

ENERGY STUDY

Project & Environmental Review – Berth 2 Shiploader Replacement

Neptune Bulk Terminals Ltd.

PBX Engineering Ltd.

300-131 Water Street
Vancouver BC, V6B 4M3

pbxeng.com

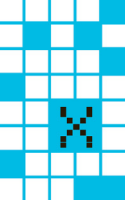
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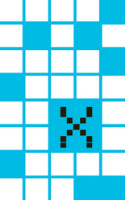
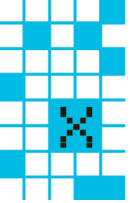


Table of Contents

1	Executive Summary	3
2	Background	3
3	Electrical Demand	4
3.1	New Electrical Loads.....	4
3.2	Removed Electrical Loads.....	4
3.3	Results.....	4
4	Metering	5
5	Energy Conservation Measures	5
5.1	Variable Frequency Drives.....	5
5.2	Motor Health Monitoring Systems.....	5
5.3	Motor Specification and Maintenance.....	5
5.4	LED Light Fixtures.....	6
6	Conclusion	6
Appendix A	Electrical Load List (New)	A-1
Appendix B	Electrical Load List (Removed)	B-1



1 Executive Summary

This report outlines the Project Energy Study that PBX Engineering has conducted for the proposed Berth 2 Shiploader Replacement project at Neptune Bulk Terminals Ltd. The purpose of the Project Energy Study is to:

- Calculate the estimated electrical demand of proposed new equipment and net change in electrical demand for Neptune Bulk Terminals Ltd.
- Identify Energy Conservation Measures (ECMs) concerning new equipment

The electrical energy demand is analyzed by comparing the electrical demand (calculated using the total kilowatt (kW) ratings and demand factors (%)) of both existing equipment to be removed, and new equipment added.

The worst-case electrical demand of newly added and deleted existing equipment are 4012kW and 2599kW respectively, resulting in a 1413kW increase overall. The typical electrical demand of new and deleted existing equipment are 3214kW and 1991kW respectively, resulting in an 1223kW increase overall.

Based on the estimated electrical demand increase, it was determined that no changes or upgrades to the incoming electrical service at Neptune Bulk Terminals are required.

Several ECMs will be employed to reduce overall energy consumption of new installed equipment. All motors will adhere to Neptune motor standards which requires premium efficiency motors, and for motors 200hp or larger, they will be installed complete with a Health Monitoring System. The Health Monitoring System consists of temperature sensors on motor bearings, temperature sensors on motor windings, and vibration sensors. If a motor's Health Monitoring System detects an unusual reading, an operator will be notified so that the motor can be investigated. Unusual readings may signal that a motor must be repaired, replaced, or that there is an operating condition causing the motor to perform sub optimally and potentially consuming excess power.

Larger motors, typically 150hp and above, will be fed from variable frequency drives (VFDs). VFDs allow motors to run at speeds less than 100%, which significantly reduces power consumption.

Additionally, all new lighting as part of the project will comprise of energy-efficient LEDs. The lighting will be automatically controlled via daylight sensors such that light fixtures will shut off when sufficient daylight is available.

To achieve metering, all motors will be fed from either starters or VFDs that are capable of monitoring current draw in amps. The amperages are trended over time and any anomalies trigger an alarm to operators in case investigation and/or maintenance is required.

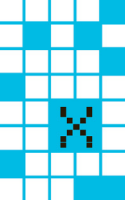
Additional metering points will be available using overcurrent relays installed at the 12.5kV distribution system. Each 12.5kV feeder in the Facility is equipped an SEL Feeder Protection Relay that is capable of monitoring current draw and total energy usage of the new equipment. These relays will provide cumulative energy metering at a higher level, rather than individual equipment.

2 Background

Neptune Bulk Terminals Ltd. (the Facility) is a bulk shipping terminal located on the North shore of Burrard Inlet in the Port of Vancouver. The Facility exports two products; coal through Berth 1 and potash through Berths 2 and 3.

