study to determine the materiality of the rate impacts of the assignment corrections for NARL and Corner Brook Pulp and Paper related to incorrect assignments that occurred prior to 2015. Hydro will provide the Board an update of the customer impacts once the analysis is complete.

Appendix A

Corner Brook Pulp and Paper

Assets highlighted below are specifically assigned to Corner Brook Pulp &



Corner Brook Pulp &

DRAWN BY: D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO CBFC–1
APPROVED BY: R. Steele	SYSTEM OPERATING DIAGRAM CORNER BROOK FREQUENCY CONVERTER	REV NO 9
DATE: 2016/11/22		

CORNER BROOK PULP & PAPER

Specifically Assigned Assets

Asset ID	Asset Description	Location
61041	BREAKER,52M,CBF CS	CBFCS
61046	BREAKER,152,CBF CS	CBFCS
61054	BREAKER,252,CBF CS	CBFCS
61098	DISCONNECT,29MA,CBF CS	CBFCS
61105	DISCONNECT,29MB,CBF CS	CBFCS
61111	DISCONNECT,29AT,CBF CS	CBFCS
61118	DISCONNECT,229SP,CBF CS	CBFCS
61125	DISCONNECT,129SP,CBF CS	CBFCS
61139	GROUND,229G,CBF CS	CBFCS
61145	GROUND,129G,CBF CS	CBFCS
61166	COMPRESSOR 1 ,CBF CS	CBFCS
61221	LIQUID RHEOSTAT,CBF CS	CBFCS
61228	STARTING MOTOR,CBF CS	CBFCS
61235	MAIN EXCITER,50 CYCLE,CBF CS	CBFCS
61242	MAIN EXCITER 60 CYCLE,CBF CS	CBFCS
61248	PILOT EXCITER,CBF CS	CBFCS
267570	HV ARRESTORS T1,CBF TS	CBFTS
268881	60 CYCLE CONVERTER GEN,CBF CS	CBFCS
268882	50 CYCLE CONVERTER GEN,CBF CS	CBFCS
268884	50/60 VOLTAGE REGULATORS,CBFCS	CBFCS
274972	50 CY, NEUT. GND. TRF, CBF CS	CBFCS
302416	VHF BASE STATION RADIO	CBFCS
303167	BATTERY CHARGER, CBF CS	CBFCS
303306	TELULAR PHONECELL CDMA	CBFCS
307379	TRANSFORMER T1, CBFTS	CBFTS
309026	OIL WATER SEPARATOR, CBF CS	CBFCS
309202	VENTILATION UPGRADE 2006 CBF CS	CBFCS
309290	50 HZ ASSESSMENT 2006	CBFCS
309341	60 HZ ASSESSMENT, 2006	CBFCS
310091	FALL ARREST PROTECTION SYSTEM, T1	CBFTS
323978	WALL BUSHING T1 A PH, CBF TS	CBFTS
323979	WALL BUSHING T1 B PH, CBF TS	CBFTS
323980	WALL BUSHING T1 C PH, CBF TS	CBFTS
323981	WALL BUSHING T2 A PH, CBF TS	CBFTS
323982	WALL BUSHING T2 B PH, CBF TS	CBFTS
323983	WALL BUSHING T2 C PH, CBF TS	CBFTS
323984	VENTILATION UPGRADE 2008 CBFCS	CBFCS
323985	60 CY ROTOR REWIND, CBFCS	CBFCS
323986	50 CY ROTOR REWIND, CBFCS	CBFCS
323987	BEARING # 4, CBFCS	CBFCS
324035	WALL BUSHING 229TB APH, CBF TS	CBFTS
324036	WALL BUSHING 229TB BPH, CBF TS	CBFTS
324037	WALL BUSHING 229TB CPH, CBF TS	CBFTS
324038	WALL BUSHING 129TA APH, CBF TS	CBFTS
324039	WALL BUSHING 129TA BPH, CBF TS	CBFTS
324040	WALL BUSHING 129TA CPH, CBF TS	CBFTS
333516	SYNCHRONIZER, CBF CS	CBFCS
333517	LIQUID RHEOSTAT, CBF CS	CBFCS
333591	AVR 60 CY, CBF CS	CBFCS

