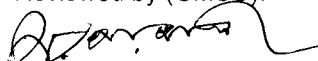


QUALITY MANAGEMENT SYSTEM	POWER GRID COMPANY OF BANGLADESH LTD.					QUALITY PROCEDURES			
	TITLE: PROCEDURE FOR POWER SYSTEM OPERATION & CONTROL								
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1. Scope: APPLIES TO WHOLE OF POWER SYSTEM NETWORK OF POWER GRID COMPANY OF BANGLADESH LTD.					
2. Purpose: To ensure economic, reliable and quality power supply to the consumers in a secured manner.					
SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
1.0	Planning		GMSO DGMLDC		
1.1	Preparing order of economic generation				
1.1.1	Economic order of generating units is prepared on the basis of variable cost of the generating units (Fuel cost for BPDB & FT (Fuel Tariff) for IPP machines). □ Fuel cost is the weighted average fuel cost, calculated for a period of 365 days. □ FT is defined in the "Power Purchase Agreement" of a particular IPP and the applicable rate is updated and circulated by IPP Cell of BPDB.	Activity Report of Chief Engineer, (Generation) PDB. & Circular of Tariff by IPP Cell.	DMEFD  IPP Cell	At least Once in a year.  As required	QF-LDC-21
1.2	Availability of Generation				
1.2.1	Everyday in the morning, all power stations are communicated for the following information: 1. Available generation units of that power station for that day. 2. Probable maximum generation of the machines for that day. 3. Information about the limitation of generation / limitation on variation of load (if any) and their cause in detail. 4. Probable time of Synchronization/ Shutdown of machines (if applicable)		DMLDC (General)	Daily	QF-LDC-07
1.3	Demand planning				
1.3.1	To facilitate the preparation of generation schedule and load shed planning, daily demand planning is made on the basis of the following: • Season & weather condition • Previous days tears demand condition (As applicable) • Working day or holiday • Existence of any emergency/ priority situation, etc.	QF-LDC-01 QF-LDC-06	DMLDC (General)	Daily	QF-LDC-07
1.4	Planning of generation				
1.4.1	Planning of IPP operation is made on weekly basis following the "Power Purchase Agreement (PPA)" of a particular IPP.	PPA of Concerned IPP	DMEMD	Weekly	QF-LDC-16
1.4.2	After assessment of available generation, the daily generation schedule is made on hourly basis following the economic order and the operating condition of the machines as described in clause 1.2.1	QF-LDC-01 QF-LDC-07 QF-LDC-16 QF-LDC-21	DMEMD	Daily	QF-LDC-15

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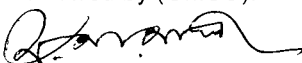
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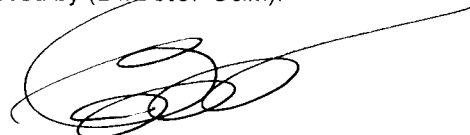
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
1.5	Load Allocation planning				
1.5.1	Load allocation planning is made on the basis of the following criteria: <ul style="list-style-type: none"> <li>Available Generation and estimated demand in the system for the day.</li> <li>Limitation in the transmission network (if any).</li> <li>Probable voltage problem in a zone due to MVAR demand, etc.</li> <li>Existence of any priority in load allocation (Irrigation load, special occasion in a particular area etc.).</li> </ul>		DMLDC (General)	Daily	
1.5.2	Following the above criteria, probable total load allocation in the system is estimated and distributed among the nine distribution zones <ul style="list-style-type: none"> <li>In proportionate to the demand of the respective zones as per load allocation plan and/or</li> <li>As per system condition.</li> </ul>	QF-LDC-13	DMLDC (General)	Daily	QF-LDC-07
1.6	Load Control planning				
1.6.1	It may become necessary to impose load control in the system either partially or all over the county, as necessary, when <ul style="list-style-type: none"> <li>Total generation in the system is not enough to meet system demand,</li> <li>or if there is any limitation in transmission network</li> <li>or if the grid voltage falls down below controllable range due to excess MVAR demand,</li> </ul>		DGMLDC MLDD	Daily	
1.6.2	Depending on the condition mentioned as in clause 1.6.1, necessary load control is imposed in distribution zones <ul style="list-style-type: none"> <li>In proportionate to the demand of the respective zones as per load allocation plan and/or</li> <li>As per system condition.</li> </ul>	QF-LDC-13	DMLDC (General)	As required	QF-LDC-07
1.7	Natural Gas requirement planning				
1.7.01	<ul style="list-style-type: none"> <li>The generation capacity and efficiency of generators in the system is not static.</li> <li>Addition and/or retirement of generators and reduction in capacity and efficiency of generators due to age affect the generation scenario.</li> <li>The system demand also varies in accord with time, season and year.</li> <li>Variation in generation capacity and/or generator efficiency of natural gas fired machines and/or change in system demand affects the quantity of gas required for power generation.</li> </ul>		DGMLDC MEMD	As required	

