

The Tata Power Company Ltd		Disaster Management & Business Continuity Plan
Page No. 1		Version – R 2.1

Disaster Management & Business Continuity Plan

The Tata Power Company Ltd

TRANSMISSION DIVISION

Dharavi Receiving Station

Matunga, Mumbai – 400019

Sign	AJG	PDG	RS
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DISASTER MANAGEMENT PLAN

Certificate of Approval

This is to certify that
**Disaster Management Plan of
 Tata Power Company Limited**
TRANSMISSION DIVISION,
DHARAVI RECEIVING STATION,
MATUNGA, MUMBAI 400 019

has been found to conform to the
**National Disaster Management
 Authority (NDMA) Guidelines.**

This certificate is for activities related to
 Incidents / Disasters, Natural & Man-made
 occurring during functioning of the Unit.

This approval is subject to continued
 satisfactory maintenance of the
 Incident Response System through periodical
 In-house Exercises
 as stipulated in the Disaster Management Plan.

Certificate No. DCS- DMP- 2014-008
 Date of Approval: 20th March 2014
 Valid for three Years from the Date of Certification



D'man Consultancy Services
 505/B, Sani Park, J.B.M. Road, Amboli,
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Sanjeevan Joshi
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By Royal Charter

Certificate of Registration

BUSINESS CONTINUITY MANAGEMENT SYSTEM – ISO 22301:2012

This is to certify that:

The Tata Power Company Limited
Corporate Centre 34
Sant Tukaram Road, Carnac Bunder
Mumbai 400 009
Maharashtra
India

Holds Certificate No: **BCMS 631076**

and operates a Business Continuity Management System which complies with the requirements of ISO 22301:2012 for the following scope:

The Management of Business Continuity within Generating divisions of Thermal, Renewable (Hydro, Solar and Wind), Transmission and Distribution divisions, Project divisions, and Corporate center functions such as Business Development, Projects, Fuel & Logistics, Engineering & Technology services, Strategic Engineering Division, Services Business, HSE & Security of the Tata Power Company Limited and Operating functions, support service functions and corporate divisions of the following subsidiary companies, viz. Coastal Gujarat Power Limited (CGPL), Maithon Power Limited (MPL), Industrial Energy Limited (IEL), Tata Power Trading Company Limited (TPTCL), Tata Power Solar Systems Ltd (TPSSL), Tata Power Renewable Energy Limited (TPREL), Chemical Terminal Trombay Limited (CTTL), Powerlinks Transmission Limited (PTL) and Tata Power Delhi Distribution Limited (TPDDL)



Frank Lee, EMEA Compliance & Risk Director

For and on behalf of BSI:

Originally Registered Date: **09/04/2015**

Effective Date: **09/04/2015**

Latest Revision Date: **10/07/2015**

Expiry Date: **08/04/2018**



Refer to Original Certificate

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FOREWORD

Business entities today exist in a highly competitive world. They are constantly innovating to meet their business objectives of providing essential and unique services to their customers. Technology advances have enabled them to achieve their varied strategies. And yet, the threats of disruptive incident, on account of business interruption, are not extinct – in fact, they have also evolved along with the technology. Business interruption does happen – but what is of significance is, how much of the consequences of such interruptions can the business afford?

Business Continuity Planning is the act of proactively working out a way to mitigate / reduce and manage the consequences of a disruptive incident, limiting it to the extent that a business can afford.

An effective Business Continuity Plan serves to secure business critical operations which lead to financial disruption. The bonus accrues customer satisfaction, enhanced corporate image and no dip in the market share.

A business continuity plan is a plan for the fast and efficient resumption of essential business operations by directing the response and recovery actions of specified recovery teams.

Even though Business Continuity Planning appears to primarily deal with vital installations and technology, it is equally associated with business. It includes activities in risk management, crisis management, identification of business processes, business impact analysis, cost benefit analysis, storage management, network management, continuity planning, recovery planning, training, communication and coordination. In view of this, it was ensured that the team involved in business continuity planning was a cross-functional team with adequate domain knowledge, expertise in system and recovery management and skills in planning.

Planning for business continuity is about being prepared for the consequences of events that one hopes should never happen; and the truth is, it is always better to be safe than sorry.

Rajan Sheth
Chief Transmission

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Version Chart

Version	Date	Modification Reference	Prepared by	Checked by	Approved by
R 1.0	17-10-2014	ISO22301:2012	K K Sajivan	R V Saraf	V K Chourey
R 1.1	14-02-2015	ISO22301:2012 Stage1 Audit Report	K K Sajivan	R V Saraf	Arvind Singh
R 2.0	12-12-2015	Merger of DMP & BCP Documents	Anil Gajare	Pravin Gaikwad	Arvind Singh
R 2.1	10-02-2017	Revision of BCP Annexures for MTPD, RTO and MBCO	Pravin Gaikwad Anil Gajare	Pravin Gaikwad	Rajan Sheth

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**ANNEXURES
(ATTACHED SEPARATELY)**

Annexure No	Details
1	Glossary
1 - a	Definitions (as given in Standards)
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5 - a (i)	Internal Resources
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5 - d (ii)	Incident Management Plan
5 - d (iii)	Emergency Evacuation Map

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Disaster Management and Business Continuity Team

Location Name: Transmission, Mumbai LA

Sr. No	Name	Designation	Position
1	Rajan Sheth	Chief-Transmission	BC Team Leader
2	Pravin D Gaikwad	Group Head- MIS & CAPEX	BC Coordinator
3	S P Sanvatsarkar	Head - Perform. Assurance	BC Administrator
4	K K Rao	Zonal Head - North	BC Team Member
5	P S Sawant	Zonal Head - Central	BC Team Member
6	T. Muraleedharan	Zonal Head - South	BC Team Member
7	S G Bhangaonkar	Zonal Head - Trans. Lines	BC Team Member
8	N R Sirdesai	Zonal Head - EHV Cable	BC Team Member
9	B S Pisolkar	Head - Trans. Automation	BC Team Member
10	S V Shetye	Group Head – Borivli Node	BC Team Member
11	D Ravikumar	Group Head – Saki Node	BC Team Member
12	K G Rane	Group Head – Salsette Node	BC Team Member
13	S K Vetcha	Group Head – Carnac Node	BC Team Member
14	S D Shitut	Group Head – Parel Node	BC Team Member
15	V M Bhondve	Group Head – Dharavi Node	BC Team Member
16	M D Dias	Group Head - Vikhroli Node	BC Team Member
17	K K Sajivan	Group Head– Kalyan Node	BC Administrator
18	G S Tawre	Group Head – Chembur	BC Team Member
19	H A Atre	Group Head – Trans. Lines	BC Team Member
20	Sajal Sen	Group Head – Trans. Security	BC Team Member
21	P K Khawadkar	Group Head – Trans. Safety	BC Team Member
22	P T Nair	Group Head – Trans. Admin	BC Team Member

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Distribution List for DM & BC Plan

The controlled copies of Business Continuity & Disaster Management Plan of “The TATA Power Company Limited, Transmission Division” are distributed to the relevant personnel listed below –

Sr. No.	Designation of the Holder
1	Chief - Corporate Operations (T&D)
2	Chief - Transmission
3	Head - PSCC
4	Transmission Zonal Heads (5 Nos.)
5	Group Head – MIS & Capex (BC Coordinator)
6	Head – Performance Assurance (BC Administrator)
7	Head – Transmission Automation
8	Group Head – Borivli Node
9	Group Head – Saki Node
10	Group Head – Salsette Node
11	Group Head – Carnac Node
12	Group Head – Parel Node
13	Group Head – Dharavi Node
14	Group Head - Vikhroli Node
15	Group Head– Kalyan Node
16	Group Head – Chembur
17	Group Head – Trans. Lines
18	Group Head – Trans. Security
19	Group Head – Trans. Safety
20	Group Head – Trans. ES & A
21	Group Head - Medical (Transmission)
22	Fire Officer – Transmission
23	Business HR - Transmission

This Document is a controlled version and shall not be handed over or parted with or without written permission of the BCMS Team Leader / Head of the Unit.

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PREFACE

In keeping with the paradigm shift in its approach to disaster management brought about by the Government of India and the recurring phenomenon of natural disasters impacting all sectors of socio-economic life, including the corporate sector and inflicting heavy economic losses, focused attention has been given to risk mitigation endeavours to systematically reduce the vulnerabilities. The new approach stems from the premise that development in any sector, more so in the corporate world cannot be sustainable and viable unless risk reduction and mitigation measures are built into the development processes and that investment in mitigation is much more cost-effective than expenditure on relief, rehabilitation, reconstruction, and redevelopment.

After the incident of Bhopal gas disaster, the Factories Act, 1948 has been amended and a new chapter i.e. Chapter IVA – provision relating to hazardous processes has been added to the Factories Act. Under the provision of Sec 41B (4) every occupier shall with the approval of the Chief Inspector of Factories draw up an On-site Emergency Plan and detailed disaster control measures for his factory and make known to the workers employed therein and to the general public living in the vicinity of the factory the safety measures required to be taken in the event of an accident taking place. Further, the Disaster Management Act, 2005 has added new dimensions to the emergency handling. Under 2(h), 32 and 41 of the said act, it is mandatory for “Local Body by whatever name called for rendering essential services” to have a Disaster Management Plan which would cover the Natural and Man-made Disasters. This is the statutory provision laid down in the Act for preparation of Disaster Management Plan to control disaster in the factories. Major accidents may cause emergency and it may lead to disaster, which may cause heavy damage to plant, property, and harm to persons and create adverse effects on production. Therefore such situations and risks should be thought, visualized and assessed in advance and it should be planned beforehand to tackle them immediately and control them within the shortest time.

Emergencies can arise at any time and do not have to be caused by a spectacular occurrences, such as nuclear attacks or cyclones, in fact, serious personnel injuries and property losses can result from basic causes like work accidents, fire, explosions, flood , earthquakes, hurricanes, tornadoes, civil strife and communal riots etc. Often when disaster strikes, all personnel are affected, their lives are in jeopardy and their jobs are threatened. Major considerations in planning for disaster control must take into consideration natural and manmade disasters to include terror attacks. All necessary provisions for protecting personnel, evacuating both injured, uninjured and care of the incapacitated must be given adequate consideration.

The Tata Power Company Limited–Transmission has developed Emergency Response Plan for the Unit which includes the organising and training of small groups of people to perform specialised services, such as rescue, fire-fighting, first aid etc. and to restore the Unit’s role in maintaining Power supply to consumers. Small, well trained groups can serve as a nucleus to be expanded to any size needed to meet any kind of emergency.

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Vision

To preserve human life , environment and minimize economic losses of Unit with implementable Business Continuity & Disaster Management Plan (BCDMP), which has five components namely, Prevention (Mitigation), Response, Resumption, Recovery and Restoration.

Mission

To successfully implement “Business Continuity & Disaster Management Plan” through well trained, well-resourced and committed people.

Rajan Sheth
Chief Transmission

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MANAGEMENT APPROVAL

First Approval & Release:

Date: 17.10.2014

V K Chourey
Chief Transmission

First Review & Approval:

Ref No. TPCL/ Transmission / BCP/ 2015-16/R 2.0

This Document on **Business Continuity & Disaster Management Plan (BCDMP)** conforming BCMS ISO 22301 along-with its Annexures is reviewed and approved at the Management Review Meeting (Local) held on 04.12.2015 and is circulated to the listed Officers guidance for action in case of any disruptive incident occurring in future. This document is valid till next review.

Date: 04.12.2015

Arvind Singh
Chief Transmission

Second Review & Approval:

Ref No. TPCL/ Transmission / BCP/ 2016-17/R 2.1

This Document on **Business Continuity & Disaster Management Plan (BCDMP)** conforming BCMS ISO 22301 along-with its Annexures is reviewed and approved at the Management Review Meeting held on 15.12.2016 and is circulated to the listed Officers guidance for action in case of any disruptive incident occurring in future. This document is valid till next review.

Date: 10.02.2017

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Chief Transmission

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ABBREVIATIONS

BCP	Business Continuity Plan
BCC	Business Continuity Coordinator
BCMS	Business Continuity Management System
BIA	Business Impact Analysis
BRP	Business Resumption Plan
CAPA	Corrective Action Preventive Action
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CFT	Cross Functional Team
CRO	Chief Risk Officer
DMP	Disaster Management Plan
DMS	Document Management System
DR	Disaster Recovery
EOC	Emergency Operations Center
ERP	Enterprise Resource Planning
FOP	Fiber Optic Point
GIS	Geographical Information System
ICT	Information & Communication Technology
IDC	Integrated Data Center
IT	Information Technology
ISO	International Standard Organization
LAN	Local Area Network
LBCC	Business Continuity Coordinator
MAO	Maximum Acceptable Outage
MBCO	Minimum Business Continuity Objective
MTPD	Maximum Tolerable Period of Disruption
MD	Managing Director
MIS	Management Information System
MO	Mumbai Operations
MOT	Maximum Outage Time
NDMA	National Disaster Management Authority
NGO	Non-Governmental Organization
OCS	Office Communicator System
OLA	Outline Agreement
OT	Operation Technology

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PI	Plant Information
PM	Preventive Maintenance
RCA	Root Cause Analysis
RDBMS	Real Time Database Management System
RMC	Risk Management Committee
ROI	Return on Investment
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SANGAM	Intranet Portal of Tata Power
SAP	Enterprise Resource Planning Software
SCADA	Supervisory Control and Data Acquisition
SCoE	SAP Center of Excellence
SLA	Service Level Agreement
SMS	Short Message Service
SOP	Standard Operating Procedure
SPLA	Standard Performance Level Agreement
SPOC	Single Point of Contact
TPCL	Tata Power Company Limited
VC	Video Conferencing
VPN	Virtual Private Network
WAN	Wide Area Network

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Executive Summary

The **Disaster Management Act, 2005** under section 2 (h), 32 (a) and 41 make it mandatory for every organization to prepare a Disaster Management Plan. For this purpose the Government of India through National Disaster Management Authority (NDMA) has issued various Guidelines (**NDMA Guidelines**).

The International Standard **ISO 22301:2012 – Societal Security and Business Continuity Management System** lay downs the requirements for any organization to initiate measures to deal with the disruptive incidents / disasters.

At **The Tata Power Company Limited, Transmission Unit** it has been decided as a policy to have a comprehensive document which will cover the requirements of the Disaster Management Act, 2005 and also the ISO 22301:2012 requirement, to be called as “**Business Continuity and Disaster Management Plan (BCDMP)**”.

The following are the salient features of the **BCDMP** for this Unit –

Chapter 1 – It gives brief description about the Organization, its context, risk appetite and need of business continuity & disaster management planning.

Chapter 2 – It describes the Objectives and Scope of BCDMP. It also includes the Corporate Policy on Business Continuity as approved by Top Management. The assumptions and limitations of the plan are also incorporated in this chapter.

Chapter 3 – It describes the Organizational Structure for Business Continuity & Disaster Management and the roles & responsibilities of each designated Officer during pre-incident stage as well as post-incident stage till full normalization of activities.

Chapter 4 – It describes about the Vital Installations & Technology, Vital Data and Vital people for post-incident management. This **BCDMP** is limited to Operational Risks. Hence this chapter covers the details of critical operational risks faced by the Unit.

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Chapter 5 – It includes the classification of functions, Business Impact Analysis for any disruptive incident and the system of calculation of BIA, including **MTPD** – Maximum Tolerable Period of Disruption and **RTO** – Recovery Time Objective and their co-relation.

Chapter 6 – It includes the various strategies for dealing with post-incident scenarios covering criteria for deciding Levels of Emergencies, Principles of BCDMP, various **Plans under BCDMP** viz **Mitigation Plan, Response Plan** including Warning procedure about impending incident, Evacuation Plan, Incident Management Plan, Casualty Management plan, **Resumption Plan, Recovery Plan** (Business Continuity Plan), **Restoration Plan** and Notification process. It also includes the various acceptable timeframes viz **MTPD** – Maximum Tolerable Period of Disruption, **MBCO** – Minimum Business Continuity Objectives and **RTO** – Recovery Time Objective and their co-relation.

Chapter 7 – It covers the procedure of organizing Testing of “**DMP**” as well as “**BCP**”. It stipulates the system of organising **Team Exercise, Table Top Exercise, In-house Exercise** (for DMP & BCP) and **Full Scale Exercise** (for DMP & BCP). It also mentions the periodicity of the exercises / testing and maintaining record of each activity followed by corrective actions wherever necessary.

Chapter 8 – It deals about Performance Evaluation of the organization in case of any disruptive incident as well as during the exercises / Testing and Management Review for corrective actions.

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CHAPTER – 1

INTRODUCTION

1. a – Introduction

The Tata Power Company Limited, Transmission unit is located in Mumbai and it forms Power Transmission unit of the organization. Office of the Transmission Unit is located at Dharavi Receiving Station, Matunga, Mumbai – 400019.

1.a1 Process activities & Departmental activities

Tata Power's Transmission network in Mumbai License Area has spread from Colaba in South Mumbai to Basin Creek in North Mumbai, Panvel in Navi Mumbai and to Vikhroli in North-East Mumbai. Transmission Division forms the vital link between the Generating stations and load centres for distribution of Electric power to the consumers. Tata Power's transmission division has an installed transformer capacity of 8945 MVA in 21 Receiving and Sub Stations with 993.26 km of overhead EHV transmission lines and 141.22 km of underground EHV cables.

Electrical Power is being received at 220 kV & 110 kV voltage levels. After stepping down using ICTs & Power transformers, the Receiving Stations and Sub Stations transmit this power to various Receiving stations & Sub Stations of BEST, BPT, TCP-D and Central Railways at 110 kV, 33 kV, 22 kV, 11 kV & 6.6 kV voltage levels on a continuous basis.

1.1.1 Receiving and Sub-stations in Transmission division:

No.	Station Name	Address	Installed Capacity
1	Ambarnath Receiving station	Murbad Road, Varap, Taluka Kalyan, Dist. Thane -421 301	192.5 MVA
2	Backbay Receiving Station	148, Lt Gen J Bhonsle Marg, Nariman Point, Mumbai-400 021	500 MVA
3	Borivali Receiving Station	Tata Power house road, Borivali (East) Mumbai-400 066	1140 MVA
4	Carnac Receiving Station	Corporate Center A, 34 Sant Tukaram Road, Carnac Bunder, Mumbai-400 009	1065 MVA
5	Chembur Receiving Station	RCF Premises, Near Gate-2, Chembur, Mumbai- 400 074	417.5 MVA
6	Dharavi Receiving Station	Matunga, Near Shalimar Industrial Estate, Mumbai 400 019	1540 MVA
No.	Station Name	Address	Installed Capacity

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7	Kalyan Receiving Station	Shil Road, Netivali, Taluka Kalyan, Dist. Thane -21301	210 MVA
8	Kolshet Receiving Station	Opp. Tikujini Wadi, Manpada, Thane(W)- 400 602	60 MVA
9	Mahalaxmi Substation Station	Senapati Bapat Marg, Lower Parel, Mumbai - 400 013	240 MVA
10	Malad Substation	Marve Road, Malad (West), Mumbai - 400 095	210 MVA
11	Mankhurd Substation	Near Mankhurd Railway station, Mumbai Pune Road, Mankhurd, Mumbai 400 088	60 MVA
12	Parel Receiving station	Parel Tank Road, Parel, Mumbai-400 033	425 MVA
13	Saki Sub Station	42, Saki Vihar Road, Andheri (East), Mumbai 400 072	795 MVA
14	Salsette Receiving Station	Lake Road, Bhadup, Mumbai 400 078	780 MVA
15	Versova Sub Station	Off- Andheri- Malad Link Road, Andheri (West) Mumbai- 400053	180 MVA
16	Vikhroli Substation	Godrej Soap Premises, Vikhroli (East) Mumbai, 400 079	315 MVA
17	Sahar Receiving Station	Near Hotel Leela, Sahar Airport Road, Andheri East, Mumbai-400059	250 MVA
18	Powai Receiving Station	Near MTNL Hiranandani, Kailas Complex Road, Powai, Mumbai-400076	180 MVA
19	IXORA Receiving Station (Name under change)	HIRCO SEZ (Opposite to Maharashtra Jeevan Pradhikaran), At Bhokar Pada Village, Po-Poyanje Dist –Raigad -410206	120 MVA
20	BKC Receiving Station	Near Asian Heart Institute, Bandra Kurla Complex, Bandra East Mumbai-400051	250 MVA
21	Panvel Substation	Bhingari, Panvel, Dist. Raigad -410206	15 MVA

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1.b – Organization and its context

Transmission Unit performs various activities as well as serves various Interested Parties as enshrined in the BCMS standard including various Suppliers, Partners and Vendors associated with this unit.

The identified Interested Parties includes DISCOMs, Suppliers, Shareholders, Insurers, emergency response agencies of govt., statutory Authorities, Regulator, suppliers, neighboring community, and employees.

The Unit has determined external and internal factors that are relevant to establishing, implementing and maintaining the Unit’s BCMS and assigning priorities.

The Unit has evaluated and understood the factors that are relevant to its purpose and operations. This information has been taken into account when establishing, implementing, maintaining and improving the BCMS.

Evaluating the Unit's **external context** includes, where relevant, the following factors:

- * the political, legal and regulatory environment whether international, national, regional or local;
- * the social and cultural, financial, technological, economic, natural and competitive environment, whether international, national, regional or local;
- * supply chain commitments and relationships;
- * key drivers and trends having impact on the objectives and operation of the organization; and
- * relationships with, and perceptions and values of interested parties outside the organization.

Evaluating the Transmission Unit's **internal context** includes, where relevant, the following factors:

- * Products and services, activities, resources, partnerships, supply chains, and relationships with interested parties;
- * the capabilities, understood in terms of resources and knowledge (e.g. capital, time, people, processes, systems and technologies);

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- * information systems, information flows, and decision making processes (both formal and informal);
- * interested parties within the organization;
- * policies and objectives, and the strategies that are in place to achieve them;
- * future opportunities and business priorities;
- * perceptions, values and culture;
- * Standards and reference models adopted by the organization and structures (e.g. governance, roles and accountabilities).

When establishing BCMS, the Unit has ensured that the needs and the requirements of Interested Parties are taken into consideration. It is important for the Unit to identify not only obligatory and stated requirements but also any that are implied.

Details of the activities, functions, their classification, services, partners, suppliers and Interested Parties with identified needs of interested parties is given in **Annexure 1b**.

1.c – Risk Assessment

The Unit has established a formal risk assessment process that systematically identifies analyzes and evaluates the risk of disrupting the organization’s prioritized activities and the processes, systems, information, people, assets, outsource partners and other resources that support them. Risk assessment attempts to answer the following fundamental questions -

- What may happen and why (by risk identification)?
- What are the consequences?
- What is the probability of their future occurrence? and
- Are there any factors that mitigate the consequence of the risk or that reduce the probability of the risk?'

Typical elements that are considered in the context of this Standard are as follows:

- Determination of the criteria for risk acceptance:
- Identification of acceptable levels of risk:
- Analysis of the risks:

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The Transmission Unit's risk assessment approach addresses the following concepts:

- ❖ Specific threats are described as events at some point, cause an impact to the resources, e.g. threats such as fire, flood, power failure, staff loss, computer viruses and hardware failure; and
- ❖ Vulnerabilities which occur as weaknesses within the resources and may, at some point be exploited by the threats, e.g. single points of failure, inadequacies in fire protection, electrical resilience, IT security and IT resilience.

Further, this Unit has considered the Risk Appetite as the amount of risk, on a broad level that Unit is willing to take on, in pursuit of value OR in other words, the total impact of risk the Unit is prepared to accept in the pursuit of Unit's strategic objectives. Factors such as the external environment, people, and business systems and policies will all influence the Unit's risk appetite.

The summary of Risk identified, its context, including Risk Appetite is given in **Annexure 1c**.

1.d – Legal and Regulatory Requirements

All Management Systems operate within framework of legal and regulatory environment. This Unit has therefore established procedures that enable Unit to identify and accommodate in BCMS all applicable legal and regulatory requirements and that relate to continuity of operations and address needs of interested parties even during disruptive incidents.

The Unit has reviewed statutory and regulatory requirements in respect of Hazards, Risk, Incident Response and Business Continuity.

List of the “Applicable Legal, Regulatory and other requirements” is given in **Annexure 1 d** which will be kept up-to-date.

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1.e - Need of Disaster Management Planning

After the incident of Bhopal gas disaster, new Chapter IVA—“Provision relating to hazardous processes” has been added to the Factories Act with addition of new provisions sec 41A, 41B, 41C, 41D, 41E, 41G and 41H covering all hazardous process industries.

Under the provision of Sec 41B (4) every occupier shall with the approval of the Chief Inspector of Factories draw up an On-site Emergency Plan and detailed disaster control measures for his factory and make known to the workers employed therein and to the general public living in the vicinity of the factory the safety measures required to be taken in the event of an accident taking place.

Further, the Disaster Management Act, 2005 has added new dimensions to the emergency handling. Under 2(h), 32 and 41 of the said act, it is mandatory for “Local Body by whatever name called for rendering essential services” to have a Disaster Management Plan which would cover the Natural and Man-made Disaster. This is the statutory provision laid down in the Act for preparation of Disaster Management Plan to control disaster in the factories.

Major accidents may cause emergency and it may lead to disaster, which may cause heavy damage to plant, property, harm to persons and create adverse effects on production. Therefore such situations and risks should be thought, visualized and assessed in advance and it should be planned beforehand to tackle them immediately and control them within the shortest time.

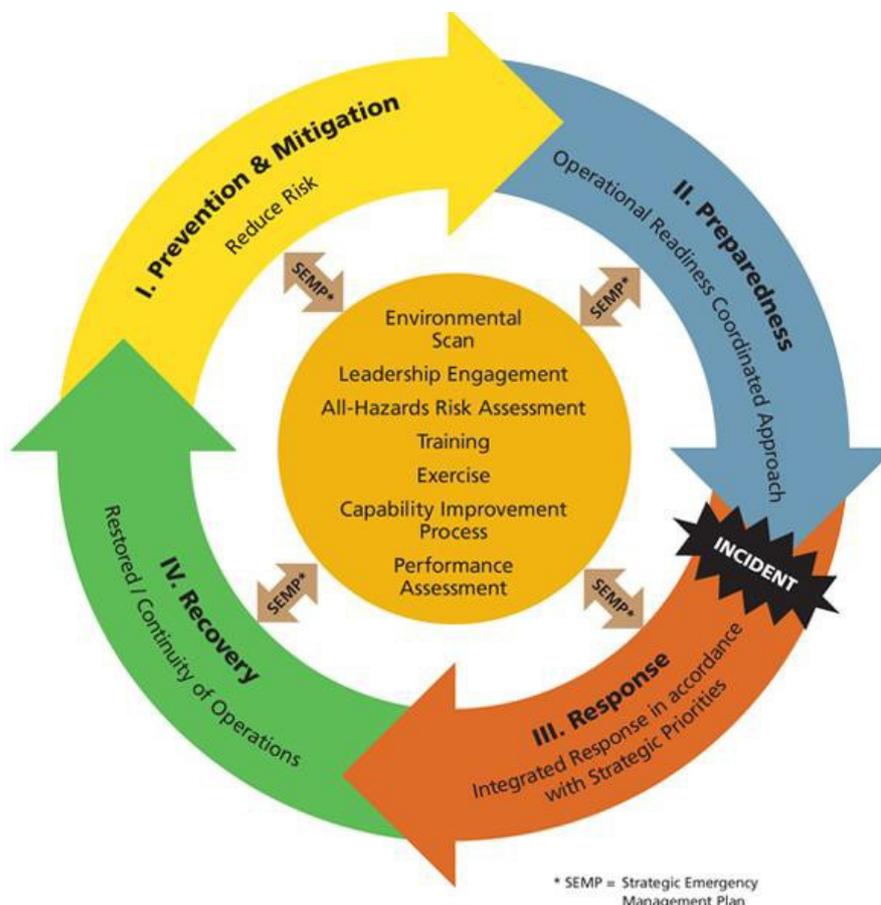
An important element of any system for the prevention of major incidents is the establishment of a facility-specific emergency plan. Disaster Management planning seeks to minimize the effect of an incident both inside and outside a facility, and requires the timely application of defined procedures by people with adequate training and resources. For this to occur, plans and procedures specific to relevant activities at the facility must have been developed, documented and tested prior to the occurrence of an event. Disaster Management plan is intended to limit the magnitude and severity of the health and safety consequences of an incident, including all major incidents, both on-site and off-site.

A disaster management plan may also be aimed at limiting or managing the effects of consequences on property or the environment. Further, emergencies may occur that are not associated with hazardous processes, such as those arising from natural events (e.g. flood or fire). It is advisable that a facility shall not have multiple plans—a single plan facilitates rapid response and avoids confusion about which plan should be executed in the event of a particular type of emergency.

1.f - Disaster Management Cycle:

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The complete disaster management cycle includes the shaping of policies and plans that either modify the causes of disasters or mitigate their effects on employee, property, and infrastructure.



The mitigation and preparedness phases occur as disaster management improvements are made in anticipation of a disaster event. Developmental considerations play a key role in contributing to the mitigation and preparation of a community to effectively confront a disaster. As a disaster occurs, disaster management personnel, in organizations become involved in the immediate response and long-term recovery phases. The four disaster management phases do not always, or even generally, occur in isolation or in this precise order. Often phases of the cycle overlap and the length of each phase greatly depends on the severity of the disaster.

1.g – Need for Business Continuity Planning

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There are various threats and vulnerabilities to which business today is exposed. They could be:

- Catastrophic events such as floods, earthquakes, storms or acts of terrorism
- Accidents or sabotage
- Outages due to accidents in operational area, major operational failures, an application error, hardware or network failures
- Impact of major environmental damage by neighbouring units affecting our operations
- Disturbances such as Strike, riots, picketing, curfew affecting plant manning resulting stoppage of operations

Some of them come unwarned. Most of them never happen. The key is to be prepared and be able to respond to the disruptive incident when it does happen, so that the organization survives; its losses are minimized; it remains viable and it can be “business as usual”, even before the customers feel the effects of the downtime.

Critical decisions made during a disruptive incident possess a high risk of being wrong, ineffective, and costly. Although the likelihood of a disruptive incidents occurring at a specific property is low, it could, and does, happen at any time. The problem faced by departments in incident affected location is; what to do when their premises are left unusable for an unacceptable length of time.

The intention of this Business Continuity Plan (BCP) is to restart critical and essential operations with a minimum delay within an acceptable length of time, probably with a reduced capacity at same site or at alternate site. The BCP has been drafted in which each Department and the respective Officers in particular, know what is expected from them during and immediately after a disruptive incident, before full restoration of existing facilities.

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CHAPTER – 2

OBJECTIVES, SCOPE AND POLICY

2. Objectives, Scope and Policy of Business Continuity Plan

2. a - Objectives

This Business Continuity Plan (BCP) identifies and reduces the risk exposures and proactively manages the contingency. As defined in ISO Standard, the Disruptive Incidents Recovery management is integral part of BCP.

This Business Continuity Plan aims to:

- Document critical information such as
 - (a) It's activities, functions, services, products, partnerships, supply chains, relationships with interested parties and needs of interested parties as required for implementation of the BCMS and
 - (b) To meet the legal and regulatory & other requirements.
- Develop and establish business continuity policy, objectives, targets, controls, processes and procedures for managing disruptive incidents that affects the organization's overall policies and objectives.
- Maintain documented process that systematically evaluates the risk of disruptive incidents, determine appropriate strategy for mitigating, responding to and managing impacts.
- Determine and provide the resources needed for the establishment, implementation, maintenance and continual improvements of the BCMS
- Provide appropriate
 - (a) Competency Training and
 - (b) Awareness Training of the BCMS to further develop the business continuity culture.
- Determine proactive measures, including warning communication procedure that shorten the period of disruption
- Develop appropriate plans mentioning critical decisions and steps with an escalation mechanism for Incident Response, Resumption, Recovery and Restoration to manage a disruptive incident, including procedure for invocation of the BCP

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- Exercise and test business continuity procedure
 - (a) to ensure its consistency with business continuity objectives and review
 - (b) the outcomes within the context of promoting continual improvements
- Review the BCMS at planned intervals to ensure its continuing suitability, adequacy and effectiveness to achieve improvement in BCMS performance.

This BCP is adhering to the following principles:

- Disruptive Incident Recovery is part of Business Continuity
- Risks are assessed for both probability and business impact
- The BCP must be flexible, comprehensive, reasonable, practical and achievable.

1. b - Scope

The scope of this BCP includes:

- **Incident Management:** Monitoring of a potential incident to determine whether an incident management team should be alerted and put in action.
- **Damage assessment:** Assessing the effect of damage on working conditions to decide whether to invoke the BCP.
- **Resumption:** In case BCP is not invoked, resume the activities without much loss of time.
- **Recovery:** Since the restoration activity may require few days / months, the “interested parties” are provide temporary and partial service from the Primary site or Alternate Site and
- **Restoration:** Managing to restore the activities / processes to as near normal level as possible with optimum time and resources

The scope of this Plan includes all the risks identified for the Transmission unit which may result into any one of the following:

- Loss of human life
- Damage to surrounding environment
- Damage to Vital installations
- Loss of data / data security
- Business disruption

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1. c - Assumptions and Limitations of this BCP

- The Plan is designed to address a worst-case scenario.
- The regular backups of critical systems occurs as per their set schedules and these backups are sent to offsite storage location once a week.
- If the interruption occurs during the end of a normal business day, transactions generated after the back-up process may be lost.
- The level of this Plan detail is based on the premise that sufficient and knowledgeable personnel will not be incapacitated by the interrupting event and can execute the Business Continuity Plan.
- The items in offsite storage / alternate site are in a secure & environmentally protected facility sufficiently remote from the Unit, which will not be affected by the same interrupting event.
- The Units of Transmission business are spread across Mumbai at various locations. Impact of disaster may not interrupt entire transmission business.

