

Indoor Substation Maintenance Checklist

PBS Name	: <u>Tangail</u>	Capacity (MVA)	: <u>10/14</u>
Substation Name	: <u>Nagarpur-2 (Tircha)</u>	Date	: <u>18/11/23</u>

33/11 KV Power Transformer

General Information:

Manufacturer Name: <u>EnergyPac</u>	Serial No: <u>10/14 MVA - 447</u>
Capacity (MVA): <u>10/14</u>	Peak Load (MW): <u>6.4 22/07/23</u>

Visual Inspection:

Oil level	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK	Grounding	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK
Oil leakage	: <input type="checkbox"/> Yes	: <input checked="" type="checkbox"/> No	Condition of bushing	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK
Silica gel changed	: <input type="checkbox"/> Yes	: <input checked="" type="checkbox"/> No	Connection tightness	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK
Riser connections opened and rejoined	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	Dust cleaned (MK and XR upper surface)	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No

Functionality Checking:

Buchholz alarm	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	WTI alarm	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
Buchholz trip	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	WTI trip	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
OTI alarm	: <input type="checkbox"/> Yes	: <input checked="" type="checkbox"/> No	Cooling fan manual operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
OTI trip	: <input type="checkbox"/> Yes	: <input checked="" type="checkbox"/> No	Cooling fan remote operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
PRD trip	: <input type="checkbox"/> Yes	: <input checked="" type="checkbox"/> No	Cooling fan auto operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No

Testing:

Insulation resistance	: <input checked="" type="checkbox"/> Satisfactory	: <input type="checkbox"/> Not Satisfactory	
Di-electric strength of oil	: <input checked="" type="checkbox"/> Satisfactory	: <input type="checkbox"/> Not Satisfactory	
Transformer turns ratio at each tap position	: <input checked="" type="checkbox"/> Satisfactory	: <input type="checkbox"/> Not Satisfactory	

Comment: Test reports attached

OLTC & RTCC

OLTC Manufacturer	: <u>MR</u>	: <input type="checkbox"/> Not Satisfactory	RTCC Manufacturer	: <input type="checkbox"/> Not Satisfactory
OLTC Model & Type	: <u>VVS111400D-40-10/136</u>		RTCC Serial No	: <input type="checkbox"/> Not Satisfactory
OLTC Serial No.	: <u>2271160</u>			

Visual Inspection:

OLTC oil level	: <input type="checkbox"/> OK	: <input type="checkbox"/> Not OK	Dust cleaned (RTCC panel and Motor Drive Unit)	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK
Tap position indicator	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK			
Tightness of connections	: <input checked="" type="checkbox"/> OK	: <input type="checkbox"/> Not OK			

Functionality Checking:

OLTC local operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	OLTC Buchholz alarm	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
OLTC remote operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	OLTC Buchholz trip	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No
OLTC auto operation	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No	OLTC PRD trip	: <input checked="" type="checkbox"/> Yes	: <input type="checkbox"/> No

Comment:

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L.C.I
 P.V.C
 Md. Zamirul Rahman
 AGM (O & M)
 Tangail Paha-Balishat Sec. 4
 System Protection & Design (SPD), BREB

33 kV VCB & CRP Panel

VCB Manufacturer :	Energy Pac	CRP Manufacturer :	Energy Pac
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Visual Inspection:

Position	33 KV Line Incomer	33 KV Transformer Incomer
Model & Manufacturing year	Energy Pac	Energy Pac
VCB Serial No.	36.3276	36.3275
CRP Serial No.		
VCB pole condition	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Riser connection opened & rejoined	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mechanical joints lubricated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Device in CRP (TCS, master trip, meters)	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
PT voltage in energymeter	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Connections tightness	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Dust cleared (VCB, control cubicle, CRP, MK)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Functionality Checking:

VCB local closing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB remote closing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB local tripping	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB remote tripping	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Master trip operation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
TCS-1 relay healthy	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
TCS-2 relay healthy	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Automatic spring charge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB indications	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CRP indications	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Heater operation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Testing:

Insulation resistance of VCB	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Contact resistance of VCB	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Opening time of VCB	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached

Overcurrent & Earth Fault Relay

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Position	33 KV Line Incomer	33 KV Transformer Incomer
Manufacturer & Model	MVAJM15JA0754A	MVAJM15JA0754A
Country of Origin		
Serial No.	35231055-12-20P	35230229-12-20P
Watchdog	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Auxiliary voltage	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Date and time	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Relay display	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Relay buttons working	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Relay terminals cleaned	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
All connections tightness	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Protection Setting Checking	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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 System Protection & Design (SPD), BREQ

33 kV Line Incomer Current Transformer

Manufacturer	: Energy Pac	Connected CT Ratio	:
Rated CT Ratio	: 800-400/5-5-5A	Rated Burden	: 30VA

Visual Inspection:

