


City of Winnipeg
Upgrades to the McPhillips and Tache
Pumping Stations
Tender Opportunity 1070-2019

APPENDIX A

Electrical Test forms

	INSPECTION FORM MOLDED CASE CIRCUIT BREAKER, < 1000V		Page 1 of 2
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

Breaker Data	Location:		Panelboard/MCC:		Cell #:	
	Manufacturer:		Type:	Serial #:		
	Rated Voltage:	V	Frame Size:	A	Trip Unit:	
	Interrupting Rating:		kA	Comments:		

Visual Inspection / Cleaning	Breaker Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Electro/Mechanical Interlock: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Exercise Circuit Breaker: <input type="checkbox"/> Yes	
	Door Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Other:	
	Comments:			

Breaker Settings	Trip Unit Rating: A		Trip Unit Type: <input type="checkbox"/> None <input type="checkbox"/> Thermal Magnetic <input type="checkbox"/> Electronic <input type="checkbox"/> LI <input type="checkbox"/> LSI <input type="checkbox"/> LSIG				
	Breaker Setting (As Left)		Range	Setpoint		Delay	I²T
	Long Time	<input type="checkbox"/> Fixed <input type="checkbox"/> Adj.	-	X	A = A	sec	<input type="checkbox"/> On <input type="checkbox"/> Off
	Short Time	<input type="checkbox"/> Fixed <input type="checkbox"/> Adj.	-	X	A = A	sec	<input type="checkbox"/> On <input type="checkbox"/> Off
	Instantaneous	<input type="checkbox"/> Fixed <input type="checkbox"/> Adj.	-	X	A = A	N/A	
	Ground Fault	<input type="checkbox"/> Fixed <input type="checkbox"/> Adj.	-		A	sec	<input type="checkbox"/> On <input type="checkbox"/> Off

Insulation Resistance Test	<i>Perform insulation resistance measurements for breakers >= 250A, or as specified.</i>									
	Temperature: °C	Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected (Source Isolated)				<i>Approval is required, prior to leaving cables connected during the test.</i>				
		Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected (Load Isolated)								
	Test Voltage (VDC)	Insulation Resistance (MΩ)								
		Phase To GND (Breaker Closed)			Phase To Phase (Breaker Closed)			Line to Load (Breaker Open)		
		A	B	C	A - B	B - C	A - C	A	B	C
Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive. Further Investigation Required. <input type="checkbox"/> Test Failed										
Comments:										

Contact Resistance	<i>Perform contact measurements for breakers >= 250A, or as specified.</i>					
	Resistance (μΩ)	A	B	C	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed	
Comments:						



**INSPECTION FORM
MOLDED CASE CIRCUIT BREAKER, < 1000V**


ID:

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

		INSPECTION FORM POWER CABLE < 1000V			Page 1 of 1 Cable ID:		
Project	Facility:			Project Name:			
	Area :			Bid Opportunity:			
Cable Data	Source:			Dest. / Load:			
	Manufacturer:		Type:		Conductor: <input type="checkbox"/> Copper <input type="checkbox"/> Aluminum		
	No. of Conductors:	Size: <input type="checkbox"/> AWG <input type="checkbox"/> MCM	Length: m <input type="checkbox"/> Measured <input type="checkbox"/> Previous Data <input type="checkbox"/> Jacket Markings <input type="checkbox"/> TDR				
	Rated Voltage: V	Operating Voltage: V	Date Installed:				
	Installation: <input type="checkbox"/> Cable Tray <input type="checkbox"/> EMT <input type="checkbox"/> Alum. Conduit <input type="checkbox"/> Direct Buried <input type="checkbox"/> Strapped <input type="checkbox"/> Steel Conduit <input type="checkbox"/> PVC Conduit <input type="checkbox"/> Underground Duct		Other:				
Visual Inspection	Physical Damage on Exposed Ends: <input type="checkbox"/> Yes <input type="checkbox"/> No			Cable Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No			
	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No			Cable Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No			
	Bend Radius Acceptable: <input type="checkbox"/> Yes <input type="checkbox"/> No			Comments:			
Insulation Resistance Test	Test Preparation: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated		Cable Dest. / Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load Isolated		Note: Approval of City's Representative is required, prior to leaving cables connected during the test.		
	Cable Temperature: °C		Temperature Correction Factor for 20°C:		Ground all conductors not under test for each reading.		
	Test Voltage	Insulation Resistance (MΩ)				Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed	
		A-GND	B-GND	C-GND	N-GND		
	V	Reading					
	Corrected to 20°C						
Utilize 1000VDC Test Voltage for 600V rated cables, 500VDC for cables rated <= 300V.							
Comments:							
Connection Resistance	Note: Torque check required for all cables. Connection Resistance Test required for cables 4/0 AWG or larger.						
	Termination	Connection Resistance (μΩ) - As Left				Torque Check	
		A	B	C	N		
	Source					<input type="checkbox"/> OK	
	Dest. / Load					<input type="checkbox"/> OK	
Comments:							
Final Analysis	Cable Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No			Comments:			
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Company	Name	Signature	Date (yyyy/mm/dd)			
Performed By							
Checked By							

	INSPECTION FORM CONTROL POWER TRANSFORMER, 600V		Page 1 of 1
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

PT Data	Location:		Pri. Voltage Rating:	Sec. Voltage Rating:
	Manufacturer:		Pri. Fuse Size:	Sec. Fuse Size:
	Size:	Type:	Other:	