2.d - Policy for Business Continuity

This Transmission Unit shall endeavor to implement the Business Continuity Policy of the Company.

2.e - Policy on Disaster Management

This Unit shall strive to manage the disruptive incident with utmost care and maximum speed with **focus on saving human life** followed by **environmental damage** and then addressing the **economic loss**.

2.f - Role of NGO in Disaster Management

NGOs associated with this Unit shall play an active and important role in addressing disruptive incidents and can allocate maximum resources to the affected site for support and help. The list of outside premises organizations and government establishments with their contact details are mentioned in Chapter 3 of the DMP. They are fully equipped to aid the incident management process in case of a disruptive incident.

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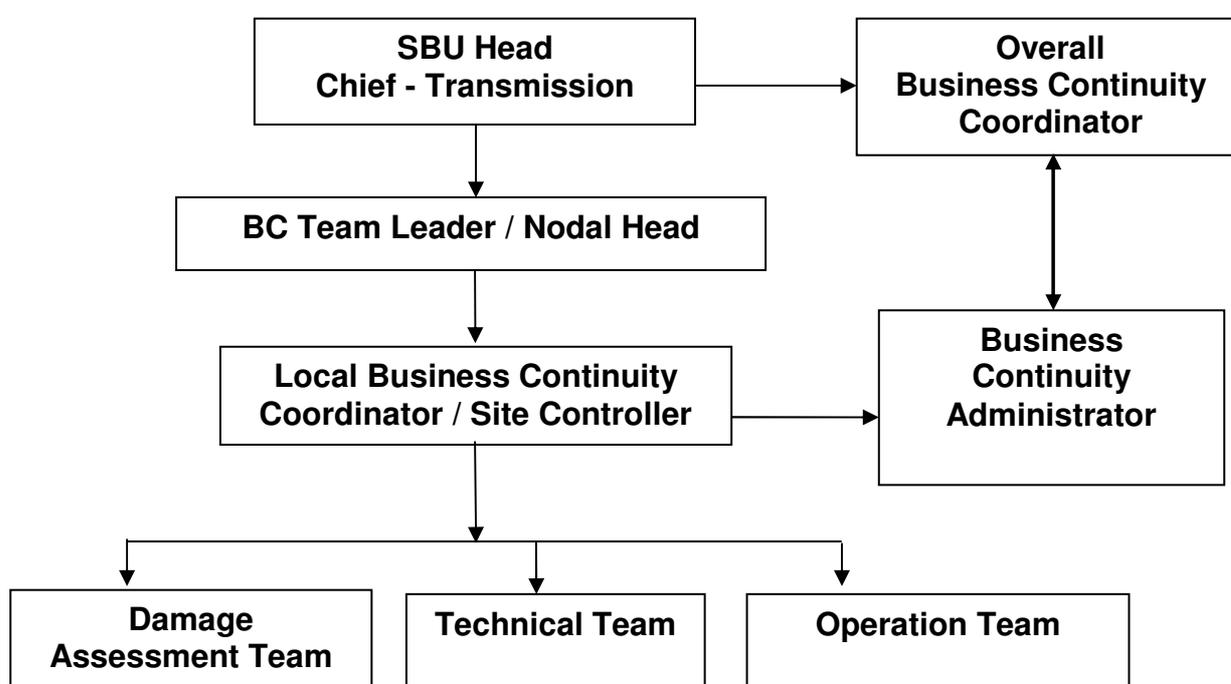
CHAPTER – 3

ORGANISATION AND STRUCTURE

3. Organization and Structure of Business Continuity Management

The unit shall have the Business Continuity Management Structure, under the leadership of the Unit Head, as under -

Business Continuity Management



Contact details of the individuals associated with business continuity including associated Consultants and important vendors are given in the **Annexure 2**. The contact details of Unit's **Business Continuity Management Team** are given in **Annexure 2 a**.

3.a – Responsibilities of Business Continuity SBU Head

- 1) Ensure that Business Continuity Management programme is established, implemented, maintained, reviewed and improved in accordance with Business Continuity Policy.

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- 2) Promoting awareness of the programme and facilitate a culture of learning in the division or organisation.
- 3) Report on the performance of Business Continuity Programme to Top Management for review
- 4) Ensure effectiveness of the procedures developed for Incident Response & Recovery.
- 5) Develop BCM Culture within the division or organization and thereby improve resilience to disasters.

3.b.1 - Responsibilities of Business Continuity Coordinator (BCC)-Overall

The **Business Continuity Coordinator-Overall** has overall responsibility for the design, development, coordination, implementation, administration, training, awareness programs, and maintenance of the Business Continuity Plan. The BCC is the most knowledgeable person on the details of the BCP.

The **Business Continuity Coordinator-Overall** has the following responsibilities:

1. Perform risk evaluation and mitigation as required and Conduct a Business Impact Analysis.
2. Develop and obtain approval for the Business Continuity Strategy/strategies.
3. Develop, implement, and maintain procedures for emergency response.
4. Develop and implement the Business Continuity Plan.
5. Create, implement, and maintain BCP Awareness and Training Programs.
6. Develop, maintain, coordinate and evaluate the BCP.
7. Develop, maintain, coordinate and evaluate plans for crisis coordination.
8. Develop, maintain, and coordinate policies and procedures with local authorities.
9. Ensure continual improvement in the Business Continuity Procedure through competency development.
10. Ensure periodic Management review meetings for review of BC procedure, corrective actions and their implementation as per the timelines decided.

3.b.2 - Responsibilities of Local Business Continuity Coordinator (LBCC)

Every Zone of the transmission Unit will have one **Local Business Continuity Coordinator (LBCC)**. **Local BCC** has responsibility for the coordination, implementation, administration, training, awareness programs, and maintenance of the Business

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Continuity Plan at Nodal level under the designated zone in line with central level Business Continuity Plan.

The **Local BCC** shall initially be act as **Site Controller** as designated in the **DMP - Disaster Management Plan** and when BCP is invoked assume the role as **Local BC Coordinator**.

Local Business Continuity Coordinator (BCC) is responsible for assisting in the activation of the Business Continuity Plan. The local BCC is the knowledgeable person on the details of the BCP.

The **Local Business Continuity Coordinator** has the following responsibilities:

1. Provide inputs for risk evaluation and mitigation as required.
2. Participate in Business Impact Analysis.
3. Participate in developing the Business Continuity Strategy/strategies.
4. Participate in developing, implementing, and maintaining procedures for emergency response.
5. Implement the Business Continuity Plan.
6. Create, implement, and maintain BCP Awareness and Training Programs.
7. Maintain, coordinate, exercise, and evaluate the BCP.
8. Maintain, coordinate, exercise, and evaluate plans for public relations and crisis coordination.
9. Maintain, and coordinate policies and procedures with local authorities.
10. Lead the Disaster Management Team (in the DMP) as Site Controller during a crisis / disaster / disruptive incident as required.
11. Participate in continual improvement in the Business Continuity Procedure through competency development.
12. Ensure periodic review meetings at Nodal level for review of BC procedure, corrective actions and their implementation as per the timelines decided.

3.b - Business Continuity Administrator and his/her Responsibilities

It is not practical for any organization to have one single individual who can effectively perform all of the responsibilities listed in the previous section. Therefore, an additional designated position called as **Business Continuity Administrator** is nominated, who **will assist the Local BCC**.

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3.c - Damage Assessment Team

The procedure used to assess the damage due to disaster is detailed. e.g., all the things that must be inspected, the kinds of evaluation to be done, whether salvage/replace, the reporting to be done, and the time required, among other activities.

The Damage Assessment Team is among the earliest (along with the management) to be notified of the event. They would be required at the site at the earliest to evaluate the extent of the damage inflicted to people and to plant & machinery. In case the site itself has been subject to damage, then they should start their work as soon as an entry is allowed.

The assessment should be done against a plan that is closely related to the business continuity priorities. This means that they should be aware of the area in the site and processes that are crucial to the business. This would help them prioritize their examination and also focus adequately on the critical areas.

Roles and Responsibilities

1. Assess the extent of the damage and loss
2. Identify, characterize and quantify damages in the disaster.
3. Help define and prioritize the actions and resources to reduce immediate risks.
4. Identify the priorities of action required
5. Estimate the additional support required for immediate resumption / recovery.

The details of Damage Assessment Team are annexed in **Annexure 2b**.

3.d - Technical Team

Armed with the input provided by the Damage Assessment Team on the severity of damage to facilities and the extent to which the business is inoperable, the Technical Team can work ahead.

Roles and Responsibilities:

1. Analyze the report received from the Incident Controller about the disruptive incident to identify the likely cause of the incident.
2. Analyze the report received from Damage Assessment Team to identify, characterize and quantify the damages and decide on whether Resumption Plan could be implemented.
3. Decide in consultation with BC Team Leader on Invocation of BCP.

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4. Decide the Line of Action.
5. Ensure Financial sanctions for implementation of Recovery Plan and Restoration Plan
6. Ensure activation of Alternate Site.
7. Decide on involving Mutual Aid Organization and Vendor support.
8. Analyze the periodical reports from Operations Team of Alternate site on status of implementation of Recovery Plan and achieving MBCO.
9. Analyze the periodical reports from Operations Team of Primary site on status of implementation of Restoration Plan for normalizing the processes.
10. Inform Higher Authorities appropriately.

The details of Technical Team are annexed in **Annexure 2c**.

3.e - Operations Team

While the Damage Assessment Team and Technical Team are working, the **rest of the BCP team** is placed on alert for a possible activation of the continuity plan. The type and extent of the disruptive incidents declared would indicate which portions of the BCP need to be implemented. Accordingly, the BCP team shall be notified and resumption activities are started.

Operations Team apart from direct employees working for disruptive incidents recovery also has employees handling logistics / transportation; PR / Communication; Security; Accounting; Telecommunication; and Information Technology.

Roles and Responsibilities:

1. Execute the Recovery Plan (Business Continuity Plan) finalized by the Technical Team and report status periodically to EOC
2. Ensure that the Recovery activities are completed as per the timelines (RTO) decided by Technical Team
3. Execute the Restoration Plan approved by the Technical Team and report status periodically to EOC
4. Co-ordinate the activities among Own Teams, Mutual Aid Teams and Vendors
5. Supervise the working of Vendors to ensure expected performance from Vendor
6. Ensure that the Restoration activities are completed as per the timelines decided by Technical Team

The details of Operations Team are annexed in **Annexure 2d**.

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3.f – Incident Management Team

Whenever any incident is reported to the Operations / Security Control Room, the first and foremost job is to ensure “life safety”. For this purpose adhering to National Disaster Management Authority (NDMA–GOI) Guidelines and provisions of the Factory Act, 1948, Incident Management Team is developed within the Unit. The initial response for any disruptive incident shall be from this Team. Incident management team shall create “safe atmosphere” for other Teams to work.

Roles and Responsibilities:

1. Evacuate the affected area and ensure Head Count at safe Assembly Area/s
2. Activate Emergency Operations Centre (EOC) to control & guide all activities
3. Site Controller shall lead the operations from EOC and he will be assisted by Communication officer and Liaison Officer.
4. Undertake Fire Fighting operations
5. Undertake Search and Rescue operations as per the need
6. Render First Aid to the victims and send the casualties to the Hospital as advised by Medical Officer within the Team
7. Arrange for the welfare of the people assembled at Safe Assembly Area and shift them to Shelter/s if felt necessary
8. Site Controller shall nominate “incident Controller” for each incident site to coordinate the activities among Own Teams and Mutual Aid Teams
9. Ensure that the safe atmosphere is created at the earliest to allow other Teams to start their operations.

3.g – Incident Management Team - Roles & Responsibilities -

3.g (i) – Site Controller / Nodal Head /Zonal Head :

1. Activate EOC and take complete charge of the emergency operations / shutdown, deploy Officers and staff for Control Room and field operations, Co-ordinate and direct emergency control/rescue Operations.
2. Evaluate the hazard and effect appropriate steps to steps to safeguard the personnel and equipment in the vicinity of affected areas.
3. Contact and activate QRTs (Quick Response Teams) - Rescue & Fire team, Security, First Aid Team, Medical Officer and initiate emergency control / rescue operations.

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4. Summon agencies like Local Fire Brigade, Police etc. as required to control the situation.
5. Summon help from Security to cordon off the affected area and to restrict entry of personnel.
6. Evaluate emergency requirement with location EOCs and arrange necessary logistics.
7. Ensure that all communication facilities are in good order.
8. Arrange to establish Shadow Emergency Control Centre in the event EOC being (directly affected by emergency condition) rendered non-Operational.
9. Arrange emergency repairs and Maintenance to keep the Unit Operational during the emergency.
10. Arrange and provide necessary tools and tackles (welding/ cutting sets, chain pulley blocks, ropes, water pumps, diesel generators etc.) and personnel to operate the same.
11. Ensure availability / restoration / isolation of power supply in the affected areas as required.
12. Make arrangements for temporary/ permanent connection for emergency Lights/ streetlights, other equipment, shelters, relief areas etc.
13. Arrange for additional personnel as may be required for carrying out civil, mechanical and electrical jobs, Site cleaning and debris clearance.
14. Make arrangement for shelter in relief area.

3.g (ii) – Incident Controller:

1. Ensure safe working conditions at all times.
2. Ensure safety of all personnel engaged in “Emergency Specific” operations.
3. Will isolate and cordon off all hazardous equipment/ zones in the affected area.
4. Will take care that rescue / evaluation operations are being carried out in a safe manner.
5. Will remove affected personnel to first aid centre for medical attention.
6. Will organize shelters and relief in the safe assembly areas.
7. Will extend any other help required.

3.g (iii) Head-count In-charge:

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1. Guide all employees, contractor staff and visitors to assemble at Safe Assembly Area in an orderly manner.
2. Ensure that Floor Wardens carry out head count for the area they are responsible.
3. Compile the information and report to Site Controller through EOC the number.
4. Make efforts to ascertain the number of people missing
5. On getting “All Clear” signal allow the people to disperse in orderly manner.

3.g (iv) Safety In-charge:

1. Ensure safe working conditions at all time.
2. Ensure safety of personnel engage in “Emergency Specific” operations.
3. Ensure isolation and cordoning off in the affected area
4. Bring to the notice of the “In-charge” of respective Incident Management Team for any unsafe conditions prevailing in affected area
5. Ensure appropriate measures & PPEs are taken / used in affected area
6. Guide & assist the Incident Controller in his operation
7. Keep Site Controller informed about the prevailing condition at the incident site from “safety” angle.

3.g (v) Security In-charge:

1. Will be in-charge of all QRTs – Rescue & Fire Fighting Teams, First Aid Team and Security Teams.
2. He will restrict entry only for authorized personnel and authorized rescue vehicles.
3. Will assign the responsibilities to each QRT Leader.
4. Will ensure that all casualties are transported to Casualty Collection centre and are handed over to the Medical / First Aid Team.
5. All External Agencies shall report to him.
6. Will assign the responsibilities to each external Team depending on their expertise and equipment brought by them.
7. Will ensure safe working conditions at all times.

3.g (vi) Rescue and Fire In-charge:

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1. Will be in-charge of all Rescue & Fire Fighting Teams
2. Will assign the responsibilities to each Crew Leader.
3. Will rescue the casualties on priority basis
4. Ensure that all casualties are transported to Casualty Collection centre and are handed over to the Medical / First Aid Team.
5. Will ensure that fire-fighting operations are carried out in planned manner with emphasis on “Fire Fighters Safety”.
6. All External Rescue & Fire Teams shall report to him.
7. Will assign the responsibilities to each external Team depending on their expertise and equipment brought by them.
8. Will ensure safe working conditions at all times.

3.g (vii) – Communication Officer:

1. Assist “Site Controller” in activating EOC.
2. Ensure that all communication facilities are operational.
3. Liaison with other EOCs as directed by “Site Controller”.
4. Arrange to organize “Messenger System” in case of failure of Telephone / Radio Communication.
5. He will be in-charge of EOC in the absence of “Site Controller”

3.g (viii) First Aid and Medical In-charge:

1. Senior Medical Officer / Medical Officer available at Unit / Office who can be called within short notice.
2. Will establish Medical Centre / First Aid Posts during the emergency conditions, in addition to the existing facility.
3. Organize medical supplies, ambulance services, treatment and hospitalization of the affected personnel keeping in mind the TRIAGE Principles give in appropriate Chapter.
4. Organize additional help through Medical Officers from other Divisions of TPCL.
5. Organize help of other professional, if required.
6. Contact blood bank for blood supply.

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- Update Unit Head on personnel treatment to hospitalized / discharged from hospital and condition of affected personnel under treatment.

3.g (ix) – Liasoning Officer:

- Will assist CMO in hospitalization of affected personnel, if necessary.
- Executive (Accounts & Administration) will ensure sufficient cash availability for emergency purchases / requirements.
- Will arrange canteen services for all personnel involved in controlling the emergency situation, personnel in hospital, personnel being evacuated.
- Will take the roll call of all personnel in the assembly areas and account for department wise (no. of persons present, absent, involved in emergency, affected, rendered first aid and sent home, rendered first aid and hospitalized etc).
- Will ensure contact with the families of the affected hospitalized personnel and keep their families informed from time to time of the Treatment status.
- Will ensure fulfilling of all statutory requirements. Extend any other help required.

3.g (x) Transport and Civil Supplies In-charge:

- Will arrange to mobilize all vehicles within the Unit for emergency response activity.
- Will arrange to mobilize additional vehicles as directed by the “Over-all In-charge” or “Site Controller”.
- Shall assist “Medical Controller” in mobilizing Ambulances to transport casualties.
- Shall maintain record of the utilization of the transport / vehicles.
- Will arrange to keep the stores manned and open continuously during the emergency to provide all material and equipment necessary for controlling the situation.
- Arrange for emergency procurement of materials at short notice, required for emergency control from all available sources and ensure that sufficient supply is available.
- Extend any other help required.

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The details of Incident Management Team for this Unit are annexed in **Annexure 2e**.

CHAPTER - 4

RISK ANALYSIS

4. Risk Analysis

The Transmission Business unit has common Risk Management System in place as designed and developed for Tata Power Group. In order to facilitate identification of Risks, the Vital Installations and Technologies, the Vital Data and the Vital People for the Unit have been identified and documented.

4.a - Vital Installations and technology

Vital installations and Technologies that would be affected in case of disruptive incidents are identified and are listed in **Annexure 3a**.

4.b - Vital Data

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Vital data critical to the business which is in Soft and Hard Formats and which needs urgent backup or recovery in case disruptive incidents are identified and listed in **Annexure 3b**. In case of Soft Formats the information includes the size of data, back up process, back up frequency and back up site.

In case of the Vital Data in Hard Formats, the process of Protecting Data is included in the column titled “back up process”. Only Critical Vital Data in Hard Copies is included in this chart.

4.c - Vital People

The Vital Positions for Business Continuity Management in the Unit are identified and are listed in **Annexure 3c**.

The contact details of these Officers are included in the Annexure 2 or 2a and hence only the positions are identified.

4.d - Risk Analysis

Risk assessment is the exercise of identifying and analyzing the potential vulnerabilities and threats. The sources of risks could be:

1. Natural Calamities (Flood, earthquake, storm)
2. Terrorism / Sabotage
3. Fire
4. Catastrophic failure of critical equipment
5. Community-wide hazardous events (Strike, Riots/ curfew)
6. Accidents causing extreme material disruptive incident
7. Security threats, network and communication failures
8. Disastrous application errors

Each risk is assessed considering: **Loss of Human life; Environmental Damages, Financial Loss, Statutory, legal & regulatory requirements, impact on interested parties and impact on business objectives.**

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Each of these areas is looked at in the light of the business and the exact possible source located and for each source the following points are identified -

- Magnitude of the risk
- Risk Appetite,
- Maximum Tolerable Period of Disturbance (MTPD)
- Probability of its occurrence

Risk analysis for the Business Unit & its critical processes is done and prioritization / risk rating of the risks in terms of Loss of Human Life, Damage to Environments, MTPD and Financial Loss is done as shown in **Annexure 3d**. Further the corresponding impacting processes are also identified for initiating appropriate actions for impacting processes.

The Risks levels are classified as Catastrophic, Critical. High, Medium and Low. This Risk Rating is done through identified parameters as given in **Annexure 3d (i)**.

CHAPTER – 5

BUSINESS IMPACT ANALYSIS

5. Business Impact Analysis and Risk Management

5.a - Classification of Business Functions

Before undertaking Business Impact Analysis, it is required to rank them from recovery / restoration point. For ranking the functions for deciding priority for recovery / restoration, in this BCP the business functions are classified as under:

- a) **Critical functions** – If these business functions are interrupted or unavailable for some time, it can completely jeopardize the business and cause heavy damages to the business.
- b) **Essential functions** – Those functions, whose loss would seriously affect the organization’s ability to function for long.

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- c) **Necessary functions** – The organization can continue functioning; however, absence of these functions would limit their effectiveness, to a great extent.
- d) **Desirable functions** – These functions would be beneficial; however, their absence would not affect the capability of the organization.

For classification of Functions, parameters are laid down with emphasis on MTPD – Maximum Tolerable Period of Disruption, impact on business objectives and legal & regulatory requirements, keeping in mind the needs of the Interested Parties. The detail information on Classification of Functions is included in the **Annexure 4a (i)**.

Further Recovery Priorities are decided considering the adverse impact on business objectives, environment, and needs of interested parties. Parameters have been defined and the information is documented and is given in **Annexure 4 a(ii)**.

5.b - Business Impact Analysis

Business Impact Analysis (BIA) is essentially the process of identifying the critical business functions and the losses and effects if these functions are not available.

As a best practice to conduct a Business Impact Analysis all the HODs were called upon and told to contribute to making the same before the Business Continuity Plan. The most vital data obtained from them for the BIA such as the Process Description, Function handling Process, Responsible Manager, Recovery Priority, Minimum Business Continuity Objectives (MBCO), Recovery Time Objective (RTO) from the angle of “Interested Parties & Business”, estimated daily financial losses in case of interruption, is compiled.

Interdependence between various functions (internal and external) is crucial information obtained as part of the analysis. While ranking the functions to derive the recovery priority, functions which by themselves are of low priority, however, have some critical functions dependent on them. By virtue of this dependence, they also become either critical or essential.

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The Business Impact Analysis (BIA) is not a one-time project because of business changes and growth as stated in the previous section. Hence, the BIA Statement shall be revisited whenever a major business change occurs or half yearly, whichever comes first.

The BCP Team comprising of HODs was formulated for BIA and through their interaction the Statement of Impact as given in **Annexure 4a** was developed considering “Process” as the point of reference.

While undertaking BIA, it was possible to define in detail the resource requirements for making a business function operational after disruptive incident. This included infrastructure, manpower, documents, records, machines, phones, fax machines etc, with complete specifications. These details are important, since in the event of disruptive incident, there is bound to be some amount of panic and it may not be possible to come down to such details. Hence this information was included in the BIA Statement.

5.c – Business Impact Calculations

The findings of the business impact analysis must also be expressed in business terms. Quantifying the impact, possibly in terms of money, will catch the attention of the management. Stating the impact in terms of time will help in proposing concrete recovery goals. Stating the requirements in technical terms will help planning the recovery strategies. Ultimately, the business impact analysis must justify the continuity plan and aid selection of the best possible recovery strategy within the budget.

BIA helps define the recovery objectives. In the course of this study, it was realized that restoring some of the functions/ processes may require few days / weeks / months, disrupting the functions of other organizations / the “interested parties”. This would trigger a chain of inconvenience for the entire society / community.

While analyzing the BIA Statement it was realized that, after a disruptive incident, it is possible to recover critical functions at every affected node to a limited capacity, i.e. it is possible to recover 50 % of the usual workload within 2 hours.

Accordingly, the interim measure to be called as “Business Continuity Plan” was considered and time required for activating this “Temporary and Partial process from the regular or alternate site” was decided. The time required to activate this plan is termed as Recovery Time Objective (RTO) and is also shown in the BIA sheet.

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MBCO – Minimum Business Continuity Objectives

Top Management should set Minimum Business Continuity Objectives for key product and services in order to establish the minimum acceptable levels required to achieve the organization’s business objectives during any disruptive incident. MBCO is measured in (%)

MBCO shall be decided on the basis of (i) needs of interested parties, (ii) applicable legal & regulatory requirements and (iii) availability of resources to implement them.

RTO – Recovery Time Objectives

Determination of business continuity strategy shall be based on the outputs from business impact analysis and risk assessment. The aim of business continuity strategy is to reduce the overall impact of disruption by shortening the period of interruption and reducing its intensity to acceptable levels.

The determination of strategy should include the setting of prioritized time frames for the resumption of activities before the impacts resulting from not resuming them unacceptable to interested parties. RTO is measured in units of time.

Recovery Time Objective (RTO) should be set for each product, service and activity. RTO should be less than the time within which the impacts of not resuming the product, service or activity would become unacceptable (MTPD).

RTO shall be set taking into account (i) providing a minimum service for a temporary period (ii) timeframe for activating Alternate Site/s, (iii) dependencies of interrelated activities and (iv) Minimum Business Continuity Objective – MBCO

MTPD – Maximum Tolerable Period of Disruption

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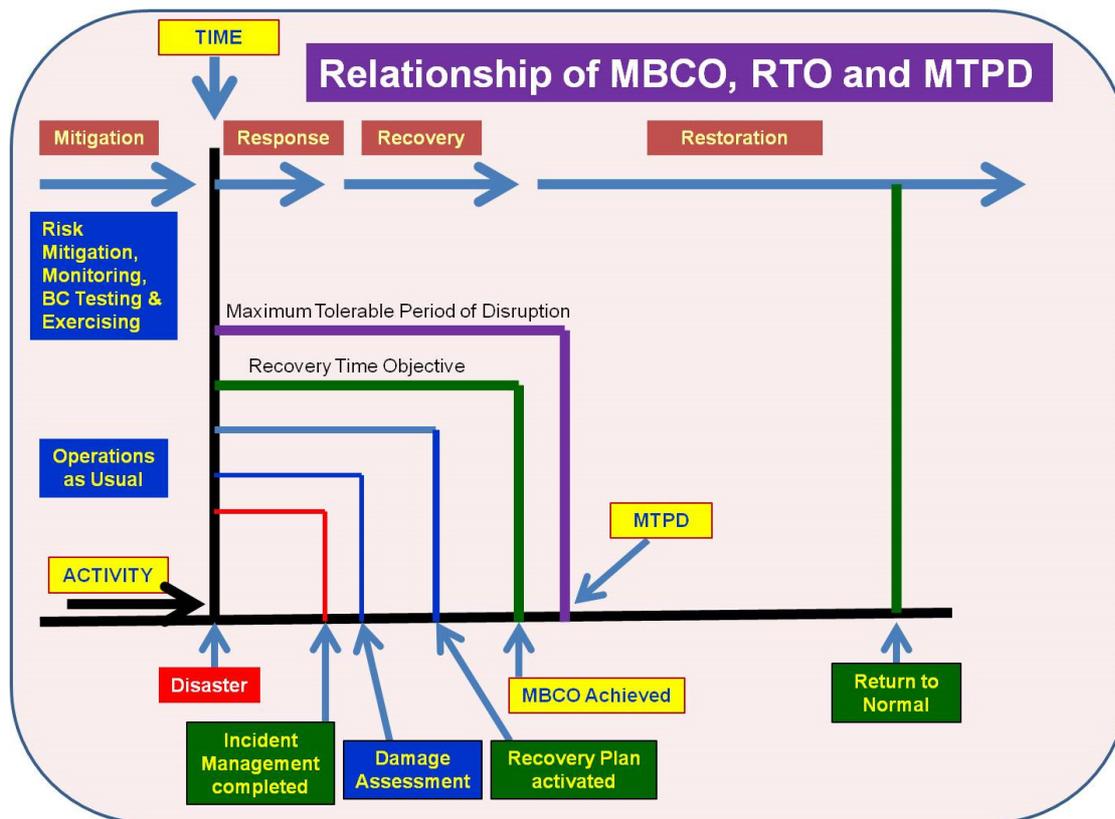
It is important to create an understanding of adverse impact over time that disruption of services or products would have on business objectives. Understanding is achieved through the processes of business impact analysis.

The Business Impact Analysis (BIA) includes estimating how long it would take for the impacts associated with disruption of the organization’s activities to become unacceptable to Interested Parties.

The time taken for impacts to become unacceptable may vary between seconds to several months depending upon the nature of the activity. Activities that are time-sensitive need to be specified with great degree of accuracy i.e. in minutes or hours. RTO is measured in units of time.

The **Relationship of MBCO, RTO and MTPD** can be well understood through the figure below.

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5.d – Assumptions and Limitations for RTO

The “Assumptions and Limitations” for RTO calculations are listed in Annexure 5j

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CHAPTER – 6

BUSINESS CONTINUITY STRATEGIES

6 . Business Continuity Planning Strategies

6.a – Categorization of Disruptive Incidents

Whenever any disruptive incident is reported, the Local Business Continuity Coordinator / Site Controller shall categorize the event / emergency situation in following **3 categories** depending upon the resources required to handle the emergency -

Categorization	Type of Emergency	Resources
Level 1	Minor Emergency	Fire Fighting, First Aid & Communication Equipment & Manpower available in Unit Invoke DMP
Level 2	Major Emergency	Fire Fighting, First Aid & Communication Equipment & Manpower available in Unit as well as mobilization of Mutual Aid Group. Invoke BCP
Level 3	Disaster	Fire Fighting, First Aid & Communication Equipment & Manpower available in Unit as well as mobilization of Mutual Aid Group and Government Agencies Invoke BCP

Level -1:

The emergency situation arising in one plant / areas which has the potential to cause injury or moderate damage to plant & can be controlled by Unit's emergency services is **Level 1 emergency**. In this case only DMP is invoked.

Level -2:

The emergency situation arising in plant / area which has the potential to cause injury, death or major damage to one or more plants/areas or environment & can be controlled only by utilizing full Unit's emergency services and mobilizing Mutual Aid Response Teams is **Level 2 emergency**. In this case BCP is invoked and Top Management is informed.

Level 3:

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The disaster situation arising in one or more Unit areas which has a serious potential to cause damage to personnel/property and environment and which cannot be controlled with available resources and needs mobilizing the necessary resources from external sources such as Mutual Aid Response Group, Local Fire Brigade & other Government Agencies is **Level 3 emergency** and is generally called as **disaster**. In this case too, BCP is invoked and Top Management is informed.

Conditions to classify L1, L2 or L3 is provided in annexure 5d(i)

6.b – Principles of BCDMP

The Transmission Business Unit have decided appropriate procedures to manage disruptive incidents and ensured that its activities continue based on their recovery objectives. These procedures include the activities required to manage a disruptive incident. The incident management procedures also establish appropriate internal and external communication protocol. These are –

- a) **Specific** – with regard to immediate steps that should be taken during a disruption
- b) **Flexible** – so that they can be used to respond to unanticipated threat scenarios and changing internal & external conditions
- c) **Focused** – they should clearly relate to the impact of events that could potentially disrupt operations and developed based on stated assumptions and an analysis on interdependencies and
- d) **Effective** – in terms of minimizing the consequences of incidents through implementation of appropriate mitigation strategies.

The **Risks** identified during the BIA process, need to strategize in the order for **Mitigation (Prevention), Response, Resumption, Recovery and Restoration** of business. The Mitigation Plan is being implemented continuously & concurrently and certain proposed measures shall be implemented on being approved by Management.

The National Disaster Management Policy, 2009 enshrines the formulation of **three Plans viz. Mitigation Plan, Response Plan and Resumption Plan**. The **Factories Act, 1948** (as amended from time-to-time) and the **Disaster Management Act, 2005** calls this as **Disaster Management Plan**, which **replaces** earlier framed “**On-site & Off-site**” **Emergency Plan/s**.

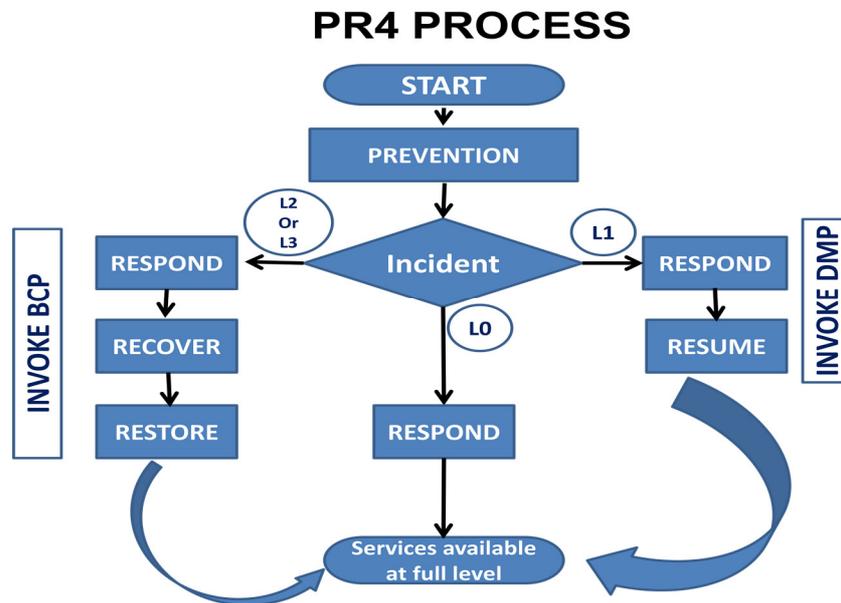
The National Disaster Management Authority (**NDMA**) has issued Guidelines on preparation of the Disaster Management Plan. While preparing **this BCDMP**, this Unit

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has strictly adhered to NDMA Guidelines. Hence Mitigation Plan, Response Plan and Resumption Plans are fully compliant with NDMA Guidelines as well as the ISO Standard 22301 for BCMS.

During Level “L 1” disruptive incidents, the Unit shall be able to resume operations after following steps mentioned in Disaster Management Plan (which includes mitigation, response and resumption plans).