	Bφ	Yφ	Rφ
Serial No.	: 33.CT.800-5875	33.CT.800-5874	33.CT.800-5873
Condition of bushing	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Oil leakage	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Primary connections opened and rejointed	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Secondary connections tightened	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Star-point grounded	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dust cleared(MK, Secondary terminal box)	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Unused core shorted	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Testing:

Insulation resistance	: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Excitation test	: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached**33 kV Line Potential Transformer**

Manufacturer	: Energy Pac	PT Ratio	: 33/110
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Visual Inspection:

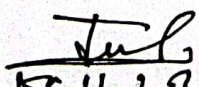
	Bφ	Yφ	Rφ
Serial No.	: 33PRD-7069	33PRD-7068	33PRD-7067
Condition of bushing	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Oil leakage	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Primary connections opened and rejointed	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Secondary connections tightened	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Neutral grounded	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dust cleared(Junction box, Secondary terminal box)	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

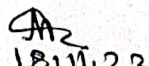
Testing:

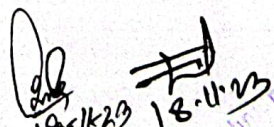
Insulation resistance	: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
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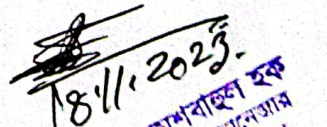
Comment: Test reports attached


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A.C.


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Md. Zahidul Raheem
AGM (O & M)
Nagarjuna Zonal Office
Tangalipalli, Andhra Pradesh


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System Protection & Design (SPD), BREB

33/0.415 kV Auxiliary Transformer

Manufacturer	: <u>EnergyPac</u>	Serial No	: <u>200/5264</u>
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Visual Inspection:

HV and LV bushing	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Silica gel	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
HV connections	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	LV connections	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Testing:

Insulation Resistance	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Di-electric strength of oil	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Transformer turns ratio	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached

AC & DC Distribution Panel

Manufacturer	: <u>AMARA RAJA EnergyPac</u>
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Visual Inspection:

All meters measurement	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Proper marking of MCBs	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Panels cleanliness	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Tightness of connections	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Functionality Checking:

Indication lamps	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MCB and MCCBs operation	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Battery & Battery Charger

Battery Manufacturer	: <u>SAFT</u>	Charger Manufacturer	: <u>AMARA RAJA</u>
Charger Model	: <u>KPL 150P</u>	Charger Serial No	: <u>B501670700100130101</u>

Visual Inspection:

Electrolyte level	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Battery cells cleaned	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Battery terminal connections tightened	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Battery terminal points cleaned	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Battery overheated	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Charger input	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Charger output	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Charger output when battery isolated	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Functionality Checking:

Float charging	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Boost charging	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Manual mode	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Auto mode	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Indication bulbs	: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Alarms	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Testing:

Specific gravity of electrolyte	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Battery fully discharged	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attache

Grounding & Miscellenous

Visual Inspection:

All equipment properly grounded	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Positive/negative earth fault alarm in battery charger panel	: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Air Condition in control room	: <input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Testing:

Earth resistance at various location of the substation	: <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
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 System Protection & Detection (S&D) BREB
 18.11.23

11 kV AIS Switchgear Panel

Position	:		Model	:	
Manufacturer	:		Serial No	:	

11 kV VCB ~~4D~~ 4D

Position	:	4D	Manufacturer	:	EnergyPac
Serial No	:	12-6870		:	

Visual Inspection:

VCB rack in & rack out	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (inside VCB panel, mechanical chamber)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mechanical joints lubricated	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	
Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Functionality Checking:

VCB local closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Automatic spring charge	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB local tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	

Testing:

Insulation Resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Contact resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Opening time	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached

CRP

Manufacturer	:	EnergyPac	Serial No	:	1VHR9161966
VCB Serial No	:	12-6870	CRP	:	REF615

35505840/11/21
VAX317G0750BA

Visual Inspection:

Device in CRP (TCS, master trip, meters)	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (Terminal blocks, contact points)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
PT voltage in energymeter	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Functionality Checking:

VCB remote closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-1 relay healthy	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB remote tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-2 relay healthy	:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Master trip operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Heater operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Overcurrent & Earth Fault Relay

Position	:		Country of Origin	:	Finland
Manufacturer & Model	:	ABB REF615	Serial No	:	1VHR9161966

Visual Inspection:

Watchdog	:	<input type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay buttons working	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Auxiliary voltage	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay terminals cleaned	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Date and time	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	All connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Relay display	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Protection Setting Checking:

Protection setting as per BREB SPD's guideline	:	<input type="checkbox"/> OK <input type="checkbox"/> Not OK
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System Protection & Design (SPD) BREB

11 kV AIS Switchgear Panel

Position	:		Model	:	
Manufacturer	:		Serial No	:	