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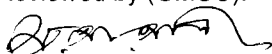
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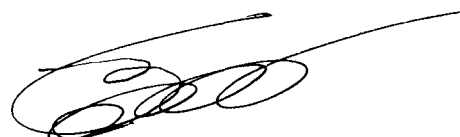
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
1.7.02	For effective & efficient use of natural gas resources, "PETRO BANGLA" needs to prepare a gas allocation plan for different category of users like power stations, fertilizer factories, industrial consumers, domestic consumers, etc.		DGMLDC MEMD	As required	
1.7.03	To facilitate the process mentioned in 1.7.02, it is required to plan the natural gas requirement in different power stations in MMCFT (Both BPDB & IPP machine) satisfying the following demand condition <ul style="list-style-type: none"> <li>Hourly maximum MkWh generation</li> <li>24-hour maximum MkWh generation</li> </ul> <i>Note : MMCFT = Million Cubic Feet</i>		DGMLDC MEMD	As required	
1.7.04	Planning of natural gas requirement is made in two separate stages: <ol style="list-style-type: none"> <li>Long term requirement planning.</li> <li>Short term requirement planning (<i>Updated in every six months</i>)</li> </ol>		DGMLDC MEMD	As required	
1.7.1	Long term requirement planning				
1.7.1.1	Planning of natural gas requirement for 60 (Sixty) months is made considering <ul style="list-style-type: none"> <li>Addition and/or retirement of generators in the period concerned.</li> <li>Machine / power station wise maximum generation capacity.</li> <li>The variation of system demand in different season and year.</li> </ul>		DGMLDC MEMD	As required	
1.7.1.2	Generators are grouped according to their probable gas supplier entity.		DGMLDC MEMD	As required	
1.7.1.3	Probable total natural gas requirement from individual gas entity is then calculated /estimated. Clause 1.1.1 to 1.1.6 of work instruction will be followed.	WI-PSO-07	DGMLDC MEMD	As required	QF-LDC-17
1.7.1.4	A report is then prepared and sent to "PETRO BANGLA" for further action.		DGMLDC MEMD	As required	
1.7.2	Short term requirement planning				
1.7.2.1	Natural gas requirement planning is updated twice in a year (i.e. updated for 06 (Six) months) considering <ul style="list-style-type: none"> <li>Addition and/or retirement of generators (If any)</li> <li>Machine / power station wise maximum generation capacity / efficiency (updated for change)</li> <li>The variation of system demand due to season change. (If applicable)</li> </ul>	Activity Report of Chief Engineer, (Generation) PDB. & QF-LDC-21	DGMLDC MEMD	As required	

