Disaster Management Plan

Manipur State Power Company Limited

Contents

1. Profile of the Department

In pursuance of Electricity Act, 2003, the State Electricity Department was unbundled and Corporatized into 2 (two) State owned functionally independent successor entities i.e. (i) Manipur State Power Company Limited (MSPCL) as the deemed transmission licensee and (ii) Manipur State Power Distribution Company Limited (MSPDCL) as the deemed distribution licensee w.e.f. the 1st of February, 2014 (Saturday) by a Gazette Notification of the Government vide Manipur State Electricity Reforms Transfer Scheme, 2013 (or Transfer Scheme, 2013) dated the 31st December, 2013. Manipur State Power Company Limited (MSPCL) will undertake the function of transmission of electricity 33 kV & above and also discharge all functions of the State Transmission Utility and Generation.

1.1 Organizational Structure

The executive/policy decisions of the respective Companies are decided by the Board of Directors of the Company. The Company works under the supervision and control of the Board of Directors headed by the Chairman of the Company. The Company has its corporate office at Keishampat headed by a Managing Director.

The Constituents of the Board of Directors for Manipur State Power Company Limited (MSPCL) are as under:

1. Chief Secretary, Government of Manipur - Non executive Chairman
2. Administrative Secretary (Finance), Govt. of Manipur - Director (on ex-officio basis)
3. Administrative Secretary (Plg), Govt. of Manipur - Director (on ex-officio basis)
4. Administrative Secretary (Power), Govt. of Manipur - Director (on ex-officio basis)
5. Managing Director, MSPCL - Director
6. Expert in Audit/legal/technical field - Independent Director
7. Expert in Audit/legal/technical field - Independent Director

The organizational chart is annexed.

1.2 Details of infrastructure available with the Company

Existing Transmission Infrastructure – Sub Stations

Voltage	No. of Sub-Stations	Total Installed Capacity (MVA)
132 kV	14	597
33 kV	82	570

Existing Transmission Infrastructure – Transmission Line

Voltage	Existing Line
400 kV	167 (under PGCIL)
132kV	573
33kV	1471

2. Hazard, Vulnerability, Capacity and Risk Profile

The hazards that may affect the transmission system are the following:

- Storms
- Flood
- Earthquake
- Fire
- Landslide
- Electrocution
- Explosions
- Strikes

2.1 Historical/past disasters /losses in the Company

There are several incidents of disaster in the past prior to the formation of the Company. Some of the disasters faced by the Company after its bifurcation from the erstwhile Electricity Department in the recent past are given below:

- Toppling/falling of battery from the rack at 132/33kV Sub-station, Yurembam and collapse of 2(two) numbers of 132kV tower near Rengpang and near Patsoi due to severe earth quake on January 4th, 2016.
- Collapse of 2 numbers of 132kV tower near Yaingangpokpi due to heavy storm in 2016
- Flooding of 33/11kV Sub-station, Mayang Imphal complex to about 4 Feet due to flood because of breach of bank of Imphal river in July, 2017.
- Collapse of 1 numbers of 132kV tower at Keithelmanbi due to soil erosion in 2017.

2.2 Vulnerability

The system is also vulnerable to the following

- Lines passing through forest are prone to tree falling during storms which may cause damage to both lines and towers.
- Towers in the vicinity of rivers are prone to collapse due to soil erosion.
- Missing of tower parts due to theft may cause collapse of towers.
- Collapse of tower my also occur due to bomb blast.
- Sub-Stations lying in the low lying areas are prone to disasters due to flooding during rainy season.
- Fire can occur in sub-stations due to explosion of transformer (oil filled)/short circuit

2.3 Capacity of the Department to deal with disasters

The department has enough technical staff to deploy at the affected areas during disaster and has developed its capacity to restore power supply by diverting availability of materials from different stocks.

All the sub-stations are manned by technical staff all around the clock in shifts. The sub-stations are linked with telephones and all breakdowns and problems are immediately reported to the senior officials. All the Control Rooms have the system of logging all the messages received and feedback of attending all the messages is also recorded.

2.4 Gaps in the existing capacity

- Shortage of skilled workforce as most of the staffs were recently recruited.
- In case of large scale damage shortage of required material may arise.
- Most of the towers are located in hilly region which are prone to disaster due to storm and landslides. Due to inaccessibility, restoration time takes longer as head loading of the materials is the only means of transport.

2.5 Risk Analysis

The risks involved may be classified as under;

- Tower collapse due to earthquakes, cyclones, whirl winds, sabotage etc.
- Conductor snapping due to mechanical failure, wind pressure, insulator failure.
- Insulator failure due to lightning strike, mechanical damage, sabotage, surge voltages.
- Road blockage on account of conductor snapping or tower collapse near road crossings or road proximity.
- Failure of transformers, equipment
- Fire hazards due to transformer oil burning, short circuit in switch yard, control room, battery room, A/C D/C room etc.
- Electrical accidents
- Flooding of cable trench due to heavy rain fall.
- Bomb threat.

3. Prevention, Mitigation and Preparedness Plan

As a precautionary measure the Operation and Maintenance Staff of the sub-station and line take up the following activities

- Routine inspection of all sub-stations.
- Routine patrolling of all lines.
- Design of line towers and equipment taking care of optimal condition with certain factors of safety.