The Berth 2 Ship Loader Replacement Project (the Project) will design, construct, and commission a new travelling slewing potash shiploader, marine structures, and approach conveyors to replace the two existing shiploaders and two conveyors at Berth 2.

Regarding changes to the Facility's electrical demand and energy consumption, there will be removal and additions of numerous electrical loads, primarily electric motors.



The Facility's incoming electrical service is a 69kV connection with BC Hydro, and power is distributed through the Facility with 12.5kV distribution. 12.5kV is then transformed to 480V, which is the voltage that feeds the majority of electrical equipment for the project.

3 Electrical Demand

This section outlines the calculations for estimated electrical demand in kilowatts (kW).

The electrical demand is considered for electrical loads being added or removed in the project to determine the total net change of electrical demand. Existing equipment not being removed is not included in these calculations.

Two demand factors (%) are used for calculated the electrical demand for each equipment; peak and typical. *Peak demand* provides insight into the anticipated worst-case scenario of electrical demand and power consumption (i.e., shiploader is travelling, slewing, and luffing, all conveyors are running at full capacity, all sump pumps are active, all lighting is active, etc.). *Typical demand* represents electrical demand during normal operation when power consumption is relatively steady state (conveyors running at near capacity, some lighting active, shiploader travelling intermittently, etc.).

Total connected load refers the combined ratings of all electrical loads.

Since various new electrical loads will not be used during normal operation (i.e. redundant motors, welding receptacles), the demand factors of such loads are considered 0% for the purposes of this report as they will not impact electrical demand or significantly impact energy usage. A power factor of 0.9 is assumed in all electrical demand calculations.

3.1 New Electrical Loads

New electrical loads primarily include electrical motors that support conveyor systems and the new shiploader. Additional new loads include lighting, welding receptacles, AC Units, electric heaters, and heat trace. The total connected load of new equipment is 5413kW. Refer to Appendix A for the full list of new electrical loads.

The largest new electrical loads are (6) 600hp conveyor motors.

The calculated peak electrical demand for new electrical loads is 4012kW, and the calculated typical electrical demand is 3214kW.

3.2 Removed Electrical Loads

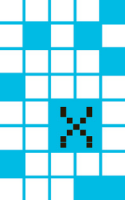
Removed electrical loads are similar to the types of new equipment being added. The largest electrical loads that will be removed are (4) 400hp motors. The total connected load for removed electrical loads is 2696kW. Refer to Appendix B for the full list of removed electrical loads.

The calculated peak electrical demand for removed electrical loads is 2599kW, and the calculated typical electrical demand is 1991kW.

3.3 Results

The following electrical demand was calculated:

- Increased Peak Electrical Demand: 1413kW
- Increased Typical Electrical Demand: 1223kW



Based on the estimated electrical demand increase and the Facility's incoming electrical service size, it was determined that no required change or upgrade to the incoming electrical service is required.

4 Metering

All VFDs will be capable of monitoring motor current draw (amps) and power consumption (kW) over time. For motors not fed from VFDs, their motor starters will contain overload relays which are also capable of monitoring current draw and power consumption over time. Both the VFDs and motor overload relays will be networked to the Facility's SCADA system so that abnormal readings trigger an alarm for operators to signal that investigation and/or maintenance is required.

Additionally, the project utilizes SEL Feeder Protection Relays at the 12.5kV distribution level, which are capable of monitoring energy usage of individual 12.5kV feeders. Most new equipment installed as part of the project will be fed from a new 12.5kV feeder, equipped with a new SEL relay. (2) of the new 600hp motors will be fed from existing electrical distribution, so their electrical consumption (MWh) can be viewed with an existing SEL relay.

5 Energy Conservation Measures

This section provides a list of energy conservation measures ECMs that will be utilized in the Project.