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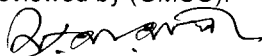
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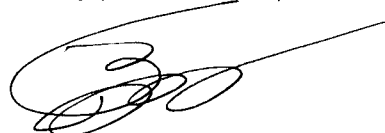
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
1.7.2.2	Generators are grouped according to their probable gas supplier entity.		DGMLDC MEMD	As required	
1.7.2.3	Probable total natural gas requirement from individual gas entity is then calculated /estimated. Clause 1.1.1 to 1.1.6 of work instruction will be followed.	WI-PSO-07	DGMLDC MEMD	As required	QF-LDC-17
1.7.2.4	A report is then prepared and sent to "PETRO BANGLA" for further action.		DGMLDC MEMD	As required	
2.0	<b>Operation</b>		Head of the Division	As required	
2.1	<u>Frequency control:</u> It is the responsibility of LDC to maintain system frequency according to grid code.				
2.1.1	If the system frequency goes above allowable range, follow the steps 1.1 to 1.8 of the work instruction	WI-PSO-01	SCE (DM/AM LDC)	As required	QF-LDC-19
2.1.2	If the system frequency goes below allowable range follow the steps 2.1 to 2.7 of the work instruction	WI-PSO-01	SCE (DM/AM LDC)	As required	QF-LDC-19
2.2	<u>Voltage Control:</u> Controlling grid voltage (230 kV, 132 kV, 66 kV & 33 kV) within $\pm 10\%$ of the rated voltage is also required for effective load despatching.				
2.2.1	If grid voltage comes down below the required level then the steps 1.1 to 1.7 of the work instruction will be followed.	WI-PSO-01	SCE (DM/AM LDC)	As required	QF-LDC-19
2.2.2	If grid voltage goes up beyond the required level then the steps 2.1 to 2.7 of the work instruction will be followed.	WI-PSO-01	SCE (DM/AM LDC)	As required	QF-LDC-19
2.3	<u>Load Allocation:</u> For nine distribution zones in the system, Load is allocated in proportionate to the demand of the respective zones or as guided by the system condition.		SCE (DM/AM LDC)	As required	
2.3.1	Despatcher from LDC control room will inform distribution zones over telephone about the load allocated for them		SCE (DM/AM LDC)	As required	
2.3.2	Despatcher will closely monitor whether the load allocation is implemented properly or not by monitoring the load flow of different transmission lines with the help of telemetering/SCADA system.		SCE (DM/AM LDC)	As required	
2.3.3	Despatcher will alert the zone to carry out load allocation as per instructions. If any zone do not carry out the given load control plan properly forced load control will be imposed by switching off 33kV feeders from grid substations feeding those areas.		SCE (DM/AM LDC)	As required	

