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Electricity

INDIA'S  
NO. 1  
POWER  
UTILITY



# DISASTER MANAGEMENT PLAN 2024



Adani Electricity Mumbai Limited  
Devidas Lane, Off SVP Road, Borivali (W), Mumbai - 400 103

We are India's No.1 utility company according to Ministry of Power's 12<sup>th</sup> Annual Integrated Rating and Ranking for Power Distribution Utilities, a report prepared by McKinsey & Company.

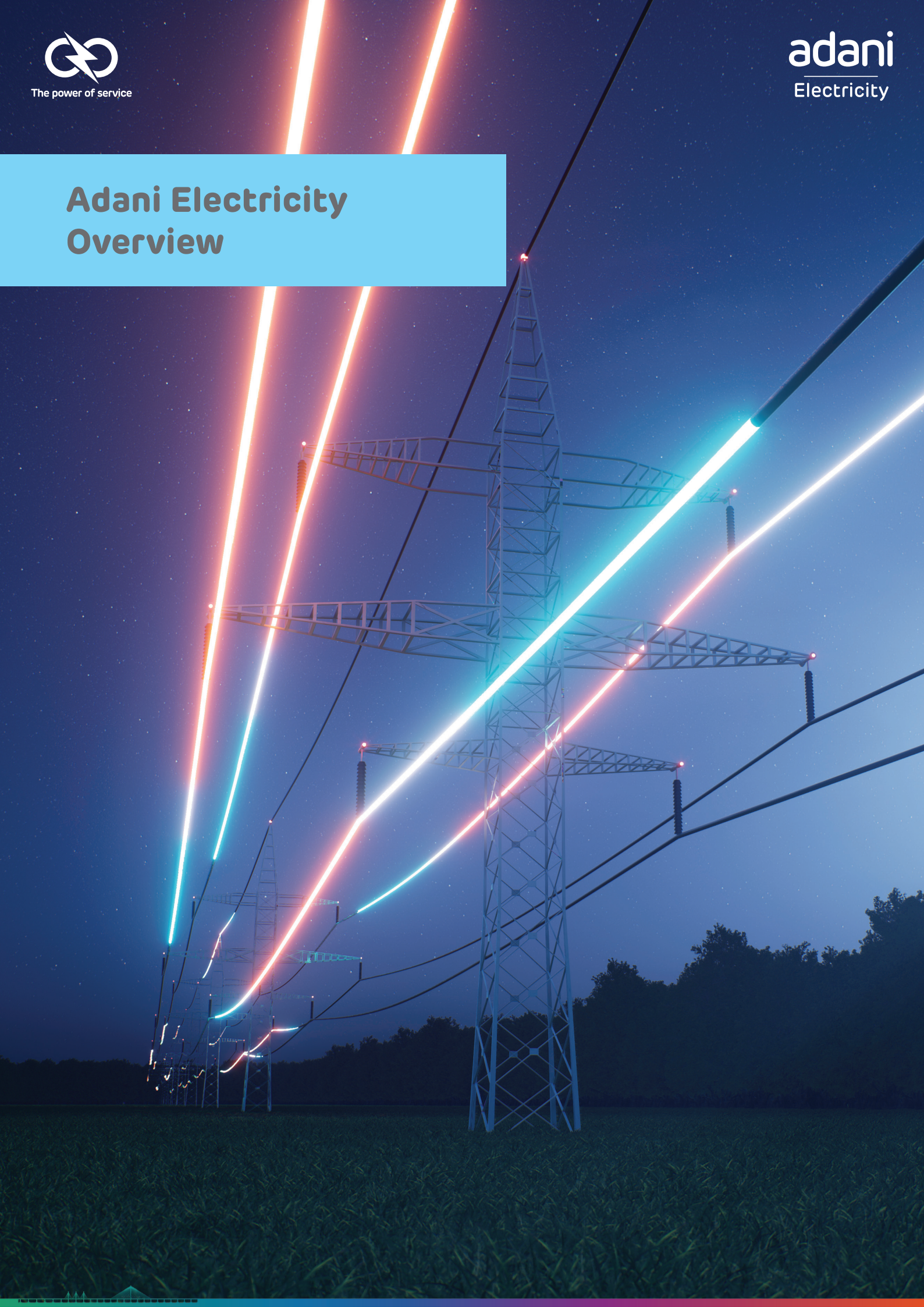


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# Adani Electricity Overview





## 1. Introduction

The Adani Group is a globally integrated infrastructure player with businesses spanning across key industry sectors like Energy and Utilities, Transportation and Logistics, Incubation, Airports, Material and Others. The Adani Group's growth and vision has always been in sync with the idea of nation building. 'Thinking Big. Doing Better.' is the philosophy that everyone abides by at Adani Group. They believe they are doing their part in nation building by touching millions of lives positively.

Adani Electricity Mumbai Limited (Adani Electricity) is a 100% subsidiary of Adani Transmission Ltd. and is an integrated Generation, Transmission and Distribution utility powering Mumbai suburbs and the surrounding areas.

Adani Electricity Mumbai Limited (Adani Electricity), a part of Adani Group, has been in the field of power distribution for over 9 decades, with a network spanning over 400 sq. kms. catering to the electricity needs of over 3.2 million customers in Mumbai city with a maximum demand of 2161 MW.

Adani Electricity's Distribution Network ensures that power reaches end customers with maximum efficiency and reliability. They stand by their core belief of 'Power of Service' to consistently deliver reliable and quality services to all customers at competitive costs, with international standards of customer care, thereby creating superior value for all stakeholders. They strive to set new benchmarks in standards of corporate performance and governance through pursuit of operational and financial excellence, responsible citizenship that aids in the nation's growth.

## 2. Power Distribution Aspects

### 2.1 Transmission and Distribution

Adani Electricity's Distribution licence area includes the suburban area of Mumbai (about 75% of Greater Mumbai) and the Mira-Bhayander Municipal Corporation area in Thane District. The entire licensed area is urban with a mix of residential, commercial and industrial consumers.

Adani Electricity's power transmission system in Mumbai is part of the intra-state transmission system. At present, our transmission system comprises 8 EHV stations and approximately 573 circuit kilometres of 220 kV lines. The power received at various EHV stations is supplied mainly through underground cables to our distribution substations, for onward distribution to consumers.

Power is distributed primarily through underground cables with network length of 26078 circuit kms. and interconnected via 7087 substations at 11 kV / 0.4 kV level. Around 3.2 million consumers are connected to these substations.

### 2.2 License

Adani Electricity holds Transmission & Distribution license (TL No.1 of 2011 and DL No.1 of 2011), granted under Sections 14 and 15 of the Electricity Act, 2003 for a period of 25 years starting from August 16, 2011.



### 3. Disaster Management Aspects of T&D Distribution

The Disaster Management Act, 2005 in 2(d) defines 'disaster' as a catastrophe, mishap, calamity or rare occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to and destruction of property or damage to or degradation of environment and is of such nature or magnitude as to be beyond the coping capacity of the community of the affected area.

In section 2 of the CEA. 'Crisis and Disaster Management Plan for Power Sector', 'Crisis' is defined as an event of acute danger, which can cause sudden disruption of power supply. The event is caused either due to human error / equipment failure or sabotage by anti-social elements.

'Disaster' refers to a catastrophe, mishap, calamity, or grave occurrence from natural or manmade causes which are beyond the coping capacity of the affected community. It leads to disruption of normal life including that of the power supply. Natural or other disasters can strike suddenly anytime and anywhere.

As far as the CEA document is concerned the word 'Disaster' is synonymous with 'Crisis'.

The main features of a disaster are:

Unpredictability

Unfamiliarity

Threat

Urgency

Speed

Uncertainty

#### 3.1 Types of Disasters

Sr. No.	Type	Details
1	Water and Climate Related	<ol style="list-style-type: none"> <li>1. Floods</li> <li>2. Cyclones, Tornadoes and Hurricanes</li> <li>3. Hailstorm</li> <li>4. Cloud Burst</li> <li>5. Landslides and Snow Avalanches</li> <li>6. Heat and Cold Waves</li> <li>7. Thunder and Lightning</li> <li>8. Tsunami</li> </ol>
2	Geological Related	<ol style="list-style-type: none"> <li>1. Earthquakes</li> <li>2. Dam Bursts and Dam Failures</li> </ol>
3	Chemical, Industrial and Nuclear Related	<ol style="list-style-type: none"> <li>1. Chemical and Industrial Disasters</li> <li>2. Nuclear Disasters</li> </ol>
4	Accident Related	<ol style="list-style-type: none"> <li>1. Major Building Collapse</li> <li>2. Serial Bomb Blasts</li> </ol>
5	Fire	<ol style="list-style-type: none"> <li>1. Urban Fire (less probable)</li> <li>2. Forest Fire (less probable)</li> </ol>
6	Agitation	Local community or local mass movement, road, rail blockades, religious or communal conflict, major law and order situation, long duration strikes
7	Terrorism	Terrorist attack, siege, or hostage situation
8	Transport	Major road, rail, water way traffic disruption

(Past occurrence history is considered in same area and the vicinity area)



**Details of probable disasters are as follows:**

**a. Water and Climate Related**

**Flood / Cloud Burst / Tsunami**

Floods refer to huge amounts of water reaching land in a short span of time, submerging land surface at places where it is usually not covered with water.

Floods could occur due to natural causes or human activities or a combination of both. Floods are caused by discharge of huge volume of water in a short span of time, at a rate, such that the water cannot be carried away from the scene of discharge.

Possible reasons could be:

- Very heavy rainfall in a short span of time. It should be noted that the amount of rainfall itself is not a sufficient cause, the duration in which the rainfall is received is an important contributor
- Breach in levees, dams, etc.
- Very high tidal waves (sometimes in the aftermath of a seismic activity, eg., earthquakes) etc. - also called tsunamis

Among the different kinds of disasters, flooding is unique as it has a very high degree of predictability, both in the short and long-terms. In most instances, flood prone areas are known as they have a history of flooding. Only in rare cases, a place without a history of flooding gets water-logged. In such cases, a study of the area could give an indication of possible reasons.

**Urban Flood**

The problem of urban flooding is a result of natural factors and land-use changes brought about by urban development. Urban flooding is significantly different from rural flooding as urbanisation leads to developed catchments which increase the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times. The problems associated with urban floods range from relatively localised incidents to major incidents, resulting in inundation of some or large parts urban areas for several hours to many days. It may result in damage to property, relocation of people and loss of life. It may also cause disruption in transport and power supply bringing life to a grinding halt.

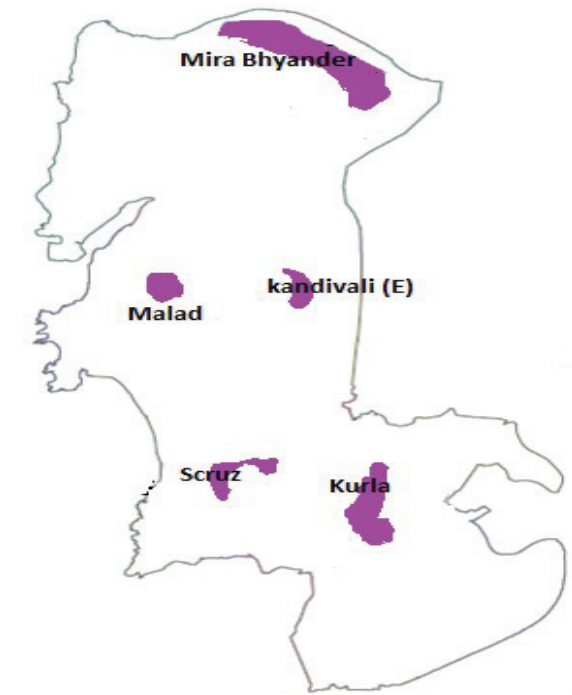
**Indicators of Possible Flooding**

Usually, any of the following situations should indicate the possibility of flooding:

- Heavy rainfall in / around the vicinity, especially, if the specific location falls in the pathway of the water discharge system from the area receiving heavy rainfall
- If there is heavy rainfall / flow of water / accumulation of water on the other side of a boundary, eg. across a dam, across a levee, side of a river-embankment etc., because these boundaries might get breached

As can be seen, both situations can be predicted with a reasonable degree of accuracy. These days, the meteorological predictions are accurate enough for up to 4-5 days. Hence, it is usually possible to know about the possibility of heavy rainfall well in advance.





Map showing identified deluge areas  
under operational area of Adani Electricity

### Effect of Floods / Cloud Burst / Tsunami on Adani Electricity T&D Network

Due to Floods / Cloud Burst / Tsunami, Distribution Substation (DSS) Buildings / Transmission Line Towers / Consumer Substations (CSS) / Network Feeder Pillars may be damaged which can result in disruption of supply. Mumbai has experienced flooding due to cloud burst in 2005.

Also, for the safety of human beings and animals, distribution utility disconnects the power supply to avoid / eliminate any eventuality due to short circuits in low lying areas where probability of customer installations getting submerged is high.

### b. Cyclones / Hurricanes / Tornadoes

These are high-speed winds, frequently accompanied by heavy rainfall. They cause structural damage, snap overhead wires and increase possibility of floods. Damage to structure and overhead wires can disrupt utility services. Heavy rainfall can cause flooding too.

These conditions could last a few days. In such cases, restoration and relief activities can only begin when these conditions start subsiding.

The progress made in metrological sciences gives us advance intimation about these kinds of natural disasters with a reasonable degree of accuracy. In most cases, it is possible to get warning of up to several days. Usually, it is also possible to take at least some preventive measures. However, despite these warnings, damage to property cannot be mitigated as immovable structures cannot be relocated.

An important thing about these strong winds and rainfall is that they do not appear randomly. There are well-defined geographical areas, which tend to see incidents of typhoons and cyclones. This means that people inhabiting these areas could take some preventive measures while building homes etc.

### Effect of Cyclones / Hurricanes / Tornadoes on Adani Electricity T&D Network:

- i. Cyclones, Hurricanes, Tornadoes can damage Substation Buildings and Transmission Line Towers which can result in disruption of supply
- ii. Cyclones / Hurricanes / Tornadoes may cause damage to equipment such as Transformers / Switchgears / Transmission Towers / other distribution equipment installed in the field, etc. resulting in disruption of supply



### c. Geological Related

#### Earthquakes

Earthquakes refer to shaking of earth. There is continuous activity below the surface of the earth. Large continent-sized plates are slowly moving on a bed of molten rock below the surface of the earth. Sometimes they collide against each other. After the collision, they continue to push each other causing a pressure build up across these plates below the surface. When the plates slide over another it results in an earthquake.

Some earthquakes can be caused by activity above the surface. For example, mountainous regions are prone to heavy landslides. There could be a shaking of the earth, due to the impact of the fall. Such earthquakes are usually not very major.

Maharashtra and its adjoining regions are prone to earthquakes of moderate magnitude. Mumbai lies in the Zone-III category. Earthquakes of mild capacity has struck Maharashtra at Koyna (1967 - 6.5 Richter) and Latur (1993 - 6.4 Richter) in the recent past. Earthquakes impact buildings, transformers, underground cable network and other machines spread across the supply area.

[www.mapsofindia.com](http://www.mapsofindia.com)



Seismic Zone Map of India



### **Effects of Earthquake on Adani Electricity T&D Network**

- i. Earthquakes can damage Substation Buildings / Transmission Line Towers / Underground Cable which can result in disruption of supply. Mumbai has experienced several earthquakes of intensities 3.5 to 4.6 Richter scale in the past, however, there has not been any significant impact on our system
- ii. Earthquake may damage equipment such as Transformers / Switchgears / Transmission Towers / Equipment installed in the field, etc. resulting in disruption of supply

### **d. Chemical, Industrial and Nuclear Related**

#### **Chemical Leaks / Spill Overs and Industrial Disasters**

Huge chemical plants handling hazardous and non-hazardous chemicals can be seen in several industrial areas. The risks associated with chemicals and chemical industries include:

- Explosions of certain equipment eg., boiler etc.
- Leakage wherever they are stored / transported / used in small quantities etc.

#### **Effects of Chemical Leaks / Spill Overs and Industrial Disasters on Adani Electricity T&D Network:**

The probability of human casualties can be very high due to Chemical Leaks / Spill Overs / Industrial Disasters and safety protocols should be followed carefully.

### **e. Accident Related**

#### **Major Building Collapse**

This can be caused due to:

- Construction on marshy land
- Poor planning of building layout
- Low-quality construction materials
- Natural calamities

#### **Effects of Major Building Collapse on Adani Electricity T&D Network:**

Collapse of building can damage all the controlling equipment located within the premise including relays, breakers etc.

### **f. Serial Bomb Blasts**

Terrorism / Bomb Blasts are one of the deadliest forms of crises in terms of loss of life and damage to the property. Power Generation Stations and Transmission Lines, Load Dispatch Centers (LDCs) form the prime target for such terrorist groups.

#### **Effects of Serial Bomb Blasts on Adani Electricity T&D Network:**

- i. Damage to the equipment inside the Distribution Substations can lead to supply disruption
- ii. Fires due to explosions can cause extensive damage to the equipment and affect supply

### **g. Pandemic / Epidemic**

Pandemic / Epidemic can have catastrophic effects as they cause large-scale mortality and morbidity as seen in the case of Covid-19 recently. Such biological emergencies are caused by infectious agents that may break naturally, accidentally, or by deliberate dispersal in food, water, air, soil or into plants, crops or livestock. As people travel within and across national boundaries, the likelihood of



epidemics spreading fast has increased dramatically, changing localised outbreaks into national epidemics and global pandemics. Such situations impact the power sector and make uninterrupted power supply a challenging task. Appropriate strategies should be planned to ensure operations and infrastructure are supported to provide reliable electricity throughout an emergency. In the short-term, the continuity of operation is based on availability of key workers, infrastructure and technological platforms, as well as having vital supplies such as fuels and spare parts. In the medium and long-term, mechanisms will be required to ensure financial and operational viability of power utilities.

#### **Effects of Pandemic / Epidemic on Adani Electricity T&D Network:**

- i. Employee absenteeism, disruption in transportation, goods and services affect supply chain networks (global, national, regional and local) and can make sourcing fuel, labour and material unpredictable. Getting the network going would require integrated response plans involving multiple stakeholders
- ii Fluctuation in power demand and changes in consumer category mix may pose operational challenges that needs to be addressed in real time

#### **h. Availability of Power**

Power crises may arise due to non-availability of Generation / Transmission network, increase in demand, depleting supplies of fossil fuels like coal, oil, gas at thermal power plants, non-availability of solar energy during night, manmade or natural disaster in local area of generation.

