Quality Management	POW	QUAL	QUALITY FORMS					
System		TITLE: Sum	mary	of Format				
Document No.	QF-RTS-01	Revision No.:	02	Effective Date:	Page	1	of	1

Summary Format (Substation Wise)

Division:	Substation	

Sl. No. (A)	Format	<u>Equipment</u>	No. of Equipment Installed/in use	No. of formats	
1.	QF-RTS-01	Summary format			
2.	QF-RTS-02	Power Transformer (Nameplate)			
3.	QF-RTS-03	Transformer Oil Test Report			
4.	QF-RTS-04	Circuit Breaker (Nameplate)			
5.	QF-RTS-05	Disconnecting Switch (Nameplate)			
6.	QF-RTS-06	Voltage Transformer (Nameplate)			
7.	QF-RTS-07	Current Transformer (Nameplate)			
8.	QF-RTS-08	Lightning Arrester (Nameplate)			
9.	QF-RTS-09	Battery/Battery Charger (Nameplate)			
10.	QF-RTS-10	Equipment Maintenance history			
11.	QF-RTS-11	Transformer Tan-delta (3 phase)			
12.	QF-RTS-12	Transformer Tan-delta (single phase)			
13.	QF-RTS-13	Instrument Transformer Tan-delta			
14.	QF-RTS-14	Circuit Breaker Timing Test			
15.	QF-RTS-15	Circuit Breaker Contact Resistance Test			
16.	QF-RTS-16	Battery Load Test	+		

B	Single Line Diagram	
	Single Line Diagram	

Comment/Other Information (if any):

AE/SDE	Executive Engineer,
Substation.	GMD .

Reviewed by CE (T-1)

Approved by ED (O&M)

Quality			POWE	R GRII	COM	(PAN	Y OI	F BAN	IGLA	DESE	LTD.		QI	UALITY
Managemer System	nt	Tl	TLE: EC	QUIPME	TAG TV	A OF G	RID	SUBST	TATIO	N (Tra	nsforme	er)	F	ORMS
Document N	0.	QF-R	TS-02	Revi	sion N	No.: (02	Effe	ctive	Date:	¥		Page	1 of
				Tran	sforme	er Data o	of Gri	id Subst	tation					
GC.:									GMD.					
SUBSTATION:												STATUS		
MVA & Current	Rating	ı												
Manufacturer		:								Trans.	ID :			
BAY ID		:				M	lanufa	c. Year	:			Frequency	:	50 H
Serial No.		:			P	No. of	Phase	:			Widd. Typ	e :		
Standard		:												
Voltage Level									Note					
Voltage Leve	el	H	/	LV		TV (If		Note	1:					
WI FLY	134 37		37											
MVA & Curre	nt Rati	DΩ												
SI. No.			Rating MVA Ratin	o (HT/LT)		_	_	ONAN 50			ONAF			FAF
	WLV		mpere Rati					215.4			323.1			
3. T	,		MVA Ratin	g (HT/LT)										
4.		A	mpere Rati	ing (HT/LT)									
Tap Changer														
-		N	fanufacture	R.			HV	Type of 1			No.	of Taps	Nomi	nel Tap No.
Tap Changer	_					-	+	_	On Load					
						- 1	LV	Cha	nger Ty	/pe				
				ħ.	lotor Pov	wer	:				Driving	Type :	мот	OR
Impedance														
SI. No.	%	Z (HV-I	LV) & XR R	latio				T		Nom	inal Tap		Las	t Tap
1.		% Z (HV-LV)											
2.		XR	Ratio											
BIL (Basic II	sulatio	n Leve	H) -					Neutr		unding				
Insulat Leve			LIWL	SIV	VL.	PFWL			-	Neutral C	Prounding		Impe	dence Ω
	- 01	_	Vector G	roun		-	Wind	fing Res	istance				-	
Temparatu	S HIZE	-	A SCHOOL CO	n coup										

Year of Manufacturing Bushing Type

AE/SDE,
Sub-station.

