DISASTER MANAGEMENT PLAN

HIMACHAL PRADESH STATE ELECTRICITY BOARD LIMITED

GOVERNMENT OF HIMACHAL PRADESH

Shimla 171004

CONTENTS

1. ABOUT THE DEPARTMENT

The first electrical division of the state was established under Public Works Department in August 1953. Later on, a department of M.P.P and Power was formed in April 1964. In accordance with the provisions of Electricity Supply Act (1948), Himachal Pradesh State Electricity Board (HPSEB) was constituted on 1st September 1971. The department was responsible for promoting coordinated development of power potential, generation, transmission, and distribution of electricity within the State of Himachal Pradesh in most efficient and economical manner. HPSEB was restructured and it was renamed as Himachal Pradesh State Electricity Board Limited (HPSEBL) in June 2010. The registered office of HPSEBL is situated at Vidyut Bhawan, Shimla- 171004, Himachal Pradesh and is responsible for the supply of Uninterrupted & Quality power to all categories of consumers in Himachal Pradesh at the most economical rates.

HPSEBL mission is to remain the biggest provider of reliable and economic power in Himachal Pradesh by timely capacity addition, performance improvement, cost reduction, better utilization of human resources, and concentration on environmental protection.

1.1 ORGANIZATIONAL STRUCTURE

HPSEBL has one chairman assisted by a managing director, four directors and a chief engineer. Figure 1 provides the organizational structure of the department.

1.2 PURPOSE OF THE PLAN

Every department of the State Government is legally mandated under Section 40 of Disaster Management Act 2005 to prepare its disaster management plan in accordance with the guidelines laid down by the State Disaster Management Authority. The basic purpose of the plan is to provide guidance to all the agencies within the department to manage the risks of disasters before, during and after disasters with a multi-hazard approach. These include assessing the sectoral and departmental risks of disasters, mitigating the existing risks, preventing the creation of new risks, presenting the status of its preparedness to perform its role and responsibilities as defined in the state DM policy and state DM Plan.

Thus in case of any eventuality of a disaster, the department must be able to perform its functions without any hindrance and this can happen only when the department specific plan is ready. Some of the objectives are as follows:

- To identify hazards and vulnerability present in the department.
- To improve the state of preparedness to meet any contingency.
- To reduce the damage to the Electrical Infrastructure & Buildings.
- To eliminate the loss of life due to electrocution.
- Capacity building of the Officers and Staff of HPSEBL to handle emergencies/disasters effectively.

1.3 SCOPE OF THE PLAN

In accordance with the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012, the scope of the plan is to handle certain hazard in the state, which affects the department and the sector as a whole. The DM plan will facilitate the department:

- To take measures for prevention and multi-hazards mitigation by the Departments at the state level as well as local level.
- To reduce response time in organizing the assistance.
- To identify major resources, manpower material & equipment needed to make the plan operational.
- Making optimum use of the combined resources.

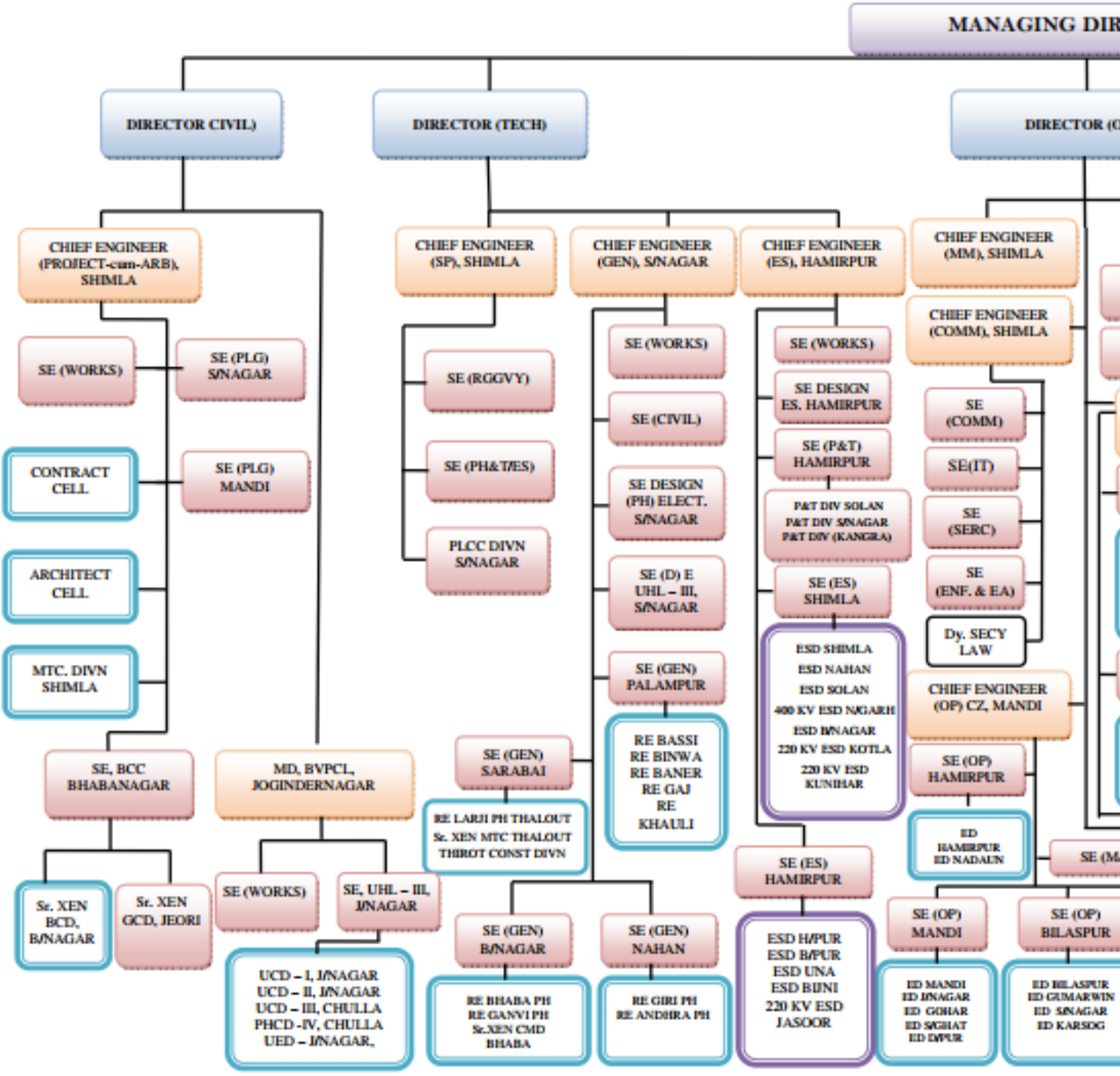
1.4 AUTHORITIES, CODES, POLICIES

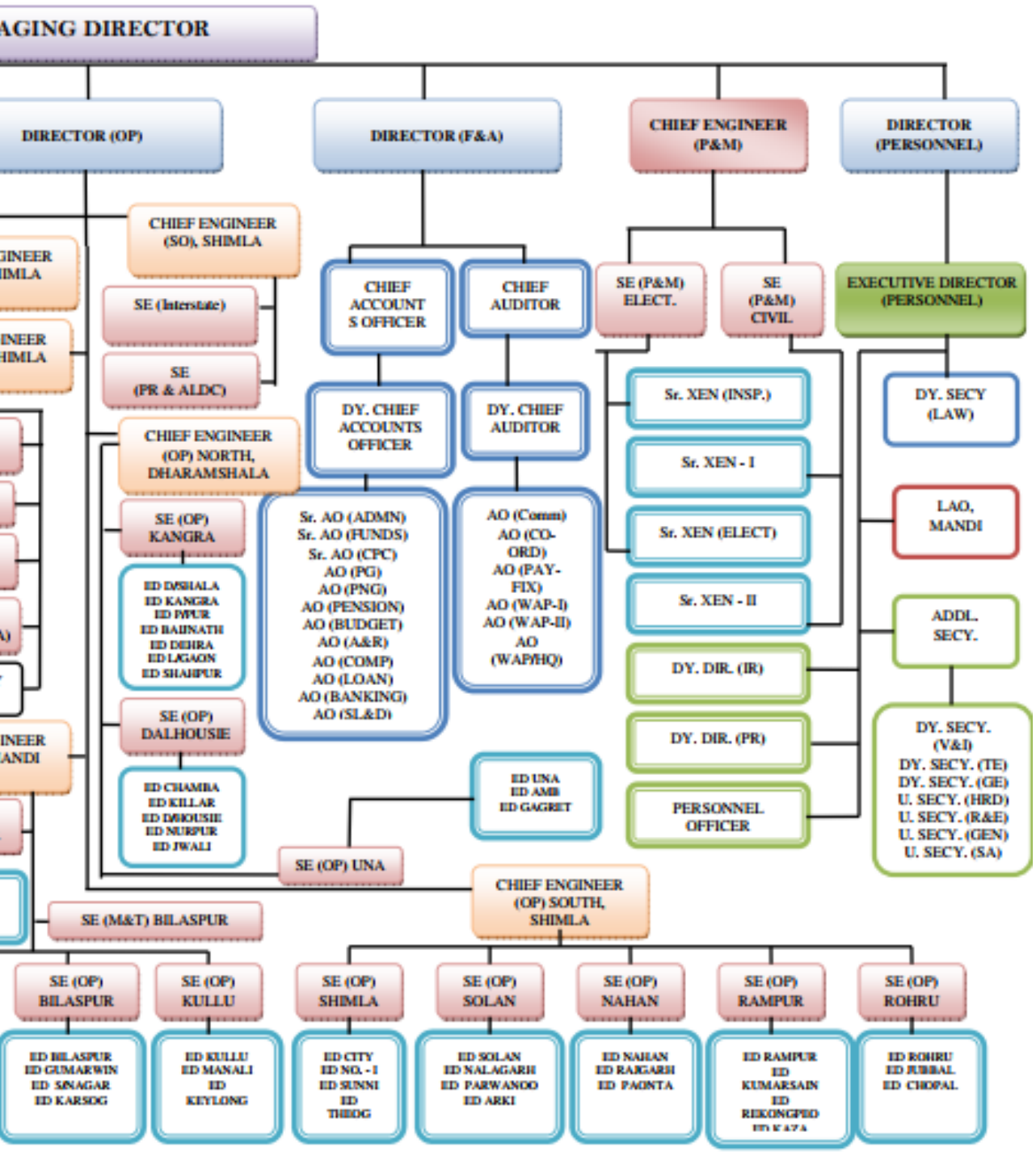
Following are the specific guidelines for the Department:

