

RABI SEASON DEMAND MANAGEMENT LOAD REGULATORY MEASURES

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1. INTRODUCTION :

- 1.1 India being agricultural predominant country so to get maximum production the agricultural sector is required to be paid due attention. As for irrigation of the crops, the canal system is not so developed in Madhya Pradesh so the farmers are dependent on the well irrigation through pumping, and for pumping of water the energy is required. The cheapest source of energy is the electricity in our subcontinent. The Rabi Season starts from Sept to Oct and ends in the Feb-March. During this period the demand of electricity increases to its maximum due to increase load of agricultural pump sets. As the availability of power is not adequate as compared to the demand so Rabi Season demand management becomes a crucial issue for power sectors.
- 1.2 Load Regulatory Measures can be basically classified as CRISIS MANAGEMENT in Power Industry, because it comes into picture in system distress conditions only. It is very critical and important in order to maintain power position effectively in order to run the system / grid smoothly. The level of frequency of electrical energy is the prime factor to judge the condition of the grid. The standard frequency is 50 Hz and any deviation is dealt with accordingly. In normal conditions with the increase of load in grid, a decrease in frequency is noticed and vice-versa. As per grid code, if the company over draws the power when the grid frequency is below 49-50 Hz then the company incurs huge losses as the company has to pay UI charges alongwith panel charges vice-versa if company over draws the power when the grid frequency is above 50.2 Hz then the company earns the UI charges. In fact, regulation of electric power is necessitated whenever there is definite shortage in

availability of power than its demand in the system and gradual decrease in frequency level, i.e. below 50 Hz.

2. **BACKGROUND :**

- 2.1 It is now a well known fact that since a decade most of the States are facing crisis in supplying power as per actual demand, especially in morning and evening hours and also in Rabi Season due to increased load of agriculture pump sets. In near future, we are going to notice considerable improvement in power system due to capacity addition in generation. It may be mentioned here that in 10th Five Year Plan, only 50% of capacity addition against target of 41,000 MW could be achieved. However, in 11th Five Year Plan, 62,000 MW capacity additions are targeted. In most of the States, the peak in demand is normally observed during evening time. Above reasons mainly necessitate regulation of power in the area of supply. Distress condition also arises whenever any power generation unit / plant is out for any reason.
- 2.2 During morning / evening period, shortage of power to the extent of about 500 MW is normally observed in the State. Similarly, during Rabi Season, the shortage reaches to more than 1000 MW in MP. There arises need of regulating power.
- 2.3 First of all assured availability of power from all sources is collected against the anticipated demand which is assessed on monthly, daily, hourly basis i.e. un-restricted demand of the system. The shortage found if any, has to be met out by planning load shedding to the same extent. Load shed duration is prioritized keeping in view the area/population being fed, i.e. district head-quarter or Tahsil head-quarter etc.
- 2.4 Load Regulatory Measures are planned by classification of 33KV feeders emanating from EHV substations in order of area being fed prominently by concerned 33KV feeder, namely Group-I, II, III, IV, V XIII. For example, 33KV feeders prominently supplying power to rural areas are

classified under Group-I to IV, those supplying to Tahsil head-quarters under Group-V, VA, VI, VIA, those supplying to District head-quarters under Group-VII and those supplying to Commissionary head-quarters under Group-VIII and so on. While implementing load regulations, power is shed in a particular area for a scheduled period as far as possible i.e. Scheduled Load Shedding. However, unscheduled load shedding is also resorted to as per system requirement. It is to mention here that we put all-out efforts by enforcing load regulatory measures to match the availability of power by restricting demand.

3. STATISTICS :

3.1 From year 2005-06 to 2009-10 the availability of power against the unrestricted demand and the shortage in percentage was as follows :-

All figures in MU

	2005-06	2006-07	2007-08	2008-09	2009-10
Unrestricted Demand	37077	38703	41606	42625	43765
Power supplied	32231	33435	36073	35503	35561
% shortage	13.1	13.6	13.3	16.7	18.7
Scheduled load shedding	2325	2674	3766	5469	7285
Unscheduled load shedding	2520	2594	1258	1140	586

Thus there is continuous shortage of power against the demand this shortage is met out by enforcing load shedding in different areas during different time slots.

3.2 To meet out the demand during Rabi Season, short term power purchase is resorted to increase the availability of power for particular time slot, but it is a very costly affair, so management of the load / demand is done in such a manner so that the farmers could get the sufficient supply of electricity to irrigate their crops.

4. **LEGAL PROVISION** : Although its obligatory for the electric supplying company to provide the power to its consumers. The Section 23 of the Indian

Electricity Act-2003 provide that “if the Appropriate Commission (MPERC for MP) is of the opinion that it is necessary or expedient so to do for maintaining the efficient supply, securing the equitable distribution of electricity and promoting competition, it may, by order, provide for regulating supply, distribution, consumption or use thereof.”

Section 37 of the Act provides that “The Appropriate Govt. (GoMP for MP) may issue directions to Regional Load Dispatch Centre or State Load Dispatch Centre, as the case may be, to take such measures as may be necessary for maintaining smooth and stable transmission and supply of electricity to any region or State.

5. To provide the uninterrupted power during the scheduled supply hours to the consumers during Rabi Season, several preventive maintenance etc. are carried out. In this regard the instructions are issued to the field officers and regular monitoring is done to ensure the supply.

6. Since last 7 years to manage the load the East Discom has constructed 373 new 33/11KV S/s by installing 584 power transformer resulting in capacity addition of 2581 MVA. Similarly 20666 distribution transformers have been installed resulting in capacity addition of 1369 MVA. To distribute the power to farthest consumer 3666 Km. 33KV line, 11534 Km. 11KV line has been constructed. The total line and substation as on Nov-10 are as follows :-

SN	Particular	Unit	As on March-03	Progressive since 03-04	As on 30.11.10	Added
1	33KV Line	Km.	10753	3666	14419	34.09%
2	11KV Line	Km.	57862	11534	69396	19.93%
3	33/11KV S/s	No.	520	381	901	73.27%
4	Power Transformer	No.	758	584	1359	77.04%
5	Power Xmer capacity	MVA	2543	2581	5124	101.49%
6	Distribution Xmer	No.	44652	25634	70286	57.41%
7	Distn. Xmer Capacity	MVA	3511	1369	4880	38.99%

7. During year 2010-11 to manage the load following works are being carried out :-

SN	Particulars	Unit	Target for 2010-11	Achievement upto 30.11.10
1	33KV Line	Km.	500	339
2	11KV Line	Km.	5780	2091
3	33/11KV New S/s	No.	24	14
4	Aug. of Power Xmer	No.	46	32
5	Add. Power Xmer	No.	12	10
6	Distribution Xmer	No.	17088	6845

8. To provide the power to agricultural pump sets during Rabi Season the company is implementing the feeder bifurcation scheme under which the feeder supplying the power to agricultural consumers are to be separated upto Dec-12 from other load so that there will be no interference for power supply to agricultural pump sets and domestic consumers and the load management can be done in efficient way. The main aim of feeder bifurcation is to provide the continuous power as per availability, in first phase the company will provide power to these places at par with Tahsil head-quarter supply.