Reviewed by CE (T-1)

Bushing Information

Bushing Information

Quality	PC	POWER GRID COMPANY OF BANGLADESH LTD.							
Management System	Т	TTLE: Transformer I	nsulat	ting Oil Test Report		,			
Document No.	QF-RTS-03	Revision No.:	01	Effective Date:	Page	1	of	1	

Name of Sub-Station	Capacity & Voltage Level			
Sample Identity		Date of Sample Collection		
Manufacturer Name	Year of Manufacturer	Year of Commissioning		
Winding Temp.	Oil Temp.	Ambient Temp.		

Name of Test: Dissolved Gas Analysis (DGA)

ame of Test: Dissolved G	IEEE C57.104		T	est Result (pp	m)		Test	
Dissolved Gases	Limits (ppm) (Con-2)	Date-1	Date-2	Date-3	Date-4	Date-5	Instrument	
Hydrogen (H ₂)	700							
Carbon Di Oxide (CO2)	570							
Carbon Monoxide (CO)	4000							
Methane (CH ₄)	400							
Ethane (C ₂ H ₆)	100							
Ethylene (C ₂ H ₄)	100						4	
Acetylene (C ₂ H ₂)	9						_	
TDCG	1920							

Name of Test: Moisture Content

	t ppm (mg/kg)		Test Instrument				
New Oil	Old Oil	Date-1	Date-2	Date-3	Date-4	Date-5	
<10	<20						

Name of Test: Di-electric Dissipation Factor (TAN-δ)

IEEE C57.106 (Limit@25°C)	Applied		Test Result													
	(Limit@25°C)	voltage	voltage	voltage	voltage	Dat	e-1	Dat	e-2	Dat	e-3	Dat	e-4	Dat	e-5	Instrument
		Cp(pf)	Tan-δ (%)	Cp(pf)	Tan-δ (%)	Cp(pf)	Tan-δ (%)	Cp(pf)	Tan-δ (%)	Cp(pf)	Tan-δ (%)					
New Oil 0.05% Old Oil 0.5%	2 KV											1				
	3 KV											4				
	5 KV															

Name of Test: Acidity (Neutralization Number)

IEC 604	122 Limit (mg	KOH/g)		Test Instrument				
Good	Fair	Poor	Date-1	Date-2	Date-3	Date-4	Date-5	
<0.1	0.1-0.2	>0.2						

					100	100		
D.	eco	***	m	an	di	ati	OH	

□ Result Satisfactory.	□ Need observation.	Resampling after	Month.	☐ Caution.	Resampling immediate	y.
------------------------	---------------------	------------------	--------	------------	----------------------	----

Comments:

Tested By:

Witnessed By:

Verified By:

C/S By:

Assistant/ Sub-Assistant Engineer,

Sub-Divisional/Assistant Engineer

Executive Engineer

Superintending Engineer

Reviewed by CE (T-1)

Approved by ED (O&M)

Maleskohn

Quality Management System				F BANGLADESH LTD. GRID SUBSTATION (CE		UAI	LITY MS	
Document No.	QF-RTS-04	Revision No.:	02	Effective Date:	Page	1	of	1

CIRCUIT BREAKER

EQUIPMENT DATA OF GRID SUBSTATION

GC:		GMD:	
SUBSTATION:			
NAME OF MANUFACTURER:	:		
YEAR OF MANUFACTURER:	:		TYPE OF BREAKER :
BREAKER ID	:		
BAY ID	:		
SERIAL NO.	:		RATED FREQUENCY :
OPERATION	:	RAT	ED SHORT CIRCUIT BREAKING :
RATED SHORT TIME CURRENT	:	OPE	RATING MECHANISM VOLTAGE :
RATED MAKING CURRENT	:		OPERATING SEQUENCE :
OPERATING MECHANISM :			CONTROL VOLTAGE :
RATED CURRENT :	:		TANKTYPE :
GAS PRESURE	:		RATED VOLTAGE :
NOTE	:		

AE/SDE,
Sub-station.

