

Model Regulation for Intra-State Essential Reliability Services Operations Regulations



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NOTIFICATION

No. XX/XX/2020

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In exercise of the powers conferred under sections 42, 61, 66, 86(1) (e) and 181 of the Electricity Act, 2003 (Act 36 of 2003) and all other powers enabling it in this behalf, and after previous publications, the(Name of State) Electricity Regulatory Commission hereby makes the following Regulations for the Intra-State Essential Reliability Services Operations:

1. Short Title and Commencement

- i. These Regulations may be called the(Name of State) Electricity Regulatory Commission (Intra-State Essential Reliability Services Operations) Regulations, 20XX
- ii. These Regulations may come into force from the date of their notification in the Official Gazette
- iii. These Regulations shall extend to the whole of the State of

2. Definitions and Interpretations

- i. In these Regulations, unless the context otherwise requires,
 - a) "Act" means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof;
 - b) "actual drawal" in a time-block means electricity drawn by a buyer, as the case may be, measured by the interface meters;

- c) "actual injection" in a time-block means electricity generated or supplied by the seller, as the case may be, measured by the Interface meters;
- d) "beneficiary" means a person who has a share in an Intra-State Generating Station;
- e) "Commission" means the (Name of State) Electricity Regulatory Commission constituted under the Act;
- f) "Congestion" means a situation where the demand for transmission capacity exceeds the Available Transfer Capability;
- g) "Detailed Procedure" means the procedure issued under regulation 14;
- h) "Deviation" in a time-block for a seller means its total actual injection minus its total scheduled generation and for a buyer means its total actual drawal minus its total scheduled drawal;
- i) "Essential Reliability Services or ERS" means Ancillary Services that consist of either Regulation Down Service or Regulation Up Service;
- j) "Essential Reliability Services Provider or ERS Provider" means the Intra-State Generating Stations eligible to participate in the ERS, for providing Regulation Up or Regulation Down service;
- k) "Grid Code" means the Grid Code specified by the (Name of State) Commission under the Act;
- l) "Interface meters" means interface meters as defined by the Central Electricity Authority under the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time;
- m) "Load Despatch Centre" means(Name of State) Load Despatch Centre, responsible for coordinating scheduling in accordance with the provisions of Grid Code;
- n) "Nodal Agency" means the System Operator, namely(Name of State) Load Despatch Centre who shall be responsible for implementation of the essential reliability services operations at the intra-state level;

- o) "Regulation Down Service" means an ERS that provides capacity that can respond to signals or instruction of the Nodal Agency for decrease in generation, within the technical limit and time limit, to respond to changes in system frequency or congestion in the system;
- p) "Regulation Up Service" means an ERS that provides capacity that can respond to signals or instruction of the Nodal Agency for increase in generation, within the technical limit and time limit to respond to changes in system frequency or congestion in the system;
- q) "State entity" means a person whose metering and energy accounting is done at the state level;
- r) "Scheduled generation" at any time or for a time block or any period means schedule of generation in MW or MWh ex-bus given by the concerned Load Despatch Centre;
- s) "Scheduled drawal" at any time or for a time block or any period time block means schedule of drawal in MW or MWh ex-bus given by the concerned Load Despatch Centre;
- t) "Security Constrained Economic Despatch" or "SCED" means operation of generation facilities to produce energy at lowest cost to reliably serve the consumers, recognizing any operational and technical limits of generation and transmission facilities;
- u) "Security Constrained Unit Commitment" or "SCUC" means committing/de-committing generating units while respecting limitations of the transmission system and unit operating characteristics;
- v) "Time-block" means a time block of 15 minutes each for which special energy meters record values of specified electrical parameters with first time block starting at 00.00 hrs;
- w) "Un-requisitioned surplus" means the reserve capacity in a generating station that has not been requisitioned and is available for despatch, and is computed as the difference between the declared capacity of the generation station and its total schedule under long-term, medium-term and short-term transactions, as per the relevant regulations of the Commission.

x) “Virtual Ancillary Entity” means a virtual entity participating in the(Name of State) Deviation Pool, as operationalized under State Electricity Regulatory Commission Regulations, , which shall act as the counterparty for the schedule prepared for despatch of essential reliability services providers;

ii. All other words and expressions used in these regulations, although not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by the Parliament applicable to the electricity industry in the State shall have the meaning assigned to them in such law.