Non-availability of major EHV transmission lines or generator outages can cause blackouts in industrial areas / commercial hubs / urban residences and villages. Dedicated control desks can monitor the demand and supply position on a continual basis and overcome this. AEML will procure power as per MOD. In case of technical constraints or emergencies, when demand and supply are mismatched, load curtailment may be initiated as per SLDC (State Load Dispatch Center) directives. Plans to restore essential services during such emergencies are available.

#### **i. Landslides**

Landslides are major natural disasters that affects life and property. They damage the foundation of electrical equipment like towers which can cause it to collapse and damage substation equipment leading to power disruption. Landslides in upstream and downstream reservoirs may create artificial reservoirs, which cause flash floods that impact structures, property, roads and people downstream.

#### **j. Fire / Forest Fire**

Fires / Forest fires start due to human errors, faulty designs, mechanical failures, natural causes or a combination of both. Fire can also be the result of an earthquake. Damages to electrical systems can ignite major fires causing losses to human life and property. Fire / Forest fires can directly damage transmission towers and other electrical infrastructure.

The greatest risk comes from smoke and particulate matter which can ionize the air around the transmission line creating a conducting path for electricity resulting in phase-to-phase or phase-to-ground fault which can shut down the line. Forest fires can burn down wooden poles and power cables in the vicinity. Steel towers are also vulnerable to heat from forest fires. The conductors of transmission lines are susceptible to physical damage from the heat of a forest fire and such

damage may not be repairable and can only be replaced. Forest fires can cause outage as it raises the ambient temperature of the air around the conductors above operating parameters. Heavy smoke can affect the insulating medium, ie. the air, surrounding the conductor transmission line.

## 4. Vulnerability Analysis

Following is the brief vulnerability analysis of AEML network with respect to various hazards.

Sr. No.	Hazards (Potential Events)	Threats	Risks	Probability
1	Floods / Cloud Burst / Tsunami / Landslides	Station Equipment, UG Network & Human Life	High	High
2	Cyclones / Hurricanes / Tornadoes	All Equipment & Human Life	Medium	High
3	Earthquakes	All Equipment & Human Life	High	Low
4	Fire	All Equipment & Human Life	Medium	High
5	Pandemic	All Equipment & Human Life	High	High
6	Availability of Power	Blackout	Medium	Low
7	Landslides	All Equipment & Human Life	Medium	Medium
8	Chemical Leaks / Spill Over and Industrial Disaster	Human Life	High	Low
9	Major Building Collapse	Station Equipment & Human Life	High	Low
10	Serial Bomb Blasts	All Equipment & Human Life	High	Low
11	Agitation	All Equipment & Human Life	High	Low
12	Terrorism	All Equipment & Human Life	High	Low
13	Transport	All Equipment & Human Life	High	Low

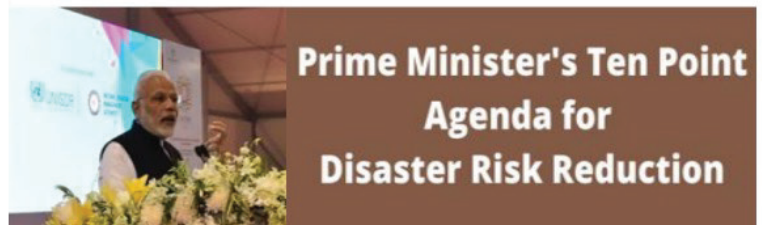
While it will be an ongoing task to identify potential environmental risks and OH&S hazards, the impact of these hazards and environmental risks on our T&D system and the mitigation process have been emphasized in this plan.



## 5. Disaster Management Plan (DMP)

Natural disasters cannot be prevented and accidents can occur despite all efforts to prevent them. Effective preparedness and actions taken can lessen the impact of such events. Response to disasters, in the absence of a well-defined plan, would be arbitrary leading to over-emphasis of some actions and absence of other critical actions. Hence, it is necessary to document a Disaster Management Plan (DMP) so that pre-planned procedures can be followed during disasters.

The DMP is based on three landmark global agreements reached in 2015 - Sendai Framework for Disaster Risk Reduction (Sendai, Japan, March 2015), Sustainable Development Goals (UN General Assembly, New York, September 2015) and Climate Change Agreement (COP21, Paris, December 2015) in addition to this Prime Minister's Agenda for Disaster Risk Reduction.



### Sendai Framework for Disaster Risk Reduction

The emphasis of Sendai Framework is on preventing new and reducing existing disaster risks while strengthening overall disaster resilience through the implementation of integrated measures.

#### Salient features of Sendai Frameworks:

- i. Outcome - To achieve substantial reduction of disaster risk and losses in lives, livelihoods and health in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries globally over a span of 15 years ie. by 2030
- ii. Goal - Prevent new and reduce existing disaster risks through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures to prevent and reduce exposure / vulnerability to disaster, increase preparedness for response / recovery, strengthening resilience

#### Four priorities for action as per Sendai framework:

- Understanding disaster risk
- Strengthening disaster risk governance to manage disaster risk
- Investing in disaster risk reduction for resilience
- Enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction

Seven Targets	
1	Reduce global disaster mortality substantially by 2030, aim to lower the average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015
2	Reduce the number of affected people globally substantially by 2030, aim to lower the average global figure per 100,000 in the decade 2020-2030 compared to the period 2005-2015
3	Reduce direct disaster economic loss in relation to global Gross Domestic Product (GDP) by 2030
4	Reduce disaster damage to critical infrastructure and disruption of basic services substantially, among them health and educational facilities, including through developing their resilience by 2030
5	Increase the number of countries with national and local disaster risk reduction strategies substantially by 2030
6	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present framework by 2030
7	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030



Sendai Framework for Disaster Risk Reduction - 7 Global Targets

### Sustainable Development Goals (SDG)

The Sustainable Development Goals (SDGs), adopted by the UN General Assembly on September 25, 2015, consists of 17 Global Goals and 169 targets. They are an universal call to action to end poverty, protect the planet, ensure peace and prosperity for all. It includes new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities.





Sustainable Development Goals (SDGs) adopted by the UN

#### Prime Minister's Agenda for Disaster Risk Reduction:

1. All development sectors must imbibe the principles of Disaster Risk Management
2. Risk coverage must include all, starting from poor households to SMEs to multinational corporations to nation states
3. Women's leadership and greater involvement should be central to Disaster Risk Management
4. Investment in global risk mapping to improve global understanding of natural and disaster risks
5. Leverage technology to enhance the efficiency of Disaster Risk Management efforts
6. Develop network of universities to work on disaster-related issues
7. Utilise opportunities provided by social media and mobile technologies for reducing disaster risk
8. Build on local capacity and initiative to enhance disaster risk reduction
9. Make use of every opportunity to learn from disasters and study the lessons after every disaster
10. Bring about greater cohesion in international response to disasters

The primary objective of Disaster Management Plan (DMP) is to ensure the safety of life and protection of property while ensuring minimum disruption of power. Its other objectives are:

- Identify major resources, manpower, material and equipment needed to make the plan operational
- Make optimum use of combined resources
- Delegate power at various levels for disaster conditions
- Provide medical support, additional crews, security guards and communication support
- Identify key personnel with their skills and experience in disaster management
- Plan for using outsourced manpower, services etc.
- Set up effective command and control structure for handling disasters
- Improve the state of preparedness to meet any contingency
- Reduce response time in organising assistance

- Identify training needs for personnel engaged in handling disaster
- Promote evacuation, rescue & relief
- Reduce frequency of occurrence of such disasters
- Protect environmental damage
- Assess the severity or magnitude of effects of any disaster
- Facilitate quick business recovery

## 5.1 Components of Disaster Management

### a) Risk Management

Identifying threats, determining their probability of occurrence, estimating impact of threats to communities at risk, determining measures that can reduce risk and taking action to reduce threat. The Risk Analysis & Vulnerability Assessment aims at identifying the disasters, their probability, effects and impact on business and people.

### b) Response Plan

The Response Plan lays down preparedness checklists, operating procedure guidelines, list of monitoring facilities, reporting formats and other measures to mitigate the impact of disasters. It also identifies functional areas such as relief, communication, transport, health services, etc. and proposes assignments to various departments, including identifying lead and supporting departments, the organisational structure to effectively deal with the disaster in a coordinated and quickest possible manner.

### c) Control of Events

This document deals with the various events that may lead to disasters, preventive measures that need to be adopted to avoid and lessen the impact of any disaster, ways and means to respond to a disaster, and the hierarchical set up at various levels during a disaster for effective and efficient handling of the disaster. Control is maintained through the following measures:

- i. Anticipation of a disaster and the cause-effect relationship generated by each type of event
- ii. Mitigation strategy for long-term planning on disaster handling. It should deal with issues of continued commitment to hazard identification, risk assessment and long-term measures to reduce the probability and impact of disasters. The mitigation strategy should have plans for better resource management, safety codes, training programs and innovative leadership
- iii. Preparedness to provide better visibility on the anticipated scope of disaster for managers to plan adequate responses
- iv. Accurate information collection and assessment after a disaster, for the manager to base priorities and direct response
- v. Each type of disaster will require a different set of responses

### d) Equity of Assistance

All disaster responses should be provided in an equitable and fair manner.



#### **e) Resource Management**

Resource management is a critical element of disaster response as few Disaster Managers would have adequate resources to meet the competing needs and demands post disaster. It is important to know resource availability.

#### **f) Loss Management**

A disaster can cause human, structural and economic losses. Effective loss management activities occur prior to a disaster and are focused on reducing the society's vulnerability to the disaster. Pre and post-disaster actions can minimise these losses.

### **5.2 Objectives and Scope of Crisis and Disaster Management Plan**

Disaster Management encompasses activities that enable various agencies plan, respond quickly and recover from unexpected events and situations. It is a tool to provide necessary guidelines for assistance to organisations for ensuring safety of people, protection of environment, protection of installations and restoration. It has the following objectives:

- Improve state of preparedness to meet any contingency
- Reduce response time in organising assistance
- Identify major resources, manpower, materials, equipment needed to make the plan operational
- Make optimum use of the combined resources

#### **The activities in response to a crisis or disaster shall mainly include:**

- a) Exchange information in terms of event description, severity and action plan
- b) Identify resources and their deployment viz, technical experts, manpower, equipment, spare parts and other material
- c) Early restoration and facilitating reinspection as needed
- d) Field / Site surveys / Damage Assessment
- e) Post-event investigation and analysis to plan the strategy for the future

# Adani Electricity - Mumbai Transmission





The power generated at ADTPS is brought to Adani Electricity Area of Supply through 2 double circuit 220 kV Transmission lines. Grid connection is established through tie lines with TPC's Borivali, Versova and Saki Substations, MSETCL's Boisar, Borivali, Trombay and Nerul EHV Substations. Eight 220 kV EHV Substations are set up for Versova, Ghodbunder, Aarey, Goregaon, Gorai, Borivali, Saki and Chembur. 100 MVA, 125 MVA Transformers are installed at these Substations to step down the voltage from 220 kV to 33 kV. The 33 kV feeders emanating from these Substations cater to the demand of Adani Electricity's Area of Supply.

**Legends**

- 1200 mm<sup>2</sup> Cable
- AAAC Zebra
- Single Zebra (MSETCL)
- 1000 mm<sup>2</sup> cable TPC
- 220/33 kV Transformer
- 220kV Variable Bus Reactor



## 6.2 Transmission Lines - Brief Details

Route	Details	Line Length (Circuit-kms.)
ADTPS to Ghodbunder ADTPS to Versova Ghodbunder to Versova Versova to Aarey Aarey to TPC Borivali Ghodbunder to Gorai Gorai to Versova Versova to Goregaon Aarey to Goregaon ADTPS to MSETCL Viraj MSETCL Viraj to MSETCL Boisar Versova to MSETCL Boisar	Conductor type AAAC 487.5 sq.mm. ADTPS-Ghodbunder-Versova line with OPGW Aarey to Tata Borivali with OPGW	Total 220 kV OH lines 482.67 circuit- kms.
AEML Borivali to TPC Borivali	Single Core 1200 sq.mm. cable	Total 220 kV UG cables 90.1 circuit- kms.
AEML Borivali to MSETCL Borivali Gorai to MSETCL Borivali	Single Core 1200 sq.mm. cable alongwith 1 OFC and DTS cable per circuit	
Ghodbunder to MSETCL Boisar Ghodbunder to MSETCL Borivali	Single Core 1200 sq.mm. cable alongwith 1 OFC and DTS cable per circuit till existing LILO tower of MSETCL	
Aarey to Saki Chembur to MSETCL Trombay AEML Saki to TPC Saki Aarey to MSETCL Borivali	Single Core 1200 sq.mm. cable alongwith 1 OFC and DTS cable per circuit	
Chembur to MSETCL Nerul Chembur to MSETCL Trombay - 3	Single Core 1200 sq.mm. cable alongwith 1 OFC and DTS cable per circuit till existing LILO tower of MSETCL	



### 6.3 List of EHV Substations

Sr. No.	Location	Area	Contact No.
1	Aarey EHV Substation	220 kV Aarey EHV Substation, Off Jogeshwari Vikhroli Link Road, Opp. SEEPZ North Gate No.3, Unit No.19, Aarey Colony, Goregaon (E), Mumbai - 400063	022 - 50547271
2	Chembur EHV Substation	220 kV Chembur EHV Substation, Behind Borla Receiving Station, S.T. Road, Near Deonar Depot, Mumbai - 400088	022 - 50547285
3	Saki EHV Substation	220 kV Saki EHV Substation, Andheri Kurla Road, Near Indian Oil Petrol Pump, Saki Naka Junction, Andheri (E), Mumbai - 400072	022 - 50547276
4	Versova EHV Substation	220 kV Versova EHV Substation, Behind Lokhandwala Complex, Near Joggers Park, Andheri (W), Mumbai - 400053	022 - 50547275
5	Goregaon EHV Substation	220 kV Goregaon EHV Substation, Opp. Sahara India, S.V. Road, Adani Electricity Mumbai Ltd., Mumbai - 400062	022 - 50547372
6	Gorai EHV Substation	220 kV Gorai EHV Substation, L.T. Road, Near MCGM Dumping Ground, Borivali (W), Mumbai - 400092	022 - 50547269
7	Ghodbunder EHV Substation	220 kV Ghodbunder EHV Substation, Ghodbunder Village, Near Raj Bucket Factory, Mira-Bhayander Area, Thane - 401107	022 - 50547273
8	AEML Borivali EHV Substation	220 kV GIS Borivali substation, Near Jn. of Dattapada Road and Western Express Highway, Borivali (E), Mumbai - 400066	022 - 50547283

### 6.4 Salient Details of 220 kV EHV Substations

Particulars	Versova	Ghodbunder	Aarey	Saki	Chembur	Goregaon	Gorai	Borivali
Installed No. of Power Transformers	5	4	5	3	3	3	2	3
No. of 220 kV AIS Bays	12	9	10	-	-	-	-	2
No. of 220 kV GIS	5	10	7	10	10	10	10	10
No. of 33 kV Switchgears	66	59	82	42	42	42	26	33
Installed No. of 220 kV Variable Reactor	-	-	-	-	-	-	1	-
Critical Feeders	Juhu, Ambivali, Saraswati Road, Metro	Mira-Bhayander	Airport, SEEPZ, Metro	Saki, Kurla, BKC	Chembur, Shivaji Nagar	Goregaon	Gorai, KIE	Borivali, Magathane



### 6.5 'Trans-Security' Security Control Room

The Security Control Room is situated at the 220 / 33 kV Ghodbunder EHV Substation with one-point monitoring of all EHV Substations with plasma displays. Modern type PTZ cameras are installed at appropriate places in the Substations. These are monitored by the Controller at the 220 kV Control Room and Security Control Room for unauthorised entries and keeping an eye on any illegal activities in the switchyard.

Access control doors are provided at all 220 / 33 kV EHV Substation to prevent unauthorised entry inside the Control Room and Building. Porta cabins inside the switchyard ensure effective patrolling of the switchyard area.

## 7. Action Plan - Transmission System

### 7.1 Preparedness to meet any contingency

- a. Personnel are kept prepared through training and posters / slogans etc.
- b. Disaster Control Center (DCC) collects updated information / news from agencies and communicates to departmental heads and respective sections
- c. Warning Notification implies a disaster is imminent. Advance action may be initiated for minimising damages and launching rescue operations. Warning Notification indicates the magnitude of disaster and is communicated to concerned stakeholders in the region

### 7.2 Warning Systems

Area Cyclone Warning Center (ACWC), Colaba, Mumbai, is responsible for issuing cyclone warning bulletins for Arabian Sea, North of Latitude 5° N and East of Longitude 60° E excluding the area North of 20° N and West of 68° E. According to the 2-stage warning scheme, ACWC, Mumbai, issues warnings for coastal districts of Goa and Maharashtra in 2 stages, whenever the coastal belt is expected to experience adverse weather (heavy rain / gales / tidal wave) in association with a cyclonic storm or depression that's likely to intensify into a cyclonic storm.

**Cyclone alert (1<sup>st</sup> stage warning):** Issued 48 hours in advance of expected commencement of adverse weather over coastal areas.

**Cyclone warning (2<sup>nd</sup> stage warning):** Issued 24 hours in advance of expected commencement of adverse weather.

Main mode of communication is by telegram - 000 weather immediate telegram, Telex, W/T, Telephone, Fax, Police wireless if other channels fail and satellite communication (disaster warning system).

Disaster	Agencies
Earthquakes	IMD, MERI, BARC
Floods	Meteorological Department, Irrigation Department
Cyclones	IMD
Epidemics	Public Health Department
Road Accidents	Police
Industrial and Chemical Accidents	Industry, MARG, Police, DISH, BARC, AERB
Fires	Fire Brigade, Police

### 7.3 Advance Preparedness

The following aspects are covered as an organisational practice to avoid last minute panic arrangements and staying prepared to handle disasters:

- Well-documented emergency plans
- Data on availability of resources and buffer stocks of restoration materials
- Identification of key personnel with skills and experience in disaster management
- Allocation of budget for emergencies
- 'Delegation of Power' at various levels for disaster management
- Transportation of emergency DG Set and other resources
- Medical Support, Additional Crews, Security Guards and Communication Support
- Backup of a fail-proof communication system when conventional systems are down
- Plan for using outsourced manpower, services etc.