Reviewed by CE (T-1)

M& week

Quality Management System				F BANGLADESH LTD GRID SUBSTATION (I	III CONTRACTOR		OR	ITY MS	
Document No.	OF-RTS-05	Revision No.:	02	Effective Date:		Page	1	of	1

EQUIPMENT DATA OF GRID SUBSTATION

DISCONNECTING SWITCH / ISOLATOR

SUBSTATION:			Running
MANUFACTURER:		DS ID. :	
TYPE		BAYID :	
SERIAL NO.:		YEAR OF MANUFACTURER:	
RATED VOLTAGE :	kv	STANDARD :	
RATED CURRENT :	A	RATED FREQUENCY :	н
SHORT TIME CURRENT :	KA SEC	NO. OF POLE :	
NO. OF CONTACTS :	NO NO	TYPE OF BREAKING :	
	NC	OPERATING MECHANISM :	
OPERATING VOLTEGE :	V DC		
NOTE :			
-			

AE/SDE, _Sub-station.

Reviewed by CE (T-1)

Quality Management System				F BANGLADESH LTD. GRID SUBSTATION (V		ORI	MS	
Document No	OF PTS 06	Revision No.:	02	Effective Date:	Page	1	of	1

GC:		GMD:		
SUBSTATION:				
MANUFACTURER:			VT. ID. :	
BAY ID :		TY	YPE :	
ATED VOLTAGE	KA	MANUFAC	YEAR:	
ATED VOLTAGE ECONDARY :		STANDAR	RD	
		RATED FREQU	ENCY :	Hz
ACITANCE :		NO. OF PHA	SE :	
HORT TIME URRENT :	KA SE	EC TERMINALS MAR	RKING:	
TAL WEIGHT	К	WEIGHT OF	OIL :	
STATUS		SL. N	0. :	
Note :				
ECIFICATION				
No. Ratio	Sec. Connection	Aux. Connection	Burden (VA)	Accuracy Class
1				

Reviewed by CE (T-1)

Approved by ED (O&M

Malekrli

Quality Management System			_	F BANGLADESH GRID SUBSTAT	 _	UAL	ITY MS	
Document No.	OF-RTS-07	Revision No.:	02	Effective Date:	Page	1	of	1

EQUIPMENT DATA OF GRID SUBSTATION

CURRENT TRANSFORMER

GC			GMD:					
SUB	SSTATION:							
NAMER MANUF	OF FACTURER:			CT. ID. :				
YEAR	OF JFACTURE :			BAY ID.				
TYPE				SL. NO. :				
RATED PRIMARY VOLTAGE: RATED PRIMARY CURRENT:			KV RATE	RATED FREQUENCY :				
		NO.	OF PHASE :	HZ				
	SECONDARY		TERMIN A	NALS MARKING :				
	BURDEN :		VA	CLASS				
MEASU	JRED		VA WI	EIGHT OF OIL :	Kç			
NO. OF			NO	STATUS				
MINDIN TOTAL I	WEIGHT		Kg ST	TANDARD				
Detai	Note :							
Detai	Note : I Specification Ratio	Sec. Connection	Aux. Connection	Burden VA	Accuracy Clas			
.No.	I Specification	Sec. Connection	Aux. Connection	Burden VA	Accuracy Cla			
Т	I Specification	Sec. Connection	Aux. Connection	Burden VA	Accuracy Class AE/SDE, Sub-static			

Quality Management System				F BANGLADESH LTD. GRID SUBSTATION (L	A)	-	ORI		
Document No.	QF-RTS-08	Revision No.:	02	Effective Date:		Page	1	of	1

EQUIPMENT DATA OF GRID SUBSTATION

SURGE / LIGHTNING ARRESTER

GC:	GMD:	
SUBSTATION:		QF-RTS-08
NAME OF MANUFACTURER:	CT. ID.	:
TYPE :	BAY ID	:
RATED SYSTEM VOLTAGE :	YEAR OF MANUFACTURER:	
TED OPERATING VOLTAGE:	KV	:
ENERGY INPUT :	KJ/KV : RATED FREQUENCY	
TOTAL WEIGHT :	KG NOMINAL DISCHARGE CURREN	п
EQUIPMENT STATUS :	PROTECTIVE CLASS	:
SL. NO. :		

AE/SDE,
Sub-station.

