

# Insulation Resistance (Megger) Test Report Canadian Coast Guard CCGS Samuel Risley

<b>Canal Project No</b>	10008301	<b>Owner</b>	Canadian Coast Guard
<b>Testing Dates</b>	10/29 /2018 to 11/01/2018	<b>Installation</b>	CCGS Samuel Risley
<b>Location</b>	Parry Sound, ON	<b>Name of Tester</b>	Geordie Wall
<b>Instrument Type</b>	Fluke 1587	<b>Instrument ID</b>	E&I 064

Revision Log					
Rev	Description	Date (dd/mm/yy)	Prepared by	Reviewed by	Approved by
B	Preliminary Release for Review	11/15/2018	Eric Booth	Donald MacNearney	
1	As Completed onboard	11/1/2018	Geordie Wall	Eric Booth	

Canadian Coast Guard

Parry Sound, ON

Report Notes
Note 1) All 3 Phase (3 $\emptyset$ ) measurements are recorded as the lowest of the 3 phases at the time of test
Note 2) All 1 Phase (1 $\emptyset$ ) measurements are recorded as the lowest of the conductors at the time of test
Note 3) All DC measurements are recorded as the lowest of the Positive and Negative
Note 4) All readings taken with 110-550V Megger unless stated otherwise
Note 5) Recording of; 50V Test at 55 M $\Omega$ indicates a value greater than (>) 55M $\Omega$ (Top of Meter Scale) 110V Tests at 110 M $\Omega$ indicates a value greater than (>) 110M $\Omega$ (Top of Meter Scale) 250V Test at 275 M $\Omega$ indicates a value greater than (>) 275M $\Omega$ (Top of Meter Scale) 500V Test at 550 M $\Omega$ indicates a value greater than (>) 550M $\Omega$ (Top of Meter Scale)

## Shaft Generators, Ship Service Generators & Shore Connection

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 161-603-3 of 8

**WARNING: Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. In order to avoid damage to equipment slowly rotate Megger about ¼ turn. A low ohm reading indicates the presence of a load on the circuit. DISCONNECT the load before continuing to crank the Megger or damage may result!**

Canadian Coast Guard

### Shaft Generator #1

Specs:	ound, ON	Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	<b>Cable:</b>	Phase 1 to Ground	800M	1G	1G	5GΩ	2GΩ
Frequency 60Hz		Phase 2 to Ground	800M	1G	1G	5GΩ	2GΩ
Power 1000kW		Phase 3 to Ground	800M	1G	1G	5GΩ	2GΩ
Amperage 1324A		Phase 1 to Phase 2	N/A	1G	1G	5GΩ	2GΩ
Phase 3		Phase 1 to Phase 3	N/A	1G	1G	5GΩ	2GΩ
Cable 3x1c#750		Phase 2 to Phase 3	N/A	1G	1G	5GΩ	2GΩ
	<b>Generator:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
		Phase 1 to Ground	800M	1G	1G	5GΩ	2GΩ
		Phase 2 to Ground	800M	1G	1G	5GΩ	2GΩ
		Phase 3 to Ground	800M	1G	1G	5GΩ	2GΩ

### Shaft Generator #2

Specs:		Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	<b>Cable:</b>	Phase 1 to Ground	800M	1G	1G	5GΩ	11GΩ
Frequency 60Hz		Phase 2 to Ground	800M	1G	1G	5GΩ	11GΩ
Power 1000kW		Phase 3 to Ground	800M	1G	1G	5GΩ	11GΩ
Amperage 1324A		Phase 1 to Phase 2	N/A	1G	1G	5GΩ	11GΩ
Phase 3		Phase 1 to Phase 3	N/A	1G	1G	5GΩ	11GΩ
Cable 3x1c#750		Phase 2 to Phase 3	N/A	1G	1G	5GΩ	11GΩ
	<b>Generator:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
		Phase 1 to Ground	800M	1G	1G	5GΩ	5GΩ
		Phase 2 to Ground	800M	1G	1G	5GΩ	5GΩ
		Phase 3 to Ground	800M	1G	1G	5GΩ	5GΩ

### Ship Service Generator #1

Specs:		Date of Test	9/7/2011	8/30/2012	8/17/2013		11/1/2018
Volts 600VAC	<b>Cable:</b>	Phase 1 to Ground	700M	1G	1G		5GΩ
Frequency 60Hz		Phase 2 to Ground	500M	1G	1G		5GΩ
Power 395kW		Phase 3 to Ground	500M	1G	1G		5GΩ
Amperage 524A		Phase 1 to Phase 2	N/A	1G	1G		5GΩ

Phase 3 Cable 3x1c#4/0	Phase 1 to Phase 3	N/A	1G	1G		5GΩ
	Phase 2 to Phase 3	N/A	1G	1G		5GΩ
<b>Generator:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013		11/1/2018
	Phase 1 to Ground	720M	1G			5GΩ
	Phase 2 to Ground	720M	1G			5GΩ
	Phase 3 to Ground	720M	1G			5GΩ

### Ship Service Generator #2

<b>Specs:</b> Volts 600VAC Frequency 60Hz Power 395kW Amperage 524A Phase 3 Cable 3x1c#4/0	<b>Cable:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013		11/1/2018
		Phase 1 to Ground	1.7G	1G	1G		5GΩ
		Phase 2 to Ground	1.4G	1G	1G		5GΩ
		Phase 3 to Ground	1.2G	1G	1G		5GΩ
		Phase 1 to Phase 2	N/A	1G	1G		5GΩ
		Phase 1 to Phase 3	N/A	1G	1G		5GΩ
		Phase 2 to Phase 3	N/A	1G	1G		5GΩ
<b>Generator:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013		11/1/2018	
	Phase 1 to Ground	1.7G	1G			5GΩ	
	Phase 2 to Ground	1.4G	1G			5GΩ	
	Phase 3 to Ground	1.2G	1G			5GΩ	

### Emergency Generator

<b>Specs:</b> Volts 600VAC Frequency 60Hz Power 140kW Amperage 186A Phase 3 Cable 3x1c#1/0	<b>Cable:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
		Phase 1 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ
		Phase 2 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ
		Phase 3 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ
		Phase 1 to Phase 2	N/A	2G	2G	3.8GΩ	2.2GΩ
		Phase 1 to Phase 3	N/A	2G	2G	3.8GΩ	2.2GΩ
		Phase 2 to Phase 3	N/A	2G	2G	3.8GΩ	2.2GΩ
<b>Generator:</b>	Date of Test	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018	
	Phase 1 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ	
	Phase 2 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ	
	Phase 3 to Ground	1.5G	2G	2G	3.8GΩ	2.2GΩ	

### Shore Connection

<b>Specs:</b> Volts 600VAC Frequency 60Hz Power 500kW Amperage 482A Phase 3 Cable 3x1c#4/0	<b>Primary Side</b>	Date of Test	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
		Phase 1 to Ground	400M	440M	440M	569GΩ	2.2GΩ
		Phase 2 to Ground	400M	420M	440M	569GΩ	2.2GΩ
		Phase 3 to Ground	400M	480M	440M	569GΩ	2.2GΩ
		Phase 1 to Phase 2	N/A				
		Phase 1 to Phase 3	N/A				
	Phase 2 to Phase 3	N/A					
<b>Secondary Side</b>	Date of Test	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018	
	Phase 1 to Ground	500M	4G	4G	5GΩ	2.2GΩ	
	Phase 2 to Ground	500M	4G	4G	5GΩ	2.2GΩ	
	Phase 3 to Ground	500M	4G	4G	5GΩ	2.2GΩ	

	Date of Test	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
<b>Shore Power Cable - Dockside</b> Phase 1 to Ground		N/A	N/A	N/A	N/A	238MΩ
Phase 2 to Ground		N/A	N/A	N/A	N/A	238MΩ
Phase 3 to Ground		N/A	N/A	N/A	N/A	238MΩ

## Ship Service Switchboard

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**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. In order to avoid damage to equipment slowly rotate Megger about ¼ turn. A low ohm reading indicates the presence of a load on the circuit. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

**Note:** After completion of readings, give to Chief Engineer for spreadsheet updating. Canadian Coast Guard

**Note: remove fuses under syncro compartment to clear ground detection circuit.**

Parry Sound, ON

### Emergency Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 209 amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 2x3C#1/0	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	2.2GΩ
Breaker # M1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ
<b>Test Results</b>	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ

### 600 Volt Non-Essential MCC #1 Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 173 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 3C#3/0	Phase 1 to Phase 2	11G	11G	11G	11GΩ	2.2GΩ
Breaker # M2	Phase 1 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ

### 600 Volt Semi-Essential MCC #2 Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 159 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 3C#3/0	Phase 1 to Phase 2	11G	11G	11G	11GΩ	2.2GΩ

Breaker # M3	Phase 1 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ

### 120 Volt Semi-Essential distribution Centre Bus Feeder

**Specs:**

**Primary**

600 VAC  
 108 Amps  
 112.5 kVA  
 3C#1/0  
 M4

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	6G	5G	5G	11GΩ	2.2GΩ
Phase 2 to Ground	6G	5G	5G	11GΩ	2.2GΩ
Phase 3 to Ground	6G	5G	5G	11GΩ	2.2GΩ

**Secondary**

120 VAC  
 524A  
 3x3C#3/0

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	6G	5G	5G	11GΩ	2.2GΩ
Phase 2 to Ground	6G	5G	5G	11GΩ	2.2GΩ
Phase 3 to Ground	6G	5G	5G	11GΩ	2.2GΩ

### 240 Volt Non-Essential Distribution Centre #1 Bus Feeder

**Specs:**

**Primary**

600 VAC  
 217 Amps  
 225 kVA  
 3C#2/0  
 M5

**Note: Remove ground detection fuses & isolate voltmeter at secondary MCC**

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	9G	11G	11G	11GΩ	2.2GΩ
Phase 2 to Ground	9G	11G	11G	11GΩ	2.2GΩ
Phase 3 to Ground	9G	11G	11G	11GΩ	2.2GΩ

**Secondary**

240 VAC  
 542A  
 3x3C#3/0

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	9G	11G	11G	11GΩ	2.2GΩ
Phase 2 to Ground	9G	11G	11G	11GΩ	2.2GΩ
Phase 3 to Ground	9G	11G	11G	11GΩ	2.2GΩ

### 600 Volt Semi-Essential MCC #1 Bus Feeder

**Specs:**

Volts 600 VAC  
 Amps 146 Amps  
 HP  
 Cable Size 3C#2/0  
 Breaker # M6

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Phase 1 to Phase 2	N/A	11G	11G	11GΩ	2.2GΩ
Phase 1 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ
Phase 2 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ

### M7 Spare Bus Feeder (for Future Expansion)

### 600 Volt Non-Essential MCC #3 Bus Feeder

**Specs:**

Volts 600 VAC  
 Amps 200 Amps  
 HP  
 Cable Size 2x3C#1/0  
 Breaker # M8

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	5.6G	3.5G	4G	11GΩ	2.2GΩ
Phase 2 to Ground	5.6G	3.5G	4G	11GΩ	2.2GΩ
Phase 3 to Ground	5.6G	3.5G	4G	11GΩ	2.2GΩ
Phase 1 to Phase 2	N/A	11G	11G	11GΩ	2.2GΩ
Phase 1 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ
Phase 2 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ

### Steering Gear Pump #2 Port (System #1)

Specs:	Date	07/09/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.8G	4G	4G	11GΩ	2.2GΩ
Amps 17 Amps	Phase 2 to Ground	2.8G	4G	4G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	2.8G	4G	4G	11GΩ	2.2GΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	N/A		11GΩ	2.2GΩ
Breaker # M9	Phase 1 to Phase 3	N/A	N/A		11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	N/A		11GΩ	2.2GΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	4G	4G	11GΩ	2.2GΩ
	Phase 2 to Ground	11G	4G	4G	11GΩ	2.2GΩ
	Phase 3 to Ground	11G	4G	4G	11GΩ	2.2GΩ

### Steering Gear Pump #4 Stbd (System #2)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.8G	11G	11G	11GΩ	2.2GΩ
Amps 17 Amps	Phase 2 to Ground	2.8G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	2.8G	11G	11G	11GΩ	2.2GΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	2.2GΩ
Breaker # M10	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	3G	3G	11GΩ	2.2GΩ
	Phase 2 to Ground	11G	3G	3G	11GΩ	2.2GΩ
	Phase 3 to Ground	11G	3G	3G	11GΩ	2.2GΩ

### 240 Volt Non-Essential Distribution Centre #2 Bus Feeder

Note: Remove Ground Detection Fuse  
 Shut Off Volt Meter at MCC for Secondary

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Primary</b>						
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	2GΩ	2.2GΩ
Amps 72 Amps	Phase 2 to Ground	11G	11G	11G	2GΩ	2.2GΩ
HP 75 kVA	Phase 3 to Ground	11G	11G	11G	2GΩ	2.2GΩ
Cable Size 3C#2						
Breaker # M11						

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Secondary</b>						
Volts 240 VAC	Phase 1 to Ground	550M	5G	5G	550MΩ	550MΩ
Amps 180 Amps	Phase 2 to Ground	550M	5G	5G	550MΩ	550MΩ
HP	Phase 3 to Ground	550M	5G	5G	550MΩ	550MΩ
Cable Size 3C#4/0						

### 600 Volt Non-Essential MCC #2 Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 215 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 2x3C#1/0	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	2.2GΩ
Breaker # M12	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	2.2GΩ

### 600 Volt Essential MCC #1 Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 223 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 2x3C#1/0	Phase 1 to Phase 2	11G	11G	11G	11GΩ	2.2GΩ
Breaker # M13	Phase 1 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ

### 600 Volt Essential MCC #2 Bus Feeder

Specs:	Date	07/09/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Amps 230 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Cable Size 2x3C#1/0	Phase 1 to Phase 2	11G	11G	11G	11GΩ	2.2GΩ
Breaker # M14	Phase 1 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	11G	11G	11G	11GΩ	2.2GΩ

### 600 Volt Shaft Generator MCC Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.2G	2G	2G	11GΩ	2.2GΩ
Amps 995 Amps	Phase 2 to Ground	2.2G	2G	2G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	2.2G	2G	2G	11GΩ	2.2GΩ
Cable Size 2x1C#750	Phase 1 to Phase 2	2.2G	2G	2G	11GΩ	2.2GΩ
Breaker # M15	Phase 1 to Phase 3	2.2G	2G	2G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	2.2G	2G	2G	11GΩ	2.2GΩ

### 600 Volt Emergency MCC Bus Feeder

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	5G	5G	11GΩ	2.2GΩ
Amps 175 Amps	Phase 2 to Ground	11G	5G	5G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	5G	5G	11GΩ	2.2GΩ
Cable Size 2x3C#2/0	Phase 1 to Phase 2	N/A	5G	5G	11GΩ	2.2GΩ
Breaker # E5	Phase 1 to Phase 3	N/A	5G	5G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	5G	5G	11GΩ	2.2GΩ