333592	AVR 50CY, CBF CS	CBFCS
333640	PHONE BOOTH, CBF CS	CBFCS
343134	SWITCH UPGRADE, 129, CBF CS 6.6KV REPLACE CURRENT-CARRYING PARTS	CBFCS
358389	125 VDC BATTERIES, CBF CS	CBFCS
368096	PORTABLE LIFTING TOOL	CBFCS
378378	UPGRADE, COMPRESSOR 1 CBF CS	CBFCS
378379	COMPRESSOR CONTROL PANEL	CBFCS
378397	COMPRESSOR 2, CBF CS	CBFCS
378398	AIR DRYER 1, CBF CS	CBFCS
378399	AIR DRYER 2, CBF CS	CBFCS
378400	AIR RECEIVER, CBF CS	CBFCS
378401	DEW POINT MONITOR, CBF CS	CBFCS
379518	COMP AIR SYSTEM UPGRADE (2013) BALANCE OF SYSTEM	CBFCS
388496	FSK DATA MODEM	CBFCS
388868	PRV, MAIN (PRESSURE REDUCING VALVE)	CBFCS
388920	PRV, DRYERS 1 (PRESSURE REDUCING VALVE)	CBFCS
388921	PRV, DRYERS 2 (PRESSURE REDUCING VALVE)	CBFCS
388922	PRV, DRYERS 3 (PRESSURE REDUCING VALVE)	CBFCS
388923	PRV,DRYERS 4 (PRESSURE REDUCING VALVE)	CBFCS
388963	RTU (REMOTE TERMINAL UNIT)	CBFCS
389861	3500 VIBRATION MONITORING	CBFCS
390227	BUSHING X2,T2 CBF TS MATERIAL ONLY	CBCTS
390228	BUSHING X3,T2 CBF TS MATERIAL ONLY	CBCTS
397720	BREAKER,152T,CBFTS	CBFTS
404326	CBFCS,60 HZ, EXCITER O/H	CBFCS
404327	CBFCS, 50 HZ, EXCITER O/H	CBFCS
404655	SF6 BREAKER 152T CBFTS (2015 PROJECT)	CBFTS
404657	SF6 BREAKER 152T CBFTS (2016 PROJECT)	CBFTS
99013954	REV METERING EQUIP - (SANGAMO SOLID STATE RECORDER)	MDRTS
99013964	REV METERING EQUIP - (SANGAMO SOLID STATE RECORDER)	PASSUBSTN
99013968	REV METERING EQUIP - (SANGAMO SOLID STATE RECORDER)	BFDREPEATER
99014004	REV METERING EQUIP - (FIBERGLASS ENCLOSURES)	PASSUBSTN
99014008	REV METERING EQUIP - (FIBERGLASS ENCLOSURES)	BFDREPEATER
99014031	FIRE PROTECTION SYSTEM - BLDG	CBFTS
99014033	CONTROL, METERING AND RELAYING	CBFTS
99014034	CONTROL, METERING AND RELAYING	CBFTS
99014036	REV METERING EQUIPMENT - (LINE RECORDER, 50 HZ)	CBFTS
99014037	REV METERING EQUIPMENT - (LINE RECORDER, 60 HZ)	CBFTS
99014038	REV METERING EQUIPMENT - (LINE RECORDER, 60 HZ)	CBFTS
99014039	FIRE PROTECTION SYSTEM	CBFTS
99014914	BUILDING - (CONCRETE) - RENOVATIONS	CBFTS
99014915	FOUNDATION (CONCRETE) FOR EQUIPMENT AND STRUCTURES	CBFTS
99014916	STRUCTURAL SUPPORT - (STEEL)	CBFTS
99014919	POWER TRANSFORMER - STATION SERVICE	CBFTS
99014920	POWER TRANSFORMER - STATION SERVICE	CBFTS
99014930	SWITCHING - H.V. (BUSWORK AND HARDWARE	CBFTS
99014938	RESISTORS - (3.87 OHM RESISTOR BANK)	CBFTS
99014939	RESISTORS - (3.5 OHM RESISTOR BANK)	CBFTS
99014941	CONTROL, METERING AND RELAYING PANELS	CBFTS
99014943	CABLES TRAYS AND CONDUIT	CBFTS
99014944	CONTROL CABLES	CBFTS
99014945	FIRE FIGHTING EQUIPMENT - BLDG	CBFTS
99041697	METER, MULTIFUNCTION	CBFTS

CORNER BROOK PULP & PAPER

Asset Additions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
NO ASSET ADDITIONS					

CORNER BROOK PULP & PAPER

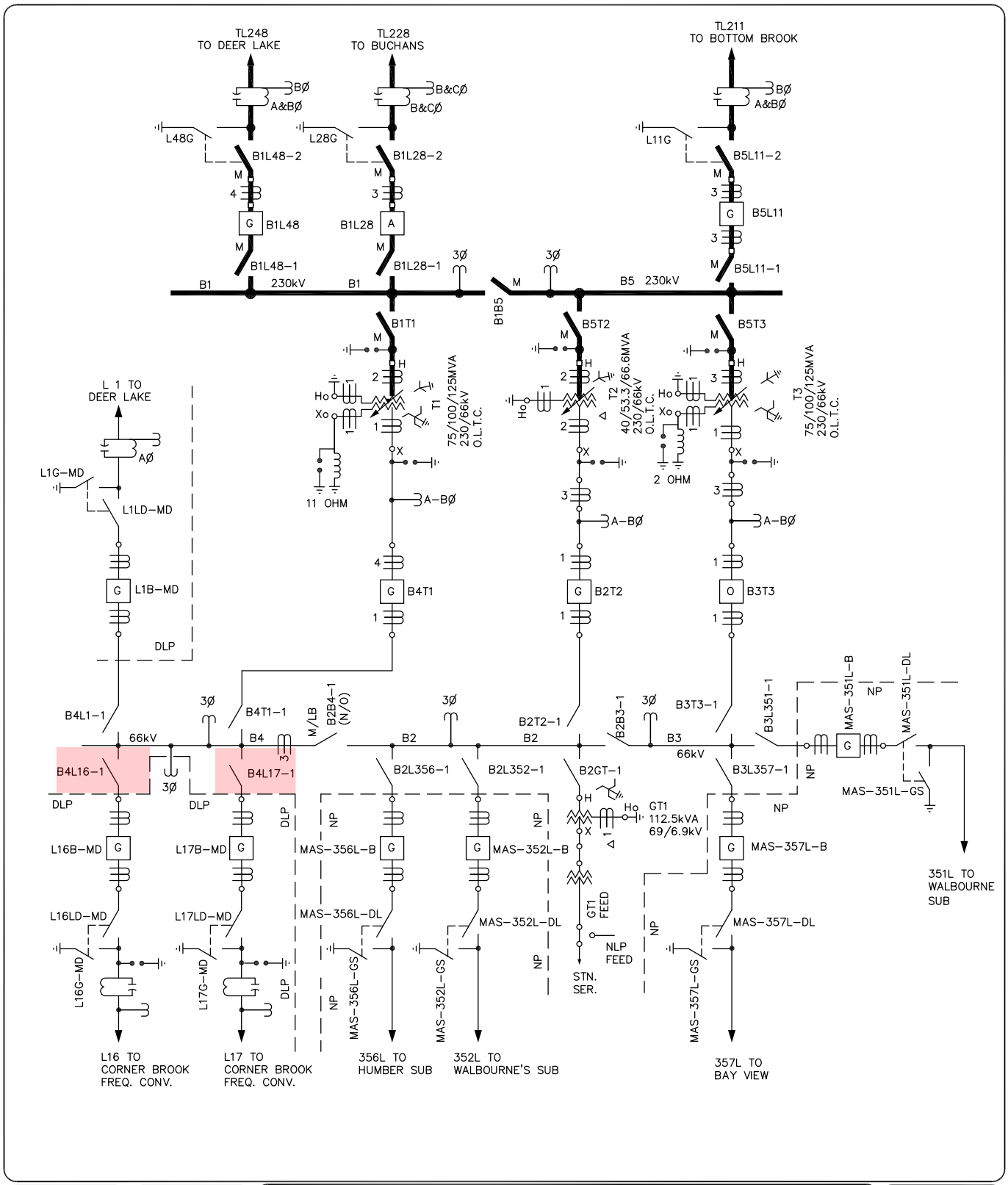
Asset Deletions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
61010	TRANSFORMER T2,CBFTS	CBFTS	CBP&P	TO BE RETIRED	9/22/2014
310092	FALL ARREST PROTECTION SYSTEM, T2	CBFTS	CBP&P	TO BE RETIRED	9/22/2014
390008	TRF UPGRADE T2, CBF TS (2014) WINDING REPAIR	CBFTS	CBP&P	TO BE RETIRED	9/22/2014
390226	BUSHING X1,T2 CBF TS MATERIAL ONLY	CBFTS	CBP&P	TO BE RETIRED	9/22/2014
99039625	POWER TRANSFORMER - (69KV PWR TRF BY MALONEY	CBFTS	CBP&P	TO BE RETIRED	8/8/2002