Visual Inspection	Physical Damage:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Defective Connections/Wiring:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Visual Signs of Overheating:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Grounding and Shorting Connections Provide Contact:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Verify Ground Connection:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Verify Withdrawal Mechanism Function:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Fuse Sizes Match Drawings:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:	

Insulation Resistance Test	Test Preparation: <input type="checkbox"/> Source Disconnected <input type="checkbox"/> Connected with Source Isolated		Note: Approval of City's Representative is required, prior to leaving cables connected during the test.	
	Test	Voltage	Insulation Resistance (MΩ)	Temperature: °C
	Primary To GND	1000 VDC		Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Secondary To GND	500 VDC		
	Primary To Secondary	1000 VDC		
Comments:				

Final Analysis	Returned to Service:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required:	<input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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	INSPECTION FORM CURRENT TRANSFORMER		Page 1 of 1
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

CT Data	Location:	Current Ratio: : A	Voltage Class: V
	Manufacturer:	Model No.:	Type: <input type="checkbox"/> Bar <input type="checkbox"/> Window (Solid) <input type="checkbox"/> Split Core
	Burden Rating:	BIL: kV	Accuracy Class:

Visual Inspection	Physical Damage: <input type="checkbox"/> Yes <input type="checkbox"/> No	Clean and Inspect Insulators: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No	Verify Connections are Correct: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Adequate Mounting Support: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated		Cable Dest. / Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load Isolated		Note: Approval of City's Representative is required, prior to leaving cables connected during the test.	
	Test	Voltage	Insulation Resistance (MΩ)			Temperature: °C
			A	B	C	Test Summary
	Primary To GND	1000 V				<input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Secondary To GND	500 V				
	Primary To Secondary	1000 V				
Comments:						

Turns Ratio, Excitation, Saturation and Polarity Tests	Note: Attach supporting data and saturation curve.					
		Phase				Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
		A	B	C	N	
	Calculated Ratio					
	Measured Ratio					
	Exciting Current (mA)					
Polarity Correct	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
CT Saturation Test Performed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Final Analysis	CT Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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INSPECTION FORM DIGITAL METER

ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Meter Data	Location:	Cell #:
	Manufacturer:	Model:

Visual Inspection / Cleaning	Cover Gasket: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Cover Glass: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	General Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Cleanliness (as found) <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes
	Connections (as found) <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Connections Torqued: <input type="checkbox"/> Yes

Test Meter	Manufacturer:	Model:
	Calibration Date: Meter calibration must be within one year, unless otherwise specified.	

Accuracy	Voltage	Nominal Test Value (V)	Phase	Calibrated Meter Measurement (V)	Meter Under Test (V)	Difference (V)	Error (%)	Acceptable (See Specs)
		0						<input type="checkbox"/> Yes <input type="checkbox"/> No
								<input type="checkbox"/> Yes <input type="checkbox"/> No
								<input type="checkbox"/> Yes <input type="checkbox"/> No
								<input type="checkbox"/> Yes <input type="checkbox"/> No
								<input type="checkbox"/> Yes <input type="checkbox"/> No
							<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Current	Nominal Test Value (V)	Phase	Calibrated Meter Measurement (A)	Meter Under Test (A)	Difference (A)	Error (%)	Acceptable (See Specs)
		0	A					<input type="checkbox"/> Yes <input type="checkbox"/> No
			B					<input type="checkbox"/> Yes <input type="checkbox"/> No
			C					<input type="checkbox"/> Yes <input type="checkbox"/> No
			A					<input type="checkbox"/> Yes <input type="checkbox"/> No
			B					<input type="checkbox"/> Yes <input type="checkbox"/> No
	C						<input type="checkbox"/> Yes <input type="checkbox"/> No	
Measurements Applicable To: <input type="checkbox"/> As-Found <input type="checkbox"/> As-Left May check both boxes if applicable.								
Unit Calibration Adjusted: <input type="checkbox"/> Yes <input type="checkbox"/> No If calibration was adjusted, complete two forms, one for as-found, the other for as-left after calibration.								



INSPECTION FORM DIGITAL METER


Page 2 of 2

ID:

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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	INSPECTION FORM EMERGENCY LIGHTING		Page 1 of 1
Project	Facility:		Project Name:
	Area :		Bid Opportunity:

Battery Unit Data	Location:		Fed From:		Circuit #:	
	Manufacturer:			Model:	Serial No:	
	Input Voltage:	V AC	Input Current:	A	Output Voltage:	V DC
			Wattage:	W		
Qty of Internal Lamps:		Internal Lamp Wattage:		W	Type of Internal Lamps:	

Remote Fixtures	Quantity:		Manufacturer:		Model:	
	Input Voltage:	V DC	Input Current:	A	Qty of Lamps per Fixture:	
	Lamp Wattage:	W	Type of Lamps:	Wire Size: AWG		

Visual Inspection / Cleaning	Identification Tag Installed:		<input type="checkbox"/> Yes <input type="checkbox"/> No	Lamps Properly Aimed:		<input type="checkbox"/> Yes <input type="checkbox"/> No		
	Visual signs of Moisture:		<input type="checkbox"/> Yes <input type="checkbox"/> No	Connections:			<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Cleanliness (As Found):			<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Ground Connection:			<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Comments:							

Battery Testing	Equipment Temperature:		°C	Test Summary			
	Test Results						<input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive <input type="checkbox"/> Further Investigation Required. <input type="checkbox"/> Test Failed
	Stated Design Time (From Drawings):		Min				
	Time Until Lamps Turn Off:		Min				
Comments:							