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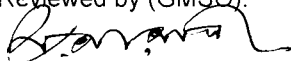
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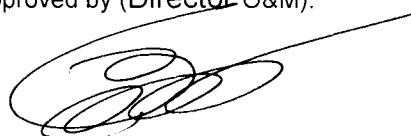
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Frequency /Time	Output
2.3	<u>Load Control:</u> Due to inadequacy in generation and/or transmission capability by any means, there may be a need for imposing load control in the system.	QF-LDC-07 QF-LDC-13	MLDD	As required	
2.3.1	Load control activity due to shortage of generation, caused by unavailability of machines and/or fuel (Gas/Oil) and/or limitation in transmission network, caused by capacity limitation and/or outage of transmission lines and/or sub-station equipment due to schedule maintenance / development work, is called <b>normal load controlling</b> . The steps 1.1.1 to 1.1.7 of the work instruction will be followed for implementation.	QF-LDC-13 WI-PSO-02	SCE (DM/AM LDC)	As required	QF-LDC-06
2.3.2	Load control imposed on emergency basis in the system due to sudden drop of generation caused by load rejection or tripping of generating units and/or outage of transmission lines and/or sub station equipment due to tripping or emergency maintenance is called <b>emergency load control</b> , then the steps 1.2.1 to 1.2.4 of the work instruction will be followed for implementation.	QF-LDC-13 WI-PSO-02	SCE (DM/AM LDC)	As required	QF-LDC-06
3.0	<b>Economic Load Despaching &amp; Coordination of Power Station Operation</b>		Head of the Division	As required	
3.1	<u>Economic Load Despaching:</u>				
3.1.1	Basis for economic despatch is sharing generation between all generators to minimize overall operating costs considering <ul style="list-style-type: none"> <li>• Transmission Limits</li> <li>• Cost of startup generators</li> <li>• Transmission Loss</li> </ul> which is achieved by <ul style="list-style-type: none"> <li>• Backing off higher cost generator:</li> <li>• Generator with lower cost should be run harder</li> <li>• keep shifting until (incremental) costs are all equal</li> </ul>		DGMLDC	As required	
3.1.2	Benefits of economic despatch <ul style="list-style-type: none"> <li>• Environmental issues are addressed properly by producing less emissions</li> <li>• Save natural resources by burning less fuel</li> </ul>				
3.1.1	Daily Generation schedule, prepared following economic order, will be followed as far as possible	QF-LDC-15	SCE (DM/AM LDC)	As required	
3.1.2	Dispatcher should check for any specific direction/message regarding the limitation in the transmission system, load supply to any specific distribution zone and/or loading of specific generators from <ul style="list-style-type: none"> <li>• MLDD/DGMLDC/GMSO/DT/MD</li> <li>• Power Station Operator</li> </ul>	QF-LDC-06	SCE (DM/AM LDC)	As required	

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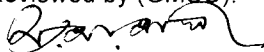
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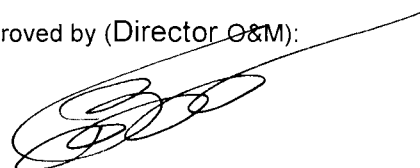
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./ Time	Output
3.1.3	In cases where the system condition gets changed, making it impossible to follow the generation schedule minutely, the loading of the available generators will be varied following <ul style="list-style-type: none"> <li>Economic order (QF-LDC-21)</li> <li>Present operating condition of the machines.</li> </ul>	QF-LDC-21	SCE (DM/AM LDC)	As required	
3.1.4	Depending on system condition, loading of different types of generators, would be done following clause 1.4.1 to 1.4.4 of Work Instruction.	WI-PSO-04	SCE (DM/AM LDC)	As required	
3.1.5	In case of emergency, i.e. tripping of generators and/or transmission lines, isolation of a zone from national grid, partial or full grid failure, economic despatching may not be possible.				
3.1.6	If system condition enforces violation of economy, Despatcher will keep record in the shift register		SCE (DM/AM LDC)	As required	QF-PSO-06
3.2	<u>Coordinating Power Station Operation:</u>				
3.2.1	The prime responsibility of a Load Despatcher is to ensure <ol style="list-style-type: none"> <li>Maximum power available to meet the demand</li> <li>Most possible economic generation &amp; transmission of power.</li> </ol>	QF-LDC-01 QF-LDC-02 QF-LDC-03 QF-LDC-13 QF-LDC-15	SCE (DM/AM LDC)	As required	coordinated operation of power stations
3.2.2	To accomplish the tasks mentioned in 3.2.1 despatcher needs to be in close contact to the power stations, monitor & guide the operation of the same.		SCE (DM/AM LDC)	As required	
3.2.3	All power station operators (Both BPDB & IPP) will inform Despatcher <ol style="list-style-type: none"> <li>Whenever a machine trips.</li> <li>When a machine starts hunting.</li> <li>When a machine is having a problem.</li> <li>When a machine is going to have forced/ scheduled shutdown soon.</li> <li>After a machine is shut down.</li> <li>When they take preparations to start a machine like firing of boiler etc.</li> <li>After a machine is synchronized with national grid.</li> </ol>		SCE (DM/AM LDC)	As required	LDC is informed about generation condition
3.2.4	With the information, described in 3.2.3, Despatcher will calculate the generation available in the forthcoming hours. If there is a possibility of shortage, Despatcher will impose load control as required		SCE (DM/AM LDC)	As required	Input data for load control
3.2.5	When a machine is synchronized or goes for shut down, the information described in 3.2.3 helps Despatcher to control the system by varying the loads on other machines		SCE (DM/AM LDC)	As required	
3.2.6	The information described in clause 3.2.3 will be recorded by Despatcher in shift register.		SCE (DM/AM LDC)	As required	QF-LDC-06