Appendix B

Deer Lake Power

Assets highlighted below are specifically assigned to Deer Lake



DRAWN BY J.T.	REVISED BY D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO MDR-1
APPROVED BY: R. STEELE		SYSTEM OPERATING DIAGRAM MASSEY DRIVE TERMINAL STATION	REV NO 27
DATE 2017/09/12			

DEER LAKE POWER

Specifically Assigned Assets

Asset ID	Asset Description	Location
61396	DISCONNECT,B4L16-1,MDR TS	MDRTS
61404	DISCONNECT,B4L17-1,MDR TS	MDRTS
99010773	EXPORT METER, TYPE DSW-64 BY C	MDRTS
99010776	IMPORT METER, TYPE DSW-64	MDRTS
99010879	REVENUE METERING EQUIPMENT	MDRTS
99013990	REV METERING EQUIP - (SANGAMO SOLID STATE RECORDER)	DLKPOWPLANT
99013991	REV METERING EQUIP - (SANGAMO SOLID STATE RECORDER)	PASSUBSTN
99020531	REVENUE METERING EQUIP - (SAN GAMO DATASTAR RECORDER)	DLKPOWPLANT

DEER LAKE POWER

Asset Deletions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
NO ASSET DELETIONS					

DEER LAKE POWER

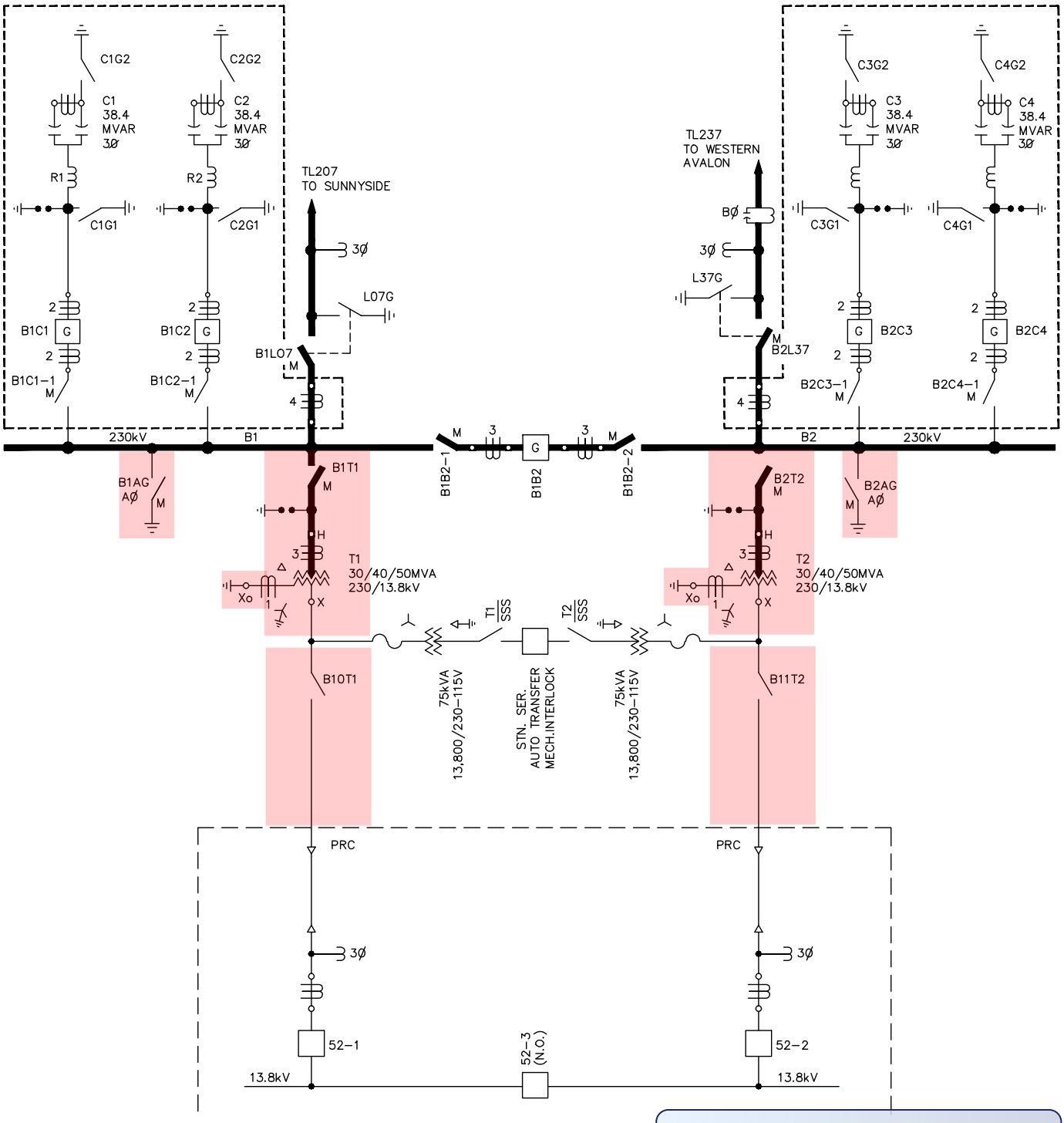
Asset Additions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
61396	DISCONNECT,B4L16-1,MDR TS	MDRTS	NP	DLP	6/29/1987
61404	DISCONNECT,B4L17-1,MDR TS	MDRTS	NP	DLP	6/29/1987