### Steering Gear Pump #1 Port (System #1)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.8G	3.5G	3.5G	11GΩ	2.2GΩ
Amps 17 Amps	Phase 2 to Ground	2.8G	3.5G	3.5G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	2.8G	3.5G	3.5G	11GΩ	2.2GΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	3.5G	3.5G	11GΩ	2.2GΩ
Breaker # E3	Phase 1 to Phase 3	N/A	3.5G	3.5G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	3.5G	3.5G	11GΩ	2.2GΩ

Motor:

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	11G	11G	11GΩ	2.2GΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	2.2GΩ

Phase 3 to Ground	11G	11G	11G	11GΩ	2.2GΩ
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**Steering Gear Pump #3 Port (System #2)**

**Specs:**  
 Volts 600 VAC  
 Amps 17 Amps  
 HP  
 Cable Size 3C#12  
 Breaker # E4

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	3.5G	3.5G	11GΩ	2.2GΩ
Phase 2 to Ground	11G	3.5G	3.5G	11GΩ	2.2GΩ
Phase 3 to Ground	11G	3.5G	3.5G	11GΩ	2.2GΩ
Phase 1 to Phase 2	N/A	3.5G	3.5G	11GΩ	2.2GΩ
Phase 1 to Phase 3	N/A	3.5G	3.5G	11GΩ	2.2GΩ
Phase 2 to Phase 3	N/A	3.5G	3.5G	11GΩ	2.2GΩ

**Motor:**

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	2.8G	3G	11GΩ	2.2GΩ
Phase 2 to Ground	11G	2.8G	3G	11GΩ	2.2GΩ
Phase 3 to Ground	11G	2.8G	3G	11GΩ	2.2GΩ

**EMERGENCY  
 120VAC TRANSFORMER**

**Specs:**  
**Primary**  
 Volts 600 VAC  
 Amps 43 Amps  
 HP 45kVA  
 Cable Size 3C#6  
 Breaker # E1  
**Secondary**  
 Volts 120VAC  
 Amps 217 Amps  
 HP  
 Cable Size 2x3C#2/0

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	2.8G	3.5G	3G	11GΩ	2.2GΩ
Phase 2 to Ground	2.8G	3.5G	3G	11GΩ	2.2GΩ
Phase 3 to Ground	2.8G	3.5G	3G	11GΩ	2.2GΩ

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	220M	220M	220M	220MΩ	220MΩ
Phase 2 to Ground	220M	220M	220M	220MΩ	220MΩ
Phase 3 to Ground	220M	220M	220M	220MΩ	220MΩ

**E6 Spare Bus Feeder (For Future Expansion)**

## 600 Volt Essential MCC #2

Dwg Ref: 161-603-4 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. In order to avoid damage to equipment slowly rotate Megger about ¼ turn. A low ohm reading indicates the presence of a load on the circuit. DISCONNECT the load before continuing to crank the Megger or damage may result!

### Sewage Handling Pump

Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, OI	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 2.7 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 2 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ

### Engine Room Extraction Fan #1 (2-speed)

Specs:	Date	9/7/2011	30/082012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 4.3 & 2 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-2	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	30/082012	8/17/2013	9/21/2017	11/1/2018
<b>Slow Speed</b>	Phase 1 to Ground	9G	11G	11G	11G	550MΩ
	Phase 2 to Ground	9G	11G	11G	11G	550MΩ
	Phase 3 to Ground	9G	11G	11G	11G	550MΩ
<b>High Speed</b>	Phase 1 to Ground	9G	11G	11G	11G	550MΩ
	Phase 2 to Ground	9G	11G	11G	11G	550MΩ
	Phase 3 to Ground	9G	11G	11G	11G	550MΩ

### Controllable Pitch Propeller Hydraulic Pump #1

Specs:	Date	9/7/2011	30/082012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	1.1GΩ
Amps 48 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	1.1GΩ
HP 50 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	1.1GΩ
Cable Size 3C#4	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	1.1GΩ
Breaker # <b>M13-3</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	1.1GΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	1.1GΩ

Motor:	Date	9/7/2011	30/082012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		2.5G	2.5G	2.5G	11GΩ	2.2GΩ
Phase 2 to Ground		2.5G	2.5G	2.5G	11GΩ	2.2GΩ
Phase 3 to Ground		2.5G	2.5G	2.5G	11GΩ	2.2GΩ

### Rescue Boat Miranda Davit Motor #1 - M13-4

Specs:	Date	9/7/2011	30/082012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	5G	5G	11GΩ	1.1GΩ
Amps	Phase 2 to Ground	11G	5G	5G	11GΩ	1.1GΩ
HP	Phase 3 to Ground	11G	5G	5G	11GΩ	1.1GΩ
Cable Size	Phase 1 to Phase 2	11G	5G	5G	11GΩ	1.1GΩ
Breaker # <b>M13-4</b>	Phase 1 to Phase 3	11G	5G	5G	11GΩ	1.1GΩ
	Phase 2 to Phase 3	11G	5G	5G	11GΩ	1.1GΩ
	Motor 1 -Ground	105G	5G	5G	56MΩ	550MΩ
	Motor 2 - Ground	105G	5G	5G	56MΩ	550MΩ
	Motor 3 - Ground	105G	5G	5G	56MΩ	550MΩ

### Spare

Breaker #

### Main Engine Pre-Lube Oil Pump #1 M13-6

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 3 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # <b>M13-6</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		3G	3.8G	3.8G	11GΩ	550MΩ
Phase 2 to Ground		3G	3.8G	3.8G	11GΩ	550MΩ
Phase 3 to Ground		3G	3.8G	3.8G	11GΩ	550MΩ

### Water Quality Pack M13-7

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 1.6 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 1 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # <b>M13-7</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Cable:</b> Phase 1 to Ground		3.5G	4G	4G	11GΩ	550MΩ
Phase 2 to Ground		3.5G	4G	4G	11GΩ	550MΩ
Phase 3 to Ground		3.5G	4G	4G	11GΩ	550MΩ

### Air Conditioning Unit #3 (Main Deck) M13-8

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	5G	5G	11GΩ	550MΩ
Amps 12.4 Amps	Phase 2 to Ground	11G	5G	5G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	5G	5G	11GΩ	550MΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	5G	5G	11GΩ	550MΩ
Breaker # M13-8	Phase 1 to Phase 3	N/A	5G	5G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	5G	5G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground		3.6G	2.3G	3G	2.2GΩ	550MΩ
Phase 2 to Ground		3.6G	2.3G	3G	2.2GΩ	550MΩ
Phase 3 to Ground		3.6G	2.3G	3G	2.2GΩ	550MΩ

### Main Engine Raw Water Pump #2 M13-9

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 32 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 30 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#6	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-9	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground		5G	11G	11G	1.6GΩ	550MΩ
Phase 2 to Ground		5G	11G	11G	1.6GΩ	550MΩ
Phase 3 to Ground		5G	11G	11G	1.6GΩ	550MΩ

### Lube Oil Purifier #2 M13-10

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		SPARE		11GΩ	SPARE
Amps 6.1 Amps	Phase 2 to Ground		SPARE		11GΩ	SPARE
HP 5 Hp	Phase 3 to Ground		SPARE		11GΩ	SPARE
Cable Size 3C#10	Phase 1 to Phase 2		SPARE		11GΩ	SPARE
Breaker # M13-10	Phase 1 to Phase 3		SPARE		11GΩ	SPARE
	Phase 2 to Phase 3		SPARE		11GΩ	SPARE

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground			SPARE		NC	NC
Phase 2 to Ground			SPARE		NC	NC
Phase 3 to Ground			SPARE		NC	NC

### Main Engine Air Supply Fan #1 (2-speed) M13-11

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018

Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 7.5 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-11	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Low Speed</b>	Phase 1 to Ground	N/A	2.3G	2G	2GΩ	550MΩ
	Phase 2 to Ground	N/A	2.3G	2G	2GΩ	550MΩ
	Phase 3 to Ground	N/A	2.3G	2G	2GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	N/A	3.5G	4G	2GΩ	550MΩ
	Phase 2 to Ground	N/A	3.5G	4G	2GΩ	550MΩ
	Phase 3 to Ground	N/A	3.5G	4G	2GΩ	550MΩ

### Engine Room Supply Fan #2 (2-speed) M13-12

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 8.6 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-12	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Low Speed</b>	Phase 1 to Ground	N/A	2.3G	2.3G	2GΩ	550MΩ
	Phase 2 to Ground	N/A	2.3G	2.3G	2GΩ	550MΩ
	Phase 3 to Ground	N/A	2.3G	2.3G	2GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	N/A	3.5G	3.5G	2GΩ	550MΩ
	Phase 2 to Ground	N/A	3.5G	3.5G	2GΩ	550MΩ
	Phase 3 to Ground	N/A	3.5G	3.5G	2GΩ	550MΩ

### Stbd Reduction Gear Standby Lube Oil Pump M13-13

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 11 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 10 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M13-13	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	2G	2.5G	2G	4.9GΩ	550MΩ
	Phase 2 to Ground	2G	2.5G	2G	4.9GΩ	550MΩ
	Phase 3 to Ground	2G	2.5G	2G	4.9GΩ	550MΩ

### Fuel Oil Transfer Pump #1 M13-14

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 6.7 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 5.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ

Breaker # <b>M13-14</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	3G	3.8G	3G	11GΩ	550MΩ
	Phase 2 to Ground	3G	3.8G	3G	11GΩ	550MΩ
	Phase 3 to Ground	3G	3.8G	3G	11GΩ	550MΩ

**Fuel Oil Centrifuge #2 M13-15**

<b>Specs:</b>	Volts 600 VAC					
	Amps 6.1 Amps					
	HP 5 Hp					
	Cable Size 3C#14					
Breaker # <b>M13-15</b>	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Ground	6G	2G	2G	4.2GΩ	550MΩ
	Phase 2 to Ground	6G	2G	2G	4.2GΩ	550MΩ
	Phase 3 to Ground	6G	2G	2G	4.2GΩ	550MΩ

**Air Compressor #2 (Engine Starting) M13-16**

<b>Specs:</b>	Volts 600 VAC					
	Amps 20.3 Amps					
	HP 15.9 Hp					
	Cable Size 3C#10					
Breaker # <b>M13-16</b>	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	2G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	2G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	2G	11G	11G	11GΩ	550MΩ
	Phase 1 to Ground	2G	5G	5G	11GΩ	550MΩ
	Phase 2 to Ground	2G	5G	5G	8.7GΩ	550MΩ
	Phase 3 to Ground	2G	5G	5G	8.7GΩ	550MΩ

## 600 Volt Essential MCC #1

Dwg Ref: 161-603-4 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. In order to avoid damage to equipment slowly rotate Megger about ¼ turn. A low ohm reading indicates the presence of a load on the circuit.  
**DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Controllable Pitch Propeller Hydraulic Motor

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, O	Phase 1 to Ground	2.7G	11G	11G	11GΩ	550MΩ
Amps 48 Amps	Phase 2 to Ground	2.7G	11G	11G	11GΩ	550MΩ
HP 50 Hp	Phase 3 to Ground	2.7G	11G	11G	11GΩ	550MΩ
Cable Size 3C#4	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M14-1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		2.7G	3.5G	3G	3.8GΩ	550MΩ
Phase 2 to Ground		2.7G	3.5G	3G	3.8GΩ	550MΩ
Phase 3 to Ground		2.7G	3.5G	3G	3.8GΩ	550MΩ

### General Service Pump (M14-2)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 32 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 30 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#6	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M14-2	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		11G	11G	11G	677MΩ	550MΩ
Phase 2 to Ground		11G	11G	11G	677MΩ	550MΩ
Phase 3 to Ground		11G	11G	11G	677MΩ	550MΩ

### Main Engine Pre-Lube Oil Pump #2

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018

Volts 600 VAC	Phase 1 to Ground	4.5G	11G	11G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	4.5G	11G	11G	11GΩ	550MΩ
HP 3 Hp	Phase 3 to Ground	4.5G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M14-3	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	4.5G	5G	5G	7.1GΩ	550MΩ
	Phase 2 to Ground	4.5G	5G	5G	7.1GΩ	550MΩ
	Phase 3 to Ground	4.5G	5G	5G	7.1GΩ	550MΩ

### Boiler RTC PUMP

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 1 Amp	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP .5 kW	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M14-4	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ

### Lube Oil Purifier #1 SPARE

<b>Specs:</b>	Date		8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		SPARE		11GΩ	SPARE
Amps 6.1 Amps	Phase 2 to Ground		SPARE		11GΩ	SPARE
HP 5 Hp	Phase 3 to Ground		SPARE		11GΩ	SPARE
Cable Size 3C#10	Phase 1 to Phase 2		SPARE		11GΩ	SPARE
Breaker # M14-5	Phase 1 to Phase 3		SPARE		11GΩ	SPARE
	Phase 2 to Phase 3		SPARE		11GΩ	SPARE

	Date		8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground		SPARE		11GΩ	SPARE
	Phase 2 to Ground		SPARE		11GΩ	SPARE
	Phase 3 to Ground		SPARE		11GΩ	SPARE

### Fuel Oil Transfer Pump #2

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	6.2G	11G	11G	11GΩ	550MΩ
Amps 6.7 Amps	Phase 2 to Ground	6.2G	11G	11G	11GΩ	550MΩ
HP 5.5 Hp	Phase 3 to Ground	6.2G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M14-6	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
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<b>Motor:</b>	Phase 1 to Ground	6.2G	4.5G	4.5G	7.1GΩ	550MΩ
	Phase 2 to Ground	6.2G	4.5G	4.5G	7.1GΩ	550MΩ
	Phase 3 to Ground	6.2G	4.5G	4.5G	7.1GΩ	550MΩ

### Fuel Oil Centrifuge #1

<b>Specs:</b> Volts 600 VAC Amps 6.1 Amps HP 5 Hp Cable Size 3C#14 Breaker # <b>M14-7</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	7.1G	11G	10G	11GΩ	550MΩ
	Phase 2 to Ground	7.1G	11G	10G	11GΩ	550MΩ
	Phase 3 to Ground	7.1G	11G	10G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	10G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	10G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	10G	11GΩ	550MΩ

<b>Motor:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	7.1G	11G	10G	1.7GΩ	550MΩ
	Phase 2 to Ground	7.1G	11G	10G	1.7GΩ	550MΩ
	Phase 3 to Ground	7.1G	11G	10G	1.7GΩ	550MΩ

### Foam Pump

<b>Specs:</b> Volts 600 VAC Amps 22 Amps HP 20 Hp Cable Size 3C#10 Breaker # <b>M14-8</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	4G	11G	11G	SPARE	SPARE
	Phase 2 to Ground	4G	11G	11G	SPARE	SPARE
	Phase 3 to Ground	4G	11G	11G	SPARE	SPARE
	Phase 1 to Phase 2	N/A	11G	11G	SPARE	SPARE
	Phase 1 to Phase 3	N/A	11G	11G	SPARE	SPARE
	Phase 2 to Phase 3	N/A	11G	11G	SPARE	SPARE