- Energy Conservation Act, 2001
- Electricity Act, 2003
- Hydro Power Policy, 2006

For the functions related to Disaster management following guidelines are to be followed:

- Disaster Management Act, 2005
- National Disaster Management Plan, 2016
- Himachal Pradesh Disaster Management Plan, 2012
- National Action Plan on Climate Change
- National Guidelines issued by the NDMA
- Guidelines and provision for State Disaster Response Fund (SDRF)
- Guidelines for administration of the National Disaster Response Fund (NDRF)


MANAGING DIR
DIRECTOR CIVIL)
DIRECTOR (TECH)
DIRECTOR (
CHIEF ENGINEER (PROJECT-cum-ARB), SHIMLA
SE (WORKS)
SE (PLG) S/NAGAR
CONTRACT CELL
SE (PLG) MANDI
ARCHITECT CELL
MTC. DIVN SHIMLA
SE, BCC BHABANAGAR
Sr. XEN BCD, B/NAGAR
Sr. XEN GCD, JEORI
MD, BVPCL, JOGINDERNAGAR
SE (WORKS)
SE, UHL – III, J/NAGAR
UCD – I, J/NAGAR
UCD – II, J/NAGAR
UCD – III, CHULLA
PHCD -IV, CHULLA
UED – J/NAGAR,
CHIEF ENGINEER (SP), SHIMLA
SE (RGGVY)
SE (PH&T/ES)
PLCC DIVN S/NAGAR
CHIEF ENGINEER (GEN), S/NAGAR
SE (WORKS)
SE (CIVIL)
SE DESIGN (PH) ELECT. S/NAGAR
SE (D) E UHL – III, S/NAGAR
SE (GEN) PALAMPUR
RE BASSI
RE BINWA
RE BANER
RE GAJ
RE KHAULI
SE (GEN) SARABAI
RE LARJI PH THALOUT
Sr. XEN MTC THALOUT
THIROT CONST DIVN
SE (GEN) B/NAGAR
RE BHABA PH
RE GANVI PH
Sr.XEN CMD BHABA
SE (GEN) NAHAN
RE GIRI PH
RE ANDHRA PH
CHIEF ENGINEER (ES), HAMIRPUR
SE (WORKS)
SE DESIGN ES. HAMIRPUR
SE (P&T) HAMIRPUR
P&T DIV SOLAN
P&T DIV S/NAGAR
P&T DIV (KANGRA)
SE (ES) SHIMLA
ESD SHIMLA
ESD NAHAN
ESD SOLAN
400 KV ESD NALAGARH
ESD B/NAGAR
220 KV ESD KOTLA
220 KV ESD KUNIHAR
SE (ES) HAMIRPUR
ESD H/PUR
ESD B/PUR
ESD UNA
ESD BILNI
220 KV ESD JASOOR
CHIEF ENGINEER (MM), SHIMLA
CHIEF ENGINEER (COMM), SHIMLA
SE (COMM)
SE(IT)
SE (SERC)
SE (ENF. & EA)
Dy. SECY LAW
CHIEF ENGINEER (OP) CZ, MANDI
SE (OP) HAMIRPUR
ED HAMIRPUR
ED NADAUN
SE (OP) MANDI
ED MANDI
ED J/NAGAR
ED GOHAR
ED S/GHAT
ED D/PUR
SE (OP) BILASPUR
ED BILASPUR
ED GUMARWIN
ED S/NAGAR
ED KARSOG


AGING DIRECTOR
DIRECTOR (OP)
DIRECTOR (F&A)
CHIEF ENGINEER (P&M)
DIRECTOR (PERSONNEL)
CHIEF ENGINEER (SO), SHIMLA
SE (Interstate)
SE (PR & ALDC)
CHIEF ACCOUNTS OFFICER
CHIEF AUDITOR
SE (P&M) ELECT.
SE (P&M) CIVIL
EXECUTIVE DIRECTOR (PERSONNEL)
DY. CHIEF ACCOUNTS OFFICER
DY. CHIEF AUDITOR
Sr. XEN (INSP.)
Sr. XEN - I
Sr. XEN (ELECT)
Sr. XEN - II
DY. DIR. (IR)
DY. DIR. (PR)
PERSONNEL OFFICER
DY. SECY (LAW)
LAO, MANDI
ADDL. SECY.
DY. SECY. (V&I)
DY. SECY. (TE)
DY. SECY. (GE)
U. SECY. (HRD)
U. SECY. (R&E)
U. SECY. (GEN)
U. SECY. (SA)
CHIEF ENGINEER (OP) NORTH, DHARAMSHALA
SE (OP) KANGRA
ED DHSHALA
ED KANGRA
ED PPUR
ED BAJNATH
ED DEHRA
ED LAGAON
ED SHAHPUR
SE (OP) DALHOUSIE
ED CHAMBA
ED KILLAR
ED DHOUSIE
ED NURPUR
ED JWALI
Sr. AO (ADMN)
Sr. AO (FUNDS)
Sr. AO (CPC)
AO (PG)
AO (PNG)
AO (PENSION)
AO (BUDGET)
AO (A&R)
AO (COMP)
AO (LOAN)
AO (BANKING)
AO (SL&D)
AO (Comm)
AO (CO-ORD)
AO (PAY-FIX)
AO (WAP-I)
AO (WAP-II)
AO (WAP/HQ)
ED UNA
ED AMB
ED GAGRET
SE (OP) UNA
SE (M&T) BILASPUR
CHIEF ENGINEER (OP) SOUTH, SHIMLA
SE (OP) BILASPUR
SE (OP) KULLU
SE (OP) SHIMLA
SE (OP) SOLAN
SE (OP) NAHAN
SE (OP) RAMPUR
SE (OP) ROHRU
ED BILASPUR
ED GUMARWIN
ED SUNAGAR
ED KARSOG
ED KULLU
ED MANALI
ED KEYLONG
ED CITY
ED NO. - I
ED SUNNI
ED THEDG
ED SOLAN
ED NALAGARH
ED PARWANOO
ED ARKI
ED NAHAN
ED RAJGARH
ED PAONTA
ED RAMPUR
ED KUMARSAIN
ED ROHRU
ED JUBBAL
ED CHOPAL

1.5 INSTITUTIONAL ARRANGEMENTS FOR DISASTER MANAGEMENT

The State Government has adopted the Disaster Management Act 2005 as enacted by the Govt. of India for providing an effective mechanism for Disaster Management in the State of Himachal Pradesh.

1.5.1 STATE DISASTER MANAGEMENT AUTHORITY

As per clause b of sub-section (2) of Section 14 of the Disaster Management Act 2005, the Himachal Pradesh Disaster Management Authority under the chairperson of the Honourable Chief Minister was constituted on 1st June 2007 with the following persons as a member of the Himachal Pradesh Disaster Management Authority (HPSDMA):

Table 1: Members of State Disaster Management Authority

#	Member	Designation in HPSDMA
1	Hon'ble Chief Minister	Chairman
2	Hon'ble Revenue Minister	Co-Chairman
3	Chief Secretary	Member
4	Principal Secy. (Rev)	Member
5	Principal Secy. (Home)	Member
6	Principal Secy. (PWD)	Member
7	Principal Secy. (Health)	Member
8	Director General of Police	Member
9	Secretary / Additional Secretary (Revenue)	Member Secretary

1.5.2 STATE EXECUTIVE COMMITTEE (SEC)

As per sub-section (1) of section 20 of the Disaster Management Act 2005, the State Executive Committee under the chairmanship of Chief Secretary was constituted by the Government of Himachal Pradesh. SEC coordinates and monitors the implementation of the National Policy, the National Plan and the State Plan in addition to management of disasters in the state. It monitors the implementation of disaster management plans prepared by the departments of the Government of the State and District Authorities.