Final Analysis	Returned to Service:		<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:		
	Monitoring / Inspection Required:		<input type="checkbox"/> Yes <input type="checkbox"/> No			
	Repair / Replacement Required:		<input type="checkbox"/> Yes <input type="checkbox"/> No			

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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INSPECTION FORM FUSED DISCONNECT SWITCH, 600V

ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Disconnect Data	Manufacturer:		Model:	
	Rated Voltage: V	Current Rating: A	Interrupting Rating: A	

Fuse Data	Manufacturer:		Type:	Cat. #:
	Rated Voltage: V	Current Rating: A	Holder:	

Visual Inspection / Cleaning	Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Support Insulators: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Blade Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Verify Blade Mechanical Operation: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Door Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Fuse Holder Support and Contact Integrity: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Fit Plumb & Square: <input type="checkbox"/> Yes <input type="checkbox"/> No		Unit Cleaned: <input type="checkbox"/> Yes	Unit Lubricated: <input type="checkbox"/> Yes	
	Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No		Other:		

Switchblade Resistance	Resistance ($\mu\Omega$) (As Left)			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	A	B	C	
	Comments:			

Fuse Resistance	Resistance ($\mu\Omega$) (As Left)			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	A	B	C	
	Comments:			



INSPECTION FORM FUSED DISCONNECT SWITCH, 600V

Page 2 of 2

ID

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Isolated Cable Dest. / Load: <input type="checkbox"/> Disconnected Note: Approval of City's Representative is required, prior to leaving cables connected during the test. Disconnect: <input type="checkbox"/> Open <input type="checkbox"/> Connected with Load Isolated					
	Test	Voltage	Insulation Resistance (MΩ)			Ground all phases not under test!
			A	B	C	
	Disconnect Line To GND	1000 VDC				Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Disconnect Load To GND	1000 VDC				
Disconnect Line to Load	1000 VDC					
Comments:						

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No			Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No			
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No			

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.



**INSPECTION FORM
GROUNDING/BONDING CONNECTION RESISTANCE**

Area:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Resistance Checks (Ductor Test)	Point A	Point B	Resistance (mΩ)	Acceptable
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
	Comments:			



**INSPECTION FORM
GROUNDING/BONDING CONNECTION RESISTANCE**

ID: _____

Resistance Checks (Ductor Test)	Point A	Point B	Resistance (mΩ)	Acceptable
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inconclusive
	Comments:			

Final Analysis	Monitoring / Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.



INSPECTION FORM INTELLIGENT OVERLOAD

ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

O/L Data	Location:	Cell #:
	Manufacturer:	Model:

Visual Inspection / Cleaning	General Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Cleanliness (as found) <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes
	Connections (as found) <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Connections Torqued: <input type="checkbox"/> Yes

Communication Settings	Static IP Address:	Subnet Mask
	Gateway:	Protocol:
	MAC Address:	

Test Meter	Manufacturer:	Model:
	Calibration Date:	Meter calibration must be within one year, unless otherwise specified.

CTs	Type: <input type="checkbox"/> Internal to O/L <input type="checkbox"/> External	External CT Ratio:
	External Ground CT: <input type="checkbox"/> Yes <input type="checkbox"/> No	Ground CT Ratio:



INSPECTION FORM INTELLIGENT OVERLOAD


ID:

Verify accuracy of Intelligent O/L Measurements with the use of software via the communication network.									
Accuracy	Current	Nominal Test Value (A)	Phase	Calibrated Meter Measurement (A)	Intelligent O/L Measurement (A)	Difference (A)	Error (%)	Acceptable (See Specs)	
		0	A						<input type="checkbox"/> Yes <input type="checkbox"/> No
			B						<input type="checkbox"/> Yes <input type="checkbox"/> No
			C						<input type="checkbox"/> Yes <input type="checkbox"/> No
			A						<input type="checkbox"/> Yes <input type="checkbox"/> No
			B						<input type="checkbox"/> Yes <input type="checkbox"/> No
	C							<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Measurements Applicable To: <input type="checkbox"/> As-Found <input type="checkbox"/> As-Left May check both boxes if applicable.								
	Unit Calibration Adjusted: <input type="checkbox"/> Yes <input type="checkbox"/> No If calibration was adjusted, complete two forms, one for as-found, the other for as-left after calibration.								

Final Analysis	Returned to Service:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required:	<input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

	INSPECTION FORM MCC, 600V				Page 1 of 6
	ID:				
Project	Facility:			Project Name:	
	Area :			Bid Opportunity:	

MCC Data	Location:				# of Cells:
	Manufacturer:		Model:		Serial #:
	Rated Voltage: V	Main Bus Rating: A		Main Bus Neutral Rating: A	
	Bus Conductor: <input type="checkbox"/> Copper <input type="checkbox"/> Aluminum		Current Withstand Rating: A		

Visual Inspection / Cleaning	Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Visual Signs of Moisture: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Corona: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Fuse/Breaker Sizes Match Drawings: <input type="checkbox"/> Yes <input type="checkbox"/> No		PT and CT ratios match drawings: <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Elevation Drawings Correct: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Insulators Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Electro/Mechanical Interlock System: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Vents/Filters: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Doors Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Exercise Active Components: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Cell Fit and Alignment: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor				
	Required Clearances are Met: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor				
	Indicating mechanisms: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Unit Cleaned: <input type="checkbox"/> Yes	Photograph Taken: <input type="checkbox"/> Yes	
	Comments:				