5.1 Variable Frequency Drives

Many of the new motors will be fed from VFDs. VFDs allow electric motors to run at less than 100% speed, which in turn reduces energy consumption. Since electric motors are often oversized to accommodate peak load requirements, VFDs allow motors to perform more optimally in situations where less output is required (i.e., lightly, or unloaded conveyor belt). Further, preventing motors from running at 100% speed when operating will reduce wear and tear, thus extending their lifetimes.

5.2 Motor Health Monitoring Systems

All motors 200hp or larger will be complete with a Health Monitoring System. The health monitoring systems consists of the following:

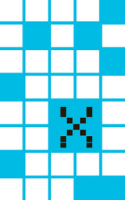
- temperature sensors on motor bearings
- temperature sensors on motor windings
- vibration sensors

If a motor's health monitoring system detects unusual readings, an operator will be notified so that the motor can be investigated. Abnormal readings from the above-mentioned sensors signal that the motor is not operating efficiently, and that it may need to be repaired, replaced, or that there is an operating condition causing the motor to perform sub optimally.

5.3 Motor Specification and Maintenance

The Facility's standard motor specification includes several requirements that contribute to the efficiency of motors, including:

- NEMA premium efficiency
- IEE 841-certification



NEMA premium efficiency and the IEEE 841-certified motors are more expensive than typical motors and specially constructed with thicker gauge copper windings and other improvements to reduce losses and increase efficiency. IEEE 841-certified motors have additional advantages such as increased insulation, which improves resistance to higher temperatures, and more robust frames that can withstand greater vibrations. These characteristics result in increased lifetime and efficiency of motors in rugged environments.

Through implementing the monitoring described in Section 4, the motor Health Monitoring System, and adherence to the standard motor specification, overall energy consumption will be reduced with efficient equipment and proactive maintenance.

5.4 LED Light Fixtures

All new light fixtures will be energy-efficient LED fixtures which are automatically controlled with photocells. When sufficient daylight is available, all light fixtures will automatically turn off. Occupancy sensors were not considered due to safety concerns and since the facility is operational 24 hours a day. Occupancy sensors may also potentially be unreliable in such dusty environments.

The lighting will be designed to achieve minimum light levels as per the appropriate safety regulations while avoiding significant over-lighting. For more information on the lighting design, refer to the Project & Environmental Review – Lighting report.

6 Conclusion

The Berth 2 Shiploader Replacement Project at Neptune Bulk Terminals will a substantial upgrade to the Facility and involves an increase to the total connected load and electrical demand. Implementation of the ECMs outlined in this report, which are all standard requirements for any new projects at the Facility, will ensure that the increased electrical demand is effectively monitored and mitigated.

If you have any questions or require further information or clarification, please feel free to contact the undersigned.

Best regards,

Written By:

PBX Engineering Ltd.

Patrick Wells EIT

Design Engineer

c. 604.690.6776

e. patrick.wells@pbxeng.com

Reviewed By:

PBX Engineering Ltd.

David Black P.Eng.

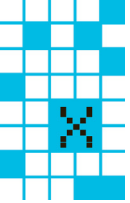
Senior Design Engineer

c. 604.314.6426

e. david.black@pbxeng.com

08/03/2022



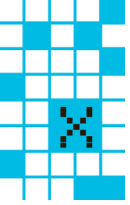


Appendix A Electrical Load List (New)