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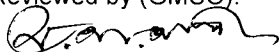
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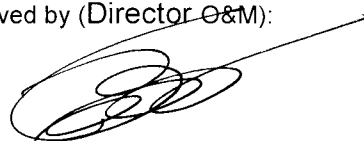
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./ Time	Output
4.0	<b>Outage Management</b>		MLDD	As required	
4.1	<u>Schedule outage:</u> Maintenance of Substation equipment and transmission lines are carried out by taking outage as per annual maintenance program. Prior approval from DT/MD is required for this type of outage.	QF-LDC-39	Functional Head of the Division/Circle	As planned	
4.1.1	Despatcher will conduct the necessary activity to give the required outage and to energize the line/equipment to resume its service after the work is finished or finished for that day. The steps from 2.1.1 to 2.1.11 of the work instruction will be followed	WI-PSO-03	SCE (DM/AM LDC)	As required	QF-LDC-06
4.1.2	Records of the activity described in 3.1.1 will be maintained.		SCE (DM/AM LDC)	As required	QF-LDC-06
4.2	<u>Emergency outage:</u> The outage given on emergency basis due to abnormality of equipments & lines. Prior permission is not required for this type of outage.		Functional Head of the Division/Circle	As required	
4.2.1	Despatcher will inform MLDD and will give clearance to the working party and will conduct the necessary activity to give the required outage and to take the line/equipment back in service after the work is finished for that day. The steps from 2.2.1 to 2.2.9 of the work instruction will be followed.	WI-PSO-03	SCE (DM/AM LDC)	As required	
4.2.2	Records of the activity described in 3.2.1. will be maintained		SCE (DM/AM LDC)	As required	QF-LDC-06
4.3	<u>Development Program outage:</u> Outage for addition of new sub-station equipment and/or transmission lines or modification of sub-station equipment and/or transmission line layout, carried out under development/project works falls in this category. Prior approval from DT/MD is required for this type of outage.	QF-LDC-39	PD/DGM(Grid)	As planned	
4.3.1	Despatcher will conduct the necessary activity to give the required outage and to take the line/equipment back in service after the work is finished for that day. The steps from 2.3.1 to 1.3.11 of the work instruction will be followed	WI-PSO-03	SCE (DM/AM LDC)	As required	
4.3.2	Records of the activity described in 3.3.1 will be maintained		SCE (DM/AM LDC)	As required	QF-LDC-06

Reviewed by (GMSO):



Approved by (Director O&M):