Appendix C

North Atlantic Refinery Limited

Assets highlighted below are specifically assigned to North Atlantic Refining



INFORMATION ONLY

DRAWN BY J.T.	REVISED BY D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO
APPROVED BY G. BRODERICK		SYSTEM OPERATING DIAGRAM COME BY CHANCE TERMINAL STATION	REV NO 5
DATE 2012–02–21			

NORTH ATLANTIC REFINING LTD

Specifically Assigned Assets

Asset ID	Asset Description	Location
6265	GROUND,B1AG,CBC TS	CBCTS
6266	GROUND,B2AG,CBC TS	CBCTS
323027	HV ARRESTORS T1, CBC TS	CBCTS
327730	HV ARRESTORS T1,CBC (INSTALL)	CBCTS
327732	HV ARRESTERS T2, CBC TS	CBCTS
333792	FALL ARREST PLATES T1, CBC TS	CBCTS
333793	FALL ARREST PLATES T2, CBC TS	CBCTS
390168	BUSHING H1,T1 CBC TS MATERIAL ONLY	CBCTS
390221	BUSHING H2,T1 CBC TS MATERIAL ONLY	CBCTS
390222	BUSHING H3,T1 CBC TS MATERIAL ONLY	CBCTS
390223	BUSHING H1,T2 CBC TS MATERIAL ONLY	CBCTS
390224	BUSHING H2,T2 CBC TS MATERIAL ONLY	CBCTS
390225	BUSHING H3,T2 CBC TS MATERIAL ONLY	CBCTS
394947	DISCONNECT B1T1 - CBC	CBCTS
395677	BUSHING H1,T1,CBC TS	CBCTS
395678	BUSHING H2,T1,CBC TS	CBCTS
395679	BUSHING H3,T1,CBC TS	CBCTS
395681	BUSHING H1,T2,CBC TS	CBCTS
395682	BUSHING H2,T2,CBC TS	CBCTS
395683	BUSHING H3,T2,CBC TS	CBCTS
395698	TRF UPGRADE T1, CBC TS (2015) PROTECTIVE DEVICE REPLACEMENT	CBCTS
395699	TRF UPGRADE T2, CBC TS (2015) PROTECTIVE DEVICE REPLACEMENT	CBCTS
405674	DISCONNECT,B2T2 CBC TS	CBCTS
99010017	POWER TRANSFORMER T1, 230KV,	CBCTS
99010018	POWER TRANSFORMER T2, 230 KV,	CBCTS
99019336	REVENUE METERING EQUIP - (DATA STAR RECORDER)	CBCTS
99031755	DIGITAL METERS,FULLY CONTRIBUTED	CBCTS
6261	DISCONNECT, B10T1	CBCTS
6262	DISCONNECT, B11T2	CBCTS

NORTH ATLANTIC REFINING LTD

Asset Additions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
390168	BUSHING H1,T1 CBC TS MATERIAL ONLY	CBCTS	COMMON	NARL	12/31/2014
394947	DISCONNECT B1T1 - CBC	CBCTS	COMMON	NARL	9/29/2015
405674	DISCONNECT,B2T2 CBC TS	CBCTS	OTHER	NARL	12/31/2015