1.5.3 ADVISORY COMMITTEE OF SDMA

As per Sub Section (1) of section 17 of the Disaster Management Act 2005, the chairperson of Himachal Pradesh State Disaster Management Authority nominates members of the Advisory Committee to assist the Authority and to make recommendations of different aspects of Disaster Management.

1.5.4 DISTRICT DISASTER MANAGEMENT AUTHORITY

As per Section 25 of the DM Act 2005, District Disaster Management Authority has also been constituted in every district of Himachal Pradesh which is chaired by the Deputy Commissioner of the district.

1.6 PLAN MANAGEMENT (IMPLEMENTATION, MONITORING AND REVISION)

Implementation of the Plan

Director level official of HPSEBL shall be responsible for implementation of the Plan. The Nodal Officer shall coordinate with all stakeholders for implementing the Plan. Annual Progress on implementation of the Plan will be submitted to HPSDMA.

Revision of the Plan

The Disaster Management Plan is a living document. It will be revised on annual basis as per provisions of the DM Act-2005. Any changes in guidelines under the NDRF and SDRF shall be incorporated in the plan as and when such changes are made. The introduction of new technology for hazard risk mitigation shall also be incorporated as when the same is tested and found feasible and acceptable in particular geographical area of the State.

System of Updation

The document shall be updated at the Director level with the help of State Disaster Management Authority at least once in a year or as per the requirement. Consultations will be held with the stakeholders for making changes in the Plan. The Nodal Officer shall be responsible for holding consultations and updating the Plan.

Dissemination of Plan

After finalization of the Plan, a copy will be submitted to the HPSDMA for approval. After approval, it shall be disseminated to all agencies, field offices and other stakeholders. Further, whenever it revised/updated, it shall be submitted to HPSDMA for endorsement of changes. The revised Plan shall be shared with all concerned.

2. HAZARD, RISK AND VULNERABILITY ANALYSIS

2.1 RISK ASSESSMENT OF HIMACHAL PRADESH

Himachal Pradesh is a mountainous state situated in the western Himalayas with an elevation ranging from 350 meters to 6000 meters. Thus there is a great variation in the geo-climatic conditions of the state due to the extreme variation in the elevation. The climate varies from hot and sub-humid tropical in the southern tracts to cold, alpine and glacial in the northern and eastern mountain ranges with increasing elevation.

Table 2: Frequency and Intensity of Major Hazards

#	Nature of Disaster	Frequency	Intensity
1	Flood/ Flash Flood	Regular Frame	High
2	Drought	Every 3-5 Years	Moderate
3	Cloud Bursts	Regular Feature	High
4	Earthquake	Regular Feature	Moderate to Very High
5	Landslides	Regular Feature	High
6	Avalanches	Regular Feature	Low
7	Lightening	Rare	Low
8	Disease Epidemics	Rare	Low
9	Fire	Regular Feature	High
10	Stampede	Moderate	Moderate

These conditions make the state prone to various hazards both natural and manmade. Main hazards consist of earthquakes, landslides, flash floods, cloudburst, snowstorms and avalanches, droughts, dam failures, fires – domestic and wild, accidents – road, rail, air, stampedes, boat capsizing, biological, industrial and hazardous chemicals etc.

The districts of Chamba, KinnaurKullu and part of Kangra and Shimla fall in very high vulnerable risk (Figure 2). Similarly, districts of Kangra, Mandi, Una, Shimla and Lahaul and Spiti fall in high vulnerable risk status. The district Hamirpur, Bilaspur, Solan and Sirmour falls in moderately vulnerable risk status. The disaster management strategies and infrastructure required to be evolved by taking the factor of vulnerability into consideration. HPSEBL and its valuable infrastructure can be adversely influenced by hazards such as earthquakes, floods, cloudburst, landslides, fire, and terrorist attack.

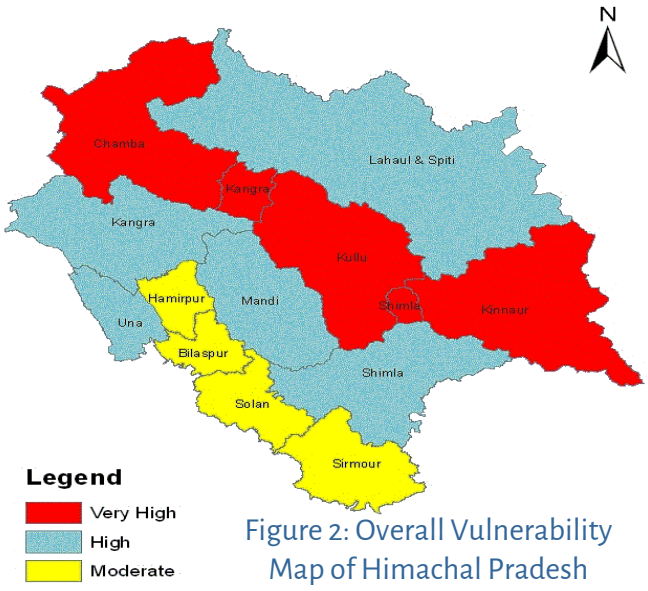


Figure 2: Overall Vulnerability Map of Himachal Pradesh

2.2 ASSESSMENT OF SECTORAL AND DEPARTMENTAL RISKS

The sectoral risks of disasters consist of the risks for the entire sector that the department represents. For example, HPSEBL may assess the potential risks of the electricity grid, electricity transformer and electricity lines due to certain hazard like earthquakes, landslides and floods in the specific region. The departmental risks of disasters consist of the risks arising out of the exposure of vulnerable departmental assets to the natural or manmade hazards.

The sectoral risk to the Rural Development department:

2.2.1 CLIMATE CHANGE RISK

Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically many decades or longer). Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. The long-term trends in observed seasonal precipitation and temperature over Himachal Pradesh using IMD gridded rainfall and temperature at daily time scales has been performed to arrive at current baseline climatology for the state. IMD gridded data was used for Climate change hazard risk analysis.

- The PRECIS data on precipitation, maximum and minimum temperature have been analysed for Himachal Pradesh by TARU. Preliminary inferences on the variations of these entities show that the annual maximum temperature is projected to increase by 1.90°C and annual minimum temperature of 2.30°C towards mid-century. This change in temperature is going to harm the apple produce, crop production etc. in the region; which will further impact the livelihood of the rural population per se.
- It is also seen from the INRM analysis that cold spell duration indicator is projected to decrease and warm spell duration indicator is projected to increase for all the districts, implying warming up over Himachal Pradesh districts. The warming up of the entire state will further result in a change in cropping patterns too. Certain schemes of rural development department need to be modified to help the community during these times.
- The increase is projected for average annual rainfall by 15.0% and 28.0% respectively for mid and end century scenarios. Mean monsoon rainfall increases by 182 mm by mid-century and by 384 mm by end century. This huge increase will have a severe impact on the entire sector. Because with an increase in rains there are chances for a hail storm, flash floods which can affect the infrastructure constructed by the department.
- It is also projected that heavy and very heavy precipitation day for all the districts in Mid Century and End Century compared to the Base Line are going to increase implying that count of heavy rainy days would increase in the future. Increase in the count of very heavy precipitation days is expected to be the maximum for Salon, Bilaspur and Kangra of Himachal Pradesh districts. These heavy rains again will have a devastating impact on the infrastructure related schemes and also schemes which try to alleviate poverty from the region.

The extreme weather events of temperature and precipitation as a consequence of climate change will also put pressure on supply and demand of electricity across the state.

2.2.2 EARTHQUAKES

Himachal Pradesh is seismic sensitive state as over the years a large number of the damaging earthquake has struck the state and its adjoining areas. Large earthquakes have occurred in all parts of Himachal Pradesh, the biggest being the Kangra earthquake of 1905. The Himalayan Frontal Thrust, the Main Boundary Thrust, the Krol, the Giri, Jutogh and Nahan thrusts are some of the tectonic features that are responsible for shaping the present geophysical deposition of the state. Chamba, Kullu, Kangra, Una, Hamirpur, Mandi and Bilaspur Districts lie in Zone V i.e. very high damage risk zone and the area falling in this zone may expect earthquake intensity maximum of MSK IX or more. The remaining districts of Lahaul and Spiti, Kinnaur, Shimla, Solan and Sirmour lie in Zone lV i.e. the areas in this zone are in high damage risk with expected intensity of MSK VIII or more.

Earthquakes can be devastating to the assets of the HPSEBL such as electricity grid, electricity transformer, electricity lines and office buildings.

2.2.3 LANDSLIDES

Landslides are one of the key hazards in the mountain regions particularly in the state of HP which cause damage to infrastructure i.e. roads, railways, bridges, dams, bio-engineering structures, and houses but also lead to loss of life, livelihood and environment. According to the analysis carried by TARU in 2015, 6824 villages of the state falls under high landslide risk zone whereas 11061 villages are in the medium risk zone. 824 villages are in the low-risk zone of landslides.