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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq. /Time	Output
5.0	<b>Tripping Management</b> Tripping is the automatic disconnection of live equipment and/or lines and/or generating units from the system due to internal or external fault. Tripping may cause abnormal change in system frequency and/or over loading of transmission lines and/or interruption of power and/or partial grid failure and/or total grid failure or none of them. Tripping tends to make the system unstable.		DGMLDC	As required	
5.01	Action to be taken when a tripping is recognized: • Despatcher will immediately collect detail information regarding tripping and will analyze the situation before stepping ahead for the next stage of action		SCE (DM/AM LDC)	As required	
5.1	<u>For minor tripping:</u> If despatcher is able to tackle the situation on his own, along with his people, then 1.1.1 to 1.1.10 of the work instruction will be followed.	WI-PSO-05	SCE (DM/AM LDC)	As required	System restored QF-LDC-07
5.2	<u>For major tripping:</u> If the situation is beyond the capacity of despatcher (In case of large/multiple tripping), then he will follow 1.2.1 to 1.2.13. of the work instruction.	WI-PSO-05	DGMLDC MLDD & SCE (DM/AM LDC)	As required	System restored QF-LDC-07
6.0	<b>Power System Restoration from Grid Fail</b> When automatic disconnection of live equipment, transmission lines or generating units from the system leads to partial or total grid failure making a system unstable or total black out, it is necessary to take action to restore the system back to stability or to revive the system from blackout (As necessary).		Functional Head of the Division/	As required	
6.01	Action to be taken when a partial or total grid fail is recognized: • Despatcher immediately collect detail information regarding tripping and analyze the situation before stepping ahead for the next stage of action		SCE (DM/AM LDC)	As required	
6.1	<u>Partial Grid failure:</u> The whole power system network is divided in different zones. If one or more zone gets full power interruption, it is called partial grid fail. Despatcher will follow 1.1.1 to 1.5 of the work instruction.	WI-PSO-06	Functional Head of the Division/	As required	System restored QF-LDC-07

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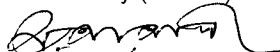




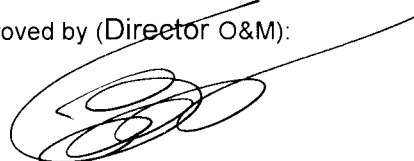
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
6.2	<u>Full Grid failure:</u> The whole power system network is divided in different zones. If All zones get full power interruption, it is called full grid fail. Despatcher will follow 2.1.1 to 2.6 of the work instruction.	WI-PSO-06	Functional Head of the Division/	As required	System restored QF-LDC-07
<b>7.0</b>	<b>Data Recording</b>				
7.1	<u>Generation:</u>				
7.1.1	Hourly MW generation of each unit (Both BPDB & IPP machines) (Generation control and monitor activity)		SCE (DM/AM LDC) & JAM on shift	Each hour	QF-LDC-01
7.1.2	Total MW generation in each hour. (Both BPDB & IPP machines)		-DO-	Once daily	QF-LDC-01
7.1.3	Total MW generation in 24 hour. (Both BPDB & IPP machines)		-DO-		QF-LDC-01
7.1.4	Hourly MVAR generation of each unit (Both BPDB & IPP machines)		-DO-	Each hour	QF-LDC-02
7.1.5	Water discharge from Kaptai Water Reservoir in Cu. sec.		-DO-	Once daily	QF-LDC-02
7.1.6	Rain fall at Kaptai in mm.		-DO-	Once daily	QF-LDC-02
7.1.7	Consumption of Natural gas (Both BPDB & IPP machines) <ul style="list-style-type: none"> <li>• Titas gas</li> <li>• Bakhrabad gas</li> <li>• Jalalabad gas</li> </ul>		-DO-	Once daily	QF-LDC-01
7.1.8	Consumption of Liquid fuel (BPDB machines only) <ul style="list-style-type: none"> <li>• High Speed Diesel (HSD)</li> <li>• Super Kerosine Oil (SKO)</li> <li>• Furnace Oil (FO)</li> </ul>		-DO-	Once daily	QF-LDC-01
7.1.9	Machine synchronization time (Both BPDB & IPP machines)		-DO-	As required	QF-LDC-03
7.1.10	Machine tripping/shutdown time with cause. (Both BPDB & IPP machines)		-DO-	As required	QF-LDC-03
7.1.11	Availability information of machines that are under scheduled/emergency maintenance. (Both BPDB & IPP machines)		-DO-	As required	QF-LDC-03
7.1.12	Information about the machines that will go under scheduled/emergency maintenance within next few days. (Both BPDB & IPP machines)		-DO-	As required	QF-LDC-06
7.2	<u>Transmission:</u>				
7.2.1	Demand of grid sub-station during day peak in MW with time of day peak.		SCE (DM/AM LDC) & JAM on shift	Once daily	QF-LDC-06
7.2.2	Demand of grid sub-station during evening peak in MW with time of evening peak.		-DO-	Once daily	QF-LDC-06
7.2.3	Maximum demand of grid sub-station in the day in MW with the time of Maximum demand.		-DO-	Once daily	QF-LDC-09