<b>Motor:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	4G	4.4G	4G	SPARE	SPARE
	Phase 2 to Ground	4G	4.4G	4G	SPARE	SPARE
	Phase 3 to Ground	4G	4.4G	4G	SPARE	SPARE

### Spare Breaker (For Future Expansion)

### Main Engine Raw Water Pump #1

<b>Specs:</b> Volts 600 VAC Amps 32 Amps HP 30 Hp Cable Size 3C#6 Breaker # <b>M14-10</b>	Date	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	5G	4G	4G	11GΩ	550MΩ
	Phase 2 to Ground	5G	4G	4G	11GΩ	550MΩ
	Phase 3 to Ground	5G	4G	4G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	N/A	4G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	N/A	4G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	N/A	4G	11GΩ	550MΩ

<b>Motor:</b>	Date	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	5G	4G	4G	931MΩ	550MΩ
	Phase 2 to Ground	5G	4G	4G	931MΩ	550MΩ
	Phase 3 to Ground	5G	4G	4G	931MΩ	550MΩ

### Port Reduction Gear Standby Lube Oil Pump

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
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Volts 600 VAC Amps 11.7 Amps HP 8.6 kW Cable Size 3C#14 Breaker # <b>M14-11</b>	Phase 1 to Ground	6G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	6G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	6G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground		6G	2.3G	2G	631MΩ	550MΩ
	Phase 2 to Ground		6G	2.3G	2G	631MΩ	550MΩ
	Phase 3 to Ground		6G	2.3G	2G	631MΩ	550MΩ

### Engine Room Extraction Fan #2 (2-speed)

<b>Specs:</b> Volts 600 VAC Amps 4.3 Amps HP 7.5 Hp Cable Size 2x3C#14 Breaker # <b>M14-12</b>		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2		N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3		N/A	11G	11G	11GΩ	550MΩ

		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Slow Speed</b>	Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ

### Stertube Lube Oil Pump #2

<b>Specs:</b> Volts 600 VAC Amps 1.6 Amps HP 1 Hp Cable Size 3C#14 Breaker # <b>M14-13</b>		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground		2.7G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground		2.7G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground		2.7G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2		N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3		N/A	11G	11G	11GΩ	550MΩ

		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor A</b>	Phase 1 to Ground		2.3G	5G	5G	11GΩ	550MΩ
<b>Motor A</b>	Phase 2 to Ground		2.3G	5G	5G	11GΩ	550MΩ
<b>Motor A</b>	Phase 3 to Ground		2.3G	5G	5G	11GΩ	550MΩ
<b>Motor B</b>	Phase 1 to Ground		N/A	5G	5G	11GΩ	550MΩ
<b>Motor B</b>	Phase 2 to Ground		N/A	5G	5G	11GΩ	550MΩ
<b>Motor B</b>	Phase 3 to Ground		N/A	5G	5G	11GΩ	550MΩ

### Engine Room Supply Fan #2 (2-speed)

<b>Specs:</b> Volts 600 VAC Amps 8.5 Amps		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ

HP 7.5 Hp Cable Size 2x3C#14 Breaker # <b>M14-14</b>	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

**Test Results**

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Slow Speed</b>	Phase 1 to Ground	11G	3.5G	4G	1.2GΩ	550MΩ
	Phase 2 to Ground	11G	3.5G	4G	1.2GΩ	550MΩ
	Phase 3 to Ground	11G	3.5G	4G	1.2GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	11G	2.5G	4G	1.2GΩ	550MΩ
	Phase 2 to Ground	11G	2.5G	4G	1.2GΩ	550MΩ
	Phase 3 to Ground	11G	2.5G	4G	1.2GΩ	550MΩ

**Main Engine Air Supply Fan #2 (2-speed)**

<b>Specs:</b> Volts 600 VAC Amps 7.5 Amps HP 7.5 Hp Cable Size 2x3C#14 Breaker # <b>M14-15</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	4.5G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	4.5G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	4.5G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Slow Speed</b>	Phase 1 to Ground	4.5G	4G	4G	689MΩ	550MΩ
	Phase 2 to Ground	4.5G	4G	4G	689MΩ	550MΩ
	Phase 3 to Ground	4.5G	4G	4G	689MΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	2.5G	2.3G	3G	1.2GΩ	550MΩ
	Phase 2 to Ground	2.5G	2.3G	3G	1.2GΩ	550MΩ
	Phase 3 to Ground	2.5G	2.3G	3G	1.2GΩ	550MΩ

## 600 Volt Shaft Generator MCC

Dwg Ref: 161-603-2 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. In order to avoid damage to equipment slowly rotate Megger about ¼ turn. A low ohm reading indicates the presence of a load on the circuit. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Forward Group Hydraulic Pump #1 Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, O	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 76 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 75 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#2	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # <b>SG-2</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		1350M	2.5G	3G	785MΩ	550MΩ
Phase 2 to Ground		1350M	2.5G	3G	785MΩ	550MΩ
Phase 3 to Ground		1350M	2.5G	3G	785MΩ	550MΩ

### Forward Group Hydraulic Pump #2

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 76 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 75 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#2	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # <b>SG-3</b>	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		1185M	1.2G	2G	878MΩ	550MΩ
Phase 2 to Ground		1185M	1.2G	2G	878MΩ	550MΩ
Phase 3 to Ground		1185M	1.2G	2G	878MΩ	550MΩ

### Forward Group Hydraulic Pump #3

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018

Volts 600 VAC Amps 76 Amps HP 75 Hp Cable Size 3C#2 Breaker # <b>SG-4</b>	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	1850M	1G	1G	521MΩ	550MΩ
	Phase 2 to Ground	1850M	1G	1G	521MΩ	550MΩ
	Phase 3 to Ground	1850M	1G	1G	521MΩ	550MΩ

### Towing Winch Cooling Pump

<b>Specs:</b> Volts 600 VAC Amps 2.1 Amps HP 1.5 Hp Cable Size 3C#14 Breaker # <b>SG-5</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	4.5G	7G	5G	3.2GΩ	550MΩ
	Phase 2 to Ground	4.5G	7G	5G	3.2GΩ	550MΩ
	Phase 3 to Ground	4.5G	7G	5G	3.2GΩ	550MΩ

### Stern Thruster Servo Pump

<b>Specs:</b> Volts 600 VAC Amps 6.1 Amps HP 5 Hp Cable Size 3C#14 Breaker # <b>SG-6</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	3.4G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	3.4G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	3.4G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b>	Phase 1 to Ground	3.4G	7G	5G	9GΩ	550MΩ
	Phase 2 to Ground	3.4G	7G	5G	9GΩ	550MΩ
	Phase 3 to Ground	3.4G	7G	5G	9GΩ	550MΩ

### Bow Thruster Hydraulic Control Pump

<b>Specs:</b> Volts 600 VAC Amps 11 Amps HP 10 Hp Cable Size 3C#14 Breaker # <b>SG-7</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
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<b>Motor:</b>	Phase 1 to Ground	2.5G	3G	2 G	1.1GΩ	550MΩ
	Phase 2 to Ground	2.5G	3G	2 G	1.1GΩ	550MΩ
	Phase 3 to Ground	2.5G	3G	2 G	1.1GΩ	550MΩ

### Aft Group Hydraulic Pump #1

<b>Specs:</b> Volts 600 VAC Amps 76 Amps HP 75 Hp Cable Size 3C#2 Breaker # <b>SG-8</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Motor:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	2.3G	3.5G	3G	2.1GΩ	550MΩ
	Phase 2 to Ground	2.3G	3.5G	3G	2.1GΩ	550MΩ
	Phase 3 to Ground	2.3G	3.5G	3G	2.1GΩ	550MΩ

### Aft Group Hydraulic Pump #2

<b>Specs:</b> Volts 600 VAC Amps 76 Amps HP 75 Hp Cable Size 3C#2 Breaker # <b>SG-9</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Motor:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	2.9G	2.5G	2.5G	2.4GΩ	550MΩ
	Phase 2 to Ground	2.9G	2.5G	2.5G	2.4GΩ	550MΩ
	Phase 3 to Ground	2.9G	2.5G	2.5G	2.4GΩ	550MΩ

### Towing Winch Hydraulic Pump #1

<b>Specs:</b> Volts 600 VAC Amps 145 Amps HP 150 Hp Cable Size 3C#4/0 Breaker # <b>SG-10</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	1975M	2.1G	2G	328MΩ	550MΩ
	Phase 2 to Ground	1975M	2.1G	2G	328MΩ	550MΩ
	Phase 3 to Ground	1975M	2.1G	2G	328MΩ	550MΩ
	Phase 1 to Phase 2	N/A	2.1G	2G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	2.1G	2G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	2.1G	2G	11GΩ	550MΩ

### Towing Winch Hydraulic Pump #2

<b>Specs:</b> Volts 600 VAC Amps 145 Amps HP 150 Hp Cable Size 3C#4/0 Breaker # <b>SG-11</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
	Phase 1 to Ground	2.5G	1.8G	2G	245MΩ	550MΩ
	Phase 2 to Ground	2.5G	1.8G	2G	245MΩ	550MΩ
	Phase 3 to Ground	2.5G	1.8G	2G	245MΩ	550MΩ
	Phase 1 to Phase 2	N/A	1.8G	2G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	1.8G	2G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	1.8G	2G	11GΩ	550MΩ

### Towing Winch Hydraulic Control Pump

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	252MΩ	550MΩ
Amps 22 Amps	Phase 2 to Ground	11G	11G	11G	252MΩ	550MΩ
HP 20 Hp	Phase 3 to Ground	11G	11G	11G	252MΩ	550MΩ
Cable Size 3C#10	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # SG-12	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		4.6G	3.3G	4G	2GΩ	550MΩ
Phase 2 to Ground		4.6G	3.3G	4G	2GΩ	550MΩ
Phase 3 to Ground		4.6G	3.3G	4G	2GΩ	550MΩ

### Buoy Handling Crane

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.5G	1G	2G	4.6GΩ	550MΩ
Amps 366 Amps	Phase 2 to Ground	2.5G	1G	2G	4.6GΩ	550MΩ
HP	Phase 3 to Ground	2.5G	1G	2G	4.6GΩ	550MΩ
Cable Size 2x3C#3/0	Phase 1 to Phase 2	N/A	1G		11GΩ	550MΩ
Breaker # SG-13	Phase 1 to Phase 3	N/A	1G		11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	1G		11GΩ	550MΩ

### Cargo Hold Heaters

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Amps	Phase 1 to Ground	2.4M	4.1G	5G	2.8GΩ	550MΩ
Breaker # SG-16	Phase 2 to Ground	2.4M	4.1G	5G	2.8GΩ	550MΩ
	Phase 3 to Ground	2.4M	4.1G	5G	2.8GΩ	550MΩ

### Towing Pins Hyd Pump

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Breaker # SG-15	Phase 1 to Ground	5.5G	3.5G	3.5G	4.6GΩ	550MΩ
	Phase 2 to Ground	5.5G	3.5G	3.5G	4.6GΩ	550MΩ
	Phase 3 to Ground	5.5G	3.5G	3.5G	4.6GΩ	550MΩ

### Stern Thruster Breaker

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600	Phase 1 to Ground	530M	100M	100M	11GΩ	2.2GΩ
Breaker #	Phase 2 to Ground	530M	100M	100M	11GΩ	2.2GΩ
	Phase 3 to Ground	530M	100M	100M	11GΩ	2.2GΩ

Motor:	Date	8/30/2012	8/17/2013	9/21/2017	11/1/2018	
Phase 1 to Ground		530M	100M	50M	2GΩ	2.2GΩ
Phase 2 to Ground		530M	100M	50M	2GΩ	2.2GΩ
Phase 3 to Ground		530M	100M	50M	2GΩ	2.2GΩ

## 600 Volt Emergency MCC

Dwg Ref: 161-603-4 of 8

**WARNING: Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. DISCONNECT the load before continuing to crank the Megger or damage may result!**

### Ice Breaking Siren Compressor M

Specs:

Parry Sound, C		Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		3G	3.5G	3G	11GΩ	550MΩ
Amps 14.5 Amps	Phase 2 to Ground		3G	3.5G	3G	11GΩ	550MΩ
HP 15 kVA	Phase 3 to Ground		3G	3.5M	3G	11GΩ	550MΩ

Cable Size 3C#12

Breaker # E2-1

Secondary		Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Volts 440 VAC	Phase 1 to Ground		2M	3.5G	3G	59.6MΩ	550MΩ
HP 13.5 kVA	Phase 2 to Ground		2M	3.5G	3G	59.6MΩ	550MΩ
Cable Size 3C#8	Phase 3 to Ground		2M	3.5G	3G	59.6MΩ	550MΩ

Breaker # E2-1A

### Whistle Compressor

Specs:		Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		7.4G	5G	5G	5.3MΩ	550MΩ
Amps 9 Amps	Phase 2 to Ground		7.4G	5G	5G	5.3MΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground		7.4	5G	5G	5.3MΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2		7.4G	5G	5G	5.3MΩ	550MΩ
Breaker # E2-2	Phase 1 to Phase 3		7.4G	5G	5G	5.3MΩ	550MΩ
	Phase 2 to Phase 3		7.4G	5G	5G	5.3MΩ	550MΩ

### Emergency Generator Radiator Fan

Specs:		Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
Amps 2.7 Amps	Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
HP 2 Hp	Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ

Cable Size 3C#14

Breaker # E2-3

### Emergency Fire Pump

Specs:		Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		4.7G	3.5G	4G	976MΩ	550MΩ

Amps 32 Amps  
HP 30 Hp  
Cable Size 3C#6  
Breaker # E2-4

Phase 2 to Ground	4.7G	3.5G	4G	976MΩ	550MΩ
Phase 3 to Ground	4.7G	3.5G	4G	976MΩ	550MΩ

### Bilge Pump

Specs:  
Volts 600 VAC  
Amps 32 Amps  
HP 30 Hp  
Cable Size 3C#6  
Breaker # E2-5

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 2		11G	11G	11GΩ	550MΩ
Phase 1 to Phase 3		11G	11G	11GΩ	550MΩ
Phase 2 to Phase 3		11G	11G	11GΩ	550MΩ

**Motor:**

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	6.6G	6.5G	6.5G	8.1GΩ	550MΩ
Phase 2 to Ground	6.6G	6.5G	6.5G	8.1GΩ	550MΩ
Phase 3 to Ground	6.6G	6.5G	6.5G	8.1GΩ	550MΩ

### Air Compressor #1 (Engine Starting)

Specs:  
Volts 600 VAC  
Amps 18 Amps  
HP 16 Hp  
Cable Size 3C#10  
Breaker # E2-6

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 2	11G	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 3	11G	11G	11G	11GΩ	550MΩ
Phase 2 to Phase 3	111G	11G	11G	11GΩ	550MΩ

**Motor:**

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	1.8G	7G	1.8G	3.4GΩ	550MΩ
Phase 2 to Ground	1.8G	7G	1.8G	3.4GΩ	550MΩ
Phase 3 to Ground	1.8G	7G	1.8G	3.4GΩ	550MΩ

