

STATE LOAD DISPATCH CENTRES (SLDC)

ACTIVITIES OF SLDC

****The State Load Despatch Centre:-**

As per section 33 of Electricity Act - 2003 (Central Act 36 of 2003), SLDC performs powers as defined below:-

SLDC is the apex body to ensure integrated operation of the power system in the state of Meghalaya.

It is the strategic functional unit of Meghalaya Energy Corporation Limited, for discharging various functions specified under Section 33 of Indian Electricity Act 2003.

The State Load Despatch Centre may give such directions and exercise such supervision and control as may be required for ensuring the integrated grid operations and for achieving the maximum economy and efficiency in the operation of the power system in the state to implement the orders/directives from Central Electricity Authority (CEA) and other statutory bodies like CERC (Central Electricity Regulatory Commission) and Meghalaya Electricity Regulatory Commission (MeSERC).

The State Load Despatch Centre shall comply with the directions of the Regional Load Despatch Centre (NERLDC).

SLDC Activities is broadly categorized: - (A) Real-time Functions (B) Pro-active Functions.

The SLDC shall have to carry out their functions in compliance with provisions in the implemented State Electricity Grid Code and Indian Electricity Grid Code (as State Grid code has not come into force). The explanation below is intended only for general guidance of SLDC from the perspective of Availability Tariff for Central stations and Indian Electricity Grid Code (IEGC).

SLDC has to look into the daily scheduling process for Central stations. How MeECL can take advantage of the commercial mechanism now available, to trade/swap/bilateral agreement the surplus/deficit generation in certain periods of a day/season. For daily scheduling, these mainly deal with actions on the previous day, up to issuance of final schedules by RLDC.

As a general rule, the SLDC should requisition their entire entitlement in the available Central generating station capacity (other than liquid fired) for the whole day, unless their consumer load profile and intra-State generation mix is such that the total State load during certain hours of the day is expected to be less than the Central

entitlement plus intra-State generation of a variable cost lower than the highest energy charge rate of Central generation. In such a case, the requisition from Central stations having high energy charge rates could be suitably curtailed during the concerned hours, provided the frequency is expected to rise during those hours to a level that causes the UI rate to fall below the energy charge rate of the concerned station. In case frequency is not expected to rise to such a level during those hours, Central station requisition should not be curtailed, and the surplus should be traded bilaterally or as UI (Unscheduled Interchange).

On the day of operation, the SLDC have to primarily monitor the intra-State system. They have to keep a general watch on the actual net drawal of the State from the regional grid vis-à-vis the State's net drawal schedule, but it is not necessary to endeavor to equalize the two. In fact, in the system in place, it is beneficial as well as desirable to deviate from the net drawal schedule depending on the circumstances. For example, an overdrawal may result from increase in consumer load or reduction of intra - State generation. If there is no transmission constraint and grid frequency is good, it causes no problem for the larger grid, and the extra energy comes to the State at a low UI rate. There can be no objection to extra consumer demand being met through such overdrawal. There can also be no objection to the over-drawn energy replacing the intra - State generation of a higher variable cost. The SLDC should in fact try to increase its overdrawal further, as long as frequency is good, by (i) reducing own generation which has a variable cost higher than prevailing UI rate, and (ii) restoring consumer load that had been shed.

Even if a State overdraws in a low-frequency situation, it would mean meeting consumer demand which would not have been met otherwise, and is beneficial from this angle. However, it has following adverse implications:

i) The regional grid may be endangered if frequency falls below 49.20 Hz, or if some transmission element gets excessively overloaded. RLDC may then ask the SLDC to curtail its overdrawal, and SLDC must take necessary action immediately as violation falls under IE Act 2003.

ii) Another State (which is under-drawing) may be perceived to be getting deprived of its rightful share. However, this would be the case only if that State has resorted to load shedding, AND frequency is below 49.20 Hz. If a State carries out load shedding and thereby causes inconvenience to its consumers while frequency is above 49.20 Hz, it would be doing so either because of a misconception or for commercial reasons, i.e., to get UI payment, and therefore would not have a valid ground for feeling aggrieved.

iii) The over-drawing State shall have to pay UI charges at a high rate. The SLDC would have to be sure that it is in the State's overall interest.

The SLDC should therefore take the following corrective action in the event of overdrawal during low frequency situation:

i) Increase Central station requisition to full entitlement (in case not fully requisitioned earlier).

ii) Maximize generation at intra - State stations having variable costs lower than prevailing UI rate. (This can be in the form of standing instructions, i.e., frequency - linked dispatch guidelines).

iii) Harness captive and co-generation, to the extent available at a price lower than the prevailing UI rate.

iv) Explore the possibility of purchasing power through a bilateral agreement.

v) Curtail consumers' load.

A situation of under-drawal can arise in case consumers load in the State comes down in an unpredictable manner. If this happens at a time of general shortage in the regional grid (wherein frequency would be low), the under-drawal is beneficial for all, and SLDC should let it continue. For enhanced optimization, the SLDC may even resort to:

i) Maximizing generation at all intra-State stations whose variable cost is below the prevailing UI rate.

ii) Increasing Central station requisition to full entitlement (in case not fully requisitioned earlier).

iii) Harnessing captive and co-generation, to the extent available at a price lower than the prevailing UI rate.

iv) Curtailing consumer load, by shedding low - priority consumers (provided UI earning for the utility justifies such load shedding). This is totally optional, and helps the regional grid. Overall interest of consumers in the State is however to be safeguarded by the concerned State Electricity Regulatory Commission (by specifying limits for such load shedding).