Reviewed by (GMSO):



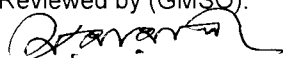
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7.2.4	Primary side bus voltage of grid sub-station during day peak in kV with time of day peak		-DO-	Once daily	QF-LDC-06
7.2.5	Primary side bus voltage of grid sub-station during evening peak in kV with time of evening peak.		-DO-	Once daily	QF-LDC-06
7.2.6	Minimum bus voltage in the day of some selected grid sub-station in kV with the time of minimum voltage.		SCE (DM/AM LDC) & JAM on shift	Once daily	QF-LDC-10
7.2.7	Hourly MW Reading of East West Inter connector (EWI).		-DO-	Each hour	QF-LDC-06
7.2.8	Energy transferred in the day through East West Inter connector in MWh (Ghorasal to Ishurdi or vice-versa).		-DO-	Once daily	QF-LDC-06
7.2.9	Tripping record of Transformer (230/132kV & 132/33 kV) and Transmission line with the detailed cause and time.		-DO-	As required	QF-LDC-06
7.2.10	Synchronization record of Transmission line and Transformer (230/132kV & 132/33 kV) including time and switching activity.		-DO-	As required	QF-LDC-06
7.2.11	Record of Load shedding implemented in different distribution zone with detailed cause of load shedding and duration of time.		-DO-	As required	QF-LDC-06
7.2.12	Detail switching records regarding shutdown activity of transformer and transmission lines (schedule/emergency/project or development).		-DO-	As required	QF-LDC-06
7.2.13	Record of Maximum & Minimum load in different Grid Sub-Stations & Distribution zones.		MNOD	Once daily	QF-LDC-05
7.2.14	Evening Report. Record of the Generation of various Power Stations and Total Generation.		MNOD	Once daily	QF-LDC-09
7.2.15	Record of Daily Load Curve.		MNOD	Once daily	QF-LDC-11
7.2.16	Record of Daily Energy Curve.		MNOD	Once daily	QF-LDC-12
7.2.17	Zone and Sub-Station wise availability of Supply under different Generation condition.		MNOD	As required	QF-LDC-13
7.2.18	Hourly MW generation of each unit of various ACCs. (Both BPDB & IPP machines) (Generation control and monitor activity)		JAM ALDC	Each hour	QF-LDC-20
7.2.19	Total MW generation and Demand in each hour of various Zones.		JAM ALDC	Each hour	QF-LDC-20
7.2.20	Coding of Grid Circle, GMD & Grid Sub-Stations.		MEMD	As required	QF-LDC-04
7.2.21	Record of Hourly Load flow of East-West Inter-connectors and Hourly Voltages of 230KV Grid Sub-Stations.		MNOD	Each hour	QF-LDC-05

Reviewed by (GMSO):



