

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

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पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ संख्या:पोसोको/एनएलडीसी/2019/ 46

दिनांक: 21st May, 2019

सेवा मे,

Secretary
Central Electricity Regulatory Commission
3rd & 4th Floor, Chandralok Building
Janpath, New Delhi

विषय: POSOCO Inputs on Draft Deviation Settlement Mechanism and related matters
(Fifth Amendment) Regulations, 2019

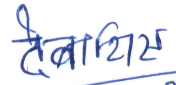
महोदय,

Honorable commission has come out with Draft Deviation Settlement Mechanism and related matters (Fifth Amendment) Regulations, 2019, dated 18th April'2019. In this regard, POSOCO suggestions are enclosed as Annexure-I for kind perusal of the Honorable commission.

Delay in submission may be condoned.

सादर धन्यवाद,

भवदीय


21/05/19

Debasis De

Chief General Manager(I/C), NLDC

Ancl:As above

Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fifth Amendment) Draft Regulations, 2019 Suggestions on Behalf of RLDCs/NLDC

The Hon'ble Commission has notified the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fifth Amendment) Draft Regulations, 2019 on the 18th April 2019. In essence, an attempt has been made to address some of the concerns raised by the stakeholders in regard to the CERC 4th Amendment Regulations, 2018.

The suggestions on behalf of the RLDCs/NLDC are as follows.

1. Secure grid operation & impact of deviations

1.1. Deviations from schedule should be inadvertent: Interconnection with a large system such as the synchronous Indian grid in no way divests the state control area of this responsibility. Rather the control area has to discharge its frequency control responsibility by ensuring that its net withdrawal from the grid remains close to the schedule and deviations, if any, are entirely inadvertent and temporary. Deviations should take the form of Brownian motion, also called Brownian movement, any deviation quantity is constantly undergoing small, random fluctuations which in turn will lead to near steady frequency hovering around 50 Hz. The intent of the Deviation Settlement Mechanism Regulations is to ensure that the deviation is "inadvertent" i.e. not resulting from or achieved through deliberate planning or unintentional, or unintended or accidental. This is the practice followed in all large systems having many control areas operating in synchronism where the deviations have to be brought back to zero within 15-30 minutes. Failure to do so invites harsh penalties by the Regulator and utilities put in place schemes to ensure that this does not happen. No check on the deviations from the schedule would only lead to 'curse of the commons' and frequency instability in the system. Maintaining frequency of the system is a public good.

1.2. Maintaining Reserves in State & Need for intra-state Ancillary Services: Frequency of the entire synchronous interconnection needs to be maintained within the IEGC band with collective actions by all the stakeholders. If an individual state control area were to operate in isolation, frequency management by the control area would have to be solely done by it through generation reserves or demand response within the state else there would be serious risk of frequency instability leading to cascading failure and blackouts. Intra-state ancillary services need to be implemented in the states to facilitate despatch of reserves & real time balancing.

1.3. International Practice: In Continental Europe, TSOs specify Frequency Restoration Control Error Target Parameters or 'FRCE'. FRCE means the control error for the Frequency Restoration Process (FRP) which is equal to the ACE of a Load Frequency Control (LFC) area or equal to the frequency deviation where the LFC area geographically corresponds to the synchronous area. Level 1 and Level 2 limits are defined and FRCE has to be within the target values. Level 1 and level 2 are the limit values for the ACE. The ACE shall not exceed these values for more than:

- level 1: 30 % of the time intervals of the year.
- level 2: 5 % of the time intervals of the year.

The level 1 and level 2 parameters must not be exploited in order to reduce reserves or reserves activation. These parameters should rather be interpreted as an absolute warning limit that shows that quality of ACE is below the required standard and that respective countermeasures have been reported and will be implemented urgently. The level 1 and level 2 Frequency Restoration Control Error Target Parameters for some of the LFC blocks within Continental Europe are provided in Table 1

Table 1: FRCE Target Parameters in Europe

Sl no	Country	LFC-Block	belonging LFC-Areas	Demand (MW)	Level 1 (MW)	Level 2 (MW)
1	Austria	APG	APG	10000	78	148
2	Belgium	Elia	Elia	12 870	88	166
3	Bulgaria	ESO	ESO	6600	63	119
4	Czech Republic	CEPS	CEPS	10000	86	163
5	Germany	TNG+TTG+AMP+50HZT+EN+CREOS	TNG+TTG+AMP+50HZT+EN+CREOS	75000	248	468
6	Spain	REE	REE	41 381	187	354
7	France	RTE	RTE	94 190	226	427
8	Greece	IPTO	IPTO	8000	64	121
9	Hungary	MAVIR	MAVIR	6500	52	98
10	Italy	TERNA	TERNA	50000	159	301
11	Poland	PSE	PSE, Western WPS	25000	125	236
12	Portugal	REN	REN	8000	73	139
13	Slovak Republic	SEPS	SEPS	4500	49	93

Source:

- https://docstore.entsoe.eu/Documents/nc- tasks/SOGL/SOGL_A118.1_180808_CE%20SAOA%20part%20B_final_180914.pdf
- <https://transparency.entsoe.eu/dashboard/show>

1.4 Demand Forecasting & Portfolio Balancing: If the state control area forecasts its load accurately and manages the power procurement portfolio adequately ensuring sufficient generation reserves (spinning) at its command, its net withdrawal in real time would hover around the schedule in an entirely random fashion. It would move up or down the 'schedule' line many-many times a day. Large deviations would occur only in case of a generating unit outage or load crash which would be taken care through spinning reserves. These would be a rare phenomenon.

