



INSPECTION FORM MOLDED CASE CIRCUIT BREAKER, < 1000V

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


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 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"/> Strapped		<input type="checkbox"/> EMT <input type="checkbox"/> Steel Conduit	<input type="checkbox"/> Alum. Conduit <input type="checkbox"/> PVC Conduit	<input type="checkbox"/> Direct Buried <input type="checkbox"/> Underground Duct


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	Source: <input type="checkbox"/> Disconnected <input type="checkbox"/> Connected with Load 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	
	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 DIGITAL METER		Page 1 of 1
			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

Accuracy	Voltage	Test Value (V)	Phase A		Phase B		Phase C	
			Reading As Found (V)	Reading As Left (V)	Reading As Found (V)	Reading As Left (V)	Reading As Found (V)	Reading As Left (V)
			0					
Accuracy	Current	Test Value (A)	Phase A		Phase B		Phase C	
			Reading As Found (A)	Reading As Left (A)	Reading As Found (A)	Reading As Left (A)	Reading As Found (A)	Reading As Left (A)
			0					
Unit Calibrated:		<input type="checkbox"/> Yes <input type="checkbox"/> No						

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
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
	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 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	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 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	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 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 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				

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 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 <input type="checkbox"/> No

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 <input type="checkbox"/> No	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				

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.



INSTRUMENTATION SWITCH CHECKLIST

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Instrument		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Inspection Checklist		
No.	Item to be Inspected	Pass (P/F)
1.	Instrument type and class per P&ID and specification	
2.	Instrument tag(s) installed and correct	
3.	Installation of sensor complete and correct	
4.	Block and drain valves	
5.	Pneumatic / hydraulic tubing leak tested	
6.	Heat tracing / insulation / instrument housing	
7.	Wiring correct	
8.	Drawings marked up as-built	
9.	HMI Graphic symbol and tag correct	

State Checklist						
State	State Desc	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off <input type="checkbox"/> N/A	
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	

Calibration					
Transition	Setpoint Trip Point (incl. units)	Actual Trip Point (incl. units)	Setpoint Time Delay	Actual Time Delay	Pass (P/F)
0 → 1					
1 → 0					

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				



INSTRUMENTATION TRANSMITTER LOOP CHECKLIST

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Instrument (Sensor / Element)		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Transmitter		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:
Units:	Design Range:	
Output	<input type="checkbox"/> 4-20 mA <input type="checkbox"/> Modbus <input type="checkbox"/> Other: <input type="checkbox"/> 0-10 V <input type="checkbox"/> Ethernet IP	

Inspection Checklist			
No.	Item to be Inspected	Comments	Pass (P/F)
1.	Instrument type and class per P&ID and specification		
2.	Instrument tag(s) installed and correct		
3.	Installation of sensor complete and correct		
4.	Block and drain valves		
5.	Pneumatic / hydraulic tubing leak tested		
6.	Heat tracing / insulation / instrument housing		
7.	Impulse lines pressure tested		
8.	Wiring correct		
9.	Drawings marked up as-built		
10.	HMI Graphic symbol, tag and units correct		



INSTRUMENTATION TRANSMITTER LOOP CHECKLIST

Signal Validation					
Input Signal	Location	Design Value	Actual Value	Error (%)	Pass (P/F)
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				
	Transmitter Display				
	Transmitter Output				
	Process Display				
	PLC				
	HMI				

Notes:

1. Attach factory calibration forms for all instruments where provided and/or specified.
2. Provide instrument parameters for each parameter changed from the factory default.

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

Control Device		
Tag:	Description:	
Manufacturer:	Model:	Serial Number:

Inspection Checklist			
No.	Item to be Inspected	Comments	Pass (P/F)
1.	Actuator type and class per P&ID and specification		
2.	Instrument tag(s) installed and correct		
3.	Installation of actuator complete and correct		
4.	Wiring correct		
5.	Drawings marked up as-built		
6.	HMI graphic symbol, tag and units correct		

Control Validation					
Control Output	Location	Design Value	Actual Value	Error (%)	Pass (P/F)
0%	PLC Output				
	Field Device				
50%	PLC Output				
	Field Device				
100%	PLC Output				
	Field Device				

Notes:

1. Attach factory calibration forms for all instruments where provided and/or specified.
2. Provide instrument parameters for each parameter changed from the factory default.

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				



PID CONTROLLER CHECKLIST

Project

Facility:

Project Name:

Area :

Bid Opportunity:

Controller Loop

Tag:

Description:

Test Checklist

No.	Item to be Inspected	Comments	Pass (P/F)
1.	Startup Test		
2.	Input signal positive bump test		
3.	Input signal negative bump test		
4.	Bumpless auto-manual control transition		
4.	Manual output capability		
5.	Bumpless manual-auto control transition		
6.	HMI graphic symbols, tag and units correct		
7.	HMI equipment faceplate correct		

Final PID Tuning Values

P :

I :

D :

Notes:

1. Attach printouts of trends for various tests, with final PID tuning values.

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				



PLC DISCRETE INPUT CHECKLIST

Project	
Facility:	Project Name:
Area :	Bid Opportunity:

PLC	
PLC ID:	Description:
Rack:	Slot:

Pt	Tag	Description	State	State Desc.	PLC Input	Local HMI	SCADA	Alarm	Pass (P/F)
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	



PLC DISCRETE INPUT CHECKLIST

			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	
			0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	<input type="checkbox"/> N/A
			1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> On <input type="checkbox"/> Off	

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				



PLC DISCRETE OUTPUT CHECKLIST

Project

Facility:	Project Name:
Area :	Bid Opportunity:

PLC

PLC ID:	Description:
Rack:	Slot:

Pt	Tag	Description	State	State Desc.	PLC Output	Field Device	Pass (P/F)
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	



PLC DISCRETE OUTPUT CHECKLIST

			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	
			0		<input type="checkbox"/>	<input type="checkbox"/>	
			1		<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

	Company	Name	Signature	Date (yyyy/mm/dd)
Tested By				
Witnessed By				