Reviewed by CE (T-1)

Approved by ED (O&M)

Malistohi

Quality	Quality POWER GRID COMPANY OF BANGLADESH LTI Management System (Battery/Charger) Occument No. OF-RTS-09 Revision No.: 02 Effective Date:		UAI	ITY				
_	IIIL			BOY TO MANAGEMENT OF REAL PROPERTY AND A VANCOUS PROPERTY.		OK	IVIS	
Document No.	OF-RTS-09	Revision No.:	02	Effective Date:	Page	1	of	1

BATTERY & BATTERY CHARGER EQUIPMENT DATA OF GRID SUBSTATION

GC :	TON!		GMD:			Runnii	20	
SUBSTAT	ION:					Kullili	ig	
NAME OF	MANUFACTURER	=						
YEAR OF	MANUFACTURER	:	\	OLUME OF	ELECTROLYTE :		Lit.	
Batten	y ID	:						
Bay	ID	:			SERIAL No. :			
MANUFA	CTURER TYPE	:			CAPACITY	:	АН	
TYPE OF ELECTROLYTE :		:	,	OLTAGE PE	ER CELL (NOMINAL)) :	V DO	
FLOAT CHARGE RATE :		:	MAXIMUM BOOST CHARGE RATE :			TE:	MA	
EFFICIENCY AT 10 HOUR :		:	RATED SHORT TIME CURRENT :				КА	
NO	TE	1						
BATTER	Y CHARGER							
NAME OF	MANUFACTURER							
YEAR OF	MANUFACTURE		MANU	JFACTURER	TYPE :			
RECTIFIC	CATION SYSTEM			FREQU	JENCY :		Hz	
CONTR	OLLING SYSTEM			CHARGIN	IG MODE :			
AC	INPUT			DC SIDE	OUTPUT :		V	
SIDE	RATED VOLTEGE			SIDE	CURRENT:		А	
CHARG	ING CONTROL							
	NOTE							

AE/SDE,
Sub-station.

Reviewed by CE (T-1)

Approved by ED (O&M)

Maleokoki

1

Quality Management System			OF BANGLADESH LTD. INTENANCE HISTORY		UAL	ITY MS	
Document No.	OF-RTS-10	Revision No.: 02	Effective Date:	Page	1	of	1

Power Grid Company of Bangladesh Ltd.

EQUIPMENT MAINTENANCE HISTORY

DIVISIO	ON:	SUBSTATION:	
	tallation / commissioning date	:	
	me of project / agency under which equi	pment installed :	
10000	uipment manual / brochure available	•	Yes/ No
	al drawing available		Ye/ No
Date	Type of Problem / Fault	Action taken	Present status / Remarks
i. Oth	her information's (if any)		
	AE/SDESubstation.	E	Executive Engineer, GMD
	Paviawad by CE (T.1)		Approved by ED (O&M)

MANSon

Muliokski

Quality Management System				F BANGLADESH LTD. hase) Tan-δ Test Report		UAI FOR	LITY MS	
Document No.	QF-RTS-11	Revision No.:	01	Effective Date:	Page	1	of	1

Power Transformer (Three Phase) Tan-δ Test

Substation Name:	Date:
Equipment ID:	Test Equipment:
Capacity:	Equipment Serial:
Voltage Rating:	Reference Value:
Manufacturer:	Ambient Temp.:
Year of Manufacturing:	Oil Temp. :
Test Frequency:	Humidity :

Transformer Tan-delta

	Mode	US	r-A	GSTg-A+B		GSTg-B		GSTg-A+B		GSTg-B	
Measurement		C _{HL} (HV-LV)		C _H (H	C _H (HV-G)		(Check)	C _L (LV-G)		C _{HL} +C _L (Check)	
Sl No	Voltage (kV)	Cp (nF)	DF (%)	Cp (nF)	DF (%)	Cp (nF)	DF (%)	Cp (nF)	DF (%)	Cp (nF)	DF (%)
1	5										
2	10										