The state has a large mesh of highways and village roads comprising of 2178.988 km of a total stretch. Out of the total stretch of the State highway major portion falls in the High vulnerable zone that is 1111.552 km. The remaining stretch of 873.24 km falls in the moderate vulnerable zone. Most of the electricity towers and lines are along the road. Hence damage to road infrastructure will also impact the function of electricity supply.

2.2.4 FLOODS

In Himachal Pradesh, flash flood due to cloudburst is common phenomena. The state experiences riverine flooding of varied magnitude almost every year and Sutlej and Beas are most vulnerable rivers. All the villages and property inside the floodplain and near close vicinity are in the vulnerable zone. According to TARU report (2015), about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding.

A flood due to dam failure is also a real threat which might be unpredictable. Flood water is capable of destroying electricity transformer and electricity lines.

Crisis Situations:

2.2.5 TERRORIST THREATS & ATTACKS

Power generating plants, dams, substations, Transmission Lines and Load dispatch centres form a prime target for such terrorist groups. These installations need to be protected against acts of terrorism. The terrorist-related aspects could be dealt with by making use of advancement of technology in the areas of surveillance and proper intelligence network.

2.2.6 BOMB THREATS, HOAX & BOMB EXPLOSIONS

Bomb explosion in Generating stations / sub-stations/Load Dispatch centres, etc., can lead to the major crisis through a disturbance in grid & disruption in power supply In the event of a bomb explosion or a bomb threat, special measures need to be adopted under the expert's guidance.

2.2.7 STRIKES

Strike by any section of the employees in a generating station/ substation/load dispatch centres or construction workers could lead to a crisis and can bring the system to a grinding halt if adequate steps to run the generating station/sub-station / load dispatch centres are not taken. This could ultimately lead to blackout in areas, which could be as small as a locality or as large as a State or Region.

2.2.8 FIRE ACCIDENTS

Like natural calamities, fires are a big threat and cause loss to human life and property. However, disasters due to fire normally remain localized to a particular installation until and unless tripping of the entire power plant causes a disturbance in the transmission grid by way of overloading and leading to tripping of other power stations/ transmission lines connected with the grid.

The most common cause of the fires is known to be electrical short circuits and fire triggered by the inflammable materials. The damages caused by the fire accidents generally take excessive time for restoration.

Analysis of causes of fire incidents reveal that majority of the fires could perhaps be prevented and extent of damage minimized if fire safety measures were strictly enforced. Early detection of fire and swiftness in fighting it can definitely turn major disaster to minor accidents. In power sector accidents taking place on account of human error or due to malfunctioning of any equipment are also causes of crisis situations.

The risk involved for HPSEBL when exposed to different types of disasters are summarized in table 3.

Table 3: Types of risks while exposed to different disasters

#	Hazard	Risk
1	Earthquake	Very High Risk: Limited awareness, preparedness and structural weaknesses of the buildings reveal very high vulnerability to the earthquake.
2	Flood	High Risk: Topography of Himalayan river valleys, glacial fed rivers, dam failure can obstruct the functioning of HPSEBL.
3	Cloudburst	High Risk: Impact of cloudburst is dual. It leads to landslides and flash floods. Assets like transmission grid, electric lines are at risk.
4	Landslide	High Risk: Landslides pose risk to buildings and disruption in road and communication network. Landslides also choke rivulets and form temporarily lakes. When these lakes burst causes flash floods.
7	Fire	Medium Risk: Fire due to electrical short circuits or any other means can cause immense losses to HPSEBL

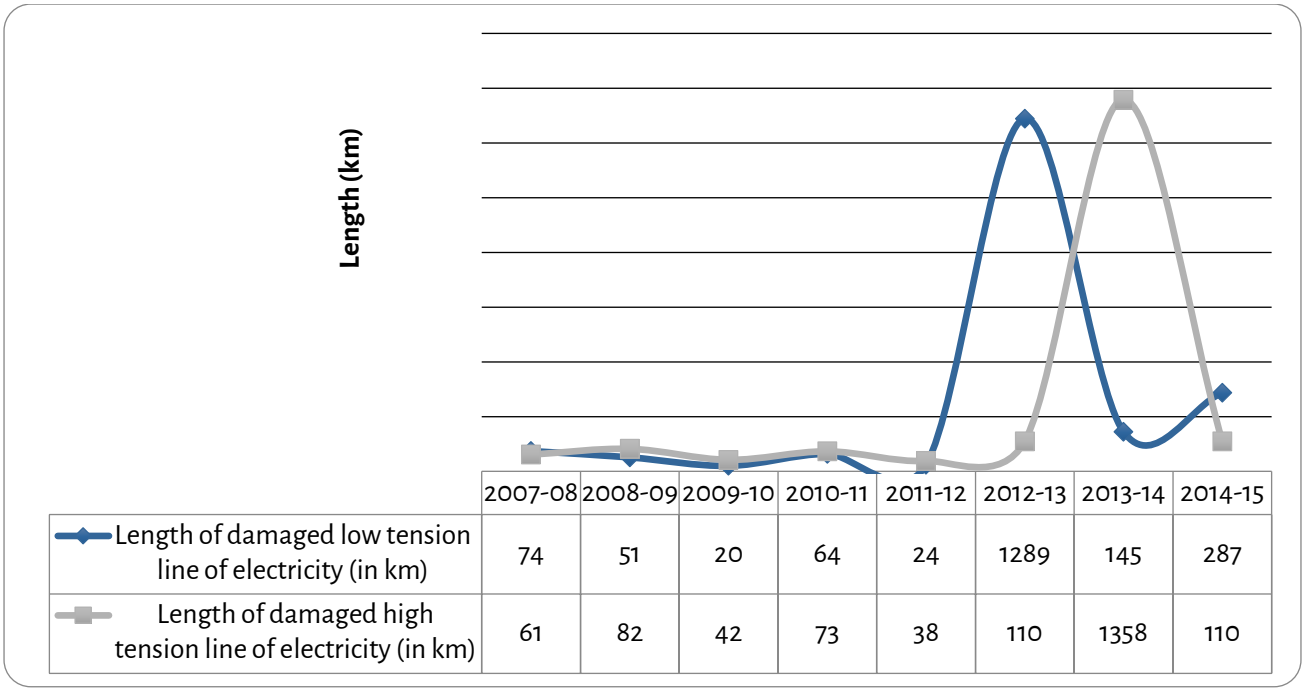
2.3 ASSESSMENT OF CAPACITY GAPS AND NEEDS

The department should also make a critical assessment of their capacity for disaster risk management. HPSEBL has a large pool of human resource comprising officials and coordinators working on the field. The gaps identified in the existing capacity are:

- Officers and staff are lacking in the basic knowledge of disaster management and response.
- Department also needs to establish a monitoring mechanism at zone level to check the Disaster management plans.
- The human resource of the department should also have training on certain mitigation measures.
- Adequate financial powers need to be vested with the different level of the department to manage the crisis and setting up of adequate safety measures in the premises, such as Disaster Preparedness Kit, Fire Extinguishers etc.
- Immediate fund for disaster mitigation activities is not available with the department.

2.4 ASSESSMENT OF PROBABLE DAMAGE AND LOSS

The Department of Economics and Statistics, Himachal Pradesh published its maiden report on "Disaster Analysis & Management" in 2016, which provides huge statistical information in respect of all districts of the State from 2007 to 2015. According to the report, during 2007-2015, a total of 1874 km length of high tension line of electricity was damaged. In the year 2013-14, the maximum distance of electricity high tension line damaged was 1358 km and the minimum distance line damaged was 38 Km during the year 2011-12. For the same period, 1954 km length of low tension line of electricity was damaged in the state (Figure 3). The maximum distance of electricity low tension line damaged 1289 KM during the year 2012-13 and the minimum distance line damaged was 20 Km during the year 2009-10. An amount of 1245 lakh was provided by the State Government to district agencies for repair to damage of low tension lines. Maximum relief of Rs. 525 lakhs was provided during the year 2014-15, out of which 55 percent amount was provided to district Kullu. In addition, 607 numbers of electricity transformer and 74 number of Electrical Substation were damaged (Figure 4).