### Searchlight #1

Specs:  
Volts 600 VAC  
Amps 1.7 Amps  
HP 1 kW  
Cable Size 3C#14  
Breaker # E2-10

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	4.6G	5G	5G	11GΩ	550MΩ
Phase 2 to Ground	4.6G	5G	5G	11GΩ	550MΩ
Phase 3 to Ground	4.6G	5G	5G	11GΩ	550MΩ
Phase 1 to Phase 2		5G	5G	11GΩ	550MΩ
Phase 1 to Phase 3		5G	5G	11GΩ	550MΩ
Phase 2 to Phase 3		5G	5G	11GΩ	550MΩ

### Emergency Fuel Oil Transfer Pump

Specs:  
Volts 600 VAC  
Amps 2.1 Amps  
HP 1.5 Hp  
Cable Size 3C#14  
Breaker # E2-11

Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	3.6G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	3.6G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	3.6G	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground		3.6G	3.5G	3.5G	11GΩ	550MΩ
Phase 2 to Ground		3.6G	3.5G	3.5G	11GΩ	550MΩ
Phase 3 to Ground		3.6G	3.5G	3.5G	11GΩ	550MΩ

**Emergency Generator Compartment Supply Fan**

Specs:	Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 1.1 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP .75 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # E2-12	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	Date	9/7/2011	30/08.2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ

**Spare Breaker (For Future Expansion)**

## 600 Volt Semi-Essential MCC #1

Dwg Ref: 161-603-5 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. .  
**DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Main Engine Pre-Lube Oil Pump # Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, OI	Phase 1 to Ground	3G	11G	11G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	3G	11G	11G	11GΩ	550MΩ
HP 3 Hp	Phase 3 to Ground	3G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
<b>Motor:</b>	Phase 1 to Ground	3G	7.3G	6G	11GΩ	550MΩ
	Phase 2 to Ground	3G	7.3G	6G	11GΩ	550MΩ
	Phase 3 to Ground	3G	7.3G	6G	11GΩ	550MΩ

### Air Conditioning Unit #1

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	6.6G	5G	6G	11GΩ	550MΩ
Amps 7.5 Amps	Phase 2 to Ground	6.6G	5G	6G	11GΩ	550MΩ
HP 3 HP	Phase 3 to Ground	6.6G	5G	6G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	5G	6G	11GΩ	550MΩ
Breaker # M6-2	Phase 1 to Phase 3	N/A	5G	6G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	5G	6G	11GΩ	550MΩ

### Air Conditioning Compressor Cooling Pump #1

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 11 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-3	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground		11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground		11G	11G	11G	11GΩ	550MΩ

### Reverse Osmosis Water Maker (Single Phase Load)

Specs:	Date	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	SPARE		LOCKED OUT	LOCKED OUT
Amps 14 Amps	Phase 2 to Ground	SPARE		LOCKED OUT	LOCKED OUT
HP 8 Hp	Phase 3 to Ground	SPARE		LOCKED OUT	LOCKED OUT
Cable Size 3C#12	Phase 1 to Phase 2	SPARE		LOCKED OUT	LOCKED OUT
Breaker # M6-4	Phase 1 to Phase 3	SPARE		LOCKED OUT	LOCKED OUT
	Phase 2 to Phase 3	SPARE		LOCKED OUT	LOCKED OUT

### Accommodation Supply Fan #2 (2-speed)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 2.7 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 2 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-5	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Slow Speed</b>	Phase 1 to Ground	2.2G	3G	3G	2.6GΩ	550MΩ
	Phase 2 to Ground	2.2G	3.2G	3G	2.6GΩ	550MΩ
	Phase 3 to Ground	2.2G	3.2G	3G	2.6GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	2.2G	3.9G	4G	2.6GΩ	550MΩ
	Phase 2 to Ground	2.2G	3.9G	4G	2.6GΩ	550MΩ
	Phase 3 to Ground	2.2G	3.9G	4G	2.6GΩ	550MΩ

### Accommodation Supply Fan #3 (2-speed)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	3G	11G	11G	11GΩ	550MΩ
Amps 2.7 Amps	Phase 2 to Ground	3G	11G	11G	11GΩ	550MΩ
HP 2 Hp	Phase 3 to Ground	3G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-6	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Slow Speed</b>	Phase 1 to Ground	3G	3.9G	4G	2.6GΩ	550MΩ
	Phase 2 to Ground	3G	3.9G	4G	2.6GΩ	550MΩ
	Phase 3 to Ground	3G	3.9G	4G	2.6GΩ	550MΩ
<b>High Speed</b>	Phase 1 to Ground	3G	3.8G	4G	2.6GΩ	550MΩ
	Phase 2 to Ground	3G	3.8G	4G	2.6GΩ	550MΩ
	Phase 3 to Ground	3G	3.8G	4G	2.6GΩ	550MΩ

### Domestic Fresh Water Pressure Pump #2

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 1.8 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 11.2 kW	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-7	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
<b>Motor:</b> Phase 1 to Ground	10G	9G	9G	11GΩ	550MΩ
Phase 2 to Ground	10G	9G	9G	11GΩ	550MΩ
Phase 3 to Ground	10G	9G	9G	11GΩ	550MΩ

**Controllable Pitch Propeller Hydraulic Pump #3**

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 48 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 50 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#4	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M6-8	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Motor:</b>	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	2.3G	2.5G	2.5G	2.3GΩ	550MΩ
Phase 2 to Ground	2.3G	2.5G	2.5G	2.3GΩ	550MΩ
Phase 3 to Ground	2.3G	2.5G	2.5G	2.3GΩ	550MΩ
Phase 1 to Phase 2	2.3G	2.5G	2.5G	2.3GΩ	550MΩ

**Spare Breaker (For Future Expansion)**

**Searchlight #2**

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.5G	9G	7G	6.8GΩ	550MΩ
Amps 1.7 Amps	Phase 2 to Ground	2.5G	9G	7G	6.8GΩ	550MΩ
HP 1 kW	Phase 3 to Ground	2.5G	9G	7G	6.8GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	2.5G	9G	7G	6.8GΩ	550MΩ
Breaker # M6-10	Phase 1 to Phase 3	2.5G	9G	7G	6.8GΩ	550MΩ
	Phase 2 to Phase 3	2.5G	9G	7G	6.8GΩ	550MΩ

## 600 Volt Semi-Essential MCC #2

Dwg Ref: 161-603-5 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. DISCONNECT the load before continuing to crank the Megger or damage may result!

### Main Engine Pre-Lube Oil Pump #2 Canadian Coast Guard

Specs:	Date	07/09/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, OI	Phase 1 to Ground	11G	4G	4G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	11G	4G	4G	11GΩ	550MΩ
HP 3 Hp	Phase 3 to Ground	11G	4G	4G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	N/A		11GΩ	550MΩ
Breaker # M3-1	Phase 1 to Phase 3	N/A	N/A		11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	N/A		11GΩ	550MΩ
<b>Motor:</b>	Phase 1 to Ground	2G	4G	4G	11GΩ	550MΩ
	Phase 2 to Ground	2G	4G	4G	11GΩ	550MΩ
	Phase 3 to Ground	2G	4G	4G	11GΩ	550MΩ

### Galley Exhaust Fan (M3-2)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 5.2 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 4 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-2	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
<b>Motor:</b>	Phase 1 to Ground	2.5G	4.3G	4.3G	7.1GΩ	550MΩ
	Phase 2 to Ground	2.5G	4.3G	4.3G	7.1GΩ	550MΩ
	Phase 3 to Ground	2.5G	4.3G	4.3G	7.1GΩ	550MΩ

### Air Conditioning Unit #2 (M3-3)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	4G	11G	11G	168MΩ	550MΩ
Amps 12.4 Amps	Phase 2 to Ground	4G	11G	11G	168MΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	4G	11G	11G	340MΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	268MΩ	550MΩ
Breaker # M3-3	Phase 1 to Phase 3	N/A	11G	11G	268MΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	268MΩ	550MΩ

### Air Conditioning Compressor Cooling Pump #2 (M3-4)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 11Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 7.5 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-4	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Phase 1 to Ground	3G	3.9G	4G	11GΩ	550MΩ
	Phase 2 to Ground	3G	3.9G	4G	11GΩ	550MΩ
	Phase 3 to Ground	3G	3.9G	4G	11GΩ	550MΩ

### Accommodation Supply Fan #1 (2-speed) (M3-5)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 2.7 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 2 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 2x3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-5	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Slow Speed	Phase 1 to Ground	2.5G	2.3	2.5G	1.1GΩ	550MΩ
	Phase 2 to Ground	2.5G	2.3G	2.5G	1.1GΩ	550MΩ
	Phase 3 to Ground	2.5G	2.3G	2.5G	1.1GΩ	550MΩ
High Speed	Phase 1 to Ground	2.5G	2.5G	2.5G	2.1GΩ	550MΩ
	Phase 2 to Ground	2.5G	2.5G	2.5G	2.1GΩ	550MΩ
	Phase 3 to Ground	2.5G	2.5G	2.5G	2.1GΩ	550MΩ

### Controllable Pitch Propeller Hydraulic Pump #4 (M3-6)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	2.5G	11G	11GΩ	550MΩ
Amps 49 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 47 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#4	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-6	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor:	Phase 1 to Ground	2.4G	5.3G	2.8G	3.1GΩ	550MΩ
	Phase 2 to Ground	2.4G	5.3G	2.8G	3.1GΩ	550MΩ
	Phase 3 to Ground	2.4G	5.3G	2.8G	3.1GΩ	550MΩ

### Toilet Exhaust Fan (M3-7)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 3 Hp	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-7	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Motor:</b>	Phase 1 to Ground	2.5G	4G	3G	7.1GΩ	550MΩ
	Phase 2 to Ground	2.5G	4G	3G	7.1GΩ	550MΩ
	Phase 3 to Ground	2.5G	4G	3G	7.1GΩ	550MΩ

**Domestic Fresh Water Pressure Pump #1 (M3-8)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	1.1G	11G	11G	11GΩ	550MΩ
Amps 1.4 Amps	Phase 2 to Ground	1.1G	11G	11G	11GΩ	550MΩ
HP 1.12 Hp	Phase 3 to Ground	1.1G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M3-8	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

<b>Motor:</b>	Phase 1 to Ground	1.3G	11G	11G	8.1GΩ	550MΩ
	Phase 2 to Ground	1.3G	11G	11G	8.1GΩ	550MΩ
	Phase 3 to Ground	1.3G	11G	11G	8.1GΩ	550MΩ

**Rescue Boat Miranda Davit Motor #2**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	11G	3.5G	5G	11GΩ	2.2GΩ
Amps	Phase 2 to Ground	11G	3.5G	5G	11GΩ	2.2GΩ
HP	Phase 3 to Ground	11G	3.5G	5G	11GΩ	2.2GΩ
Cable Size	Phase 1 to Phase 2	N/A	3.5G	5G	11GΩ	2.2GΩ
Breaker # M3-9	Phase 1 to Phase 3	N/A	3.5G	5G	11GΩ	2.2GΩ
	Phase 2 to Phase 3	N/A	3.5G	5G	11GΩ	2.2GΩ
	Motor 1 - Ground	N/A	300M	300M	268MΩ	550MΩ
	Motor 2 - Ground	N/A	300M	300M	268MΩ	550MΩ
	Motor 3 - Ground	N/A	300M	300M	268MΩ	550MΩ

**Spare Breaker (For Future Expansion)**

**Cathodic Protection (M3-11) SPARE**

<b>Specs:</b>	Date		8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground		11G	11G	SPARE	SPARE
Amps	Phase 2 to Ground		11G	11G	SPARE	SPARE
HP	Phase 3 to Ground		11G	11G	SPARE	SPARE
Cable Size	Phase 1 to Phase 2		11G	11G	SPARE	SPARE
Breaker # M3-11	Phase 1 to Phase 3		11G	11G	SPARE	SPARE
	Phase 2 to Phase 3		11G	11G	SPARE	SPARE

## 600 Volt Non-Essential MCC #1

Dwg Ref: 161-603-6 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Waste Oil Discharge (M2-1) Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, O	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 2.5 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 2 HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M2-1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ

### Oily Water Separator

#### Main Engine Pre-Heat Circulator Pump #1 (M2-3)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 0.34 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 1.5 HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M2-3	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	3.6G	3.5G	3.6G	11GΩ	550MΩ
	Phase 2 to Ground	3.6G	3.5G	3.6G	11GΩ	550MΩ
	Phase 3 to Ground	3.6G	3.5G	3.6G	11GΩ	550MΩ

#### Main Engine Pre-Heat Circulator Pump #2 (M2-4)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 0.34Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 1.5 HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ

Breaker # M2-4	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	1250M	1G	1G	11GΩ	550MΩ
	Phase 2 to Ground	1250M	1G	1G	11GΩ	550MΩ
	Phase 3 to Ground	1250M	1G	1G	11GΩ	550MΩ

**Main Engine Pre-Heater #1 (M2-5)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	1430M	3.8G	3.5G	11GΩ	550MΩ
Amps 16.1 Amps	Phase 2 to Ground	1430M	3.8G	3.5G	11GΩ	550MΩ
HP 15 KW	Phase 3 to Ground	1430M	3.8G	3.5G	11GΩ	550MΩ

**Main Engine Pre-Heater #2 (M2-6)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	4.8M	3.8G	3.5G	11GΩ	550MΩ
Amps 16.1 Amps	Phase 2 to Ground	4.8M	3.8G	3.5G	11GΩ	550MΩ
HP 15 KW	Phase 3 to Ground	4.8M	3.8G	3.5G	11GΩ	550MΩ

**Domestic Hot Water Calorifier #1 (M2-7)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 13.6 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ

**Main Engine Turning Gear #1 (M2-8)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 5.2 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 3.45KW	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	9G	3.5G	3G	4.9GΩ	550MΩ
	Phase 2 to Ground	9G	3.5G	3G	4.9GΩ	550MΩ
	Phase 3 to Ground	9G	3.5G	3G	4.9GΩ	550MΩ

**Domestic Fresh Water Transfer Pump (M2-9)**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 11 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 5.6 KW	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M2-9	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	3G	3.8G	3G	11GΩ	550MΩ
	Phase 2 to Ground	3G	3.8G	3G	11GΩ	550MΩ

Phase 3 to Ground	3G	3.8G	3G	11GΩ	550MΩ
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### Spare Breaker (For Future Expansion)

#### Humidifier #1 (M2-11)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	10G	3.5G	3.5G	5.3GΩ	550MΩ
Amps 10 Amps	Phase 2 to Ground	10G	4G	3.5G	5.3GΩ	550MΩ
HP	Phase 3 to Ground	10G	4G	3.5G	5.3GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	4G	3.5G	5.3GΩ	550MΩ
Breaker # M2-11	Phase 1 to Phase 3	N/A	4G	3.5G	5.3GΩ	550MΩ
	Phase 2 to Phase 3	N/A	4G	3.5G	5.3GΩ	550MΩ