3. Objective:

i. The objective of these regulations is to balance the supply and demand in the state, relieve the congestion in the Intra-State transmission system and to optimize the despatch of electricity incorporating reserves.

4. Scope and applicability

i. These regulations shall be applicable to the Intra-State Entities (other than Hydro & Renewable generators) involved in the transactions facilitated through short-term open access or medium-term open access or long-term access.

5. Eligibility for participation for Intra-State Essential Reliability Services:

i. All (Name of State) Generating Stations and whose tariff is determined or adopted by the Commission for their full capacity shall provide Intra-State ERS.

ii. All other State Generating Stations whose tariff is not determined or adopted by the commission may also be considered for Intra-State ERS. The consolidated tariff may be considered as 303.04 Paise/kwh.

6. Control period:

i. The Regulations shall come into force from the date of notification in the Official Gazette.

7. Role of Nodal Agency

- i. Nodal Agency shall prepare merit order stack of Intra-.....(Name of State) Generating Stations as stipulated in regulation 7.ii and take despatch decision.
- ii. For Regulation-Up, the Nodal Agency shall prepare stack of un-requisitioned surplus capacities available in respect of Intra-.....(Name of State) Generating Stations from lowest variable cost to highest variable cost in each time block, and taking into account ramp up or ramp down rate, response time, transmission congestion and such other parameters as stipulated in the Detailed Procedure. For Regulation-Down, a separate merit order stack from highest variable cost to lowest variable cost incorporating technical parameters as above shall be prepared.
- iii. Nodal agency shall prepare merit order stack factoring intra- state transmission constraints, if any.
- iv. Nodal Agency shall monitor the frequency during continuous low frequency or high frequency period, any system contingency, loading on tie lines etc.
- v. Nodal agency shall direct the selected ERS Provider(s) based on the merit order for economical despatch for Regulation Up and Regulation Down, as and when requirement arises in the system on account of any of the following events:
 - a) Extreme weather forecasts and/or special day;
 - b) Generating unit or transmission line outages;
 - c) Trends of frequency;
 - d) Any abnormal event such as outage of hydro generating units due to silt, coal supply blockade etc.;
 - e) Excessive loop flows leading to congestion; and
 - f) Such other events.
- vi. Nodal agency shall direct the selected ERS Provider(s) to withdraw their services after the circumstances leading to triggering of ERS no longer exist. The time-frame for withdrawal of service shall be determined as per the Detailed Procedure.

8. Role of Intra-State Essential Reliability Services Provider (ERS Provider)

- i. The ERS Provider shall on monthly basis submit the following to the Nodal Agency.
 - a) Maximum possible ex-bus generation (MW) including overload if any (P_{max})
 - b) Minimum turn down level (MW) (P_{min})
 - c) Type of fuel
 - d) Fixed cost (paise/kWh upto one decimal place)
 - e) Energy charge rate (paise/kWh upto one decimal place)
 - f) Ramp up rate (MW/min) for each unit
 - g) Ramp down rate (MW/min) for each unit
 - h) Start up time from cold start (in minutes)
 - i) Start up time from warm start (in minutes)
 - j) Minimum up time for a unit after synchronization (in minutes)
 - k) Minimum down time for a unit after desynchronization (in minutes)
 - l) Maximum number of units that can be started up simultaneously
 - m) Any other information / constraints
- ii. The ERS Provider shall inject or back down generation as per the instruction of the Nodal Agency for Regulation Up and Regulation Down respectively.