Incoming Power	Type:	Inspection			
	<input type="checkbox"/> Main Breaker	Complete appropriate breaker inspection form.			
	<input type="checkbox"/> Disconnect	Complete appropriate disconnect inspection form.			
	<input type="checkbox"/> Main Lugs	Visual Inspection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor			
		Connections Torqued: <input type="checkbox"/> Yes			
	Connection Resistance ($\mu\Omega$) As Left	A	B	C	N



INSPECTION FORM MCC, 600V

ID:

Insulation Resistance Test (Buswork)	Test Preparation:	Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated	Cable Dest. / Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load Isolated	Note: Approval of City's Representative is required, prior to leaving cables connected during the test.	
	Temperature: _____ °C				
	Test Voltage (dc)	Insulation Resistance (MΩ) Phase To Phase			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
		A - B	B - C	C - A	
	1000 V				
	Test Voltage	Insulation Resistance (MΩ) Phase To GND			
	A - GND	B - GND	C - GND		
1000 V					
Comments:					

Ground Resistance Checks (Ductor Test)	Point A	Point B	Resistance (μΩ)	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	MCC GND Bus	Facility Ground Electrode		
	MCC GND Bus	MCC Enclosure		
	MCC GND Bus	System Neutral		
Comments:				

Feeder Breakers	Visual Inspect Requirements:	G=Good, A=Acceptable, P=Poor Comments are required for all items identified in Poor condition.
		<ol style="list-style-type: none"> Confirm identification tag / lamacoid is installed. Look for visual signs of overheating. Inspect and torque connections. Inspect and test any electro/mechanical interlocks. Confirm disconnect operation. Check door mechanical condition. Exercise circuit breaker. Confirm cables are supported and routed appropriately. Visually assess the general condition of the installation.
	Note:	Complete an appropriate Breaker Inspection Form for all breakers with separate adjustable Long and Short trip settings, Ground trip settings, or > 250A frame size.
Continued on next page		

Continued from previous page											
Feeder Breakers	ID	Loc./ Cell	Frame Rating (A)	Trip Rating (A)	Manuf.	Model	Trip Unit Type	Inst Setting	Visual Inspection	Cleaned	Comments
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
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										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
General Comments:											



INSPECTION FORM MCC, 600V

ID:

Motor Starters / Contactors	Overcurrent Protection Type: B=Breaker (Thermal Magnetic), M=Motor Circuit Protector, F=Fuse
	Overload Protection Type: T=Thermal, SS=Solid State, I=Intelligent
	Visual Inspect Requirements: G=Good, A=Acceptable, P=Poor Comments are required for all items identified in Poor condition. <ol style="list-style-type: none"> 1. Confirm identification tag / lamacoid is installed. 2. Look for visual signs of overheating. 3. Inspect and torque connections. 4. Inspect and test any electro/mechanical interlocks. 5. Confirm disconnect operation. 6. Check door mechanical condition. 7. Exercise circuit breaker. 8. Confirm cables are supported and routed appropriately. 9. Visually assess the general condition of the installation.
	Note: Complete a Motor Starter Inspection Form for all Motor Starters Size 4 or larger, with VFDs, or with Soft Starters.

Motor Starters / Contactors	ID	Loc./ Cell	Overcurrent Protection			Contactor	Overload		Visual Insp.	Cleaned	Comments
			Type	Rating (A)	Manuf.	Model	Size / Rating	Type			
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
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									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
General Comments:											



**INSPECTION FORM
MCC, 600V**

ID:

ID	Loc./ Cell	Overcurrent Protection				Contactor	Overload		Visual Insp.	Cleaned	Comments
		Type	Rating (A)	Manuf.	Model	Size / Rating	Type	Model			
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
									<input type="checkbox"/>		
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									<input type="checkbox"/>		
									<input type="checkbox"/>		
<p>General Comments:</p>											



**INSPECTION FORM
MCC, 600V**


Page 6 of 6

ID:

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

	INSPECTION FORM MOTOR STARTER, FVNR, 600V		Page 1 of 2
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

Starter Data	Load:		Starter Location:		Cell #:	
	Manufacturer:		Type:		Serial #:	
	Size:		Rated Voltage: V	Current Rating: A	Control Voltage: V	
	Circuit Protection:	<input type="checkbox"/> Fused Disc.	Rating: A	Fuse Size: A	Fuse Mfg. Model:	
		<input type="checkbox"/> Breaker <input type="checkbox"/> MCP	Rating: A	Inst. Setting: A	Manufacturer: Model:	
	Overload Protection:	<input type="checkbox"/> Thermal <input type="checkbox"/> Electronic <input type="checkbox"/> Intelligent	Class: <input type="checkbox"/> 10 <input type="checkbox"/> 20 <input type="checkbox"/> 30 <input type="checkbox"/> Unknown	Setting / Rating: A	Manufacturer: Model:	
	Control Power Transformer:		Size: VA	Sec. Voltage: V	Primary Fuse: A	Secondary Fuse: A
Current Transformers:		Phases: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	<input type="checkbox"/> None	Ratio:	Ground Fault CT: <input type="checkbox"/> Present <input type="checkbox"/> Not Present	

Motor Data	ID:	Size: kW / HP	Voltage: V
	Full Load Amps: A	Service Factor:	Other:

Visual Inspection / Cleaning	Starter Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Support Insulators: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Electro/Mechanical Interlock: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Contact Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Door Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Contact Alignment: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Verify O/L element is correctly sized for the load: <input type="checkbox"/> Yes <input type="checkbox"/> No	Exercise Circuit Breaker/MCP/Disconnect: <input type="checkbox"/> Yes	
	Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Cleaned: <input type="checkbox"/> Yes	Photograph Taken: <input type="checkbox"/> Yes
	Comments:		