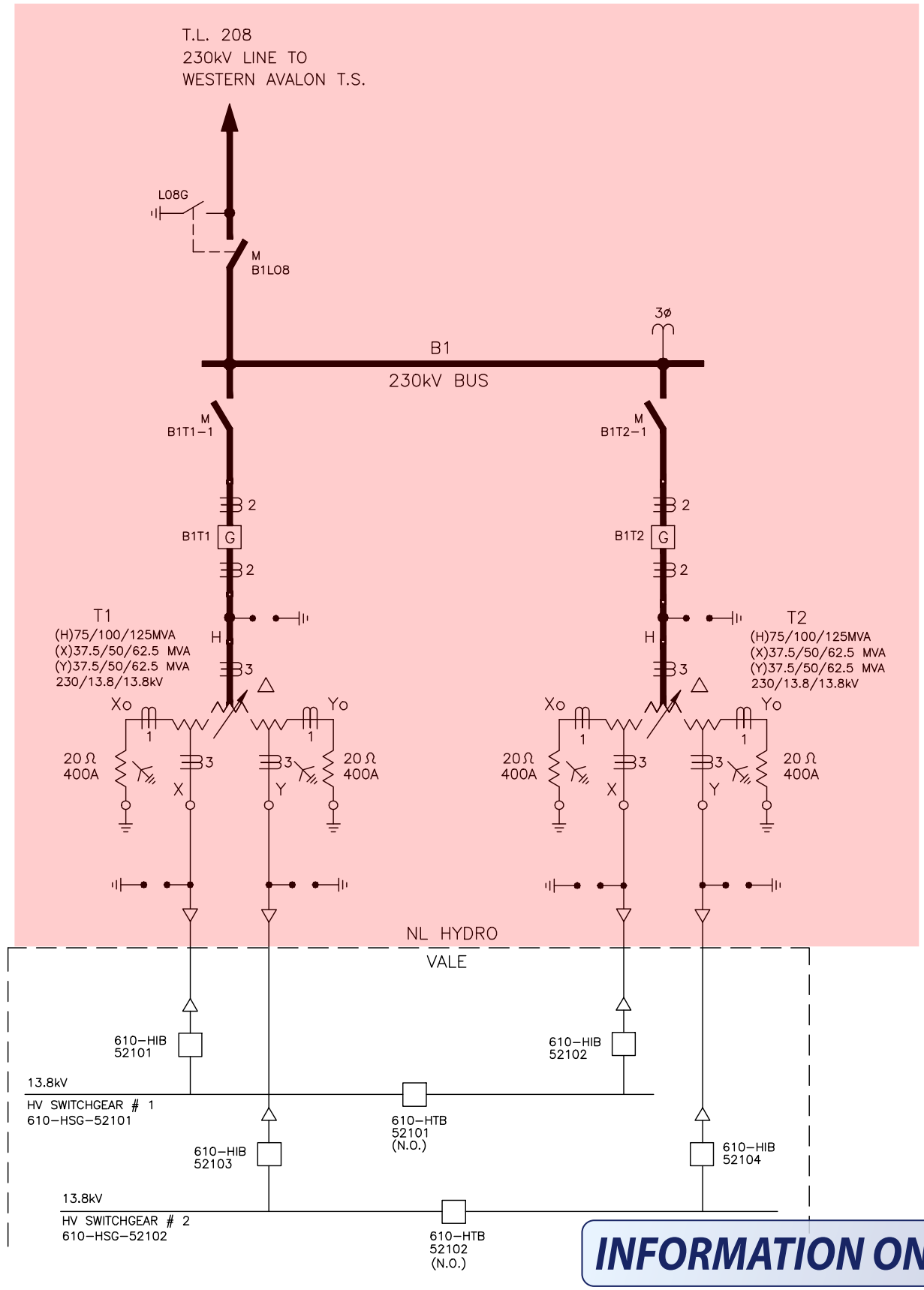
NORTH ATLANTIC REFINING LTD

Asset Deletions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
6287	FENCE,CBC TS	CBCTS	NARL	COMMON	12/8/2011
6288	SEWAGE SYSTEM, CBC TS	CBCTS	NARL	COMMON	12/8/2011
6291	CABLE RACEWAY,CBC TS TRENCH,CONDUIT,TRAY,ETC	CBCTS	NARL	COMMON	12/8/2011
267745	BUS WORK, CBC TS	CBCTS	NARL	COMMON	12/8/2011
267746	SUPPORT STR, FOOTINGS, CBC TS	CBCTS	NARL	COMMON	12/8/2011
267751	POWER & CONTROL CABLE,CBC TS	CBCTS	NARL	COMMON	12/8/2011
267752	GROUNDING, CBC TS	CBCTS	NARL	COMMON	12/8/2011
378369	GROUNDING UPGRADE,CBC TS(2013) GROUND MAT U	CBCTS	NARL	COMMON	12/8/2011
394741	INSULATORS - TL207 BUS 1	CBCTS	NARL	COMMON	12/8/2011
394742	INSULATORS - TL207 BUS 1	CBCTS	NARL	COMMON	12/8/2011
99009831	EXIT DOOR/ENTRANCE, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99009832	REPAIR EXTERIOR SIDING, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99009858	GROUNDING	CBCTS	NARL	COMMON	12/8/2011
99009859	CONTROL CABLES	CBCTS	NARL	COMMON	12/8/2011
99009871	AIR CONDITIONING UNIT, CBC TS FOR TELECONTROL E	CBCTS	NARL	COMMON	12/8/2011
99009987	AIR RECEIVER BY BROWN BOVERIE	CBCTS	NARL	TO BE RETIRED	12/31/1997
99009988	AIR RECEIVER BY BROWN BOVERIE	CBCTS	NARL	TO BE RETIRED	12/31/1997
99009990	INSTRUMENT AIR DRYER BY BROWN	CBCTS	NARL	TO BE RETIRED	12/31/1997
99009992	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99009994	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99009995	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99009996	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99009997	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99009998	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99010004	LAND CLEARED 10' OUTSIDE FENCE	CBCTS	NARL	COMMON	12/8/2011
99010005	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99010006	LIGHTING FIXTURE, 250 WATT	CBCTS	NARL	COMMON	12/8/2011
99010008	COMPRESSOR & DRIVE, MODEL # C-	CBCTS	NARL	TO BE RETIRED	12/31/1997
99010009	BALANCE OF COMPRESSED AIR SYST	CBCTS	NARL	TO BE RETIRED	12/31/1997
99010011	CONCRETE BLDG. - FOR CONTROL & EQUIPMENT BLDG	CBCTS	NARL	COMMON	12/8/2011
99010012	FOUNDATION FOR BUILDING - CONCRETE	CBCTS	NARL	COMMON	12/8/2011
99010013	FOUNDATION FOR BUILDING - CONCRETE	CBCTS	NARL	COMMON	12/8/2011
99010014	EQUIPMENT FOUNDATION, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99010049	SUSPENSION INSULATOR, 230 KV,	CBCTS	NARL	COMMON	12/8/2011
99010050	POST TYPE INSULATOR, 230 KV, 1	CBCTS	NARL	COMMON	12/8/2011
99010053	CONT, MET, & REL PNL, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99010054	CONTROL,METERING & RELAY PANEL	CBCTS	NARL	COMMON	12/8/2011
99010055	CONTROL,METERING & RELAY PANEL	CBCTS	NARL	COMMON	12/8/2011
99010057	CONT, MET & REL PNL, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99010062	MISCELLANEOUS TELECONTROL	CBCTS	NARL	COMMON	12/8/2011
99024621	CONT, MET & RELAYING C/W ANNUNCIATOR, CBC TS	CBCTS	NARL	COMMON	12/8/2011
99024622	CONTROL CABLE - (#18-2, #12-2, #12-4, #16)	CBCTS	NARL	COMMON	12/8/2011
99031499	TIMERS RXKM-2H TIMER RELAY WITH PANEL BASES &	CBCTS	NARL	COMMON	12/8/2011

