

QUALITY MANAGEMENT SYSTEM	POWER GRID COMPANY OF BANGLADESH LTD.					QUALITY PROCEDURES			
	TITLE: PROCEDURE FOR TELECOM & RTU EQUIPMENT MAINTENANCE								
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1. Scope: Applies to the whole of POWER GRID COMPANY OF BANGLADESH LTD.

2. Purpose: To provide necessary supports for maintenance of Telecom & RTU equipment which stands out as an indispensable component affecting quality & reliability of power system operation.

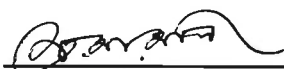
SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
1.0	<b>Operational activity of Telecom &amp; RTU system</b>				
1.1	Telecom & RTU Divisions are responsible for repair, Maintenance and Operation of all Communication System equipment and SCADA field equipment. And also responsible for installing new communication equipment and SCADA field equipment with necessary adaptation work.		M TRD		Effective and Efficient Load dispatch
1.2	Telecom & RTU Division providing the services by the following equipment: <ul style="list-style-type: none"> <li>Telecom Equipment – <ul style="list-style-type: none"> <li>i) Power Line Carrier System :- PLC, LMU, CVT, WT, ECS-FX, DCS-255, SOPHO-is3030</li> <li>ii) Fiber Optic Communication System :- FOX-515, MSE-5010/5001, DXC-5000, Call Manager(Cisco), SOPHO-is3030.</li> </ul> </li> <li>OPGW –8/12/24/32/48 cores optical Ground Wire all over Bangladesh.</li> <li>SCADA Field Equipment – RTU, MC (Transducer, FIM Module etc.).</li> <li>DC Power System – 48 V battery charger, Alkaline/Acid/Dry cell battery Set.</li> </ul>		M TRD		
1.3	<b>Power Line Carrier (PLC)</b> communication system used for voice, data communication, Tele-protection, Tele-control etc. by using carrier frequency (100-500KHz) for communication through LMU, CC, Wave Trap and Power Line. <b>FOX-515/MSE-5010/MSE-5001/DXC-5000</b> are digital communication system which used for Voice Communication, Data Transmission ( RTU Data), Tele-operation, Tele-metering, Video conference, Voice conference, IP Based Telephone, different Ethernet services etc. through OPGW and fiber optic cable. <b>ECS-FX</b> is a Static Analogue Telephone Exchange using for Voice Communication <b>DCS-255/SOPHO-is3030</b> are Digital Exchange which are used for TDM Based Telephone switching, Voice Conference and <b>CISCO Call Manager</b> is used for IP Based Telephone switching. <b>Remote Terminal Unit (RTU)</b> which collect Sub-station equipment data and send those data to NLDC SCADA Server through Communication Equipment.		M TRD		

Reviewed by (GMSO):

Approved by (D O&M):

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<b>2.0</b>	<b>Reference documents/information</b>				
2.1	A master list of Telecommunication equipment, SCADA field equipment is maintained.		M TRD		
2.2	Information card is maintained for all equipment under the jurisdiction of the division where records each equipment operational status/Specifications.		DM/AM TRD	As required	QF-TRD-01 to QF-TRD-09
<b>3.0</b>	<b>Planning</b>				
<b>3.1</b>	<b><u>Annual maintenance planning: (Scheduled)</u></b>		MTRD	As planned	
3.1.1	Telecom & RTU Division makes a detailed planning for Annual Maintenance Program for the scheduled maintenance of Telecommunication and RTU equipment.			Once in a year	QF-TRD-10
3.3	The prepared annual maintenance plan is then checked for error and/or omission of component (if any) and then submitted to the competent authority for approval.		DM/AM TRD	Once in a month	
3.3	After getting the required approval the plan becomes ready for implementation.				
<b>3.2</b>	<b><u>Monthly maintenance planning: (Scheduled)</u></b>				
3.2.1	Monthly maintenance plan is made at the last week of every month effective for the next month depending on the annual maintenance plan. <i>(The monthly maintenance schedule is just month wise division of the yearly maintenance schedule. It shows the day wise distribution of yearly maintenance of a particular month)</i>		DM/AMTRD	Monthly	QF-TRD-11
3.2.2	The monthly maintenance schedule should be signed by the Engineer-in-Charge of work. <i>After getting this monthly maintenance schedule the work in charge get acknowledge which work he have to do in the following month.</i>				
3.2.3	A detailed work list is done for the maintenance work as scheduled in the monthly maintenance plan. This list is made considering manufacturer's instruction manual and discussion with the engineer in charge.				
<b>4.0</b>	<b>Implementation</b>				
<b>4.1</b>	<b>Scheduled Maintenance:</b>				
4.1.1	A checklist is followed to carry out the preventive steps.	WI-TRD-01	DM/AMTRD	As required	
4.1.2	Maintenance work is done as planned in the annual maintenance program.		DM/AMTRD	As required	Actual maintenance work done
4.1.3	Proper safety measures must be followed throughout the maintenance work.	Safety guide of PGCB	DM/AMTRD	As required	Safety ensured