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EQUIPMENT TAG	EQUIPMENT DESCRIPTION	QNTY	EQUIPMENT CODE	EQUIPMENT TYPE	FED FROM	EXISTING/PROPOSED/DELETED	EQUIPMENT SPECIFICATION						PEAK DEMAND %	TYPICAL DEMAND %	CONNECTED LOAD		PEAK DEMAND		TYPICAL DEMAND		
							VOLTAGE	PH	RATING (HP)	RATING (kVA)	RATING (kW)	FLA (A)			STARTER/PROTECTION TYPE	CURRENT (A)	kW	CURRENT (A)	kW	CURRENT (A)	kW
	Total Proposed PROPOSED Load														7233.8	5412.7	5361.4	4011.6	4295.7	3214.2	
	MCC-211-21														1299.6	972.4	1284.9	961.4	1028.5	769.6	
	MCC-211-22														1299.6	972.4	1284.9	961.4	1028.5	769.6	
	MCC-211-23														1082.0	809.6	541.9	405.5	401.6	300.5	
	MCC-211-24														204.3	152.9	124.2	93.0	64.9	48.6	
	PDC-513-11														1282.0	959.3	641.0	479.6	512.8	383.7	
	MCC-514-21														130.0	97.3	65.0	48.6	0.0	0.0	
	MCC-514-23														63.4	47.4	61.6	46.1	40.4	30.2	
	MCC01A & 02A (Shiploader)														1872.9	1401.4	1357.8	1016.0	1219.0	912.1	
	MCC-211-21																				
MTR-243-01	Conveyor 243 Motor #1	1	MTR	Motor	MCC-211-21	PROPOSED	480	3	600			641.0	VFD	100%	80%	641.0	479.6	641.0	479.6	512.8	383.7
MTR-243-02	Conveyor 243 Motor #2	1	MTR	Motor	MCC-211-21	PROPOSED	480	3	600			641.0	VFD	100%	80%	641.0	479.6	641.0	479.6	512.8	383.7
BRK-243-01	Conveyor 243 Motor #1 Thruster Brake	1	MTR	Motor	MCC-211-21	PROPOSED	480	3	1			1.8		80%	80%	1.8	1.3	1.4	1.1	1.4	1.1
BRK-243-02	Conveyor 243 Motor #2 Thruster Brake	1	MTR	Motor	MCC-211-21	PROPOSED	480	3	1			1.8		80%	80%	1.8	1.3	1.4	1.1	1.4	1.1
MTR-243-04	Conveyor 243 Counter Weight Winch Motor	1	MTR	Motor	MCC-211-21	PROPOSED	480	3	10			14.0		0%	0%	14.0	10.5	0.0	0.0	0.0	0.0
	MCC-211-22																				
MTR-244-01	Conveyor 244 Motor #1	1	MTR	Motor	MCC-211-22	PROPOSED	480	3	600			641.0	VFD	100%	80%	641.0	479.6	641.0	479.6	512.8	383.7
MTR-244-02	Conveyor 244 Motor #2	1	MTR	Motor	MCC-211-22	PROPOSED	480	3	600			641.0	VFD	100%	80%	641.0	479.6	641.0	479.6	512.8	383.7
BRK-244-01	Conveyor 244 Motor #1 Thruster Brake	1	MTR	Motor	MCC-211-22	PROPOSED	480	3	1			1.8		80%	80%	1.8	1.3	1.4	1.1	1.4	1.1