Bushing Tan-delta

Measurement		HT		L	LT		Tertiary		itral	
Phase	Mode	UST-A (Tes	t Terminal)	UST-A (Test Terminal)		UST-A (Test Terminal)		UST-A (Test Terminal)		
	Voltage (kV)	Cp (pF)	DF (%)	Cp (pF)	DF (%)	Cp (pF)	DF (%)	Cp (pF)	DF (%)	
R	5									
	10									
V	5									
Y	10									
_	5									
В	10									

Recom	imendation:			
	Transformer			Bushing
	Result satisfactory.		☐ Result satis	factory.
	Need Observation. Retest after	month.	☐ Need Obse	rvation. Retest after month.
	Centrifuge the oil.		☐ Replace the	e phase bushing immediately
Comme	ent :			
	Tested By	Witnessed	/Checked By	Counter signed By
	AE/SDE, RTS,PGCB	Executive Eng	ineer, RTS, PGCB	Superintending Engineer, RTS, PGCB

Reviewed by CE (T-1)

Approved by ED (O&M)

HOLDER

Quality Management System				F BANGLADESH le Phase Auto) Test	 _	UAL		
Document No.	OF-RTS-12	Revision No.:	00	Effective Date:	Page	1	of	1

	GSTg-A+F C _L (LV-G) nF) DF		GSI	
(x)	C _L (LV-G)		GSI	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)		GST	
(x)	C _L (LV-G)			d-R
				(Check)
		(%)	Cp (nF)	-
		,	-	
1 (GSTg-A+E		GST	Гд-В
	C _L (LV-G)			(Check)
	nF) DF		Cp (nF)	
			L	
	GSTg-A+E	}	GST	Гg-В
	C _L (LV-G)			(Check)
6) Cp (nF) DF	(%)	Cp (nF)	DF (%
-		-		
		_		
		770		
				DF (%)
(51)	DI (70)	-	p (pi)	D1 (70)
-		+		
		-		
	Tertia C-A (Test 1) (pF)	C _L (LV-G) Cp (nF) DF Tertiary C-A (Test Terminal) (pF) DF (%) Bushing tisfactory.	Tertiary P-A (Test Terminal) O(pF) Bushing tisfactory.	C _L (LV-G) C _{HL} + C _L

Witnessed/Checked By

Executive Engineer, RTS, PGCB

Reviewed by CE (T-1)

Tested By

AE/SDE, RTS, PGCB

Counter signed By

Superintending Engineer, RTS, PGCB

Quality Management System				F BANGLADESH mer Tan- δ Test Re	Ì	UAL		
Document No.	OF-RTS-13	Revision No.:	00	Effective Date:	Page	1	of	1

TAN-δ Test Result of Current Transformer / Voltage Transformer

Test Instrument Used
Name of the Grid S/S
Equipment ID
Date of Testing
Commissioning date
Manufacturing year
Manufacturer
Oil temperature

SI No.	Phase	Mode	Test Connection	Applied Voltage	Capacitance(nF)	Tanô (%)	Remarks
	0.74			3 KV			
1	R	UST-A	HT-Cx	5 KV	CHL		
				10 KV			
				3 KV			
2	Y	UST-A	HT-Cx	5 KV	CHL		
				10 KV			
				3 KV			
3	В	UST-A	HT-Cx	5 KV	CHL		
3				10 KV			

NB - According to IEEE C57.13-2016, the Tan-δ limit is 0.5% (max.) for Current Transformer.