Onsite incharge shall arrange mock drill on disasters as per schedule, in coordination with the Safety and Security departments.

Sr. No.	Mock Drill
1	Floods / Cloud Burst / Tsunami / Landslides
2	Cyclones / Hurricanes / Tornadoes
3	Earthquakes / Major Collapses of Buildings
4	Chemical Leaks / Spill Overs / Industrial Disasters
5	Serial Bomb Blasts / Bomb Threats / Terrorist Attacks
6	Fire

#### 7.4 Accident / Incident Recovery Plan ('Build Back Better')

After the emergency passes, the team's efforts will be directed towards bringing back the facility to normal status. Assessment committee will assess the loss / damage and redevelopment committee will be responsible for restoration of the facility.

The major concerns that keep people worrying about their facility:

- Accident psychological factors
- Environmental factors

The psychological trauma associated with the accidents is handled by the management through thoughtful investigation of the accident and ensuring the cause of the accident is eliminated.

The debris is cleared carefully to minimise further environmental damages. The management can take help for this from outside personnel who are experts in this area. Waste water is not allowed to go out of the premises untreated, under any circumstances.

The emergency management plan is documented and reviewed frequently for adequacy to reduce response times and enhance speedy mitigation of emergencies.

#### 7.5 Post Disaster Response and Recovery Stage

- a. Accurate information collection and assessment - On the occurrence of a disaster, the manager needs reliable data to base priorities and guide response
- b. Balanced response - Each type of disaster will require a different set of response

**Following features need to be kept in mind for an efficient recovery system:**

- i. Clear hierarchy of command system
- ii. Mobilisation of damage assessment teams
- iii. Mobilisation of teams for establishment of base camps / infrastructure
- iv. Officer for communication with the outside environment / press etc.
- v. Pre-defined staff for coordination with other agencies for restoration
- vi. Management of funds and resources at the disaster site



## 8. Roles and Responsibilities

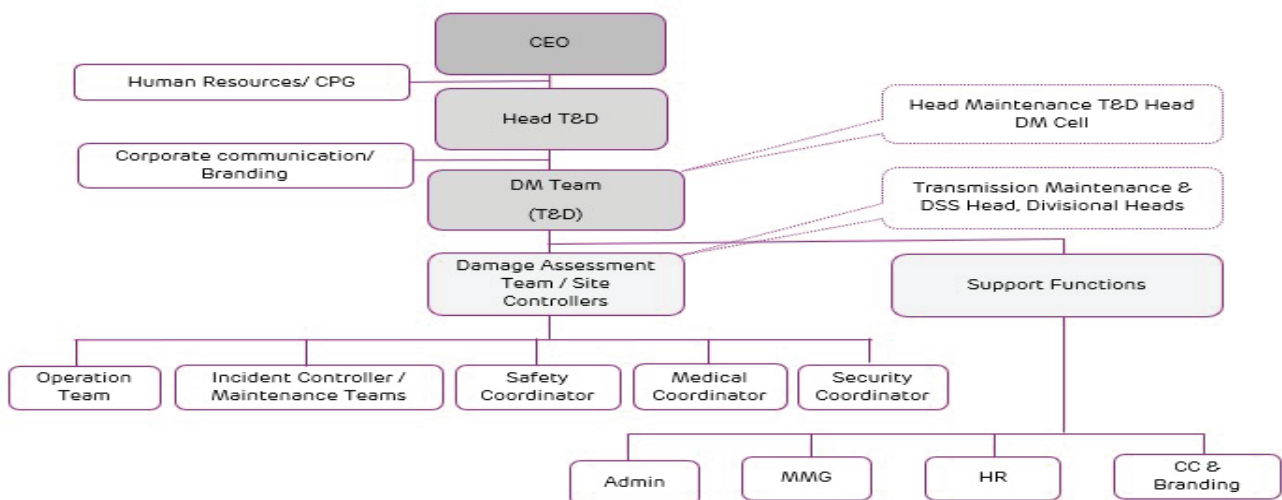
### 8.1 Responsibilities

The Disaster Management (DM) Cell is responsible for implementing the Disaster Management Plan and acting as the coordinating, controlling and monitoring body.

#### The DM Cell shall:

- Examine the vulnerability of different parts within an organisation for different forms of disasters and specify measures to be taken for their prevention or mitigation
- Lay down, review and update guidelines for preparation of Disaster Management Plans
- Monitor the implementation of the guidelines laid down for integrating measures for prevention of disasters and mitigation by the departments
- Evaluate preparedness to respond to any threatening disaster situation or disaster at all functional levels and give directions, where necessary, for enhancing such preparedness
- Coordinate response / rescue teams in the event of any threatening disaster situation
- Give directions to all concerned sections, regarding actions to be taken in response to any threatening disaster situation
- Advise, assist and coordinate activities of the departments engaged in disaster management
- Provide information to concerned government authorities relating to different aspects of disaster management
- Ensure communication systems are in order and disaster management drills are carried out periodically
- Assess the severity or magnitude of effects of any disaster
- Facilitate quick business recovery

### 8.2 Organisation Structure of Disaster Management Cell



As the Chairperson of the Disaster Management Cell, the Head (T&D) will review / revalidate Disaster Management Cell in January of every year.

### **A. Human Resources**

To ensure availability and distribution of resources prior to disaster, the Human Resource Department shall support the Incident Controller in implementing the Disaster Management Plan.

### **B. Incident Controller**

Head - O&M / Head - Projects shall be Incharge of the Disaster Management Cell and will be the main coordinating authority in case of disaster. The responsibilities shall be:

1. Maintain prior agreed inventory of emergency equipment in the Emergency Control Center
2. Keep shift schedule for all the areas readily available
3. Direct all actions taken onsite
4. Direct 'Key Personnel' at the work spot for carrying out specific tasks
5. Provide updates and information to the CEO
6. Assess the impact of disaster
7. Coordinate with the redevelopment committee
8. Request for help from Government / Private Authorities like MCGM, MBMC Fire brigade, Ambulance, Police, NGOs etc.

The table identifies the key personnel for handling disasters at each EHV Stations. Their contact details are provided subsequently in this plan. In absence of Head - O&M / Head - Project, the Zonal-Incharge acts as Incident Controller.

### **C. Key Personnel (KP)**

A list of key personnel and their phone numbers shall be available at all the times at the concerned places. They shall decide actions needed to evacuate personnel at the affected area, carry out emergency works and arrange supplies of equipment, personnel and liaison with outside authorities. Following shall be the Key Personnel (KP) at the corporate level during disasters / emergencies. Their roles are:

#### **Admin Coordinator**

He / She shall provide all the logistic support required for implementing the Disaster Management Plan to Incident Controller.

#### **Safety Coordinator**

He / She shall:

- Update onsite Disaster Management Plan regularly
- Keep a list of compatibility chemicals, appropriate fire extinguishing media / safety equipment readily available
- Carry out mock drills
- Arrange training on periodic basis
- Monitor list of all fire extinguishers and update their refilling
- Ensure availability of competent first aiders

### **Security Officer**

He / She shall -

- Maintain the inventory of spill containment equipment
- Periodically check and ensure proper working of battery-operated radios, cellular mobile phones to ensure operability during emergency
- Coordinate with fire brigade, police officials, ATS, bomb disposal squad as and when required

### **Onsite Incharge**

He / She shall -

- Prepare plan for evacuation in advance and ensure availability of the same with office personnel
- Ensure all the equipment / tools / first aid kits are available and maintained at assigned locations
- Keep a list of all fire extinguishers and update their refilling
- Ensure availability of local rescue team

### **Emergency Response Teams**

Local Emergency Response Teams are available at all locations. In case of disaster, these teams will be put in action immediately and DCC will coordinate for mobilising them in affected areas. Emergency Response Teams shall be responsible for Cordoning, First Aid, Fire Fighting, Restoring, Cleaning Spills.

#### **Responsibilities of Emergency Response Teams are as follows:**

- Identify the location of disaster victims trapped or isolated
- Save lives of the disaster victims by bringing them to a safe location
- Provide them with medical attention
- Ensure survival of the maximum possible number of victims
- Facilitate Search & Rescue by experts
- Work out the Search & Rescue plan with local people
- Involve various teams in appropriate places
- Involve local people well versed with the area who can be instrumental in searching
- Relocate victims to safer areas through community mapping
- Provide shelter and other relief material
- Control panic, rumours, confusion
- Provide moral support to victims
- Provide food, drinking water, first aid and psychosocial care to the victims at affected places and to people stranded in life threatening situation awaiting rescue
- Provide post evacuation relief through emergency supplies and services
- Approach damaged buildings and facilities, if required, from the least dangerous side or access
- Shut off all piped service mains (water / gas) and electricity lines in collapsed buildings

### Medical Coordinator

He / She shall -

- Coordinate for equipped ambulance and other medical facilities
- Assess casualties and coordinate with hospitals in nearby area

### Assessment Committee

Assessment committee shall consist of representatives from HR, Admin, Finance, Planning, Engineering, Safety, Security with representatives from affected department, chaired by the Head - O&M / Head - Projects. First Information Report of the Committee shall be submitted to CEO within 48 hours and Final Analysis Report shall be submitted within 7 days.

### Redevelopment Committee

CEO will appoint the Redevelopment Committee which shall:

- Coordinate with the Assessment Committee
- Plan redevelopment
- Execute redevelopment

## 8.3 Disaster Control Center (Emergency Control Room)

Provision is made to establish a Disaster Control Center (DCC) from where disaster mitigation operations are directed and coordinated. This Center is activated as soon as onsite disaster is declared. The DCC is equipped to allow unhampered communication with the teams involved in bringing the incident under control with assistance from external response organisations and personnel from nearby facility. The Occupational Health Room provides shelter for persons who have been affected by the emergency. Admission to the DCC during an emergency is for authorised personnel only.

### Location

In case of emergency at 220 kV EHV substations, Disaster Control Center (DCC) will be set up according to the following table at two different locations.

Location	DCC	Back Up DCC
	Aarey	Ghodbunder

### Resources

The Disaster Control Room shall have the following resources to handle disasters effectively:

1. Contact list and numbers of fire stations, medical Centers, security, police and district administration and authorities
2. First aid procedure
3. Disaster Management Manuals, blown up area maps, district phone directories
4. Contact list of key personnel from AEML
5. Complete details of the system and guiding document for Bulk Supply Failure
6. Comprehensive communication facilities



7. Site plans, facility description, various drawings and maps of the facility describing electrical fittings, availability of fire fighting equipment, floor-wise plan of evacuation etc.
8. All facilities like telephone, communication wireless handsets, mobiles, backed up with emergency lighting, etc.

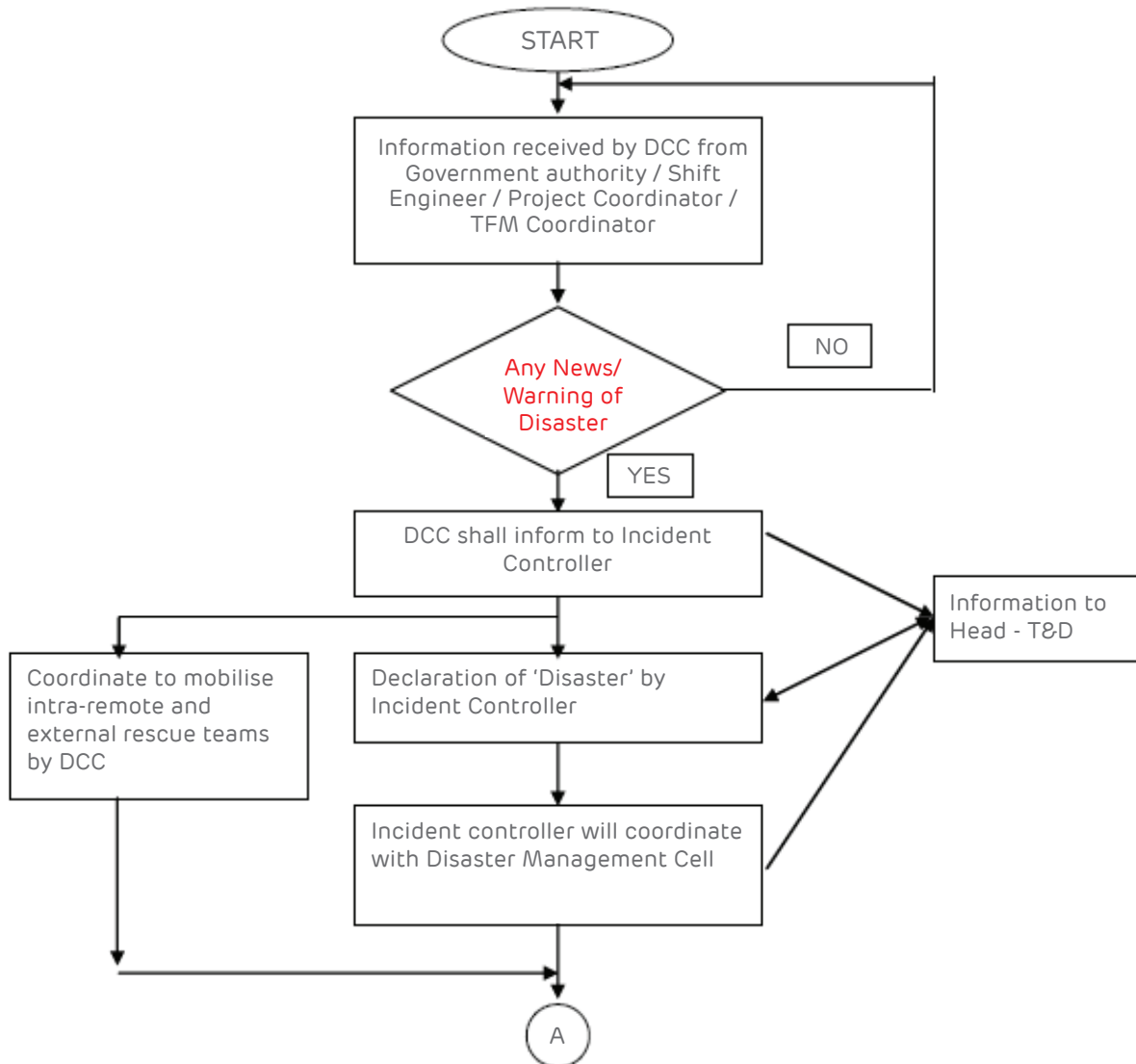
#### Facilities at Disaster Control Center

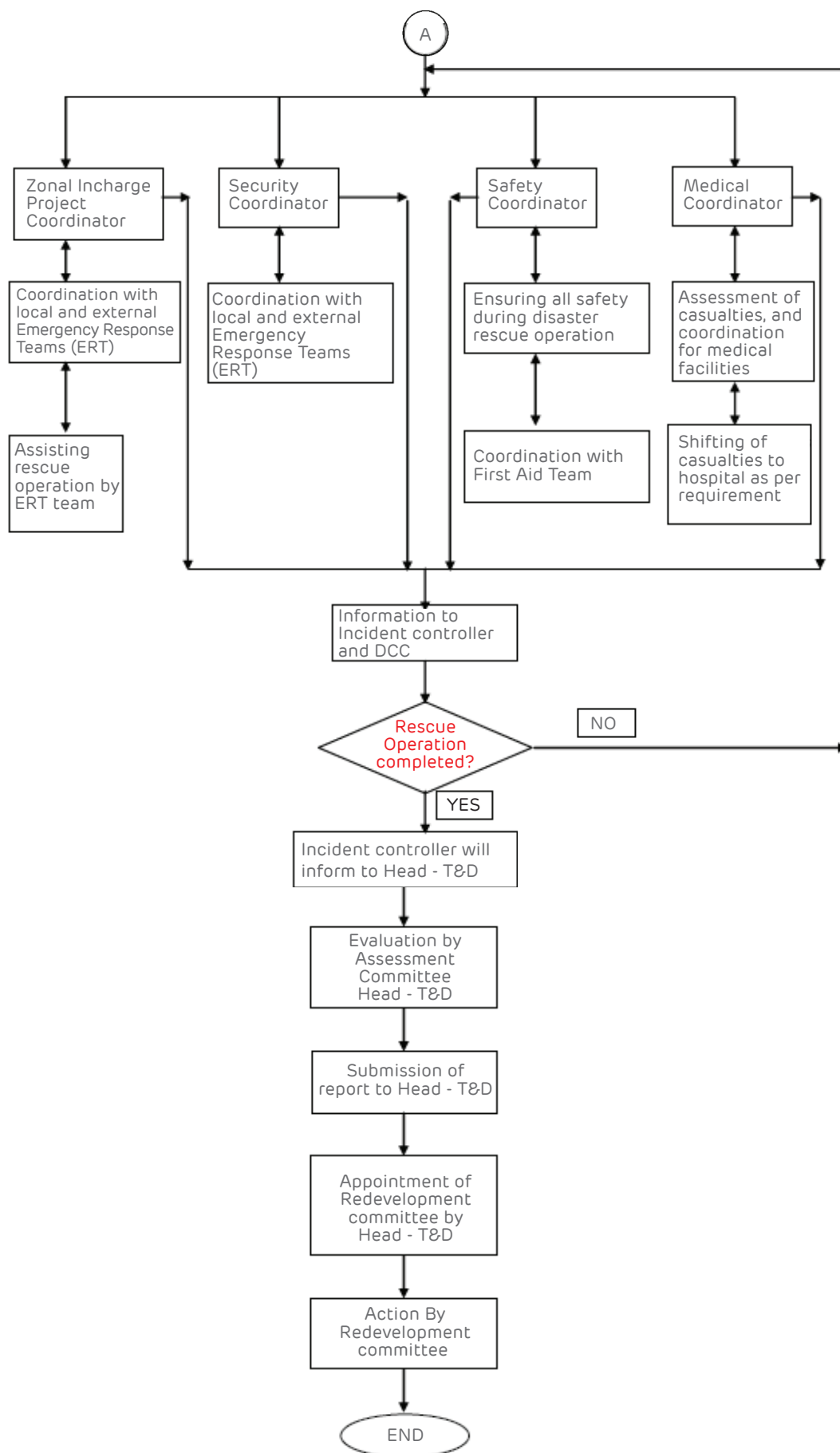
Sr. No.	Description	Quantity (Aarey DCC)	Quantity (Ghodbunder Backup DCC)
1	Hotline Telephone	2	1
2	IP Telephone	1	2
3	Personal Computer	1	1
4	Printer	1	1
5	LAN Connectivity	1	1
6	Outlook (web mail)	1	1
7	Cell Phone Chargers	1	1
8	Cell Phone	1	1