#### Freezer Refrigeration Compressors (M2-12)

Specs:	Date	11G	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 4.2 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 1.5 HP	Phase 3 to Ground	N/A	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M2-12	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
<b>Motor 1:</b>	Phase 1 to Ground	11G	5G	5G	5.3GΩ	550MΩ
	Phase 2 to Ground	11G	5G	5G	5.3GΩ	550MΩ
	Phase 3 to Ground	11G	5G	5G	5.3GΩ	550MΩ
<b>Motor 2:</b>	Phase 1 to Ground	11G	5G	5G	5.6GΩ	550MΩ
	Phase 2 to Ground	11G	5G	5G	5.6GΩ	550MΩ
	Phase 3 to Ground	11G	5G	5G	5.6GΩ	550MΩ

### Spare Breaker (For Future Expansion)

#### Standby Main Engine Raw Water Pump (M2-14)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 32 Amp	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 30 HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#6	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M2-14	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
<b>Motor</b>	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ

## 600 Volt Non-Essential MCC #2

Dwg Ref: 161-603-6 of 8

**WARNING: Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. DISCONNECT the load before continuing to crank the Megger or damage may result!**

### M.E Preheat Circ Pump#3 Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, ON	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 0.34 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 1.5 HP	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-1	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	3.4G	2.6G	2.5G	11GΩ	550MΩ
	Phase 2 to Ground	3.4G	2.6G	2.5G	11GΩ	550MΩ
	Phase 3 to Ground	3.4G	2.6G	2.5G	11GΩ	550MΩ

### M.E Preheater #3 M12-2

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	7G	7G	6.8GΩ	550MΩ
Amps 16.1 Amps	Phase 2 to Ground	11G	7G	7G	6.8GΩ	550MΩ
HP 15 KW	Phase 3 to Ground	11G	7G	7G	6.8GΩ	550MΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	7G	7G	6.8GΩ	550MΩ
Breaker # M12-2	Phase 1 to Phase 3	N/A	7G	7G	6.8GΩ	550MΩ
	Phase 2 to Phase 3	N/A	7G	7G	6.8GΩ	550MΩ
Heater	Phase 1 to Ground	0	1G	1G	11GΩ	550MΩ
	Phase 2 to Ground	0	1G	1G	11GΩ	550MΩ
	Phase 3 to Ground	0	1G	1G	11GΩ	550MΩ

### M.E Turning Gear #2 M12-3

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Amps 5.2 Amps	Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
HP 3.45 KW	Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-3	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor	Phase 1 to Ground	3.5G	4.3G	4G	11GΩ	550MΩ
	Phase 2 to Ground	3.5G	4.3G	4G	11GΩ	550MΩ
	Phase 3 to Ground	3.5G	4.3G	4G	11GΩ	550MΩ

### Sewage Treatment Plant M12-4

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	2.6GΩ	550MΩ
Amps 5.2 Amps	Phase 2 to Ground	11G	11G	11G	2.6GΩ	550MΩ
HP	Phase 3 to Ground	11G	11G	11G	2.6GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-4	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

### Heater Circ Pump #1 M12-5 (Boiler)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	11G	11G	8GΩ	550MΩ
Amps 1.9 Amps	Phase 2 to Ground	11G	11G	11G	8GΩ	550MΩ
HP 1.5 HP	Phase 3 to Ground	11G	11G	11G	8GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-5	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor	Phase 1 to Ground	5G	11G	11G	11GΩ	550MΩ
	Phase 2 to Ground	5G	11G	11G	11GΩ	550MΩ
	Phase 3 to Ground	5G	11G	11G	11GΩ	550MΩ

### Spare

Breaker # M12-6

### Domestic H.W. Calorifier#2 M12-7

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	7.5G	11G	11G	11GΩ	550MΩ
Amps 13.6 Amps	Phase 2 to Ground	7.5G	11G	11G	11GΩ	550MΩ
HP 13.5 KW	Phase 3 to Ground	7.5G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-7	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

### F.W. Generator M12-8

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	11G	EQUIP		LOCKED OUT	LOCKED OUT
Amps 11 Amps	Phase 2 to Ground	11G	Removed		LOCKED OUT	LOCKED OUT
HP 8.5 KW	Phase 3 to Ground	11G			LOCKED OUT	LOCKED OUT
Cable Size 3C#14	Phase 1 to Phase 2	N/A			LOCKED OUT	LOCKED OUT
Breaker # M12-8	Phase 1 to Phase 3	N/A			LOCKED OUT	LOCKED OUT
	Phase 2 to Phase 3	N/A			LOCKED OUT	LOCKED OUT

### Engine Room Welder (Single Phase) M12-9

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	1250M	11G	11G	11GΩ	550MΩ

Amps	Phase 2 to Ground	1250M	11G	11G	11GΩ	550MΩ
HP	Phase 3 to Ground	N/A	11G	11G	11GΩ	550MΩ
Cable Size	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-9	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

**Humidifier #2 M12-10**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	3.6G	4.3G	4G	11GΩ	550MΩ
Amps 5.8 Amps	Phase 2 to Ground	3.6G	4.3G	4G	11GΩ	550MΩ
HP	Phase 3 to Ground	3.6G	4.3G	4G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	4.3G	4G	11GΩ	550MΩ
Breaker # M12-10	Phase 1 to Phase 3	N/A	4.3G	4G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	4.3G	4G	11GΩ	550MΩ

**Sanitary F/W Pressure Pump #1 M12-11**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600VAC	Phase 1 to Ground	1.5G	11G	11G	11GΩ	550MΩ
Amps 1.8 Amps	Phase 2 to Ground	1.5G	11G	11G	11GΩ	550MΩ
HP 1.12 KW	Phase 3 to Ground	1.5G	11G	11G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M12-11	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor	Phase 1 to Ground	11G	11G	11G	6.4GΩ	550MΩ
	Phase 2 to Ground	11G	11G	11G	6.4GΩ	550MΩ
	Phase 3 to Ground	11G	11G	11G	6.4GΩ	550MΩ

**Spare** Breaker # M12-12

## 600 Volt NoN-Essential MCC #3

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**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Potable Water Chlorinator Coast Guard

Specs:	Date	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
Volts Parry Sound, ON	Phase 1 to Ground	11G	4G	4G	11GΩ	550MΩ
Amps 0.34 Amps	Phase 2 to Ground	11G	4G	4G	11GΩ	550MΩ
HP 1.5 Hp	Phase 3 to Ground	11G	4G	4G	11GΩ	550MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	N/A		11GΩ	550MΩ
Breaker # M8-1	Phase 1 to Phase 3	N/A	N/A		11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	N/A		11GΩ	550MΩ
Motor	Phase 1 to Ground	3G	4G	4G	11GΩ	550MΩ
	Phase 2 to Ground	3G	4G	4G	11GΩ	550MΩ
	Phase 3 to Ground	3G	4G	4G	11GΩ	550MΩ

### M.E. Preheater #4 (M8-2)

Specs:	Date	9/7/2011	1/3/2013	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	2.3G	4G	4G	11GΩ	550MΩ
Amps 16.1 Amps	Phase 2 to Ground	2.3G	4G	4G	11GΩ	550MΩ
HP 15 KW	Phase 3 to Ground	2.3G	4G	4G	11GΩ	550MΩ
Cable Size 3C#12	Phase 1 to Phase 2	N/A	N/A		11GΩ	550MΩ
Breaker # M8-2	Phase 1 to Phase 3	N/A	N/A		11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	N/A		11GΩ	550MΩ

### Chain Locker Bilge Pump (M8-3)

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Volts 600 VAC	Phase 1 to Ground	.1M	11G	11G	11GΩ	550MΩ
Amps 3.9 Amps	Phase 2 to Ground	.1M	11G	11G	11GΩ	475MΩ
HP 3 Hp	Phase 3 to Ground	.1M	11G	11G	11GΩ	475MΩ
Cable Size 3C#14	Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Breaker # M8-3	Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
	Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Motor	Phase 1 to Ground	6.3M	500M	500M	11GΩ	550MΩ
	Phase 2 to Ground	6.3M	500M	500M	11GΩ	550MΩ
	Phase 3 to Ground	6.3M	500M	500M	11GΩ	550MΩ

### Lathe

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018

Volts 600 VAC  
 Amps 9 Amps  
 HP 7.5 Hp  
 Cable Size 3C#14  
 Breaker # M8-4

Phase 1 to Ground	1.5G	7G	7G	11GΩ	550MΩ
Phase 2 to Ground	1.5G	7G	7G	11GΩ	550MΩ
Phase 3 to Ground	1.5G	7G	7G	11GΩ	550MΩ
Phase 1 to Phase 2	N/A	7G	7G	11GΩ	550MΩ
Phase 1 to Phase 3	N/A	7G	7G	11GΩ	550MΩ
Phase 2 to Phase 3	N/A	7G	7G	11GΩ	550MΩ

**Electric Welder**

**Specs:**  
 Volts 600 VAC  
 Amps 36.8 Amps  
 Cable Size 3C#8  
 Breaker # M8-5

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	5.5G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	5.5G	11G	11G	11GΩ	550MΩ

**Spare**

Breaker # M8-6

**Spare**

Breaker # M8-7

**Washer / Dryer Transformer - Single Phase**

**Specs:**  
 Volts 600 VAC  
 Breaker # M8-8

Date	8/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	2.4G	2.5G	2.4G	11GΩ	550MΩ
Phase 2 to Ground	2.4G	2.5G	2.4G	11GΩ	550MΩ
Phase 3 to Ground	N/A	2.5G	2.4G	11GΩ	550MΩ

**Humidifier #3**

**Specs:**  
 Volts 600 VAC  
 Amps 5.8 Amps  
 Cable Size 3C#14  
 Breaker # M8-9

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	3.5G	3.5G	3.5G	11GΩ	550MΩ
Phase 2 to Ground	3.5G	3.5G	3.5G	11GΩ	550MΩ
Phase 3 to Ground	3.5G	3.5G	3.5G	11GΩ	550MΩ

**Sanitary F/W Pressure Pump #2**

**Specs:**  
 Volts 600 VAC  
 Amps 1.8 Amps  
 HP 1.12 KW  
 Cable Size 3C#14  
 Breaker # M8-10

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
Phase 1 to Ground	4.8G	4G	4G	11GΩ	550MΩ
Phase 2 to Ground	4.8G	4G	4G	11GΩ	550MΩ
Phase 3 to Ground	4.8G	4G	4G	11GΩ	550MΩ
Phase 1 to Phase 2	N/A	4G	4G	11GΩ	550MΩ
Phase 1 to Phase 3	N/A	4G	4G	11GΩ	550MΩ
Phase 2 to Phase 3	N/A	G4	4G	11GΩ	550MΩ

Motor

Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ

**Walk-In Cooler**

SPARE

**Heater Circ Pump #2**

**Specs:**

Date	9/7/2011	8/30/2012	8/17/2013	9/21/2017	11/1/2018
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Volts 600 VAC  
 Amps 1.9 Amps  
 HP 1.5 HP  
 Cable Size 3C#14  
 Breaker # M8-12  
**Test Results**

Phase 1 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	11G	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 2	N/A	11G	11G	11GΩ	550MΩ
Phase 1 to Phase 3	N/A	11G	11G	11GΩ	550MΩ
Phase 2 to Phase 3	N/A	11G	11G	11GΩ	550MΩ

Motor

Phase 1 to Ground	8.2G	11G	11G	11GΩ	550MΩ
Phase 2 to Ground	8.2G	11G	11G	11GΩ	550MΩ
Phase 3 to Ground	8.2G	11G	11G	11GΩ	550MΩ

## 240 Volt NoN-Essential MCC #1

Dwg Ref: 161-603-7 of 8

**WARNING: Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. DISCONNECT the load before continuing to crank the Megger or damage may result!**

### Reheat Panel M5-1 Bri Canadian Coast Guard

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts Parry Sound, Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Amps 126 AT Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
HP 30 KW Phase 3 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Cable Size 3C#1/0 Phase 1 to Phase 2		220M	220M	220M	220	220	550MΩ	550MΩ
Breaker # M5-1 Phase 1 to Phase 3		220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Phase 3	220M	220M	220M	220	220	550MΩ	550MΩ

### Reheat Panel M5-2 Boat Deck

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Amps 116 AT Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
HP 26.5 KW Phase 3 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Cable Size 3C#1 Phase 1 to Phase 2		220M	220M	220M	220	220	550MΩ	550MΩ
Breaker # M5-2 Phase 1 to Phase 3		220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Phase 3	220M	220M	220M	220	220	550MΩ	550MΩ

### Reheat Panel M5-3 Main Deck

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Amps 106 AT Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
HP 23.5 KW Phase 3 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Cable Size 3C#1 Phase 1 to Phase 2		220M	220M	220M	220	220	550MΩ	550MΩ
Breaker # M5-3 Phase 1 to Phase 3		220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Phase 3	220M	220M	220M	220	220	550MΩ	550MΩ

### Reheat Panel M5-4 E/R level

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC Phase 1 to Ground		200M	220M	220M	220	220	550MΩ	550MΩ
Amps 42 AT Phase 2 to Ground		200M	220M	220M	220	220	550MΩ	550MΩ
HP 9.75 KW Phase 3 to Ground		200M	220M	220M	220	220	550MΩ	550MΩ
Cable Size 3C#8 Phase 1 to Phase 2		200M	220M	220M	220	220	550MΩ	550MΩ

Breaker # M5-4	Phase 1 to Phase 3	200M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Phase 3	200M	220M	220M	220	220	550MΩ	550MΩ

### Wartsilla alarm system 220 volt supply M5-5

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	550M	220M	220M	220	220	550MΩ	550MΩ
Cable Size						220		
Breaker # M5-5						220	550MΩ	550MΩ

### Buoy Crane Auxillary Circuits

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	20M	25M	20M	15	15	16.7MΩ	18MΩ
Amps 101 AT	Phase 2 to Ground	20M	25M	20M	15	NA	16.7MΩ	18MΩ
HP 20 KW	Phase 3 to Ground	20M	25M	20M	15	15	16.7MΩ	18MΩ
Cable Size 3C#2	Phase 1 to Phase 2		25M	20M	NA	NA	NA	NA
Breaker # M5-6	Phase 1 to Phase 3		25M	20M	NA	NA	NA	NA
	Phase 2 to Phase 3		25M	20M	NA		NA	NA

### Dryer #1

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	2.3G	2.5G	2.5G	3	3	550MΩ	550MΩ
Amps 65 AT	Phase 2 to Ground	2.3G	2.5G	2.5G	3	3	550MΩ	550MΩ
Cable Size 3C#6	Phase 3 to Ground	2.3G	2.5G	2.5G	3	3	550MΩ	550MΩ
Breaker # M5-7								

### Dryer #2

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	3.7G	4G	4G	3	3	550MΩ	550MΩ
Amps 65 AT	Phase 2 to Ground	3.7G	4G	4G	3	3	550MΩ	550MΩ
Cable Size 3C#6	Phase 3 to Ground	3.7G	4G	4G	3	3	550MΩ	550MΩ
Breaker # M5-8								