9. Despatch of ERS

- i. Generation under the ERS shall be scheduled to the Virtual Ancillary Entity as decided by the Nodal Agency.
- ii. Once the time period as specified by the Nodal Agency in the scheduled procedure starts, ERS shall be deemed to have been triggered.
- iii. The schedules of the ERS Provider(s) shall be considered as revised by the quantum scheduled by the Nodal Agency under ERS.
- iv. Any deviations in schedule of ERS Provider(s) beyond the revised schedule shall be treated in accordance with the -.....(Name of State) Regulations.

10. Withdrawal of ERS

The Nodal Agency, having been satisfied that the circumstances leading to triggering of ERS no longer exist, shall direct the ERS Provider(s) to withdraw with effect from the time block as specified in the Detailed Procedure.

11. Scheduling of ERS

- i. The quantum of generation dispatched shall be directly incorporated in the schedule of respective ERS Provider(s).
- ii. For Regulation Up Service, power shall be scheduled from the generating station to the Virtual Ancillary Entity by the concerned Nodal Agency, until such time the Nodal Agency gives instruction for withdrawal of service.
- iii. For Regulation Down Service, power shall be scheduled from the Virtual Ancillary Entity to the generating station, so that effective scheduled injection of the generating station comes down, until such time the Nodal Agency gives instruction for withdrawal of service.
- iv. Separate statement shall be maintained along with State Deviation Settlement Account for ERS.
- v. The energy despatched under ERS shall be deemed as delivered ex-bus.

12. Energy Accounting

- i. Energy Accounting shall be done by the Nodal Agency on weekly basis along with State Deviation Settlement Account based on interface meters data and schedule.
- ii. The Nodal Agency shall issue an Ancillary Services Statement along with the State Deviation Settlement Mechanism Account.

13. ERS Settlement

- i. The settlement shall be done by the Nodal Agency under the State Deviation Settlement Pool Account under separate account head of ERS.
- ii. The payment to ERS Provider(s) shall be from the State Deviation Settlement Pool Account Fund. There can be two types of pool. One is ZERO balance pool and other is pool having residual amount after settlement.

- iii. In case of ZERO balance (also known as revenue neutral) pool, payment under ERS from or to State DSM pool is to be considered as a part of pool balancing and accordingly payable and receivable to be made equal.
- iv. In case of Non-ZERO balance pool, settlement towards ERS is to be done directly with the pool. In case of a deficit pool, dispatch under ERS is not envisaged.
- v. The ERS Provider(s) shall be paid at their variable charges, as decided by the Commission through a separate order from time to time in case of Regulation Up services for the quantum of ERS scheduled from the pool.

Provided that, the variable charges allowed by the Commission and as applicable at the time of delivery of ERS shall be used to calculate the payment for this service and no retrospective settlement of variable charges shall be undertaken even if the variable charges are revised at a later date.

- vi. For Regulation Down service, the ERS Provider(s) shall pay back of the variable charges corresponding to the quantum of Regulation Down services scheduled, to the pool. Loss due to sub-optimal operation may be factored.
- vii. Any deviation from the schedule given under ERS shall be in accordance with the State Electricity Regulatory Commission Regulations, 2014
- viii. Sustained failure to provide the ERS (barring unit tripping) by ERS Provider(s) shall attract penalties on account of gaming. Violation of directions of Nodal Agency for ERS shall also make the ERS Provider(s) liable for penalties in terms of section 30 of the Act.
- ix. No commitment charges shall be payable to the ERS Provider(s) for making themselves available for the ERS.

14. Detailed Procedure

- i. The Nodal Agency shall, after obtaining prior approval of the State Commission, issue the Detailed Procedure within a period of 3 months of notification of these regulations.
- ii. The Detailed Procedure shall contain the guidelines regarding operational aspects of ERS including scheduling and dispatch and any residual matter.

15. Power to give directions

- i. The Commission may from time to time issue such directions and orders as considered appropriate for implementation of these Regulations.

16. Power to relax

- i. The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

17. Power to amend

- i. The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provisions of these Regulations.

18. Power to remove difficulties

- i. If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing the difficulty.

(Secretary)