	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Length of damaged low tension line of electricity (in km)	74	51	20	64	24	1289	145	287
Length of damaged high tension line of electricity (in km)	61	82	42	73	38	110	1358	110

Figure 3: Length of damaged line of electricity

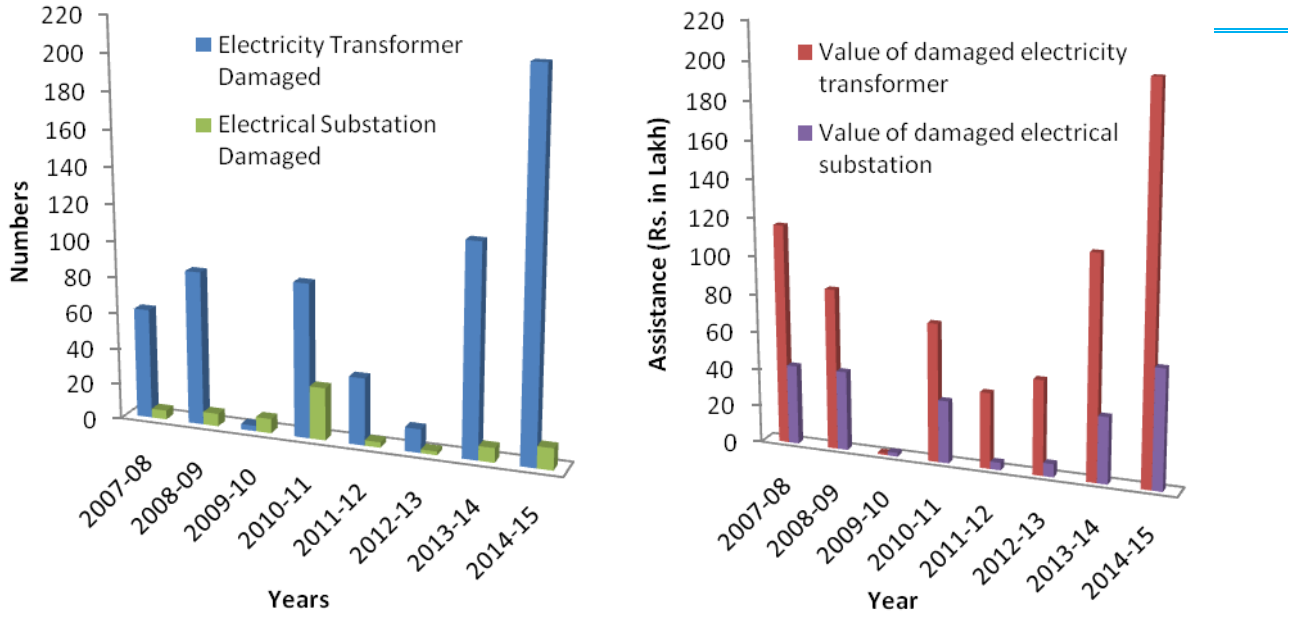


Figure 4: Number and value of damaged transformers & substations

3. RISK PREVENTION AND MITIGATION

3.1 RISK PREVENTION

Disasters occur with unfailing regularity in Himachal Pradesh causing loss of life, assets and livelihood. The increasingly shifting paradigm from a reactive response orientation to a proactive prevention mechanism has put the pressure to build a fool-proof system, including within its ambit, the components of prevention, mitigation, rescue, relief and rehabilitation.

Pre-disaster planning is crucial for ensuring an efficient response at the time of a disaster. A well-planned and well-rehearsed response system can deal with the exigencies of calamities and also put up a resilient coping mechanism. Optimal utilization of scarce resources for rescue, relief and rehabilitation during times of crises is possible only with detailed planning and preparation.

Risk prevention encompasses all techniques and management practices that help to prevent unnecessary or foreseeable risks. Fundamentally, risk prevention is strategies that increase the resilience of area prone to disasters.

The departmental risk prevention measures are given in the table below:

Table 4: Risk Prevention Measures

Hazard	Prevention
Earthquakes	Earthquake as such is unpreventable but its impact in the form of destruction of structures which could be prevented by designing resilient structures to earthquake impacts. All the departmental structures such as buildings should be designed, taking into consideration the loads/forces generated by the earthquake as prescribed by latest BIS Codes.
Landslides	Landslides can be prevented by a plantation of trees in the form of afforestation, creating storm-water drainage system, slope analysis etc. The department should avoid construction of its infrastructure in landslide-prone areas, if inevitable then proper prevention measures should be taken.
Floods	The Early warning system can prevent loss of livestock and property to the great extent.
Avalanches	The impact could be reduced by study and analysis of avalanche-prone zones by relevant agencies.
Fire	Time to time evaluation of electrical equipment will be helpful in avoiding the instance of fire.

3.2 RISK MITIGATION

Risk mitigation is reducing the risks of disasters that are already there due to exposure of vulnerabilities to the hazards. Mitigation projects reduce the level of exposures or the depth of vulnerabilities or both through a combination of various structural and non-structural measures. Mitigation projects are always costly and therefore these have to be planned with proper Cost Benefit Analysis (CBA) to ensure that the benefits of the projects outweigh the costs. Structural mitigation refers to any physical construction to

reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural mitigation refers to policies, awareness, knowledge development, public commitment, information sharing which can reduce risk.

The primary objective of mitigation efforts would be:

- To identify, delineate and assess the existing and potential risks and to work towards reducing potential causalities and damage from disasters.
- To substantially increase public awareness of disaster risk to ensure a safer environment for communities to live and work.
- To reduce the risks of loss of life, infrastructure, economic costs, and destruction that result from disasters.

In view of the prevailing risk and the vulnerabilities perception, the mitigation measures proposed have been categorized under following five major groups:

1. **Risk assessment:** Risk information should be provided to concern stakeholders on time and for that, a proper risk assessment should be done by the department.
2. **Construction work:** All the newly constructed assets should follow the building by-laws of the state.
3. **Repair and maintenance:** Retrofitting and renovation of the lifeline buildings should be done by the department.
4. **Research and technology transfer:** The department should identify and interact with research institutions to evolve mitigation strategies both structural and non-structural.
5. **Training and capacity building:** Training programs about the awareness of disaster with respect to agriculture can be planned at the village level.
6. **Communication arrangements:** A good communication system is a prerequisite in the disaster mitigation.

3.3 MATRIX OF HAZARD SPECIFIC MITIGATION MEASURES

HAZARD	MITIGATION MEASURES	
	STRUCTURAL	**NON-STRUCTURAL**
Earthquake	• Undertaking mandatory technical audits of structural designs of infrastructure under department by the competent authorities. • Retrofitting and reinforcement of old and weak structures. • Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical structures.	• Seismic hazard risk mapping pertaining to departmental assets. • The training to the local masons for construction of earthquake resistant structures. • Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions.
Floods, Flash Floods and GLOF	• Along with DDMA, the department should demarcate the flood-prone area and no	• Flood mapping pertaining to departmental assets. • Mitigation plan should be in place to safeguard the departmental

	construction related to the department should be done there. • Open space for emergency construction of sheds etc. shall be left to the extent possible.	infrastructure/ inhabitants from the flash flood.
Landslides	• Risk audit of the infrastructure • Selecting alignments for construction of structures which are less prone to landslides.	• Landslide hazard risk mapping pertaining to departmental assets.
Fire	• Open space for emergency exit in the case of fire. • Fire extinguishers should be installed on each floor. • Replacement of dilapidated electrical wires.	• Fire safety mock drill.

4. MAINSTREAMING DISASTER RISK REDUCTION IN DEVELOPMENT

Disaster Management Act has stipulated that DM Plans of the Departments of State Government shall integrate strategies for prevention and mitigation of the risks of disasters with the development plans and programmes of the department. Mainstreaming disaster management into the development planning process essentially means looking critically at each activity that is being planned, not only from the perspective of reducing the disaster vulnerability of that activity but also from the perspective of minimizing that activity's potential contribution to the hazard.

Every development plan in the state would require incorporating elements of impact assessment, risk reduction, and adoption the 'do no harm' approach. The linkage of DRR in Development has the following three purposes to achieve:

- To make the future environment free from construction risk.
- To utilize the funds of the govt. to mitigate the vulnerability to any disaster, thus progressing towards physical, socio-economic and environmental vulnerability free era.
- To make sure that all the govt. plans should be integrated with disaster risk reduction programmes by integrating such elements in these plans so that disaster risk-free environment can be created.

DRR refers to the measures used to reduce direct, indirect and intangible disaster losses. The measures may be technical, economic or social. DRR encompasses the two aspects of a disaster reduction strategy: 'mitigation' and 'preparedness'. Mitigation refers to measures aimed at reducing the risk, impact or effects of a disaster or threatening disaster situation, whereas, preparedness refers to the measures undertaken to ensure the readiness and ability of a society to forecast and take precautionary measures in advance of imminent threat, and respond and cope with the effects of a disaster by organizing and delivering timely and effective rescue, relief and other post-disaster assistance. 'Mainstreaming DRR' describes a process to fully incorporate the concerns of disaster preparedness, prevention and mitigation into development and post-disaster recovery policy and practice. It means completely institutionalizing DRR within the development and recovery agenda. Accordingly, the following broad objectives of mainstreaming DRR into Development will be encouraged:

- Ongoing schemes and projects of the Ministries and Departments of GoI and State Governments, as well as of all Government agencies and Institutions, including Public Sector Undertakings, will be selectively audited by designated government agencies for ensuring that they have addressed the disaster risk and vulnerability profiles of the local areas where such schemes and activities are being undertaken.
- At conceptualization or funding stage itself, the developments schemes will be designed with consideration of any potential hazardous impact associated with it and incorporate measures for mitigation of the same.
- All the development schemes will be pragmatic, incorporating the awareness of local disaster risk and vulnerability, and ensuring that the schemes have addressed these concerns and included specific provisions -for mitigating such disaster concerns; and
- DDMAs will ensure that all the disaster relief and recovery programmes and projects that originate from or are funded by any agency satisfy developmental aims and reduce future disaster risks.