Appendix D

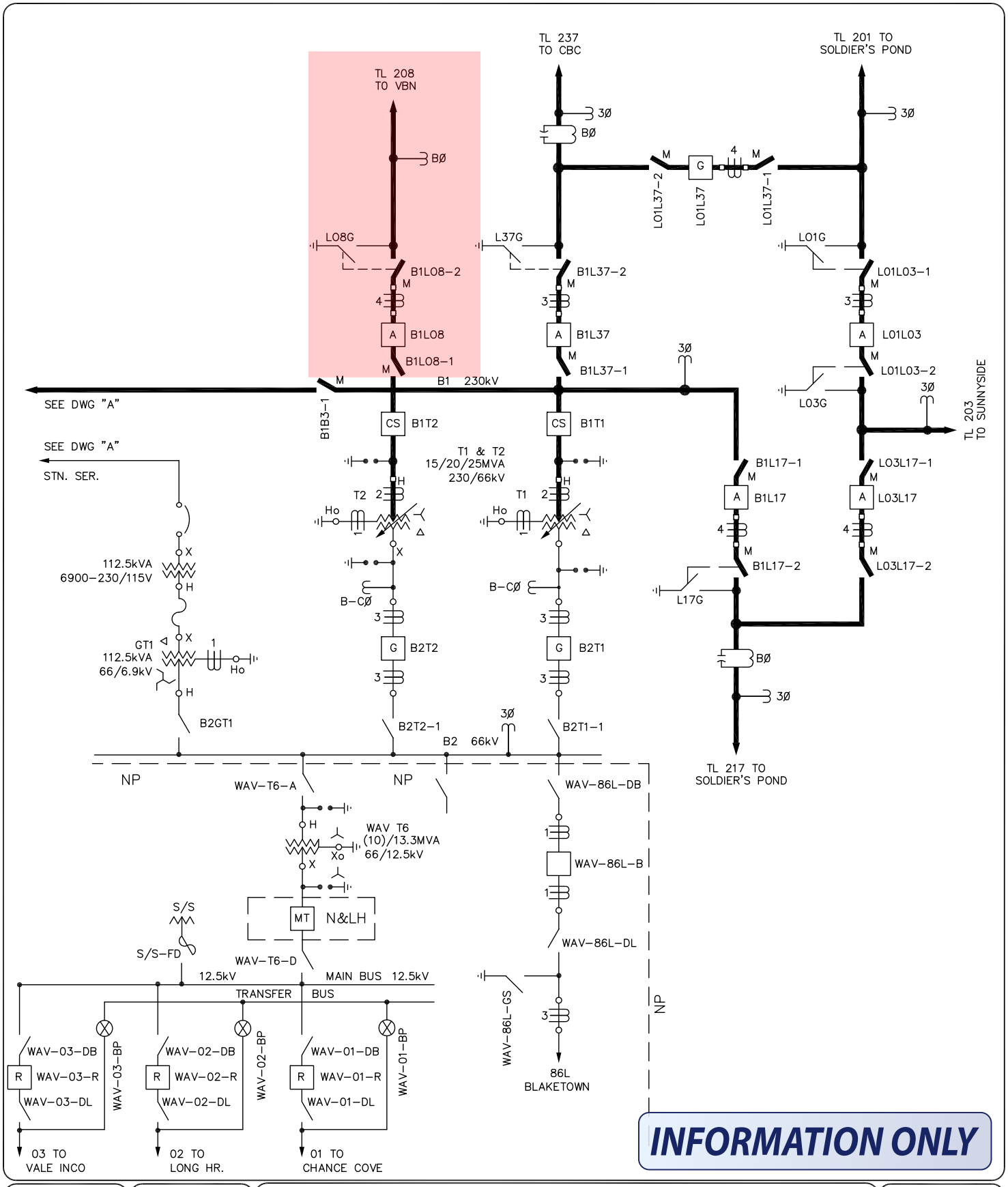
Vale Newfoundland and Labrador Limited



INFORMATION ONLY

DRAWN BY D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO
APPROVED BY G.B.	SYSTEM OPERATING DIAGRAM VOISEY'S BAY NICKEL TERMINAL STATION	REV NO 1
DATE 2012/06/28		

Assets highlighted below are specifically assigned to Vale



DRAWN BY: J.T.	REVISED BY: D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO WAV-B
APPROVED BY: D. KING		SYSTEM OPERATING DIAGRAM WESTERN AVALON TERMINAL STATION (B)	REV NO 23
DATE: 2017/11/03			

VALE

Specifically Assigned Assets

Asset ID	Asset Description	Location
3199	RIGHT-OF-WAY	WHBTL208
6454	CT B1L08 B PH,WAV TS	WAVTS
6492	PT TL208 B PH,WAV TS	WAVTS
6522	BREAKER,B1L08,WAV TS	WAVTS
342312	B1L08, UPGRADE (L&M) WAV TS	WAVTS
362648	RECLOSER, B1L08, WAV TS	WAVTS
362649	TL208 PROTECTION, WAV TS	WAVTS
362650	BUS WORK, VBN TS	VBNTS
362651	SUPPORT STR, FOOTINGS, VBN TS	VBNTS
362652	POWER & CONTROL CABLES, VBN TS	VBNTS
362653	GROUNDING, VBN TS	VBNTS
362654	CABLE RACEWAY, VBN TS	VBNTS
364451	125 VDC BATTERIES, VBN TS	VBNTS
364452	125 VDC CHARGER, VBN TS	VBNTS
364453	125 VDC DIST PANEL, VBN TS	VBNTS
364454	DISCONNECT, B1L08, VBN TS	VBNTS
364455	DISCONNECT, B1T1-1, VBN TS	VBNTS
364456	DISCONNECT, B1T2-1, VBN TS	VBNTS
364457	TRANSFORMER T1, VBN TS	VBNTS
364458	TRANSFORMER T2, VBN TS	VBNTS
364459	BREAKER, B1T1, VBN TS	VBNTS
364460	BREAKER, B1T2, VBN TS	VBNTS
364461	REVENUE METERING, VBN TS	VBNTS
364463	FENCE, VBN TS	VBNTS
364464	POST INSULATORS(230KV), VBN TS	VBNTS
364465	AC DISTRIBUTION PANEL, VBN TS	VBNTS
364468	HEAT,LIGHT,VENT,SECUR,VBN TS	VBNTS
364469	YARD LIGHTING, VBN TS	VBNTS
364470	FIRE PROT / DET, VBN TS	VBNTS
364478	BREAKER FAIL PROT, VBN TS	VBNTS
364485	BUSHING H1, T1, VBN TS	VBNTS
364486	BUSHING H2, T1, VBN TS	VBNTS
364487	BUSHING H3, T1, VBN TS	VBNTS
364488	BUSHING X1, T1, VBN TS	VBNTS
364489	BUSHING X2, T1, VBN TS	VBNTS
364490	BUSHING X3, T1, VBN TS	VBNTS
364491	BUSHING X0, T1, VBN TS	VBNTS
364492	BUSHING Y1, T1, VBN TS	VBNTS
364493	BUSHING Y2, T1, VBN TS	VBNTS
364494	BUSHING Y3, T1, VBN TS	VBNTS
364495	BUSHING Y0, T1, VBN TS	VBNTS
364496	HV ARRESTERS, T1, VBN TS	VBNTS
364497	LV (X) ARRESTERS, T1, VBN TS	VBNTS
364498	LV (Y) ARRESTERS, T1, VBN TS	VBNTS
364499	NEUT GND RESISTOR(X)T1, VBN TS	VBNTS
364500	NEUT GND RESISTOR(Y)T1, VBN TS	VBNTS
364501	BUSHING H1, T2, VBN TS	VBNTS
364502	BUSHING H2, T2, VBN TS	VBNTS
364503	BUSHING H3, T2, VBN TS	VBNTS