However, during Level “L2 & L3” disruptive incidents it may take a longer time to resume the activities and hence the interested parties may be badly affected. Hence, this Unit has prepared two more plans viz. Recovery Plan and Restoration Plan. These two plans are a part of “Business Continuity Plan”.



6.c – Warning System

The Transmission Unit has established, implemented and maintained procedure for warning and communication of any disruptive incident or impending disaster. It includes -

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1. Detecting an incident and alerting response personnel;
2. Continuing monitoring of incident;
3. Internal communication between the various levels and functions within the organization;
4. External communications with partner organizations and other interested parties;
5. Receiving, documenting and responding to communication from other interested parties;
6. Alerting interested parties potentially impacted by an actual or impending disruptive incident;
7. Assuring availability of means of communication during a disruptive incident;
8. Facilitating structured communication with emergency responders;
9. Assuring the interoperability of multiple responding organizations and personnel;
10. Recording of vital information about the incident, actions taken and decisions made; and
11. Operations of communication facility.

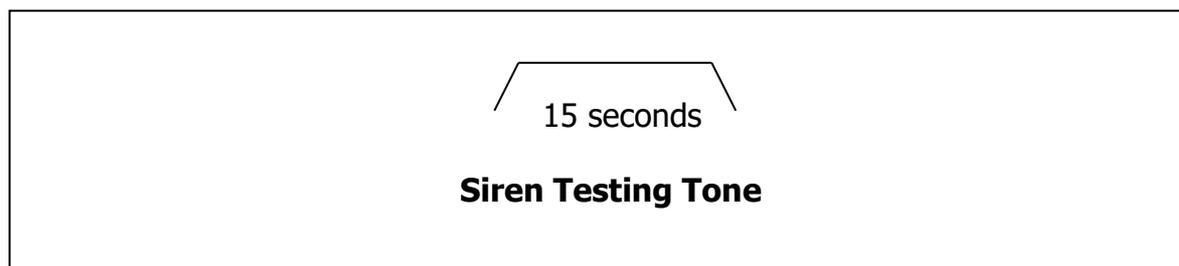
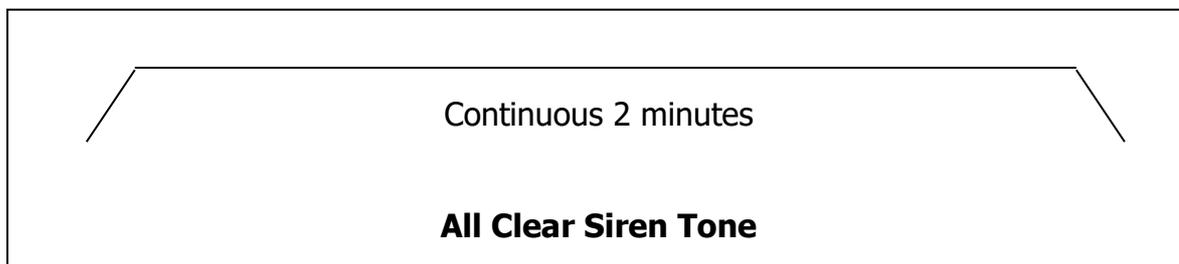
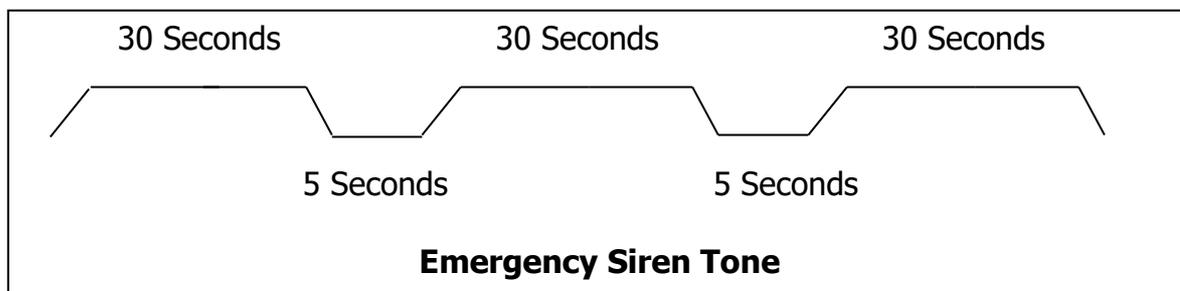
The Transmission Unit has well defined “**Siren Codes**” for conveying warning to as listed below –

1. **Emergency**: For emergency situation, the siren shall be wailing sound 3 times for 30 seconds with a gap of 5 second after every 30 seconds
2. **DISASTER** : For emergency situation, the siren shall be wailing sound 5 times for 30 seconds with a gap of 5 second after every 30 seconds

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- 3. **ALL CLEAR:** For all clear situation, the siren shall be straight run sound for 2 minutes.

Tone of Emergency siren



Types of Warning System

(i) Warning for Fire related incidents:

In case of fire related incidents, evacuation procedure as defined above and wailing siren indicated by "Siren Code - Emergency" will be issued.

(ii) Warning for Terrorist Attacks:

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In case of a Terrorist Attack, **NO SIREN** will be issued. A message "TERRORIST ATTACK" will be shouted 3 times over the "Public Address System", (PAS) by any person, who cites such terrorists. All divisions are to ensure the following

1. Method to access PAS through intercom telephone should be made available in the BCDMP Document, as well as displayed at prominent locations and near PAS paging systems.
2. Map indicating location of PAS Paging system, should be displayed at major locations in the plant or office.
3. In case PAS is not available with a division, any suitable mechanism other than a wailing siren is to be adopted by the division. This is to prevent personnel from assembling in the Safe Assembly Area.
4. Upon hearing alert "Terrorist attack", all personnel are to hide at suitable locations.
5. People are to assemble in the Safe Assembly area, only upon hearing the "All Clear" Siren.
6. People should resume to their workplace, only after receipt of clearance from Emergency personnel.

-

(iii) Warning for Earthquake:

- In case of earthquake related incidents, evacuation procedure as defined above and wailing siren indicated by "Siren Code - Disaster" will be given.

DURING AN EARTHQUAKE :

1. Stay in the building. Do not evacuate.
2. DROP, and take shelter under tables, desks, in doorways and similar places. Keep away from overhead fixtures, windows, filing cabinets and bookcases. COVER your head and neck with your arms. HOLD the position until the ground stops shaking.
3. Assist any disabled persons in the area and find a safe place for them.
4. If you are outside, stay outside. Move to an open area away from buildings, trees, power lines, and roadways.

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AFTER AN EARTHQUAKE :

1. Check for injuries. If qualified, give first aid; otherwise, seek help.
2. Check for safety hazards: fire, electrical, gas leaks, water supply, etc. Coordinate with your supervisor and begin turning off all potentially hazardous equipment such as gas and electric appliances.
3. Do not use telephones, including cellular/mobile phones, or roads unless necessary. Keep them open for emergency use.
4. Be prepared for aftershocks.
5. Cooperate, keep informed and remain calm.
6. DO NOT RETURN to a building unless told to do so by evacuation personnel.

IF EVACUATION IS ORDERED:

1. Seek out any disabled or injured persons in the area and give assistance. Exit using the stairway. Do not use elevators.
2. Beware of falling debris or electrical wires as you exit.
3. Go to an open area away from buildings, trees, power lines and roadways.
4. Wait for further instructions from emergency personnel.

6.d – Mitigation (Prevention) Plan

Prevention aims at lessening the chances & impact of the disruptive incident happening. Strategies for prevention would include both deterrent and preventive controls.

- **Deterrent controls reduce the likelihood of the threats.**
- **Preventive controls safeguard the vulnerable areas to ward off any threat that occurs and reduce its impact.**

Planning for prevention is an exercise that must be done carefully. It has to ensure that the mechanisms used are neither very restrictive, nor would they constitute a bottleneck, nor cause an availability problem, nor allow undesirable / easy access and usage.

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The **Statement of Preventive Measures** for all risks identified for Unit is attached herewith as **Annexure 5a**. Some of them are **proposed** measures, when implemented it will **result in reducing “RTO”** and speeding up the implementation of **“Recovery Plan”**.

6.e – Resources

The BCP includes various plans for operational purposes. However, for implementing these plans Resources in terms of Manpower, Equipment, Machinery & Tools, and Vehicles & Appliances are required to be mobilized. Easy access to the information about the “Internally Available” Resources shall be very useful and hence the same is compiled and is given in Annexure 5 a(i).

In addition, the Unit may require assistance from the neighboring Units as well as Government agencies. It is therefore essential to have their contact details as well as know their capability to provide assistance. Hence the information about “Externally Available” Resources is compiled and is given in Annexure 5a(ii).

The competency of various Teams for speedy and appropriate actions is required to be developed. For this purpose Training Modules are devised at Corporate level shall be followed and details of the **“Competency Training”** undertaken so far have been given in the **Annexure 5a (iii)**. This Unit endeavors to develop the level of competency of all key Business Continuity personnel in next one year.

Further, for developing internal resources the “awareness” among the employees on the Business Continuity vis-à-vis Business Continuity Plan is essential. The involvement of each employee in implementing the BCP shall play a key role in ensuring speedy recovery after any disruptive incident. The Awareness Training Module as framed at corporate level shall be followed and the details of the **“Awareness Training”** undertaken so far have been included in **Annexure 5 a (iv)**. This Unit endeavors to train 100 % employees in next one year.

6.f – Response Plan / Incident Management Plan

Response is the reaction when the disruptive incident occurs. It must stem further damage, assess the extent of damage, salvage the business entity’s reputation by providing appropriate communication to the external world and indicate a possible recovery timeframe.

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The Response phase may last from a few minutes to a few hours after the disruptive incident. It will start near the end of, or after, the Crisis Phase if there has been one, or when a potentially threatening situation is identified & pre-warning is received.

During the Response Phase the Disaster Management Team shall be activated and shall deal with the situation urgently. They will ensure “life safety” and shall help the casualties, if any. They will also ensure “safe atmosphere” for other Teams to work. Thereafter the Business Continuity Team (BCT) will assess the situation and decide on Invocation of BCP

A Crisis Phase may not actually have occurred but a potentially threatening situation may have been identified which would warrant calling out the Disaster Management Team to monitor events, for example a fire in the building next door which, if not brought under control quickly, may damage Unit premises and will certainly require evacuation procedures to be invoked.

In view of this a list of “**conditions to declare level of Disruptive Incident**” is prepared. Also, the “Plan Activation Criteria” are decided. This information is attached as **Annexure 5d (i)**

The detail plan for Transmission Unit has been prepared under the caption Disaster Management Plan (DMP). The DMP has been drafted as per the Guidelines issued by the National Disaster Management Authority (NDMA) and the procedure laid down therein is being rehearsed regularly at the Unit level as stipulated in the DMP. The DMP for this Unit is appended herewith separately for reference.

The gist of activities for each risk is listed under the caption “**Incident Management Plan**” and is given in the **Annexure 5d (ii)**.

For Incident Management the Business Continuity Coordinator (BCC) shall act as “**Site Controller**” and in case it is decided to activate BCP, he will assume the charge as “Business Continuity Coordinator”.

6.f (i) – Evacuation Plan

The Evacuation Plan for the Transmission Unit has been developed to ensure the safest and most efficient evacuation time of all expected occupants in the Unit at the time of any disruptive incident or impending emergency. Evacuation Plan involves designated actions by employers and employees to ensure safety from all identified emergencies. Evacuation Plan identifies authorized personnel for taking suitable

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decision to evacuate or shut down of operations. In the event of an emergency, immediate action plan is put in place for evacuation to a safe shelter.

In a disaster situation, evacuation is a complex exercise requiring multidisciplinary inputs. A comprehensive and coordinated preplanning is necessary to implement orderly evacuation of occupants. The weather conditions obtained through the Meteorological Department / Weather Monitoring Station would dictate to a large extent the area to be evacuated.

On hearing the warning (Siren, PA system), the persons should quickly move to the designated safe assembly area / shelter in an orderly manner. In case of emergency near the safe assembly area / shelter area, they should listen to PA system for alternate safe assembly area / shelter. The **Floor Safety Wardens** or Warden shall help physically challenged personnel in reaching the shelter.

While in many cases evacuation is a life saving measure, however it is not always practical. Lack of time is often the single most important limitation on the effectiveness. Large evacuation takes very long time to execute even if they are well planned in advance. Keeping this in mind, according to the type of disaster, area & people affected by the disaster, the EOC will make suitable amendments in the plan and communicate these instructions to the personnel through PA System.

SOP for Evacuation

General Guidelines for Evacuation in Disaster

1. Keep calm
2. Don't Panic
3. Cover mouth and Nose with wet cloth (smoky condition)
4. Don't spread rumour
5. Don't crowd at incident sight
6. Close doors and windows in case of toxic gas release
7. Turn off LPG/gas cylinders in case of inflammable Gas leakage
8. Keep phone lines clear
9. Inform security and fire dept.
10. Follow direction from proper authority
11. Keep the road clear
12. Give way to Emergency vehicles immediately

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Responsibilities of Floor Safety Warden

1. He / She must be familiar with the floor or plan of the building
2. He / She will make a list of physically handicapped /disabled person working on his floor and pay special attention to them during evacuation
3. During fire /emergency, he/ she will ensure that instructions of the EOC are followed by floor occupants and nobody is left on the floor
4. Guide all personnel to evacuate & direct them to assemble in Shelter in an orderly manner.
5. Ensure all personnel are evacuated safely.
6. In case any person is missing or trapped on the floor, he will inform the EOC for rescue
7. In case Shelter is not safe, guide all to Alternate Shelter instructed by EOC.
8. Carry head count for their personnel.

Requirements of Shelter

The Shelter shall be a big space with over-head protection in the plant area or vicinity of plant area, identified well before the emergency occurs. The Shelter shall have sitting facilities, drinking water facilities, sanitation facilities and First Aid facilities as the personnel will be displaced there temporarily for a short duration.

Safe Assembly Area / Shelter:

1 No. of Safe Assembly Area / Shelter has been identified for each Receiving station or substation. Dharavi, Kalyan and Borivli receiving stations have 2 Nos. of Safe Assembly Areas each. All personnel not involved in the disaster management / fire control activities will move to either of these shelters under instruction from the Incident Controller / Department Head / Sectional Head / Immediate Superior. Gathering at the shelters depends on the wind direction.

Locations of the Identified safe assembly areas / shelters are mentioned in Annexure 5a (i).

All of these shelters have strong structures with ample space to house a minimum of 10 personnel with facilities of Toilet , water , ventilation, telephone , first aid kit and transportation if need be.

Head Count Procedure:

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Headcount In-charge shall liaison with Security in-charge to get information relating to persons in the plant premises at the time of emergency. On receiving the information, Floor wardens will carry out the head count of the personnel assembled in the shelter. He will cross verify the data received with the available list and make sure no one is trapped in and around the disaster area. Follow the same procedure in counting the visitors and contractors present in the plant.

Rehearsal

An essential element of any disaster management plan is the emergency evacuation drill. The evacuation drills should be carried out on bi-monthly basis to train and rehearse employees on their responsibilities and actions in case of any emergency.

The Emergency Evacuation Plan for this Unit is given in the **Annexure 5d (iii)**.

6.f (ii) – Casualty Management Plan

(a) First Aid

A mass casualty incident is defined as an event in which generates more patients at one time that cannot be manageable using routine procedures with locally available resources. It requires exceptional emergency arrangements and additional or extraordinary assistance. It can also be defined as any event resulting in a number of victims large enough to disrupt the normal course of emergency and health care service.

The objective of this Casualty Management Plan is to assist in developing mass casualty management systems in plant premises which is capable of responding to all types of incidents at different scales.

First aiders:

This Unit has trained first aiders who are capable of providing necessary first aid to the patients at the time of emergency. To increase the competency and to increase the number of first aiders, first aid training is being given on regular basis.

Roles and Responsibilities of First Aiders

1. Respond to first aid emergencies within the limits of the training.
2. Arrange without delay medical assistance, unless injury is so minor it can be handled without professional attention.

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3. Render appropriate first aid and CPR until transportation of casualty to further medical care, if necessary.
4. Maintain first aid kits and equipment and restock as needed
5. Report any first aid supplies needed to the Person in Charge of the First Aid Station.
6. Must keep information on casualties confidential apart from reporting requirements and giving medical information to medical staff
7. Inspect first aid station kits every 3 months.

Actions of First aid Team

Immediately after disruptive incident, severe trauma and wounds are the most urgent priority for medical management. In case of any large disaster, First aid team will be formed with the available First aiders in the Unit premises at the time of emergency to provide necessary service to the patients.

(b) Medical Facility: *In-house Medical facilities*

The list of Doctors / Medical Practitioners with their contact details, who can be mobilized in case of emergency, is given in **Annexure 2**.

Triage:

The term "triage" refers to a sorting of injured or sick people according to their need for emergency medical attention. Used to determine priority for whom to get care first, triage may be performed by anyone from emergency medical technicians (EMTs) to emergency room gatekeepers, from soldiers on a battlefield to anyone with knowledge of the system who finds himself or herself in an unusual emergency situation.

Triage is used when the medical-care system is overloaded, meaning there are more people who need care than there are available resources to care for them. There may be mass casualties in a war zone or in an earthquake or other natural disaster that results in many injuries.

Triage coding system

Triage systems run the gamut from verbal shouting in an unusual emergency to well-defined coloured tagging systems used by soldiers and EMTs when they arrive on the scene of a mass casualty accident or a battlefield with many wounded soldiers.

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The most common triage systems use colour coding that works similar to this:

- **Red:** needs immediate attention - critical life-threatening injury or illness; transport first for medical help
- **Yellow:** In some systems, yellow tags are transported first because they have a better chance of recovery than red-tagged patients.
- **Green:** less serious or minor injuries, non-life-threatening, delayed transport; will eventually need help but can wait for others
- **Black:** deceased or mortally wounded

Identification Procedure:

The Triage Tag is used as the identification tag during a disaster situation.

1. IMMEDIATE (Red): Highest priority
2. DELAYED (Yellow): Second priority
3. MINOR (Green): Third priority
4. DEAD/DYING (Black): Lowest priority

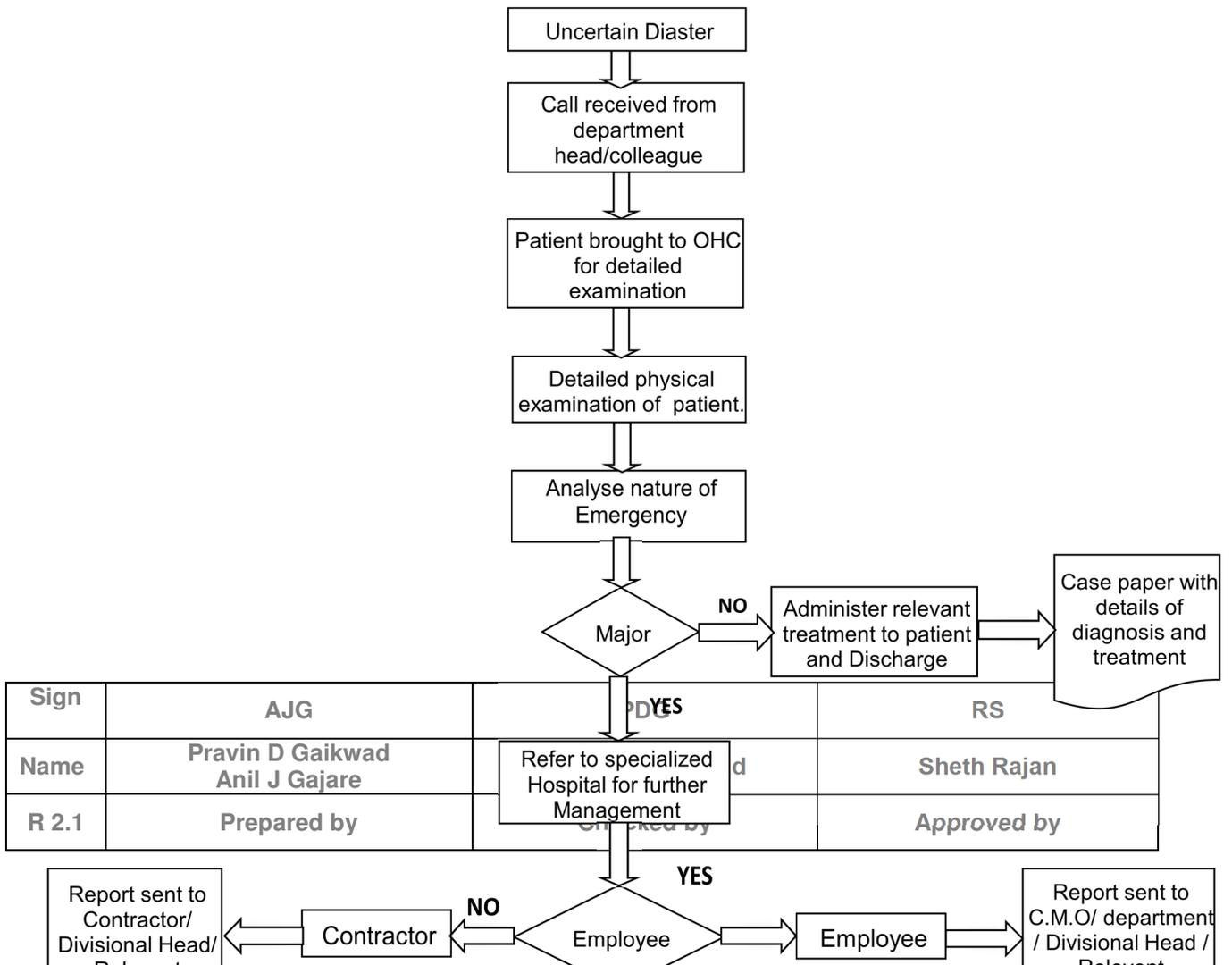
The most seriously injured persons can be quickly identified by:

- Evaluating respiratory rate
- Evaluating perfusion
- Evaluating mental status

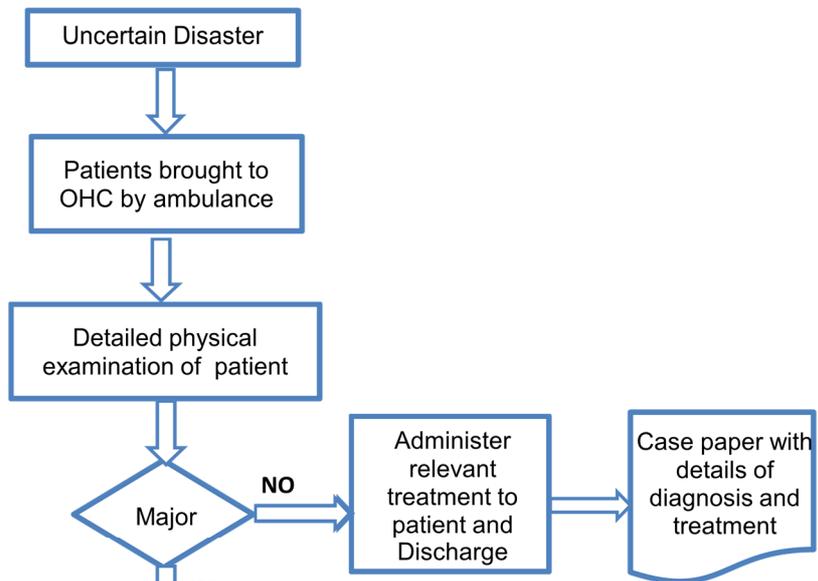
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Rapid Triage (for multiple patient scenes)			
Priority	Color	Condition	Notes
1	Red	Immediate	Life threatening
2	Yellow	Urgent	Can delay up to 1 hour.
3	Green	Delayed	Up to 3 hours.
4	Black	Deceased	No care needed
Priority 1 - Immediate Transport			

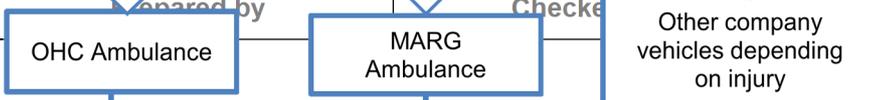
SOP for TRIAGE in consultation with Medical practitioners



SOP for Casualty Evacuation



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6 f (iii) - Notification Process

The first reaction to an interruption would be to inform all the relevant people about the interruption. If it is an impending interruption about which there is a prior warning, then this notification can be done in advance.

Timely notification is important, since it may provide an opportunity to stem any further damage. In a situation where there is adequate time to perform a shutdown, a switchover or an evacuation, it may even completely prevent damage. This, however, requires the presence of diagnostic or detective controls. Such controls either continuously scan themselves for a symptom of interruption (network, servers) or collect such information from external sources (natural calamities, accidents & fires in neighboring Unit).

Notification Process involves clearly documenting who is to be notified, how, by whom, and also the escalation mechanism. People listed in this notification list will have to perform different roles. The type of information and amount of detail provided as a part of the notification depends on the role of the person.

The following groups would be involved:

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- **Management** would need to be informed of the status. It has the powers to authorize the emergency response and further actions. The management will also deal with the press, public, customers, shareholders, and interested parties.
- **Damage Assessment Team** would assess the damage and rate the severity of the interruption.
- **Technical Team** would serve as the key decision-makers for further activities of the BCP.
- **Operations Team** would execute the actual operations of the BCP.

Notification List for this Unit has been finalized and is given **Annexure 5b**. The list includes “**back-ups**” for each contact. In case the primary person is not available or contactable, the backup person is to be notified. Notification shall be done using various tools: pager, SMS, phone, and email with emphasis on use of SMS. The team is equipped appropriately. The list also includes the “**Escalation Mechanism**” to ensure timely updates to the management.

Also, the notification procedure is given through a Flow Chart in **Annexure 5c**.

6.g - Resumption Plan

The procedure for transition from the emergency response to business resumption is given here. The process starts with damage assessment and is followed by process of making decisions regarding operations, concerning where and whom they would deploy, and the activities to be performed and to what extent, are described. Activities are assigned to the different sub-units in the BCP team and each group performs its assigned tasks.

This part of the plan is also called the **Business Resumption Plan (BRP)**.

Resumption involves resuming only the time-sensitive business processes, immediately after the interruption. It may be mentioned that if the gravity of destruction is heavy, the resumption of activities may not be possible. Resumption Plan for this Unit is given in **Annexure 5e**.

The focus shifts to the **EOC**, where the decision to invoke BCP is taken. The first decision to be taken is whether the critical operations can be resumed at the normal business site or are required to be shifted to an alternate site. In situations when access to the primary

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site is denied or the site is damaged beyond use, the operations could move to an alternate site.

6.h - Recovery Plan

The most essential aspect of the Business Continuity Plan is the “**Recovery Plan**”. When the activities cannot be resumed after any disruptive incident and it is realized that the restoration time would cause inconvenience to the “Customer / Stake-holder / Interested Parties”, **as an interim action, a pre-defined procedure of providing “temporary and partial” service shall be followed in this Unit. This procedure is called the Recovery Plan / Business Continuity Plan.**

Identification of alternate sites in the vicinity for resuming operations “**Temporarily and Partially**” during the interim phase is very essential and identification process is required to be done in pre-crisis phase.. The “**Alternate Sites**” for the Unit are identified and are listed in **Annexure 5f.**

The BC Team has formulated the **Recovery Strategies** to address disruptive incidents within optimum time and resources. While deciding recovery strategies, “**Minimum Business Continuity Objectives (MBCO)**” has been decided keeping in mind the “**Maximum Tolerable Period of Disruption (MTPD)**”.

Tata Power Company Limited, Transmission unit, has decided **MBCO** as 50%. In some cases MBCO shall be 80 % also. Accordingly, the method of implementation is decided.

The “**Business Continuity Strategies**” for this Unit keeping in mind MTPD & MBCO are identified and listed in **Annexure 5 g.**

Based on the identified and listed recovery strategies, MBCO and RTO, **Recovery Plan (Business Continuity Plan)** is developed as per **Annexure 5h.**

In order to facilitate recovery process in optimum time and resources, the following points are addressed / pre-defined in the **Recovery Plan**:

- Activities, Responsibilities, Timeline, and Resource Requirements
- Plan for interaction with external agencies

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The Business Continuity Management Process Flow Chart, including the Incident Management Process, is given in the **Annexure 5 h (i)**.

It may be mentioned that the implementation of Recovery / Business Continuity Plan shall continue till the Primary Site is fully functional / operational.

6.i - Restoration Plan

Restoration is the process of repairing and restoring the primary site. At the end of this, the business operations are resumed in totality from the original site or a completely new site, in case of a catastrophic disruptive incident.

This phase restores conditions to normal. It will start with a damage assessment, usually within few hours or so of the disruptive incident, and may identify any need for refurbishment or even replacement of the premises. This phase will not occur if physical damage does not happen. During the Restoration Phase any damage to the premises and facilities will be repaired.

The Operations Team shall initially be involved in the implementation of “**Recovery / Business Continuity Plan**” through the alternate site. Thereafter, as the Technical Team shall finalize the **Restoration Plan**, the Operation Team shall be divided in two groups. One group shall ensure the continuous implementation of Recovery / Business Continuity Plan; the other would undertake “**Restoration**” process at the Primary Site. **On most of the occasions, the Recovery / Business Continuity Plan and Restoration Plan shall run parallel.**

The Restoration Plan for this Unit is prepared and is given in the **Annexure 5 i**.

6.j – Acceptable Levels and Timeframes

Considering the needs of the Interested Parties this Unit has decided acceptable levels of disruption and timeframes for recovery of the business. These timeframes are referred to in various Annexures mentioned above. Combined statement about “**Acceptable Levels and Timeframes**” is prepared and given in **Annexure 5 j** for ready reference.

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CHAPTER - 7

EXERCISING AND TESTING

7. Conduct of Disaster Management Exercises

7.1 Need

7.1.1 Practice is an important aspect of the preparation process. Experience and data show that exercises are a practical, efficient and cost effective way to prepare for disaster response and recovery. Exercises identify the areas where individuals & organization are proficient and those that need improvement. Lessons learned from exercises can be used for Corrective Actions in DMP and provide basis for imparting knowledge and developing skills.

7.1.2 An exercise is a focused practice activity that drives them through a pre-decided scenario and requiring them to function in the capacity that would be expected of them in a real event. Its purpose is to promote preparedness by testing operational plans and training personnel.

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7.1.3 Following are the main reasons to conduct exercises:

- 1) To test and evaluate plans, strategy and procedures.
- 2) To detect planning or procedural weaknesses.
- 3) To identify gaps in resources.
- 4) To improve organizational coordination and communication.
- 5) To bring clarity in roles and responsibilities.
- 6) To improve the skills of the personnel engaged in response activity.

7.2 Types of Disaster Management Exercises

7.2.1 NDMA advises the organizing following four types of exercises –

- a) Team Exercise**
- b) Table Top Exercise**
- c) In-house Mock Drill / Exercise**
- d) Full Scale Exercise**

7.3 Team Exercise

7.3.1 Team Exercise is defined as “a coordinated, supervised exercise activity, normally used to develop skills of Individual Team such as Warden & Welfare Team, SAR & FF team, First Aid Team, EOC Team. In Team Exercise the entire DM set up is not activity. Only specified QRTs are activated and are given specific assignment to practice a small part of the response plan. The effectiveness of Team Exercise is its focus on specific activity / drill. It enhances the skills of the individual members.

7.3.2 During Team Exercise the QRTs are expected to use the equipment, PPE as well as functional, which they would normally require to use in case of any emergency. Whenever, any new equipment is introduced it is essential to organise the Team

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Exercises so that the individuals would be aware of the system of operation. A Senior Officer and 1-2 In-house Trainers should be nominated to supervise the Team Exercises.

7.3.3 Some of the Team Exercises are listed below –

- 1) Evacuation Drill (For Warden & Welfare QRT)
- 2) Fire Extinguisher Drill (For SAR & FF Team Volunteers)
- 3) Hydrant / Pump Drill (For SAR & FF Team)
- 4) Stretcher Drill (For First Aid Team)
- 5) Ambulance loading- unloading Drill (For First Aid Team)
- 6) Handling Gas affected Casualties (For Para-medical Staff Team)
- 7) EOC Drill (For Communication Team)

This list is not exclusive list. The Officer nominated as “Site Controller” should devise his own model and implement it. However, he should devise his own periodical cycle for development of skills / competency building.

7.4 Tabletop Exercise

7.4.1 Tabletop Exercise facilitates analysis of an emergency situation by the participants in an informal, stress-free environment. It is designed to elicit constructive discussion as participants examine pros-&-cons of the emergency situation and decide the way / system to handle the situation as envisaged in the DMP. The success of the exercise is largely determined by group participation in the identification of problems, resources and actions.

7.4.2 A senior officer well conversant with DMP is nominated as “Facilitator”. There is minimal attempt at simulation in a Tabletop Exercise. Equipment is not used and resources are not deployed. The Exercise begins with the reading of a short scenario narrative, which sets the stage for the hypothetical emergency. Thereafter, the Facilitator leads the discussion. Since the scenario is known, the discussion should be focused on the roles, resources, strategic plan and co-ordination.

Generally, site maps, charts and map markers & pinning material are used during the discussion. At the end of the discussion, the participants should work out “line of action”

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for the given narrative. They should keep in mind that their suggested “line of action” should be as per principles listed in DMP and shall be implemented during “Functional” or “Full Scale” Exercise by the QRTs at a later date / time.

7.4.3 The advantages of Tabletop Exercise are –

- a) It provides a low stress discussion of co-ordination.
- b) It provides a good environment for problem solving.
- c) It provides an opportunity for key personnel to be acquainted with their roles and responsibilities.
- d) It provides a good preparation for “In-house Mock Drill” and “Full Scale” Exercise.

7.4.3 Officer nominated as “Site Controller” should ensure that **every month at-least ONE Table Top Exercise** for DMP is organized and 3 to 4 scenarios are discussed through formation of groups among the participants.