Contact/Pole Measurements	Test	A	B	C	Test Summary	
	Contact Resistance ($\mu\Omega$)					<input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive <input type="checkbox"/> Test Failed Further Investigation Required.
	Disconnect / Breaker / MCP Resistance ($\mu\Omega$)					
	Fuse Resistance ($\mu\Omega$)					
Comments:						



**INSPECTION FORM
MOTOR STARTER, FVNR, 600V**

ID:

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Isolated Cable Dest. / Load: <input type="checkbox"/> Disconnected Note: Approval of City's Representative is required, prior to leaving cables connected during the test. Contactor: <input type="checkbox"/> Open <input type="checkbox"/> Connected with Load Isolated					
	Test	Voltage	Insulation Resistance (MΩ)			Ground all phases not under test!
			A	B	C	
	Contactor Line To GND	1000 VDC				Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Contactor Load To GND	1000 VDC				
Contactor Line to Load	1000 VDC					
Comments:						

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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INSPECTION FORM MOTOR SOFT STARTER, 600V

Page 1 of 3

ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Starter Data	Load:	Starter Location:	Cell #:		
	Soft Starter:	Manufacturer:	Model:	Serial #:	
		Size:	Rated Voltage: V	Current Rating: A	Control Voltage: V
	Circuit Protection:	<input type="checkbox"/> Fused Disc.	Rating: A	Fuse Size: A	Fuse Mfg. Model:
		<input type="checkbox"/> Breaker	Rating: A	Inst. Setting: A	Manufacturer: Model:
		<input type="checkbox"/> MCP			
	Bypass Contactor:	Type: <input type="checkbox"/> NEMA <input type="checkbox"/> IEC <input type="checkbox"/> N/A	Manufacturer:	Model:	
			NEMA Size:	IEC Rating: A <input type="checkbox"/> AC-3 <input type="checkbox"/> AC-4	
	Bypass Overload Protection:	<input type="checkbox"/> Thermal <input type="checkbox"/> Electronic <input type="checkbox"/> Not Applicable	Class: <input type="checkbox"/> 10 <input type="checkbox"/> 20 <input type="checkbox"/> 30 <input type="checkbox"/> Unknown	Setting / Rating: A	Manufacturer: Model:
Capacitor Contactor:	Type: <input type="checkbox"/> NEMA <input type="checkbox"/> IEC <input type="checkbox"/> N/A	Manufacturer:	Model:		
		NEMA Size:	IEC Rating: A <input type="checkbox"/> AC-3 <input type="checkbox"/> AC-4		
Control Power Transformer:	Size: VA	Sec. Voltage: V	Primary Fuse: A Secondary Fuse: A		
Current Transformer:	Ratio:	Type:			

Motor Data	ID:	Size: kW / HP	Voltage: V
	Full Load Amps: A	Service Factor: <input type="checkbox"/> 1.00 <input type="checkbox"/> 1.15	Other:

Visual Inspection / Cleaning	Starter Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Support Insulators: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Electro/Mechanical Interlock: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Contactors Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Door Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Contact Alignment: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Verify O/L element is correctly sized for the load: <input type="checkbox"/> Yes <input type="checkbox"/> No	Exercise Circuit Breaker/MCP/Disconnect: <input type="checkbox"/> Yes
	Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Cleaned: <input type="checkbox"/> Yes Photograph Taken: <input type="checkbox"/> Yes
	Comments:	



INSPECTION FORM MOTOR SOFT STARTER, 600V

ID: _____

Contact / Pole Measurements	Test	A	B	C	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Bypass Contactor Contact Resistance ($\mu\Omega$)				
	Capacitor Contactor Contact Resistance ($\mu\Omega$)				
	Disconnect Resistance ($\mu\Omega$)				
	Main Fuse Resistance ($\mu\Omega$)				
	Capacitor Fuse Resistance ($\mu\Omega$)				
Comments:					

Test Preparation: Source: <input type="checkbox"/> Isolated Cable Dest. / Load: <input type="checkbox"/> Disconnected Note: Approval of City's Representative is required, prior to leaving cables connected during the test. Contactor: <input type="checkbox"/> Open <input type="checkbox"/> Connected with Load Isolated						
WARNING: DISCONNECT ALL POWER CABLES FROM SOFT STARTER MODULE AND ALL CONTROL POWER FUSES PRIOR TO TEST.						
Insulation Resistance Test	Test	Voltage	Insulation Resistance (M Ω)			Ground all phases not under test!
			A	B	C	
	Disconnect Line to GND	1000 VDC				Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Disconnect Load to GND	1000 VDC				
	Disconnect Line to Load	1000 VDC				
	Bypass Contactor Line To GND	1000 VDC				
	Bypass Contactor Load To GND	1000 VDC				
	Bypass Contactor Line to Load	1000 VDC				
	Capacitor Contactor Line To GND	1000 VDC				
	Capacitor Contactor Load To GND	1000 VDC				
Capacitor Contactor Line to Load	1000 VDC					
Comments:						



INSPECTION FORM MOTOR SOFT STARTER, 600V

ID: _____

Operational Inspection	Test Preparation: Run motor at normal load.					
	Ramp Up Time	Specified: _____ sec		Actual: _____ sec		Comments:
	Measured Motor Current	ØA _____ A	ØB _____ A	ØC _____ A		
	Soft Start Motor Current	ØA _____ A	ØB _____ A	ØC _____ A		
	Ammeter Displayed Motor Current: _____ A					
	Remote (RTU/PLC/DCS) Displayed Motor Current: _____ A					
	Ramp Down Time	Specified: _____ sec		Actual: _____ sec		

Final Analysis	Returned to Service:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	Repair / Replacement Required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.



