

QUALITY MANAGEMENT SYSTEM	POWER GRID COMPANY OF BANGLADESH LTD.					QUALITY PROCEDURES			
	TITLE: WORK INSTRUCTION FOR TRIPPING MANAGEMENT								
Document No:	WI-PSO-5	Revision No.:	00	Effective Date:	22/02/06	Page:	1	of	4

1. Scope: Applies to the whole of Power System Network of POWER GRID COMPANY OF BANGLADESH LTD.

2. Purpose: To ensure uninterrupted quality power supply to the consumers in case of tripping by means of efficient tripping management.

SL. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq./ Time	Output
1.0	Tripping Management		GMSO	As required	
1.01	Tripping is recognized when <ul style="list-style-type: none"> Abnormal change in system frequency is observed in frequency meter. Abnormal change in load flow or breaker opening indication is observed in the Telemetering/ SCADA mimic board/Console Information from concerned grid sub-stations and/or power stations is received. 		SCE (DM/AM LDC)	As required	Recognition of tripping
1.02	Action to be taken when a tripping is recognized: <ul style="list-style-type: none"> 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	
1.1	<u>For minor tripping:</u>				
1.1.1	Tripping of generators, transmission lines or substation equipment <ul style="list-style-type: none"> May not have any noticeable effect on the system May lead to a minimum effect on the running system without disturbing the system stability. resulting in : <ul style="list-style-type: none"> Minor change in system frequency. Minor change in load flow. 		SCE (DM/AM LDC)	As required	
1.1.2	Despatcher will tackle the situation on his own along with his people.		SCE (DM/AM LDC)	As required	
1.1.3	Despatcher will be immediately informed by the concerned grid sub-station and/or power stations where tripping has occurred, otherwise he will contact himself with them.		SCE (DM/AM LDC)	As required	Information gathered
1.1.4	WI-PSO-01 and/or WI-PSO-02 will be followed (If necessary).		SCE (DM/AM LDC)	As required	Voltage Frequency & Load control
1.1.5	Actions will be taken to <ul style="list-style-type: none"> Start & synchronize the generator tripped. Perform switching operations in association with the JAM on duty in grid sub-station to resume the service of transmission lines and/or substation equipment tripped. 		SCE (DM/AM LDC)	As required	

Reviewed by (GMSO): 

Approved by (DT) 

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Sl. No.	Activity (including check points)	Ref. Doc.	Responsibility	Freq. /Time	Output
1.1.6	Before charging any equipment and/or transmission line, necessary checks are done to find out suitability of the equipment for charging and safety.		SCE (DM/AM LDC)	As required	Security and sustainability of equipment is ensured.
1.1.7	Defective line and/or equipment will be isolated from the system (If any).		SCE (DM/AM LDC)	As required	Isolation of faulty section
1.1.8	Actions described in 1.1.3 to 1.1.7 to normalize the system will be carried out with the help of grid sub station and / or power station operator.		SCE (DM/AM LDC)	As required	
1.1.9	After normalizing the system despatcher will inform all concerned high officials about the tripping. (Refer to the list of persons to be informed in case of <i>Minor tripping</i>).	QF-LDC-14	SCE (DM/AM LDC)	As required	Concerned high officials are informed
1.1.10	After completion of system restoration, despatcher writes the details of tripping and restoration process in the shift registers.		SCE (DM/AM LDC)	As required	QF-LDC-06
1.2	<u>For major tripping:</u>				
1.2.1	Multiple Tripping of generators, lines and/or substation equipment leads to a substantial effect on the system disturbing the system stability resulting in : <ul style="list-style-type: none"> Abnormal change and/or swing in system frequency. Abnormal change in load flow Island mode operation of national grid 		DGMLDC, MLDD & SCE (DM/AM LDC)	As required	
1.2.2	Island mode operation of grid may be recognized, depending on generation & load condition in the concerned area, when one or more of the following lines trips <ul style="list-style-type: none"> Ashuganj - Shahjibazar 132kV double circuit line Ashuganj – Kishoreganj 132kV double circuit line Ishurdi – Bheramara 132kV double circuit line Comilla(N) – Hathazari 230 kV double circuit line and Comilla(N) – Baroaulia 132 kV single circuit line No load flow is indicated in those lines in the telemetering / SCADA mimic board or console.		DGMLDC, MLDD & SCE (DM/AM LDC)	As required	Island mode operation is recognized.
1.2.3	Despatcher will be immediately informed by the concerned grid sub-station and/or power stations where tripping have occurred, otherwise he will contact himself with them.		SCE (DM/AM LDC)	As required	Information gathered

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1.2.4	If the situation is beyond the capacity of despatcher (In case of large/multiple tripping and/or for island mode operation of grid system) <ul style="list-style-type: none"> He will inform all concerned high officials about the tripping. (Refer to the list of persons to be informed in case of <i>Major tripping</i>). He will consult with concerned officials about the restoration process. 	QF-LDC-14	DGMLDC, MLDD & SCE (DM/AM LDC)	As required	Concerned high officials are informed and consulted
1.2.5	Actions will be taken to <ul style="list-style-type: none"> Start & synchronize the generator tripped. Perform switching operations in association with the JAM on duty in grid sub-station to resume the service of transmission lines and/or substation equipment tripped. Unification of grid zones running under island mode with whole grid. 		SCE (DM/AM LDC)	As required	
1.2.6	Accordingly despatcher, along with his assistants will start restoration process following the method devised earlier with the consultation of concerned officials.		DGMLDC, MLDD & SCE (DM/AM LDC)	As required	System is restored
1.2.7	WI-PSO-01 and/or WI-PSO-02 will be followed (If necessary).		SCE (DM/AM LDC)	As required	Voltage frequency & load control
1.2.8	Actions will be taken to <ul style="list-style-type: none"> Start & synchronize the generator tripped. Perform switching operations in association with the JAM on duty in grid sub-station to resume the service of transmission lines and/or substation equipment tripped. 		SCE (DM/AM LDC)	As required	
1.2.9	Following operations will be carried out to unify the areas running under island mode with the whole Grid (as necessary) <ol style="list-style-type: none"> Unification of Khulna area (including Barisal area) with Rajshahi area through Ishurdi-Bheramara 132 kV Ckts. Unification of Mymensingh & Sylhet area through Ashuganj 132 kV Bus. Unification of Chittagong area through Comilla(N) 230 kV & 132 kV bus 		DGMLDC, MLDD & SCE (DM/AM LDC)	As required	Restoration process is identified.

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1.2.10	Before charging any equipment and/or transmission line, necessary checks are done to find out suitability of the equipment for charging and safety		SCE (DM/AM LDC)	As required	Security and sustainability of equipment is ensured.
1.2.11	Defective line and/or equipment will be isolated from the system (If any).		SCE (DM/AM LDC)	As required	Isolation of faulty section
1.2.12	Actions described in 1.2.3 to 1.2.11 to normalize the system will be carried out with the help of grid sub station and / or power station operator.		SCE (DM/AM LDC)	As required	
1.2.13	After completion of system restoration, despatcher writes the details of tripping and restoration process in the shift registers.		SCE (DM/AM LDC)	As required	QF-LDC-06
2.0	The effectiveness of the work instruction for Tripping management will be evaluated and reviewed during internal audits.		Management Review Committee, MR.	During internal audit	Review of review system
3.0	The Management will take actions on the basis of the evaluation.		MD, DT, MR.	At least 1 time in a year	Improvement

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