#### 9. List of Additional Equipment at EHV substations

Sr. No.	Resources	ARY Zone	VSV Zone	GBR Zone	TFM
1	De-Watering Pumps	6	6	4	–
2	DG Sets	3	3	2	–
3	Fire Extinguishers	350	303	292	–
4	First Aid Box	3	3	2	3
5	Torches	6	6	4	6
6	Emergency Lights	6	6	4	–
7	Gloves	6	6	4	5
8	Life Jackets	6	6	4	22
9	Fire Suits	10	10	10	–
10	PPEs	As applicable	As applicable	As applicable	As applicable
11	Public Address System	3	3	2	–
12	Inflatable Boats	–	–	–	2
13	Lifeboat	1	1	–	–
14	AED Kit	1	1	1	–
15	Wheelchair	3	3	2	–
16	Stretchers	3	3	2	–
17	Walkie Talkie	1	1	1	1

## 9. Flowchart for Transmission DMP





## 10. Important Contact Numbers

### 10.1 Key personnel have been identified in the table for handling disasters at each receiving station

Area / Location	Disaster Control Center	Backup Disaster Control Center
Area Covered	All EHV Substations in MTB	All EHV Substations in MTB
Location	As mentioned in details of EHV Substation	As mentioned in details of EHV Substation
<b>Person Responsible</b>		
Disaster Control Center Head	Mahesh Dange 9320328593	Satish Shinde 9322131364
Dy. Disaster Control Center Head	Nilesh Patil 9320284787	Sanjay Satamkar 9321923437
<b>Person Responsible in Absence of the Person Above</b>		
Disaster Control Center Head	Nilesh Patil 9320284787	Balkrishna Gosavi 9321923438
Dy. Disaster Control Center Head	Durgesh Choukulkar 7498243819	Sagar Patil 9372199811

Sr. No.	Department Details	Designation	Name	Contact No.
1	AEML	CEO	Kapil Sharma	022 - 50548770
2	Head - T&D	Sr. VP	Suraj Phalak	9322218741
3	Head - NM	VP	Nitin Kate	9323549946
4	Head - Operations	VP	Mahesh Andhari	9323549996
5	Head - Maintenance	Addl. VP	Vignesh Gawade	9324216596
6	Incharge EHV Zones	Asst. VP	Mahesh Dange	9320328593
7	Incharge - T&P	Asst. VP	Mohan Waingankar	9324216664
8	Incharge - TFM	DGM	Satish Shinde	9322131364
9	Head - Engineering	Sr. VP	Mahesh Ambardekar	9323842316
10	Head - Projects (T&D)	VP	Unnat Prakash	7705912151
11	Incharge - Substation Projects	Addl. VP	Rajesh Vadangekar	9323951396
12	Incharge - Cable Projects	Addl. VP	Sandeep Godbole	9323702020
13	Head - Planning & Regulatory	VP	Rakesh Raj	9323552940
14	Head - HR (T&D)	Addl. VP	Smt. Chanda Vanmali	9323550005
15	Head - Security	VP	Vinay Khanduri	9099980108
16	Incharge - Security	GM	Vivek S. Pathak	7498246694
17	Head - Safety	Asst. VP	Jai Singh	8591315263





### 10.2 For Bomb Threat

Mumbai	Bomb Squad (BDDS)	022 - 2080501, 22650707
Thane	BDDS	022 - 25392767
Fire Brigade	Fire	101
Police Control	Police	100
Sr. VP (Head - T&D)	Suraj Phalak	9322218741
VP (Head - NM)	Nitin Kate	9323549946
VP (Head - Operations)	Mahesh Andhari	9323549996
Addl. VP (Head - Maintenance)	Vignesh Gawade	9324216596
VP - Security	Vinay Khanduri	9099980108

### 10.3 For Terrorist Attack

VP - Security	Vinay Khanduri	9099980108
Fire Brigade	Fire	101
Police Control	Police	100
Sr. VP (Head - T&D)	Suraj Phalak	9322218741
VP (Head - NM)	Nitin Kate	9323549946
VP (Head - Operations)	Mahesh Andhari	9323549996
Addl. VP (Head - Maintenance)	Vignesh Gawade	9324216596
Mumbai	ATS	022 - 23077778
Mumbai	DCP Protection	022 - 22652767

## 10.4 List of Hospitals for Transmission Feeders

### Mumbai Section of Transmission Line:

Cluster No.	Location	Area	Hospital Name	Contact No.
1	SS 174 - SS 204 LS 171 - LS 201	Virar	Sanjivani Hospital, Datta Mandir Road, Virar	7378502284 9168505029
2	SS 205 - SS 214 LS 202 - SS 211	Nallasopara	Alliance Hospital, Tulinj Road, Nallasopara (E)	8669611807 8669611811 9011324881
3	SS 215 - SS 228 LS 212 - LS 226	Vasai	Riddhi Hospital, Vasant Nagari, Nallasopara Link Road, Vasai (E)	7666383424
4	SS 229 - SS 264 LS 227 - LS 261	Naigoan	Purushottam Hospital, Juchandra, Naigaon (E)	0250 - 3206827
5	SS 265 - SS 297 LS 262 - LS 285 SS 298 - SS 316	Mira-Bhayander	Bhaktivedanta Shrusti, Mira Road (E)	022 - 29452400 8400146262
6	SS 298 - SS 334 LS 313 - LS 332	Malad (W)	Dr. Bet Hospital & Polyclinic, Neptune Building, Mith Chowki, Marve Road, Malad (W)	022 - 28820435 / 28823910
7	SS 335 - SS 338 LS 333 - LS 337 VAB 1 - VAB 11	Versova	Cooper Hospital, Vile Parle (W)	022 - 26207254
8	LS 286 - LS 312 VAB 71 - VAB 77	Borivali (E)	Karuna Hospital, Jeevan Bhima Nagar, Borivali (W)	022 - 28934698 022 - 61594698
9	VAB 54 - VAB 61	Malad (E)	Sanjeevani Hospital, Ishwar Bhavan, Rani Sati Marg, Malad (E)	9892056253 9372641009
10	VAB 62 - VAB 70	Kandivali (E)	Aditi Hospital & Polyclinic, Nirav Building, 90 ft. Road, Kandivali (E)	022 - 28709901
11	VAB 12 - VAB 21	Goregaon (W)	101, ONYX 1 <sup>st</sup> Floor, SV Road, Goregaon (W)	022 - 26794797
12	VAB 22 - VAB 31 VAB 39 - VAB 53	Goregaon (E)	Dr. Kamat's Hospital, B-3/4, Ground Floor, Satellite Classic, Caves Road, Jogeshwari (E)	022 - 28265677
13	VAB 31 - VAB 38	Aarey	Vidya Hospital, Kanya Pada Film City, Shop #21, Goregaon Road, Goregaon (E)	022 - 28492201



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#### Dahanu Section of Transmission Line:

Cluster No.	Location	Area	Hospital Name	Contact No.
1	LS 2 - LS 51 SS 1 - SS 55	Dahanu	Dr. R. Wadekar Hospital, Above Chandrika Hotel, Dahanu Station Road, Dahanu	02528 - 222067 02528 - 222957
2	LS 52 - LS 92 SS 55 - SS 94 BTL 1 - BTL 27	Boisar	Dr. Jaiprakash Tarapur General Hospital, (A unit of TIMA Hospital) P-126, Khaira Phatak, Saravali, Boisar, Dist. Thane - 401501	9260709968 02525 - 278444
3	LS 92X - LS 170 SS 94X - SS 173	Palghar	Rural Homoeopathic Hospital, Palghar - Boisar Road, Opp. S.T. Workshop, Palghar - 401404	02525 - 256932 / 33

### 10.5 Police Stations

#### Aarey / Versova EHV Zones:

Sr. No.	Station	Exchange No.	Exchange No.	Contact No.	Sr. PI No.	Name of Sr. PI / PI
1	Andheri	26831365	26831447	26831562	28367767	Santaji Ghorpade
2	D.N. Nagar	26304002		26303893	26304001	Milind Kurde
3	Jogeshwari (E)	28221672	28210763	28367548	28367767	Balasaheb Tambe
4	Meghwadi	28210860	28221651	28210860	28210837	Sanjiv Pimple
5	MIDC	28368352		28368352	28394205	Satish Gaikwad
6	Oshiwara	26422042	26323862	26323861	26322753	Manohar Dhanwade
7	Sahar	26829784	26817485	26829783	26829783	Sanjay Govilkar
8	Versova	26365420	26304812	26304812	26304812	Siraj Inamdaar
9	Aarey Colony	29272485	29272484	29272484	29272484	Shekhar Dombé
10	Chembur	25232044	25221613	25227563	25221613	Jaykumar Suryawanshi
11	Deonar	25544292	25563381	25568682	25563381	Ravindra Adane
12	Trombay	25563382		25563382		Rehana Sheikh

**Ghodbunder EHV Zone:**

Cluster No.	Address	Names of Sr. Officers	Contact No. (Police Stn.)
1	<b>Mira Road Police Station</b> Kanakiya (Beverly) Park, Bhayander (E), Dist. Thane		022 - 28126767
2	<b>Kashimira Police Station</b> Jn. Off W Exp Highway & Mira-Bhayander Road, Kashimira, Dist. Thane	Sr.PI - Sanjay Hazare PSI Shaikh	9890597999 022 - 28457301 8657936948
3	<b>Bhayander (W) Police Station</b> Station Road, Bhayander (W), Dist. Thane	Sr.PI - Mukutrao Patil	9767506633 8657936951 022 - 2819257
4	<b>Charkop Police Station</b> Reserve Land (Svy. #152/3/4) Sector 2 Charkop, Kandivali (W), Mumbai - 67, Zone 11	Sr.PI - Manohar Shinde	7710806572 022 - 28676581
5	<b>MHB Police Station</b> Yogi Nagar, Police Officers Quarters, Borivali (W), Mumbai - 92, Zone 12	Sr.PI - Sudhir Kudulkar	9975575986 022 - 28677401 022 - 28677402
6	<b>Kasturba Marg Police Station</b> Jn. Off Main Kasturba Road & Cross Road #1, Borivali (E), Mumbai - 66, Zone 12	Sr. PI-Anil Avhad	9870018699 022 - 28066158
7	<b>Dahisar Police Station</b> Near Rajshri Jn. SV Road, Dahisar (E), Mumbai - 68, Zone 12	Sr.PI - Pravin Patil	9821238656 022 - 28971654

**National Disaster Management**

Sr. No.	Address	Contact No.	Fax No.
1	Ministry of Home Affairs National Disaster Management Division, Lok Nayak Bhawan, New Delhi MHA Control Room	011 - 23092923 011 - 23093054 011 - 23092885 011 - 23093897	011 - 23093750 011 - 23092763
2	Meteorological Department Maharashtra Flood, Drought, Tsunami Control Room	18001801717 022 - 22027990	022 - 22026712
3	SLDC (Kalwa)	022 - 27601765 022 - 27601766	022 - 27601769
4	MCC Transmission	9320290123	



## 10.6 EHV Substation-wise Hospitals and Fire Services Contact Numbers

### Aarey EHV Zone:

Sr. No.	Hospital Name	Contact No.
1	Sanjivan Hospital, Andheri	022 - 26833939
2	Seven Hills Hospital, Andheri	022 - 67676767, 67676766
3	Nanavati Hospital	022 - 26267500, 26267777
4	JJ Hospital	022 - 23735555
5	Sion Hospital	022 - 24076381, 24063000
6	Day & Night Ambulance Service	102 / 022 - 28732823
7	Fire Brigade, Marol	101 / 022 - 28210940 / 41
8	Holy Spirit Hospital, Mahakali Road, Andheri (E)	022 - 28248500/1/2/3, 42478888, 28248505

### Verosva EHV Zone:

Sr. No.	Hospital Name	Contact No.
1	BSES MG Hospital	022 - 66487500
2	Kokilaben Dhirubhai Ambani Hospital	022 - 30919191
3	Ambulance Service	102 / 022 - 26243675
4	Ambulance Service	9821531252
5	Fire Brigade, Andheri	101 / 022 - 26205301

### Ghodbunder EHV Zone:

Sr. No.	Hospital Name	Contact No.
1	Bagwati Hospital, Borivali (W)	022 - 28932461 / 62
2	BMC Hospital, Kandivali (W)	022 - 28647003
3	Karuna Hospital, Borivali (W)	022 - 61594698, 28953009
4	Bhaktivedanta Hospital, Mira Road	022 - 29452435, 61882435
5	St. Anns, Mira Road	022 - 28458663, 8291531912
6	Ambulance Service - Bhaktivedanta	8879936253
7	Ambulance, Mira-Bhayander	9870035135 / 9820332108
8	Fire Brigade, Silver Park	022 - 28553661
	Fire Brigade, Dahisar (E)	022 - 28977702
	Fire Brigade, Borivali (W)	022 - 28602847



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### Other Contact Numbers

Designation	Contact No.
Head - Mumbai Meteorology Department	022 - 22150517
Marine Engineering & Research Institute, Mumbai	022 - 23723577, 23725987
Bhabha Atomic Research Center, Trombay	022 - 25505050, 25592000

### NGOs at State Level

Designation	Contact No.
Indian Red Cross	022 - 23096979
Divya Joyti Jagrati	011 - 27020666, 27024555
Ratna Nidhi Charitable Trust	022 - 23898930 / 8530485324

Sr. No.	DM Group member		Name	Contact No.
1	Head - T&D		Suraj Phalak	9322218741
2	Head - NM		Nitin Kate	9323549946
3	Head - EHV & DSS Maintenance		Vighnesh Gawade	9324216596
4	Incident Controller	Head (Operations)	Mahesh Andhari	9323549996
		Head (Project Construction)	Unnat Prakash	7705912151
5	HR - Head (T&D)		Smt. Chanda Vanmali	9323550005
6	Zone Incharge	All EHV Zones	Mahesh Dange	9320328593
	Project Coordinator	All sites	Rajesh Vadangekar	9323951396
	Incharge (TFM)		Satish Shinde	9322131364
	Incharge (Cable Project)		Sandeep Godbole	9323702020
7	Head (Safety)		S. B. Gapat	9321486569
8	Medical Coordinator		Dr. Naresh Jhamnani	9324232140
9	Security Coordinator		Kiran Gurav	9607945337





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Electricity

# Adani Electricity Mumbai Distribution



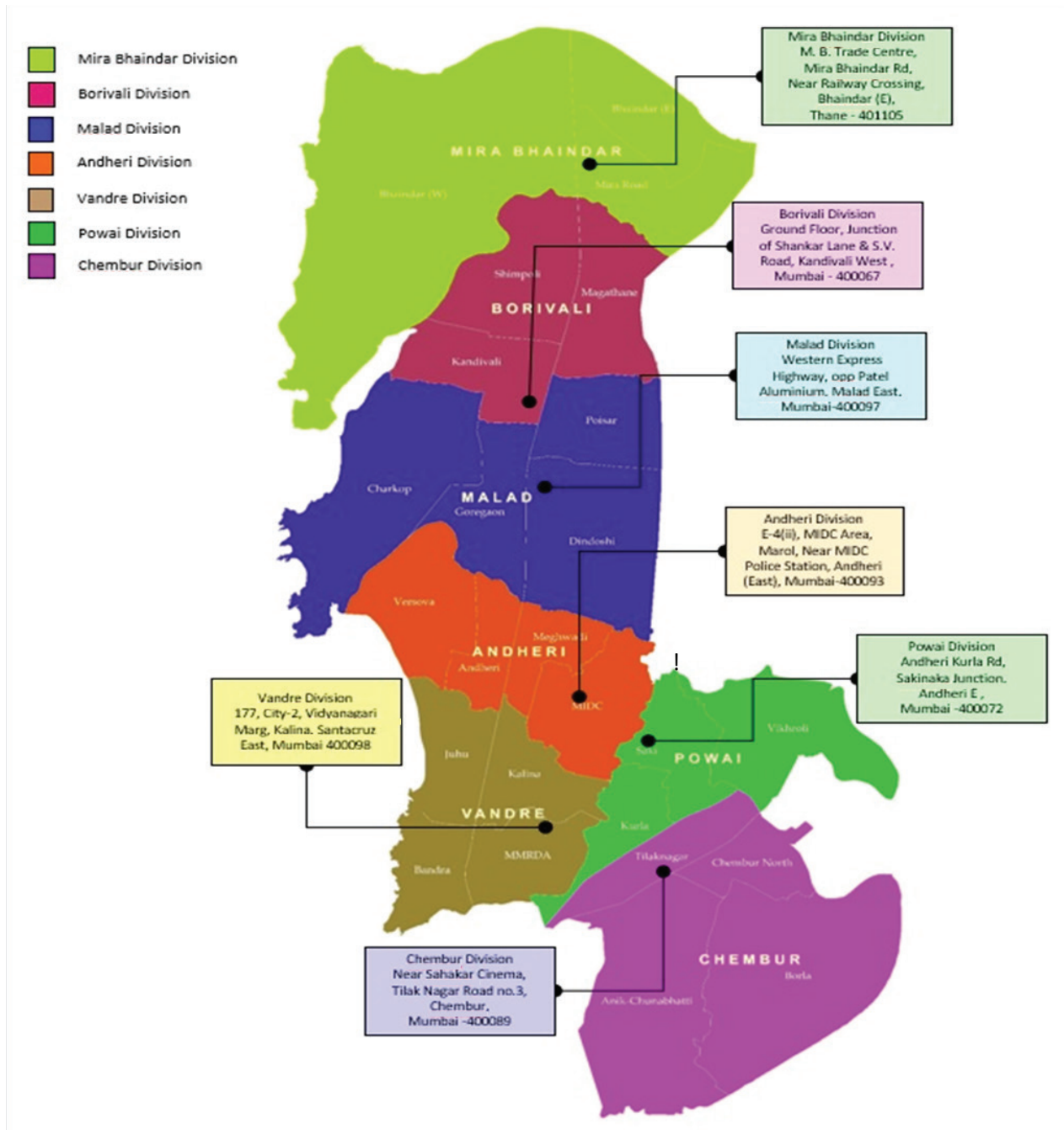




The power of service

## 11. Adani Electricity Mumbai Distribution at a Glance

Adani Electricity Distribution Network is spread over 400 sq. kms. catering to the electricity needs of over 3.2 million customers today. It extends from Bandra to Bhayander on the western side and Sion to Mankhurd on the eastern side.