Recommend	lat	ion:
-----------	-----	------

	Result satisfact	ory.		
	Need Observat	ion. Retest aft	er_	_ month.
	Replace the	phase	_ im	mediately
Comme	ent:			

Tested By:

Verified By:

C/S By:

Assistant Engineer/ Sub-divisional Engineer RTS, PGCB Executive Engineer, RTS, PGCB Superintending Engineer RTS, PGCB

Reviewed by CE (T-1)

Whosew

Quality		POWER GRID COMP	ANY OF	BANGLADESH LTD.		QUA	LITY	FORM	S
Management System	TITLE	: Transformer Tan-δ	(Single	Phase Auto) Test Re	eport		,		
Document No.	QF-RTS-14	Revision No.:	00	Effective Date:		Page	1	of	1

Circuit Breaker Timing Test

Test Instrument Used

Sub Station Name

Date of Testing

Breaker ID

Manufacturer

Manufacturing Year

Operating Mechanism

Ambient temperature : °C

Test Result

SL. NO.	PHASE	TRIP 1 (ms)	TRIP 2 (ms)	CLOSE (ms)	C-O (ms)	REMARKS
1.	R					
2.	Y					
3.	В					

Recommendat	ion:		
	☐ Result Satisfacto	ry.	
	□ Need observation	n. = _ = _	
	☐ Warning. Replac	e phase immediately.	
Comments:			
	Tested By:	Witnessed By:	C/S By:
	ub-divisional Engineer, RTS, PGCB	Executive Engineer RTS, PGCB	Superintending Engineer RTS, PGCB

Reviewed by CE (T-1)

Approved by ED (O&M)

Malakshi

Quality POWER GRID COMPANY OF BANGLADESH LTD.						QUA	LITY	FORM	IS
Management System	TITI	E: Circuit Breaker C	ontact	Resistance Test Rep	ort				
Document No.	QF-RTS-15	Revision No.:	00	Effective Date:	00/00/21	Page	1	of	1

Circuit Breaker Contact Resistance Test

Test Instrument Used :
Sub Station Name :
Date of Testing :
Breaker ID :
Manufacturer :
Manufacturing Year :
Operating Mechanism :

Ambient temperature : °C

Test Result

Sl. No.	Phase	Test Current (A)	Resistance (micro ohm)	Remarks
1.	R			
2.	Y			
3.	В			

Recommendation:			
	Result Satisfacto	ory.	
	Need observation	on. Retest after Month.	
	Warning. Repla		
Comments:-			
Tested By	i	Witnessed By:	C/S By:
A animatorat/Surb division	al Engineer	E-residue Francisco	6 F F .
Assistant/Sub-division RTS, PGCI		Executive Engineer RTS, PGCB	Superintending Engineer RTS, PGCB

Reviewed by CE (T-1)

Melossan

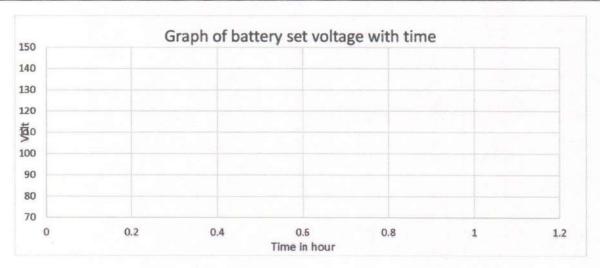
Quality POWER GRID COMPANY OF BANGLADESH LTD.						ALIT	/ FOR	MS
Management System		TITLE: Batter	y Loa	d Test Report				
Document No.	QF-RTS-16	Revision No.:	00	Effective Date:	Page	1	of	1

Battery Load Test

Substation Name:	Date:		
Equipment ID:	Test Equipment:		
Battery Type:	Batter Location:		
Capacity:	End Cell Voltage:		
Manufacturer:	Electrolyte Temp:		
No. of Cell:	Year of Manufacturing:		

Test Result

Sl.	Time	Discharging Current	Total Battery Voltage (Volt)	Āvg. Cell Voltage	Amp-Hour
1.	Pre-discharge				
2.	0.01	Amp			
3.	0.30				No.
4.	1.00				
5.	1.30				
6.	2.00				
7.	2.30				
9.	3.00				
10.	3:30				
11.	4:00				
12.	4:30				
13.	5:00				



Comments:

Acknowledge By Counter signed By Tested By Witnessed/Checked By

Superintending Engineer, RTS, PGCB AE/SDE, RTS, PGCB Executive Engineer, RTS, PGCB

Reviewed by CE (T-1)

Approved by ED (O&M)

Male Koshi MSWSSW