### Washer #1

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	2.6G	3.8G	3.5G	3	3	550MΩ	550MΩ
Amps 15 AT	Phase 2 to Ground	2.6G	3.8G	3.5G	3	3	550MΩ	550MΩ
Cable Size 3C#14	Phase 3 to Ground	2.6G	3.8G	3.5G	3	3	550MΩ	550MΩ
Breaker # M5-9								

### Washer #2

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	2.6G	2.8G	2.5G	2.5	2.5	19MΩ	19MΩ
Amps 15 AT	Phase 2 to Ground	2.6G	2.8G	2.5G	2.5	2.5	19MΩ	19MΩ
Cable Size 3C#14	Phase 3 to Ground	2.6G	2.8G	2.5G	2.5	2.5	550MΩ	550MΩ

### Plasma Cutter (Workshop Plug)

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 240VAC	Phase 1 to Ground	.03M	0.3M	0.3M	500	500	550MΩ	275MΩ

Amps 15 AT	Phase 2 to Ground	.03M	0.3M	0.3M	500	500	550MΩ	275MΩ
Cable Size 3C#14	Phase 3 to Ground	N/A	N/A		500	500	550MΩ	275MΩ
Breaker # M5-11								

### Panel M5-1

#### Bridge and focsle deck heating panel

<b>1. Fwd w/h heaters&amp;htr control</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>2. Fwd w/h heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>3. Fwd w/h heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>4.Aft w/h heaters&amp; htr control</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>5. Aft w/h heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>6.Captains cabin heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>7.Chief Eng cabin heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>8.Senior eng cabin heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>9. Log. Off. cabin heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>10. Chief Off. cabin heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ

<b>11.Wash rm,elect rm, stairway</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	11MΩ

<b>12. W/H air conditioner #1</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
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Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ	
Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	275MΩ	
<b>13. W/H air conditioner #2</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
<b>14. Elec. Room A/C</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	57	57	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	57	57	550MΩ	275MΩ
<b>15. Stbd Searchlight Power Su</b>	Date					1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground						220	550MΩ	275MΩ
Phase 2 to Ground						220	550MΩ	275MΩ
<b>16. Port Searchlight Power sup</b>	Date					1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground						220	550MΩ	275MΩ
Phase 2 to Ground						220	550MΩ	275MΩ
<b>17. Stbd Searchlight PLC supp</b>	Date					1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground						220	550MΩ	275MΩ
Phase 2 to Ground						220	550MΩ	275MΩ
<b>18. Port Searchlight PLC suppl</b>	Date					1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground						220	550MΩ	275MΩ
Phase 2 to Ground						220	550MΩ	275MΩ

**Panel M5-2 Boat deck heating panel**

<b>1. Bosuns stores heater Port</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	139MΩ	275MΩ
<b>2. Bosun Stores heater Stbd and lights</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		140M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		140M	220M	220M	220	220	280MΩ	275MΩ
<b>3.B deck wash, cadets heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	126MΩ	275MΩ
<b>4.Winchman &amp; Oilers heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
<b>5.Q.M., Supernum. heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
<b>6.2nd &amp; 3rd Eng. cabins heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		24M	220M	220M	220	220	550MΩ	275MΩ

Phase 2 to Ground	24M	220M	220M	220	220	550MΩ	275MΩ
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<b>7. Ships and eng office heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>8. Stairwell heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>9. Bosun &amp; cooks heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>10. 2nd&amp;3rd Off.cabin heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

**11. Spare**

**Panel M5-3 Main deck heating panel**

<b>1. Fwd&amp;midship wash heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>2. Clerk, seaman port heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>3. Off. mess&amp;stewd. heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>4. Off lounge heaters</b>	Date	8/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>5. Stairwell</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>6. Laundry&amp;deck locker heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>7. Tech&amp;seaman stbd heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	50M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	50M	220M	220	220	550MΩ	275MΩ

<b>8. Crews mess heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>9.Canteen&amp;crew lounge heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

<b>10.Em gen compt heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		12M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		12M	220M	220M	220	220	550MΩ	275MΩ

<b>11.Deck workshop heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	275MΩ

**Panel M5-4 Engine room heating panel**

<b>1. Bow Thruster Servo Heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>2. Bow Thruster Motor Heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>3.E.R workshop/ Sewage comp</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>4. Power packs W/T doors</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	2M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	2M	220M	220	220	550MΩ	550MΩ

<b>5. Stbd Steering flat heaters</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	206MΩ	206MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>6.#1 (port) SSG JW heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>7.#2 (stbd) SSG JW heater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>8.M.C.R. Air conditioner</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	150M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	150M	220M	220	220	550MΩ	550MΩ

<b>9. Boiler (Thermal fluid heater)</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>10. Port Steering Flat Heater Outlet</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground		220M	220M	220M	220	220	153MΩ	153MΩ
Phase 2 to Ground		220M	220M	220M	220	220	550MΩ	550MΩ

<b>11. FWD Stores heater 2 (stbd)</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Ground	220M	220M	220M	220	0	550MΩ	550MΩ
<b>12. Local Outlet 240 VAC</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	550MΩ
<b>14. Fwd Stores Heater 1 (port)</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
	Phase 1 to Ground	220M	220M	220M	220	220	550MΩ	550MΩ
	Phase 2 to Ground	220M	220M	220M	220	220	550MΩ	550MΩ

## 240 Volt Non-Essential MCC #2

Dwg Ref: 161-603-7 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

### Ranges and Oven

		Canadian Coast Guard						
Amps	Date	9/7/2011	8/30/2102	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
11.5 Amps HP Parry Sound, Phase 1 to Ground		550M	1.5G	1.5G	1	4000+	550MΩ	275MΩ
Cable Size Phase 2 to Ground		550M	1.5G	1.5G	1	4000+	550MΩ	275MΩ
Breaker # M11-1 Phase 3 to Ground		550M	1.5G	1.5G	1	4000+	550MΩ	275MΩ

### Broiler

Specs:		Date						
Volts	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
240VAC Phase 1 to Ground		11G	11G	11G	5	4000+	3.2MΩ	275MΩ
40 AT Phase 2 to Ground		11G	11G	11G	5	4000+	3.2MΩ	275MΩ
5.4 KW Phase 3 to Ground		11G	11G	11G	5	4000+	3.2MΩ	275MΩ

Breaker # M11-2

### Dishwasher booster heater

Specs:		Date						
Volts	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
240VAC Phase 1 to Ground		220M	11G	11G	5	4000+	550MΩ	275MΩ
79.1 Amps Phase 2 to Ground		220M	11G	11G	5	4000+	550MΩ	275MΩ
5.7 KW						4000+	550MΩ	275MΩ

Breaker # M11-3

### Deep Fryer

Specs:		Date						
Volts	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
240VAC Phase 1 to Ground		11G	11G	11G	11	4000+	550MΩ	275MΩ
56.6 Amps Phase 2 to Ground		11G	11G	11G	11	4000+	550MΩ	275MΩ
12 KW Phase 3 to Ground		11G	11G	11G	11	4000+	550MΩ	275MΩ

Breaker # M11-4

### Incinerator

Specs:		Date						
Volts	Date	9/7/2011	8/30/2012	8/17/2013		1/11/2016	9/20/2017	11/1/2018
240VAC Phase 1 to Ground		11G	11G	11G		220	550MΩ	275MΩ
Breaker # M11-5 Phase 2 to Ground		11G	11G	11G		220	550MΩ	275MΩ

Phase 3 to Ground	11G	11G	11G			550MΩ	275MΩ
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**Toaster Outlets**

**Specs:**  
 Volts 240VAC  
 Amps 15 Amps  
 Cable Size  
 Breaker # M11-6

Date	9/7/2011	8/30/2012	8/17/2013		1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground	11G	11G	11G		220	550MΩ	275MΩ
Phase 2 to Ground	11G	11G	11G		220	550MΩ	275MΩ
Phase 3 to Ground	11G	11G	11G		220	550MΩ	275MΩ

**Drill Press**

**Specs:**  
 Volts 240VAC  
 Amps 15 Amps  
 Breaker # M11-7

Date	9/7/2011	8/30/2012	8/17/2013		1/11/2016	9/20/2017	11/1/2018
Phase 1 to Ground	11G	5G	5G		220	550MΩ	275MΩ
Phase 2 to Ground	11G	5G	5G		220	550MΩ	275MΩ
Phase 3 to Ground	11G	5G	5G		220	550MΩ	275MΩ

## 120 Volt Semi-Essential MCC #1

Dwg Ref: 161-603-7 of 8

**WARNING:** Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. **DISCONNECT** the load before continuing to crank the Megger or damage may result!

Canadian  
Coast  
Guard

### Nav Lights Normal Supply M4-1

**Specs:** Parry Sound, ON  
Volts 120VAC  
Amps 11.5 Amps  
Cable Size 3C#10  
Breaker # M4-1

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	200M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Navigation Aids Panel #2

**Specs:**  
Volts 120VAC  
Amps 36 Amps  
HP 3.5 KW  
Cable Size 3C#8  
Breaker # M4-2

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	0	220M	220M	NA	220	220MΩ
Phase 1 to Phase 3	0	220M	220M	NA	220	220MΩ
Phase 2 to Phase 3	0	220M	220M	NA	220	220MΩ

### Lighting Panel M4-3 Wheelhouse

**Specs:**  
Volts 120VAC  
Amps 79.1 Amps  
HP 5.4 KW  
Cable Size 3C#8  
Breaker # M4-3

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Lighting Panel M4-4 Focsle deck

**Specs:**  
Volts 120VAC  
Amps 56.6 Amps  
HP 3.5 KW  
Cable Size  
Breaker # M4-4

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Lighting Panel M4-5 Boat deck

**Specs:**  
Volts 120VAC  
Amps 52.1 Amps  
HP 5.2 KW  
Cable Size  
Breaker # M4-5

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Lighting Panel M4-6 Main deck

**Specs:**  
Volts 120VAC  
Amps 53 Amps  
HP 8 KW  
Cable Size  
Breaker # M4-6

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Lighting Panel M4-7 Engine room

**Specs:**  
Volts 120VAC  
Amps 66.2 Amps  
HP 8 KW  
Cable Size  
Breaker # M4-7

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	550M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	550M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	550M	220M	220M	220M	220	220MΩ

### E.R. 115V power panel M4-8

**Specs:**  
Volts 120VAC  
Amps 40.6 Amps  
HP 5.5 KW  
Cable Size  
Breaker # M4-8

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Ventilation 115V Power Panel M4-9

**Specs:**  
Volts 120VAC  
Amps 30.1 Amps  
HP 3.4 KW  
Cable Size  
Breaker # M4-9

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

### Galley 115V Power Panels M4-10/A/B

**Specs:**  
Volts 120VAC

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ

Amps 148.6 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
HP 24.4 KW	Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Cable Size	Phase 1 to Phase 2	55M	220M	220M	220M	220	220MΩ
Breaker # M4-10	Phase 1 to Phase 3	102M	220M	220M	220M	220	220MΩ
	Phase 2 to Phase 3	41M	220M	220M	220M	220	220MΩ

**Heated Windows & Wipers Panel M4-11**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Amps 85 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
HP 17 KW	Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Cable Size	Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ
Breaker # M4-11	Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ

**Boat Deck Ext. Receptacles M4-12**

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Amps	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
HP 24.2 KW	Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ
Cable Size 3C#2/0	Phase 1 to Phase 2		220M	220M	220M	220	220MΩ
Breaker # M4-12	Phase 1 to Phase 3		220M	220M	220M	220	220MΩ

Phase 2 to Phase 3		220M	220M	220M	220	220MΩ
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**Panel M4-2**

**1. Time signal receivers**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**2. W/H console lights interior**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**3. Wempe clock & anemometer**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**4. Console Searchlight PLC supply**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**5. Echo sounder stbd**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**6. Hand held battery charger**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**7. Loran C**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**8. VHF direction finder**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**9. Doppler log**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**10. VHF-FM radio stbd**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**11. VHF-AM radio stbd**

**Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**12. Outlet by Thermostat**

**Test Results**

(under cabinet by frig)

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground		Electronics		Electronics	Electronics	Electronics

**13. Communications antenna system  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**14. Spare (old GRS radio outlet)  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**15 Fuel Computer  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**16. Blue SAR light  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**17. Data Cell Bridge  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**18. Outlet Fed by VHF  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronics	Electronics	Electronics
Phase 2 to Ground	Electronics		Electronics	Electronics	Electronics

**19. Stbd Console searchlight PLC supply  
Test Results**

Date					9/20/2017
Phase 1 to Ground					Electronics
Phase 2 to Ground					Electronics

**Panel M4-3**

**1. W/H lighting  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	90M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	90M	220M	220M	220M	220	220MΩ

**2. W/H receptacles (comp.)  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	200M	220M	220M	220M	220	220MΩ

**3. W/H & Bridge deck recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	28MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	48MΩ

**4. W/H coffee maker & M-sat  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**5. Focslde deck ltg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	15m	220M	6M	220	220MΩ
Phase 2 to Ground	220M	15m	220M	6M	220	220MΩ

**6. Boat deck Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**7. Main deck bulwark Itg & recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	17M	1.5M	1M	10M	0.11	1.3MΩ
Phase 2 to Ground	17M	1.5M	220M	10M	220	220MΩ

**8. Main deck bulwark Itg & recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	6.5M	32M	220M	110M	220	220MΩ
Phase 2 to Ground	6.5M	32M	3.5M	110M	2.4	.78MΩ

**9. Main mast & radar platform recp  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	40M	85M	100M	96M	163	33MΩ
Phase 2 to Ground	40M	85M	100M	96M	198	220MΩ

**10. Ventilation control panel #1  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	32M	220M	56M	220	220MΩ
Phase 2 to Ground	220M	32M	220M	56M	220	220MΩ

**Panel M4-3**

**11. Pillar recp.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**12. Remote temp. indicator recp.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**13. CCTV recp's P&S  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronic	Electronic	Electronic
Phase 2 to Ground	Electronics		Electronic	Electronic	Electronic

**14. Aft Radar  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronic	Electronic	Electronic
Phase 2 to Ground	Electronics		Electronic	Electronic	Electronic

**15. Plug above chart table  
Test Results**

Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	Electronics		Electronic	Electronic	Electronic
Phase 2 to Ground	Electronics		Electronic	Electronic	Electronic

**16. Plug above chart table  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**Panel M4-4**

**1. Chief Eng., 1st officer & focsle deck Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**2. Captain, Senior Eng., 2nd Officer Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**3. Focsle deck corridor Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**4. Deck locker, fan & electronic room Itg & recp  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	.5M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	.5M	220M	220M	220M	220	220MΩ

**5. Focsle deck corridor & stairwell recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**6. Focsle deck outside recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	6.5M	220M	1.6M	220M	220	4.3MΩ
Phase 2 to Ground	6.5M	220M	1.6M	220M	220	4.3MΩ