BRK-244-02	Conveyor 244 Motor #2 Thruster Brake	1	MTR	Motor	MCC-211-22	PROPOSED	480	3	1			1.8		80%	80%	1.8	1.3	1.4	1.1	1.4	1.1
MTR-244-04	Conveyor 244 Counter Weight Winch Motor	1	MTR	Motor	MCC-211-22	PROPOSED	480	3	10			14.0				14.0	10.5	0.0	0.0	0.0	0.0
	MCC-211-23																				
	Strubber 240 Fan Motor	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	60			77.0		100%	80%	77.0	57.6	77.0	57.6	61.6	46.1
	Strubber 240 Re-circulation Pump	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	1			1.8		100%	80%	1.8	1.3	1.8	1.3	1.4	1.1
	Scrubber 241 Fan Motor	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	60			77.0		100%	80%	77.0	57.6	77.0	57.6	61.6	46.1
	Scrubber 241 Re-circulation Pump	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	1			1.8		100%	80%	1.8	1.3	1.8	1.3	1.4	1.1
	Booster Pump #1	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	100			124.0		0%	0%	124.0	92.8	0.0	0.0	0.0	0.0
	Booster Pump #2	1	MTR	Motor	MCC-211-23	PROPOSED	480	3	100			124.0		0%	0%	124.0	92.8	0.0	0.0	0.0	0.0
	Cathodic Protection System	1			MCC-211-23	PROPOSED	480	3				80.0		100%	80%	80.0	59.9	80.0	59.9	64.0	47.9
	HVAC Unit	1	HVAC	HVAC	MCC-211-23	PROPOSED	480	3				56.0		100%	60%	56.0	41.9	56.0	41.9	33.6	25.1
	HVAC Unit	1	HVAC	HVAC	MCC-211-23	PROPOSED	480	3				56.0		0%	0%	56.0	41.9	0.0	0.0	0.0	0.0
	HVAC Unit	1	HVAC	HVAC	MCC-211-23	PROPOSED	480	3				56.0		100%	60%	56.0	41.9	56.0	41.9	33.6	25.1
	HVAC Unit	1	HVAC	HVAC	MCC-211-23	PROPOSED	480	3				56.0		0%	0%	56.0	41.9	0.0	0.0	0.0	0.0
LT-254-23A	480V/208V Lighting TX	1	LT	Lighting Transformer	MCC-211-23	PROPOSED	480	3		150		180.4		80%	80%	180.4	135.0	144.3	108.0	144.3	108.0
WLD-242-01	60A Receptacle	1	REC	Receptacle	MCC-211-23	PROPOSED	480	3				48.0		100%	0%	48.0	35.9	48.0	35.9	0.0	0.0
WLD-242-02	60A Receptacle	1	REC	Receptacle	MCC-211-23	PROPOSED	480	3				48.0		0%	0%	48.0	35.9	0.0	0.0	0.0	0.0
WLD-243-03	60A Receptacle	1	REC	Receptacle	MCC-211-23	PROPOSED	480	3				48.0		0%	0%	48.0	35.9	0.0	0.0	0.0	0.0
WLD-243-03	60A Receptacle	1	REC	Receptacle	MCC-211-23	PROPOSED	480	3				48.0		0%	0%	48.0	35.9	0.0	0.0	0.0	0.0