INSPECTION FORM AC MOTOR, LOW VOLTAGE

Page: 1 of 2

ID: _____

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

Motor Data	Size: kW / HP	Voltage: V	R.P.M:
	Manufacturer:	Model:	Serial Number:
	Frame Type:	Service Factor:	Other:
	Cooling: <input type="checkbox"/> Air <input type="checkbox"/> Fan # Cooling Fans:	Winding Material:	

Visual Inspection / Cleaning	Motor Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Air Baffles: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Paint: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Filter Media: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Cooling Fans: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Fan Controls: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Anchorage/Alignment: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	
	Mechanical/Electrical Noise During Operation: <input type="checkbox"/> Yes <input type="checkbox"/> No	Lubrication Required: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes Photograph Taken: <input type="checkbox"/> Yes

Winding Insulation Resistance	Stator Winding	Test Voltage (Vdc)	Winding Temperature (°C)	Resistance (MΩ)			Dielectric Absorption Ratio	Polarization Index (a)
				30 Sec	1 min.	10 min. (a)		
		500	40				-	-
		500	40				-	-
		500	40				-	-
Notes:								
(a) Testing to 10 minutes and calculation of Polarization Index is only required for motors > 150 kW (200 HP)								
Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive. Further Investigation Required. <input type="checkbox"/> Test Failed								

Winding Resistance	Resistance (μΩ)			Test Summary
	A - B	B - C	A - C	
Comments:				



INSPECTION FORM AC MOTOR, LOW VOLTAGE

Page: 2 of 2

ID: _____

Bearing Insulation Resistance	<input type="checkbox"/> Not Applicable			
	Bearing	Test Voltage (Vdc)	Bearing Temperature (°C)	Resistance (MΩ)
				1 min. Corrected to 40°C
		500		
		500		
Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive. Further Investigation Required. <input type="checkbox"/> Test Failed				

RTD Resistance	<input type="checkbox"/> Not Applicable					
	Actual Winding Temperature: °C			Actual Bearing Temperature °C		
	RTD	Resistance (Ω)	Calculated Temperature (°C)	RTD	Resistance (Ω)	Calculated Temperature (°C)
Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive. Further Investigation Required. <input type="checkbox"/> Test Failed						

Note: Test connection resistance of bolted connections. Report on cable inspection sheet.

Final Analysis	Returned to Service:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	Repair / Replacement Required:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.



INSPECTION FORM

NON-FUSIBLE DISCONNECT SWITCH, 600V

Project	Facility: _____	Project Name: _____
	Area : _____	Bid Opportunity: _____

Disconnect Data	Manufacturer: _____	Model: _____	
	Rated Voltage: V	Current Rating: A	Interrupting Rating: A

Visual Inspection / Cleaning	Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Support Insulators: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Blade Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Verify Blade Mechanical Operation: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Door Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes
	Fit Plumb & Square: <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Lubricated: <input type="checkbox"/> Yes
	Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No	Other: _____

Switchblade Resistance	Resistance ($\mu\Omega$) (As Left)			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	A	B	C	
	Comments: _____			

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Isolated Cable Dest. / Load: <input type="checkbox"/> Disconnected Note: Approval of City's Representative is required, prior to leaving cables connected during the test. Disconnect: <input type="checkbox"/> Open <input type="checkbox"/> Connected with Load Isolated								
	Test	Voltage	Insulation Resistance ($M\Omega$)	Ground all phases not under test!					
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;">A</td> <td style="width: 33%; text-align: center;">B</td> <td style="width: 34%; text-align: center;">C</td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </table>		A	B	C		
	A	B	C						
	Disconnect Line To GND	1000 VDC			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed				
Disconnect Load To GND	1000 VDC								
Disconnect Line to Load	1000 VDC								
Comments: _____									



INSPECTION FORM
NON-FUSIBLE DISCONNECT SWITCH, 600V


Page 2 of 2

ID

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

Note: The person(s) performing the check is responsible for ensuring that the data is transcribed from the handwritten form correctly, and that the analysis results are correct.

	INSPECTION FORM PANELBOARD, LOW VOLTAGE		Page 1 of 2
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

Panelboard Data	Location:		Fed From:		No. of Circuits:	
	Manufacturer:			Model:	Serial No:	
	Rated Voltage:	V	Current Rating:	A	Withstand Rating:	A
	<input type="checkbox"/> Single Phase		<input type="checkbox"/> 3 Phase, 3 Wire	<input type="checkbox"/> 3 Phase, 4 Wire	Neutral Bonded to Ground	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Main Lugs					
	<input type="checkbox"/> Main Breaker:	Rating:	A	Manufacturer:	Model:	Inst. Setting:
	<i>Complete separate inspection form (F-BKR-MC-LV) for main breaker if >= 250A, or has long, short, or ground fault settings.</i>					

Visual Inspection / Cleaning	Identification Tag Installed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Visual signs of Moisture:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Corona:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Fuse/Breaker Sizes Match Drawings:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Cables Supported Appropriately:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found):	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Connections:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Door Mechanical:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Ground Connection:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Exercise All Circuit Breakers:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:	