**7. Focsle deck drinking fountain  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**8. Chief Eng. & 1st Officer recp's and bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	43	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	43	220MΩ

**9. Captain, Senior Eng. & 2nd officer recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	3M	220M	2.9M	220	220MΩ
Phase 2 to Ground	220M	3M	220M	2.9M	220	220MΩ

**10. Officers cabins valance Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	44.3MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	44.3MΩ

**11. Captain & Chief Eng. fridge recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**12. Elect. Room Recp's  
Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	N/A	Electronic		Electronic	Electronic	Electronic
Phase 2 to Ground	N/A	Electronic		Electronic	Electronic	Electronic

**13. Modular recp.  
Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	N/A	Electronic		Electronic	Electronic	Electronic
Phase 2 to Ground	N/A	Electronic		Electronic	Electronic	Electronic

**14. 30 amp UPS supply  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	40M	8/30/2012	40M	220M	220	220MΩ
Phase 2 to Ground	40M		40M	220M	220	220MΩ

**15. UPS for Lan/Sat System**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		110M	110M	110M	1.3	1.6MΩ

Phase 2 to Ground		110M	110M	110M	1.3	1.6MΩ
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### Panel M4-5

**1. Port cabin Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	2M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	2M	220M	220M	220	220MΩ

**2. Engineers & officers Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	2M	220M	7M	220	220MΩ
Phase 2 to Ground	220M	2M	220M	7M	220	220MΩ

**3. Cadets, Winchman, fwd stores Itg & recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	25M	220M	5.4M	220M	220	220MΩ
Phase 2 to Ground	25M	220M	5.4M	220M	220	220MΩ

**4. Eng's/ships office, w/closet & stewards locker Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	2M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	2M	220M	220M	220	220MΩ

**5. Boat deck corridor Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**6. ships office recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**7. Boat deck corridor & stairwell recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**8. Boat deck outside recp's & funnel casing Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	95M	220M	220M	220M	23	1.04MΩ
Phase 2 to Ground	95M	220M	220M	220M	23	1.04MΩ

**9. Bosun, cook & super recp's and bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	2M	1M	220M	1.2	220MΩ
Phase 2 to Ground	220M	2M	1M	220M	1.2	220MΩ

**10. Qtr masters, oilers & winchman recp's & bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	2M	220M	220M	2.2	220MΩ
Phase 2 to Ground	220M	2M	220M	220M	2.2	220MΩ

**11. 3rd Eng. & Deck Officers recp's & bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	2.6M	2.8M	2.5M	220M	1.3	34.3MΩ
Phase 2 to Ground	2.6M	2.8M	2.5M	220M	1.3	34.3MΩ

**12. 2nd Eng.,E/R Techs & Cadets recp's & bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	20M	5M	5M	220M	220	93.4MΩ
Phase 2 to Ground	20M	5M	5M	220M	220	93.4MΩ

**13. Boat deck cabins valance Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	22.5MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	22.5MΩ

<b>14. Fwd hydr. P.P. control Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	25M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	25M	220M	220M	220M	220	220MΩ

<b>15. Fwd hydr. P.P. control Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

<b>16. Engineers office recp's Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

### Panel M4-6

<b>1. Officer mess, stewards, cook, seaman cabin Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	1.8M	220	1.96MΩ
	Phase 2 to Ground	220M	220M	220M	1.8M	220	1.96MΩ

<b>2. Officers mess recp's, decorative Itg &amp; valance Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	0	2M	220M	220M	220	220MΩ
	Phase 2 to Ground	0	2M	220M	220M	220	220MΩ

<b>3. Wash closets Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220m	220M	220M	220M	220	220MΩ

<b>4. Galley &amp; crew mess Itg. Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	2M	220M	220M	220	220MΩ
	Phase 1 to Phase 2		2M	220M	220M	220	220MΩ

<b>5. Crews mess recp's, decorative Itg &amp; valance Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	1.9M	35M	220M	41M	220	220MΩ
	Phase 2 to Ground	1.9M	35M	220M	41M	220	220MΩ

<b>6. Canteen, deckhand, winchman cabin Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	6.41MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	6.41MΩ

<b>7. Main deck corridor Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

<b>8. Central stores, laundry room, deck &amp; paint locker Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

<b>9. Fwd stores, freezer &amp; cooler Itg Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	.3M	50M	220M	0.4M	220	0.3MΩ
	Phase 2 to Ground	.3M	50M	220M	0.4M	220	0.3MΩ

<b>10. Maindeck corridors &amp; stairwell recp's Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	100M	220M	220M	220M	220	220MΩ

Phase 2 to Ground	100M	220M	220M	220M	220	220MΩ
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**11. Laundry room recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**12. Stewards, cook & seaman recp's & bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	3.8M	2M	220M	2.6M	220	3.52MΩ
Phase 2 to Ground	3.8M	2M	220M	2.6M	220	3.52MΩ

**13. Deckhand & tech. recp's & bunk Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	1.6M	4M	220M	220M	4.6	2.8MΩ
Phase 2 to Ground	1.6M	4M	220M	220M	4.6	2.8MΩ

**14. Main deck cabins valance Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	1.7M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	1.7M	220M	220M	220M	220	220MΩ

**15. Entertainment system  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**Panel M4-7**

**1. E/R Itg stbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	55	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	55	220MΩ

**2. E/R Itg port  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ

**3. Cargo hold recp's & Itg  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	4.2M	150M	20M	220M	220	220MΩ
Phase 2 to Ground	4.2M	150M	20M	220M	220	220MΩ

**4. C/R & workshop Itg.  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ

**5. E/R recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	4.2M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	4.2M	220M	220	220MΩ

**6. Control room recp's  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ

**7. Main deck recp's  
Test Results**

Date	07/09/201	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	2.7M	2M	200M	0.06M,	220	3.4MΩ
Phase 2 to Ground	2.7M	4M	200M	0.06M,	220	3.4MΩ

**8. Workshop recp's & drinking fountain**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
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<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>9. Workshop bench recp's</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>10. Workshop bench recp's</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>11. SSG heater stbd</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>12. SSG heater port</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>13. C-2000 control panel</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>14. E/R grey water tank pump</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>15 OWS</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	
<b>16. Bearing Heater</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	550M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	550M	220M	220M	220M	220	220MΩ	

**Panel M4-8**

<b>1. Aft hydr P.P. control</b>		Date	07/09/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	30M	220M	220M	220M	3.7	2.61MΩ	
	Phase 2 to Ground	30M	220M	220M	220M	3.7	2.63MΩ	
<b>2. Aft hydr P.P. control</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	15M	220M	25M	220M	23	5.93MΩ	
	Phase 2 to Ground	15M	220M	25M	220M	23	5.96MΩ	
<b>3. Main winch hydr. P.P. control</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ	
<b>4. Main winch hydr. P.P. control</b>		Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ	
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ	

**5. Domestic H/W circ. pump #2  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**6. Domestic H/W circ. pump #1  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**7. UV purifier & FW chemical pump  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**8. E/R workshop recp's  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	2.7M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	2.7M3	220	220MΩ

**9. E/R workshop ltg & recp's  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**10. Fwd/aft hyd. P.P. & deck consoles  
 anti condensation htrs**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	5.6M	220M	220M	220M	220	1.93MΩ
Phase 2 to Ground	5.6M	220M	220M	220M	220	1.93MΩ

**11. M/E J/W drain pump  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	.5M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	.5M	220M	220	220MΩ

**12. Asea battery charger # 1  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**13. Stern thruster control, Fuel bunkering  
 panel & shaft seal solenoids**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**14. new cable no identification  
 Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Spare	200M	200M	220	220MΩ
Phase 2 to Ground		Spare	200M	200M	220	220MΩ

**15. E/R ventilation control panel #2  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	.2M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	.2M	220M	220	220MΩ

**16. Fuel management computer  
 Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic
Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic

**17. Fuel management computer exp. interface  
 Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic
Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic

**Panel M4-9**

**1. Fwd stores & bowthruster comp't exhaust fan  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**2. Laundry & central stores exhaust fan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**3. Deck workshop exhaust fan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	.1M	0.1m		220M	220	220MΩ
Phase 2 to Ground	.1M	0.1m		220M	220	220MΩ

**4. Sewage comp't exhaust fan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**5. MCR supply fan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**6. Spare - Cable coiled in crawl space  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	.1M	0.8m	.1M	220M	220	220MΩ
Phase 2 to Ground	.1M	0.8m	.1M	220M	220	220MΩ

**7. E/R unit heater fan port  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**8. E/R unit heater fan stbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**9. E/R unit heater fan midshipstbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**10. Winch house unit heater fan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	1.09MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**11. Thermal Fluid Heater  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	.1M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	.1M	220m	220M	220M	220	220MΩ

**12. Electronic air cleaner  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**Panel M4-10A**

**1. Stbd Aft counter in galley  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**2. Galley fridge/freezer  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	7.5M	1.7m	6M	220M	220	220MΩ
Phase 2 to Ground	7.5M	1.7m		220M	220	220MΩ

**3. Spare (Old Toaster #1)  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ

**4. Hot water dispenser**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017

<b>Test Results</b>	Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ
<b>5. Milk dispenser</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220m	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220m	220M	220M	220	220MΩ
<b>6. Juice dispenser/coffemaker</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	76.8MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	76.8MΩ
<b>7. Stbd fwd counter in galley</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>8. Stbd fwd under counter in galley</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>9. Mixer</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>10. Food slicer</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>11. Outlet behind juice disp.</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>12.Spare (Old Toaster #2)</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	spare	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	spare	220	220MΩ
<b>13. Chemical extinguishing control</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>14. Hot food serving table well #1</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>15. Hot food serving table well #2</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
<b>16. Hot food serving table well #3</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	9.8M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	9.8M	220M	220M	220	220MΩ
<b>17. Hot food serving table well #4</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	170M	10M	220M	220M	220	220MΩ
	Phase 2 to Ground	170M	10M	220M	220M	220	220MΩ
<b>18. Microwave/toaster crew mess</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**19. Small Fridge Adjacent to Canteen  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**Panel M4-10B**

**21. Canteen fridge  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**22. Fridge officer mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**23. Hot plate/ice machine officer mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**24. Toaster officer mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	4.3M	220M	220M	220M	10	220MΩ
Phase 2 to Ground	4.3M	220M	220M	220M	10	220MΩ

**25. Coffemaker officer mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**26. Recp under counter crew lounge  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**27. Recp behind bookcase crew lounge  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**28. Recp. behind TV crew lounge  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**29. TV under counter  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	50M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	50M	220M	220M	220	220MΩ

**30. Fountain officer mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**31. Fountain crews mess  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**32. Waste disposal unit  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ

**33. Gaylord vent. control panel  
Test Results**

Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ
Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	8.5M	20M	15M	220M	220	33.7MΩ
Phase 2 to Ground	8.5M	20M	15M	220M	220	33.7MΩ

**34. Serving counter canteen  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ

**35. Refrigerated cold pan  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	na	220MΩ
Phase 2 to Ground	220M	220M	220M	220M	na	220MΩ

**36. Spare  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	1.4m	220	220MΩ
Phase 2 to Ground	220M	220M		1.4m	220	220MΩ

**37. Spare  
Test Results**

Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground		SPARE		220M	220	220MΩ
Phase 2 to Ground		SPARE		220M	220	220MΩ

**38. Spare  
Test Results**

Date	9/7/2011	8/30/2012	CONNECTED	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	WITH	220M	na	220MΩ
Phase 2 to Ground	220M	220M	CABTYRE	220M	na	220MΩ

**Panel M4-11**

**1. Fwd window port  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	1.8M	200M	22M	220	200MΩ
Phase 2 to Ground	220M	2.4M	200M	22M	220	200MΩ

**2. Fwd window center  
Test Results**

Date	07/09/201	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	0.8M	1M	12M	220	200MΩ
Phase 2 to Ground	220M	0.8M	1M	12M	220	200MΩ

**3. Fwd window stbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	10M	22M	220M	220	200MΩ
Phase 2 to Ground	220M	10M	22M	220M	220	200MΩ

**4. Stbd wing fwd outbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	0.15M	220M	0.9M	220	200MΩ
Phase 2 to Ground	220M	0.15M	220M	0.9M	220	200MΩ

**5. Stbd wing fwd center  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	4M	220M	10M	220	200MΩ
Phase 2 to Ground	220M	4M	220M	10M	220	200MΩ

**6. Stbd wing fwd inbd  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	30.5M	220M	12M	220	200MΩ
Phase 2 to Ground	220M	30.5M	220M	12M	220	200MΩ

**7. Stbd wing aft  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ

**8. Stbd & port wing aft  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	8.2M	220M	0.2M	130	200MΩ
Phase 2 to Ground	220M	8.2M	220M	0.2M	130	200MΩ

**9. Port wing aft  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	3.5M	220M	2M	220	200MΩ
Phase 2 to Ground	220M	3.5M	220M	2M	220	200MΩ

**10. Port wing fwd inbd  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	0.5M	1M	2.5M	220	200MΩ
Phase 2 to Ground	220M	0.5M	1M	2.5M	220	200MΩ

**11. Port wing fwd center  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	16M	16M	1.2M	220	200MΩ
Phase 2 to Ground	220M	16M	16M	1.2M	220	200MΩ

**12. Port wing fwd outbd  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	28M	220M	150M	80	200MΩ
Phase 2 to Ground	220M	28M	220M	150M	80	200MΩ

**13. Aft window  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ

**14. Fwd window wipers  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ

**15. Stbd wing wipers  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ

**16. Port wing wipers  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ

**17. Aft window  
 Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015		9/20/2017
Phase 1 to Ground	220M	220M	220M	220M		200MΩ
Phase 2 to Ground	220M	220M	220M	220M		200MΩ

**18. Spare  
 Test Results**

Date	DISCONNECT		8/17/2013			9/20/2017
Phase 1 to Ground						
Phase 2 to Ground						

**Panel M4-12**

**1. Viewing deck stbd O.B. recp's**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017

<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>2. QM station heater</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	5M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	5M	220M	220M	220M	220	200MΩ
<b>3. Viewing deck stbd I.B. recp's</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>4. Fire locker heater</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>5. Viewing deck port I.B. recp's</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	.1M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	.1M	220M	220	200MΩ
<b>6. Fire monitor platform recp's</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	135M	180M	60M	220M	3.4	28.9MΩ
	Phase 2 to Ground	135M	180M	60M	220M	3.4	28.9MΩ
<b>7. Viewing deck port O.B. recp's</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	75M	220M	60M	220M	220	43.8MΩ
	Phase 2 to Ground	75M	220M	60M	220M	220	43.8MΩ
<b>8. B.T. gearbox heater</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	150M	220M	na	200MΩ
	Phase 2 to Ground	220M	220M	150M	220M	na	200MΩ
<b>9. GMDSS Charger</b>							
<b>Test Results</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>10. Bridge</b>							
<b>Test Results</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground		ELECTRONIC			220	ELECTRONIC
	Phase 2 to Ground		ELECTRONIC			220	ELECTRONIC
<b>11. GMDSS SATC</b>							
<b>Test Results</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground		ELECTRONIC			220	ELECTRONIC
	Phase 2 to Ground		ELECTRONIC			220	ELECTRONIC
<b>12. GMDSS HF/DSC</b>							
<b>Test Results</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground		ELECTRONIC			220	ELECTRONIC
	Phase 2 to Ground		ELECTRONIC			220	ELECTRONIC
<b>13. Spare</b>							
<b>Test Results</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
	Phase 1 to Ground		ELECTRONIC			na	ELECTRONIC
	Phase 2 to Ground		ELECTRONIC			na	ELECTRONIC