In case under-drawal takes place when grid frequency is good, the SLDC should take action to reduce the under-drawal, through one or more of the following measures:

i) Restore consumer load, which may have been shed.

ii) Back down intra-State generation having variable costs higher than prevailing UI rate, preferably through standing frequency-linked dispatch guidelines.

iii) May intent to reduce drawal schedules from any Central generating station whose energy charge rate is higher than the prevailing UI rate, and/or arrange a bilateral sale.

It would be seen from the above that the action to be taken by the SLDC depends on the grid frequency, rather than on whether the State is in under-drawal or over-drawal mode. The need for action on the above lines would generally arise when there is a change in system status, e.g., tripping of an intra-State generating unit, a load crash within the State, or a frequency change due to load-generation imbalance elsewhere.

Hence, the SLDC operators need to be perpetually vigilant to promptly initiate the desired action, for grid security (technical optimization) as well as commercial optimization.

TRANSMISSION OF ELECTRICITY

Section 25. (Inter-State, regional and inter-regional transmission):

For the purposes of this Part, the Central Government may, make regionwise demarcation of the country, and, from time to time, make such modifications therein as it may consider necessary for the efficient, economical and integrated transmission and supply of electricity, and in particular to facilitate voluntary inter-connections and co-ordination of facilities for the inter-State, regional and inter-regional generation and transmission of electricity.

Section 26. (National Load Despatch Centre) :-(1) The Central Government may establish a centre at the national level, to be known as the National Load Despatch Centre for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres.

(2) The constitution and functions of the National Load Despatch Centre shall be such as may be prescribed by the Central Government: Provided that the National Load Despatch Centre shall not engage in the business of trading in electricity.

(3) The National Load Despatch Centre shall be operated by a Government company or any authority or corporation established or constituted by or under any Central Act, as may be notified by the Central Government.

Section 27. (Constitution of Regional Load Despatch Centre):

(1) The Central Government shall establish a centre for each region to be known as the Regional Load Despatch Centre having territorial jurisdiction as determined by the Central Government in accordance with section 25 for the purposes of exercising the powers and discharging the functions under this Part.

(2) The Regional Load Despatch Centre shall be operated by a Government company or any authority or corporation established or constituted by or under any Central Act, as may be notified by the Central Government:

Provided that until a Government company or authority or corporation referred to in this sub-section is notified by the Central Government, the Central Transmission Utility shall operate the Regional Load Despatch Centre:

Provided further that no Regional Load Despatch Centre shall engage in the business of generation of electricity or trading in electricity.

Section 28. (Functions of Regional Load Despatch Centre): --- (1) The Regional Load Despatch Centre shall be the apex body to ensure integrated operation of the power system in the concerned region.

(2) The Regional Load Despatch Centre shall comply with such principles, guidelines and methodologies in respect of the wheeling and optimum scheduling and despatch of electricity as the Central Commission may specify in the Grid Code.

(3) The Regional Load Despatch Centre shall -

(a) be responsible for optimum scheduling and despatch of electricity within the region, in accordance with the contracts entered into with the licensees or the generating companies operating in the region;

(b) monitor grid operations;

(c) keep accounts of quantity of electricity transmitted through the regional grid;

(d) exercise supervision and control over the inter-State transmission system; and

(e) be responsible for carrying out real time operations for grid control and despatch of electricity within the region through secure and economic operation of the regional grid in accordance with the Grid Standards and the Grid Code.

(4) The Regional Load Despatch Centre may levy and collect such fee and charges from the generating companies or licensees engaged in inter-State transmission of electricity as may be specified by the Central Commission.

Section 29. (Compliance of directions): --- (1) The Regional Load Despatch Centre may give such directions and exercise such supervision and control as may be required for ensuring stability of grid operations and for achieving the maximum economy and efficiency in the operation of the power system in the region under its control.

(2) Every licensee, generating company, generating station, sub-station and any other person connected with the operation of the power system shall comply with the directions issued by the Regional Load Despatch Centres under subsection (1).

(3) All directions issued by the Regional Load Despatch Centres to any transmission licensee of State transmission lines or any other licensee of the State or generating company (other than those connected to inter State transmission system) or sub-station in the State shall be issued through the State Load Despatch Centre and the State Load Despatch Centres shall ensure that such directions are duly complied with the licensee or generating company or sub-station.

(4) The Regional Power Committee in the region may, from time to time, agree on matters concerning the stability and smooth operation of the integrated grid and economy and efficiency in the operation of the power system in that region.

(5) If any dispute arises with reference to the quality of electricity or safe, secure and integrated operation of the regional grid or in relation to any direction given under subsection (1), it shall be referred to the Central Commission for decision :

Provided that pending the decision of the Central Commission, the directions of the Regional Load Despatch Centre shall be complied with by the State Load Despatch Centre or the licensee or the generating company, as the case may be.

(6) If any licensee, generating company or any other person fails to comply with the directions issued under sub-section (2) or sub-section (3), he shall be liable to a penalty not exceeding rupees fifteen lacs.