Insulation Resistance Test	Test Preparation:	Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated	Note: Approval of City's Representative is required, prior to leaving cables connected during the test.				Equipment Temperature: °C				
	Test Voltage	Insulation Resistance (MΩ) Ground all Phases not under test!						Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed			
		A-GND		B-GND		C-GND				N-GND	
		RDG	20°C	RDG	20°C	RDG	20°C			RDG	20°C
	Test Voltages: 120-300V → 500 VDC Test Voltage 301-600V → 1000 VDC Test Voltage										
Comments:											

Load/Feeder Breakers	Breakers < 100A and Without Inst. Setting					
	<i>List by model of breaker. Multiple breakers of varying ampacity may be listed per line.</i>					
	Type	Manufacturer	Model Series	Interrupting Rating (kA)	Positions/Circuits	Notes
	A					
	B					
	C					
	D					



INSPECTION FORM PANELBOARD, LOW VOLTAGE

ID:

Breakers >= 100A or with Inst. Setting									
<i>List each breaker individually. Complete separate inspection form (F-BKR-MC-LV) for breaker if >= 250A, or has long, short, or ground fault settings.</i>									
Load/Feeder Breakers	ID	Pos.	Manufacturer	Model	Trip Rating (A)	Int. Rating (kA)	Inst. Setting	Separate Form	Notes
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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INSPECTION FORM POTENTIAL TRANSFORMER, 600V

ID:

Project	Facility:	Project Name:
	Area :	Bid Opportunity:

PT Data	PT Location or Designation:		Pri. Voltage Rating:	Sec. Voltage Rating:
	Manufacturer:	Catalogue #:	Pri. Fuse Size:	Sec. Fuse Size:
	Size: VA	Type:	Other:	

Visual Inspection	Physical Damage: <input type="checkbox"/> Yes <input type="checkbox"/> No	Verify Connections are Correct: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No	Grounding and Shorting Connections Provide Contact: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Verify Ground Connection: <input type="checkbox"/> Yes <input type="checkbox"/> No	Verify Withdrawal Mechanism Function: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Fuse Sizes Match Drawings: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated		Note: Approval of City's Representative is required, prior to leaving cables connected during the test.			
	Test	Voltage	Insulation Resistance (MΩ)			Temperature: °C
			PT 1	PT 2	PT 3	Test Summary
	Primary To GND	1000 V				<input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Secondary To GND	500 V				
	Primary To Secondary	1000 V				
Comments:						

Turns Ratio and Polarity Tests	Test Preparation: Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated					
		Phase			Test Summary	
		PT 1	PT 2	PT 3	<input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed	
	Calculated Ratio					
	Measured Ratio					
Polarity Correct	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Comments:						


Final Analysis	PT Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
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	INSPECTION FORM POTENTIAL TRANSFORMER, 600V			Page 2 of 2
				ID: _____

Performed By				
Checked By				

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	INSPECTION FORM SWITCHGEAR, 600V		Page 1 of 2
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

Switchgear Data	Location:		No. of Cells:	
	Manufacturer:		Type:	Serial #:
	Rated Voltage: V	Current Rating: A	Interrupting Rating: A	

Visual Inspection / Cleaning	Identification Tag Installed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Visual signs of Moisture:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Corona:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Fuse/Breaker Sizes Match Drawings:	<input type="checkbox"/> Yes <input type="checkbox"/> No	PT and CT ratios match drawings:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Elevation Drawings Correct:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Cables Supported Appropriately:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found):	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Insulators Condition:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Connections:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Electro/Mechanical Interlock System:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Ground Connection:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Vents/Filters:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Doors Mechanical:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Exercise Active Components:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Cell Fit and Alignment:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Required Clearances are Met:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Indicating mechanisms:	<input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes	Photograph Taken: <input type="checkbox"/> Yes

Insulation Resistance Test	Test Preparation: Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated Cable Dest. / Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load Isolated			Note: Approval of City's Representative is required, prior to leaving cables connected during the test.				
	Test Voltage	Insulation Resistance (MΩ) Phase To GND			Temperature: °C			
		A	B	C	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed			
	1000 V							
	Test Voltage	Insulation Resistance (MΩ) Phase To Phase						
		A - B	B - C	A - C				
1000 V								
Comments:								



**INSPECTION FORM
SWITCHGEAR, 600V**

ID: _____


Ground Resistance	Point A	Point B	Resistance ($\mu\Omega$)	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	Switchgear GND Bus	Facility Ground Electrode		
	Switchgear GND Bus	Switchgear Enclosure		
	Switchgear GND Bus	System Neutral		
Comments:				

Connection Resistance	To	From	Resistance ($\mu\Omega$)			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
			A	B	C	
Comments:						

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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	INSPECTION FORM SWITCHBOARD, 600V			Page 1 of 4	
					ID:
Project	Facility:		Project Name:		
	Area :		Bid Opportunity:		

SWB Data	Location:			# of Cells:	
	Manufacturer:		Model:		Serial #:
	Rated Voltage: V	Main Bus Rating: A		Main Bus Neutral Rating: A	
	Bus Conductor: <input type="checkbox"/> Copper <input type="checkbox"/> Aluminum		Current Withstand Rating: A		

Visual Inspection / Cleaning	Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Visual Signs of Moisture: <input type="checkbox"/> Yes <input type="checkbox"/> No		Visual Signs of Corona: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Fuse/Breaker Sizes Match Drawings: <input type="checkbox"/> Yes <input type="checkbox"/> No		PT and CT ratios match drawings: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Elevation Drawings Correct: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cables Supported Appropriately: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Insulators Condition: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Electro/Mechanical Interlock System: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Vents/Filters: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		
	Doors Mechanical: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Exercise Active Components: <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Cell Fit and Alignment: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor				
	Required Clearances are Met: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor				
	Indicating mechanisms: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor		Unit Cleaned: <input type="checkbox"/> Yes	Photograph Taken: <input type="checkbox"/> Yes	
	Comments:				