7.5 In-house Exercise (Mock Drill)

7.5.1 In-house Exercise (Mock drill) is a fully interactive exercise that tests the capability of an organization to respond to a simulated but likely perceived scenario. Mock drill tests multiple functions of the organization’s operational plan. It is a coordinated response to a situation in a time-pressured, realistic scenario. In-house Exercise focuses on coordination, integration and interaction of organization’s policies, procedures, roles and responsibilities before, during or after the simulated emergency.

7.5.2 Mock drill is similar to a “Combined” Exercise without participation of external agencies. It is limited for Internal Resources. During the In-house Exercise, the EOC shall be activated and shall include Evacuation Drill also. On getting ‘Warning – Alert’ signal all QRTs shall operate with equipment as laid down in the DMP.

7.5.3 Realism is achieved through the following –

- a) On scene actions and decisions
- b) Simulated “victims”
- c) Search and Rescue requirements
- d) Communication devices

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- e) Equipment utilisation
- f) Actual resources and personnel allocation.

7.5.4 Assignment

The following persons shall be nominated for conduct of In-house Exercise –

- i. **Controller** – Manages and directs the In-house Exercise
- ii. **Simulators** – Assume external roles and deliver planned messages
- iii. **Observers** – Observers who assess performance
- iv. **Safety Marshal** – Ensures Safety of Participants and Plant and shall intervene and stop the proceedings if problem arises.

7.5.5 Steps for In-house Exercise (Mock drill)

To design and conduct the mock drill one has to get organised, planned ahead and be creative. The following **FOUR** steps are required for success of Mock Drill –

Step 1: Design the In-house Exercise - The key components of designing the In-house Exercise are: details of the simulation and a timeline for how the events will unfold clear objectives to use to evaluate the drill’s success and equipment to make the drill realistic.

Step 2: Assign roles for all the participants to play at a **pre-exercise briefing**.
Appoint a Safety Marshal who is responsible for implementing a medical safety plan and shutting down the exercise if a real danger occurs.

Step 3: Initiate the In-house Exercise by introducing the prepared mock situation that mimics a potential real hazard or vulnerability. Instruct everyone to follow the procedures that are outlined in your existing DMP. Deliver the scripted messages to test the players’ reactions according to the timeline you developed.

Step 4: Evaluate the In-house Exercise to assess the effectiveness of your written procedures and address any shortcomings. Attain feedback from the designated observers on the performance of the participants and the fulfillment of the exercise objectives. Document all lessons learned through the In-house Exercise (Mock drill) for Corrective Actions.

7.5.6 The **In-house exercise** should be organized on “**Bi-monthly**” basis with different scenarios being tested every time.

7.6 Full Scale Exercise

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7.6.1 Full Scale Exercise simulates a real event as closely as possible. It is an exercise designed to evaluate the operational capability of response system in a highly stressful environment that simulates actual response conditions. To accomplish this realism it requires the mobilization and actual movement of QRTs, equipment and resources, including external resources. Ideally, the Full Scale Exercise should test and evaluate most functions of the DMP.

7.6.2 Full Scale Exercise is an extension of In-house Exercise and the aims and assignments as listed in **Para 7.5.2 and 7.5.3** above are same.

7.6.3 Steps

The following **FIVE** steps are required for success Full Scale Exercise –

Step 1

Design the Full Scale Exercise. The key components of designing the Exercise are: details of the simulation and a timeline for how the events will unfold, clear objectives to use to evaluate the drill's success and equipment to make the drill realistic.

Step 2

Identify key External partners and invite their representatives to participate in the exercise with appropriate QRTs. Since an effective exercise simulates damage and injuries, the presence of mutual aid group helps the exercise to be realistic. In addition, working with the mutual aid group during an exercise will build relationships that will make you both more effective during an actual disaster.

Step 3

Assign roles for all the participants to play at a **pre-exercise briefing**.

Appoint a Safety Marshal who is responsible for implementing a medical safety plan and shutting down the exercise if a real danger occurs.

Step 4

Initiate the Full Scale Exercise by introducing the prepared mock situation that mimics a potential real hazard or vulnerability. Instruct everyone to follow the procedures that are

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outlined in your existing DMP. Deliver the scripted messages to test the players’ reactions according to the timeline you developed.

Step 5

Evaluate the Full Scale Exercise to assess the effectiveness of your written procedures and address any shortcomings. Attain feedback from the designated observers on the performance of the participants and the fulfillment of the exercise objectives. Document all lessons learned through the Full Scale Exercise for Corrective Actions.

7.7 The Full Scale exercise should be organized on “**Half Yearly**” basis with different scenarios being tested every time.

7.8 Briefing & De-briefing Session

7.8.1 Before the exercise is undertaken, it would be appropriate to arrange “**Pre-Exercise**” **briefing session**. This would enable the participants understand and prepare themselves for achieving defined objectives. On some occasions you may have to organise more than one “pre-exercise briefing” sessions. In case of “Mock Drill” and “Full Scale Exercise” a Tabletop Exercise should be organised for the Group Leaders / QRT Leaders. This would enable them to work out their own strategy. This would also ensure their full-fledge involvement in the exercise.

7.8.2 After every Exercise a de-briefing session shall be arranged and the feedback from the designated evaluators on the performance of the participants and the fulfillment of the drill objectives shall be recorded. Document all lessons learned through the exercise for Corrective Actions.

7.9 The Site Controller/ Nodal head / Local Business Continuity Coordinator is responsible for conducting periodic exercises of the Disaster Management Plan as documented.

7.10 - BCP EXERCISING AND TESTING

The business continuity plan needs to be tested for adequacy. The exercises must be carried out periodically. Ignoring the exercising would mean that the plan gets tested only when disruptive incident actually strikes. This is certainly not a risk that any Organization can take.

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It is important to test the business continuity plan every time the plan is revised, a system is added to the production, a system in production is changed, a scheduling change occurs in the business activities, a process falls in the scope of the plan changes, a requirement arises for reporting on the adequacy of the plan, or when reporting on the preparedness of the business continuity team.

Testing the BCP is the only way to see if the goals set have been met. These tests will throw up inconsistencies, incorrect information (if any) and points where the actual and expected results differ. The team shall brainstorm on the gaps found and revise the plan accordingly. This would lead to yet another test cycle.

The exercise of testing the plan also serves as competency building for the team. It is possible that at the time of disruptive incident, the team may not be able to refer to the plan. Moreover, there would be panic and human response could be affected. At such moments, the earlier “drills” would serve to remind them of their activities and provide some level of confidence.

7.10.1 Planning a BCP test will involve defining the following:

- Test Objectives
- Test Scenario
- Test Activities, including Participants and
- Expected Results.

7.10.2 The test exercise can be a Table Top Exercise or a Tactical Exercise.

- a) Table Top Exercise involves a structured walkthrough. The team comes together with a prior knowledge of the test scenario. Each member plays a designated role and walks-through the activities assigned to him/her in the business continuity plan. The **Table Top Exercise** shall be organized on “**Monthly**” basis and at-least 2 to 3 scenarios **leading to “BCP Invocation”** shall be discussed every time
- b) Tactical exercise involves an actual simulation. There will be a coordinator for each test, who will announce the intermediate events for the scenario, as if they were happening. The team goes through the entire plan, performing all the activities, from notification to restoration. If this exercise is a planned or notified exercise, then it will be generally designed in such a way that the activities of the entire team

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are covered. The **Tactical Exercises leading to “BCP Invocation”** shall be organized in the Unit on **bi-monthly** basis.

7.10.3 Surprise simulations shall also be performed. It is usually the best type of exercise in the testing of the continuity plan and gives a picture of the actual preparedness of the team.

7.10.4 In short, while testing the BCP, the following activities are performed.

- Preparing a test plan, choose the test scenario(s) and state the expected results
- Executing the plan
- Documenting the test results
- Reviewing the actual results and report gaps and/or slippages
- Circulating the results and the report among the team
- Identifying the changes that are to be made to the BCP to cover gaps and overcome observed slippages

7.10.5 The BCP Test Plans for this Unit are given in the **Annexure 6a**. The Test results and gaps are all captured in Plan vs. Actual in **Annexure 6b**.

7.10.6 The **Nodal Head / Site Controller / Business Continuity Coordinator** is responsible for conducting periodic exercises of the Business Continuity Plan as documented.

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CHAPTER 8

PERFORMANCE EVALUATION

8.a – Disruptive Incident Analysis

It is essential to document every disruptive incident which necessitates Invocation of BCP, as it may point out the deficiencies in the BCP. As in case of BCP Testing, there is a lot learning from the actual disruptive incidents.

The post-incident review by the Business Continuity Management team should cover the gaps in (a) Timelines, (b) Resources, (c) Manpower requirements, (d) Vendor selection & his performance and (e) Recovery / Restoration activities. Further, the review has to be in the context of promoting continual improvement.

This Unit has laid down a format for documenting the disruptive incident analysis which is given as Annexure 7 a. Whenever disruptive incident occurs learnings will be shared with other similar sites for avoiding future such incidents elsewhere.

8.b – Corrective Action Plan

It is essential to establish effective procedures to ensure that non-fulfillment of any requirement, deficiency in planning approach and weaknesses associated with the BCMS (its capability and procedures) are identified and communicated in a timely manner to prevent further occurrence of the situation, as well as identify and address root causes. The procedures should enable ongoing detection, analysis and elimination of actual and potential causes of possible non-conformities.

This Unit accepts gaps in planning as a visible symptom and shall proceed to identify and fix the problem. The gaps shall be identified and dealt with in a timely manner as should

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the corrective actions that address them. The Corrective Action Plan should originate from a well-defined statement that clearly states the problem and is understood.

The Corrective Action Plan shall be designed to mitigate consequences and identify changes to be made to correct the situation, restore normal operations and eliminate the cause(s) in order to prevent the problem from recurring. The nature and timing of actions should be appropriate to the scale and nature of the gap identified and its potential consequences.

Potential problems may be extrapolated from corrective actions for actual gaps, identified during the internal BCMS audit process, analysis of industry trends and events, or identified during exercise and testing.

Corrective actions that result in changes to the BCMS shall be reflected in the documentation. They shall also trigger a revisit of the risk assessment and impact analysis in order to evaluate their impact on business continuity procedures and training needs.

The Transmission Unit has decided to document the gaps in the planning process identified during BCP Exercising & Testing, Internal audit, and Actual disruptive incidents and prepare “Corrective Action Plan”. The format of the CAP is given in **Annexure 7b**.

It is also essential to review the status of corrective actions periodically. The BCMS Team shall be responsible for the periodic review and documenting the review. This Unit shall submit the review report about the status of Corrective Actions in the format given in **Annexure 7b (i)** to the Management.

8.c – BCP Internal Audit

It is essential for the organization to conduct internal audits at planned intervals so that it makes sure that the BCMS conforms to organization’s own requirements and the requirements of this International Standard.

It is essential to conduct internal audits of the BCMS to ensure that the BCMS is achieving its objectives, that it conforms to its planned arrangements and has been properly implemented and maintained, and to identify opportunities for improvement. Internal audits of the BCMS shall be conducted at half-yearly intervals to determine and provide information to top management on appropriateness and effectiveness of the BCMS as well as to provide a basis for setting objectives for continual improvement of BCMS performance.

Sign	AJG	PDG	RS
Name	Pravin D Gaikwad Anil J Gajare	Pravin D Gaikwad	Sheth Rajan
R 2.1	Prepared by	Checked by	Approved by

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The Company's, internal audit programme shall be based on the full scope of the BCMS, however, each audit need not cover the entire system at once. Audits may be divided into smaller parts, so long as the audit programme ensures that all organizational units, functions, activities and system elements and the full scope of the BCMS are audited in the audit programme within the auditing period.

The results of an internal BCMS audit shall be documented in the format given at Annexure 7 c and 7 c (i).

8.d – Performance Evaluation

This Unit is committed to continual improvement in BCMS. Hence, it is essential to evaluate BCMS performance through BCP Exercising, Internal Audit and post-incident Review Report for addressing the possible need for changes to strategy, objectives and other elements of the business continuity management system.

The evaluation shall be taken in the form of self-assessments, which shall be undertaken on “bi-monthly” basis. The evaluation of the organization's BCMS shall be undertaken against the following parameters –

- 1) Contest of Organization
- 2) BCMS Planning Evaluation
- 3) Resilience
- 4) Communication Procedure
- 5) Response Plans
- 6) Exercising & testing
- 7) Performance Evaluation & Management review

The scoring methodology is defined in the BCDMI (Business Continuity and Disaster Management Index) and is given in **Annexure 7 d**.

8.e – Management Review of BCP

The Management shall meet on half-yearly basis for review of the BCMS, Status of the Corrective Actions approved earlier, Results of the Internal / external audit, the CAP prepared by the BC Team for future & giving approval to timelines mentioned therein, revisiting the risks identified, reviewing the lessons from the disruptive incidents after previous review meeting and understanding the emerging good practices in the industry.

Sign	AJG	PDG	RS
Name	Pravin D Gaikwad Anil J Gajare	Pravin D Gaikwad	Sheth Rajan
R 2.1	Prepared by	Checked by	Approved by

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The Management Review shall be undertaken in the second week of January and July of every year and immediately after any disruptive incident. The minutes of the Management Review Meeting shall be recorded in the format given in Annexure 7e.

The **Business Continuity Coordinator** shall coordinate the Management review and shall ensure that the history of the revisions of BCP is maintained in the “version Chart”.

Sign	AJG	PDG	RS
Name	Pravin D Gaikwad Anil J Gajare	Pravin D Gaikwad	Sheth Rajan
R 2.1	Prepared by	Checked by	Approved by

LIST OF BCP ANNEXURE

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Annexure 1 – Glossary

emergency use by an organization's *Emergency Operations Center (EOC)*, business units for business operations and/or data processing services (*IT*) when the primary location(s) are inaccessible.

Auditing – A thorough examination and evaluation of an organization's *Business Continuity Plan* and procedures to verify their correctness and viability.

Backlog – A measure of unfinished work in hours or days.

BIA – Acronym for *Business Impact Analysis*.

Business Continuity – Activities, plans, and programs designed to return an organization to an operational condition.

Business Continuity Coordinator (BCC) – A member of the Executive Management Team and/or the Crisis Management Team with the responsibility for the development, coordination, training, testing, training, and implementation of the *Business Continuity Plan*.

Board of Directors) of arrangements, resources, and sufficient procedures that enable an organization to respond to a disaster and resume its *Critical Functions* within a pre-defined time frame without incurring unacceptable financial or operational impacts.

procedures that enable an organization to respond to an event so that *Critical Business Functions* can continue without significant or unacceptable *Financial Impacts* and/or *Operational Impacts*.

course of action to be used in the development and implementation of an organization's *Business Continuity Plan*.

Unit. For example, the Accounting *Business Unit* in a smaller organization may include accounts payable and accounts receivable as Business Functions while a larger organization may have separate business units that perform these Business Functions.

Business Impact Analysis (BIA) – The process of analysing activities and the effect that a business disruption might have upon them. It is the process of developing and distributing a questionnaire to determine the *Financial Impact* and *Operational Impact* on an organization if its business offices and/or data center facilities are not available for an extended time (usually at least one month). The objective of the BIA is to provide a management-level

Business Unit – A separate, discrete organizational entity that performs a specific business function or process. A Business Unit may be as small as two people or as entire company.

Contact List – A list of all team members and their phone numbers (home, work, cell, pager, etc.) on a *Team* for the *Business Continuity Plan*.

Cold Site – An *Alternate Site* consisting of space that can be configured to support business unit recovery and/or data center recovery operations. A Cold Site is basically “four walls” with access to *Voice Communications* and *Data Communications* circuits and sufficient available electrical power and HVAC to support the recovery operations. A Cold Site may or may not have raised floor, and ALL furniture and hardware must be delivered,

Competence

Ability to apply knowledge and skills to achieve intended results.

Correction

Action to eliminate a detected nonconformity.

Corrective action

Action to eliminate the cause of a non-conformity and to prevent recurrence.

that enable an organization to respond to an event that could occur by chance or unforeseen circumstances.

Controls – A term usually associated with *Auditing* and defined as procedures or other measures designed to ensure that plans and systems function correctly.

Crisis – An event that threatens the security, integrity or facilities of an organization and/or the safety of its employees. A Crisis may range from a building evacuation due to a bomb threat to a full-scale, easily recognized disasters. For planning purposes, a Crisis includes, but is not limited to, severe weather threats or occurrences (snow, tornadoes, etc.), senior management succession planning, power and communications outages, medical

(usually by senior management and/or a Board of Directors) of arrangements, resources, and sufficient procedures that enable an organization to effectively respond to a *Crisis / disaster*.

management team that activates the *Crisis Management Plan (CMP)* in response to a *Crisis*.

restored first in the event of a disaster or interruption to avoid unacceptable financial or operational impacts. Ensure the ability to protect the organization’s assets, meet organizational needs, and satisfy regulations.

Customer List – An inventory list of all primary customers –including name, address, telephone number, and contact (if required)– that must be notified during the recovery of a business unit or an entire company. The *Customer List* is an essential part of an organization’s *Business Continuity Plan*. It is a best practice to have a complete inventory

geographically separate locations via public and/or private electrical or optical transmission systems. Contrast with *Voice Communications*.

Declaration Fee – A one-time charge normally paid to a commercial vendor who provides an *Alternate Site* (usually a *Hot Site*) facility at the time a disaster is officially declared.

Department – A separate, discrete entity defined by each organization or company. A department usually performs a specific business function or process.

business environment, any event that creates an inability on an organization's part to provide essential products and/or services for an indefinite period of time.

Disaster Mitigation – Actions, plans, and activities to reduce or eliminate the effects of a disaster on business and/or data center operations.

disaster that are used to support and enhance mitigation, response, and recovery to disasters.

Disaster Recovery – Archaic term for *Business Continuity* but still occasionally used in reference to a data center's *Business Continuity Plan*. See *Business Continuity*.

used in reference to a data center's *Business Continuity Plan*. See *Business Continuity Plan*.

occasionally used in reference to a data center's *Business Continuity Planning*. See *Business Continuity Planning*.

Disaster Response – See *Emergency Response*.

Document

Information and its supporting medium.

Documented information

which it is contained.

Effectiveness

Extent to which planned activities are realised and planned results achieved.

Electronic Vaulting – The transmission of journal transactions or data records to an Alternate Site or Offsite Storage using telecommunications facilities.

Emergency Operations Center (EOC) – An *Alternate Site* with sufficient *Voice Communications* capabilities and work space used to manage the initial recovery efforts including emergency notifications using the *Call List* from the *Business Continuity Plan*. The EOC may initially be a temporary location (e.g., hotel, team member's home, etc.) used by the management team to begin coordinating the recovery operations or it may be the

Emergency Response – The initial activities and plans designed to address and mitigate a disaster's immediate and short-term effects.

EOC – Acronym for *Emergency Operations Center*.

required for the recovery of a business unit or an entire company. Equipment includes, but is not limited to, FAX machines, printers, computer systems, monitors, cables, scanners, mail processing hardware, etc. The Equipment List is an essential part of an organization's Business Continuity Plan. It is a best practice to have a complete inventory list of ALL

Recovery Time Objective (RTO), to determine whether a *Disaster* declaration and implementation of the *Business Continuity Plan* is in the best interest of the organization or company.

Exercise

Process to train for, assess, practice, and improve performance in an organization.

from the unavailability of an organization's business office and/or data center facilities. Financial impacts are usually reported during a *Business Impact Analysis (BIA)* and are typically estimated on a daily basis. See also *Operational Impact*.

Hot Site – An *Alternate Site* consisting of designated office space and/or a data center facility that is equipped with sufficient workstations (including desks, chairs, telephones, etc.), voice and data communications hardware and connectivity, power, raised floor, computer hardware (including workstations if required), and appropriate heating, ventilating, and air conditioning capacity. Commercial vendors typically provide separate

affected by a disaster. Hot sites vary depending on the type of facilities offered (such as data processing equipment, communications equipment, electrical power, etc.).

person's home, where all designated team leaders and members can meet if the organization's business offices and/or data center are not accessible for any reason. See also *Emergency Operations Center (EOC)*.

Interested party

affected by a decision or activity.

Invocation

Act of declaring that and organisation's business continuity arrangements need to be put into effect in order to continue delivery of key products or services.

Inventories – Specific lists of items required for the Business Continuity Plan which includes the *Customer List* with contact information, *Equipment List* (with *Vendor List* and contact information), *Supplies List* (with *Vendor List* and contact information), *Software List* (with *Vendor List* and contact information), *Telecommunications List* (with *Vendor List* and

IT – Acronym for Information Technology. A *Department* or *Business Unit* that provides computing systems support to an organization or company.

an organization. The basic supporting installations and facilities upon which the continuance and growth of a community depend, such as power plants, water supplies, transportation systems, and communications systems, etc.

LAN – Acronym for *Local Area Network*.

computers, and peripherals under a standard topology, usually within one building or a group of buildings. A LAN does not use public carriers to link its components, although it may have a “gateway” outside the LAN that uses a public carrier. See also *Wide Area*

disaster. Such losses may include loss of life, revenue, market share, competitive stature, public image, facilities, or operational capability. See also *Financial Impact* and *Operational Impact*.

Maximum acceptable outage Time (MAOT)

Time it would take for adverse impacts, which might arise as a result of not providing product/ service or performing an activity, to become unacceptable.

Maximum tolerable period of disruption (MTPD)

Time it would take for adverse impacts, which might arise as a result of not providing product/ service or performing an activity, to become unacceptable.

Minimum business continuity objective (MBCO)

Minimum level of services and/ or products that is acceptable to the organisation to achieve its business objectives during a disruption.

Mutual aid agreement

other.

Mitigate – To make or become milder, less severe, or less painful.

available from a commercial vendor, that can be transported to a pre-determined location so that needed equipment can be obtained and installed near the original location. Depending on the vendor, an MRF may be available in a “business office” and a “data

Modem – An acronym for **modulator/demodulator**, a device that converts analog signals to digital signals and back again, usually on *Voice Communications* circuits.

Operational Impact – An intangible impact resulting from the unavailability of an organization’s business office and/or data center facilities. An Operational Impact cannot be quantified in rupees, but may be critical because of its effect on an organization. Examples of operational impacts include, but are not limited to customer service, stockholder confidence, industry image, regulatory, financial reporting, employee morale, vendor relations, cash flow (that cannot be quantified), and increases in liability. Operational

Vital Records and critical documentation may be stored for emergency use during the execution of an organization’s *Business Continuity Plan*.

Performance

Measurable result.

Performance evaluation

Process of determining measurable results.

Policy

Intentions and direction of an organisation as formally expressed by its top management.

Prioritised activities

Activities to which priority must be given following an incident in order to mitigate impacts.

and follow documented responsibilities for the design, development, and implementation of a *Business Continuity Plan*.

POTS – Acronym for Plain Old Telephone Service.

and resources to accomplish a defined objective, such as a *Business Continuity Plan*, usually under time and cost constraints.

business processes and/or data processing hardware that allows one organization to continue business operations for the other in case of disaster.

Record

Statement of results achieved or evidence of activities performed.

Recovery Time Objective

Period of time following an incident within which Products or service must be resumed, or Activity must be resumed, or Resources must be recovered.

Recovery Point Objective (RPO) – Point to which the information used by an activity must be restored to enable the activity to operate on resumption. The measure how much data loss, in hours or days, is acceptable to an organization. The point in time at which backup data (e.g., backup tapes) must be restored and synchronized by *IT* to resume processing. Most *IT* organizations usually have an *RPO* of at least –1 day (–24 hours) because backups are usually performed daily (usually at night) and transported to *Offsite Storage* early the following day. The **best** *RPO* is zero (0) which basically means as example that

plan and equipment), and suppliers and information (whether electronic or not) that an organisation has to have available to use, when needed, in order to operate and meet its objective. These are required for the recovery of a business unit or an entire company as documented in the *Business Continuity Plan*.

Requirement

Need or expectation stated, generally implied or obligatory.

Resilience

achieve the organizations objectives.

man-made or natural, are constant throughout our daily lives. The potential is usually measured by its probability in years.

Risk appetite

Amount and type of risk that an organisation is willing to pursue or retain.

Critical Functions necessary for an organization to continue business operations, defining the controls in place to reduce organization exposure, and evaluating the cost for such controls. Risk analysis often involves an evaluation of the probabilities of a particular event.

which is required for the recovery of a business unit or an entire company. The Software List is an essential part of an organization's Business Continuity Plan. It is a best practice to have a complete inventory list of ALL existing software compiled and used by an

for the recovery of a business unit or an entire company. Supplies includes, but is not limited to, forms (e.g., check stock), special rubber stamps, pens, pencils, paper, paper clips, staplers, etc. The Supplies List is an essential part of an organization's Business Continuity Plan. It is a best practice to have a complete inventory list of ALL existing

completed *Business Continuity Plan*. The exercise includes a disaster scenario and exercise moderator who observes one or more team leaders verbally walk through each step of their *BCP* to confirm its viability and identify omissions, gaps, bottlenecks, or other

Tactical Exercise ("War Game") – A simulated, scenario-based exercise of the *Business Continuity Plan* conducted in a "War Room" format in a large room. The exercise moderator conducts the exercise and reads a prepared scenario. All Team Leaders and Alternate Team Leaders are required to participate and "perform" their tasks under supervised conditions. Each team has a separate table or work area and can only communicate with another team using written notes that are given to "couriers" for delivery to simulate the communications problems (e.g., incomplete information) that occur during a disaster. The written communications are time-stamped so that an exercise report can be

Team to recover a specific portion of an organization, business function and/or business unit. The *Task List* is an essential part of an organization's Business Continuity Plan.

the *Business Continuity Plan*. A *Team* consists of a Team Leader, Alternate Team Leader, and Team Members. The Team Leader is responsible for the successful completion of all tasks assigned (See Task List) to a team.

vendor, in which the *IT* and *Telecommunications* teams verify that computer systems and telecommunications can be successfully restored to operational status.

(See also *Data Communications* and *Voice Communications*) by electrical, optical, or acoustical means over public or private communications carriers.

Telecommunications List – An inventory list of all *Voice Communications* and *Data Communications* circuits which are required for the recovery of a business unit or an entire company. The Telecommunications List is an essential part of an organization's Business Continuity Plan. It is a best practice to have a complete inventory list of ALL existing

Testing

something.

natural phenomena such as tornadoes and earthquakes and man-made incidents such as terrorist attacks, bomb threats, disgruntled employees, and power failures.

telephone number, and vendor representative (if required)— that provide an essential service or product required for the recovery of a business unit or an entire company. The Vendor List is an essential part of an organization's Business Continuity Plan. It is a best practice to have a complete inventory list of ALL existing vendors compiled and used by an

organization's business operations. This may include employee information, financial and stockholder records, business plans and procedures, and the Business Continuity Plan. Vital records may be contained on a wide variety of media including, but not limited to, electronic (including tape, disk, and CD-ROM), hard copy (normally paper), microfilm, and

records (see *Vital Record*) required for the recovery of a business unit or an entire company. The Vital Records List is an essential part of an organization's Business Continuity Plan.

Voice Communications – The transmission of sound at frequencies within the human hearing range which may be in digital or analog form. Contrast with *Data Communications*.

WAN – Acronym for *Wide Area Network*.

Warm Site – An *Alternate Site* consisting of designated office space and/or data center space that has installed voice and data communications access and is partially equipped with telecommunications interfaces, such as a PBX and/or a router. A Warm Site is usually pre-wired for Voice and Data Communications so that telephones, PCs, and other computer

campus, or local area networks across greater distances, usually accomplished using common carrier lines. See also *Local Area Network*.

Workstation – A single-person work area which usually includes office furniture (e.g., a desk), computer equipment (e.g., a PC), a telephone, and a wastebasket.

Annexure 1a - Definitions as per Clause 3 of ISO 22301:2012 Standard

3.1 Activity

Process or set of processes undertaken by an organization (or on its behalf) that produces or supports one or more products and services.

EXAMPLE - Such processes include accounts, call centre, IT, manufacture, distribution.

3.2 Audit

Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.

NOTE 1 - An audit can be an internal audit (first party) or an external audit (Second party or third party), and it can be a combined audit (Combining two or more disciplines).

3.3 Business Continuity

Capability of the organization to continue delivery of products or services at acceptable predefined levels following disruptive incident.

3.4 Business Continuity Management

Holistic management process that identifies potential threats to an organization and the impacts to business operations those threats, if realized, might cause, and which provides a framework for building organizational resilience with the capability of an effective response that safeguards the interests of its key stakeholders, reputation, brand and value-creating activities.

3.5 Business Continuity Management System (BCMS)

Part of the overall management system that establishes, implements, operates, monitors, reviews, maintains and improves business continuity

NOTE - The management system includes organizational structure, policies, planning activities, responsibilities, procedures, processes and resources.

3.6 Business Continuity Plan

Documented procedures that guide organizations to respond, recover, resume and restore to a pre-defined level of operation following disruption.

NOTE - Typically this covers resources, services and activities required to ensure the continuity of critical business functions.

3.7 Business Continuity Programme

Ongoing management and governance process supported by top management and appropriately resourced to implement and maintain business continuity management

3.8 Business impact analysis

Process of analyzing activities and the effect that a business disruption might have upon them.

3.9 Competence

Ability to apply knowledge and skills to achieve intended results

3.10 Conformity

Fulfillment of a requirement

3.11 Continual improvement

Recurring activity to enhance performance

3.12 Correction

Action to eliminate a detected nonconformity

3.13 Corrective action

Action to eliminate the cause of a nonconformity and to prevent recurrence

NOTE - In the case of other undesirable outcomes, action is necessary to minimize or eliminate causes and to reduce impact or prevent recurrence. Such actions fall outside the concept of "corrective action" in the sense of this definition.

3.14 Document

Information and its supporting medium

NOTE 1 - The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof.

NOTE 2 - A set of documents, for example specifications and records, is frequently called "documentation".

3.15 Documented information

Information required to be controlled and maintained by an organization and the medium on which it is contained.

NOTE 1 - Documented information can be in any format and on any media from any source.

NOTE 2 - Documented information can refer to

- The management system, including related processes;
- Information created in order for the organization to operate (documentation);
- Evidence of result achieved (records).

3.16 Effectiveness

Extent to which planned activities are realized and planned result achieved.

3.17 Event

Occurrence or change of a particular set of circumstances.

NOTE 1 - An event can be one or more occurrences, and can have several causes

NOTE 2 - An event can consist of something not happening

NOTE 3 - An event can sometimes be referred to as an "incident" or "Accident".

NOTE 4 - An event without consequences may also be referred to as a "near miss", "incident", "near hit", "close call".

3.18 Exercise

Process to train for, assess, practice, and improve performance in an organization.

NOTE 1 - Exercises can be used for : validating policies, procedures, training, equipment and inter-organizational agreement; clarifying and training personnel in roles and responsibilities; improving inter-organizational coordination and communications; identifying gaps in resources; improving individual performance; and identifying opportunities for improvement, and controlled opportunity to practice improvisation.

NOTE 2 - A test is a unique and particular type of exercise, which incorporates an expectation of a pass or fail element within the goal or objectives of the exercise being planned.

3.19 Incident

Situation that might be, or could lead to, a disruption, loss, emergency or crisis.

3.20 Infrastructure

System of facilities, equipment and services needed for the operation of an organization.

3.21 Interested party /stakeholder

Person or organization that can affect, be affected by, or perceive themselves to be affected by a decision or activity.

NOTE - This can be an individual or group that has an interest in any decision or activity of an organization.

3.22 Internal Audit

Audit conducted by, or on behalf of, the organization itself for management review and other internal purposes, and might form the basis for an organization's self-declaration of conformity.

NOTE - In many cases, particularly in smaller organizations, independence can be demonstrated by the freedom from responsibility for the activity being audited.

3.23 Invocation

Act of declaring that an organization's business continuity arrangements need to be put into effect in order to continue delivery of key products or services.

3.24 Management system

Set of interrelated or interacting elements of an organization to establish policies and objectives, and processes to achieve those objectives.

NOTE 1 - A management system can address a single discipline or several disciplines.

NOTE 2 - The system elements include the organization's structure, roles and responsibilities, planning, operation etc.

NOTE 3 - The scope of a management system can include the whole of the organization, specific and identified functions of the organization, specific and identified sections of the organization or one or more functions across a group of organizations.

3.25 Maximum Acceptable Outage (MAO)

Time it would take for adverse impacts, which might arise as a result of not providing a product / service or performing an activity, to become unacceptable.

NOTE - see also maximum tolerable period of disruption.

3.26 Maximum Tolerable Period of Disruption (MTPD)

Time it would take for adverse impacts, which might arise as a result of not providing a product / service or performing an activity, to become unacceptable.

NOTE see also maximum acceptable outage.

3.27 Measurement

Process to determine a value.

3.28 Minimum Business Continuity Objective (MBCO)

Minimum level of services and / or products that is acceptable to the organization to achieve its business objectives during a disruption.

3.29 Monitoring

Determining the status of a system, a process or an activity.

3.30 Mutual Aid Agreement

Pre-arranged understanding between two or more entities to render assistance to each other.

3.31 Non conformity

Non-fulfillment of a requirement.

3.32 Objective

Result to be achieved.

NOTE 1 - An objective can be strategic, tactical or operational.

NOTE 2 - Objectives can relate to different disciplines (such as financial, health and safety and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product and process).

NOTE 3 - An objective can be expressed in other ways, e.g. as an intended outcome, purpose, an operational criterion, as a societal security objective or by the use of other words with similar meaning (e.g. aim, goal, or target).

NOTE 4 - In the context of societal security management systems standards, societal security objectives are set by the organization, consistent with the societal security policy, to achieve specific results.

3.33 Organization

Person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives.

NOTE 1 - The concept of organization includes, but is not limited to, sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

NOTE 2 - For organizations with more than one operating unit, a single operating unit can be defined as an organization

3.34 Outsource (verb)

Make an arrangement where the external organization performs part of an organization's function or process.

NOTE - An external organization is outside the scope of the management system, although the outsourced function or process is within the scope.

3.35 Performance

Measurable result.

NOTE 1 - Performance can relate either to quantitative or qualitative findings.