4.1 APPROACHES FOR MAINSTREAMING

There are three suggested approaches of mainstreaming disaster management into the development process and disaster management plans-

- Structural Measures
- Non- Structural Measures
- Disaster Mitigation Projects

Based on the suggested approaches the specific action would involve:

- Adopting a sectoral approach and identification of Key sectors for mainstreaming.
- Within each sector, key programmes/projects would have to be identified.
- This has to be followed by identifying the entry points within the programmes/projects for integration.
- It would also involve work at the policy and planning level be it national, state and district level.
- It would also need a close coordination with State Planning Commission and Finance Department for promoting DRR into all development programmes and involve working with different departments to mainstream DRR into the Departmental Plans and policies.
- Advocacy would have to be done for allocation of dedicated budget for DRR within the departmental plans.
- Further appropriate guidelines for different sectors would have to be developed and for it to be effective and sustainable, it has DRR would have to be ultimately integrated to the development plans of various departments at the district and sub-district levels.

5. DISASTER PREPAREDNESS

Disaster preparedness has been defined as "the state of readiness to deal with a threatening disaster situation or disaster and the effects thereof". The Department may review their "state of readiness" and prepare a strategic action plan to deal with possible disaster situations.

HPSEBL must undertake a number of preparedness measures to ensure that response and recovery during a disaster is effective and prompt.

The stakeholders in HPSEBL disaster preparedness are:

1. HPSEBL
2. HPPCL, HPTCL and other power suppliers
3. Civil administration (Police, Fire Dept., Municipal bodies etc.)
4. High priority customers (Hospitals, shelters etc.)
5. All customers

5.1 HPSEBL DISASTER MANAGEMENT CELL

The DM Cell shall consist of the Chairperson and such number of other members, not exceeding seven, as may be prescribed by the District Authority, and unless the rules otherwise provide, it shall consist of the following, namely: -

1. Managing Director (MD), who shall be Chairperson;
2. Director (Technical), who shall be Chief Executive Officer;
3. Director (Finance)
4. CGM (Operations)
5. CGM (CA), who shall be convener;
6. SP (Vigilance)
7. One GM level officer to be appointed by the MD
8. One external Disaster Management Consultant appointed through standard procedures

5.1.1 POWERS OF THE CHAIRPERSON OF DM CELL

1. The Chairperson of the DM Cell shall, in addition to presiding over the meetings of the DM Cell, exercise and discharge all powers and functions of the DM Cell.
2. The Chairperson of the DM Cell may, by general or special order, delegate such of his/her powers and functions, under sub-section (1) to the Chief Executive Officer of the DM Cell, subject to such conditions and limitations, if any, as it or he/she deems fit.

5.1.2 MEETINGS

In the event of a disaster being declared by the District or State or National authority, a meeting of the DM Cell will be convened. In addition, the DM Cell shall meet as and when necessary and at such time and place as the Chairperson may see fit. However, it is recommended that the DM Cell meet at least once a year even if there have been no disasters in that year.

5.1.3 RESPONSIBILITIES OF DM CELL PERSONNEL

The following table lists the functions and responsibilities of each of the members of the DM Cell during, and in preparing for, a "State of Disaster".

Table 5: Composition, Responsibilities and Functions of HPSEBL Disaster Management Cell (DM Cell)

#	Designation	Designation for DM Cell	Functions
1	Managing Director of HPSEBL	Chairperson	• Declare a "State of Disaster" within HPSEBL and ensure immediate activation of this plan. • Coordinate with DDMA and present detailed reports and updates to DDMA. • Request District, State or Central resources as necessary from appropriate authorities. • Declare "Closure of State of Disaster" within HPSEBL and ensure completion of activities related to closure, including certification and audit, closure of financial documents, implementation of any feedback reports from DDMA, issues of compensation etc.

2	Director (Technical)	Chief Executive Officer	• Establish a team for certification/ audit of work undertaken, after the disaster is declared closed.
			• Implement procedures specifically for DM, including but not limited to:
			  ○ Authorization of emergency powers,
			  ○ Rules related to leaves and overtime,
			  ○ Procedures for transport and communication (including alternatives to telephones/mobile telephones, cranes, boats, trucks)
			  ○ Procedures for purchase or leasing of equipment, etc.
			  ○ Procedures for purchase, leasing, maintenance and inventory of equipment and vehicles ONLY to be used in disasters [Note: This should be the equipment, cranes, vehicles etc. that is owned by HPSEBL, rather than outsourced]
			  ○ Procedures for capacity building and training specifically for disaster management

3	CGM (Operations)	Member	• Activate and monitor an HPSEBL Disaster Management Command Control Centre (DMC3). This centre can be hosted from the current HPSEBL customer response centre but should handle inputs/requests only from HPSEBL personnel (for example, supervisors, AEEs, field engineers, workmen etc.) and the information must be collated, analysed and priorities assigned for all requests. • Coordinate with power suppliers (HPTCL, HPPCL etc.) on all issues.

4	CGM (CA)	Convener	• Convene the DM Cell meetings at the request of the Chairperson and update the schedule of future meetings after consultation with Chairperson. • Collect status updates on a regular basis from other members and report to the Chairperson and DM Cell. • Implement the protocols (or SOP) for communicating that a disaster has been declared to all HPSEBL employees in affected districts [for example: formulating the text of the SMS/Email message, list out instructions to be conveyed in a phone call etc.] • Supervise the communication of any information necessary as decided by the DM Cell to all stakeholders including priority consumers (hospitals, blood banks, police & fire) and media.
5	SP Vigilance	Member	• Ensure security of installations and equipment and safety of workers. • Ensure officers and men neglecting duty are held accountable under the DM Act, 2005. • Ensure officers and men are not succumbing to undue political pressure, corruption and are not taking undue advantage of the citizenry.
6	Director (Finance)	Member	• Implement budgets designed specifically for DM (for example related to expenditure in purchase/lease of equipment and that incurred for transport). • Implement procedures for quick and easy transfer of funds to personnel as specified by the Director (Tech.). [*Note:* Both the above tasks must be completed prior to any disasters, and continuously revised.] • Review compensation and similar claims. • Ensure proper closure of accounts.
7	GM-level official appointed by MD	Member	• Activate and monitor an HPSEBL command and control centre for citizens only. The current HPSEBL consumer response centre may be used, however, it might need to be staffed and operated by HPSEBL personnel during a disaster. • Coordinate constantly (before, during and after) with early warning agencies and special groups (like weather department or civil defence groups) and advise the Chairperson/DM Cell accordingly. • Make contingency plans for meetings of the DM Cell during a disaster (for example, in case the standard meeting location is unavailable). • Any other activity that the MD assigns.
8	External Consultant in Disaster Management	Member	• Provide the DM Cell with inputs and domain expertise and help to update the DM Plan. • Any other activity that the MD assigns.

5.1.4 RESPONSIBILITIES OF DISASTER MANAGEMENT COMMAND CONTROL CENTRE PERSONNEL (DMC3)

Table 6: Functions and Responsibilities of DMC3 personnel

#	Designation	Functions
1	CGM (O)	In-charge of DMC3
2	GM (CR)	• Identify and draft personnel to work in the DMC3 (this personnel may be drafted from the existing Customer Response Centre). • Train personnel in handling disaster specific responsibilities.
3	GM (ICT/MIS)	• Maintain all IT and communication infrastructure at DMC3. • Assist the CGM (O).
4	DGM (O)	• Coordinate with other departments for operational needs. • Operate the DMC3 in the absence of CGM (O).
5	SE (Office of CE BMAZ)	• Coordinate with all circles (including equipment suppliers and contractors). • Assist the CGM (O) in all operational aspects.
6	SE (Office of CE BRAZ)	• Coordinate with all circles (including equipment suppliers and contractors). • Assist the CGM (O) in all operational aspects.
7	GM (Finance)	• Assist the CGM (O) in all financial aspects of facilitating financial resources. • Execute any plans as notified by the Director (Finance).
8	External Consultant on Disaster Management for Electric Utilities (appointed by standard procedures)	• Assist the CGM (O) • Coordinate with the district/state administration on all operational issues behalf of the MD / DM Cell / DMC3.