Incoming Power	Type:	Inspection			
	<input type="checkbox"/> Main Breaker	Complete appropriate breaker inspection form.			
	<input type="checkbox"/> Disconnect	Complete appropriate disconnect inspection form.			
	<input type="checkbox"/> Main Lugs	Visual Inspection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor			
		Connections Torqued: <input type="checkbox"/> Yes			
Connection Resistance ($\mu\Omega$) As Left		A	B	C	N



INSPECTION FORM SWITCHBOARD, 600V

ID:

Insulation Resistance Test (Buswork)	Test Preparation:	Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Source Isolated	Cable Dest. / Load: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load Isolated	Note: Approval of City's Representative is required, prior to leaving cables connected during the test.	
	Temperature: _____ °C				
	Test Voltage (dc)	Insulation Resistance (MΩ) Phase To Phase			Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	1000 V	A - B	B - C	C - A	
	Test Voltage	Insulation Resistance (MΩ) Phase To GND			
	1000 V	A - GND	B - GND	C - GND	
Comments:					

Ground Resistance Checks (Ductor Test)	Point A	Point B	Resistance (μΩ)	Test Summary <input type="checkbox"/> Test Passed <input type="checkbox"/> Test Inconclusive Further Investigation Required. <input type="checkbox"/> Test Failed
	SWB GND Bus	Facility Ground Electrode		
	SWB GND Bus	SWB Enclosure		
	SWB GND Bus	System Neutral		
Comments:				

Feeder Breakers	Visual Inspect Requirements:	G=Good, A=Acceptable, P=Poor Comments are required for all items identified in Poor condition.
		<ol style="list-style-type: none"> 1. Confirm identification tag / lamacoid is installed. 2. Look for visual signs of overheating. 3. Inspect and torque connections. 4. Inspect and test any electro/mechanical interlocks. 5. Confirm disconnect operation. 6. Check door mechanical condition. 7. Exercise circuit breaker. 8. Confirm cables are supported and routed appropriately. 9. Visually assess the general condition of the installation.
	Note:	Complete an appropriate Breaker Inspection Form for all breakers with separate adjustable Long and Short trip settings, Ground trip settings, or > 250A frame size.
Continued on next page		



INSPECTION FORM SWITCHBOARD, 600V

ID: _____

Continued from previous page											
Feeder Breakers	ID	Loc./Cell	Frame Rating (A)	Trip Rating (A)	Manuf.	Model	Trip Unit Type	Inst Setting	Visual Inspection	Cleaned	Comments
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
										<input type="checkbox"/>	
General Comments:											



INSPECTION FORM SWITCHBOARD, 600V


Page 4 of 4

ID:

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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	INSPECTION FORM TRANSFORMER, DRY TYPE, LOW VOLTAGE		Page 1 of 2
			ID:
Project	Facility:	Project Name:	
	Area :	Bid Opportunity:	

Transformer Data	KVA:	Phase:	Primary Voltage: V	Secondary Voltage: V					
	Manufacturer:		Type:	Serial Number:					
	Primary Winding: <input type="checkbox"/> Δ <input type="checkbox"/> Y	Secondary Winding: <input type="checkbox"/> Δ <input type="checkbox"/> Y	Impedance: %Z	Temp Rise: °C	K Factor:				
	Winding Material: <input type="checkbox"/> Copper <input type="checkbox"/> Aluminum								
	No Load Tap Changer	Tap Voltage	1	2	3	4	5		

Visual Inspection / Cleaning	Transformer Identification Tag Installed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Visual Signs of Overheating: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Bushings: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Support Insulators: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Paint: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	No Load Tap Changer: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Fans: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Fan Controls: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Temp. Gauge: <input type="checkbox"/> N/A <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Connections: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor
	Ground Connection: <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Neutral Bonded to Ground: <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No
	Cleanliness (As Found): <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Poor	Unit Cleaned: <input type="checkbox"/> Yes

Operational Inspection	Operational Conditions / Notes:					
	Primary Voltage:	H1:H2: V	H2:H3: V	H3:H1: V	Measured at:	
	Secondary Voltage:	X1:__: V	X2:__: V	X3:__: V	Measured at:	
	Current:	Ph A: A	Ph B: A	Ph C: A	Measured at:	
	Tap Setting:	<input type="checkbox"/> Appears Satisfactory <input type="checkbox"/> Further Monitoring Recommended. <input type="checkbox"/> Recommend Changing Tap.			Tap Setting (As Left):	
Thermographic Inspection Performed:	<input type="checkbox"/> Yes	Attach report separately	Results:	<input type="checkbox"/> No Issues Found <input type="checkbox"/> Potential Issue Identified.		

Insulation Resistance	Winding	Test Voltage (Vdc)	Resistance (MΩ)		Dielectric Absorption Ratio 60s/30s
			30 sec	60 sec.	
	Primary to Ground, Secondary Guarded				
	Secondary to Ground, Primary Guarded				
	Primary to Secondary, Ground Guarded				



**INSPECTION FORM
TRANSFORMER, DRY TYPE, LOW VOLTAGE**

Page 2 of 2

ID:

Final Analysis	Returned to Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Comments:
	Monitoring / Further Inspection Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Repair / Replacement Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	

	Company	Name	Signature	Date (yyyy/mm/dd)
Performed By				
Checked By				

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