EQUIPMENT TAG	EQUIPMENT DESCRIPTION	QNTY	EQUIPMENT CODE	EQUIPMENT TYPE	FED FROM	EXISTING/PROPOSED/DELETED	EQUIPMENT SPECIFICATION							PEAK DEMAND %	TYPICAL DEMAND %	CONNECTED LOAD		PEAK DEMAND		TYPICAL DEMAND	
							VOLTAGE	PH	RATING (HP)	RATING (kVA)	RATING (kW)	FLA (A)	STARTER/PROTECTION TYPE			CURRENT (A)	kW	CURRENT (A)	kW	CURRENT (A)	kW
MCC-211-24																					
PMP-xxx-01	Berth 2 West Dock Pond 1	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		100%	60%	14.0	10.5	14.0	10.5	8.4	6.3
PMP-xxx-02	Berth 2 West Dock Pond 2	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		0%	0%	14.0	10.5	0.0	0.0	0.0	0.0
PMP-xxx-03	Berth 2 East Dock Pond 1	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		100%	60%	14.0	10.5	14.0	10.5	8.4	6.3
PMP-xxx-04	Berth 2 East Dock Pond 2	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		0%	0%	14.0	10.5	0.0	0.0	0.0	0.0
LT-254-24A	480V/208V Lighting TX	1	LT	Lighting Transformer	MCC-211-24	PROPOSED	480	3		25		30.1		80%	80%	30.1	22.5	24.1	18.0	24.1	18.0
LT-254-24B	480V/208V Lighting TX	1	LT	Lighting Transformer	MCC-211-24	PROPOSED	480	3		25		30.1		80%	80%	30.1	22.5	24.1	18.0	24.1	18.0
LT-254-24C	Heat Trace Panel	1	LT	Lighting Transformer	MCC-211-24	PROPOSED	480	3		50		60.1		80%	0%	60.1	45.0	48.1	36.0	0.0	0.0
	West Line Capstan	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		0%	0%	14.0	10.5	0.0	0.0	0.0	0.0
	East Line Capstan	1	MTR	Motor	MCC-211-24	PROPOSED	480	3	10			14.0		0%	0%	14.0	10.5	0.0	0.0	0.0	0.0
PDC-513-11																					
MTR-242-01	Conveyor 242 Motor #1	1	MTR	Motor	PDC-513-11	PROPOSED	480	3	600			641.0	VFD	100%	80%	641.0	479.6	641.0	479.6	512.8	383.7
MTR-242-02	Conveyor 242 Motor #2	1	MTR	Motor	PDC-513-11	PROPOSED	480	3	600			641.0	VFD	0%	0%	641.0	479.6	0.0	0.0	0.0	0.0
MCC-514-21																					
	B2 Surge Bin Gate HPU A	1	MTR	Motor	MCC-514-21	PROPOSED	480	3	50			65.0		100%	0%	65.0	48.6	65.0	48.6	0.0	0.0
	B2 Surge Bin Gate HPU A	1	MTR	Motor	MCC-514-21	PROPOSED	480	3	50			65.0		0%	0%	65.0	48.6	0.0	0.0	0.0	0.0
MCC-514-23																					
						PROPOSED															
BRK-242-01	Conveyor 242 Motor #1 Thruster Brake	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	1			1.8		100%	80%	1.8	1.3	1.8	1.3	1.4	1.1
BRK-242-02	Conveyor 242 Motor #2 Thruster Brake	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	1			1.8		0%	0%	1.8	1.3	0.0	0.0	0.0	0.0