NOTE 2 - Performance can relate to the management of activities, processes, products (including services), systems or organizations.

3.36 Performance evaluation

Process of determining measurable results.

3.37 Personnel

People working for and under the control of the organization.

NOTE - The concept of personnel includes, but is not limited to employees, part-time staff, and agency staff.

3.38 Policy

Intentions and direction of an organization as formally expressed by its top management.

3.39 Procedure

Specified way to carry out an activity or a process.

3.40 Process

Set of interrelated or interacting activities which transforms inputs into outputs.

3.41 Products and services

Beneficial outcomes provided by an organization to its customers, recipients and interested parties e.g. manufactured items, car insurance and community nursing.

3.42 Prioritized activities

Activities to which priority must be given following an incident in order to mitigate impacts.

NOTE - Terms in common use to describe activities within this group include : critical, essential, vital, urgent and key.

3.43 Record

Statement of results achieved or evidence of activities performed.

3.44 Recovery Point Objective (RPO)

Point to which information used by an activity must be restored to enable the activity to operate on resumption.

NOTE - Can also be referred to as “maximum data loss”.

3.45 Recovery Time Objective (RTO)

Period of time following an incident within which

- Product or service must be resumed, or
- Activity must be resumed, or
- Resources must be recovered

NOTE - For products, services and activities, the recovery time objective must be less than the time it would take for the adverse impacts that would arise as a result of not providing a product / service or performing an activity to become unacceptable.

3.46 Requirement

Need or expectation that is stated, generally implied or obligatory

NOTE 1 - “Generally implied” means that it is a customary or common practice for the organization and interested parties that the need or expectation under consideration is implied.

NOTE 2 - A specified requirement is one that is stated, for example in documented information.

3.47 Resources

All assets, people, skills, information, technology (including plant and equipment), premises, and supplies and information (whether electronic or not) that an organization has to have available to use, when needed, in order to operate and meet its objective.

3.48 Risk

Effect of uncertainty on objectives.

NOTE 1 - An effect is a deviation from the expected – positive or negative

NOTE 2 - Objectives can have different aspects (such as financial, health and safety and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product and process). An objective can be expressed in other ways, e.g. as an intended outcome, a purpose, an operational criterion, as a business continuity objective or by the use of other words with similar meaning (e.g. aim, goal or target).

NOTE 3 - Risk is often characterized by reference to potential events and consequences or a combination of these.

NOTE 4 - Risk is often expressed in terms of combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence.

NOTE 5 - Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood.

NOTE 6 - In the context of the business continuity management system standards, business continuity objectives are set by the organization, consistent with the business continuity policy, to achieve specific results. When applying the term risk and components of risk management, this should be related to the objectives of the organization that include, but are not limited to the business continuity objectives.

3.49 Risk appetite

Amount and type of risk that an organization is willing to pursue or retain.

3.50 Risk assessment

Overall process of risk identification, risk analysis and risk evaluation.

3.51 Risk Management

Coordinated activities to direct and control an organization with regard to risk.

3.52 Testing

Procedure for evaluation; a means of determining the presence, quality, or veracity of something.

NOTE 1 - Testing may be referred to a "trial".

NOTE 2 - Testing is often applied to supporting plans.

3.53 Top Management

Person or group of people who directs and controls an organization at the highest level.

NOTE 1 - Top management has the power to delegate authority and provide resources within the organization.

NOTE 2 - If the scope of the management system covers only part of an organization then top management refers to those who direct and control that part of the organization.

3.54 Verification

Confirmation, through the provision of evidence, that specified requirements have been fulfilled.

3.55 Work environment

Set of conditions under which work is performed.

NOTE - Conditions include physical, social, psychological and environmental factors (such as temperature, recognition schemes, ergonomics and atmospheric composition).

Annexure 1 b - Organization and its Context

Location / Company Name: Mumbai LA, Transmission Unit, Tata Power Company Ltd.

Services provided: (Please use from the scope defined)

Facilitating Transmission of Electrical Power at different voltage levels

Transformation Capacity: 8945 MVA

EPM Processes applicable: Annexure 4a

BUSINESS CONTINUITY OBJECTIVES

Sr. No.	Business Objectives Measure	Target	Achievement
1	Grid Availability	99.51%	\\anant\TRD_DATA\BE-TRANSMISSION\SDM FY17\SDM Tracker
2	Forced shutdown > 1 Hour to DISCOMs	< 12 Nos per year	\\anant\TRD_DATA\BE-TRANSMISSION\SDM FY17\SDM Tracker

1 - Partnerships

Sr. No.	Name	Address	Contact Numbers	Nature of partnership
	NA			

2 - Supply Chain

Sr. No.	Name	Address	Contact Numbers	Material being supplied
1	TPC-G	The Tata Power Co. Ltd Trombay Thermal Plant, Mahul Road, Chembur Mumbai-400074	022-67171000 022-67175114	Electric Power
2	MSEGCL	Maharashtra State Electricity Generation Company Limited. Hongkong Bank Building, M.G. Road, Fort, Mumbai-400001.	022-22619100 022-22619200 022-22619300	Electric Power

3 - Interested parties

Sr. No.	Name	Address	Contact Numbers	Needs / Expectations of Interested Parties
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Sr. No.	Name	Address	Contact Numbers	Needs / Expectations of Interested Parties
1	TPC-D	Distribution Consumer Services Dharavi Receiving Station, Near Shalimar Indl. Estate Matunga, Mumbai-400019	2267172090	Power supply with MTPD = 4 Hrs.
2	BEST	The Brihanmumbai Electric Supply & Transport Undertaking (Of the Brihan Mumbai Mahanagarpalika) Electric House, New Administrative Building, BEST Marg, SV Road, Colaba, Mumbai- 400001, Maharashtra	022-22856262 022-22856395 022-22856396	Power supply with MTPD = 4 Hrs.
3	R-INFRA-D	Reliance Infrastructure Limited RNA Corporate Park, Old Kalamandir, Near Collector's Office, Rd Number 13, Bandra East, Mumbai, 400051	1800-200-3030	Power supply with MTPD = 4 Hrs.
4	PSCC	Power System Control Centre, Station A, Trombay Thermal Generating Station, Mahul Road, Mumbai, 400074	022-6717 5377 022-67175368 022-6668 7091	Availability of Transmission network = 98%
5	MSEDCL	Maharashtra State Electricity Distribution Company Limited. Hongkong Bank Building, M.G. Road, Fort, Mumbai-400001.	022-22619100 022-22619200 022-22619300	Power supply with MTPD = 4 Hrs.
6	MERC	Maharashtra Electricity Regulatory Commission World Trade Centre, Centre No.1, 13th Floor, Cuffe Parade, Colaba, Mumbai-400005	022-22163964 022-22163965 022-22163969	Regulatory SOP adherence
7	STU	Maharashtra state Electricity Transmission Company Limited. Office of Chief Engineer (State Transmission Utility) Prakashganga, 5th Floor/ 'A' Wing, plot C-19, E- Block, BKC, Bandra (East), Mumbai- 400051	022-26595176 022-26595175	Availability of Transmission network = 98%
8	Chief Fire Officer / Electrical Inspectorate	Office of Chief Fire Officer / Electrical Inspectorate - Chembur, Mumbai		Information of Fire / catastrophic failure of electrical equipment
9	Employees / Officers and contractor's people	Respective Receiving stations	Refer Annexure	Safe working condition and instructions for operation and maintenance

Annexure 1 c - Risk identified

Sr. No.	Risks identified for BCP (As per BC Policy & Process document)	Type of context (Internal, External, Natural)	Impact of disruptive incident		Risk Appetite (Rs. Cr) (as calculated by RMS)	Risk Management Strategy (Terminate, Transfer, Treat, Tolerate)	Remarks
			Impact or consequence of risk	Impact on Needs of Interested Parties due to occurrence of risk			
1	Major threats to stations from terrorism / sabotage	External	1. Equipment damage 2. Human loss 3. Power supply interruption	Power supply interruption	0.76	Treat, Transfer	
2	Natural disasters like flood, draught, storm, earthquake	Natural	1. Equipment damage 2. Human loss 3. Power supply interruption	Power supply interruption	0.74	Treat, Transfer	
3	Risk of Fire	Internal	1. Fire in ICT / Transformer, 2. Fire in Control room 3. Fire in cable basement, 4. Fire in switchgear room, 5. Fire in relay / auxiliary room, 6. Fire in Office 7. Human Loss 8. Power supply interruption	Power supply interruption	0.04	Treat, Transfer	
4	Major Operational/catastrophic failures of critical equipment	Internal	1. Power supply interruption 2. Failure of connected equipment or equipment in vicinity 3. Fire 4. Accidents 5. Human Loss	Power supply interruption	0.02	Treat, Transfer	
5	Accidents due to activity in operations area	Internal	Transformer explosion, Blast, shattering, Flashover in Switchyard equipment 3. Power supply interruption 4. Human Loss	Power supply interruption	0	Treat	
6	Strike \ Riots \ Picketing \ Curfew affecting manning of plant	External	1. Manning of plants 2. Shortage of food and water	Power supply interruption	0.01	Treat	
7	Exposure to operation from neighbours (Gas leakage)	External	1. Manning of plants 2. Human Loss	Power supply interruption	0	Treat	

Annexure 1d - Legal, Regulatory and Other Requirements

Sr. No.	List of Rules and Regulation	Compliance Monitoring System	Frequency	Remarks
1	Industrial Safety and Health	Legatrix system	Monthly	
2	Shop and establishment Act 1948	Legatrix system	Monthly	
3	MERC Regulation 2015	Legatrix system	Monthly	
4	STU (State Transmission utility) rules	Legatrix system	Quarterly	
5	Statutory requirements	Legatrix system	Monthly	
6	Electricity Act	Legatrix system	As per Regulation	

Annexure 2 – Contact List (General)

Sr. No.	Name of the officer	Position	E-mail address	Office No	Mobile No.	
1	Mr Ganesh Srinivasan	Chief - Corporate Operations(T&D)	ganesh.srinivasan@tatapower.com	02267172802	9820132283	
2	Mr. Sheth Rajan K	Chief - Transmission	rksheth@tatapower.com	02267172401	9223220825	
3	Maj. Sajal Sen	Group Head - Security (T&D)	sajal.sen@tatapower.com	02267172550	9810099189	
4	Mr. S P Sanvatsarkar	Group Head- Performance Assurance	sureshps@tatapower.com	02267172403	9223550619	
5	Mr. P D Galkwad	Group Head - MIS & Capex	pgalkwad@tatapower.com	02267172404	9223220837	
6	Mr. P K Khawadkar	Group Head - Safety	pkhawad@tatapower.com	02267172410	9223501570	
7	Kawalkar Onkar	Lead Engineer - Safety	onkar.kawatkar@tatapower.com	02267172411	7208000274	
8	Tomar Yogendra	Lead Engineer - Fire & Safety	yogendra.tomar@tatapower.com	02267172412	7208676126	
9	Dr. P R Lingayat	Group Head - Medical	lingayatpr@tatapower.com	02267172551	9223348976	
10	Dr. Dabholkar Manoj B	Group Head - Medical	manoj.dabholkar@tatapower.com	02267172551	9819606735	
11	Ms. B S Pisolkar	Head - Trans. Automation	bsp@tatapower.com	02267172541	9223553185	
12	Mr. D Sequeira	Head - Maint Planning Group	dsequeira@tatapower.com	02267172001	9223581599	
13	Mr. K K Rao	Head - North Zone	kkrao@tatapower.com	02267173501	9223276273	
14	Mr. Muralaedarhan T	Head - South Zone	muralaedarhan@tatapower.com	02267172141	9223550706	
15	Mr. S G Bhangaonkar	Head - Transmission Lines	sgbhangonkar@tatapower.com	02516459030	9223311429	
16	Mr. P S Sawant	Head - Central Zone	pssawant@tatapower.com	02267172422	9223360216	
17	Mr. N R Sirdesai	Head - MO EHV Cable Group	nrsirdesai@tatapower.com	02267172223	9223311454	
18	Mr. S V Shetye	Group Head - Borivali Node	svshetye@tatapower.com	02267173511	9223303118	
19	Mr. D Ravikumar	Group Head - Saki Node	rkumar@tatapower.com	02267173300	9223316591	
20	Mr. K G Rane	Group Head - Salsette Node	kgrane@tatapower.com	02267174312	9223307197	
21	Mr. S K Vetcha	Group Head - Carnac Node	subhashvetcha@tatapower.com	02267171901	9223311480	
22	Mr. V M Bhondve	Group Head - Dharavi Node	bhondvem@tatapower.com	02267172421	9223305164	
23	Mr. M D Dias	Group Head - Vikhroli Node	mddias@tatapower.com	02267174251	9223503884	
24	Mr. Ganesh S Tawre	Group Head - Chembur Node	gstawre@tatapower.com	02267174211	9224582184	
25	Mr. K K Sajivan	Group Head - Kalyan Node	ksaiivan@tatapower.com	02516459030	9223306186	
26	Mr. S D Shitut	Group Head - Parel Node	sdshitut@tatapower.com	02267172111	9223582856	
27	Mr. H A Atre	Group Head - Trans. Lines & Trans. Lines Constn.	haatre@tatapower.com	02516459030	9223311432	
28	Mr. Naman Patel	NSMC Engr. - Carnac	naman.patel@tatapower.com	02267171902	9029001594	
29	Mr. K P Umak	NSMC Engr. - Carnac	kapilumak@tatapower.com	02267174264	9223501318	
30	Mr. R P Barde	NSMC Engr. - Parel	rohitbarde@tatapower.com	02267172144	9223527794	
31	Mr. Ravi K Sahu	NSMC Engr. - Parel	ravisahu@tatapower.com	02267172145	9029001482	
32	Mr. R P Dipke	NSMC Engr. - Dharavi	rameshwardipke@tatapower.com	02267174252	9223503971	
33	Mr. Vinod Khaire	NSMC Engr. - Vikhroli	khairv@tatapower.com	02267172430	9223276299	
34	Mr. Y P Sawant	NSMC Engr. - Vikhroli	yogeshsawant@tatapower.com	02267174213	9029530539	
35	Mr. Ravikant Dixit	NSMC Engr. - Chembur	ravikantdixit@tatapower.com	02267174213	9890892389	
36	Mr. P C Budhe	NSMC Engr. - Salsette	pcbudhe@tatapower.com	02267174344	9029001849	
37	Mr. Nitin Gawde	NSMC Engr. - Salsette	nitin.gawde@tatapower.com	02267174314	8655055109	
38	Mr. P R Naik	NSMC Engr. - Saki	naikprakash@tatapower.com	02267173344	9223502793	
39	Mr. R P Kopewar	NSMC Engr. - Saki	ravishkopewar@tatapower.com	02267173344	8655055108	
40	Mr. K K Datar	NSMC Engr. - Borivali	kedardatar@tatapower.com	02267173512	9223501578	
41	Mr. Nilesh Kekane	NSMC Engr. - Borivali	nileshkekane@tatapower.com	02267173524	7506740772	
42	Mr. S M Rawool	NSMC Engr. - Kalyan	smrawool@tatapower.com	02516459030	9967843432	
43	Mr. R R Bamgude	NSMC Engr. - Kalyan	rbamgude@tatapower.com	02516459030	9222298745	
44	NMMC Engineer on duty	Borivali Node	borivalio@mengineers@tatapower.com	02267173533	9223311409	9920031409
45	NMMC Engineer on duty	Carnac Node	carnaccontrolroom@tatapower.com	02267171903	9223311407	9820631407
46	NMMC Engineer on duty	Chembur Node	chemburcontrolroom@tatapower.com	02267174233	9223573829	
47	NMMC Engineer on duty	Dharavi Node	dharavicontrolroom@tatapower.com	02267172433	9223307195	9820597195
48	NMMC Engineer on duty	Kalyan Node	O&M-KalyanNode@tatapower.com	02516459030	9223502033	
49	NMMC Engineer on duty	Parel Node	pareloperations@tatapower.com	02267172133	9223307196	9820937196
50	NMMC Engineer on duty	Saki Node	sakitransmissionengrs@tatapower.com	02267173333	9223700350	9820217807
51	NMMC Engineer on duty	Salsette Node	salsetteops@tatapower.com	02267174333	9223700558	9930459950
52	NMMC Engineer on duty	Vikhroli Node	vikhrolicontrolroom@tatapower.com	02267174253	9223501311	9820937196

Annexure 2a – Business Continuity Management Team

Sr. No.	Position	Name of the Officer	Designation	E-mail Address	Landline No.	Mobile No.
1	BC Team Leader-North	Mr. K K Rao	Zonal Head - North	kkrao@tatapower.com	02267173501	9223276273
2	BC Team Leader-Central	Mr. P S Sawant	Zonal Head - Central	psawant@tatapower.com	02267172422	9223360216
3	BC Team Leader-South	Mr. T Muraleedharan	Zonal Head- South	Muraleedharant@tatapower.com	02267172141	9223550706
4	BC Team Leader- Trans. Lines	Mr. S Bhangaonkar	Zonal Head- Trans. Lines	sgbhangaonkar@tatapower.com	02516459030	9223311429
5	BC Team Leader- EHV Cables	Mr. N R Sirdesai	Zonal Head- EHV Cables	nrsirdesai@tatapower.com	02267172223	9223311454
	Site Controller -Borivli	Mr. K K Datar	Nodal Head - Borivli	kedardatar@tatapower.com	02267173611	9223501578
	Site Controller-Saki	Mr. D Ravikumar	Nodal Head-Saki	rkumar@tatapower.com	02267173300	9223316591
	Site Controller-Salsette	Mr. K G Rane	Nodal Head-Salsette	kgrane@tatapower.com	02267174312	9223307197
	Site Controller-Carnac	Mr. S K Vetcha	Nodal Head-Carnac	subhashvetcha@tatapower.com	02267171901	9223311480
	Site Controller-Parel	Mr. S D Shitut	Nodal Head-Parel	sdshitut@tatapower.com	02267172111	9223582856
	Site Controller-Dharavi	Mr. V M Bhondve	Nodal Head-Dharavi	bhondvevm@tatapower.com	02267172421	9223305164
	Site Controller-Vikhroli	Mr. M D Dias	Nodal Head-Vikhroli	mddias@tatapower.com	02267174251	9223503884
	Site Controller-Kalyan	Mr. K K Sajivan	Nodal Head-Kalyan	kksajivan@tatapower.com	02267174513	9223306186
	Site Controller-Chembur	Mr. G S Tawre	Nodal Head-Chembur	gstawre@tatapower.com	02267174211	9224582184
7	Site Controller- Trans. Lines	Mr. H A Atre	Nodal Head-Trans. Lines	haatre@tatapower.com	02267184512	9223311432
8	Over-all In-charge	Mr. Sheth Rajan K	Chief - Transmission	rksheth@tatapower.com	02267172401	9223220825
9	BC Coordinator	Mr. Gaikwad Pravin D	Group Head - MIS & Capex	pgaikwad@tatapower.com	02267172404	9223220837
10	BC Administrator	Mr. Sanvatsarkar Suresh	Group Head- Performance Assurance	sureshps@tatapower.com	02267172403	9223550619

Annexure 2b – Damage Assessment Team

Sr. No.	BC Position	Designation	Name of the Officer	E-mail Address	Mobile No.	Landline No.
1	DA Team Leader	Respective Nodal Head				
2	DA Team member	Respective NSMC engineers				
3	DA Team member	Resident Testing Engineer of the Zone				
4	DA Team member	Specialist - Trans. Lines	Mr. P P Kamble	<u>ppkamble@tatapower.com</u>	9223335987	02267174120
5	DA Team member	Lead Engineer - EHV Cable	Mr. Mohan Sandeep	<u>sandeep.mohan@tatapower.com</u>	9223501566	02267172243
6	DA Team member	Lead Engineer - SCADA	Mr. Madne Sandeep	<u>madaners@tatapower.com</u>	9223553174	02267172348

Annexure 2 c – Technical Team

Note : The team members will be called as suggested by Chief- Transmission, as & when required.

Sr. No.	Position	Name of the Officer	E-mail Address	Landline No.	Mobile No.
1	Chief - Transmission	Mr. Sheth Rajan K	rksheth@tatapower.com	02267172401	9223220825
2	Head - PSCC	Mr. Bhaskaran Thatra K	tkbhaskaran@tatapower.com	02267175371	92233550622
3	Respective Zonal Head				
4	Respective Nodal Head				
5	Head - Trans. Automation	Ms. Pisolkar B S	bsp@tatapower.com	02267173225	7208032494
6	Group Head - Financial Concurrence Group	Ms. V O Mehta	vimim@tatapower.com	02267173225	7208032494
7	Head-Employee Services & Administration	Mr. M B Mehta	mbmehta@tatapower.com	02267171444	9223176177
8	Head-Electrical Testing (Western Region)	Mr. T Murlikrishna	tmurali@tatapower.com	02267175303	9223327501
9	Group Head - Transmission Stores	Mr. Khadse Arun D	dkshinde@tatapower.com	02267174321	92233552522
10	Group Head - MIS & Capex	Mr. Gaikwad Pravin D	pgaikwad@tatapower.com	02267172404	9223220837
11	Head - Material Management	Mr. Vepul Jain	vepul.jain@tatapower.com	02267173206	8097001071
12	Group Head - Electrical Engineering (Project Engineering)	Mr. Mujumdar Sachin R	srmujumdar@tatapower.com	02267173817	9223581607
13	Representative of Central Civil, Constn & CEO-CTTL			02267175751	9223999171

Annexure 2d – Operations Team

Sr. No.	BC Position	Designation	Name of the Officer	E-mail Address	Mobile No.	Landline No.
1	Site Controller	Respective Nodal Head				
2	Team Member -Operations	Respective Nodal NSMC Engineers				
3	Team Member -Operations	Respective Nodal NMMC Engineers				
4	Team Member -Operations	Respective Zonal testing Engineer				
5	Team Member -Operations	PSCC Engineer				

Annexure 2e – Incident Management Team

Sr. No.	BC Position	Shift	Name of the Officer	E-mail Address	Office No.	Mobile No.
1	Over-all In-charge	All the time	Mr. Sheth Rajan K	rksheh@tatapower.com	02267172401	9223220825
2	Site Controller	All the time	Respective Nodal Head			
3	Incident Controller (Location Specific)	All the time	NMMC Engineer (or)			
		All the time	NSMC Engineer			
4	Communication Officer	All the time	Assigned by Site Controller			
5	Fire In-charge	All the time	Assigned by Site Controller			
6	Security In-charge	All the time	Assigned by Site Controller			
7	Medical In-charge	General	Assigned by Site Controller			
8	Safety In-charge	All the time	Assigned by Site Controller			
9	Head count In-charge		Assigned by Site Controller			

Annexure 3 a
Vital Installations and Technology

* Asset Register is maintained in SAP Transaction Code: **S_ALR_87011994**

Sr. No.	Description of critical installations	Asset Value (Book Value) Rs.	Year of Purchase	Annual Maintenance (In house or External)	Name of vendor and contact details	Name of external agency conducting Annual maintenance and contact details	Approx. Value of critical new machinery Rs. In lakh
Vikhroli							
1	Power Transformer No.1	15210.73	1987	Inhouse	NA	NA	500
2	Power Transformer No.2	503815.41	1988	Inhouse	NA	NA	500
3	Power Transformer No.4	37944795.4	2009	Inhouse	NA	NA	600
Chembur							
1	Power Transformer No.1	50360.59	1965	Inhouse	NA	NA	600
2	Power Transformer No.2	50360.59	1965	Inhouse	NA	NA	600
3	Power Transformer No.3	386270.57	1976	Inhouse	NA	NA	600
4	Power Transformer No.4	435432.67	1987	Inhouse	NA	NA	600
5	Power Transformer No.5	2288626.7	1988	Inhouse	NA	NA	600
Mankhurd							
1	Power Transformer No.1	34712.97	1961	Inhouse	NA	NA	300
2	Power Transformer No.2	40973.11	1974	Inhouse	NA	NA	300
Carnac							
1	245 KV Marin Gerin GIS (6 Bays)	17,15,851.79	1988	Inhouse	NA	NA	3,000
2	145KV Marin Gerin GIS (12 bays)	34,20,366.60	1988	Inhouse	NA	NA	2,100
3	Auto Transformer-5 Crompton 315 MVA 220 kv/110 kv/33 kv	19,82,638.98	1988	Inhouse	NA	NA	1,500
4	Auto transformer-6 Crompton 315 MVA 220 kv/110 kv/33 kv	19,47,218.92	1988	Inhouse	NA	NA	1,500
5	Power Transformer#4 'TYREE' make 54/72/90 MVA, 110/22 kv	5,06,702.74	1977	Inhouse	NA	NA	600
6	Power Transformer#7 Crompton greaves 90MVA 110/33KV	5,06,702.74	1993	Inhouse	NA	NA	600
7	ABB make TRF-8, 90 MVA 110/34.5 kv	26,88,752.43	2001	Inhouse	NA	NA	600
8	90MVA 110/33KV Transformer No 9	568,14,180.30	2012	Inhouse	NA	NA	600
Backbay							
1	245 KV GIS (5 bays)	529,05,368.65	2001	Inhouse	NA	NA	2,500
2	145 kv GIS 145 kv (10 bays)	1158,25,496.64	2010	Inhouse	NA	NA	2,500
3	250 MVA, 220/105/33 kv ICT Auto Transformer-1	63,25,188.70	2001	Inhouse	NA	NA	1,200
4	250 MVA 220/105/33 kv ICT Auto Transformer-2	820,31,350.13	2010	Inhouse	NA	NA	1,200
5	145 kv GIS (3 bays) Toshiba (Grant Road)	42,92,671.99	1995	Inhouse	NA	NA	750
Ambernath							
1	30 MVA Power Transformer 1	4,15,300.00	1965	Inhouse	NA	NA	300
2	60 MVA Power Transformer 4	8,12,260.21	1967	Inhouse	NA	NA	425
3	30 MVA Power Transformer 3	4,15,300.00	1961	Inhouse	NA	NA	300
Kalyan							
1	60 MVA Power Transformer 1	30,81,562.58	1975	Inhouse	NA	NA	425
2	75MVA Power Transformer 2	13.00	1990	Inhouse	NA	NA	500
3	75MVA Power Transformer 3	13.00	1990	Inhouse	NA	NA	500
Panvel							
1	7.5 MVA Power Transformer 1	259237	1967	Inhouse	NA	NA	100
2	7.5 MVA Power Transformer 2	214643.67	1984	Inhouse	NA	NA	100
Parel							
1	110/6.6 KV Power transformer -2, 25 MVA		1994	Inhouse	NA	NA	200
2	110/6.6 KV Power transformer -4 25 MVA		1984	Inhouse	NA	NA	200
3	110/22 KV Power transformer -5 75 MVA	42,10,997.25	1983	Inhouse	NA	NA	500
4	110/22 KV Power transformer -6 75 MVA	6,67,687.19	1964	Inhouse	NA	NA	500
5	110/22 KV Power transformer -7 75 MVA	6,67,687.20	1964	Inhouse	NA	NA	500
6	110/33 KV Power transformer -8 75 MVA	618,56,283.13	2009	Inhouse	NA	NA	500
7	110/33 KV Power transformer -9 75 MVA	653,73,697.04	2009	Inhouse	NA	NA	500
Mahalaxmi							
1	145 KV GIS (13 Bays)	1076,60,416.86	2008	Inhouse	NA	NA	1,950
2	110/22 KV Power transformer -1 75 MVA	28,36,434.53	1973	Inhouse	NA	NA	500
3	110/22 KV Power transformer -2 90 MVA	28,50,901.80	1973	Inhouse	NA	NA	600
4	110/22 KV Power transformer -3 75 MVA	28,04,025.05	1993	Inhouse	NA	NA	500
Salsette							
1	250 MVA ICT-1	13		Inhouse	NA	NA	1200
2	250 MVA ICT-2	13		Inhouse	NA	NA	1200
3	250 MVA ICT-3	974,04,927.15	2013	Inhouse	NA	NA	1200
4	30 MVA DT-6	37,435.13	1960	Inhouse	NA	NA	300
5	220 kv GIS (11 bays)	495,86,980.61	1993	Inhouse	NA	NA	2750
6	110 kv Railway GIS (Outdoor)	1024,02,466.93	2013	Inhouse	NA	NA	1024
Kolsheet							
1	30 MVA DT-1 (AEG Make)	45,181.39	1966	Inhouse	NA	NA	300

Sr. No.	Description of critical installations	Asset Value (Book Value) Rs.	Year of Purchase	Annual Maintenance (In house or External)	Name of vendor and contact details	Name of external agency conducting Annual maintenance and contact details	Approx. Value of critical new machinery Rs. In lakh
2	30 MVA DT-2 (AEG Make)	41,530.00	1967	Inhouse	NA	NA	300
	Saki						
1	245 KV GIS Bay Salsette-Saki # 7	744,98,647.23	2010	Inhouse	NA	NA	500
2	245 kv GIS make Toshiba (7 bays)	2809,73,715.61	2012	Inhouse	NA	NA	3,500
3	250 MVA ICT-1	1000		Inhouse	NA	NA	1200
4	250 MVA ICT-2	1000		Inhouse	NA	NA	1200
5	72.5 MVA Transformer # 1	10,00,000.00					500
6	72.5 MVA Transformer # 2	4,02,374.64					500
7	72.5 MVA Transformer # 3	10,00,000.00					500
8	72.5 MVA Transformer # 4	483,18,267.67					500
	Sahar						
1	245 kv GIS make Toshiba (7 bays)	2809,73,715.61	2012	Inhouse	NA	NA	3,500
2	125 MVA Transformer # 1	700		Inhouse	NA	NA	900
3	125 MVA Transformer # 2	700		Inhouse	NA	NA	900
	Powai						
1	90 MVA, Chint make transformer-1	455,24,345.00	2012	Inhouse	NA	NA	600
2	90 MVA, Chint make transformer-2	455,24,345.00	2012	Inhouse	NA	NA	600
3	145 kv GIS - 08 Bays make Toshiba	2187,68,582.46	2012	Inhouse	NA	NA	2,000
	Borivali						
1	250 MVA ICT -1			Inhouse	NA	NA	1,300
2	250 MVA ICT -2	332,49,507.01	1996	Inhouse	NA	NA	1,300
3	250 MVA ICT -3			Inhouse	NA	NA	1,300
4	75 MVA Transformer -2	13.00	2010	Inhouse	NA	NA	500
5	75 MVA Transformer -7			Inhouse	NA	NA	500
6	30 MVA Transformer -1	41,304.43	1966	Inhouse	NA	NA	300
7	30 MVA Transformer -3	44,731.80	1966	Inhouse	NA	NA	300
8	90 MVA Transformer -8	607,31,298.61	2012	Inhouse	NA	NA	600
9	245 kv GIS (12 bays)	591,31,128.45	1995	Inhouse	NA	NA	6,000
	Malad, Versova						
1	Malad 75 MVA Transformer -1	13.00	2010	Inhouse	NA	NA	500
2	Malad 75 MVA Transformer -2	13.00	2010	Inhouse	NA	NA	500
3	Malad 75 MVA Transformer -3	349,50,821.39	2009	Inhouse	NA	NA	500
4	Versova 90 MVA Transformer -1		1991	Inhouse	NA	NA	600
5	Versova 90 MVA Transformer -2		1991	Inhouse	NA	NA	600
	Dharavi						
1	60 MVA DT- 1	8,28,966.37	1967	Inhouse	NA	NA	425
2	60 MVA DT- 2		1969	Inhouse	NA	NA	425
3	75 MVA DT- 3	182,95,005.95	2002	Inhouse	NA	NA	500
4	75 MVA DT- 4	8,12,260.21	1990	Inhouse	NA	NA	500
5	60 MVA DT- 5	33,31,554.14	1975	Inhouse	NA	NA	425
6	60 MVA DT- 6	8,28,966.37	1967	Inhouse	NA	NA	425
7	250 MVA ICT # 7	1265,78,297.71	2012	Inhouse	NA	NA	1,200
8	250 MVA ICT # 8	13.00	1991	Inhouse	NA	NA	1,200
9	250 MVA ICT # 9	26.00	1991	Inhouse	NA	NA	1,200
10	250 MVA ICT # 10	1319,04,974.59	2009	Inhouse	NA	NA	1,200
11	75 MVA DT- 11		1997	Inhouse	NA	NA	500
12	75 MVA DT-12	388,81,745.98	2006	Inhouse	NA	NA	500
13	245 KV, GIS TOSHIBA (11 Bays)	2775,55,970.49	1992	Inhouse	NA	NA	5,500
	BKC						
1	125 MVA Transformer-1 at BKC		2013	Inhouse	NA	NA	900
2	125 MVA Transformer-2 at BKC		2013	Inhouse	NA	NA	900
	145 kv GIS - 08 Bays make Toshiba						2,000
	Ixora						
1	60 MVA Transformer-1 at Ixora		2012	Inhouse	NA	NA	425
2	60 MVA Transformer-2 at Ixora		2012	Inhouse	NA	NA	425
	Transmission Lines						
	Attachment						