Map Showing Operational Area of Adani Electricity

Adani Electricity believes in 'The Power of Service'. It is born with the 'will to make a difference'. Adani Electricity changes things for the better by powering the dreams of our consumers.



From an operational point of view, Adani Electricity's Supply Area is divided into 7 divisions

Division	Area
Vandre	Bandra, Khar, Santacruz, Vile Parle
Andheri	Andheri, MIDC, Marol, SEEPZ and Jogeshwari
Malad	Goregaon, Dindoshi, Poisar and Kandivali
Borivali	Kandivali, Shimpoli and Borivali
Mira-Bhayander	Mira Road, Bhayander (E), Bhayander (W), Uttan
Powai	Kurla (W), Saki and Vikhroli
Chembur	Chunabhatti, Chembur and Tilak Nagar, Govandi, Mankhurd

Adani Electricity strives to provide quality power to consumers with new technologies like state-of-the-art SCADA (Supervisory Control and Data Acquisition) system as its backbone, secondary SCADA, GIS (Geographical Information System), OMS (Outage Management System), WMS (Work Management System), etc. to ensure uninterrupted power supply to its 3.2 million consumers.

At the System Control Center, Adani Electricity monitors and controls the entire open ring system distribution network. The distribution network has NOPs (Normally Open Points) for regulating supply to other parts of the network in case of any abnormality. With the kind of topology of 11 kV network, Adani Electricity is successful in maintaining the reliability and quality of power being supplied to the consumers.

Adani Electricity implements, monitors and controls 33 / 22 / 11 kV Distribution Substations (DSS) and 11/0.433 kV Consumer Substations (CSS) from its advanced Network Operation Center (ANOC). Its ADMS System also analyses the data, does complex network calculations to give Network status where no remote monitoring is possible. It monitors the distribution system and its behaviour closely and takes prompt actions to reduce the downtime of the network. We have 100% automation for 33 / 22 / 11 kV DSS and 60% automation for 11/0.433 kV CSS which is being raised to 100% in the near future.

## 12. Adani Electricity - Distribution Disaster Preparedness

Adani Electricity management has drawn up an elaborate Disaster Management Plan to minimise the damage and disruption of power supply during any probable natural disaster. It has also put in place a well-defined response, recovery and restoration plan with its associated infrastructure.

### 12.1 Creation of Dedicated Disaster Management Teams

Disaster Management Teams consisting of senior and experienced personnel drawn from various functions have been formed at the Central Control Center level as well as at the 7 Divisional levels. Regular review meetings of various teams are held to assess the level of preparedness in respect of Material, Manpower and Transport.

Apart from the Apex DM Team stationed at the Central Disaster Control Center (CDCC) at Hiranandani Powai, 7 Divisional DM teams' function from Divisional Disaster Control Centers (DDCCs) located at respective Divisional Offices across Mumbai Suburban Areas. These Disaster Control Centers are

equipped with communication gadgets including wireless communication equipment like Radio Frequency Walkie-Talkie Sets, Hotlines, etc. Apart from these, mobile phones are provided to each executive for ease and continuance of communication in case the normal communication system fails. Hotline connectivity is available between our System Control Center Complaint Management Cell (CMC) and MCGM's Primary Disaster Control Room at their Head Quarters opposite Mumbai CST and their backup Control Room at Parel. We have also acquired and installed a BSNL Satellite Phone at the Network Operation Control Center.

### **Disaster Management Manual**

A comprehensive Disaster Management Manual specific to our business has been prepared for reference and guidance to all employees connected with Mumbai business. This updated reference Manual covers information of DM Cell, round-the-clock accountability of available quick response teams, response trigger mechanisms and resource management at pre-defined locations. The updated Manual is available on the Company's Intranet Portal and all employees can access and view the same.

### **12.2 Training of Teams**

Organisation has identified 32 teams for quick response during and effective recovery post disaster. These teams have trained and experienced personnel with indepth understanding of Adani Electricity's electrical system and are on-call 24x7.

### **12.3 Pre-disaster Preparedness**

A total of 32 Quick Response Teams are identified for quick response during and post disaster. The role of each team has been defined with necessary briefing / training conducted when needed, including mock drills.

The disaster trigger mechanism is defined and methodology of alerting and activating all teams within the shortest possible time has been worked out.

### **Safe Loading of Lines, Equipment and Network Redundancy**

Installed capacities of Power Transformer (PT) are 1.5 times and Distribution Transformers (DT) are 2 times Peak Load Demand. All DT CSS are provided with energy audit metering which are upgraded when new loads are added. All Substations are interconnected by Ring Main Unit (RMU) type switchgear which ensures redundancy of supply with minimal interruptions in case of network fault.

### **12.4 Infrastructure**

#### **a. Additional Spares and Capex Materials**

- i. Essential spare parts, tools and other equipment are specifically reserved for use in the event of a catastrophic disaster. They are stocked at 10 locations over the area of supply. These materials are at the disposal of divisional teams. Each of these locations has 70 Nos. of different types of identified equipment, including major Capex equipment like Distribution Transformers, HT / LT Switchgears, HT / LT Cables, accessories etc. apart from other electrical utility spares
- ii. 9 Distribution Transformers, over 300 kms. of cables, 12 LT pillars, 25 Mini pillars
- iii. Adequate reserves of LT / HT jointing kits and LT / HT HRC fuses
- iv. 20 de-watering pumps of 3-HP rating for evacuation of flood water are kept in working conditions at strategic locations

**b. Transportation Emergency and Other Resources**

- i. Adequate nos. of vehicles like trucks, pickup / delivery vans and testing vans equipped with emergency repair kits, tools, safety gear and PPE are available during the monsoon period. These have been placed at all Divisional offices and Depots
- ii. In addition to the above, DG Sets of various capacities are on '24x7 standby basis' and 'As and When' basis
- iii. One satellite phone at the Network Operation Control room for business continuity in case of complete communication failure

**c. Medical Support, Additional Crews, Security Guards and Communication Support**

- i. Medical teams to provide first-aid training with training on monsoon related diseases to employees including contract labour are available. Necessary medicine is also distributed to all field level employees and contract labour as and when required
- ii. Teams are trained to conduct First Aid on Disaster Management for identified teams
- iii. Additional skilled employees from other functions are absorbed in NM based on their necessity and availability
- iv. 31 Radio Frequency Walkie-Talkie (Handset & Base Set) are available at all Divisions as well as Control Center

**12.5 Fire Safety Management System at AEML - D**

The areas covered for firefighting are:

- 33 kV / 11 kV Distribution Substations (DSS)
- 11 kV / 0.440 kV Consumer Substations (CSS)
- AEML - D Office building

**Fire protection sub-systems installed for firefighting:**

- Portable fire extinguishers
- Trolley type fire extinguishers
- Emulsifier system-based on water sprinklers for protection of power transformer
- Nitrogen-based fire extinguishing system for protection of power transformer

The type of fire is quickly identified by Area / Distribution Substations in-charge and action to extinguish the fire is initiated. The Area-in-Charge is responsible for equipment isolation, if any, and to control fire with the help of firefighting equipment and inform the Fire Brigade.

Inspection, testing and refilling of fire extinguishers are done in coordination with the department. Health check of firefighting system is done periodically. Mock fire drills are conducted for creating awareness among employees at all working locations. Regular awareness sessions are conducted in slums and residential areas to educate and safeguard our consumers.



Safe Raho, Khush Raho - Safety awareness program for consumers

## 12.6 Cyber Security: Business Continuity / Disaster Recovery Plan for IT

### a. Server load balancing and redundancy

- i. All servers are configured in load balancing and redundant mode in DC
- ii. Hard disks of main server system are configured in disk array to ensure redundancy for failure of hard disks
- iii. Server System stores data on different server machines i.e, Primary and Secondary, for in-built redundancy of data (Fail-over / HA mode)
- iv. Secondary server where data is stored shall be active in case of failure of the Primary server
- v. IT Network devices are configured in HA mode
- vi. IT Network links are configured in HA mode
- vii. IT Network links are taken from different service providers

### b. Backups and Restoration

- i. Backup of all critical servers is taken in accordance with the backup frequency and type of backups identified by respective stakeholder
- ii. Backup restoration and testing activity is carried out periodically
- iii. All administrators check if the data can be read properly on the successful completion of a backup using testing features of the Backup solution

## 12.7 Central and Divisional Control Centers

As per Disaster Management Act, 2005, Central Disaster Control Center (CDCC) is equipped with necessary communication facilities such as dedicated teams to man these centers 24x7 especially during the monsoon months (June 1 - September 30). In addition, 7 Divisional Disaster Control Centers (DDCCs) are also set up with similar arrangements. These arrangements will continue to operate if the monsoon period extends beyond September. The contact details of control center are appended vide Annexure - 2.

## 12.8 Distribution / Consumer Substations in Low-lying Areas

Distribution / Consumer Substations in low-lying areas have been identified and a disaster recovery plan for their speedy restoration is in place. Adequate resources have been reserved to meet any contingencies in case of disruption of supply to these Substations in low lying areas.

### 12.9 Pre-Monsoon Maintenance Checks

All network and equipment are subject to additional physical verifications. Preventive maintenance audits are carried out prior to monsoons for moisture ingress in any form. This includes cleaning, drying and sealing of busbars and switchgears, water seepage checks at substation ceilings, Distribution Substations (DSS) etc. All accessories in outdoor type HT installations and cable terminations etc; in pole-mounted type consumer substation are cleaned and sealed to prevent moisture ingress.

### 12.10 Identified Essential Consumers

Our supply network is an open ring system ie, every consumer Substation is fed by a duplicate source of supply to provide enough redundancy in HV / LV network to minimise interruption of supply by providing power through alternate source of supply. Personnel from the operation squad are available round the clock at strategic locations for faster restoration of supply in case of emergency.

In case of major failure, due to man-made or natural disaster, priority will be to safeguard the distribution system to prevent shock, fire, and loss of human life. Essential consumers have been identified as detailed here:

Airport	Public Transportation Mass Transit
Metro	Public Transportation Mass Transit
MCGM Installations	All hydraulic and Sewage Pumping Stations
Hospitals	All Government, MCGM and Large Private
Defence Establishments	Military and Civil Establishments
Government Installations	Radio Stations, MTNL Exchanges, Mantralaya
Mobile Towers	All Mobiles / Telephone Exchanges

### 12.11 Supply - Side Disaster Management Process

#### a. Risk / Threat / Potential Event

- Non-availability of Generation / Transmission Network
- Manmade Disaster or Natural Disaster in Local Area of Generation

**Probability: Low**

#### b. Action Plan to Match Demand and Supply

- Dedicated control desks monitor the demand and supply positions on a continual basis
- Any tripping or failure of Generation / Transmission line is reported by Generator / MSLDC / through mail / phone
- AEML / Power procurement is responsible for AEML network demand and supply matching as per existing Balancing and Settlement Code
- AEML / power procurement will arrange power as per MOD irrespective of the contract
- In case of technical constraints or emergencies, demand and supply are matched irrespective of contracts and post-facto settlement takes place between utilities
- All actions are taken as per 'Scheduling and Dispatch Code / DSM' as approved by MERC



### c. Risk / Threat / Potential Event

All emergency related transmission systems have been addressed by our Transmission Division along with response and recovery plans. All documents pertaining to transmission emergencies and disaster management are available on our intranet.

## 13. Communication

Communication before, during and after a disaster dictates the success of Prevention and Relief efforts. It is one of the important aspects of any Disaster Management Plan.

### 13.1 External Communication - Media, Public Information

AEML's corporate communication team communicates with external stakeholders via 24x7 toll-free helpline 19122 (Toll-Free), SMS and social media handles with important updates.

### 13.2 Internal Communication Plan

Internal Communication flow among an organisation's staff plays a key role in mitigating disaster. For effective communication, all employees including site staff have been provided mobile phones. Wireless handsets are given to field crews for faster communication. Contact number directory is available on intranet which is accessible 24 hours at the control center. 2 satellite phones are available for emergency communication.

## 14. Power Helpline for Consumer Connect

**19122 - 24x7 Toll-Free helpline:** A seamless Interactive Voice Response (IVR) service has been established to handle all customer complaints, queries and other information needs. Staffed with multilingual, professionally trained agents, they offer services in English, Hindi, Marathi and Gujarati. In the likelihood of a situation leading to disaster, there is an arrangement of an option for shifting / taking additional provisions at Call Centers.

Customers can also lodge their 'No supply complaint' at zonal offices. During monsoon, in case of emergencies like Fire and Shock Complaints, they can call 24x7 Central Disaster Control Room on 50549111 / 50547225 from June to September.

**Virtual Contact Center:** Consumers can also lodge complaints from Adani website with their customer account number.

**Missed Call:** 18005329998 - Consumers can call from their registered mobile number to register their complaint or know the status of power restoration.

**SMS:** Send Power<9-digit account no.> to 7065313030 e.g. If your account no. is XXXXXXXXX, then send Power XXXXXXXXX, to 7065313030.

**WhatsApp:** Business Account 9594519122. Consumers can register 'No supply Complaint' 24x7.

## 15. Complaint Handling Centers

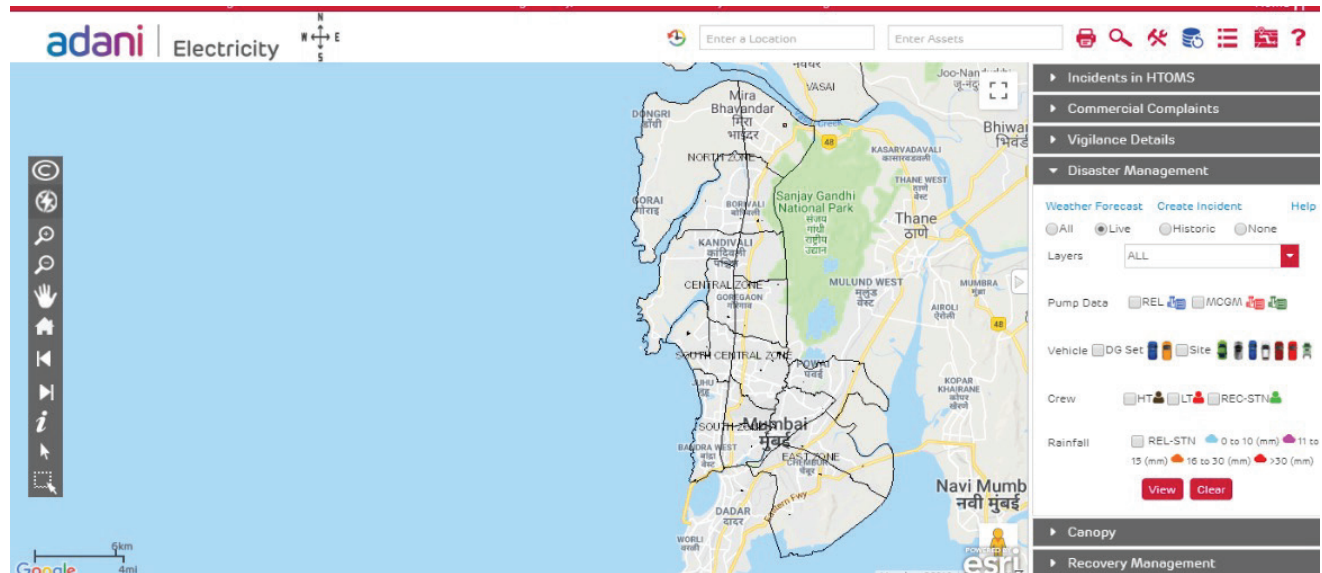
Apart from 19122 (Toll-Free) Customers can lodge their 'No supply Complaint' at the following Complaint Handling Centers serving their area.