11 kV VCB 5E

Position	:	5E	Manufacturer	:	Energyrac
Serial No	:	12-6867		:	

Visual Inspection:

VCB rack in & rack out	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (inside VCB panel, mechanical chamber)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mechanical joints lubricated	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	
Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Functionality Checking:

VCB local closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Automatic spring charge	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB local tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	

Testing:

Insulation Resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Contact resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Opening time	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached

CRP

Manufacturer	:	Energyrac	Serial No	:	35505858/11/21
VCB Serial No	:	12-6867	CRP	:	VAX3/2G0750BA

Visual Inspection:

Device in CRP (TCS, master trip, meters)	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (Terminal blocks, contact points)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
PT voltage in energymeter	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Functionality Checking:

VCB remote closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-1 relay healthy	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB remote tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-2 relay healthy	:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Master trip operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Heater operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Overcurrent & Earth Fault Relay

Position	:		Country of Origin	:	Finland
Manufacturer & Model	:	ABB REF 615	Serial No	:	1VHR91676571

Visual Inspection:

Watchdog	:	<input type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay buttons working	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Auxiliary voltage	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay terminals cleaned	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Date and time	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	All connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Relay display	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Protection Setting Checking:

Protection setting as per BREB SPD's guideline	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
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18/11/23

System Protection Design (SPD) BREB
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11 kV AIS Switchgear Panel

Position	:		Model	:	
Manufacturer	:		Serial No	:	

11 kV VCB 6F

Position	:	6F	Manufacturer	:	Energy Pac
Serial No	:	12-6869		:	

Visual Inspection:

VCB rack in & rack out	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (inside VCB panel, mechanical chamber)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mechanical joints lubricated	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	
Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Functionality Checking:

VCB local closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Automatic spring charge	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB local tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		:	

Testing:

Insulation Resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	
Contact resistance	:	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	
Opening time	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	

Comment: Test reports attached

CRP

Manufacturer	:	Energy Pac	Serial No	:	355D5782/11/21
VCB Serial No	:	12-6869	CRP	:	VAX317G0750BA

Visual Inspection:

Device in CRP (TCS, master trip, meters)	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Dust cleared (Terminal blocks, contact points)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
PT voltage in energymeter	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK

Functionality Checking:

VCB remote closing	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-1 relay healthy	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
VCB remote tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	TCS-2 relay healthy	:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Protection tripping	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Indications	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Master trip operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Heater operation	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Overcurrent & Earth Fault Relay

Position	:		Country of Origin	:	Finland
Manufacturer & Model	:	ABB REF 615	Serial No	:	1VHR91617845

Visual Inspection:

Watchdog	:	<input type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay buttons working	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Auxiliary voltage	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	Relay terminals cleaned	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Date and time	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	All connections tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Relay display	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		:	

Protection Setting Checking:

Protection setting as per BREB SPD's guideline	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK	
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[Signature]
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System
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BREB

11 kV Current Transformer

Manufacturer	:		Connected CT Ratio	:	
Rated CT Ratio	:			:	

Visual Inspection:

Serial No.	:					
Primary connections opened and rejointed	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Secondary connections tightened	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Star-point grounded	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dust cleared(MK, Secondary terminal box)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Unused core shorted	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Testing:

Insulation resistance	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
Excitation test	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory

Comment: Test reports attached

Bus-bar

Visual Inspection:

Bus-bar condition	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		Connection tightness	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK
Cable connection opened & rejointed	:	<input checked="" type="checkbox"/> OK <input type="checkbox"/> Not OK		Dust cleared	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Testing:

Insulation resistance	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
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Comment: Test reports attached

11 kV Potential Transformer

Manufacturer	:		PT Ratio	:	
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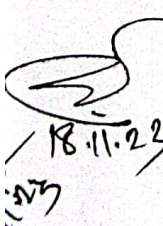
Visual Inspection:

Serial No.	:					
Primary connections opened and rejointed	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Secondary connections tightened	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Neutral grounded	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dust cleared(Junction box, Secondary terminal box)	:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

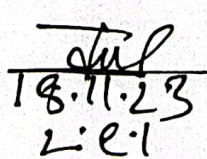
Testing:

Insulation resistance	:	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory	<input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Not Satisfactory
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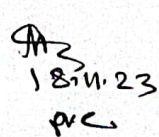
Comment: Test reports attached




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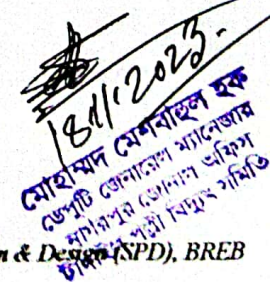
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মোহাম্মদ মোহাম্মদ হক
ডেপুটি সিস্টেম প্রকল্প অফিসার
সিস্টেম প্রকল্প অফিস
সিস্টেম প্রকল্প অফিস

System Protection & Design (SPD), BREB