All Transmission Lines in Tata Power Mumbai Transmission Grid

Sr. No	Layout	Voltage	Line / Cable Name	Line Ckt.Km.	Cable Ckt.Km.	Total Ckt.Km.
1	OH	110 KV	Ambernath Kalyan 1	19.850		19.850
2	OH	110 KV	Ambernath Kalyan 2	19.850		19.850
3	OH	110 KV	BMC Kolshet	18.969		18.969
4	OH	110 KV	Bhira Davdi	10.131		10.131
5	OH/UG	220 KV	Bhira Dharavi 7	104.102	2.800	106.902
6	OH/UG	220 KV	Bhira Dharavi 8	104.102	2.800	106.902
7	OH	110 KV	Bhira Khopoli 2	50.960		50.960
8	OH	110 KV	Bhivpuri Ambernath 1	46.480		46.480
9	OH/UG	110 KV	Borivli Malad 1	7.300	0.100	7.400
10	OH/UG	110 KV	Borivli Malad 2	7.300	0.100	7.400
11	UG	220 KV	Borivli REL Aarey		0.470	0.470
12	UG	220 KV	Borivli REL Borivli		0.510	0.510
13	UG	110 KV	Carnac Backbay 1		4.008	4.008
14	UG	110 KV	Carnac Backbay 2		4.002	4.002
15	UG	110 KV	Carnac Grant Road		3.600	3.600
16	OH	110 KV	Chola Kalyan 1	2.500		2.500
17	OH	110 KV	Chola Kalyan 2	2.500		2.500
18	OH/UG	110 KV	Dharavi BKC 3	4.143	1.260	5.403
19	OH/UG	110 KV	Dharavi BKC 4	4.143	1.270	5.413
20	UG	220 KV	Dharavi Backbay		17.156	17.156
21	UG	110 KV	Dharavi Mahalaxmi		6.400	6.400
22	OH/UG	110 KV	Dharavi Powai	10.775	2.868	13.643
23	OH	110 KV	Dharavi Vikhroli	10.775		10.775
24	OH	110 KV	Kalwa Kalyan	16.802		16.802
25	OH	220 KV	Kalwa Salsette 3	7.772		7.772
26	OH	220 KV	Kalwa Salsette 4	7.772		7.772
27	OH	220 KV	Kalwa Salsette 6	8.930		8.930

28	OH	110 KV	Kalyan Kalwa Salsette 1	23.304		23.304
29	OH	110 KV	Kalyan Kalwa Salsette 2	22.835		22.835
30	OH	110 KV	Khopoli Bhivpuri Tie	28.670		28.670
31	OH	110 KV	Khopoli Bhivpuri Tie 2	28.670		28.670
32	OH	110 KV	Khopoli Davdi	39.843		39.843
33	OH/UG	110 KV	Khopoli Lodhivali Chembur	63.010	1.590	64.600
34	OH	110 KV	Khopoli Mankhurd	56.271		56.271
35	OH	110 KV	Malad Versova 1	6.850		6.850
36	OH	110 KV	Malad Versova 2	6.850		6.850
37	UG	110 KV	Parel Carnac		5.405	5.405
38	UG	110 KV	Parel Grant Road		5.200	5.200
39	UG	110 KV	Parel Mahalaxmi 1		2.850	2.850
40	OH	110 KV	Parel Mankhurd	11.095		11.095
41	UG	110 KV	Parel mahalaxmi 2		3.610	3.610
42	UG	220 KV	Saki Sahar		2.600	2.600
43	OH	110 KV	Salsette BMC	3.410		3.410
44	OH/UG	220 KV	Salsette Borivli 1	10.970	0.100	11.070
45	OH/UG	220 KV	Salsette Borivli 2	10.970	0.100	11.070
46	OH	110 KV	Salsette Kolshet	10.907		10.907
47	OH/UG	110 KV	Salsette Powai	7.185	2.789	9.974
48	OH/UG	220 KV	Salsette Sahar	6.500	4.280	10.780
49	OH	110 KV	Salsette Saki 3	7.800		7.800
50	OH	110 KV	Salsette Saki 4	7.800		7.800
51	OH/UG	220 KV	Salsette Saki 7	6.500	3.316	9.816
52	OH	110 KV	Salsette Vikhroli	7.185		7.185
53	OH	110 KV	Tata Ambernath MSETCL Neral	40.346		40.346
54	OH	110 KV	Tata Bhivpuri MSETCL Neral	12.058		12.058
55	OH/UG	110 KV	Tata Borivli MSETCL Borivli 1	1.900	0.150	2.050

56	OH/UG	110 KV	Tata Borivli MSETCL Borivli 2	1.900	0.150	2.050
57	OH	220 KV	Tata Borivli MSETCL Borivli 4	1.700		1.700
58	OH	220 KV	Tata Borivli MSETCL Borivli 5	1.570		1.570
59	OH/UG	110 KV	Trombay Carnac 1 / 3	4.950	7.520	12.470
60	OH/UG	220 KV	Trombay Carnac 5	5.156	7.231	12.387
61	OH/UG	220 KV	Trombay Carnac 6	5.156	7.231	12.387
62	UG	110 KV	Trombay Chembur 1		4.297	4.297
63	UG	110 KV	Trombay Chembur 2		4.297	4.297
64	OH/UG	110 KV	Trombay Chembur 3	5.704	1.590	7.294
65	OH	110 KV	Trombay Dharavi 1	10.363		10.363
66	OH/UG	220 KV	Trombay Dharavi 5	8.600	2.400	11.000
67	OH/UG	220 KV	Trombay Dharavi 6	8.600	2.400	11.000
68	OH/UG	220 KV	Trombay Dharavi 9	8.290	2.400	10.690
69	OH	220 KV	Trombay MSETCL Tie 1	0.850		0.850
70	OH	220 KV	Trombay MSETCL Tie 2	0.850		0.850
71	OH	110 KV	Trombay Parel 1 Wadala 1	9.510		9.510
72	OH	110 KV	Trombay Parel 2	8.690		8.690
73	OH/UG	110 KV	Trombay Parel 3 / Carnac 2	4.950	11.220	16.170
74	OH	110 KV	Trombay Parel 4 Wadala 2	10.531		10.531
75	OH/UG	220 KV	Trombay Salsette 1 Backbay	26.950	12.500	39.450

Capacity Amps.
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Annexure 3b - Vital data

Sr. No.	Critical Databases	Back up process	Back up frequency	Data base Restoration time (Hrs)	Back up site	Remarks
1	SCADA database	Manual	Daily	10 Hrs	PSCC, Trombay generating station	Independent BCP is prepared for SCADA
2	Engineering drawings	Manual	Annually	10 Hrs	1. Project Engineering, Technopolice Andheri, Mumbai. 2. TEC - Vikhroli	
3	Electrical Inspectors approvals	Manual	Annually	2 Hrs	1. Project Engineering, Technopolice Andheri, Mumbai. 2. Respective Node (Maint. Dept)	
4	Operation Manual	Manual	Annually	1 hour	1. PSCC, Trombay 2. Respective Node, Control Room	

Annexure 3c - Vital Positions (Internal)

Sr. No.	Position	Name of the Officer	Office No	Mobile No.
1	Chief - Corporate Operations(T&D)	Mr Ganesh Srinivasan	02267172802	9820132283
2	Chief - Transmission	Mr. Sheth Rajan K	02267172401	9223220825
3	Chief - Transmission Projects	Mr Arvind Singh	02267173401	9223307618
4	Group Head - Security (T&D)	Maj. Sajal Sen	02267172550	9810099189
5	Group Head - MIS & Capex Overall BCP Coordinator	Mr. Gaikwad Pravin D	02267172404	9223220837
6	Head - Maint Planning Group	Mr. D Sequeira	02267172001	9223581599
7	Group Head - Safety	Mr. P K Khawadkar	02267172410	9223501570
8	Group Head - Medical	Dr. P R Lingayat	02267172551	9223348976
9	Group Head - Medical	Dr. Dabholkar Manoj B	02267172551	9819606735
10	Head - Trans. Automation	Ms. Bhagyashree S Pisolkar	02267172541	9223553185
11	Group Head- Performance Assurance	Mr. Sanvatsarkar Suresh P	02267172403	9223550619
12	Head - North Zone	Mr. K K Rao	02267173501	9223276273
13	Head - South Zone	Mr. Muraleedharan T	02267172141	9223550706
14	Head - Transmission Lines	Mr. S G Bhangaonkar	02516459030	9223311429
15	Head - Central Zone	Mr. P S Sawant	02267172422	9223360216
16	Head - MO EHV Cable Group	Mr. N R Sirdesai	02267172223	9223311454
17	Group Head – Borivali Node	Mr. S V Shetye	02267173511	9223303118
18	Group Head – Saki Node	Mr. D Ravikumar	02267173300	9223316591
19	Group Head – Salsette Node	Mr. K G Rane	02267174312	9223307197
20	Group Head – Carnac Node	Mr. S K Vetcha	02267171901	9223311480
21	Group Head – Parel Node	Mr. S D Shitut	02267172111	9223582856
22	Group Head – Dharavi Node	Mr. V M Bhondve	02267172421	9223305164
23	Group Head - Vikhroli Node	Mr. M D Dias	02267174251	9223503884
24	Group Head - Chembur Node	Mr. Ganesh S Tawre	02267174211	9224582184
25	Group Head – Kalyan Node	Mr. Sajivan K K	02516459030	9223306186
26	Group Head - Transmission Stores	Mr. Khadse Arun D	02267174321	9223552522
27	Group Head – Admin	Mr. Nair Pradeep T	02267172481	9223358407

Annexure 3 d - Risk Analysis

Sr. No.	Risk considered for BCP	Sub- Risk or Likely scenarios	Level of Incident (L1 or L2 or L3)	Inherent Value (Rs. Cr.)	Impact on Human Life (Yes / No)	Impact on Environment (Yes / No)	Risk Appetite (Rs. Cr)	Maximum Tolerable Disruption Period (MTPD)	Probability	Risk Rating (From Annex 3d(i))	Impacting Processes EPM No	Impacting Process Description	Risk Owner
1	Major threats to stations from terrorism / sabotage									Medium			
1a		Equipment damage (Transformers, switchgear, Lines, Towers, control room, building, lift)	L2	6.04	Y	Y	0.76	4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
1b		Human loss	L3		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
1c		Power supply interruption	L2		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
2	Natural disasters like flood, draught, storm, earthquake									Medium			
2a		Equipment (Transformers, switchgear, Lines, Towers, control room, building, lift) damage	L2	4.3	Y	Y	0.74	4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
2b		Human loss	L3		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
2c		Power supply interruption	L2		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3	Risk of Fire									High			
3a		Fire in ICT / Transformer,	L2		Y	Y		4 Hrs	H	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3b		Fire in Control room	L2		Y	Y		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3c		Fire in cable basement,	L2		Y	Y		4 Hrs	H	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3d		Fire in switchgear room,	L2	2.45	Y	Y	0.04	4 Hrs	M	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3e		Fire in relay / auxiliary room,	L2		Y	Y		4 Hrs	M	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3f		Fire in Office	L2		Y	Y		4 Hrs	H	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3g		Human Loss	L3		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
3h		Fire below transmission line	L2		Y	Y		4 Hrs	L	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
4	Operational/catastrophic failures of critical equipment									High			
		Equipment damage (Transformers, switchgear, Lines, Towers)	L2		Y	Y		4 Hrs	L	Medium	15.02.01		
4a		Power supply interruption	L2	1.5	Y	N	0.02	4 Hrs	M	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
4b		Failure of connected equipment or equipment in vicinity	L2		Y	N		4 Hrs	L	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
4c		Fire	L2		Y	Y		4 Hrs	L	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
4d		Accidents	L2		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
4e		Human Loss	L3		Y	N		4 Hrs	L	High	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
5	Accidents due to activity in operations area									Medium			
5a		Fearful employees	L2	0.11	Y	N	0	4 Hrs	L	Low	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
5b		Riots	L2		Y	Y		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
5c		Human injury / disability	L2		Y	N		4 Hrs	L	Medium	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K
6	Strike \ Riots \ Picketing \ Curfew affecting manning of plant									Low			
6a		Shortage of Manpower	L1	0.03	N	N	0.01	4 Hrs	L	Low	15.06.03 & 15.06.04	Preventive Maintenance Receiving Stations & Breakdown Maintenance Receiving Stations	Mr. Sheth Rajan K
6b		Shortage of food and water	L1		Y	N		4 Hrs	M	Low	15.06.03 & 15.06.04	Preventive Maintenance Receiving Stations & Breakdown Maintenance Receiving Stations	Mr. Sheth Rajan K
7	Exposure to operation from neighbors	Human injury	L2	0.02	Y	Y	0	4 Hrs	L	Low	15.02.01	Receiving Station Operations	Mr. Sheth Rajan K

Annexure 3 d (i) - Criteria for Risk Rating

Annexure 3 d (i) - Criteria for Risk Rating												
Notes												
1. Give Points 1 to 5 from your perspective in each "criteria" point. 1 is lowest and 5 is the highest.												
2. Likelihood (Low=1, Medium=1.1, High=1.2)												
3. Risk Rating = Criteria Score X Likelihood												
(a) Catastrophic - Above 30 (b) Critical - 23 to 30 Points (c) High - 16 to 22 (d) Medium - 10 to 15 Points and (e) Low - less than 10												
Sr. No.	Risk	Sub-Risk	Criteria						Criteria Score (A+B+C+D+E+F)	Risk Rating	Assumption / Remarks	
			Impact on Unit's Objectives	Impact on Interested Parties	Impact on Environment	Statutory, Legal and Regulatory Impact	Impact on Reputation	Impact on Revenue (Mainly from grid availability)				
			A	B	C	D	E	F	G			
1	Major threats from terrorism / sabotage										Medium	Considered attack by 4 terrorists with weapons
1a		Equipment damage (Transformers , switchgear , Lines, Towers, control Panels)	3	2	3	1	2	2	13	Medium	Bomb on one ICT and one Power transformer or one Bus section.	
1b		Human loss / Injury	2	2	1	3	2	2	12	Medium	Gun firing/ sword attack. Non-availability of people for supply resumption operations locally.	
1c		Power supply interruption	2	2	1	3	2	1	11	Medium	DISCOMS able to shift their max. load to other network.Remote operations performed.	
2	Natural disasters like flood, storm & earthquake										Medium	
2a		Equipment damage (Transformers , switchgear, Lines, Towers, control room, building, lift)	4	2	3	1	2	2	14	Medium	Transformers &, switchgear in one RSS damaged. 1-2 tower collapsed.	
2b		Human loss / Injury	2	2	1	1	2	2	10	Medium	Non-availability of people for supply resumption operations locally. Expenditure on casualties.	
2c		Power supply interruption	3	3	1	1	2	1	11	Medium	DISCOMS able to shift their max. load to other network.Remote operations performed.	
3	Fire	Power supply interruption due to :									High	DISCOMS able to shift their max. load to other network
3a		Fire in ICT / Transformer	3	3	3	3	3	3	18	High	Loss of 250 MVA capacity	
3b		Fire in Control room	2	2	3	3	3	2	15	Medium	Loss of control resulting in non-availability of critical equipment & lines	
3c		Fire in cable basement	3	3	3	3	3	3	18	High	Non-availability of equipment / lines / feeders	
3d		Fire in switchgear room	3	3	3	3	3	2	17	High		
3e		Fire in relay / auxiliary room	3	3	2	3	2	2	15	Medium		
3f		Fire in Office	1	2	2	3	3	1	12	Medium		
3g		Human loss / Injury	2	3	1	3	3	2	14	Medium	Non-availability of people for supply resumption operations locally. Expenditure on casualties.	
3h		Fire below transmission line	3	3	3	3	3	2	17	High	To avoid tripping /incident due to melting, Lines required to open.	
4	Major Operational/catastrophic failures of critical equipment										High	
4a		Equipment damage (Transformers , switchgear , Lines, Towers)	3	2	3	1	2	2	13	Medium	Transformers &, switchgear in one RSS damaged. 1-2 tower collapsed.	
4b		Power supply interruption	3	3	1	3	4	1	15	Medium		
4c		Failure of connected equipment or equipment in vicinity	4	3	3	1	4	2	17	High		
4d		Fire	3	3	3	3	4	2	18	High		
4e		Accidents	2	3	1	3	4	2	15	Medium	Vehicles/crane, fall of objects, human error	
4f		Human loss / Injury	2	5	1	5	4	2	19	High		
5	Accidents in operations area										Medium	
5a		Fearful employees	1	1	1	1	3	1	8	Low		
5b		Riots	3	3	2	1	3	2	14	Medium	Riots by angree relatives or affected people in neighbourhood	
5c		Human injury / disability	2	1	1	1	4	2	11	Medium		
6	Strike\ Riots \ Picketing \ Curfew										Low	
6a		Shortage of Manpower	1	1	1	1	1	1	6	Low	Constraints of travelling	
6b		Shortage of food and water	1	1	1	2	2	1	8	Low	Limitation of food stock and constraints of transport	
7	Exposure to operation of neighbours (Exposure to Gas leakage)	Human Injury	2	1	1	1	1	2	8	Low		

Annexure 4a – Statement of Business Impact

Sr. No.	Process Description	Process EPM No.	Function (or Activity as described in EPM process)	Classification of function (from 4a(i))	Interdependence of Function (EPM)	Recovery Priorities	Minimum Business Continuity Objective (MBCO)	Recovery Time Objective (RTO)	Daily Loss	Remarks
1	Breakdown Maintenance O/H Lines	15.06.02	Breakdown Maintenance	Essential	EPM 15.06.01 EPM 15.02.01	1. Transfer load to other line/cable 2. Restoration of line	50%	2 Hrs.	Nil	
2	Breakdown Maintenance Receiving Stations	15.06.04	Breakdown Maintenance	Essential	15.02.01, 15.01.01, 15.02.02	1. Transfer load to other bus section, 2. Restoration of transformer, switchgear	50%	2 Hrs.	Nil	
3	Breakdown Maintenance Cables	15.06.14	Breakdown Maintenance	Essential	15.02.01 & 15.06.13	1. Transfer load to other line/cable 2. Restoration of faulty cable	50%	2 Hrs.	Nil	

Annexure 4 a (i) - Criteria for Classification of Functions

Notes	<p>1. Give Points 1 to 5 from your perspective for each "criteria" point. 1 is lowest and 5 is highest.</p> <p>2. MTPD - Less than 8 hrs - 5 Points, 8 to 12 hrs - 4 Points, 24 to 72 hrs - 3 Points, 72 to 144 hrs - 2 Points and more than 144 hrs - 1 Point</p> <p>3. Key Functions are list of activities being carried out in a process</p> <p>Classification of function shall be -</p> <p>(a) Critical - 18 Points & above. (b) Essential 12 to 17 Points (c) Necessary 06 to 11 Points and (d) Desirable - less than 06</p>
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Sr. No.	Process Description	Process EPM No.	Function (or Activity as described in EPM process)	Interdependence of Function	Criteria					Classification of Function	Remarks	
					Impact on Unit's Objectives	Impact on Interested Parties	Impact on Environment	Statutory, Legal and Regulatory Impact	Maximum Tolerable Period of Disruption (MTPD), E			Total Points
1	Breakdown Maintenance O/H Lines	15.06.02	1. Obtaining outage & PTW 2. Break Down Maintenance (Repair or replace) 3. Clearing PTW to take line in service	15.06.01 & 15.02.01	A 3	B 3	C 2	D 1	E 5	A+B+C+D+E 14	Essential	PSCC & NMMC Engineers
2	Breakdown Maintenance Receiving Stations	15.06.04	1. Obtaining outage & PTW 2. Break Down Maintenance (Repair or replace) 3. Clearing PTW to take RSS transformer, switchgear or other equipment in service	15.02.01 & 15.06.03	A 3	B 3	C 1	D 1	E 5	A+B+C+D+E 13	Essential	PSCC & NMMC Engineers
3	Breakdown Maintenance Cables	15.06.14	1. Obtaining outage & PTW 2. Break Down Maintenance (Repair or replace) 3. Clearing PTW to take Cable in service	15.02.01 & 15.06.13	A 3	B 3	C 2	D 1	E 5	A+B+C+D+E 14	Essential	PSCC & NMMC Engineers

Function Rating Scale

Scale	Impact on Unit's Objectives	Impact on Interested Parties	Impact on Environment	Statutory, Legal and Regulatory Impact
1	No impact	No impact	No impact	No violation
2	25%	Low impact	Very low & localised impact within affected part of the network	Beginning of violation but controllable.
3	50%	Medium impact	Medium, Significant but remedial impact within boundaries of the affected part of the network	Minor violations
4	75%	High impact	High, noticeable impact within & outside boundaries of the affected part of the network. Surrounding community is affected.	Violations initiating legal notices and/or penalties. Notice of violation (NOV) certain, Media attention
5	100%	Very High impact	Severe, visible impact within & outside boundaries of the affected part of the network. Surrounding community is affected. Public complaints.	Major violations. Regulatory & legal actions including fines and closure notice

Annexure 4 a (ii) - Criteria for Recovery Priorities (Risk Based)

Notes	Give Points 1 to 5 from your perspective in each criteria point - 1 is lowest and 5 is the highest Recovery Priority shall be - (a) Priority 1 - 18 Points and above, (b) Priority 2 - 12 to 17 Points, (c) Priority 3 - 06 to 11 Points and (d) Priority 4 - Less than 06 Points
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Sr. No.	Risk	Sub-Risk	Criteria					Total Points (A+B+C+D+E)	Recovery Priority	Remarks
			Impact on Unit's Objectives	Impact on Interested Parties	Impact on Environment	Statutory, Legal and Regulatory impact	Impact on Revenue			
			A	B	C	D	E	F		
1	Major threats from terrorism / sabotage									
1a		Equipment damage (Transformers , switchgear , Lines, Towers, control Panels)	3	2	3	1	2	11	3	Initiate all the actions simultaneously
1b		Human loss / Injury	2	2	1	3	2	10	3	
1c		Power supply interruption	2	2	1	3	1	9	3	
2	Natural disasters like flood, storm & earthquake									
2a		Equipment damage (Transformers , switchgear, Lines, Towers, control room, building, lift)	4	2	3	1	2	12	2	
2b		Human loss / Injury	2	2	1	1	2	8	3	
2c		Power supply interruption	3	3	1	1	1	9	3	
3	Fire	Power supply interruption due to :								
3a		Fire in ICT / Transformer	3	3	3	3	3	15	2	
3b		Fire in Control room	2	2	3	3	2	12	2	
3c		Fire in cable basement	3	3	3	3	3	15	2	
3d		Fire in switchgear room	3	3	3	3	2	14	2	
3e		Fire in relay / auxiliary room	3	3	2	3	2	13	2	
3f		Fire in Office	1	2	2	3	1	9	3	
3g		Human loss / Injury	2	3	1	3	2	11	3	
3h		Fire below transmission line	3	3	3	3	2	14	2	
4	Major Operational/catastrophic failures of critical equipment									
4a		Equipment damage (Transformers , switchgear , Lines, Towers)	3	2	3	1	2	11	3	
4b		Power supply interruption	3	3	1	3	1	11	3	
4c		Failure of connected equipment or equipment in vicinity	4	3	3	1	2	13	2	
4d		Fire	3	3	3	3	2	14	2	
4e		Accidents	2	3	1	3	2	11	3	
4f		Human loss / Injury	2	5	1	5	2	15	2	
5	Accidents in operations area									
5a		Fearful employees	1	1	1	1	1	5	4	
5b		Riots	3	3	2	1	2	11	3	
5c		Human injury / disability	2	1	1	1	2	7	3	
6	Strike \ Riots \ Picketing \ Curfew									
6a		Shortage of Manpower	1	1	1	1	1	5	4	
6b		Shortage of food and water	1	1	1	2	1	6	3	
7	Exposure to operation of neighbours (Exposure to Gas leakage)	Human Injury	2	1	1	1	2	7	3	

Annexure – 4b Business Impact Analysis Questionnaire (1)

Process Name Brakedown Maintenance of O/H Lines

Process Identification No. 15.06.02

Process Owner Mr. S G Bhangaonkar

Process Description Breakdown maintenance of lines and towers

Acceptable Outage ≥ 2 hours
Importance to Business Necessary
Depends on 15.02.01, 15.01.01, 15.02.02

Dependent Processes

Critical Resources Skilled Engineer & spares

People

S. No.	Role	Responsibility	Weightage (Scale 1 – 5)
1	Head - Trans.	Ensuring completion of annual maintenance plan	5
2	Nodal Head	Ensuring completion of annual maintenance plan	3
3	Line Engineer	Ensuring outage and maintenance as plan	4
4	Skilled Technician	Maintenance work	4

Machineries

S. No	Item	Configuration	Quantity	
			Normal Operations	Critical Situations
1	NA			

Software

S. No.	Item	Version	License	
			Type	Quantity
1	NA			

Documents

S. No.	Name	Type Paper/Electronic	Copies	Acceptable Outage
1	Work Instruction	Electronic	1	

Business Impact

S. No.	Area	Impact None/Low/Medium/High
1		Low

Annexure – 4b Business Impact Analysis Questionnaire (2)

Process Name Breakdown Maintenance
Receiving Stations

Process Identification No. 15.06.04

Process Owner Mr. D Ravikumar

Process Description Repairs of damaged equipment

Acceptable Outage Importance to Business ≥ 2 hours
Critical

Processes dependant / Related 15.02.01, 15.01.01, 15.02.02

Critical Resources Skilled technicians & spares

People

S. No.	Role	Responsibility	Weightage (Scale 1 – 5)
1	Nodal Head	Ensuring completion of annual maintenance plan	5
2	NSMC Engineer	Ensuring completion of annual maintenance plan	4
3	PSCC Engineer	Outage of the equipment	3
4	NMMC Engineer	Isolation & grounding of the equipment	3
5	Skilled Technician	Maintenance work	4

Machineries

S. No	Item	Configuration	Quantity	
			Normal Operations	Critical Situations
1	Receiving station equipments	As per station layout	All (N)	N-1

Software

S. No.	Item	Version	License	
			Type	Quantity
1	NA			

Documents

S. No.	Name	Type Paper/Electronic	Copies	Acceptable Outage
1	Work instructions	Electronic	1	

Business Impact

S. No.	Area	Impact None/Low/Medium/High
1	Industry Ranking	Medium
2	Consumer shut down	High

Annexure – 4b Business Impact Analysis Questionnaire (3)

Process Name Breakdown Maintenance of Cables

Process Identification No. 15.06.14

Process Owner Mr. Sanket Bendkhale

Process Description Breakdown maintenance of cables & terminations

Acceptable Outage ≥ 2 hours

Importance to Business Necessary

Depends on

Dependent Processes

Critical Resources Skilled Engineer, Jointers & spares, termination & jointing kits

People

S. No.	Role	Responsibility	Weightage (Scale 1 – 5)
1	Head - Cable	Ensuring completion of annual maintenance plan	5
2	Nodal Head	Ensuring completion of annual maintenance plan	4
3	Cable Engineer	Ensuring outage and maintenance as plan	4
4	Cable Jointer	Maintenance work	4

Machineries

S. No	Item	Configuration	Quantity	
			Normal Operations	Critical Situations
1	NA			

Software

S. No.	Item	Version	License	
			Type	Quantity
1	NA			

Documents

S. No.	Name	Type Paper/Electronic	Copies	Acceptable Outage
1	Work Instruction	Electronic	1	

Business Impact

S. No.	Area	Impact None/Low/Medium/High
1		Low

Annexure 5 a (i) - Internal Resources

Manpower

Category	Employees	Contractor Workforce*	* As & when
Carnac	24	-	
Parel	24	-	
Dharavi	250	-	
Vikhroli	24	-	
Chembur	24	-	
Salsette	24	-	
Saki	24	-	
Borivli	24	-	
Kalyan	118	-	

Commumnication Facilities

		As on 31.12.2016				
		Mobile	Office Landline	Wireless Walky	Email	PA System /Hooter
Carnac	Number required	5	5	2	5	1
	Number Available	5	5	2	5	1
	Gap	NIL	NIL	NIL	NIL	NIL
Parel	Number required	5	5	2	5	1
	Number Available	5	5	2	5	0
	Gap	NIL	NIL	NIL	NIL	1
Dharavi	Number required	5	5	2	5	1
	Number Available	5	5	2	5	1
	Gap	NIL	NIL	NIL	NIL	NIL
Vikhroli	Number required	5	5	2	5	1
	Number Available	5	5	2	5	0
	Gap	NIL	NIL	NIL	NIL	NIL
Chembur	Number required	5	5	2	5	1
	Number Available	5	5	2	5	0
	Gap	NIL	NIL	NIL	NIL	NIL
Salsette	Number required	5	5	2	5	1
	Number Available	5	5	2	5	1
	Gap	NIL	NIL	NIL	NIL	NIL
Saki	Number required	5	5	2	5	1
	Number Available	5	5	2	5	0
	Gap	NIL	NIL	NIL	NIL	1
Borivli	Number required	5	5	2	5	1
	Number Available	5	5	2	5	0
	Gap	NIL	NIL	NIL	NIL	NIL
Kalyan	Number required	10	10	2	10	1
	Number Available	10	10	2	10	0
	Gap	NIL	NIL	NIL	NIL	NIL

Transport

Sr. No.	Type	Number required	Number Available	Gap
1	People-SUV	2	2	NIL
2	Material- Vehicle	0	0	NIL
3	Faultduty Vehicle	1	1	NIL
4	People-BUS	2	2	NIL

Personal Protective Equipment - PPE (Standard at all locations)

Sr. No.	Type	Number required	Number Available	Gap	Additional spare available
1	Helmet	5	5	NIL	4
2	Safty Shoe	5	5	NIL	2
3	Cotton Gloves	5	5	NIL	3
4	Cut/abrasion Gloves	2	2	NIL	2
5	Heat Resistance Gloves	2	2	NIL	2
6	Rubber Gloves	2	2	NIL	4

Fire Control Equipment & Fire Fighting Equipment

Station	Fire Extinguishers	Smoke Detectors	Manual Call points
Salsette	108	182	14
Kolshet	32	7	5
Borivli	81	157	17
Malad	39	72	11
Versova	31	24	2
Saki	75	29	8
Powai	13	143	8
Sahar	10	117	8
Dharavi	175	343	28
Vikhroli	63	77	8
Chembur	45	49	5
Mankhurd	19	62	3
Carnac	145	151	23
Backbay	70	51	12
Parel	92	132	8
Mahalaxmi	43	209	15
Kalyan	124	279	16
Ambarnath	61	65	10

SAFE ASSEMBLY AREA

Division	Location	Capacity (Nos. of people)
Carnac	Near Main Gate	300
Parel	Near Main Gate	100
Dharavi	Near T&D Office	325
	Near CCR Office	125
Vikhroli	Near Main Gate	100
Chembur	Near Main Gate	50
Salsette	Near AGM office	50
Saki	Between Switch yard & CR	50
Powai	Near Main Gate	50
Borivli	Near Main Gate	50
	Near Canteen	50
Kalyan	Near Main Gate	50
	Near Garage	50

Shelter

Sr. No.	Location	Capacity (Nos. of people)
1	Tata Power Dharavi Colony	100
2	Tata Power Salsette Colony	25
3	Tata Power Kalyan Colony	100
4	Tata Power Borivli Colony	50

Other Internal Resources, if any

Sr. No.	Type	Number required	Number Available	Gap
1	Food	3 Days	More than 3 Days	NIL
2	Water	3 Days	More than 3 Days	NIL

Annexure 5 a (ii) - External Resources

Sr. No.	Name of External Support Agency	Address	Contact No.
1	Disaster Mangement Control Room - MCGM	Mr. Mahesh Narvekar, Chief Officer DM MCGM Office, Fort, Mumbai.	Contact No - 1916
2	National Disaster Response force (NDRF)	Mr. Anupam Srivastava, Commandant, 5th Bn NDRF, Village Sudumbare, (Chakan Road), Taluka Maval, District Pune.	Tel 02114-247010 Mobile : 09423506765 Control Room 02114-247000 Control Room Mobile : 09422315628

Hospital

No.	RSS Station Name	Name of Hospital	Phone Nos.	Distance in km	Approximate Time to reach site
1	Ambernath R/S.				
		Century Rayon Hospital, Shahad	0251-2733670	1	5 Minutes
2	Backbay R/S.	GT hospital	022-22621465	3.5	20 Minutes
		St. George Hospital	022-22620244	2.5	15 Minutes
3	Borivali R/S.				
		Rabindra Nursing Home.	022-28861632	5	30 Minutes
4	Carnac R/S.				
		G.T.Hospital	022-22621465	2	10-15 Minutes
		Bombay Hospital	022-22067676	2	10-15 Minutes
		St. George Hospital	022-22620244	2	10-15 Minutes
		J J Hospital	022-23735555, 022-23739031	2	10-15 Minutes
5	Chembur R/S.	Masina Hospital	022-23714889, 022-23714890, 022-61841200	4	20 Minutes
			022-61500300		
5	Chembur R/S.	BARC Hospital	022-25563137, 022-25598000		10-15 Minutes
6	Dharavi R/S.	ShushrushaHospital & ICU	022-21639361, 022-21639365	1.5	10 Minutes
		Hinduja Hospital	022-2444 8524, 022-2445 2575, 022- 24452222, 022-24449199, 022- 24451515	2	10-15 Minutes
		Masina Hospital	022-23714889, 022-23714890, 022-61841200	9.5	30 Minutes
		Lokmanya Tilak General Hospital Sion	022-24076382 , 022-24072737	1.5	10 Minutes
		K.E.M.hospital	022-24131763 ,022- 24137517 , 022-24131255	5.5	20 - 25 Minutes
7	Kalyan R/S.				
		Fortis Hospital, Kalyan	0251-6694444	3	30 Minutes
		National Burn hospital, Airoli	022-2779 6660 022-2779 6661 022-2779 6662 022-2779 6663 022-2779 6664 022-2779 3333	26	90 Minutes
		Mamta Hospital, Dombivli (E)	0251-2443174	4	30 Minutes
		ICON Hospital, Dombivli (E)	0251-2800600	3	30 Minutes
		AIMS Hospital, Dombivli (E)	0251-2475001	4	30 Minutes
8	Kolshet S/S.				
		Thane Civil Hospital	022-25479634, 022-25472582		
9	Mahalaxmi S/S.				
		K.E.M.hospital	022-24136051 , 022-24131763, 022-24137517 , 022-24131255	3.5	20 – 25 Minutes
10	Malad S/S.				
		Raksha Hospital	022-42641181	0.5	5 -10 Minutes
		Zenith Hospital	022-67733281	1	10-15 Minutes
11	Mankhurd R/S.				
		BARC Hospital, Anushakti Nagar	022-25563137, 022-25598000		10-15 Minutes
		Shatabdi Hospital, Govandi	022 - 25564069, 022 - 25564070, 022 - 25564071	2	10 Minutes
		Sterling Wockhart Hospital, Vashi	022 - 66804444	2	10 Minutes
12	Parel R/S.	National Burn hospital, Airoli	022-2779 6660 / 61 022-2779 6662 / 63 / 64	16	45 Minutes - 1 Hour
12	Parel R/S.	Global hospital	022-67670101	3	30 Minutes
		Sion Hospital	022-24076381	12	30 - 45 Minutes
		KEM Hospital	022-24136051 & 022-24131763	3	10 Minutes
		J J Hospital	022-23735555,022- 23739031	12	30 - 45 Minutes
		Jaslok Hospital	022-66573333	14	30 - 45 Minutes
13	Saki S/S.				
		Abhay Nursing home	022-2850 6690	3.3	10-15 Minutes
		Seven hills hospital	022-6767 6767	1.7	10 Minutes
		Hiranandani Hospitals	022- 2576 3300	5	15-20 Minutes