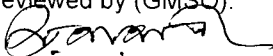
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8.0	<b>Reporting</b>		GMSO		
8.1	Monthly power system report		M IMD	Monthly	
8.1.1	Outage of sub-station equipment due to tripping/Emergency maintenance.		DM IMD,M IMD		QF-LDC-23
8.1.2	Outage of transmission lines due to tripping / Emergency maintenance.		DM IMD,M IMD		QF-LDC-24
8.1.3	Outage of sub-station equipment due to schedule maintenance/project work		DM IMD,M IMD		QF-LDC-26
8.1.4	Outage of transmission lines due to schedule maintenance/project work		DM IMD,M IMD		QF-LDC-26
8.1.5	Un-served energy occurred in the system due to power interruption.		DM IMD,M IMD		QF-LDC-28 QF-LDC-32
8.1.6	Maximum load of different sub-station		DM IMD,M IMD		QF-LDC-33
8.1.7	Area & Zone wise maximum load served during peak hour.		DM IMD,M IMD		QF-LDC-34
8.1.8	Minimum voltages at selected sub-stations		DM IMD,M IMD		QF-LDC-36
8.1.9	Maximum load of 230/132kV Auto transformers		DM IMD,M IMD		QF-LDC-36
8.1.10	Load shedding in different zones in the system, its duration and cause.		DM IMD,M IMD		QF-LDC-37

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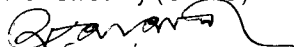
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SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./Time	Output
8.1.11	Total flow of energy through East West Inter Connector (Ghorasal – Ishurdi 230kV double circuit line) in MkWh		DM IMD,M IMD		QF-LDC-22
8.1.12	Transmission loss in EWI in %		DM IMD,M IMD		QF-LDC-22
8.1.13	Actual & Rule curve Head Water Level in ft MSL at Kaptai Water Reservoir		DM IMD,M IMD		QF-LDC-38
8.1.14	Maximum generation of the month in MW		DM IMD,M IMD		QF-LDC-38
8.1.15	Total generation of the month in MkWh		DM IMD,M IMD		QF-LDC-38
8.1.16	Load factor of the system in %		DM IMD,M IMD		QF-LDC-38
8.1.17	Unit cost of generation for the month, with & without exclusion of Hydro units, in Tk.		DM IMD,M IMD		QF-LDC-38
8.1.18	Circle wise total number of forced & scheduled interruption in sub-stations & transmission line due to that interruption.		DM IMD,M IMD		QF-LDC-27
8.1.19	Circle wise energy un-served due to forced & scheduled interruption in sub-stations & transmission line		DM IMD,M IMD		QF-LDC-28
8.1.20	Circle wise consolidated sub-station performance		DM IMD,M IMD		QF-LDC-29
8.1.21	Circle wise consolidated transmission line performance		DM IMD,M IMD		QF-LDC-30
8.1.22	Power interruption due to trouble in Transmission/Generation system		DM IMD,M IMD		QF-LDC-31 QF-LDC 41
8.2	Daily Report		DM (General)	Daily	QF-LDC-08
8.3	Daily Evening report		Shift in Charge (LDC)	Daily	QF-LDC-19
8.4	Monthly generator outage report		DMEMD	Monthly	QF-LDC-18
8.5	Special interruption report		DM (General)	As required	QF-LDC-40
8.6	TQM Activity Report.		DGMLDC	As required	QF-TQM-01
<b>9.0</b>	<b>Monitoring</b>				
9.1	The activity reports, mentioned in clause 8.1 to 8.6, will be monitored and analyzed.	QF-LDC-18, QF-LDC-19, QF-LDC-22 to 40	DGMLDC GMSO	As required	Monitoring is accomplished
<b>10.0</b>	<b>Action for improvement</b>				
10.1	Necessary measures & recommendation to prevent the recurrence of fault and/or for improvement of the system will be submitted to the management for necessary instruction / guide line.		DGMLDC GMSO	As required	Recommendation for improvement
10.2	The instruction/guide line of the management will be followed.		GMSO, MR		Action taken according to guideline
<b>11.0</b>	<b>The effectiveness of the procedure of Power System Operation &amp; Control will be evaluated and reviewed during internal audits.</b>		Management Review Committee, MR.	During internal audit	Review of review system
<b>12.0</b>	<b>The Management will take actions on the basis of the evaluation.</b>		MD, DT, MR.	At least 1 time in a year	Improvement

Reviewed by (GMSO):



Approved by (Director O&M):