Sr. No.	Control center	Location Address	Contact No.	Alternate No.
1	AEML	Adani Electricity Management, Disaster Control Room, Unit No.19, Goregaon (E), Mumbai-400065	50547165	9324216667

## 16. Disaster: Response, Recovery and Restoration

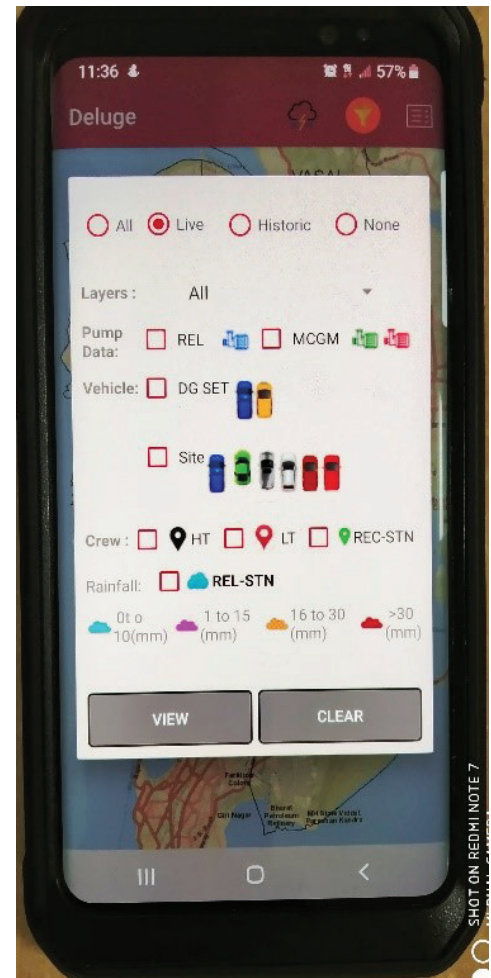
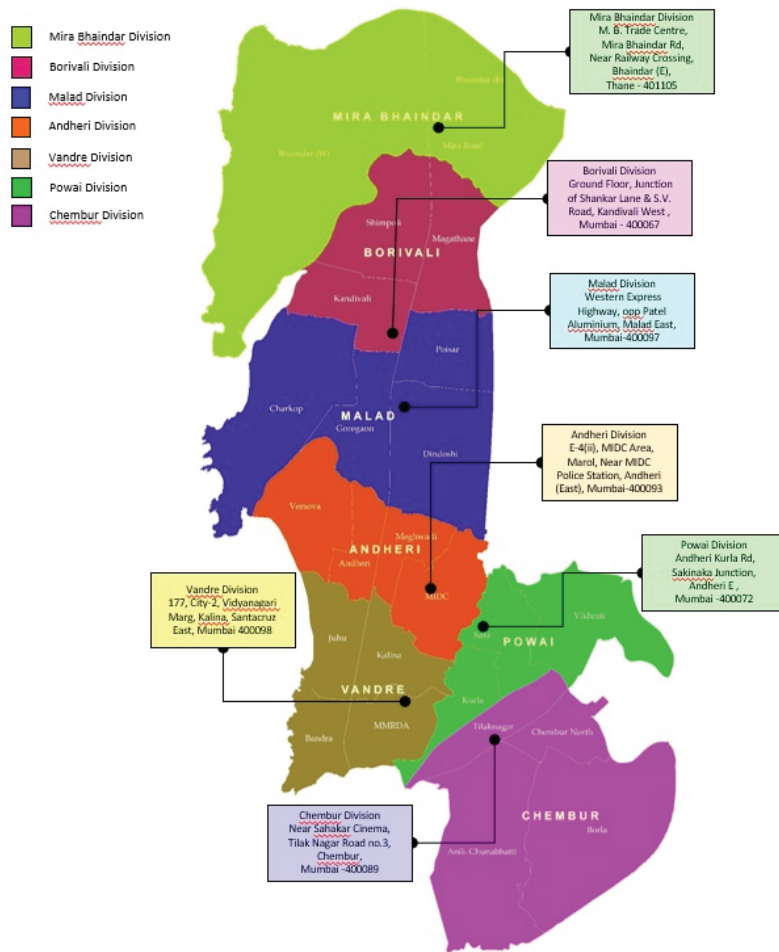
1. Accurate information collection and assessment - When a disaster occurs, the Manager needs reliable data based on which priorities can be decided and guide response as appropriate
2. Balanced response - Each type of disaster requires a different set of responses
3. Notification - The first reaction to an interruption on account of disaster would be to inform all the relevant people (referred as teams) about the interruption

### Disaster Management Portal

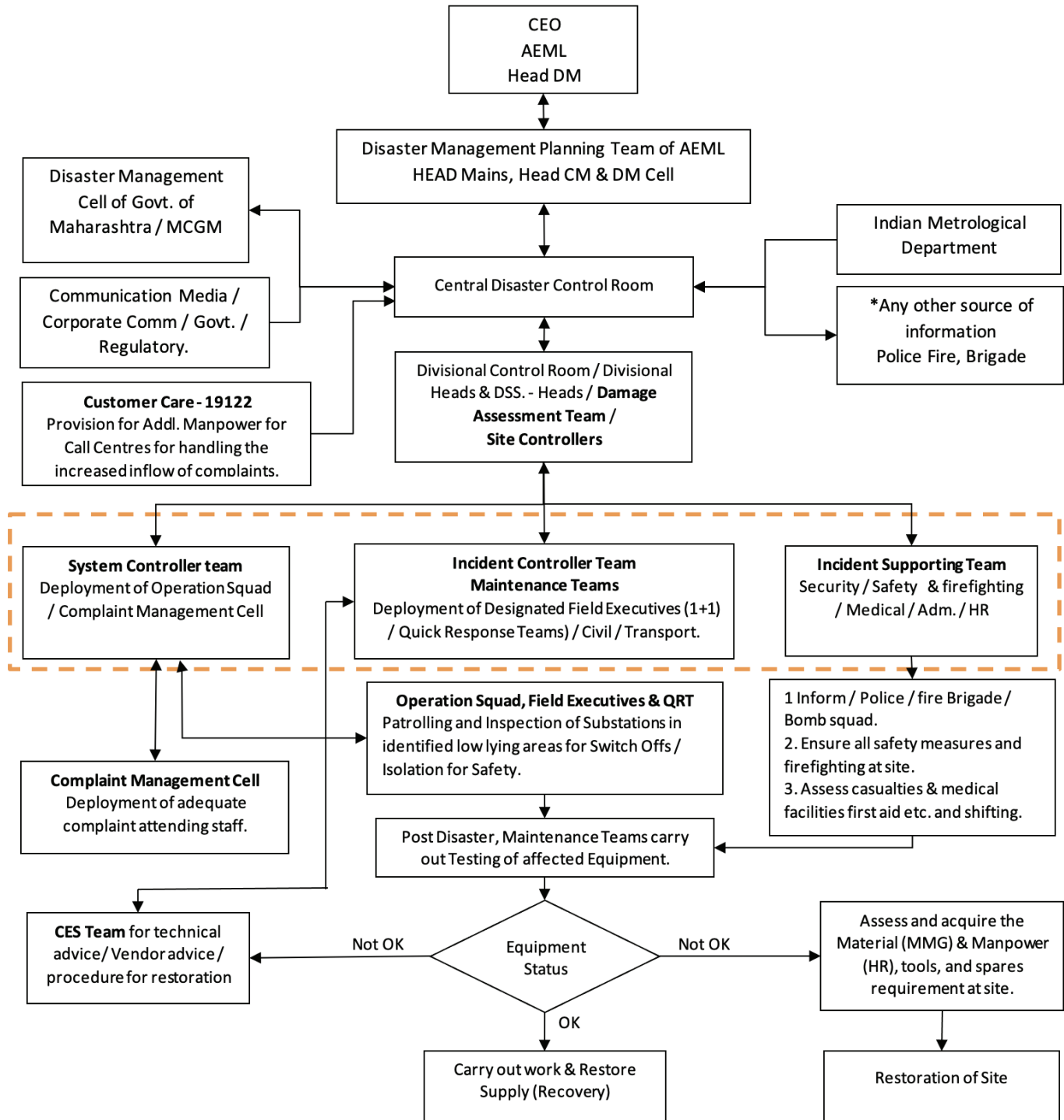


Adani Electricity has a disaster management portal on our GIS platform that is accessible to all employees. The purpose of this portal is to have minimal or zero consumers affected during a deluge situation. Information related to deluge can be accessed on a single platform. This helps to interlink and correlate the data captured from other systems and derive actionable points in restoring supply in an optimal way.

## Disaster Management Portal Mobile App



A mobile app has been developed so that field staff can access and share live information from the site. Actions taken onsite during disaster, like recording Division / Zone-wise assets affected due to water logging, water level, reason for switching 'OFF', action taken to recover affected assets, expected restoration time and intimation to 'Pump Operator' can be fed in. This App is also useful for identification and allocation of de-watering pumps, mapping waterlogged area on GIS, allocation and communication of the affected asset to the asset owner.



## 17. Roles and Responsibilities Disaster Management Cell (DMC) and Team

- **Head - T&D** (Mumbai Distribution) shall be the Chairperson of Disaster Management Cell
- **Head - Mains, Head - CM and Head - DM Cell** will be incharge of the Disaster Management Cells and will be the main coordinating authority in case of disaster and are the Disaster Management Planning Team of AEML. They will coordinate with Management to authorise emergency response and further actions. They will deal with the press, public, customers, shareholders, and other stakeholders. The DM Cell is responsible for implementing the Disaster Management Plan and acting as the coordinating, controlling and monitoring body

### The DM Planning Team Shall:

- a. Examine the vulnerability of different parts within the organisation for different forms of disasters Natural / manmade and specify measures to be taken for their prevention or mitigation
- b. Lay down, review and update guidelines for preparation of Divisional / Centralised Department disaster management plans
- c. Monitor the implementation of the guidelines laid down for integrating measures for prevention of disasters and mitigation by the departments
- d. Evaluate preparedness at all functional levels to respond to any threatening disaster situation or disaster and give directions, where necessary, for enhancing such preparedness
- e. Coordinate response / rescue team in the event of any threatening disaster situation
- f. Provide information to the concerned Government Authority relating to different aspects of disaster management

### Central Disaster Control Room:

Apart from our Master Control Center (MCC) that function 24x7, 365 days for catering to supply related incidents, a separate 24x7 Central Disaster Control Room (CDCR) is setup and activated during the monsoon months from June to September as laid down in the Disaster Management Act, 2005.

Office of the Addl. Mun. Commissioner, MCGM is the District Disaster Management Authority as stipulated under the Disaster Management Act, 2005 who directs us to activate our CDCR from 1<sup>st</sup> June and deactivate it as per the vagaries of the monsoons.

MCGM coordinates with AEML on their 2 hotlines for all disaster related matters concerning electric supply. AEML is one of the Emergency Support Function to the Lead Agency, BEST.

CDCR maintains 2-way coordination with internal stakeholders as Head - Mains, Head - CM and DM Cell, Divisional Control Rooms, System Controller Team, Div. Maint. Heads, Incident Controller Team, Maintenance Team and Incident Support Teams.

CDCR maintains 2-way coordination with Disaster Management Cell (Maharashtra Gov.), MCGM, Communication Media, GoM, Regulatory and Indian Metrological Department.



### **Divisional Heads, Damage Assessment Team & Site Controller**

Assess the damage due to disaster and rate the severity of the interruption. Identify any need of refurbishment or replacement of the equipment.

#### **In addition:**

- Maintain the prior agreed inventory of emergency equipment in the Emergency Control Center
- Shift schedules for all areas are kept readily available
- Direct all actions taken on the actual on-site condition
- Update onsite Disaster Management Plan to COO
- Direct the Operational and Technical Team at the work spot for execution
- Review the proposals made by the Technical / Maintenance Teams
- Help define and prioritise the actions and resources to reduce immediate risks
- Identify the priorities of actions required
- Estimate the additional support required for immediate resumption / recovery
- Request for help from Authorities like MCGM, MBMC Fire brigade, Ambulance, Police, NGOs etc. List of coordinating authorities are attached in (Annexure 2 a.b.c)

### **Incident Controller Team**

They comprise functional heads and shall deploy Quick Response Teams and Maintenance Teams for recovery or stopping further damage.

They identify and train field executives for deployment in 1+1 formation (for redundancy). They rush to disaster affected Substations to take necessary electrical circuit switch-offs / isolation. In addition, Quick Response Teams and Maintenance Teams are formed to carry out restoration and normalise the system. They also coordinate with MMG, HR and CES for the requisite material, manpower and technical support required to restore supply with minimum down time.

### **Maintenance Team (DSS, HT&LT)**

Respective team will visit the site and assess the loss due to the disaster. Make proposals for replacement of equipment etc.; and serve as key decision-makers for further activities of the recovery of site.

- Execute preventive maintenance schemes planned by CES and System Controller
- Coordinate with CES Team for technical specifications of the equipment and procedures for execution of the schemes in a timely fashion
- Budgetary team for necessary MERC approvals and Budgetary provision for the execution of the schemes. (Annexure B1, B2, B3)

### **Operations & System Controller Team**

Act as a first response to a disaster event to recover or to stop further damage with appropriate operations on network components.

- Discuss with the Divisional / HT Heads the loading of the 11 kV feeders. Identify critical feeder for essential consumers
- System controllers approve the outages plan operations, issue work permits
- Ensure section outage and supply restored for balanced section (Annexure C)

CES would serve as the key decision-maker for budgetary provision, planning and execution of schemes to eliminate / minimise the impact of disaster event in future.

### Quick Response Team

- This team is well equipped with tools and instruments, skilled fitters and jointers working under experienced engineers
- A quick response team visits the incident site, isolates the faulty section / equipment and arranges for supply restoration in coordination with System Controller team and LT Team
- This team isolates the fault and charges the network after adequate testing of equipment

### Powai Division Quick Response Team

The table gives the Powai Division details of the Quick Response Team.

Similar teams are also identified by other 6 Divisions.

Location	Saki Naka Office	Kurla Bailbazar-1	Kurla Bailbazar-2	Vikhroli	Tagore Nagar
Team Leader	Nilesh Lohar 9321340497	Prashant Tawde 9322603893	Arvind Jadhav 9321044665	Arun Sivaram 7208905229	Arun Sivaram 7208905229
Executive	Sunil Sawant 9323126179	Sachin Redij 9323470344	Suraj Bawane 9323470343	Rajesh Bawaskar 9323470363	Rajesh Bawaskar 9323470363
JE/Supervisor	Shivakumar Pandey 7208084681	Kishan Namdas 8169564099	Rajendra Wagh 9323702094	Manish Patel 7208970630	Ravindra Raul 9323701963
Jointer	Krishtya Potugulla 9323569572	Suresh Rajbhar 9082021102	Suresh Rajbhar 9082021102	Ganesh Bhawe 9326206366	Ganesh Bhawe 9326206366
Linesmen	Narsimha Boya 7498508091	Girish Patil 9320137750	Girish Patil 9320137750	S K Madegauda 9320698911	S K Madegauda 9320698911
Fitter	Sadashiv Kale 9702272556	Chandrakant Jadhav 9833598993	Chandrakant Jadhav 9833598993	Bhagwan Paste 8691906669	Bhagwan Paste 8691906669
Vehicle No.	MH47AS0981	MH47-AS-1026	MH47AS0981	MH47A1204	MH47A1204
CL	DRR-04 Nos.	SDR - 04 Nos.	DRR-04 Nos.	DRR-04 Nos.	KRR-04 Nos.

### Incident Supporting Team

This team comprises all executives from Security, Safety and Fire-Fighting, Medical, HR, Admin, Civil and Transport Teams. Their role is to support the Core Team to bring the system back to normal and ensure that a safe working environment is created to enable other Teams to start their operations at the earliest.

### Main Role & Responsibility

- Evacuate the affected area and ensure Head Count at safe Assembly Area/s
- Undertake fire fighting operations
- Undertake Search & Rescue operations as per the need
- Render first aid to the victims and send the casualties to the Hospital as advised by the Medical Officer within the Team
- Arrange for the welfare of the people assembled at safe Assembly Area and shift them to Shelter/s if necessary

## **Roles and Responsibilities**

### **a. Safety and Firefighting Teams**

- Arrange extra Personal Protective Equipment (PPE) such as (helmet, mask, safety shoes, gloves)
- Collect and preserve evidence related to accidents/disaster
- Guide authorities on all safety related issues
- Any other responsibilities as decided by Executive Site Controller looking into the circumstances at the time of disaster
- Formulate the procedure and process of fire management in the AEML Premises (Office Buildings and Distribution Substation Building)
- To prepare matrix and coordination teams as part of OHSAS
- Conduct and keep in record fire safety mock drill twice a year at office buildings of our AEML(D)
- Arrange firefighting training in coordination with Security and Administration on a periodic basis
- Monitor list of all fire extinguishers, update their refilling and ensure availability of competent first aiders

### **b. Security Officer**

- Ensure all installations are guarded against trespassing / entry of unauthorised personnel
- Arrange screening of visitors / outsiders
- Ensure restriction on the involvement of outsiders
- Protect the restricted vital premises
- Arrange to verify the issued gate passes / arrange to provide visible identity batches
- Organise traffic / crowd control
- Provide additional security and Home Guards to the staff and executive attending the Disaster Site
- Coordinate with Fire Brigade, Police officials, ATS, Bombs disposal squad as and when required

### **c. Medical Executive Team**

- Direct all medical activities through his team of Doctors
- Provide first aid and other medical facilities at the earliest
- Liaison with the nearest hospitals / dispensaries and ask for specific medical assistance from outside
- Maintain casualty cards and medical stockpile
- Maintain blood group, register of the employees
- Organise camps for the hygiene of employees / precaution against epidemic
- Coordinate for equipped ambulance and other medical facilities
- Assess the casualty and co-ordinate with Hospitals in nearby area
- Arrange and give First Aid training and precautionary measures to be taken during epidemics, shocks, snake bites, heart attacks, fracture, etc.

### **Administration / HR Teams**

- Provide support to DM teams in terms of food, transport and accommodation
- Ensure personal attention to external manpower for their comfortable stay in Mumbai
- Ensure casualties / injured receive adequate medical attention and arrange additional help if required
- Arrange transport for casualties to first aid post, safe places or medical centers
- Arrange relief of personnel, refreshments and canteen facilities when emergency is prolonged
- Maintain details of employees and pass information to kith and kin of fatal and injured persons
- Arrange temporary residential accommodation, reliever and catering facilities
- Any other responsibility as decided by Executive Controller looking into the circumstances at the time of disaster

## **Annexure A to D: Damage Assessment Team and Site Controller**





## 18. Annexure A to D: Damage Assessment Team and Site Controller

### a) Annexure A: Division / DSS Head

Sr. No.	Designation	Officer	E-Mail	Contact No.
1	Head DSS	Vighnesh Gawade	vighnesh.gawade@adani.com	9324216596
2	Divisional Head - Vandre Division	Umesh Kamat	umesh.kamat@adani.com	9321044397
3	Divisional Head - Andheri Division	Shrikant Yeole	shrikant.yeole@adani.com	9323552945
4	Divisional Head - Malad Division	Kiran Shinde	kiran.shinde@adani.com	9022961249
5	Divisional Head - Borivali Division	Manoj M. Chouhan	manoj.m.chouhan@adani.com	9323552830
6	Divisional Head - Mira-Bhayander Division	Jaypal Vadgave	jaypal.vadgave@adani.com	9322218682
7	Divisional Head - Powai Division	Rajesh Nerurkar	rajesh.nerurkar@adani.com	9322218732
8	Divisional Head - Chembur Division	Abaji Neralkar	abaji.naralkar@adani.com	9324817526