		National Burn hospital, Airoli	022-2779 6660 022-2779 6661 022-2779 6662 022-2779 6663 022-2779 6664 022-2779 3333		
14	Salsette R/S.	Fortis Hospital, Mulund Link Rd	022 6799 4187/ 022 49174633	2	10 Minutes
15	Versova S/S.	Kokilaben Dhirubhai Ambani Hospital	022-3099 9999	3	10-15 Minutes
		Criticare Multispecialty Hospital and Research Center	022-6775 6600	4	15-20 Minutes
16	Vikhroli S/S.	Godrej Memorial Hospital	022-66417100	1.5	5-10 Minutes
		Mahatama Phule (Vikhroli West)	022-25782283	3	10-15 Minutes

Police Station (Phone- 100)

No.	Station Name	Name of Police Stations	Phone Nos.	Distance in KM	Approximate Time to reach site
1	Ambernath R/S.	Titwala Police Station	0251 - 2381320	10	30
		Shahad Police Station	0251-2710005, 2710100, 2710341	2	10
2	Backbay R/S.				
		Cuffe Parade Police Station	022-22183225, 022-22188009, 022-22180588	1	10 Minutes
3	Borivali R/S.				
		Near Railway Station, Kasturba Marg, Borivali East	022-28651477, 022-28657919	0.5	10 Minutes
4	Carnac R/S.				
		Pydhonie Police Station	022-23465333 / 022-2346114	2	5 -10 Minutes
5	Chembur R/S.				
		Chembur Police Station	022-25221613 /022- 2522 7563	2	10 Minutes
6	Dharavi R/S.				
		Police Station - Dharavi, 90 Feet Road	022-2407 4368	1	5 Minutes
7	Kalyan R/S.				
		Manpada Police station	0251-2470104	3	20 - 25 Minutes
8	Kolshet S/S.				
		Vartaknagar Police Station	022-25853576	1	5 -10 Minutes
9	Mahalaxmi S/S.				
		Kala chowki Police Station	022-23754128	3	15 – 20 Minutes
10	Malad S/S.				
		Malwani Police station	022-28821319 / 022-28822557	3	20 - 25 Minutes
11	Mankhurd R/S.				
		Mankhurd Police Station	022-22926006	1.5	15 Minutes
12	Parel R/S.				
		Kala chowki Police Station	022-23735804 / 022-23757357	2	5 -10 Minutes
13	Saki S/S.				
		Powai Police Station	022-25702690, 022-25702492	2.3	5 -10 Minutes
14	Salsette R/S.				
		Lake Road, Bhandup	022-25952171	< 1.0	5 Minutes
15	Versova S/S.				
		Amboli Police station	022-2676 2001	5	30 Minutes
16	Vikhroli S/S.				
		Kannamwar Nagar Police Station (Vikhroli)	022-25782240	1.5	10 Minutes

Fire Station (Phone- 101)

No.	Station Name	Name of Fire Brigade Stations	Phone Nos.	Distance in km	Approximate Time to reach site
1	Ambernath R/S.	Ambernath Fire Station	0251-2682400 / 0251-2682409	6	20 Minutes
2	Backbay R/S.	Indira Dock Fire Brigade	022-22611589	3	15 Minutes
3	Borivali R/S.	Borivali Fire station	022-28602847	4	30 Minutes
4	Carnac R/S.	Indira Dock Fire Brigade	022-22611589	1.5	5 -10 Minutes
5	Chembur R/S.	Chembur Fire Station	022-25224824 / 022-23076113	2	10 Minutes
		Deonar Fire Station	022-2407 7868	4.5	25 Minutes
6	Dharavi R/S.	Dharavi Fire Station	022-24077868	2.5	15 minutes
7	Kalyan R/S.	Kalyan Fire Station	0251-2315101 / 2310155	5	30 Minutes
		Dombivli Fire Station	0251 - 2470357	5	30 Minutes
		Badalapur Fire Station	0251-2690890	21	60 Minutes
		Ulhasnagar Fire Station	0251-2720131 / 32 / 33	6	30 Minutes
		Ambernath Fire Station	0251-2682400 / 2682409	11	45 Minutes
8	Kolshet S/S.	Wagale Estate Fire Brigade	022-25823477	6	20 – 25 Minutes
9	Mahalaxmi S/S.	Mumbai Fire Brigade (Byculla)	101 , 022-23076111 / 2 / 3	4.5	15 Minutes
10	Malad S/S.	Malad Fire station	022-2807 1010	2	10 – 15 Minutes
11	Mankhurd R/S.	Chembur Fire Station	022-25224824/23076113	2	10 – 15 Minutes
		Deonar Fire Station	022-2407 7868	1.5	10 Minutes
12	Parel R/S.	Fire Brigade (Mumbai Fire Brigade)- CR & BYCULLA	022-23076111 / 2 / 3	6	20 – 25 Minutes
13	Saki S/S.	Marol Fire brigade	022-2920 0940	2.5	5 -10 Minutes
14	Salsette R/S.	LBS Marg (Mulund West).	022-25687637	3	10 – 15 Minutes
15	Versova S/S.	Andheri Fire station	022-26205301	4	20 Minutes
16	Vikhroli S/S.	Godrej Fire (In house)	022-25170730 / 022-23083240	1	10 – 15 Minutes
			022-55963052		
		Vikhroli Fire Brigade	022-23085991, 92, 93, 94	2	15 – 20 Minutes

AMBULANCE (Phone- 102)

No.	Station Name	Name of Ambulance Service	Phone Nos.	Distance in KM	Approximate Time to reach site
1	Ambarnath R/S.	Century Rayon Hospital	0251-2734562	1	5 Minutes
		Fortis Hospital, Kalyan	0251-6694400	5	30 - 40 Minutes
2	Backbay R/S.	Parsi Ambulance	022-22621666, 022-22620401	3	10 Minutes
3	Borivali R/S.	Ambucare Cardiac Ambulance service	022-2898 2564	4	25 Minutes
		Bhagwati Hospital	022-2893 2461	4	25 Minutes
		Vibha Care Home	022-2833 3331	3	20 Minutes
4	Carnac R/S.	Parsi Ambulance	022-22621666 & 022-22620401	2	10-15 Minutes
		Saifee Ambulance	022-234665201 & 022-23471189	2	15-20 Minutes
5	Chembur R/S.	RCF Ambulance	1286/4444/ 2183 (RCF intercom)	< 1.0	5 – 10 Minutes
		Jeevan Ambulance service	9821555528		10-15 Minutes
		Tata Power, Trombay	022-67175990	3	20 Minutes
6	Dharavi R/S.	BOMBAY CITY AMBULANCE	022-22014295 , 022-22018175, 022-23076111	13	30 – 45 Minutes
		Salvation Ambulance	022-24465895, 022-7738289963, 022-9930628712	2.5	10 – 15 Minutes
7	Kalyan R/S.	AIMS Hospital, Dombivli	0251 - 2475000 / 2475001	4	30 Minutes
		ICON Hospital, Dombivli	0251-2444747	5	30 Minutes
		AJIT Scanning Centre, Kalyan	0251-2213531	6	30 Minutes
8	Kolshet S/S.	Sai Prasad Ambulance	9869180699	2	5 – 10 Minutes
9	Mahalaxmi S/S.	Bombay Hospital	022-2206 7676	7	20 Minutes
10	Malad S/S.	Ambulance Mobile Critical Care	022-28821828, 022-28823903	< 1.0	5 – 10 Minutes
		Raksha Hospital	022-42641181	0.5	5 -10 Minutes
		Riddhivinayak critical care	022-2866 3985	4	30 Minutes
11	Mankhurd R/S.	BARC Hospital, Anushakti Nagar	022-25563137, 022-25598000		15 -20 Minutes
		Jeevan Ambulance service	9821555528		10-15 Minutes
		Sterling Wockhart Hospital, Vashi	022 - 66804444	2	10 Minutes
12	Parel R/S.	KEM Hospital	022-24136051 & 022- 24131763	3	10 Minutes
		Sion Hospital	022-24076380 & 022-24076381	12	30 - 45 Minutes
13	Saki S/S.	Abhay Nursing home	022-2851 7498	3.3	10 -15 Minutes
		Shagun Hospital		1	10 Minutes
14	Salsette R/S.	Harishrai Jakhand Ambulance services, Bhandup west	022-25601634	1	5-10 Minutes
15	Versova S/S.	Kokilaben Dhirubhai Ambani Hospital	022-3099 9999	3	10-15 Minutes
		Ambuline Ambulance services	022-61639443	4	30 Minutes
16	Vikhroli S/S.	Godrej Memorial Hospital	022-67967100 / 022-67967052 022-67967031	1.5	5-10 Minutes
		Bombay City Ambulance	022-22014295 ,022-22018175		20 Minutes

Annexure 5 a(iii) - Training for Competency Development

Sr. No.	Name of Training Module	Number of Employees to be trained in 2016-17 (A)	No. of Employees Trained (B)	Gap (A) - (B)	Training calendar to cover the gap
1	First Aid Training	150	200	NIL	Balance 100 employees will be trained in 2017-18
2	Basic Fire Fighting	200	276	NIL	Balance 25 employees will be trained in 2017-18
3	DM & BCP Certification	2	2	NIL	NA
4	TPSDI Training - Safety & fire	40	40	NIL	NA

Zonewise Details of First Aid & Fire Fighting Training			
Zone	Node	First Aid	Fire Fighting
Central Zone	Vikhroli Node	14	21
	Chembur Node	11	17
	Dharavi Node	22	20
North Zone	Salsette Node	26	29
	Borivli Node	15	15
	Saki Node	11	14
South Zone	Carnac Node	19	9
	Parel Node	29	29
	Zone 1 (South)	18	29
Cable Dept	Zone 2 (Central)	2	4
	Zone 3 (North)	3	4
	Kalyan Node	9	18
Kalyan Node Transmission	Transmission Line	21	67
	Total	200	276

Annexure 5 a(iv) - Awareness

Zone	Name of the Node	Total Emp.
Central Zone	Vikhroli Node	24
	Chembur Node	17
	Dharavi Node	23
North Zone	Salsette Node	36
	Borivli Node	29
	Saki Node	22
South Zone	Carnac Node	25
	Parel Node	32
Cable Dept	Zone 1 (South)	36
	Zone 2 (Central)	5
	Zone 3 (North)	5
Kalyan Node	Kalyan Node	23
	Transmission Line	105
Transmission	Total	382

ss Development

Number of employee covered in Awareness Sessions conducted in 2014-15 2015-16 & 2016-17	Gap (To be covered in 2017-18)
20	4
7	10
21	2
36	0
25	4
12	10
16	9
26	6
6	30
3	2
2	3
23	0
40	65
237	145

Annexure 5 a(iv) - Training for Awareness Development

Sr. No.	Name of the Department - Transmission	Number of Employees	No. of Employees Trained	Gap (ALL EMPLOYEES TO BE TRAINED)
	Details of Awareness sessions conducted including Exercise sessions			
1	3rd February, 2014 - Training Session for Management Officers of Transmission Unit at Parel R.S.			
2	6th February, 2014 - Training session for Management Officers of DCS Unit			
3	7th February, 2014 - Training Session for Non-Management Staff of Transmission Unit at Dharavi 198 (officers)+263 (Employees)+8 (FDA)=469		60+110+2=172	
4	7th February, 2014 - Training Session for Non-Management Staff of DCS Unit at Dharavi			
5	21st March, 2014 - In-house Exercise was conducted at Borivali R.S. for Transmission Division Officers and Staff participated			
6	20-05-2016 - Dharavi BCDMP awareness & Table top Exercise		12	
7	18-05-2016 - Carnac BCDMP awareness & Table top Exercise		11	
8	19-05-2016 - Salsette BCDMP awareness & Table top Exercise		15	
9	19-05-2016 - Borivli BCDMP awareness & Mock drill Exercise		16	
10	20-05-2016 - Chembur BCDMP awareness & Table top Exercise		9	
11	21-05-2016 - Kalyan BCDMP awareness & Table top Exercise		40	
12	25-05-2016 - Saki BCDMP awareness & Table top Exercise		9	
13	19-05-2016 - Parel BCDMP awareness & Table top Exercise		25	
14	06-08-2016- Ambernath - Monsoon preparedness Mock Drill		15	
15	14-06-2016-Dharavi - Fire Mock Drill		26	
16	14-06-2016-Salsette - DM & BCP Awareness		34	
17	16-02-2017-Dharavi-SCADA - DM & BCP Awareness		9	
18	16-02-2017-Kalyan - DM & BCP Awareness		36	

Annexure 5b – Notification List

Sr. No.	Position Titles to be notified	Name of Officer	Contact Number	Back up Position	Name of Officer	Contact Number	Mode of notification	Responsible designated authority for Notification	Escalation Level
1	MD	Mr Anil Sardana	9223333033	Executive Director	Mr Ashok Sethi	9223364750	Phone & Email	Chief - Transmission	MD
2	Executive Director	Mr Ashok Sethi	9223364750	Chief Corp Opn. (T&D)	Mr Ganesh Srinivasan	9820132283	Phone & Email	Chief - Transmission	ED
3	Chief-IA & RM & Chief Ethics Counsellor	Mr Parshuram Date	9223588035	Group Head -RM & BC	Ms Fallahzadeh Ketayun K	7506022030	Phone & Email	Chief - Transmission	MD
4	Head-Corporate Communication	Ms Singh Shalini	9223336815	Group Head - Comm. Ops. & Exec	Mr Doshi Rajendra N	9223398190	Phone & Email	Chief - Transmission	MD
5	Chief - Corporate Operations (T&D)	Mr Pillai Ramachandran	9223399174	Dy.Chief - Corp. Operations(T&D)	Mr Ganesh Srinivasan	9820132283	Phone & Email	Chief - Transmission	ED
6	Chief - Transmission	Mr. Sheth Rajan K	9223220825	Head – MIS & Capex	Mr. P D Gaikwad	9223220837	Phone & Email	Zonal Head	Chief - Corporate Operations (T&D)
7	BCDMP Coordinator	Mr. P D Gaikwad	9223220837					Nodal Head	Chief - Transmission
8	Respective NSMC engineers							Nodal Head	Chief - Transmission
9	Resident Testing Engineer of the Zone							Nodal Head	Chief - Transmission
10	Head – Transmission Automation	Mrs. B. Pisolkar	9223553185	Head – MIS & Capex	Mr. P D Gaikwad	9223220837	Phone & Email	Zonal Head	Chief - Transmission
11	Zonal Head (Respective zone)							Nodal Head	Chief - Transmission
12	Head - Performance Assurance	Mr Sanvatsarkar Suresh P	9223550619					Nodal Head	Chief - Transmission
13	Head - PSCC	Mr Bhaskaran Thatra K	9223550622	Head - Grid Operations	Mr Gadave Prakash R	9223553341	Phone & Email	Nodal Head	ED
14	Chief Medical Officer	Mr Chakraborty Utpal R	9223276270	Medical Officer (T)	Mr Lingayat Prabhunath R	9223348876	Phone & Email	Nodal Head	Chief - Transmission
15	Chief – Corporate Safety	Mr Chourey Vijay K	9223276279	Group Head - Safety (Transmission)	Mr Khawadkar Praveen K	9223501570	Phone & Email	Nodal Head	Chief - Transmission
16	Head Fire & Safety	Mr kale Sanjay V	9223220813	Lead Engineer - Fire & Safety	Mr Tomar Yogendra	7208676126	Phone & Email	Nodal Head	Chief - Transmission

TATA POWER COMPANY LIMITED

Annexure 5b(i) - BLUE SKY REPORT

Imp:- TO BE SENT BY SMS ON NNNNNNNNNN(Mobile Number)

Message Format

XXXX (Location) UNIT - **BLUE SKY REPORT** - DDMMYY AT 1600 HRS

Notes:-

- 1) This REPORT is required to be sent **EVERY DAY at 1600 hrs without fail** to MD (All Units) + ED (All Units) + CCOT (Respective Units only) + CC T&D (Respective Units only) + BCEO (All Units) + Division Head (Respective Units only) **by UNIT HEAD**
- 2) Report is to be **sent by SMS only**
- 3) **THIS REPORT IS TO BE SENT ONLY AND ONLY IF THERE IS NO L1 OR L2 OR L3 INCIDENT AT UNIT DURING LAST 24 HOURS**
- 4) In case of any incident the "Notification Process" as mentioned in the DMP for L 1 Incident and BCP Annexure 5 b for L 2 & L 3 Level Incidents should be followed

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Annexure 5b(ii) - NOTIFICATION

Imp:- TO BE SENT BY SMS

Message Format

XXXX (Location) UNIT - **BCP INVOKED** - DDMMYY AT NNNN HRS -
DUE TO AAAAAAAAAA (**Mention the Incident**) - LEVEL 2 / 3
FROM - B C CO-ORDINATOR / B C TEAM LEADER
(**select appropriate authority**)

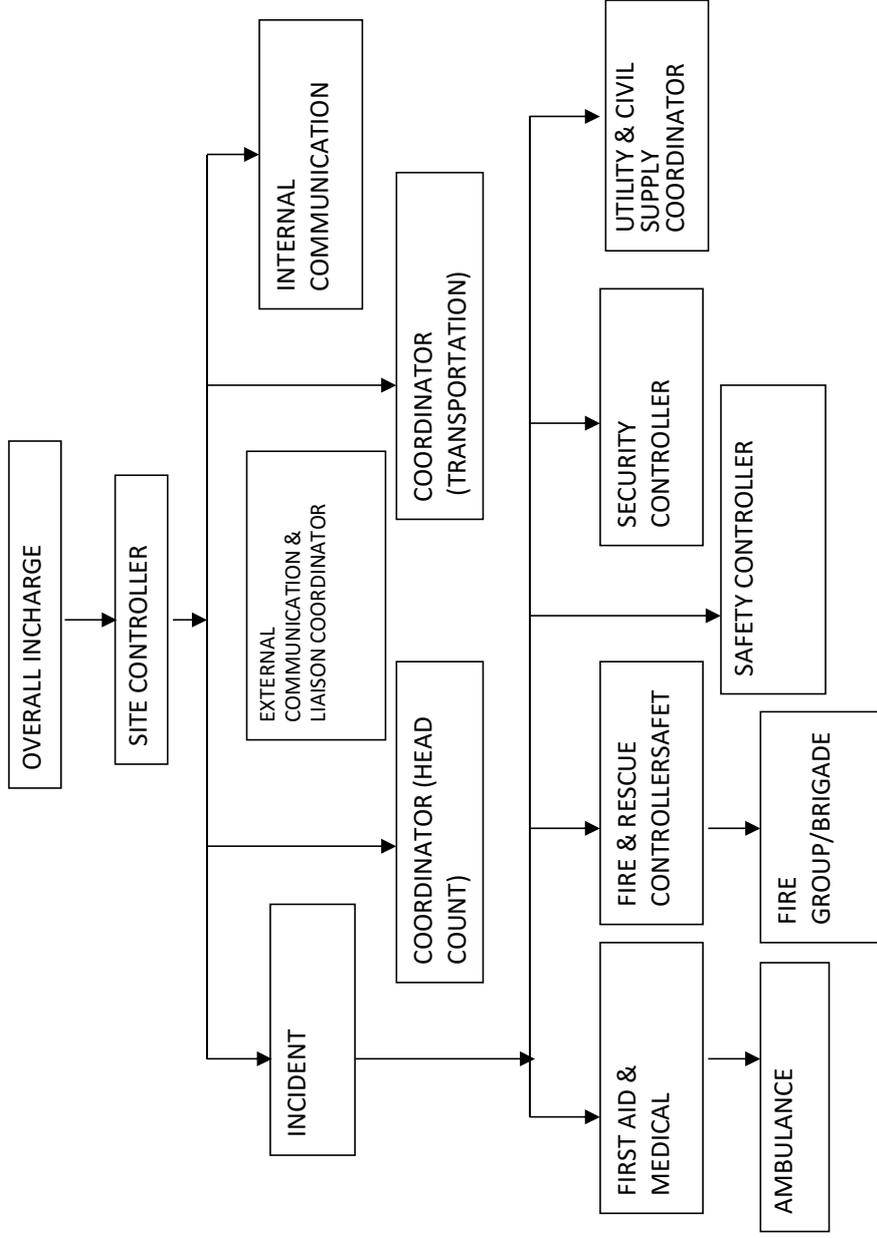
INCIDENT NUMBER	
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For Record Only

Notes:-

1. BCP Invocation Notification to be communicated to all officials / Persons mentioned in BCP Annexure 5 b.
2. Higher Authorities to be informed by BC Team Leader, as mentioned in the same Annexure

Annexure 5c – Notification Process



Annexure 5d(i) – DMP / BCP Invocation Criteria

DMP Invocation

- Note:
1. Disasters of L1 level will lead to invocation of DMP
 2. Disasters of L2 & L3 will lead to invocation of BCP

Sr. No	Conditions to declare Disaster (L1)	DMP Invocation Criteria	Plan Activator
1	Terrorism	Terrorist attack, Bomb Blast or firing to people by them	Site Controller
2	Sabotage	Intimation of sabotage, reporting of detection of Bomb or similar hazardous material	Site Controller
3	Flood	Flood water level above Red Mark (High Flood Alert) in RSS	Site Controller
5	Fire in ICT / Transformer	Fire is spreading rapidly, beyond control, spreading to adjacent area and to transformers and towards oil storage, if any.	Site Controller
6	Fire at Control Room		Site Controller
7	Fire in cable basement		Site Controller
8	Fire in switchgear room		Site Controller
9	Fire in relay / auxiliary panel room		Site Controller
10	Fire in Office		Site Controller
11	Stuck breaker during fault	Stuck breaker condition to HV bus in service	Site Controller
12	Control DC total failure	Control DC total failure alarm and no detection	Site Controller
13	Critical electrical relays & protection failure	Protection failure	Site Controller
14	Protection & interlock failure		Site Controller
15	Transformer explosion	Fire to Transformer, explosion damaging other equipment, injury to people	Site Controller
16	Electrical arc	Electrical arc causing Fire and start spreading rapidly in adjacent area and fire is beyond control	Site Controller
17	Switchyard equipment shattering	Explosion damaging other equipment, injury to people	Site Controller
18	Breaker flashover	Explosion damaging other equipment, injury to people. Flashover causing Fire and start spreading rapidly in adjacent area and fire is beyond control	Site Controller
19	Disturbances such as Strike, riots, picketing, curfew	Intimation from Police and Security with high extent of dangerous activities with weapons, stone & fire etc.	Site Controller

BCP Invocation

Sr. No	Conditions to declare	Level (L2 or L3)	BCP Invocation Criteria	Plan Activator
1	Serious damage to equipment	L2	Serious damage to equipment such as power transformers or GIS	Site Controller
2	Death	L3	Death of people due to attack or accident or equipment failure and reporting of serious injury to many people	Site Controller
3	Atmospheric Dryness	L3	Atmospheric Dryness Report	Site Controller
4	Electric Shock	L3	Electric Shock Report	Site Controller
5	Burning	L3	Burning after fire or chemical incident	Site Controller
6	Injury	L3	Injury due to attack or accident or equipment failure and reporting of serious injury to many people	Site Controller

Annexure 5d(ii) – Incidence Management Plan

Sr. No.	Risk (As named in RMS)	Sub-Risk	List of activities emanating for Incident Management	Responsibility	Target Time span for each activity (Min)	Estimated Cost / Expenditure for each activity (if any)	Resources required (Trained manpower, list of tools & equipment etc.)
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Annexure 5d(iii) – Emergency Evacuati



on Map

TATA POWER COMPANY LIMITED

Annexure 5d(v) - INCIDENT REPORT

Date	Time of Receipt of Information	Name of person reporting	Mode of Communication	Initials of Recipient
Incident Location			Type of Incident	
Action Taken			Siren Sounded at (Time)	
Informed to (Mention Name)			Time of Communication	Mode of Communication
Unit Head				
Site Controller				
Incident Controller				
Security In-charge				
Fire In-charge				
Medical In-charge				
Head count In-charge				
Charge Handed Over to Site Controller			Time of Handing Over	Incident no Allotted
				Initials of Person Taking Over

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Annexure 5d(vi) - REPORT BY INCIDENT CONTROLLER AND ACTION TAKEN AT EOC

Date	Name of Incident Controller		Time of Reporting		Mode of Communication	
Location of Incident			Charge Taken Over At (Time)			
Type of Incident		Siren Sounded At (Time)		Evacuation Done		
SITUATION REPORT						
Fire		Trapped Persons		Casualties		Dead, if any
Security Threat						
SERVICES ALREADY ON THE SPOT						
Fire Fighting Teams		First Aid Teams		Ambulances		Security Teams
Engineering Team			Safety Team			
SAFE ASSEMBLY AREA ACTIVATED						
Location	In-charge	Attendees		Area Cordoned Off		
ASSISTANCE REQUIRED						
Fire Fighting Teams		First Aid Teams		Ambulances		Security Teams
Engineering Team			Safety Team		Other Teams	

INCIDENT NUMBER	
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ACTION TAKEN AT EOC BY SITE CONTROLLER						
DEPLOY			INFORM TO			
Team	Number	Spl. Eqpt	Designation / Position		Name	
MUTUAL AID , IF REQUIRED						
Name of Company	Contact Details		Equipment Required		Number	
INSTRUCTIONS TO TEAM				Time of Instructions by Site Controller Communicated by		Time

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Annexure 5d(vii) - SITUATION REPORT BY INCIDENT CONTROLLER

Date	Name of Incident Controller	Time of Reporting		Mode of Communication
Location of Incident		Type of Incident		
SITUATION REPORT				
DAMAGE ASSESSED				
Fire	Trapped Persons	Casualties	Dead, if any	
Security Threat				
SERVICES ON THE SPOT				
Fire Fighting Teams	First Aid Teams	Ambulances	Security Teams	
Engineering Team	Safety Team	Others		
ACTION COMPLETED SO FAR				
Fire Fighting Action	No of Persons Rescued	Casualties Treated	Casualties sent to Hospital	
Security Threat			Dead Bodies Recovered	
MUTUAL AID TEAMS IN ACTION				
Name of Company		Equipment	Number	
SAFE ASSEMBLY AREA ACTIVATED				
Location	In-charge	Attendees at xxxx (Time)	Area Cordoned Off	
ADDITIONAL INFORMATION, IF ANY				
ADDITIONAL ASSISTANCE REQUIRED, IF ANY				
Fire Fighting Teams	First Aid Teams	Ambulances	Security Teams	
Engineering Team	Safety Team	Other Teams		

INCIDENT NUMBER	
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Note:-

TATA POWER COMPANY LIMITED

Annexure 5d(viii) - INCIDENT CLOSED REPORT AND SUBSEQUENT ACTION PLAN

Date	Name of Incident Controller	Time of Reporting	Mode of Communication
Location of Incident		Type of Incident	
SITUATION REPORT - INCIDENT CLOSED			
DAMAGE ASSESSED			
Fire	Trapped Persons	Casualties	Dead, if any
Security Threat			
SERVICES ON THE SPOT			
Fire Fighting Teams	First Aid Teams	Ambulances	Security Teams
Engineering Team	Safety Team	Mutual Aid Teams	
ACTION COMPLETED			
Fire Fighting Action	No of Persons Rescued	Casualties Treated	Casualties sent to Hospital
Security Threat			Dead Bodies Recovered
Evacuation		Any Other Information	
Attendees			
Missing			

**SITUATION UNDER CONTROL.
ALLOW ALL TEAMS TO RETURN TO THEIR POSITION**

INCIDENT NUMBER	
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ACTION TAKEN AT EOC BY SITE CONTROLLER			
1. INCIDENT CLOSED. Inform All DM Teams		Time of Instructions by Site Controller	
2. Inform Damage Assessment Team to proceed to Incident Site		Communicated by	Time
Name	Contact		
INSTRUCTIONS TO DAMAGE ASSESSMENT TEAM			

<p>Notes:-</p> <ol style="list-style-type: none"> 1. On completion of "Incident Management" Incident Controller shall send this Report to EOC 2. Site Controller in consultation with "Over all In-charge / Station Head" shall declare "incident Closed". 3. Site Controller shall direct "Damage Assessment Team" to proceed to the Incident site for assessing the damage
--

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Annexure 5d(ix) - DAMAGE ASSESSMENT REPORT AND ACTION AT EOC

Date	Name of D. A. Team Leader	Time of Reporting	Mode of Communication
Location of Incident		Type of Incident	
DAMAGE ASSESSMENT REPORT			
Equipment Damaged	Severity	Suggested Action	
		e.g. Replacement of part	
		e.g. Repairs can be undertaken	
		e.g. Cabling to be done	
Assessment of Level of Incident		L 2 or L 3	

INCIDENT NUMBER	
------------------------	--

ACTION TAKEN AT EOC BY SITE CONTROLLER / B C COORDINATOR		
1. INCIDENT Level	L 2 or L 3	Time of Instructions by Site Controller / B C COORDINATOR
2. INVOCATION OF BCP REQUIRED		
3. NOTIFICATION TO BE ISSUED.		

Annexure 5e – Resumption Plan

Sr. No.	Risk / Crisis / Disaster	Sub-Risk	Damaged Business Asset	List of Resumption activities to be performed	Timeline (Hrs)	Resources required (Trained manpower, list of tools & equipment etc.)	Responsibility
1	Major threats to stations from terrorism / sabotage		Transformers , switchgear, Lines,	Attend the equipment by Arranging breakdown			Head - PSCC Respective Nodal Head

Annexure 5g – Recovery Strategies

Sr. No.	Risk	Sub-Risk	Maximum Tolerable Period of Disruption (MTPD)	Minimum Business Continuity Objective (MBCO)	Recovery Strategies (Define Broad strategies which will be used to identify associated activities in Annex 5h)	Recovery Time Objective (RTO)	Method (Used for implementing the identified strategy)
1	Major threats to stations from terrorism / sabotage		4 Hrs	50%	1. Medical First aid 2. Arrange alternate source 3. Breakdown maintenance	2 Hrs	Emergency operating procedures
1a		Equipment (Transformers , switchgear , Lines, Towers, control panels) damage					
1b		Human loss / injury					
1c		Power supply interruption					
2	Natural disasters likeflood, draught, storm, earthquake		4 Hrs	50%	1. Medical First aid 2. Arrange alternate source 3. Breakdown maintenance 4. Arrange for Shelter, food and water	2 Hrs	Emergency operating procedures
2a		Equipment (Transformers , switchgear , Lines, Towers, control room, building, lift) damage					
2b		Human loss					
2c		Power supply interruption					
3	Risk of Fire				1. Medical First aid 2. Fire fighting & summon Fire brigade	2 Hrs	Emergency operating procedures
3a		Fire in ICT / Transformer,					
3b		Fire in Control room					

Annexure 5f – Alternate Sites

Sr. No.	Location	Site Address	Type of Site	Contact Details	
				Name	Number
1	MEOC Dharavi Receiving Station, Near Shalimar Industrial Estate, Matunga, Mumbai 400 019, Maharashtra, India	Alternate to MEOC Salsette Receiving Station, Lake Road, Bhandup, Mumbai 400 078, Maharashtra, India.	Warm site	Mr. P S Sawant	9223360216
2	Salsette Receiving Station, Lake Road, Bhandup, Mumbai 400 078, Maharashtra, India.	Dharavi Receiving Station, Near Shalimar Industrial Estate, Matunga, Mumbai 400 019, Maharashtra, India.	Warm site	Mr. K G Rane	9223307197
3	Carnac Receiving station 34 Sant Tukaram Road Carnac Bunder, Mumbai- 400009	Parel Receiving station Parel tank Road Mumbai-400033	Warm site	Mr. S K Vetcha	9223311480
4	Parel Receiving station Parel tank Road Mumbai-400033	Carnac Receiving station 34 Sant Tukaram Road Carnac Bunder, Mumbai- 400009	Warm site	Mr. S D Shitut	9223582856
5	Saki Sub station 42 Saki Vihar Road Andheri (East) Mumbai-400072	Borivli Receiving station Tata power house Road, Borivli (East), Mumbai-400066	Warm site	Mr. D Ravikumar	9223316591
6	Borivli Receiving station Tata power house Road, Borivli (East), Mumbai-400066	Saki Sub station 42 Saki Vihar Road Andheri (East) Mumbai-400072	Warm site	Mr. S V Shetye	9223303118
7	Vikhroli sub station Godrej Soap premises Vikhroli (East) Mumbai-400079	Chembur Receiving station PO Box HO 18801, RCF Premises , Gate No.2, Chembur, Mumbai-400074	Warm site	Mr. M D Dias	9223503884
8	Chembur Receiving station PO Box HO 18801, RCF Premises , Gate No.2, Chembur, Mumbai-400074	Vikhroli sub station Godrej Soap premises Vikhroli (East) Mumbai-400079	Warm site	Mr. V B Gawali	9223500434
9	Kalyan Receiving Station shill Road, Netivali, Kalyan Dist- Thane PIN- 421301	Salsette Receiving Station, Lake Road, Bhandup, Mumbai 400 078, Maharashtra, India.	Warm site	Mr. K K Sajivan	9223306186

- 1) Through own standby resource capacity in the same R/S.
- 2) Through alternate feeders from another building.(As in case of Carnac A & B blocks for BEST)

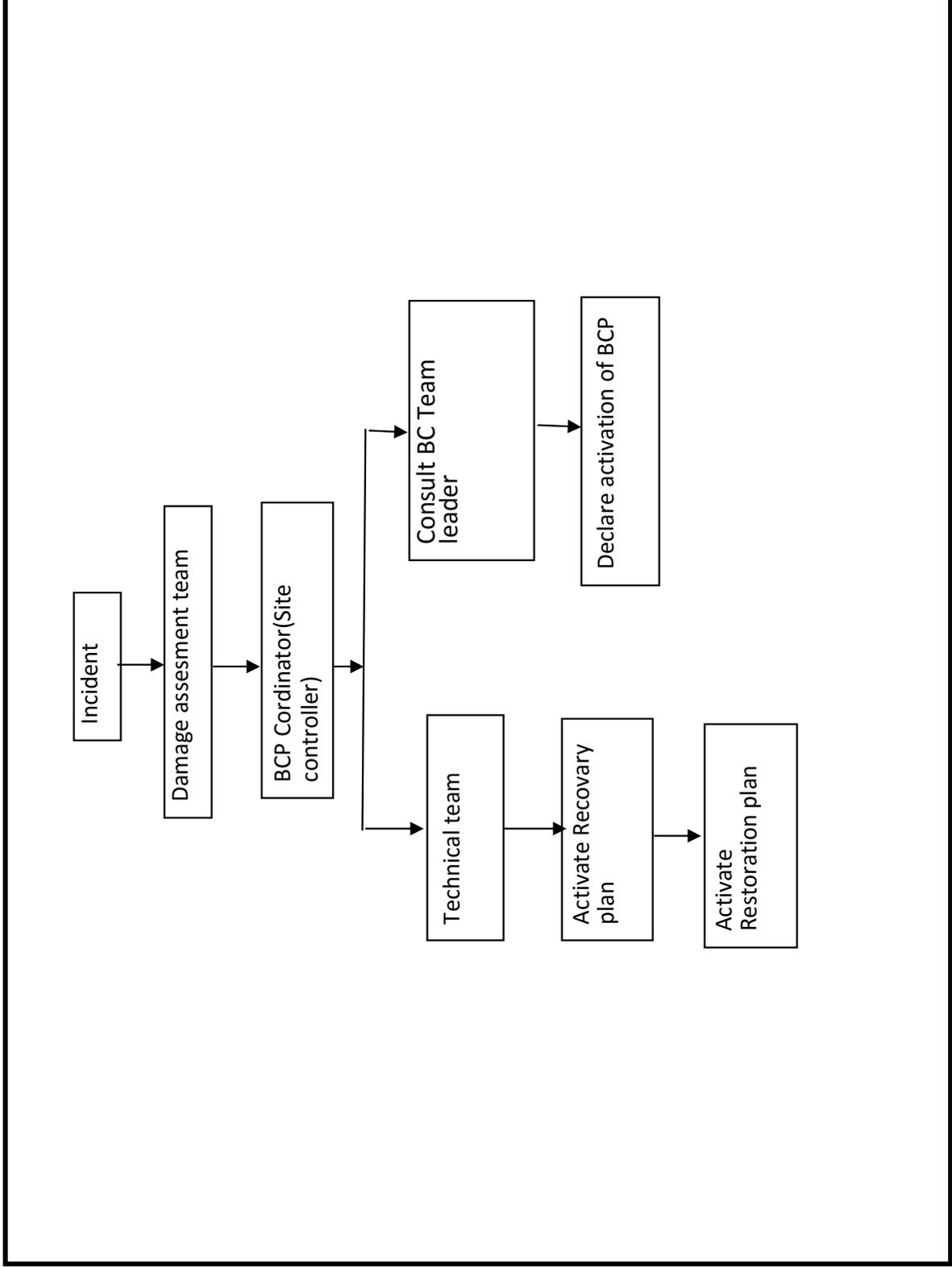
- 1) Through alternate feeders from other Tata Power R/S.
- 2) Extending reach of zones as in Railways (By consumer).
- 3) LT network operational changes (By consumer BEST, R-Infra etc.)