MTR-242-03	Conveyor 242 Hydraulic Take-up HPU Motor	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	10			14.0		100%	60%	14.0	10.5	14.0	10.5	8.4	6.3
MTR-248-05	Sampler 248 Hoist	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	5			7.6		100%	0%	7.6	5.7	7.6	5.7	0.0	0.0
MTR-248-01	Sampler 248 Primary Sampler Drive Motor	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	20			27.0	VFD	100%	80%	27.0	20.2	27.0	20.2	21.6	16.2
MTR-248-02	Sampler 248 Feeder Belt Drive Motor	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	5			7.6	VFD	100%	80%	7.6	5.7	7.6	5.7	6.1	4.5
MTR-248-03	Sampler 248 Secondary Sampler Drive Motor	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	1			1.8	VFD	100%	80%	1.8	1.3	1.8	1.3	1.4	1.1
MTR-248-04	Sampler 248 Collector Drive Motor	1	MTR	Motor	MCC-514-23	PROPOSED	480	3	1			1.8	VFD	100%	80%	1.8	1.3	1.8	1.3	1.4	1.1
MCC01A																					
	Shiploader Lower Distribution TX	1	LT	Lighting Transformer	MCC01A	PROPOSED	480	3		25		30.1		80%	80%	30.1	22.5	24.1	18.0	24.1	18.0
	Lower Electrical Room HVAC 1	1	HVAC	HVAC	MCC01A	PROPOSED	480	3			35	42.1		75%	53%	42.1	31.5	31.6	23.6	22.1	16.5
	Lower Electrical Room HVAC 2	1	HVAC	HVAC	MCC01A	PROPOSED	480	3			35	42.1		75%	53%	42.1	31.5	31.6	23.6	22.1	16.5
	30A Welding Receptacle	1	REC	Receptacle	MCC01A	PROPOSED	480	3				24.0		0%	0%	24.0	18.0	0.0	0.0	0.0	0.0
	Boom Luff Pump A Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	40			52.0		80%	80%	52.0	38.9	41.6	31.1	41.6	31.1
	Boom Luff Pump B Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	40			52.0		80%	0%	52.0	38.9	41.6	31.1	0.0	0.0
	Take-up Shuttle Pump A Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	10			14.0		80%	80%	14.0	10.5	11.2	8.4	11.2	8.4
	Take-up Shuttle Pump B Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	10			14.0		80%	0%	14.0	10.5	11.2	8.4	0.0	0.0
	HPU Circulation Pump Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	5			7.6		80%	80%	7.6	5.7	6.1	4.5	6.1	4.5
	HPU Colling Fan Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	0.75			1.4		80%	80%	1.4	1.0	1.1	0.8	1.1	0.8
	Spout Change-Out Hoist Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	0.5			1.0		80%	0%	1.0	0.7	0.8	0.6	0.0	0.0
	Travel Rail Clamp A Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	2			2.6		70%	50%	2.6	1.9	1.8	1.4	1.3	1.0
	Travel Rail Clamp B Motor	1	MTR	Motor	MCC01A	PROPOSED	480	3	2			2.6		70%	50%	2.6	1.9	1.8	1.4	1.3	1.0