  
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4.1.4	After the completion of maintenance work. A report to be prepared by the Engineer-in- Charge for record.		DM/AMTRD	As required	QF-TRD-12 to QF-TRD-25
4.1.5	The works that can't be completed within the stipulate time frame of scheduled maintenance are carried forward.		DM/AMTRD	As required	Re-scheduling
<b>4.2</b>	<b>Emergency Maintenance:</b>		MTRD		
4.2.1	Whenever a fault occurs in Telecommunication & SCADA field Equipment system, the fault record is analyzed to confirm whether there is a root cause..		DM/AMTRD	As required	
4.2.2	Manager (Telecom & RTU Division) is informed over telephone about the Emergency Maintenance within quickest possible time.		DM/AMTRD	As required	Information to MTRD
4.2.3	Action plan for repairing and maintenance of the equipment is taken up immediately.		DM/AMTRD	As required	
4.2.4	The team leader of the working party will carry out the maintenance work.	WI-TRD-01	DM/AMTRD	As required	Actual maintenance work done
4.2.5	Proper safety measures must be followed throughout the maintenance work.	Safety guide of PGCB	DM/AMTRD	As required	Safety ensured
4.2.6	After the completion of maintenance work. A report to be prepared by the Engineer-in- Charge for record.		DM/AMTRD	As required	QF-TRD-26
4.2.7	A report will be prepared by the engineer in charge for record including 1. Nature of fault 2. Cause of break down 3. Repair/rectification work done 4. Spare parts issued 5. Time required for maintenance 6. Person designated for the repairing the breakdown maintenance work.		DM/AMTRD	As required	QF-CAC-01 QF-PAC-01
<b>4.3</b>	<b>Break down Maintenance:</b>		MTRD		
4.3.1	Whenever a fault occurs in Telecommunication system, the fault record is analyzed to confirm whether there is a break down.		DM/AMTRD	As required	
4.3.2	Manager (Telecom & RTU Division) is informed over telephone about the break down within quickest possible time.		DM/AMTRD	As required	Information to MTRD



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4.3.3	Action plan for repairing and maintenance of the equipment is taken up immediately.		DM/AMTRD	As required	
4.3.4	The team leader of the working party will carry out the maintenance work.	WI-TRD-01	DM/AMTRD	As required	Actual maintenance work done
4.3.5	Proper safety measures must be followed throughout the maintenance work.	Safety guide of PGCB	DM/AMTRD	As required	Safety ensured
4.3.6	After the completion of maintenance work. A report to be prepared by the Engineer-in- Charge for record.		DM/AMTRD	As required	QF-TRD-27
4.3.7	A report will be prepared by the engineer in charge for record including 1. Nature of fault 2. Cause of break down 3. Repair/rectification work done 4. Spare parts issued 5. Time required for maintenance 6. Person designated for the repairing the breakdown maintenance work.		DM/AMTRD	As required	QF-CAC-01 QF-PAC-01
<b>4.4</b>	<b>Inspection:</b>				
4.4.1	All equipment is inspected visually time to time.		DGM	As required	QF-TRD-28
4.4.2	Each ETI, ETBA, ETL, ECS-FX, PAX, SOPHO, DCS-255, FOX-515, NLDC MUX(SDH, PDH), RTU, MC Panel, DIP, LMU, CVT, WT etc. would be inspected visually.		M/ DM/AM TRD	As required	QF-TRD-29 QF-TRD-30
<b>5.0</b>	<b>Action for improvement</b>				
5.1	After the completion of annual maintenance program, Manager, Telecom & RTU Division will submit the report to the management.		MTRD	As required	Report to management
5.2	In the case of Emergency/Break down maintenance Manager, Telecom & RTU Division will submit the report to the management with recommendation of remedial action necessary		MTRD	As required	-Do-
5.3	Report on Emergency/Breakdown maintenance is studied to prevent the recurrence of the same in future.		GM	As required	Improvement
5.4	Management will give proper instruction/ guideline to follow.				
<b>6.0</b>	Effectiveness of the 'Procedure for Telecom & RTU Equipment Maintenance' followed in PGCB, will be evaluated by the management.		GM, MR	During internal audit	
<b>7.0</b>	Action will be taken, based on the evaluation, by the Management.		MR, MD, Management Review Committee	When required	

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