5.1.5 CIRCLE LEVEL DISASTER MANAGEMENT CELLS (DMCS)

At each level of the HPSEBL operational hierarchy, a DMC may be formed along the lines of the DM Cell. These will allow HPSEBL to handle emergencies that are not massive in scale and thus do not require direct intervention from the DM Cell. The composition of a DMC at Circle Level is provided below for illustrative purposes:

Table 7: Composition of DMC at Circle Level

#	Designation	Appointed Officer	Functions
1	SE	Designated	Nodal Officer of Circle level DMC, reporting to CGM(O)
2	DCA	Designated	Convener
3	EE (Office of SE Circle)	Designated	Chief Executive Officer
4	EE (from any division)	Nominated by SE	• Identify and draft personnel for handling Circle-Level DMC3 • Train personnel for handling Circle-level DMC3 • Handle IT and communication infrastructure
5	AEE (Office of SE Circle)	Nominated by SE	Responsibilities as required by SE during disasters
6	AEE (from any division / subdivision)	Nominated by SE	Responsibilities as required by SE during disasters
7	AEE (from any division / subdivision)	Nominated by SE	Responsibilities as required by SE during disasters
8	AO (from any division)	Nominated by SE	Facilitate any and all financial transactions as required by SE

5.2 ESTABLISHMENT OF DISASTER RESPONSE TEAMS

As part of the preparedness measures, HPSEBL should form the following teams:

Early Warning team:

Under the member of the DM Cell (a GM-level official appointed by MD), this team will monitor incidents associated with weather, earthquakes or other incidents that might lead to a disaster. The team will provide inputs to the member of the DM Cell in carrying out his/her early warning responsibilities.

1. **Command and Control Centre Team:** Under the CGM (Operations), this team will manage the Disaster Management Command Control Centre (DMC3) in time of disaster and assist in the coordination of Response.
2. **Corporate Affairs and Communication Team:** This team will coordinate with all other response teams for the collection of necessary updates. They will be the sole point of communication for the Media and manage communication and messages to all stakeholders. This team will also prepare a list of priority stakeholders for each disaster and communicate the same to the Command and Control Centre team.
3. **Vigilance Team:** This team will assist in carrying out the responsibilities of SP Vigilance including but not limited to ensuring the security of installations and equipment and safety of workers.
4. **Damage and Loss Assessment Team:** This team will perform certification/audit of work undertaken during a disaster.

5.3 ESTABLISHMENT OF DISASTER RESPONSE ASSETS

HPSEBL should maintain or have access to assets to be used during a disaster. These assets include, but are not limited to, computation, communication and transport equipment, equipment needed for the coordination/ maintenance / replacement of assets destroyed in an emergency (e.g. distribution transformers, poles, and conductors etc.), equipment such as generators that may be required to provide temporary services to customers and other equipment as deemed necessary by Director (Technical). The storage of these assets should be in locations where they are easily accessible as well as least likely to be damaged in a disaster situation. A list of the equipment and the location of the same should be maintained by the Director (Technical) and be available to Divisional Officers.

HPSEBL, under the Director (Technical), should also maintain a list of equipment vendors and resource personnel (experts) that may be called upon during a disaster to assist in response activities.

5.4 ESTABLISHMENT PROCEDURES FOR CHECKING AND CERTIFICATION OF ASSETS

To ensure that the assets acquired for disaster management are maintained in an acceptable state, the following procedures should be established:

- Procedures for checking and certification of logistics, equipment and stores necessary for disaster management should be established.
- Procedures for an operational check-up of Warning Systems and the inspection of facilities and critical infrastructure should be established.

5.5 ESTABLISHMENT OF COORDINATION AND COMMUNICATION PROTOCOLS

During a disaster, HPSEBL as a support function will receive requests from many stakeholders as well as avail the services of other agencies. The protocols for communication and coordination for the following should be established and documented:

- Between District Authorities and civil security agencies such as Police Dept., Fire Dept. and HPSEBL.
- Among other civil agencies, such as Municipal bodies, Hospitals etc. and HPSEBL
- Between HPSEBL and other agencies such as Govt. of India, State Government, Public Sector Undertaking (PSUs) (e.g. HPTCL), Other State Governments, National Disaster Response Force (NDRF), State Disaster Response Force (SDRF), Army, Navy and Air Force, Central Para Military Forces
- Between HPSEBL personnel and the Disaster Management Command Control Centre(DMC3)

Protocols should also be established for communication with customers regarding early warning, potential and actual outages, scheduled for restoration of services, warning notices and instructions etc.

5.6 ESTABLISHMENT OF DISASTER PREPAREDNESS EXERCISES

HPSEBL under the guidance of the Director (Technical) should develop preparedness exercises to ensure that the various teams involved in Disaster Management are knowledgeable about their responsibilities at the time of a disaster, the protocols for communication and coordination, availability and the use of assets

required and procedures to be followed during a disaster. The preparedness exercises must also ensure adequate capabilities among the disaster response personnel in following standard procedures and use of assets.

Some of the exercises may also include outside agencies that will be involved in the disaster response activities. This exercise will help test the inter-agency coordination and communication protocols that have been established.

Procedures and protocols to be followed during a disaster may be modified and updated based on feedback received during preparedness exercises.

Preparedness must be reviewed at regular intervals to ensure adequate preparedness amongst personnel for disaster response.

6. DISASTER RESPONSE AND RELIEF

6.1 RESPONSE PLAN

The response plan of the Department includes the design of actions based on Standard Operating Procedures and tested through mock drills and exercises that would be initiated on a trigger mechanism based upon the impending or actual occurrence of an event of a disaster. Many Departments and agencies of the State Governments will be required to perform important functions relating to relief and rehabilitation. The response plan of the Department should provide detail with the logistic, financial and administrative support necessary for discharging these functions and the manner in which these functions shall be discharged.

Response planning constitutes the following activities:

1. **Warning and Alert**
   - 1.1 *Early Warning Systems***:** An Early Warning team, reporting to an officer (at GM level) must coordinate with the appropriate authorities to monitor and communicate potential disaster situations.
   - 1.2 *Warning dissemination:* The DM Cell [via the CGM (CA)] will ensure that any warnings and communication are appropriately communicated to all employees, stakeholders and media.
2. **DM Cell Meeting:** A meeting of the DM Cell must be immediately called for by the Chairperson, DM Cell.
3. **Resource Mobilization Checklist:** Details are presented in the following section "Procedure for Action during a Disaster".
4. **Demobilization and Winding Up**
   - 4.1 *Documentation:* Documentation of actions taken, expenditures incurred, and special services offered etc. should be maintained and completed within a stipulated time from the close of disaster.
   - 4.2 *Success stories and Lessons for future:* The DM Cell will review activities of personnel during the disaster to document success stories or shortcomings that may be rectified in the future. Key lessons learned can be used to update the DMP if required.

6.2 PROCEDURE FOR ACTION DURING A DISASTER

On receiving a notification of declaration of disaster from DDMP, or if the early warning systems indicate that there is a potential for a disaster, *the Chairperson (DM Cell) must be immediately informed*. [If the Chairperson is not available, the Director (Technical) must be immediately informed].

1. The Chairman (DM Cell) conveys to CGM (CA) the intent to declare a "State of Disaster" in HPSEBL, via phone call / SMS / in writing. The Chairman (DM Cell) also conveys to Director (Technical) and CGM (Operations) the intent to declare a "State of Disaster", via phone call / SMS / in writing.
2. CGM (CA) immediately follows the requisite communication protocol
   a. Send out a bulk SMS / Wireless message to all employees, including members of the DM Cell
   b. Send out associated content (if any) to all media and priority stakeholders
3. DM Cell Meeting: A meeting of the DM Cell must be immediately called for by the Chairperson, DM Cell to supervise response and relief efforts.
4. Disaster Management Command and Control Centre (DMC3, under CGM (O)) must be immediately operational. [*Note*: A part of the existing HPSEBL customer service centre may be used for the same; however, the DMC3 must be dedicated to handling communication only from HPSEBL personnel, and not the general public.]

5. The safety and availability of personnel are conveyed by said personnel to the DMC3 via a reporting mechanism.
6. Prepare First Assessment Report for DM Cell that includes
    a. Lists of personnel available in various areas and list of mobilizing points
    b. Any early damage reports that are available
    c. Any action is taken (for e.g. turning off power in any area in advance)
7. Tasks are assigned to individuals (if necessary). Every Section Office (and higher) can take action.
8. Prepare Second Assessment Report for DM Cell that includes
    a. A current detailed damage estimate
    b. Equipment/manpower requirements for complex problems/areas
    c. List of high priorities (including regions that will need attention)
    d. Requirements for assistance from an-HPSEBL agencies
9. Reporting of information on a continuous basis via DMC3 including interim reports.
10. Final Progress Report prepared for DM Cell by DMC3.

6.3 DISASTER RELIEF AND REHABILITATION

Relief measures will vary with the nature and degree of natural calamity. Information on the amount of damage done will help in deciding the extent of relief, reconstruction or rehabilitation.

7. DISASTER RECOVERY AND RECONSTRUCTION

The process of recovery from small-scale disasters is usually simple. Recovery operations get completed almost simultaneously with response, relief and rehabilitation. However, in medium and large disasters involving wide spread damages to infrastructure, the process of recovery may take considerable time. Therefore, some of the Emergency Support Functions of recovery of the sector may continue for months.

HPSEBL should strive to recover to normal service to its consumers as soon as possible.

The Recovery Plan activities will include the following:

1. Develop a priority schedule (location and time-frame) for recovery of normal services to affected areas
2. Conduct a detailed damage and loss assessment
3. Restoration of infrastructure
4. Reconstruction / repair of infrastructure / damaged assets

8. FINANCIAL ARRANGEMENTS

Section 40(2) of the Disaster Management Act stipulates that every department of the State Department while preparing the DM Plan, shall make provisions for financing the activities proposed therein.