364504	BUSHING X1, T2, VBN TS	VBNTS
364505	BUSHING X2, T2, VBN TS	VBNTS
364506	BUSHING X3, T2, VBN TS	VBNTS
364507	BUSHING X0, T2, VBN TS	VBNTS
364508	BUSHING Y1, T2, VBN TS	VBNTS
364509	BUSHING Y2, T2, VBN TS	VBNTS
364510	BUSHING Y3, T2, VBN TS	VBNTS
364511	BUSHING Y0, T2, VBN TS	VBNTS
364512	HV ARRESTERS, T2, VBN TS	VBNTS
364513	LV(X) ARRESTERS, T2, VBN TS	VBNTS
364514	LV (Y) ARRESTERS, T2, VBN TS	VBNTS
364515	NEUT GND RESISTOR(X) T2 VBN TS	VBNTS
364516	NEUT GND RESISTOR(Y) T2 VBN TS	VBNTS
364517	TL208 PROTECTION, VBN TS	VBNTS
364518	T1 PROTECTION A, VBN TS	VBNTS
364519	T1 PROTECTION B, VBN TS	VBNTS
364520	T2 PROTECTION A, VBN TS	VBNTS
364521	T2 PTOTECTION B, VBN TS	VBNTS
364522	STATION CONTROL, HMI, VBN TS	VBNTS
364523	PT, B1, A PH, VBN TS	VBNTS
364524	PT, B1, B PH, VBN TS	VBNTS
364525	PT B1 C PH, VBN TS	VBNTS
364532	GND SW, L08G, VBN TS	VBNTS
364538	AA236 TYPE , STEEL TOWERS TL208 LINE EXTENSION TO VALE	WHBTL208
364541	NDD TYPE STEEL TOWER SS TL208 LINE EXTENSION TO VALE	WHBTL208
364544	A-TYPE (CAC) STEEL TOWER TL208 LINE EXTENSION TO VALE	WHBTL208
364547	DD236 TYPE STEEL TOWERS TL208 LINE EXTENSION TO VALE	WHBTL208
364548	TOWER FOUNDATIONS SELF S TL-208 Extension To VALE	WHBTL208
364549	ANCHORS FOR V-TOWERS TL208 LINE EXTENSION TO VALE	WHBTL208
364550	TAP CHANGER, T1, VBN TS	VBNTS
364551	TAP CHANGER, T2, VBN TS	VBNTS
364553	804 KMCIL CONDUCTOR TL-208 LINE EXTENSION FOR VALE, 7909 METERS	WHBTL208
364554	SUSPENSION INSULATORS FOG, 15000 LBS 70KN	WHBTL208
364559	# 1 STEEL COUNTERPOISE TL208 LINE EXTENSION TO VALE 2700 METERS	WHBTL208
364560	OVERHEAD GROUND WIRE TL-208 LINE EXTENSION TO VALE 5/8" GUY STRAND,	WHBTL208
364577	SUSPENSION INSULATORS FOG 25000 LBS 120KN	WHBTL208
364578	INSULATORS SUSPENSION 15000 LBS 70 KN	WHBTL208
364579	SUSPENSION INSULATORS	WHBTL208
367903	CT, B1L08, APH, WAV TS	WAVTS
367904	CT, B1L08, CPH, WAV TS	WAVTS
368035	DISCONNECT B1L08-1, WAV TS LABOUR ONLY	WAVTS
368036	DISCONNECT B1L08-2, WAV TS LABOUR ONLY	WAVTS
368040	GND SW L08G, WAV TS LABOUR ONLY	WAVTS
394737	FOUNDATIONS - B1L08	WAVTS
394739	FOUNDATIONS - B1L08-1	WAVTS
401060	TRANS T1,INSP./OIL PROCESS,VBN 2016	VBNTS
99011438	FOUNDATIONS FOR METAL TOWERS	WHBTL208
99011439	METAL TOWERS (GUYED)	WHBTL208
99011440	METAL TOWERS (RIDGED)	WHBTL208
99011441	ANCHORS FOR GUYED TOWERS	WHBTL208
99011443	CONDUCTOR 795 MCM ACSR 26/7	WHBTL208
99011444	OVERHEAD GROUND WIRE	WHBTL208
99011445	COUNTERPOISE	WHBTL208
99027963	RIGHT OF WAY	WHBTL208

VALE

Asset Additions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
6454	CT B1L08 B PH,WAV TS	WAVTS	COMMON	VALE	1/1/2013
394737	FOUNDATIONS - B1L08	WAVTS	COMMON	VALE	10/23/2015
394739	FOUNDATIONS - B1L08-1	WAVTS	COMMON	VALE	10/23/2015