**14. Bilge Lighting  
Test Results**

Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
Phase 1 to Ground	220M	140M	220M	220M	220	200MΩ
Phase 2 to Ground	220M	140M	220M	220M	220	200MΩ

## 120 Volt Emergency Dist. Center

Dwg Ref: 161-603-7 of 8

**WARNING: Extreme caution should be used when Megger Testing circuits that may support sensitive electronic equipment. DISCONNECT the load before continuing to crank the Megger or damage may result!**

Canadian  
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### VHF Transmitter/Receiver Q.M. Station

Specs:	Parry Sound, ON	Date	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
Amps 15 Amps	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
HP	Phase 3 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic

Cable Size 3C#12

Breaker # EI-1

### Navigation Light Panel EI-2/M4-1

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
Amps 11.5 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
HP 1.32 KW								

Cable Size 3C#10

Breaker # EI-2

### Navigation Aids Panel #1 EI-3

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	LEFT ON
Amps 36 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	LEFT ON
HP 7.5 KW	Phase 3 to Ground		220M	220M	220M	220	200MΩ	LEFT ON

Cable Size 3C#8

Breaker # EI-3

### Spare

Breaker # E1-4

### Lighting Panel E1-5 Main Deck

Specs:	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	220MΩ	220MΩ
Amps 41.6 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	220MΩ	220MΩ
HP 3.1 KW	Phase 3 to Ground	220M	220M	220M	220M	220	220MΩ	220MΩ

Cable Size 3C#6 Breaker # E1-5	Phase 1 to Phase 2	220M	220M	220M	220M	220	220MΩ	220MΩ
	Phase 1 to Phase 3	220M	220M	220M	220M	220	220MΩ	220MΩ
	Phase 2 to Phase 3	220M	220M	220M	220M	220	220MΩ	220MΩ

### Lighting Panel E1-6 Engine Room

<b>Specs:</b>	Date	07/09/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
Amps 53.1 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
HP 5.4 KW	Phase 3 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
Cable Size 3C#4	Phase 1 to Phase 2	220M	220M	220M	220M	220	200MΩ	275MΩ
Breaker # E1-6	Phase 1 to Phase 3	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Phase 3	220M	220M	220M	220M	220	200MΩ	275MΩ

### Lighting Panel E1-7 Flood Lights

<b>Specs:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
Volts 120VAC	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
Amps 75.8 Amps	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
HP 5.4 KW	Phase 3 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
Cable Size 3C#2	Phase 1 to Phase 2	220M	220M	220M	220M	220	200MΩ	275MΩ
Breaker # E1-7	Phase 1 to Phase 3	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Phase 3	220M	220M	220M	220M	220	200MΩ	275MΩ

### Spare

Breaker # E1-8

### Spare

Breaker # E1-9

### Spare

Breaker # E1-10

### Panel E1-3

<b>1. PBX UPS</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic

<b>2. Radar X-Band 258kw TXRX/TU</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic

<b>3. Fire &amp; general alarm panel</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	5M	5M	5M	220M	5	200MΩ	Electronic
	Phase 2 to Ground	5M	5M	5M	220M	5	200MΩ	Electronic

<b>4. Internal communication system</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M	110M	220M	220	200MΩ	Electronic
	Phase 2 to Ground	110M	110M	110M	220M	220	200MΩ	Electronic

<b>5. Outlet Deckhead (By VHF)</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M	110M	220M	220	200MΩ	Electronic

	Phase 2 to Ground	110M	110M	110M	220M	220	200MΩ	Electronic
								Electronic
<b>6. FWD Gyro Repeater</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M	110M	220M	Electronic	Electronic	Electronic
	Phase 2 to Ground	110M	110M	110M	220M	Electronic	Electronic	Electronic
<b>7</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	0.1	110M	64M	220M	Electronic	Electronic	Electronic
	Phase 2 to Ground	0.1	110M	64M	220M	Electronic	Electronic	Electronic
<b>8. HF-ssb radio port &amp; CB &amp; GPS</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
<b>9. Echo sounder port &amp; BCD contro</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M		220M	Electronic	Electronic	Electronic
	Phase 2 to Ground	110M	110M		220M	Electronic	Electronic	Electronic
<b>10. Rudder Angle Indicator</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		SPARE		SPARE	Electronic	Electronic	Electronic
	Phase 2 to Ground		SPARE		SPARE	Electronic	Electronic	Electronic
<b>11. Rudder Angle Indicator</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		SPARE		SPARE	Electronic	Electronic	Electronic
	Phase 2 to Ground		SPARE		SPARE	Electronic	Electronic	Electronic
<b>12. spare</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	na	200MΩ	Electronic
	Phase 2 to Ground		Electronic		Electronic	na	200MΩ	Electronic
<b>13. Compass lt, fire door hold back,</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M		70M	220	200MΩ	Electronic
	Phase 2 to Ground	110M	110M		70M	220	200MΩ	Electronic
<b>14. spare</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	na	200MΩ	Electronic
	Phase 2 to Ground		Electronic		Electronic	na	200MΩ	Electronic
<b>15. Icebreaking siren &amp; beacons</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	110M	110M	200M	220M	220	200MΩ	Electronic
	Phase 2 to Ground	2.1M	15M	56M	220M	220	9.13MΩ	Electronic
<b>16. Auto Pilot &amp; helm order Ind back</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
<b>17. Airchime</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	3.2M	18M		12M	80	20.3MΩ	Electronic
	Phase 2 to Ground	10M	18M		12M	19	11.9MΩ	Electronic
<b>18. Radar s-band 30 kW TX RX</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic

Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
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### Panel E1-5

	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>1. Focsle deck corridor, stairwell &amp; ...</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>2. Boat deck stairwells &amp; corridors I</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>3. Incinerator, emerg. gen comp't, d</b>								
<b>Test Results</b>	Phase 1 to Ground	0	0.1M	0	0.04	220	0.3MΩ	0.2MΩ
	Phase 2 to Ground	0	0.1M	0	0.04	220	0.3MΩ	0.2MΩ
<b>4. Galley, crews/officers mess &amp; cer</b>								
<b>Test Results</b>	Phase 1 to Ground	.4M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	.4M	220M	220M	220M	220	200MΩ	275MΩ
<b>5. Main deck corridors, stairwells, E</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>6. Winch house recp's &amp; Itg</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>7. Emerg. gen. comp,t &amp; winch hou:</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>8. Emerg. gen. jacket water &amp; anti c</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>9. Tow pin solenoids &amp; davit motor</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	63MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	63MΩ	275MΩ

### Panel E1-6

	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>1. E/R &amp; shaft tunnel recp's &amp; Itg stk</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>2. MCR, workshop, sewage comp't i</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	2M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	2M	220M	220M	220	200MΩ	275MΩ
<b>3. Cargo hold, tunnel &amp; steering flat</b>								
<b>Test Results</b>	Phase 1 to Ground	190M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	190M	220M	220M	220M	220	200MΩ	275MΩ
<b>4. E/R recp's</b>								
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ

	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>5. Main deck &amp; qtr. master stations</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	21M	220M	220M	6M	220	1.8MΩ	2.2MΩ
	Phase 2 to Ground	21M	220M	220M	6M	220	1.8MΩ	2.4MΩ
<b>6. Thrusters starters &amp; shaft swbd/A</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>7. MCR swbd &amp; MCC Itg &amp; SSG anti</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	2M	2M		220M	220	2.26MΩ	275MΩ
	Phase 2 to Ground	2M	2M		220M	220	2.26MΩ	275MΩ
<b>8. Watertight doors ind. &amp; emerg. fir</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>9. Ship service 24 VDC battery char</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>10. ASEA E/R console</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	220	200MΩ	110MΩ
	Phase 2 to Ground		Electronic		Electronic	220	200MΩ	110MΩ
<b>11. ASEA E/R console</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	220	200MΩ	110MΩ
	Phase 2 to Ground		Electronic		Electronic	220	200MΩ	110MΩ
<b>12. E/R &amp; shaft tunnel recp's &amp; Itg p</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>13. Cargo hold, steering comp't &amp; b</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>14. Auto pilot MSI panel elect. room</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	220	200MΩ	SPARE
	Phase 2 to Ground		Electronic		Electronic	220	200MΩ	SPARE
<b>15. Asea battery charger #2</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>16. Shore power take up reel</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	2.2M	220M	220	0.3MΩ	275MΩ
	Phase 2 to Ground	220M	220M	2.2M	220M	220	0.3MΩ	275MΩ
<b>17. E/R, steering comp't, MCR &amp; bo</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	145M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	145M	220M	220M	220M	220	200MΩ	275MΩ

Phase 1 to Phase 2							
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<b>18. Emerg. ventilation &amp; pump shut</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	170	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	170	220M	220M	220M	220	200MΩ	275MΩ
<b>19. FARV unit</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic
	Phase 2 to Ground		Electronic		Electronic	Electronic	Electronic	Electronic

**Panel E1-7**

<b>1. W/H recp's &amp; Itg</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	1.2M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	1.2M	220M	220M	220M	220	200MΩ	275MΩ
<b>2. 1000W flood aft stbd</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	30MΩ
<b>3. 1000W flood aft port</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>4. 1000W HPS flood aft stbd</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	200MΩ
<b>5. 1000W HPS flood aft stbd</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>6. 1000W HPS flood aft port</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>7. 1000W HPS flood aft port</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>8. 250W quartz floods-focsle deck f</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
<b>9. 250W quartz floods-W/H fwd &amp; m:</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	93MΩ
<b>10. 500W quartz floods-life boat sta</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ	275MΩ

<b>11. 500W quartz floods-life boat sta</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>12. 250W quartz floods-insignia &amp; n</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	5.8MΩ
	Phase 2 to Ground	220M	185M		220M	220	5.8MΩ
<b>13. Bridge deck Itg</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>14. Control info. console sound pov</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>15. Refrigerator</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	220M	220M	220M	220M	220	200MΩ
	Phase 2 to Ground	220M	220M	220M	220M	220	200MΩ
<b>16. UPS</b>	Date		8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground		SPARE		SPARE	Electronic	Electronic
	Phase 2 to Ground		SPARE		SPARE	Electronic	Electronic
<b>17. ECPINS Port Console.</b>	Date	9/7/2011	8/30/2012	8/17/2013	10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground	.01M	110M	110M	Electronic	Electronic	Electronic
<b>RADAR BATTERY PACK?</b>	Phase 2 to Ground	.01M	110M	110M	Electronic	Electronic	Electronic
<b>18. Radar Isolation Trans</b>	Date				10/7/2015	1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground				Electronic	Electronic	Electronic
	Phase 2 to Ground				Electronic	Electronic	Electronic
<b>19. Gyro Repeaters Port, Stbd, and</b>	Date					1/11/2016	9/20/2017
<b>Test Results</b>	Phase 1 to Ground					Electronic	Electronic
	Phase 2 to Ground					Electronic	Electronic

Wheelhouse												
PMC Navigation Light Control Panel 120 Volt												
B		reading	2015 Reading	2016 Reading	2017 Reading	A		8/17/2013	10/7/2015	1/11/2016	9/20/2017	11/1/2018
14	NL17-14A	150M	220M	220	47MΩ	14	NL17-14A	150M	220M	59	33MΩ	275MΩ
	NL17-14B	150M	adian Coast Gi	220	46MΩ		NL17-14B	150M	220M	59	31MΩ	275MΩ
13	NL17-13A	220M	220M	220	65MΩ	13	NL17-13A		220M		NC	NC
	Parry Sour	220M	220M	220	61MΩ		NL17-13B		220M		NC	NC
12	NL17-12A	220M	220M	220	96MΩ	12	NL17-12A	220M	220M	220	107MΩ	3MΩ
	NL17-12B	220M	220M	220	104MΩ		NL17-12B	220M	220M	220	106MΩ	275MΩ
11	NL1-11A	1.3M	8M	220	6.3MΩ	11	NL2-11A	1.3M	20M	220	24MΩ	275MΩ
	NL1-11B	220M	8M	220	6.3MΩ		NL2-11B	2.8M	20M	60	20.8MΩ	275MΩ
10	NL1-10A	220M	220M	220	200MΩ	10	NL2-10A	220M	220M	57	83MΩ	275MΩ
	NL1-10B	130M	220M	220	192MΩ		NL2-10B	130M	220M	140	81MΩ	275MΩ
9	NL1-9A	220M	220M	220	110MΩ	9	NL2-9A	220M	220M	133	102MΩ	275MΩ
	NL1-9B	220M	220M	220	103MΩ		NL2-9B	220M	220M	220	93MΩ	275MΩ
8	NL1-8A	220M	220M	220	81MΩ	8	NL2-8A	220M	220M	220	109MΩ	275MΩ
	NL1-8B	220M	220M	220	79MΩ		NL2-8B	220M	220M	220	106MΩ	275MΩ
7	NL1-7A	220 M	220 M	220	125MΩ	7	NL2-7A	220M	220M	220	131MΩ	275MΩ
	NL1-7B	220M	220M	220	122MΩ		NL2-7B	220M	220M	220	125MΩ	275MΩ
6	NL1-6A	180M	220M	220	120MΩ	6	NL2-6A	180M	220M	220	121MΩ	275MΩ
	NL1-6B	140M	220M	220	116MΩ		NL2-6B	140M	220M	220	116MΩ	275MΩ
5	NL1-5A	200M	200M	220	127MΩ	5	NL3-5A	200M	220M	55	176MΩ	275MΩ
	NL1-5B	200M	200M	220	121MΩ		NL3-5B	200M	220M	78	172MΩ	275MΩ
4	NL1-4A	180M	220M	220	22MΩ	4	NL14-4A	180M	220M	146	28MΩ	275MΩ
	NL1-4B	220M	220M	220	22MΩ		NL14-4B	220M	220M	144	27MΩ	275MΩ
3	NL1-3A	220M	220M	220	98MΩ	3	NL16-3A	220M	30M	30	111MΩ	275MΩ
	NL1-3B	220M	220M	220	99MΩ		NL16-3B	220M	30M	30	108MΩ	275MΩ
2	NL1-2A	75M	30M	130	1MΩ	2	NL15-2A	75M	60M	90	2MΩ	2MΩ
	NL1-2B	220M	30M	111	1MΩ		NL15-2B	220M	60M	90	2MΩ	2MΩ
1	NL1-1A	220M	0.7M	66	70MΩ	1						
	NL1-1B	220M	0.7M	108	71MΩ							