Appendix B Electrical Load List (Removed)

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EQUIPMENT TAG	EQUIPMENT DESCRIPTION	QNTY	EQUIPMENT CODE	EQUIPMENT TYPE	FED FROM	EXISTING/NEW/DELETED	EQUIPMENT SPECIFICATION						PEAK DEMAND %	TYPICAL DEMAND %	CONNECTED LOAD		PEAK DEMAND		TYPICAL DEMAND		
							VOLTAGE	PH	RATING (HP)	RATING (kVA)	RATING (kW)	FLA (A)			STARTER/PROTECTION TYPE	CURRENT (A)	kW	CURRENT (A)	kW	CURRENT (A)	kW
	Total Existing Load Deleted														3602.4	2695.5	3473.9	2599.4	2660.3	1990.6	
	PDC-513-11														1908.0	1427.7	1908.0	1427.7	1526.4	1142.1	
	MCC-514-21														14.0	10.5	14.0	10.5	0.0	0.0	
	MCC-514-22														125.0	93.5	125.0	93.5	100.0	74.8	
	MCC-201-21														782.1	585.2	734.3	549.4	589.7	441.2	
	MCC-201-22														539.1	403.4	500.9	374.8	397.7	297.6	
	MCC-211-21														109.1	81.6	99.7	74.6	25.5	19.1	
	MCC-214-21														125.1	93.6	92.1	68.9	21.0	15.7	
	PDC-513-11																				
	Conveyor C-12A	1	MTR	Motor	PDC-513-11	DELETED	480	3	400			477.0	VFD	100%	80.00%	477.0	356.9	477.0	356.9	381.6	285.5
	Conveyor C-12B	1	MTR	Motor	PDC-513-11	DELETED	480	3	400			477.0	VFD	100%	80.00%	477.0	356.9	477.0	356.9	381.6	285.5
	Conveyor C-9A	1	MTR	Motor	PDC-513-11	DELETED	480	3	400			477.0	VFD	100%	80.00%	477.0	356.9	477.0	356.9	381.6	285.5
	Conveyor C-9B	1	MTR	Motor	PDC-513-11	DELETED	480	3	400			477.0	VFD	100%	80.00%	477.0	356.9	477.0	356.9	381.6	285.5
	MCC-514-21																				
	B2 Surge Bin Gate HPU	1	MTR	Motor	MCC-514-21	DELETED	480	3	10			14.0		100%	0.00%	14.0	10.5	14.0	10.5	0.0	0.0
	MCC-514-22																				
	Scrubber 210 Fan	1	MTR	Motor	MCC-514-22	DELETED	480	3	100			124.0		100%	80.00%	124.0	92.8	124.0	92.8	99.2	74.2
	Scrubber 210 Re-circulating Pump	1	MTR	Motor	MCC-514-22	DELETED	480	3	0.5			1.0		100%	80.00%	1.0	0.7	1.0	0.7	0.8	0.6
	MCC-201-21																				
	Conveyor #11	1	MTR	Motor	MCC-201-21	DELETED	480	3	150			180.0		100%	80.00%	180.0	134.7	180.0	134.7	144.0	107.7
	Conveyor #10	1	MTR	Motor	MCC-201-21	DELETED	480	3	75			96.0		100%	80.00%	96.0	71.8	96.0	71.8	76.8	57.5
	WPSL Dock Pond Pump #2	1	MTR	Motor	MCC-201-21	DELETED	480	3	10			14.0		100%	60.00%	14.0	10.5	14.0	10.5	8.4	6.3
	Scrubber 240 Feeder Breaker	1	MTR	Motor	MCC-201-21	DELETED	480	3	60			77.0		100%	80.00%	77.0	57.6	77.0	57.6	61.6	46.1
	Scrubber 241 Feeder Breaker	1	MTR	Motor	MCC-201-21	DELETED	480	3	60			77.0		100%	80.00%	77.0	57.6	77.0	57.6	61.6	46.1
	480V Lighting Contactor	1	LJB	Lighting Junction Box	MCC-201-21	DELETED	480					48.0		80%	80.00%	48.0	35.9	38.4	28.7	38.4	28.7
	Scrubber Conveyor #9/#10	1	MTR	Motor	MCC-201-21	DELETED	480	3	60			77.0		100%	80.00%	77.0	57.6	77.0	57.6	61.6	46.1
	Cathodic Protection Feeder	1			MCC-201-21	DELETED	480	3				80.0		100%	80.00%	80.0	59.9	80.0	59.9	64.0	47.9
	Slew Drive East	1	MTR	Motor	MCC-201-21	DELETED	480	3	20			27.0		100%	60.00%	27.0	20.2	27.0	20.2	16.2	12.1
	Slew Drive West	1	MTR	Motor	MCC-201-21	DELETED	480	3	20			27.0		100%	60.00%	27.0	20.2	27.0	20.2	16.2	12.1
	Slew Brakes	1	MTR	Motor			480	3				12.0		60%	60.00%	12.0	9.0	7.2	5.4	7.2	5.4
	WPSL Dock Pond Pump #1	1	MTR	Motor	MCC-201-21	DELETED	480	3	10			14.0		0%	0.00%	14.0	10.5	0.0	0.0	0.0	0.0
	West Line Capstan	1	MTR	Motor	MCC-201-21	DELETED	480	3	7.5			11.0		0%	0.00%	11.0	8.2	0.0	0.0	0.0	0.0
	Lighting Transformer	1	LT	Lighting Transformer	MCC-201-21	DELETED	480	1		10		12.0		80%	80.00%	12.0	9.0	9.6	7.2	9.6	7.2
	Lighting Transformer	1	LT	Lighting Transformer	MCC-201-21	DELETED	480	1		25		30.1		80%	80.00%	30.1	22.5	24.1	18.0	24.1	18.0
	MCC-201-22																				
	480V Lighting Contactor	1	LJB	Lighting Junction Box	MCC-201-22	DELETED	480	3				24.0		80%	80.00%	24.0	18.0	19.2	14.4	19.2	14.4
	Scrubber Conveyor #12/#13	1	MTR	Motor	MCC-201-22	DELETED	480	3	60			77.0		100%	80.00%	77.0	57.6	77.0	57.6	61.6	46.1
	Dock Pond Pump #2	1	MTR	Motor	MCC-201-22	DELETED	480	3	10			14.0		100%	60.00%	14.0	10.5	14.0	10.5	8.4	6.3

