

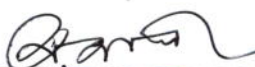
QUALITY MANAGEMENT SYSTEM	POWER GRID COMPANY OF BANGLADESH LTD.					QUALITY PROCEDURES			
	TITLE: PROCEDURE FOR SCADA EQUIPMENT MAINTENANCE								
Document No:	QP-SMD-1	Revision No.:	00	Effective Date:	11/11/12	Page:	1	of	3

1. Scope: Applies to the whole of POWER GRID COMPANY OF BANGLADESH LTD.
2. Purpose: To provide necessary supports for maintenance of SCADA & Electrical 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	Operation of SCADA/EMS system				
1.1	SCADA/EMS is a system of computer-aided tools to monitor, control, and optimize the performance of the generation and/or transmission system. SCADA Division is responsible for operation and maintenance of SCADA/EMS system and integration of newly connected equipment such as X-er, line, generator etc.		M SCADA	Continuous	SCADA /EMS system provides real time data to NLDC & Area Control Center operator for smooth operation of power system of Bangladesh.
1.2	NLDC SCADA system consists of the following subsystems: <ul style="list-style-type: none"> • Server system (Such as FE server, SCADA/EMS server, HIS server, Archive Server, PDS server, DTS server & OAG server etc) • Remote Terminal Units (RTUs) • Communications system 				
1.3	Remote Terminal Units (RTUs) interface to field sensing devices and continuously monitors status data & analog data. This data is transmitted to master station through communication media. It also receives and executes control commands from the master station. Front end server (FE) performs the polling of the RTU's using the IEC-101/104 protocol and transmits the received data to the SCADA/EMS servers. SCADA/EMS Server Contains the real-time applications. It processes the received data for other application and operator use. HIS server store the data as "historical data" and Archive Server allows to "automate" the archival of files on a "tape library" for the purpose of report generation and future planning. Web Servers provides access to the SCADA/EMS system via Web Forms. Development Server is used for program development, modeling and DTS server Contains a "training simulator" for dispatchers. OAG Gateways performs data exchange with other control centers.				
2.0	Reference documents/information				
2.1	A master list of SCADA equipment and Electrical equipment is maintained.		M SCADA		
2.2	Safety Manual QD-TSS-01 is maintained				

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3.0	Planning				
3.1	SCADA & Maintenance Division makes a detailed planning for Annual inspection & maintenance program for the scheduled maintenance of SCADA equipment.		AM/DM SCADA	Once in a year	QF-SMD-01
3.2	The daily operation, checking & inspection and schedule maintenance should be in such a way that the operation of all equipment can be carried out efficiently and effectively.			Daily	
3.3	Monthly operation and maintenance schedule for the succeeding month should be developed within the last week of running month.		AM/DM SCADA	Once in a month	QF-SMD-02
3.3	The prepared annual/ monthly maintenance plan is then checked for error and/or omission of component (if any) and then submitted to the competent authority for approval.				
	The schedule is then approved by the Manager SCADA & Maintenance Division.				
3.4	After getting the required approval the plan becomes ready for implementation.				
4.0	Implementation				
4.1	Monitoring				
4.1.1	Monitor the performance of SCADA & other equipment according to check list.		JAM/AM/DM SCADA	Daily	QF-SMD-03 QF-SMD-06 QF-SMD-07
4.3	Monitor the functionality of SCADA/EMS application.			Daily	QF-SMD-04 QF-SMD-05
4.5	Monitoring the operation of lift, Central AC & Split AC, Pump & Battery, fire fighting equipment				QF-SMD-08 To QF-SMD-12
4.2	Inspection & Schedule Maintenance				
4.2.1	Each Area control Center would be inspected visually twice in a Year.		M SCADA	Twice in a year.	
	Back up station would be inspected visually twice in a month.			Twice in a month	
4.2.2	Each equipment is inspected as per checklist. The checklist is followed to monitor the perfection of operation and/or identify the source of mal-operation, which in turn, will help to carry out the preventive steps.		AM/DMSMD	As required	
4.2.3	Maintenance work is carried out as necessary & planned in the annual maintenance program.		AM/DMSMD	As required	Actual maintenance work done
4.2.4	Proper safety measures must be followed throughout the maintenance work.	QD-TSS-01	AM/DM SCADA	As required	Safety ensured
4.2.5	After the completion of maintenance work. A report to be prepared by the Engineer-in-Charge for record.		AM/DM SCADA	As required	QF-TMD-14


Reviewed by (GMSO):


Approved by (Director O&M):

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4.2.6	The works that can't be completed within the stipulate time frame of scheduled maintenance are carried forward.		AM/DM SCADA	As required	Re-scheduling
4.3	Break down Maintenance:				
4.3.1	Whenever a fault occurs in SCADA system, and NLDC electrical power system the fault record is analyzed to confirm whether there is a break down.		JAM/AM/DM SCADA	As required	QF-SMD-13
4.3.2	Manager (SCADA) is informed about the break down.		AM/DM SCADA	As required	Information to M SCADA
4.3.3	Action plan for repairing and maintenance of the equipment is taken up immediately.		AM/DM SCADA	As required	
4.3.4	The team leader of the working party will carry out the maintenance work.		DMSCADA	As required	Actual maintenance work done
4.3.5	Proper safety measures must be followed throughout the maintenance work.	QD-TSS-01	DMSCADA	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. Records of the maintenance works are maintained for reference including following information: ⇒ Nature of fault ⇒ Cause of break down ⇒ Repair/rectification work done ⇒ Spare parts issued (if any) ⇒ Time required for maintenance Person designated for the breakdown maintenance work.		DMSCADA	As required	QF-SMD-15
5.0	Action for improvement				
5.1	After the completion of annual maintenance program, Manager SMD will submit the report to the management.		MSCADA	As required	Report to management
5.2	In the case of break down maintenance Manager SMD will submit the report to the management with recommendation of remedial action necessary		MSCADA	As required	
5.3	Report on breakdown maintenance is studied to prevent the recurrence of the same in future.	QF-SMD -15	GM	As required	
5.4	Management will give proper instruction/guideline to follow.				
6.0	The effectiveness of the procedure, for the SCADA equipment operation & maintenance, followed in PGCB, will be evaluated by the management.		GM, MR	During internal audit	
7.0	Actions will be taken on the basis of evaluation by the Management.		MR, MD, Management Review Committee	When required	Improvement