VALE

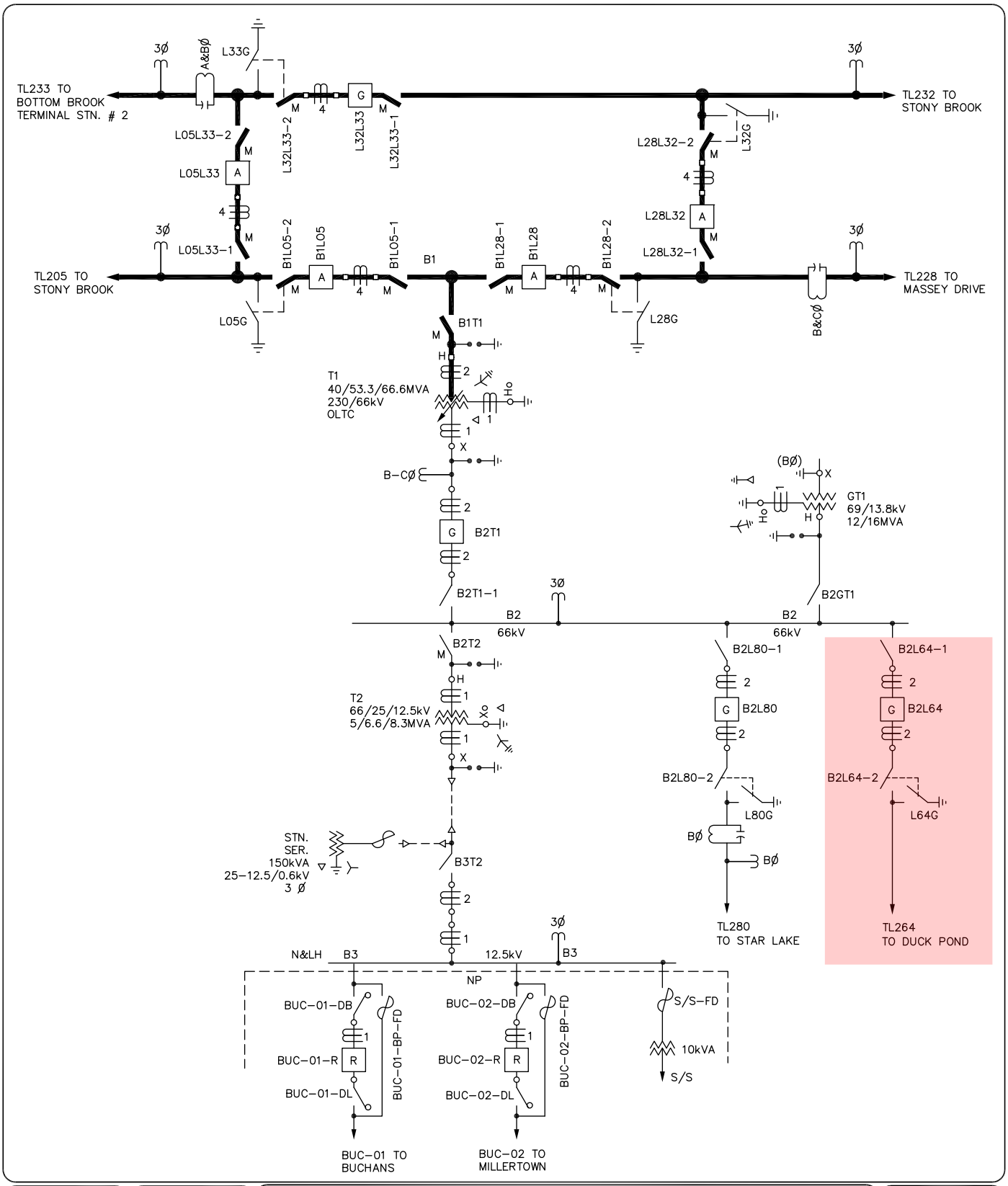
Asset Deletions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
NO ASSET DELETIONS					

Appendix E

Teck Resources Limited

Assets highlighted below are specifically assigned to Teck



DRAWN BY: J.T.	REVISED: D.R.	NEWFOUNDLAND AND LABRADOR HYDRO	DWG NO BUC-1
APPROVED BY: C.Q.		SYSTEM OPERATING DIAGRAM BUCHANS TERMINAL STATION	REV NO 20
DATE: 2017/06/19			

TECK

Specifically Assigned Assets

Asset ID	Asset Description	Location
298879	TL264 PROTECTION, BUC TS	BUCTS
298880	BREAKER, B2L64, BUC TS	BUCTS
298881	DISCONNECT, B2L64-1, BUC TS	BUCTS
298882	DISCONNECT, B2L64-2, BUC TS	BUCTS
298883	BUS WORK, DPD TS	DPDTS
298884	WOOD SUPPORT STRUCT, DPD TS	DPDTS
298885	POWER & CONTROL CABLE, DPD TS	DPDTS
298886	GROUNDING, DPD TS	DPDTS
298887	STATION INSULATORS, DPDTS	DPDTS
298950	DISCONNECT, L64T1, DPD TS	DPDTS
298951	T1AG, DPD TS	DPDTS
298952	TRANSFORMER, T1 DPD TS	DPDTS
298953	TRANSFORMER T1 PROTECTION, DPD TS	DPDTS
298991	HV ARRESTERS T1, DPD TS	DPDTS
298992	LV ARRESTERS T1, DPD TS	DPDTS
298993	NEUTRAL GROUND RESISTOR, T1 DPD TS	DPDTS
304235	CONTROL CABLE, TL264, BUC TS	BUCTS
304354	RIGHT OF WAYS	BIFTL264
304355	40 FT WOOD POLES	BIFTL264
304356	45 FT WOOD POLES	BIFTL264
304357	50 FT WOOD POLES	BIFTL264
304358	55FT WOOD POLES	BIFTL264
304359	60FT WOOD POLES	BIFTL264
304360	65FT WOOD POLES	BIFTL264
304361	TYPE D STRUCTURES	BIFTL264
304362	SUSPENSION INSULATORS	BIFTL264
304363	POST TYPE INSULATORS	BIFTL264
304364	266.8 ACSR ALUMINUM COND.	BIFTL264
304365	AIRCRAFT WARNING MARKERS.	BIFTL264

TECK

Asset Additions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
NO ASSET ADDITIONS					

TECK

Asset Deletions

Asset ID	Asset Description	Location	Currently Assigned To	To Be Assigned To	Re-assignment Effective Date
NO ASSET DELETIONS					