- Rising up of ground level of the low lying sub-station by land filling and rising plinth level of the control room
- Equipping low lying sub-stations with dewatering pumps to remove excess water.
- Provision of parpaulin, bakelite sheets above the equipment wherever necessary prior to monsoon.
- Providing heaters in the sub-stations where there is a problem of moisture absorption in the bus bar compartment of the switchgear to avoid flashover.

3.1 Preparedness Plan

- Fire Fighting equipments are available at different Power Stations to protect man & material from fire hazard
- First Aid boxes are provided in case of medical emergency.
- Communication Systems are available in the sub-stations for communication to the State Load Dispatch Centre (SLDC), Yurembam.
- All leaves sanctioned earlier to all the officers/engineers and workers shall stand suspended once emergency is declared.
- All the engineers responsible for operation shall be on duty round the clock and they will also ensure their subordinate officers to be on duty accordingly.
- Verification of all susceptible infrastructures to rectify defects if any including strengthening of weak points.
- Educating each Crisis Leader about their role, responsibility prior to and after disaster.
- Distinct Control Rooms shall be in operation with Mobile phone under intimation to Govt.
- The Switching operation inside the 33/11KV Substations should be known to everyone and working level personnel should operate the equipments without referring to or waiting for management's consent during the crisis.
- Shift duty personnel should be detained till the restoration process is completed.
- Sufficient generators are to be kept ready.
- Arrangement of special squad comprising of Engineers and Workers along with T&P and diversion of working groups from the unaffected area.
- To identify major resources like man power, materials & equipments needed to make the plan operational. Accordingly empanelled Contractors with their workers and T&P may be asked to remain ready.
- Identification of resources need and their deployment viz, technical experts, manpower, equipment, spare parts & other material.
- All required materials are to be mobilized from central store/procured.
- Funds to be placed for fooding & petty purchase.
- Advertisement in the local newspapers for precautions to be taken during the monsoon season of their installations and service position and the necessary information regarding the contact personnel about the complaints to controls in their respective areas.

3.2 Capacity Building

Constitution of Disaster Management Group:

- Organization Level Disaster Management Group:-
  - Managing Director, MSPCL
  - Executive Director (Technical) / Executive Director(C&G) / Director (HR)
  - General Manager (Finance)
  - Nodal Officer/Alternate Nodal Officer for the Crisis management plan in respect of MSPCL.
- Responsibilities:-
  - To mobilize resources for restoration
  - To ensure that Disaster Management Plans are in place of
  - To mobilize financial recourses
  - To facilitate inter-agency support
  - To coordinate information
  - To facilitate damage assessment
- Conducting Training program among all the field engineers and workers on rotational basis.
- Mock Drill on disaster management.

4. Response Plan

In the event of any disaster, all related control rooms, dedicated line patrolling units will act as Quick Response Units in co-ordination with the Senior Officials and Crisis Management Team. These Units remain prepared with necessary T&P and accessories.

During the disaster, power supply to all the disaster prone areas are to be switched off from the grid. First priority shall be given for restoration of 33 kV supply to the respective 33/11 kV sub-stations. Second priority for supply to the dedicated & emergency feeders covering vital installations like water supply, hospital, communication etc.

The Completion report is to be given to the Crisis Management Team and senior officials. Concerned DGMs are to assess the damages and furnish a damage report to the senior official.

5. Knowledge Management

MSPCL caters to the population living in every corner of the State. MSPCL can propagate awareness campaign in the State. This will help in reducing disasters by creating awareness. People will be motivated towards a practice of disaster prevention and resilience. This in turn requires the collection, compilation and dissemination of relevant knowledge and information on hazards, vulnerabilities and capacities. In a broader context, information about disaster preparedness, do's and don'ts in emergency, Disaster Management Plans; policies and guidelines are available at various domains from decades. However, millions of people are getting severely affected by disasters every year due to lack of adequate coping mechanisms.

This may be attributed to the fact that the information lying at one place is not getting transformed into lifesaving knowledge for the communities at risk.

Documentation of lessons learnt

Manipur being located in the hilly region is a hazard prone State. Documentation of the lessons learnt from every disaster faced will help the Company to better cater to future disasters. MSPCL will document the cause, lacunae, and the preventive measures which should be undertaken to avoid its re-occurrence.

Documentation of best practices

Disasters lead to loss of life and property at mass level. There are many incidents to cite in which little knowledge or slightly different practices would have saved many lives and property. Documentation of such practices will be helpful in improving safety measures. Attempt will be made to prepare an inventory of such practices.

6. Review, updation and dissemination of the plan

6.1 DMP a living document

DM Plan is a "Living document" and would require regular improvement and updating. The plan must be updated at least once a year. The Disaster Management plan prepared by the Company shall be circulated to all its General Manager and Deputy General Managers offices. The Plan shall be shared on the Company portal. The plan will be updated as and when required and modified plan shall be communicated to the key stake holders. For the annual review of the disaster management plan participation of different stakeholders will be ensured by inviting them to workshops. Based on their feedback, necessary changes will be incorporated in the plan.

6.2 Dissemination of plan

The primary responsibility for dissemination of the plan will be with MSPCL. It would involve MSPCL for capacity building at different levels for training and dissemination. The Disaster Management Plan will be disseminated at various levels. Disaster Management Plan will be uploaded in the MSPCL website. A printed document will be supplied to all the stakeholders.