PSCC Control Room	
PSCC : Intercom	022-6717 5377
PSCC : IP phone	022-6717 5378
	022-67177333
PSCC :Land lines	022-2554 3331
	022-6668 7091
	022-6525 3222
Operation - In Charge : Intercom	022-6717 5379
Operation - In Charge : Land line	022-66687093

Note:

Provide details of the alternate sites which can provide part or full support in case of BCP is invoked for the main plant

Annexure 5h(i) – Business Continuity Process Flow Chart



TATA POWER COMPANY LIMITED

Annexure 5h(iii) - REPORT TO HIGHER AUTHORITIES

Date	Name of Unit / Location	Time of Reporting	Mode of Communication
Location of Incident		Type of Incident	
		Level of Incident	L 2 or L 3
Casualties		No of persons Rescued	
No of persons Hospitalized		Dead, if any	
Probable Financial Loss			
DAMAGE ASSESSMENT REPORT			
Equipment Damaged	Severity	Action Proposed	
		e.g. Replacement of part	
		e.g. Repairs can be undertaken	
		e.g. Cabelling to be done	
MTPD as per BCP		MBCO as per BCP	RTO as per BCP
Location of Alternate Site/s activated			
Location		In-charge	
Additional Resources Required			
Manpower		Vendor Support Mobilized	
		Name	Type of support
Equipment		e.g. Manpower	
		e.g. Equipment	
Spares			
Operations Commenced At		Operations likely to be completed At	

INCIDENT NUMBER	
For Record Only	

Annexure 5i – Restoration Plan

Sr. No.	Risk	Sub-Risk	Responsible Team	Supporting Vendor	Expected performance parameters from Vendor	Parallel run with Alternate Site / standards	Plan Time for completion (days)	Plan Resources
1	Major threats to stations from terrorism / sabotage		Respective nodal NMMC	OEM (Toshiba / ABB / Siemens/ CGL etc), Aditya Vidyut, Bhushan Steel etc	1] Repairs as per PO. 2] Commissioning services as per pre set standards.	No	1-2 Months in case of repairs; 6-9 Months for replacement.	1] Budget. 2] Internal skilled manpower for erection, commissioning, testing. 3] OEM services 4] External services for lifting, shifting.
1a		Equipment (Transformers , switchgear , Lines, Towers, control panels) damage						
1b		Human loss / injury						
1c		Power supply interruption						
2	Natural disasters like flood, draught, storm, earthquake		Respective nodal NMMC	OEM (Toshiba / ABB / Siemens/ CGL etc), Aditya Vidyut, Bhushan Steel etc	1] Repairs as per PO. 2] Commissioning services as per pre set standards.	No	1-2 Months in case of repairs; 6-9 Months for replacement.	1] Budget. 2] Internal skilled manpower for erection, commissioning, testing. 3] OEM services 4] External services for lifting, shifting.
2a		Equipment (Transformers , switchgear , Lines, Towers, control room, building, lift) damage						
2b		Human loss						
2c		Power supply interruption						
3	Risk of Fire		Respective nodal NMMC	OEM (Toshiba / ABB / Siemens/ CGL etc), Aditya Vidyut, Bhushan Steel etc	1] Repairs as per PO. 2] Commissioning services as per pre set standards.	No	1-2 Months in case of repairs; 6-9 Months for replacement.	1] Budget. 2] Internal skilled manpower for erection, commissioning, testing. 3] OEM services 4] External services for lifting, shifting.
3a		Fire in ICT / Transformer,						
3b		Fire in Control room						
3c		Fire in cable basement,						
3d		Fire in switchgear room,						
3e		Fire in relay / auxiliary room,						
3f		Fire in Office						
3g		Human loss / injury						
3h		Fire below transmission line						
4	Major Operational/catastrophic failures of critical equipment		Respective nodal NMMC	OEM (Toshiba / ABB / Siemens/ CGL etc), Aditya Vidyut, Bhushan Steel etc	1] Repairs as per PO. 2] Commissioning services as per pre set standards.	No	1-2 Months in case of repairs; 6-9 Months for replacement.	1] Budget. 2] Internal skilled manpower for erection, commissioning, testing. 3] OEM services 4] External services for lifting, shifting.
4a		Equipment (Transformers , switchgear , Lines, Towers) damage						
4b		Power supply interruption						
4c		Failure of connected equipment or equipment in vicinity						
4d		Fire						
4e		Accidents						
4f		Human Loss						
5	Accidents due to activity in operations area		Respective nodal NMMC	OEM (Toshiba / ABB / Siemens/ CGL etc), Aditya Vidyut, Bhushan Steel etc	1] Repairs as per PO. 2] Commissioning services as per pre set standards.	No	1-2 Months in case of repairs; 6-9 Months for replacement.	1] Approved budget. 2] Internal skilled manpower for erection, commissioning, testing, cable termination, cable jointing. 3] OEM services. 4] External services for lifting, shifting.
5a		Fearful employees						
5b		Riots						
5c		Human injury / disability						
6	Strike \ Riots \ Picketing \ Curfew affecting manning of plant		Respective nodal NMMC	NA	NA	No	NA	Security Services
6a		Shortage of Manpower						
6b		Shortage of food and water						
7	Exposure to operation from neighbors	Exposure to Gas leakage	Respective nodal NMMC	NA	NA	No	NA	Trained manpower and Experienced Security

TATA POWER COMPANY LIMITED

Annexure 5i(i) - ACTION COMPLETED REPORT TO HIGHER AUTHORITIES

Date	Name of Unit / Location	Time of Reporting	Mode of Communication	
Location of Incident		Type of Incident		
		Level of Incident	e.g. L 2 or L 3	
Casualties		No of persons		
No of persons Hospitalized		Rescued		
		Dead, if any		
DAMAGE ASSESSMENT REPORT				
Equipment Damaged			Severity	
MTPD as per BCP		MBCO as per BCP		RTO as per BCP
Location of Alternate Site/s activated				
Location			In-charge	
ACTION TAKEN REPORT				
ACTION TAKEN		Equipment Used		Vendor Support Requisitioned
Operations Commenced At		Operations completed At		Business Loss

OPERATIONS COMPLETED.

ALTERNATE SITE/S CLOSED. SITUATION NORMAL

INCIDENT NUMBER	
For Record Only	

Annexure 5j – Statement of Acceptable Levels and Timeframes

S.No	Risk	Sub-Risk	MTPD	MBCO	RTO	Asumptions & limitations
1	Major threats to stations from terrorism / sabotage		4 Hrs	50%	2 Hrs	Availability of alternate source, Medical facilities, trained manpower and spares.
1a		Equipment (Transformers , switchgear , Lines, Towers, control panels) damage				
1b		Human loss / injury				
1c		Power supply interruption				
2	Natural disasters likeflood, draught, storm, earthquake		4 Hrs	50%	2 Hrs	Availability of alternate source, Medical facilities, trained manpower and spares.
2a		Equipment (Transformers , switchgear , Lines, Towers, control room, building, lift) damage				
2b		Human loss				
2c		Power supply interruption				
3	Risk of Fire		4 Hrs	50%	2 Hrs	Availability of alternate source, Medical facilities, trained manpower and spares.
3a		Fire in ICT / Transformer,				
3b		Fire in Control room				
3c		Fire in cable basement,				
3d		Fire in switchgear room,				
3e		Fire in relay / auxiliary room,				
3f		Fire in Office				
3g		Human loss / injury				
3h		Fire below transmission line				
4	Major Operational/catastrophic failures of critical equipment		4 Hrs	50%	2 Hrs	Availability of alternate source, Medical facilities, trained manpower and spares.
4a		Equipment (Transformers , switchgear , Lines, Towers) damage				
4b		Power supply interruption				
4c		Failure of connected equipment or equipment in vicinity				
4d		Fire				
4e		Accidents				
4f		Human Loss				
5	Accidents due to activity in operations area		4 Hrs	50%	2 Hrs	Availability of alternate source, Medical facilities, trained manpower and spares.
5a		Fearful employees				
5b		Riots				
5c		Human injury / disability				
6	Strike \ Riots \ Picketing \ Curfew affecting manning of plant		4 Hrs	50%	2 Hrs	Impact is outside the work premise Experienced Security is Available
6a		Shortage of Manpower				
6b		Shortage of food and water				
7	Exposure to operation from neighbors	Exposure to Gas leakage	4 Hrs	50%	2 Hrs	Trained manpower and Experienced Security is Available

Notes -

MTPD - Maximum Tolerable Period of Disruption

MBCO - Minimum Business Continuity Objective

RTO - Recovery Time Objective



No.	Risk	Risk type (Critical/ High/ Medium/low)	Year -2016 - 17		
			Test 1	Test 2	Test 3
1	Risk of Fire	High (L2)	Sep-16	Dec-16	Feb-17
2	Major threat to stations from terrorism / Sabotage	Critical (L3)	Sep-16	Dec-16	Feb-17
3	Natural disasters like Flood, draught, storms, earthquake	Critical (L3)	Jun-16	---	Nov-16
4	Natural disasters like Flood, draught, storms, earthquake	Critical (L3)	May-16	Sep-16	Jan-17

Annexure 6a – Test plan

Type of Exercise	Incident / Scenario	Test Objectives
(Mock drill / table top)		
Mock drill / table Top	Imaginary situation of Fire to Transformer / LT switchgear with Casualties	Communication, Response, RTO, MBCO, MTPD, Preparedness of organisation, Capacity building
Mock drill	1. Imaginary situation of terrorist attack with severe damage to equipment, Fire with Casualties 2. Sabotage in receiving station	Communication, Response, RTO, MBCO, MTPD, Preparedness of organisation, Capacity building
Mock drill / Table top	Imaginary situation of Flood in Receiving station causing damage to equipment with Casualties	Communication, Response, RTO, MBCO, MTPD, Preparedness of organisation, Capacity building
Table top	Imaginary situation of earthquake in Receiving station causing damage to equipment with Casualties	Communication, Response, RTO, MBCO, MTPD, Preparedness of organisation, Capacity building



Number of Participants	List of activities to be carried out	Expected Results
About 50	1. Plan the exercise & obtain approval of Chief Transmission. 2. Form team to execute, monitor and capture learnings. Inform the team accordingly. 3. On given date and time, Take Head count of people inside the premises and create alert by three wailing siren.	RTO ≤ 2 Hrs MBCO ≥ 50% MTPD ≤ 4 Hrs
About 50	4. Monitor activities such as formation of DM and BCP teams, their response, communication, completion of activated with discipline including head count. Check invocation of other relevant BC plan. 5. Measure all times for RTO, MBCO, MTPD.	RTO ≤ 2 Hrs MBCO ≥ 50% MTPD ≤ 4 Hrs
About 40	6. Declare Closure of exercise through all clear siren. 7. Prepare report on the exercise giving details, analysis, learnings and conclusion. 8. Review the findings in next BCBMP Review meeting.	RTO ≤ 2 Hrs MBCO ≥ 50% MTPD ≤ 4 Hrs
About 30		RTO ≤ 2 Hrs MBCO ≥ 50% MTPD ≤ 4 Hrs



Expected timeframe for the activity	Responsibility of activity	Other participants for the activity
1.5 Hour	Nodal Head	Security, Other business Unit, if any.
1.5 Hour	Nodal Head & Group Head Security (T&D)	Security, Other business Unit, if any.
1.5 Hour	Nodal Head	Security, Other business Unit, if any.
1.5 Hour	Nodal Head	Security, other receiving station if planned, Other business Unit, if any.

Annexure 6 b - DMP & BCP Exercise & Testing Report

THE TATA POWER COMPANY LTD		DMP & BCP TESTING REPORT		6 b
Organizational Details: TRANSMISSION				
Date & Time	19 May 2016 1015hrs			
Scenario including number and type of casualties , Type of Fire and Head count procedure	Suspected parcel found near scrap yard at Borivali Receiving station. Type of casualties Nil. There was no fire. Head count procedure carried out by respective safety wardens.			
Participants	Position	Name		
	Site Controller	Mr. Shetye Suhas V		
	Incident Controller	Mr. Shetye Suhas V		
	Communication officer	Mr. Sah Mithilesh		
	Transport Officer	NA		
	Liaison officer	Sh. Chandrakant Nail		
	Security Team (QRT) Head	Mr Sanjay Malwadkar		
	Rescue & Fire Team Head	NA		
	First Aid Team – Head	NA		
	Safety Controller	Mr. Sah Mithilesh		
	Safe Assembly Area / Shelter In-charge -1	Mr. Sah Mithilesh		
	Safe Assembly Area / Shelter In-charge - 2	NA		
	Head –count In-charge	Mr. Sah Mithilesh		
	Damage Assessment team	NA		
	Technical team	ATS kasturba Police station		
	Operations team	Security team Tata Power Anti Terrorist squad from kasturba Police station		
	BC team	Mr. Shetye Suhas V Mr. S G Chaudhary		
Name of Observers	Mr. K K Datar			
Operational Details				
List of expected activities to be carried out	Expected Response Time in Minutes	Performance		
		Actual sequence of activities	Actual Time	Actual Response Time
Suspected item detected	NA	Suspected parcel detected	1015	
Emergency siren to be blown	01 Minutes	Emergency siren blown	1016	01 Minutes
Security control room Dharavi and Police control room to be informed	01 Minutes	Security control room and Kasturba Police station informed	1017	01 Minutes
First person to reach safe assembly area	03 Minutes	First person arrived at safe assembly area	1019	02 Minutes
Last person to reach safe assembly area	04 Minutes	Last person arrived at safe assembly area	1023	04 Minutes
Site Inspection to be carried out	10 Minutes	Area Inspection by ATS team	1034	11 Minutes
Neutrlaising of Suspected parcel	120 Minutes	Suspected parcel checked and no explosive found. All clear signal given.	1039	05 Minutes
Briefing by Police/ Security expert	07 Minutes	Briefing by Police Inspector Rajendra Vittal Mandare	1046	07 Minutes
De Briefing by Site controller	05 Minutes	Mr.Shetey Suhas V	1051	05 Minutes
CONCLUSION:				
		1. Total 104 Company employees and contractor		

Annexure 7 a - Disruptive incident analysis report

Date of Incident :

Description of Disruptive Incident :

Timeline for Damage Assessment

Plan	Actual	Gaps Identified	Description of NC or Observation during Disruptive Incident

Timeline for Invocation of BCP (RTO)

Plan	Actual	Gaps Identified	Description of NC or Observation during Disruptive Incident

Requirement of Resources

Plan	Actual	Gaps Identified	Description of NC or Observation during Disruptive Incident

Activities undertaken

Plan	Actual	Gaps Identified	Description of NC or Observation during Disruptive Incident

Annexure 7 c - Internal Audit Report

Report No.:

Location:

Auditor :

Audit Scope : As per ISO 22301:2012 Clauses

Audit Date :

Sr. No.	Check Point	Description	Clause No	Annexure No	Findings & Evidence	NC / Observations
1	Previous Audit Report	Effective closure of observations and NC's. Check for effective implementation of internal audit requirements as mentioned in the previous report.	Clause 9.2	Annexure 7 b and 7 b (i)		
2	Corrective action for Non conformity / Observations	1) Have the corrective actions for non-conformities and observations been identified and implemented in the BCMS and is reported at Management review? 2) Do the reviews result in an improvement to the BCMS ?	Clause 10.1 & 10.2	Annexure 7 b and 7 b (i)		
3	Business Continuity Management System Analysis	Context of Organisation - 1) Have the activities, functions, services, relationship with interested parties and potential impacts of the disruptive incidents are documented. 2) Have legal, regulatory and other requirements documented 3) Have the needs and expectations of the interested parties identified and documented ?	Clause 4, 4.1, 4.2, 4.3 & 4.4	Annexure 1 b, 1 c, 1 d, 3 a, 3b and 3 c		

<p>BCMS Scope - 1) Is the scope of BCMS clear and documented ? 2) Are exclusions mentioned in the scope and are they valid ? 3) Have the options for risk treatment been identified and evaluated</p>	<p>Clause 4.3.2 & 4.4</p>	<p>BCP Document</p>	
<p>Leadership - 1) Have you observed the involvement, Leadership and commitment of the Management during the audit. Whether this commitment is documented appropriately 2) Have the roles, responsibilities and authorities for BCMS Teams properly defined. 3) Is management involvement seen through review process ?</p>	<p>Clause 5, 5.1, 5.2, 5.3 & 5.4</p>	<p>Annexure 2 a, 2 b, 2 c, 2 d and 2 e</p>	
<p>Planning - 1) Is the Risk Analysis done appropriately to meet BC Objectives 2) Is Risk appetite decided 3) Is the Business Impact Analysis done properly 4) Does the BIA enable prioritization of timeframes for resuming each activity (RTO) ? 5) Is the MBCO for each activity been decided ? 6) Have measurable BC Objectives been established, documented and communicated to all concerned ?</p>	<p>BCMS - Clause 6, 6.1, 6.2, 8.2.2 & 8.2.3</p>	<p>Annexure 3 d, 3 d (i), 4 a, 4 a (i), 4 a (ii) and 4b</p>	

<p>Support -</p> <ol style="list-style-type: none"> 1) Have the resources identified and additional requirements decided and action planned decided ? 2) Has the procedure for notifying disasters and action to be taken defined ? 3) Has the procedure for BCMS Awareness & Competence defined ? 4) Is every one within organization aware of BCM Policy and their involvement in implementing it ? 5) Have the communication needs for BCMS analysed and gaps identified ? 6) Have the structured procedures decided and communicated to all concerned ? 6) Are the communication procedures tested 	<p>BCMS - Clause 7, 7.1, 7.2, 7.3 & 7.4</p>	<p>Annexure 5 a, 5 a (i), 5 a (ii), 5 a (iii), 5 a (iv), 5 b, 5 c and 5 d (i)</p>	
<p>Operation -</p> <ol style="list-style-type: none"> 1) Has the Business Impact Analysis done appropriately to cover all critical processes / functions ? 2) Is there evidence of prioritizing risk treatments with costs identified ? 3) Is the BC Strategy based on the outputs of BIA and RA ? 4) Does the BC Strategy provide for mitigating, responding to and managing disruptive incidents ? 5) What is the status of "Proposed" mitigation measures ? 6) Have prioritized timeframes been set for Incident Management, Resumption, Recovery 	<p>Clause 8, 8.1, 8.2, 8.2.1, 8.2.2, 8.2.3, 8.3, 8.3.1, 8.3.2 & 8.3.3</p>	<p>Annexure 3 d, 3 d (i), 4 a, 4 a (i), 4 a (ii), 5a, 5 d (ii), 5 e, 5 g, 5 h and 5 i</p>	

	<p>Procedure -</p> <ol style="list-style-type: none"> 1) Is the Incident Response Structure and Incident Management Plan prepared and the concerned people are trained ? 2) Is the Warning, Communication and Notification procedure decided ? 3) Is the procedure for documenting vital information about incident, action taken and decisions made is defined and tested periodically ? 5) Are Business Continuity Plan viz Resumption Plan, Recovery Plan & Restoration Plan, including timeline mentioned at every level of disruptive incident prepared ? 6) Do these plans contain essential information to use it effectively ? 	<p>8.4, 8.4.1, 8.4.2, 8.4.3, 8.4.4 & 8.4.5</p>	<p>Annexure 2 e, 5 d (i), 5 d (ii), 5 d (iii), 5 b, 5 c, 5 e, 5 h, 5 h (i), 5 j and 5 i</p>	
4	<p>Exercising and Testing</p> <ol style="list-style-type: none"> 1) Is the procedure laid down appropriate for the Unit / Location BC Objectives ? 2) Are the test exercise, post-previous audit, designed to cover all Risks identified for the organization ? 2) What is the level of performance during the "In-house Exercises" ? 3) Evaluate the performance during "Actual" Incident / Disaster, post-previous audit, as they occur. 4) Check the "Incident Investigation Reports" as prepared by the Unit / Location for "Gap Analysis" and corrective action planned. 	<p>Annexure 8.5 and 9.1.2</p>	<p>Annexure 6a, and 6 b</p>	

5	Performance Evaluation	Monitoring & Evaluation 1) Have the performance evaluation metrics and periodicity of monitoring defined ? 2) Has the procedure for monitoring BCMS been documented ? 3) Are reviews conducted periodically ? 4) Are post-incident reviews undertaken ? 5) Are internal audits conducted periodically to check effectiveness of BCMS ? 6) Are corrective actions implemented on the internal audit observations ?	Clause 9.1.1 & 9.1.2	Annexure 7 d	
		Internal Audit 1) Are internal audits conducted periodically to check effectiveness of BCMS ? 2) Are corrective actions implemented on the internal audit observations ?	Clause 9.2	Annexure 7 c and 7 c (i)	
		Management Review 1) Do management undertake periodic review of the BCMS ? 2) Does the Management review of BCMS identify changes and improvements ? 3) Are MRM minutes documented and communicated to concerned people for corrective actions and improvements ?	Clause 9.3	Annexure 7 e and 7 b (i)	
		Corrective Actions 1) Have the Corrective Actions Plan for non-conformities and observations prepared and implemented ? 2) Does the status of corrective actions is reported to management for review ?	Clause 10	Annexure 7 b and 7 b (i)	
6	Mandatory Documents	Check Mandatory Documents as given in BCMS Standards' Requirement keeping in mind the "NOTE" included in the clause.	Clause 7.5.1 & 7.5.2	Check List	

		Check the "Timelines" mentioned in the various documents and do you feel they are appropriate in the present "scenario / process".	Clause 8.4.4 - e	Check List		
7	Additional Documents	Check the "Additional Documents" prepared by the Unit / Location. Check whether they are "really required" for the Location / Process	Clause 7.5	Check List		
8	Document Control	Check revision in documents, DCR, list of documents and control of standards if any. check documents are available in respective folders in Anant .	7.5.3 (b)	BCP Document		
1. Remarks of Auditor:						

Annexure 7d - Performance Evaluation (Excellarator) As on:

Sr. No.	Parameter	Revised BCP Objectives	ISO 22301 Standard Clause No	Activity to be conducted by location			Max. Points
				Frequency of filling Annexure	Annexure No.	Scoring methodology	
1	Context of Organisation	Document critical information such as (a) it's activities, functions, services, products, partnerships, supply chains, relationships with interested parties and needs of interested parties as required for implementation of the BCMS and (b) to meet the legal and regulatory & other requirements	4	Half yearly (Review in Jan & July)	a) Ann - 1 b and 1 c b) Ann - 1 d	(a) Yes - 10 Points No - NIL (b) Yes - 10 Points No - NIL	20
2	Performance Evaluation (BCMS)	Develop and establish business continuity policy, objectives, targets, controls, processes and procedures for managing disruptive incidents that affects the organization's overall policies and objectives	5 + 6	Half yearly (Review in Jan & July)	1) BCP Text 2) Ann - 3 d 3) Ann - 4 a 4) Ann - 5 a 5) Ann - 5 g 6) Ann - 5 h 7) Ann - 5j	Yes - 5 Points No - NIL	10
		Maintain documented process that systematically evaluates the risk of disruptive incidents, determine appropriate strategy for mitigating, responding to and managing impacts.	8	Half yearly (Review in Jan & July)	1) Ann 3 d 2) Ann 4 a 3) Ann 5 a 4) Ann 5 g 5) Ann 5 h	Yes - 5 Points No - NIL	
3	Resilience	Determine and provide the resources needed for the establishment, implementation, maintenance and continual improvements of the BCMS	7	Half yearly (Review in Jan & July)	1) Ann 5 a (i) 2) Ann 5 a (ii)	Yes - 10 Points No - NIL	20
		Provide appropriate (a) Competency Training and (b) Awareness Training of the BCMS to further develop the business continuity culture.	7.2 + 7.3	Bi monthly (Review in Jan, Mar, May, July, Sept, Nov)	a) Ann 5 a (iii) b) Ann 5 a (iv)	(a) Yes - 5 Points No - NIL (b) Yes - 5 Points No - NIL	
4	Communication	Determine proactive measures, including warning communication procedure that shorten the period of disruption	8	Half yearly (Review in Jan & July)	(1) Ann 5 b & 5 c (2) Ann 5 h (i)	(1) Int Commn Procedure Yes - 5 Points No NIL (2) Ext Comm Pro Yes - 5 Points No - NIL	10
5	Response	Develop appropriate plans mentioning critical decisions and steps with an escalation mechanism for Incident Response, Resumption, Recovery and Restoration to manage a disruptive incident, including procedure for invocation of the BCP	8	Half yearly (Review in Jan & July)	1) Ann 5 d (i) 2) Ann 5 d (ii) 3) Ann 5 d (iii) 4) Ann 5 e 5) Ann 5 f 6) Ann 5 h 7) Ann 5 i	Yes - 15 Points No - Nil	15
6	Exercising	Exercise and test business continuity procedure (a) to ensure its consistency with business continuity objectives and review (b) the outcomes within the context of promoting continual improvements	8.5 + 10	Bi monthly (Review in Jan, Mar, May, July, Sept, Nov)	1) Ann 6 a 2) Ann 6 b 3) Ann 7 b	(a) Every Bi- monthly Exercise - 2.5 Points each Max - 15 Points (b) Review after each exercise - Yes - 1 Point for each review No - NIL	20
7	Performance Evaluation & Management Review	Review the BCMS at planned intervals to ensure its continuing suitability, adequacy and effectiveness to achieve improvement in BCMS performance.	5.2 + 9.3 + 10.2	Half yearly (Review in Jan & July)	1) Ann 7 b (i) 2) Ann 7 c 3) Ann 7 d	Yes - 5 Points No - NIL	5
						TOTAL	100

Note:

This sheet is to be filled by Internal Auditor

Annexure 7 c(i) - Check List of Mandatory Documents

Report No.:
Location:
Auditor :
Audit Scope : As per ISO 22301:2012 Clauses
Audit Date :

MANDATORY DOCUMENTS

Documents and records	ISO 22301 clause no	Checklist	Yes / No
Determining the context of the organization	4.1	BCP Annexure 1b / 1c/ 3a / 3b/ 3c / 3d and 4a	
List of legal, regulatory and other requirements	4.2.2	BCP Annexure 1d	
Scope of the BCMS (Business Continuity Management System) and explanation of exclusions	4.3	BCP Text	
Business Continuity Policy	5.3	BCP Text	
Business Continuity Objectives	6.2	BCP Text	
Competences of personnel	7.2	BCP Annexure 5 a (iii)	
Communication with interested parties	7.4	BCP Annexure 5 b and 5 c	
Procedure for control of Documented information	7.5	BCP Text	
Process for business impact analysis and risk assessment	8.2.1	BCP Annexure 4 b	
Results of business impact analysis	8.2.2	BCP Annexure 4 a / 4 a (i)	
Results of risk assessment	8.2.3	BCP Annexure 3 d / 3 d (i)	
Business Continuity procedures	8.4.1	BCP Annexure 5 d(ii) / 5 e / 5 h / 5 j	
Incident Response Procedures	8.4.2	BCP Annexure 5 d (ii)	
Decision whether the risks and impacts are to be communicated externally	8.4.2	BCP Annexure 5 d (i)	
Communication with interested parties, including the national or regional risk advisory system	8.4.3	BCP Annexure 5 b + 5 c	
Records of important information about the incident, actions taken and decisions made	8.4.3	BCP Annexure 7 a	
Procedures for responding to disruptive incidents	8.4.4	BCP Annexure 5 d(ii) / 5 e / 5 h / 5 j	
Procedures for restoring and returning business from temporary measures	8.4.5	BCP Annexure 5 i	
Business Continuity Exercises / Testing	8.5	BCP Annexure 6 a	
Post-exercise reports	8.5	BCP Annexure 6 b	
Data and Results of Monitoring and Measurement	9.1.1	BCP Annexure 7 d	
Result of post-incident Review	9.1.2	BCP Annexure 7a	
Results of Internal Audit	9.2	BCP Annexure 7 c and 7 c (i)	
Results of Management Review	9.3	BCP Annexure 7 e	
Nature of Non-conformities and action taken	10.1	BCP Annexure 7 b and 7 b (i)	

ADDITIONAL DOCUMENTS MAINTAINED

Documents and records	ISO 22301 clause no	Yes / No
Implementation Plan for achieving Business Continuity Objectives	6.2	BCP Annexure 2
Training and Awareness Plan	7.2 + 7.3	BCP Annexure 5 a (iv)
Business Continuity Strategy	8.3	BCP Annexure 5 g
Risk Mitigation Plan	8.3.3	BCP Annexure 5 a
Incident Scenarios	8.5	Risks are sub-classified in scenarios

Annexure 7 e
Minutes of Management Review Meeting
Held On :23-12-2015

Date		Venue	Salsette Conference Room
23-12-2015			
Attendees	Mr. Arvind singh		
	M/s K K Rao, Muraleedharan T, Dhapare Suhas C, Pisolkar Bhagyashree S, Sequeira Donald, Sirdesai Narayan R		
	M/s Gaikwad Pravin D, Atre Hemant A, Bhangaonkar Shrikant G, Nene Mahesh V, Rane Krishna G, Ravikumar D, Sajivan Kanattil Karunan, Sanvatsarkar Suresh P, Shetye Suhas, V, Shitut Suhas D, Vetcha S K, Dandekar Vijay R		
Agenda: (Ref - Clause 9.3)			
1	Status of actions from previous management reviews		
2	Changes in internal and external issues for BCMS, if any		
3	Information on BCMS performance, including trends a) Corrective actions b) Monitoring and measurement of evaluation results c) BCP Exercising & Testing Results f) Risks and issues not adequately addressed g) Lesson learned and actions arising from disruptive incidents h) Review of Merged document of BCDMP & its approval i) Review of Annexures of BCDMP Doc & its approval j) Training status review		
Decisions:			
1	Merged document of BCDMP was reviewed & updated.		
2	BCDMP Annexures were reviewed & updated.		
3	Training plan prepared		
Other Points , if any			
	Nil		
Signature:			
Name	Mr. Arvind Singh		
BC Team Leader -Mr. Arvind Singh			
Transmission Division			