Normally the funds required for risk assessment and disaster preparedness must be provided in the budgets of every concerned department. Such funds are not very sizeable and departments should be able to allocate such funds within their normal budgetary allocations.

Here the idea is to come up with a separate disaster management budget head within the budget allocation of the department.

This budget can be used to work upon the already suggested mitigation and preparedness measures, as response and relief are already being taken care of by the SDRF and NDRF.

This budget head can work with a very basic amount initially as the marginal costs involved in mainstreaming DRR in existing programme is not very sizable. Also, the funds required for risk assessments and disaster preparedness are also not very large. This budget will help in institutionalizing the entire process. And once the department starts having a separate budget for prevention and mitigation, at least some measures will start automatically.

HPSEBL should make financial allocations in preparing and executing the disaster management plan. The Director (Finance) should plan for the following:

1. Funds for Prevention and Mitigation Activities
2. Funds for Preparedness and Training Activities
3. Funds for Response Activities (including pre-authorization to draw money from treasury in the event of an immediate emergency)
4. Funds for Disaster Risk Insurance

For the purpose of expediting services to its customers, HPSEBL will delegate special financial powers during an emergency to its personnel.

ANNEXURE

I. Administrative Procedure to be adopted at the time of Emergencies

1. All leaves sanctioned to the officers and workmen stand suspended once the emergency is declared. The officers and workmen on leave shall report back to their respective controlling officers immediately.
2. All officers responsible for operations shall work for 24 hours and make their subordinate officers / officials who are required for the emergency to work round the clock.
3. The employees who are eligible for drawing overtime allowances/double wages can claim as per rules during the emergency period.
4. Special delegation of powers to the officers for the purchase of materials, obtaining services of manpower and execution of works are given to AP1.
5. Before exercising special powers with respect to materials, the Zonal Chief Engineers shall take into account the materials in stock in various stores in their jurisdiction and make necessary arrangement to mobilize the materials from the available stores to the emergency work spot. Similarly, the Superintending Engineers of O&M circles and Executive Engineers of O&M divisions shall exercise mobilization of materials in their jurisdiction. Only after reviewing of stock of materials at stores and mobilization of materials, balance materials required shall be procured by the respective officers. However, the officers who are empowered to procure materials shall certify that no materials are available at stores for emergency work and hence, procured, in the purchase orders.
6. Once the HPSEBL declares closure of emergency, the field officers have to furnish necessary certificate regarding purchase of material and non-availability of the same in the storehouses, work executed etc., and the Accounts Officers who are responsible for passing of bills, closure of accounts and making payment shall ensure to complete the same within 15 days from the date of closure of emergency.
7. The expenditure incurred shall be booked under appropriate heads of account.
8. After 15 days from the date of closure of emergency, field officer shall furnish the certificate for the works carried out during the emergency period. If any officer deviates from this, the same will be viewed seriously and further action will be initiated.
9. The Zonal Chief Engineers shall seek a declaration of emergency by Director (Tech) through telephonic talk/SMS followed by a written requisition duly indicating the area for which the emergency to be declared.
10. After the declaration of emergency by Director (Tech.), the emergency restoration work shall be carried out and expenditure booked against the newly created heads of account with the caption "Emergency restoration of power supply-calamity".
11. After the restoration of power supply, the Zonal Chief Engineers shall seek for the closure of emergency by Director (Tech) through telephonic talk / SMS followed by a written requisition.
12. The Zonal Chief Engineers shall send a report within 3 days duly indicating the quantum of damages and the estimated amount after the closure of emergency declared.
13. A budget of a certain amount per O&M division will be allocated by the Chief General Manager (CA) for utilizing the same for carrying out power supply restoration work during the period of emergency.
14. The circle Superintending Engineers are authorized to re-appropriate the special budget grant allotted within his jurisdiction during emergency period in case of expenditure incurred during the restoration work goes beyond the budget of any one division.

15. The Zonal Chief Engineers (Ele.) are authorized to re-appropriate the special budget grant if the expenditure incurred in particular O&M circle goes beyond the total special allocation made to each division in that circle.
16. After re-appropriation of the special grants during the emergency period by the Superintending Engineers of O&M circles and after the closure of accounts (within 15 days from the date closure of the emergency) they shall send the accounts to the Chief General Manager (CA) duly seeking recoupment of the same. The Chief General Manager (CA) shall release this amount as recoupment to the respective Superintending Engineers of O&M circles for reallocation among the divisions in their jurisdiction depending upon the requirement.
17. In case, the Superintending Engineers of O&M circle encounter the second-time emergency declaration before closure of the first emergency declared/ before finalization of accounts he/she shall seek recoupment of the budget grant towards expenditure incurred duly furnishing a certificate accordingly.
18. In case the total expenditure incurred due to re-appropriation by the Zonal Chief Engineers between the circles goes beyond the total special budget grant, he shall seek for recoupment of the expenditure from the General Manager (O&M) duly certifying to this effect. The Chief General Manager (CA) shall recoup the amount sought by the Zonal Chief Engineers to the respective Zonal Chief Engineers who shall in-turn allocate to the circles as per the requirement.
19. The Superintending Engineers of O&M circles shall submit the statement of accounts on the 16th day from the date of closure of emergency to the General Manager (Exp.) positively with a copy marked to the respective Zonal Chief Engineers.

List of Works to be carried out during Emergency for Restoration of Power Supply:

1. Rectification of fallen poles.
2. Re-conducting/re-stringing of snapped conductors.
3. Replacement of faulty distribution transformers.
4. Rectification of fallen LT / HT lines.
5. Clearing of fallen trees / branches.

Financial Powers

Special delegation of powers for purchase of materials and execution of works on emergency only.

Sub-ordinate officers in the O&M jurisdiction can exercise powers of their immediate superior officer like:

- Superintending Engineers (Ele.) can exercise Chief Engineers (Ele.) power.
- Executive Engineers can exercise Superintending Engineers power.

Assistant Executive Engineers can exercise Executive Engineers power.

II. Operational Guidelines and Checklists for Emergencies

The following points list some of the more common problems and the actions that should be taken to restore power at the earliest.

General Power Failure

In the event of any power failure, personnel are informed through the HPSEBL customer care centre.

1. Failure of 11 kV line
    a. First, check for 11kV line failure via physical inspection (it will keep tripping if there is ANY problem).
    b. If 11kV failure is indeed the problem, try and shift load through any other Ring Main Unit (RMU) that may be available, and recommend maintenance procedure. [Network grid structure (including adjacent RMUs) is known to the Unit Officer In-charge]
2. Failure of Distribution Transformer Centre (250kVA, 500 kVA etc. or consumer relevant transformers only)
    a. Check incoming (HT) and outgoing (LT) protection mechanism. If the problem is in the incoming (HT), refer to {1), 1.1}. If not, proceed further.
    b. If the outgoing (LT) protection has failed, first shift load to another DTC (if available). Next, recommend repairing or replacing DTC as per best practices. If the problem is not DTC (LT), follow the procedure for verifying proper functioning of fuses and poles and LT cables. See {1), 1.3}.
3. Failure of Fuses, Poles and LT Cables

    Follow Standard Operating Procedures for the restoration of power from the failure of fuses, poles and LT cables.

4. Tree Collapse on Lines

    First, keeping safety paramount, clear debris (including chopping branches, sweeping leaves and informing local municipal authorities). Refer to point {1) General Power Failure} for the procedure for the restoration of power.

5. Hail-storms

    Hail-storms mainly affect transformers, usually causing damage to insulation which may lead to oil leakage. Clean any oil leakages as per procedure to prevent environmental damage. Refer to point {1) General Power Failure} for the procedure for the restoration of power.

III. Standard Procedure for Preventive Maintenance (including Monsoon)

1. Procedures outlined in the Distribution Maintenance Manual are to be followed regularly.
2. It is recommended that a monsoon-specific list of activities and a schedule of those activities should be compiled and followed.

Preparedness Measures

1. All efforts as prescribed in the Distribution Maintenance Manual must be carried out and a checklist of tasks completed at every level must be available to the HPSEBL Disaster Management Cell.
2. A system to view inventory and list of equipment available should be available to section officers during an emergency or disaster.
3. Follow procedures outlined in Manual for Financial Delegation.
4. Preparedness for an emergency/disaster for which warning has been received
    - D-24 hours: Alert from **Director (Technical)** must go to all HPSEBL personnel. Testing and availability of emergency equipment must begin.
    - D-12h: All communication equipment must be tested at this time.
    - D-4h: All personnel must be at their designated positions, and all required response equipment must be assigned to the teams.
    - D+ zero: Turn off the power of the "Line" based on reported failure complaints and local knowledge (usually by Unit Officer or higher).
    - D+2h: Based on the seriousness of the event, continue execution of response effort, including isolating vulnerable points, detecting problems and mobilizing relief efforts.

NOTES