**b) Annexure B1: Maintenance Team Distribution Substation (DSS)**

Sr. No.	Executive	Function	Division	Contact No.
1	Vighnesh Gawade	HOD - DSS Maintenance	All 7 Divisions	9323552858
2	Mahesh Dange	Head - RSM	All 7 Divisions	9320328593
3	Mohan Waigankar	Head - T&P	All 7 Divisions	9324216664
4	Rajesh J Sawant	Maintenance Planning TSS / DSS	All 7 Divisions	9325119643
5	Sunil Bhujbal	Maintenance Planning DSS	All 7 Divisions	9321044307
6	Sanjay Salunkhe	DSS / TSS Maintenance	Andheri, Vandre, Chembur, Powai	9324582596
7	Bharat Ahire	DSS Maintenance	Andheri, Vandre, Chembur, Powai	9321044683
8	Dinesh P Kadam	DSS Maintenance	Andheri, Vandre, Chembur, Powai	9321044281
9	Swanand Sawant	DSS Maintenance	Andheri, Vandre, Chembur, Powai	9323126183
10	Jitendra Jadhav	DSS Maintenance	Andheri, Vandre, Chembur, Powai	9324216618
11	Swapnil Sukalkar	DSS Maintenance	Andheri, Vandre, Chembur, Powai	9320328587
12	Suresh Patil	TSS / DSS T&P	Andheri, Vandre, Chembur, Powai	9324177944
13	Amol Nikam	DSS T&P	Andheri, Vandre	9320327679
14	Hulaji Dorugade	DSS T&P	Andheri, Vandre	9323951431
15	Sunil Bamne	DSS T&P	Andheri, Vandre	9323951401
16	Prasad Datar	DSS T&P	Chembur, Powai	9324216639
17	Ashok Dhale	DSS T&P	Chembur, Powai	9323951404
18	Vilas Patil	DSS T&P	Chembur, Powai	9323950789
19	Somit Kumar	DSS / TSS Maintenance	Malad, Borivali & Mira-Bhayander	9323805701
20	Mangesh Sardal	DSS Maintenance	Malad, Borivali & Mira-Bhayander	9323951414
21	Chandrakant Marathe	DSS Maintenance	Malad, Borivali & Mira-Bhayander	9699972194
22	Namit Satam	DSS Maintenance	Malad, Borivali & Mira-Bhayander	9321044654
23	Satish Parab	DSS T&P	Malad, Borivali & Mira-Bhayander	8080009542
24	Sunil Vikhare	DSS T&P	Malad, Borivali & Mira-Bhayander	9323951412
25	Santosh Kumbhar	DSS T&P	Malad, Borivali & Mira-Bhayander	9323441449

### c) Annexure B2: Division HT Maintenance Team

#### HT Maintenance Team

Sr. No.	Division	Name	Contact No.
1	Vandre	Kiran Suryawanshi	9322427653
		Shivashankar Lohare	9320328621
2	Andheri	Ramdas Patil	9323702026
		Rakesh Gudekar	8767961555
3	Malad	Shasikant Misal	9324905358
		Satish Tambe	9321044108
4	Borivali	Suresh Dongare	9321044122
		Subhash Ardalkar	9324904844
5	Mira-Bhayander	Prashant Salian	9321044408
		Aditya Jain	9699113180
6	Powai	Ashish Gaikwad	9320399849
		Arvind Jadhav	9321044665
7	Chembur	Sandip Jadhav	7208905236
		Sandeep Machkar	9323820938

#### HT Projects Team - Consumer Substation (CSS)

Sr.No	Division	Name	Contact No.
1	Vandre	Yogesh Panchal	9324904843
		Sunil Katkar	9323470346
2	Andheri	Dattatray Nikam	9323806437
		Yash R. Bichave	8356858853
3	Malad	Rajesh Kandalgaonkar	9323646746
		Deepak A. Patil	9322803963
4	Borivali and Mira-Bhayander	Rajesh Vartak	9322956291
		Sujeet Kuwar	9322803961
5	Powai and Chembur	Avinash Chaudhari	9323126175
		Audumber Bobade	9321923461

#### d) Annexure B3: Division LT Maintenance Team

##### Vandre Division

Division	Zone	Name	Contact No.
Vandre	Bandra	Vikas Satam (Zonal Head)	9321044564
Vandre	Bandra	Vishal Chaudhari (LT NM)	9323729532
Vandre	Bandra	Suresh Nandawade	9324905067
Vandre	Bandra	Ashok Pawar	9324193820
Vandre	Bandra	Nasir B. Shaikh	9022919166
Vandre	Juhu	Vikas Satam (Zonal Head)	9321044564
Vandre	Juhu	Pandurang Kalekar (LT NM)	9323418939
Vandre	Juhu	Suresh Pawar	9321044573
Vandre	Juhu	Sachin Gharat	9322803950
Vandre	Kalina	Ajay Lade (Zonal Head)	9322105789
Vandre	Kalina	Prasad Kadam (LT NM)	9324193757
Vandre	Kalina	Laxmikant Ahinave	9320124678
Vandre	MMRDA	Subhash Shigwan (LT NM)	9323702353
Vandre	MMRDA	Ajay Pardeshi	9323126186
Vandre	MMRDA	Dattaram Sawant	9323699197

##### Andheri Division

Division	Zone	Name	Contact No.
Andheri	Andheri	Abhijit Patil (Zonal Head)	9322603919
Andheri	Andheri	Sanjay Khatal (LT NM)	9323791967
Andheri	Andheri	Mahesh Perumalla	9892688301
Andheri	Versova	Abhijit Patil (Zonal Head)	9322603919
Andheri	Versova	Dominic Alvares	9324507266
Andheri	Versova	Rukmangad Deshpande (LT NM)	9320399848
Andheri	Meghwadi	Anurag Thatte (Zonal Head)	9320499374
Andheri	Meghwadi	Sunil Chavan (LT NM)	9320328615
Andheri	Meghwadi	Pranav Bunge	9323795865
Andheri	Meghwadi	Abhimanyu Patil	8169444864
Andheri	MIDC	Amit Mandal (LT NM)	9324056706
Andheri	MIDC	Chandan Pawar	9323470340
Andheri	MIDC	Vijaykumar A Kadam	9321044129



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#### Malad Division

Division	Zone	Name	Contact No.
Malad	Goregaon	Sandesh Mane (Zonal Head)	9324216588
Malad	Goregaon	Swapnil Umale (LT NM)	9323553037
Malad	Goregaon	Vasant Palkar	9323810619
Malad	Goregaon	Sadashiv Bhikle	7498508085
Malad	Dindoshi	Satyajeet Varadkar (Zonal Head)	9323629438
Malad	Dindoshi	Prashant Mane (LT NM)	9322956270
Malad	Dindoshi	Hareh Parab	9321536894
Malad	Dindoshi	Sagar Sable	9323126196
Malad	Dindoshi	Lavu More	9324904850
Malad	Poisar	Mahesh Rajole (LT NM)	9322343984
Malad	Poisar	Rajesh Pendse	9322150615
Malad	Charkop	Sandesh Mane (Zonal Head)	9324216588
Malad	Charkop	Dipesh Hanote (LT NM)	9321306847
Malad	Charkop	Hareh Rane	9320109565

#### Borivali Division

Division	Zone	Name	Contact No.
Borivali	Shimpoli	Pushpraj Jaint (Zonal Head)	9322218672
Borivali	Shimpoli	Subhash Desai (LT NM)	9322424592
Borivali	Shimpoli	Naresh Boya	7498411292
Borivali	Shimpoli	Mahesh B. Patil	9372683013
Borivali	Magathane	Sachin Suryavanshi (LT NM)	9323701986
Borivali	Magathane	Ramesh Gawde	9323470359
Borivali	Magathane	Saurabh Takarkhede	7208846735
Borivali	Kandivali	Pushpraj Jaint (Zonal Head)	9322218672
Borivali	Kandivali	Prathmesh Ajgaonkar (LT NM)	9324582598
Borivali	Kandivali	Chandraprakash Koravi	7208846724
Borivali	Kandivali	Pravin Bhoir	9321044110





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Electricity

### Mira-Bhayander Division

Division	Zone	Name	Contact No.
Mira-Bhayander	Mira Road	Ganesh Patil (Zonal Head)	9323552858
Mira-Bhayander	Mira Road	Prashant Shipurkar (LT NM)	9323126181
Mira-Bhayander	Mira Road	Shruti Kotwad	8169445519
Mira-Bhayander	Bhayander (E)	Aparna Jadhav (Zonal Head)	9322158463
Mira-Bhayander	Bhayander (E)	Rajan Korgaonkar (LT NM)	9323951554
Mira-Bhayander	Bhayander (E)	Umesh Tendolkar	9321044486
Mira-Bhayander	Bhayander (W)	Prashant Gore (LT NM)	9323126180
Mira-Bhayander	Bhayander (W)	Shailesh Kavathankar	9323621202
Mira-Bhayander	Bhayander (W)	Prathamesh Khuje	7208846735

### Powai

Division	Zone	Name	Contact No.
Powai	Kurla	Prakash Sawant (Zonal Head)	9324216630
Powai	Kurla	Prashant Tawde (LT NM)	9322603893
Powai	Kurla	Pranav Petkar	7208846725
Powai	Kurla	Sachin Redij	9323470344
Powai	Saki	Girish Salunkhe (Zonal Head)	9324249280
Powai	Saki	Nilesh Lohar (LT NM)	9321340497
Powai	Saki	Sunil B. Sawant	9323126179
Powai	Saki	Nilesh Lohar	9321340497
Powai	Saki	Mangesh Shelar	9322655329
Powai	Vikhroli	Arun Sivaram (LT NM)	9699720180
Powai	Vikhroli	Rajesh Bawaskar	9323470363



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### Chembur Division

Division	Zone	Name	Contact No.
Chembur	Tilak Nagar	Jayesh Kulkarni (Zonal Head)	9322218655
Chembur	Tilak Nagar	Rajendra Jawale (LT NM)	9321044339
Chembur	Tilak Nagar	Mahendra Nerurkar	9323470345
Chembur	Tilak Nagar	Santosh Karande	9324861178
Chembur	Tilak Nagar	Yogesh Pradhan	9322150601
Chembur	Anik Chunabhatti	Jayesh Kulkarni (Zonal Head)	9322218655
Chembur	Anik Chunabhatti	Malakari Pujari (LT NM)	9325401272
Chembur	Anik Chunabhatti	Ravindra R. Jadhav	9321044673
Chembur	Anik Chunabhatti	Ashutosh Waghadkar	7208846723
Chembur	Chembur North	Shyam Chaudhari (Zonal Head)	9322150625
Chembur	Chembur North	Balasaheb Dhokate (LT NM)	9320361160
Chembur	Chembur North	Rohan C. Mhatre	9320604952
Chembur	Chembur North	Vijay Waingawdekar	9322803971
Chembur	Borla	Shyam Chaudhari (Zonal Head)	9322150625
Chembur	Borla	Yogesh Shringarpure (LT NM)	9323985424
Chembur	Borla	Samar Vaidya	9324581160
Chembur	Borla	Sushant Rothe	9022966451
Chembur	Borla	Mahendra Chaudhari	9322150627
Chembur	Borla	Suresh Kumbhar	9321044118



**Annexure C - Team Operation**

Sr. No.	Zone	Name	Contact No.
1	Head - Operations	Mahesh Andhari	9323549996
2	Head - Scada Maintenance	Ashish Patil	9323951393
3	Head - System Control	Sandeep Khule	9323647338
4	Incharge - CMC & OS	Tushar Borade	7208857653
5	CMC	CMC - Center	022 - 50547166
6	CMC	CMC - Center	9324216667
7	System Control	MCC	022 - 50547346 022 - 50548930
8	System Control	ZCC Vandre Division	022 - 50548928
9	System Control	ZCC Andheri Division	022 - 50548932
10	System Control	ZCC Malad Division	022 - 50547293
11	System Control	ZCC Borivali and Mira-Bhayander Division	022 - 50548931
12	System Control	ZCC Powai and Chembur Division	022 - 50548929
13	System Control	BCC Transmission	022 - 50547295

**Annexure D1 - Vandre Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Vandre	Umesh Kamat	9321044397
2	Incident Controller	1. Head - Distribution Substation	Centralised Dept.	Vignesh Gawde	9324216596
		2. Head - Divisional HT	Vandre	Kiran Suryawanshi	9322427653
		3. Zonal Head	Bandra	Vikas Satam	9321044564
			Juhu	Vikas Satam	9321044564
			Kalina	Ajay Lade	9322105789
			MMRDA	Ajay Lade	9322105789
		4. Operations	System Control	Sandeep Khule	9323647338
CMC	Tushar Borade		7208857653		
3	Safety & Fire Incharge	Head - Safety	Vandre	Jai Singh	8591315263
		Divisional Safety Officer		Udhav Rajge	7506703526
		Safety Coordinator - NM		Amrut Jagtap	7498288406
4	Security Incharge	Head - Security	Vandre	Kiran Gurav	9607945337
		Divisional Head - Security		Vivek Phathak	7498246694
5	Medical Incharge	Head - Medical	Vandre	Dr. Naresh Jhamnani	9324232140
		Divisional Medical Officer		Dr. Utpal Chakraborty	9223276270
					Dr. Rakesh Matekar
6	HR Incharge	Head - HR	Vandre	Mrs. Chanda Vanmali	9323550005
		Divisional Head HR		Amit Gore	7666830673
7	Administration	Head - Administration	Vandre	Mrs. Chanda Vanmali	9323550005
		Division Admin Incharge		Satish Ganeshan	9321210023
					Himanshu Awati
8	MMG	Head - MMG	Vandre	Bhushan Chaudhari	9323552884
				Shailraj Uchil	9324049183



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#### Annexure D2 - Andheri Division Incident Management Team

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Head - Divisional	Andheri	Shrikant Yeole	9323552945
2	Incident Controller	1. Head - Distribution Substation 2. Head - Divisional HT 3. Zonal Head 4. Operations Head - Safety	Centralised Dept. Andheri Andheri Versova Meghwadi MIDC System Control CMC	Vignesh Gawde Ramdas Patil Abhijit Patil Abhijit Patil Anurag Thatte Anurag Thatte Sandeep Khule Tushar Borad	9324216596 9323702026 9322603919 9322603919 9320499374 9320499374 9323647338 7208857653
3	Safety & Fire Incharge	Head - Safety Divisional Safety Officer Safety Coordinator - NM	Andheri	Jai Singh Bhalchandra Prabhu Amit Mandal	8591315263 9323950924 9324056706
4	Security Incharge	Head - Security Divisional Head - Security	Andheri	Vinay Khanduri Vivek Pathak	9099980108 7498246694
5	Medical Incharge	Head - Medical Divisional Medical Officer	Andheri	Dr. Naresh Jhamnani Dr. Rakesh Matekar	9324232140 9324136774
6	HR Incharge	Head - HR Divisional Head - HR	Andheri	Mrs. Chanda Vanmali Amit Gore	9323550005 7666830673
7	Administration	Head - Administration Division Admin - Incharge	Andheri	Mrs. Chanda Vanmali Satish Ganeshan Roshan Couthino	9323550005 9321210023 9320233563
8	MMG	Head - MMG	Andheri	Bhushan Chaudhari Shailraj Uchil	9323552884 9324049183





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**Annexure D3 - Malad Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Malad	Karan Shinde	9022961249
2	Incident Controller	1. Head - Distribution Substation	Centralised Dept.	Vignesh Gawde	9324216596
		2. Head - Divisional HT	Malad	Shashikant Misal	9324905358
		3. Zonal Head	Charkop	Sandesh Mane	9324216588
			Goregaon	Sandesh Mane	9324216588
			Poisar	Satyjeet Varadkar	7323629438
			Dindoshi	Satyjeet Varadkar	7323629438
		4. Operations	System Control	Sandeep Khule	9323647338
CMC	Tushar Borade		7208857653		
3	Safety & Fire Incharge	Head - Safety	Malad	Jai Singh	8591315263
		Divisional Safety Officer		Suraj Singh	9322956268
		Safety Coordinator - NM		Sachin Satose	9323701965
4	Security Incharge	Head - Security	Malad	Vinay Khanduri	9099980108
5	Medical Incharge	Head - Medical	Malad	Dr. Naresh Jhamnani	9324232140
		Divisional Medical Officer		Dr. Santosh Kate	9320011058
6	HR Incharge	HR - Head	Malad	Mrs. Chanda Vanmali	9323550005
		Divisional Head - HR		Lloyd Castelino	9320846420
7	Administration	Head - Admin	Malad	Mrs. Chanda Vanmali	9323550005
		Division Admin Incharge		Satish Ganeshan	9321210023
				Shrutakriti Bhise	9324681837
8	MMG	Head - MMG	Malad	Bhushan Chaudhary	9323552884
				Dayanand Rane	7719875400

**Annexure D4 - Borivali Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Borivali	Manoj M Chavan	9323552830
2	Incident Controller	1. Head - Distribution Substation	Centralised Dept.	Vignesh Gawde	9324216596
		2. Head - Divisional HT	Borivali	Suresh Dongre	9321044122
		3. Zonal Head	Shimpoli	Pushpraj Jaint	9322218672
			Magathane	Sachin Suryavanshi	9323701986
			Kandivali	Pushpraj Jaint	9322218672
		4. Operations	System Control	Sandeep Khule	9323647338
CMC	Tushar Borade		7208857653		
3	Safety & Fire Incharge	Head - Safety	Borivali	Jai Singh	8591315263
		Divisional Safety Officer		Vishal Kadam	9321923467
		Safety Coordinator - NM		Subhash Desai	9322424592
4	Security Incharge	Head - Security	Borivali	Vinay Khanduri	9099980108
5	Medical Incharge	Head - Medical	Borivali	Dr. Naresh Jhamnani	9324232140
		Divisional Medical Officer		Dr. Utpal Chakraborty	9223276270
6	HR Incharge	HR - Head	Borivali	Mrs. Chanda Vanmali	9323550005
		Divisional Head - HR		Lloyd Castelino	9320846420
7	Administration	Head - Admin	Borivali	Mrs. Chanda Vanmali	9323550005
		Division Admin Incharge		Satish Ganeshan	9321210023
				Nandkishor Talgaonkar	7303954292
				Abhay Pandit	9324507229
8	MMG	Head - MMG	Borivali	Bhushan Chaudhari	9323552884
				Dayanand Rane	7719875400

**Annexure D5 - Mira-Bhayander Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Mira-Bhayander	Jaypal Vadgave	9322218682
2	Incident Controller	1. Head - Distribution Substation	Centralised Dept.	Vignesh Gawde	9324216596
		2. Head - Divisional HT	Mira-Bhayander	Prashant Salian	9321044408
		3. Zonal Head	Mira Road	Ganesh Patil	9323552858
			Bhayander (E)	Aparna Jadhav	9322158463
			Bhayander (W)	Ganesh Patil	9323552858
		4. Operations	System Control	Sandeep Khule	9323647338
CMC	Tushar Borade	7208857653			
3	Safety & Fire Incharge	Head - Safety	Mira-Bhayander	Jai Singh	8591315263
		Divisional Safety Officer		Prafulla Manekar	7498288220
		Safety Coordinator - NM		Ganesh Patil	9323552858
4	Security Incharge	Head - Security	Mira-Bhayander	Vinay Khanduri	9099980108
5	Medical Incharge	Head - Medical	Mira-Bhayander	Dr. Naresh Jhamnani	9324232140
		Divisional Medical Officer		Dr. Utpal Chakraborty	9223276270
6	HR Incharge	HR - Head	Mira-Bhayander	Mrs. Chanda Vanmali	9323550005
		Divisional Head - HR		Mrs. Smita Shilwant	9322603798
7	Administration	Head - Admin	Mira-Bhayander	Mrs. Chanda Vanmali	9323550005
		Division Admin Incharge		Satish Ganeshan	9321210023
				Jeevan Patil	9022599707
8	MMG	Head - MMG	Mira-Bhayander	Bhushan Chaudhari	9323552884
				Garry Faroz	9320335813



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**Annexure D6 - Powai Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Powai	Rajesh Nerurkar	9322218732
2	Incident Controller	1. Head - Distribution Substation	Centralised Dept.	Vignesh Gawde	9324216596
		2. Head - Divisional HT	Powai	Ashish Gaikwad	9320399849
		3. Zonal Head	Kurla	Prakash Sawant	9324216630
			Saki	Prakash Sawant	9324216630
			Vikhroli	Girish Salunkhe	9324249280
		4. Operations	System Control	Sandeep Khule	9323647338
CMC	Tushar Borade		7208857653		
3	Safety & Fire Incharge	Head - Safety	Powai	Jai Singh	8591315263
		Divisional Safety Officer		Mohan C Kulkarni	9325119604
		Safety Coordinator - NM		Aandhiya Mundle	9022984678
4	Security Incharge	Head - Security	Powai	Vinay Khanduri	9099980108
		Divisional Head - Security		Husein Sakerwala	9099052702
5	Medical Incharge	Head - Medical	Powai	Dr. Naresh Jhamnani	9324232140
		Divisional Medical Officer			
6	HR Incharge	Head - HR	Powai	Mrs. Chanda Vanmali	9323550005
		Divisional Head - HR		Amit Arolkar	9324567356
7	Admin	Head - Admin	Powai	Mrs. Chanda Vanmali	9323550005
		Division Admin Incharge		Satish Ganeshan	9321210023
				Sagar D Patil	7498256949
8	MMG	Head - MMG	Powai	Bhushan Chaudhari	9323552884
				Pankaj Buragohain	9324632884



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**Annexure D7 - Chembur Division Incident Management Team**

Sr. No.	Disaster Control Position	Designation	Division / Zone	Name	Contact No.
1	Site Controller	Divisional Head	Chembur	Abaji Naralkar	9324817526
2	Incident Controller	1. Head - Distribution Substation 2. Head - Divisional HT 3. Zonal Head 4. Operations	Centralised Dept. Chembur Tilak Nagar Anik Chunabhathi Chembur North Borla System Control CMC	Vignesh Gawde Sandip Jadhav Jayesh Kulkarni Shyam Choudhari Jayesh Kulkarni Shyam Choudhari Sandeep Khule Tushar Borade	9324216596 7208905236 9322218655 9322150625 9322218655 9322150625 9323647338 7208857653
3	Safety & Fire Incharge	Head - Safety Divisional Safety Officer Safety Coordinator - NM	Chembur	Jai Singh Mahendra Thasale Amit Gudekar	8591315263 9321044368 9323803017
4	Security Incharge	Head - Security Divisional Head - Security	Chembur	Vinay Khanduri Husein Sakerwala	9099052702 9099052702
5	Medical Incharge	Head - Medical Divisional Medical Officer	Chembur	Dr. Naresh Jhamnani	9324232140
6	HR Incharge	HR - Head Divisional Head - HR	Chembur	Mrs. Chanda Vanmali Amit Arolkar	9323550005 9324567356
7	Admin	Head - Admin Division Admin - Incharge	Chembur	Mrs. Chanda Vanmali Satish Ganeshan Mohan Dhotre	9909960121 9321210023 7498268499
8	MMG	Head - MMG	Chembur	Bhushan Chaudhari Ms. Archana Amin Kiran Barge	9323552884 9322347056 9324890623



## Annexure 1: Key Personnel details

### 1. Central Disaster Control Center (CDCC)

Sr.No	CDCC	Contact No.	Location
1	CDCC	50549111	Adani Electricity Management, Disaster Control Room, Unit No.19, Goregaon (E), Mumbai - 400065
2		50547225	

### Key Personnel

Sr. No.	Name of Executive	Contact No.	Department
1	Kapil Sharma	022 - 50548770	CEO - MDB
2	Nitin Kumar Rohilla	022 - 50555850	Chief Information Officer
3	Suraj Phalak	022 - 50548420	Head - T&D
4	Nitin Kate	022 - 50548410	Head - Maintenance T&D
5	Shanay D. Shah	022 - 50666011	Head - Commercial Management
6	Aniruddha Khekale	022 - 50548730	Head - HR (Corporate)
7	Chanda Vanmali	022 - 50548820	Head - HR
8	Suresh Shinde	9909954844	Head - CPG/MMG
9	Unnat Prakash	7705912151	Head (Project Construction)
10	Vinay Khanduri	022 - 50548140	Head - Security
11	Kishore R. Patil	022 - 50548780	Head - Regulatory
12	Sandeep Parekh	022 - 50548350	Head - Engineering & Technology
13	Mahesh Andhari	022 - 50549410	Head - Operations / Disaster Mgmnts. Cell
14	Vignesh Gawde	022 - 50547872	Head - DSS
15	Ashish Patil	022 - 50547677	Head - SCADA
16	Umesh Kamat	022 - 50549618	Head - Vandre Division
17	Shrikant Yeole	022 - 50547660	Head - Andheri Division
18	Kiran Shinde	022 - 50549020	Head - Malad Division
19	Manoj Chouhan	022 - 50549800	Head - Borivali Division
20	Jaypal Vadgave	022 - 50549700	Head - Mira-Bhayander Division
21	Rajesh Nerurkar	022 - 50549631	Head - Powai Division
22	Abaji Naralkar	022 - 50548781	Head - Chembur Division
23	Dinesh Parab	022 - 50549597	Head - Projects
24	Dr. Naresh Jhamnani	022 - 50549448	Head - Medical
25	Shanay D. Shah	022 - 50666011	Corporate Communications (MDB)
26	Govind Samant	022 - 50548240	Head - IT
27	Rohit Dighe	022 - 50548250	CISO
28	Sandeep Narale	022 - 50548170	Head - Central Marketing
29	Bhushan Choudhary	022 - 50548130	Head MMG

## 2. Divisional Disaster Control Centers (DDCCs)

### Vandre Divisional Control Center

City2 center office, Kalina, Santacruz (E)

Areas Covered	Name	Contact No.
Divisional Head - Umesh Kamat		9321044397
Bandra	Zonal Head - Vikas Satam	9321044564
Juhu	Zonal Head - Vikas Satam	9321044564
Kalina	Zonal Head - Ajay Lade	9322603919
MMRDA	Zonal Head - Ajay Lade	9322603919
HT - Mains Head	Kiran Suryawanshi	9322427653

### Andheri Divisional Control Center

MIDC Distribution Substation, E-4, MIDC, Andheri (E), Mumbai - 400093

Areas Covered	Name	Contact No.
Divisional Head - Shrikant Yeole		9323552945
Andheri	Zonal Head - Abhijit Patil	9322603919
Versova	Zonal Head - Abhijit Patil	9322603919
Meghwadi	Zonal Head - Anurag Thatte	9320499374
MIDC	Zonal Head - Anurag Thatte	9320499374
HT - Mains Head	Ramdas Patil	9323702026

### Malad Divisional Control Center

Dindoshi Office, off W.E. Highway, Goregaon (E), Mumbai - 400097

Areas Covered	Name	Contact No.
Divisional Head - Kiran Shinde		9022961249
Goregaon	Zonal Head - Sandesh Mane	9324216588
Dindoshi	Zonal Head - Satyajeet Varadkar	9323629438
Poisar	Zonal Head - Satyajeet Varadkar	9323629438
Charkop	Zonal Head - Sandesh Mane	9324216588
HT - Mains Head	Shashikant Misal	9324905358



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### Borivali Divisional Control Center

S.V. Road and Shankar Lane Junction, Kandivali (W), Mumbai - 400067

Areas Covered	Name	Contact No.
Divisional Head - Manoj Chouhan		9323552830
Shimpoli	Zonal Head - Pushpraj Jaint	9322218672
Magathane	Zonal Head - Sachin Suryavanshi	9323701986
Kandivali	Zonal Head - Pushpraj Jaint	9322218672
HT - Mains Head	Suresh Dongre	9321044122

### Mira-Bhayander Divisional Control Center

Pavan Putra, Near Bhayander Pump

Areas Covered	Name	Contact No.
Divisional Head - Jaypal Vadgave		9322218682
Mira Road	Zonal Head - Ganesh Patil	9323552858
Bhayander (E)	Zonal Head - Aparna Jadhav	9322158463
Bhayander (W)	Zonal Head - Ganesh Patil	9323552858
HT - Mains Head	Prashant Salian	9321044408

### Powai Divisional Control Center

A. K. Road, Opp. Kumaria Residency, Saki Naka, Andheri (E)

Areas Covered	Name	Contact No.
Divisional Head - Rajesh Nerurkar		9322218732
Kurla	Zonal Head - Prakash Sawant	9324216630
Saki	Zonal Head - Prakash Sawant	9324216630
Vikhroli	Zonal Head - Girish Salunkhe	9324249280
HT - Mains Head	Ashish Gaikwad	9320399849

### Chembur Divisional Control Center

Tilak Nagar R/S, Road No.3, Chembur, Mumbai - 400089

Areas Covered	Name	Contact No.
Divisional Head - Abaji Naralkar		9324817526
Tilak Nagar	Zonal Head - Jayesh Kulkarni	9322218655
Chembur Anik	Zonal Head - Shyam Choudhari	9322150625
Chembur North	Zonal Head - Jayesh Kulkarni	9322218655
Borla	Zonal Head - Shyam Choudhari	9322150625
HT - Mains Head	Sandeep Jadhav	7208905236

### Master System Control Center (MSCC) / Complaint Management Cell (CMC)

Network Operation Center, Hiranandani Receiving, Hiranandani, Near IIT Bombay, Powai, Mumbai - 400076

Areas Covered	Name	Contact No.
Operation Head - Mahesh Andhari		9323549996
System Control	Sandeep Khule	9323647338
System Control	MCC (HT Abnormalities)	022 - 50548930
CMC	Tushar Borade	7208857653
CMC	CMC (LT Abnormalities)	022 - 50547165

## Annexure 2: a) List of Local Police Station Nos. in the Divisions

### Police Control Room No. - 100

Division	Locations	Contact No.
Vandre	Bandra Police Station, Hill Road	022 - 26423122, 26513716
	Juhu Police Station	022 - 26188308
	Vile Parle Police Station	022 - 26117317
	BKC Police Station	022 - 26504481 / 82 / 83
	Santacruz Police Station	022 - 26493139, 26487856
Andheri	MIDC Police Station	022 - 28368352 / 28361329
	Meghwadi Police Station	022 - 2821 0860
	Aarey Police Station	022 - 26858484
	Sahar Police Station	022 - 26829784
	D N Nagar Police Station	022 - 26303893 / 26304002
	Amboli Police Station	022 - 2676 2001 / 2 / 3
	Versova Police Station	022 - 26365420 / 26304812
	Oshiwara Police Station	022 - 26322753, 26323861, 26323862
	Andheri Police Station	022 - 28394205, 28361324, 28368352
	Jogeshwari Police Station	022 - 28210763, 28221672, 28242783
Malad	Kandivali Police Station	9821239179, 9870202312 (Sr. PI)
	Charkop Police Station	022 - 28676581, 9821627636 (Sr. PI)
	Goregaon Police Station	022 - 28721900 / 28723252, 9821637822 (Sr. PI)
	Samata Nagar Police Station	8879033697 (Sr.PI), 022 - 28876119
	Kurar Police Station	022 - 28401444 / 28490444, 7045992782 (Sr. PI)
	Malwani Police Station	9870300474 (Sr. PI)
	Malad Police Station	9870162409 (Sr. PI)
	Bangur Nagar Police Station	9821369920 (Sr. PI)
	Dindoshi Police Station	9821220377 (Sr. PI)
	Aarey Police Station	9594999829 (Sr. PI)
	Vanrai Police Station	9594027899 (Sr. PI)
Borivali and Mira-Bhayander Divisions	Kashimira	8657936948
	Mira Road	8657936947
	Naya Nagar	8657936949
	Navghar	8657936952
	Uttan Sagri	8657936953
	Bhayander	8657936951



	Gorai	022 - 28450763
	Kandivali Police Station	9821239179
	Kasturba Police Station	022 - 28657919
	Borivali Police Station	022 - 28930145
Powai and Chembur Divisions	Tilaknagar Police Station	022 - 25527293 / 25229345
	Pant Nagar Police Station	022 - 21029087
	Chunabhatti Police Station	022 - 24050084 / 85 / 86
	Ghatkopar Police Station	022 - 25113256
	Vikhroli Police Station	022 - 25789366 / 2189 / 2240
	Govandi Police Station	022 - 25562170
	Sakinaka Police Station	022 - 28476160 / 4411 / 2334
	Kurla Police Station	022 - 26500478 / 26503182
	Powai Police Station	022 - 25702690 / 2492 / 0218

**Annexure 2: b) List of Local Fire Brigade Nos. in the Divisions****General Fire Brigade No. - 101**

Division	Location	Contact No.
Vandre	Bandra (W)	022 - 26435206
	Bandra (E)	022 - 26522426
	Vile Parle (E)	022 - 26112121
	Andheri (W) Fire Brigade	022 - 26205301
	BKC Fire Brigade	022 - 26522426
Andheri	Marol Fire Brigade	022 - 28210940 / 41
	Irla / Andheri Fire Brigade	022 - 26205301
Malad	Kandivali Fire Brigade	022 - 28050101
	Marve Fire Brigade	022 - 28071010
	Goregaon Fire Brigade	022 - 23085992 / 91
	Dindoshi Fire Brigade	022 - 28406729
Borivali and Mira-Bhayander Divisions	Bhayander (W)	022 - 28197637
	Silver Park	022 - 28553661
	Kandivali Fire Brigade	022 - 28050101
	Dahisar Fire Brigade	022 - 28977702
	Borivali Fire Brigade	022 - 28602847
Powai and Chembur Divisions	Chembur Fire Station	022 - 25224824
	Vikhroli Fire Station	022 - 25170730
	Marol Fire Station	022 - 29200940

## Annexure 2: c) List of Hospitals & Ambulances with Contact Nos. in the Area

### General Ambulance No. - 102 / 108

Division	Name	Contact No.
Vandre	Guru Nanak Hospital	022 - 42227777
	Nanawati Hospital	022 - 26267500
	Kokilaben Hospital	022 - 42696969
	Lonica Ambulance V.P. East	9821182100
	Star Ambulance Services	9920849531
	Nulife Cardiac Ambulance	022 - 24376568
	Sanjeevani Ambulance	9892181211
Andheri	Holy Spirit Hospital	022 - 28248500 / 2 / 3 / 4
	BSES Mg Hospital	022 - 66487500
	Kokilaben Dhirubhai Ambani Hospital	022 - 42696969
Malad	Shatabdi Hospital	022 - 28085703
	Kokilaben Dhirubhai Ambani Hospital	022 - 42696969
	Oscar Hospital, Ganeshnagar	022 - 29672020, 28696998
	KDAH Ambulance	022 - 42699999
	Siddharth Hospital	022 - 28766885
	Suchak Hospital	022 - 28891484 / 66494949
Borivali and Mira-Bhayander Divisions	Indira Gandhi, Mira Road	022 - 28114611
	Kasturi Memorial, Mira-Bhayander	022 - 28147676
	Shatabdi Hospital	022 - 28647004 022 - 28647000-3
	Ambucare Ambulance	9820644429, 9820644421
	Karuna Hospital	022 - 28934698, 28953009
Powai and Chembur Divisions	Godrej Hospital	022 - 66417052 / 7100
	Ambucare Ambulance	9820644429 / 9820644421

## 19. Abbreviations

ACWC	: Area Cyclone Warning Centers	KP	: Key Personnel
AEML	: Adani Electricity Mumbai Limited	LDC	: Load Dispatch Center
AMCDRR	: Asia Pacific Ministerial Conference on Disaster Risk	LILO	: Loop-In-Loop-Out
ATS	: Anti-Terrorism Squad	LT	: Low Tension
AVP	: Assistant Vice President	LV	: Low Voltage
BCC	: Backup Control Center	MBMC	: Mira-Bhayander Municipal Corporation
BDDS	: Bomb Detection and Disposal Squad	MCC	: Master Control Center
BEST	: Bombay Electric Supply and Transport	MCGM	: Municipal Corporation of Greater Mumbai
CAPEX	: Capital Expenditures	MIDC	: Maharashtra Industrial Development Corporation
CDCC	: Central Disaster Control Centers	MOD	: Merit Order Dispatch
CDCR	: Central Disaster Control Room	MSEB	: Maharashtra State Electricity Board
CEA	: Central Electricity Authority	MSLDC	: Maharashtra State Load Dispatch Center
CEO	: Chief Executive Officer	MTNL	: Mahanagar Telephone Nigam Limited
CFO	: Chief Finance Officer	NLDC	: National Load Dispatch Center
COO	: Chief Operating Officer	NMS	: Network Management System
CSS	: Consumer Substations	NOP	: Normally Open Points
DCC	: Disaster Control Center	O&M	: Operation & Maintenance
DDCC	: Divisional Disaster Control Centers	OHSAS	: Occupational Health and Safety Assessment Series
DDLO	: Devidas Lane Office	OPGW	: Optical Ground Wire
DG	: Diesel Generator	PT	: Power Transformer
DGM	: Deputy General Manager	PTZ	: Pan Tilt and Zoom
DMP	: Disaster Management Plan	RLDC	: Regional Load Dispatch Center
DSS	: Distribution Substations	RMU	: Ring Main Unit
DT	: Distribution Transformer	SCADA	: Supervisory Control & Data Acquisition
DTS	: Distributed Temperature Sensing	SLDC	: State Load Dispatch Center
GDP	: Gross Domestic Product	SMS	: Short Message Service
GIS	: Geographic Information System	SOP	: Standard Operating Procedures
GM	: General Manager	T&D	: Transmission & Distribution
GOM	: Government of Maharashtra	UNDRR	: United Nations Office for Disaster Risk Reduction
HR	: Human Resource	VP	: Vice President
HRC	: High Rupturing Capacity	ZCC	: Zonal System Control
HT	: High Tension		
HV	: High Voltage		
IVR	: Interactive Voice Response		