The DSM regulations issued in Feb 2014 by CERC provided a signal for better load forecasting, maintaining reserve and additional charges for advertent deviation. For a deviation to be classified as 'inadvertent' it would have to cross the 'zero' line at least once every three (3) hours. This was just a beginning and it was expected that utilities would ensure that the necessary measures are put in place for sound forecasting, scheduling and spinning generation reserves. The fourth amendment has operationalised this part of the Regulations with the three (3) hour period reduced to one and a half hours or six (6) time blocks.

It may be appreciated that, if the deviations are large, it is very difficult to correct the deviations in a short time. Hence, if the deviations are small, they would statistically cross the zero line every now and then without any effort or even if it is sustained in one direction, interventions through reserves and generation scheduling is possible in a very short time.

If the utilities chose to maintain some spinning reserves in ISGS thermal plants, they have the option to revise their requisitions and such requests are implemented from the 4th time block counting the time block in which revision is received by RLDC as the first one. This effectively means that if a state has to revise its schedule for the 1130-1145 hours block, it can make a request on RLDC portal latest by 1059 hours or 31 minutes before the start of despatch period.

If the state utility has spinning reserves within its own state, this could be done even faster. If the state utility tries to contract through the intra-day market, it must file its application latest by 1000 hours in the RLDC Short Term Open Access (STOA) portal for deliver starting 1130 hours i.e., one and half hours ahead.

The point is that the utility has sufficient access to mechanisms to ensure that the deviations are 'inadvertent'. There is absolutely no need of load shedding or curtailment of RE unless the requirement is from a transmission network constraint threatening the grid security. There need be no misconceptions on this account.

2. Other Suggestions

- (a) The purpose of implementing the various provisions of the DSM Regulations is to ensure a better frequency and secure & reliable power system operation. In this context, it is pertinent to mention that the monitored frequency band is asymmetrical i.e., 49.90-50.05 Hz considering a short supply position. However, in view of the fact that the nominal frequency for Indian Electricity Grid has been declared as 50 Hz and with improved generation & transmission infrastructure adequacy, the frequency band to be monitored should be "above 50 Hz" and "below 50 Hz" with a symmetrical tolerance band around 50 Hz. Hence, as also recommended in the *"Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency (Volume – I)"*, the operational frequency band should be changed to 49.95 – 50.05 Hz.
- (b) Specific exemptions to any of the provisions of the DSM Regulations should not be encouraged for any of the entities, be it generators or drawee entities. A general tolerance has already been envisaged by the Commission in the regulations to take care small entities / measurement errors etc.
- (c) Retrospective changes may be avoided as it would lead to accounting and settlement issues.
- (d) Part of the difficulties being faced by the stakeholders are on account of post-facto revisions of the schedules caused by entities which are presently exempt from deviation settlement mechanism, for example, nuclear stations, cross-border transactions like Bhutan. These aberrations need to be addressed and all entities must be brought within the ambit of DSM.
- (e) Hon'ble Commission has notified the Communication Regulations which need to be implemented in letter and spirit so as to improve the power system visibility and take care of issues related to real time monitoring through SCADA.

3. Specific / Clause wise suggestions

The specific clause wise suggestions are as follows.

Sr. No.	Draft 5 th Amendment Proposal	POSOCO Suggestion	Rationale
1	The following proviso under Regulation 7(1) of the Principal Regulations shall be deleted: "Provided also that from a date not earlier than one year as may be notified by the Commission, the total deviation from schedule in energy terms during a day shall not be in excess of 3% of the total schedule for the drawee entities and 1% for the generators and additional charge of 20% of the daily base DSM payable/receivable shall be applicable in case of said violation."	This clause should not be deleted and should be retained.	The 4 th Amendment Regulations already specify that this provision shall come into force from a prospective date to be notified by the Commission. Further, retaining the clause also provides the stakeholders an advance notice to prepare for such provisions in the future date. This is also in the interest of secure grid operation.
2	Clause (3) of Regulation 5 of the Principal Regulations shall be substituted as under :- "The Cap rate for the charges for deviation for the generating stations, irrespective of the fuel type and whether the tariff of such generating station is regulated by the Commission or not, shall not exceed 303.04 Paise/kWh."	Hydro station may be added in the clause: "The Cap rate for the charges for deviation for the generating stations, including hydro irrespective of the fuel type and whether the tariff of such generating station is regulated by the Commission or not, shall not exceed 303.04 Paise/kWh."	Water is not classified as fuel type. In order to have clarity and uniform approach for accounting and settlement process hydro station may be included.
3	Clause (10) of Regulation 7 of the Principal Regulations shall be substituted as under: "In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity (buyer or seller), such entity shall correct its position in the manner as specified under clauses (a) and (b) of this Regulation. (a) Up to 31.03.2020, if the sustained deviation from schedule continues for 12 time blocks, the regional entity (buyer or seller), shall correct its position by making the sign of its	Following changes are suggested: "In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity (buyer or seller), such entity shall correct its position in the manner as specified under clauses (a) and (b) of this Regulation. (a) Up to 31.03.2020, if the sustained deviation from schedule continues for 12 time blocks , the regional entity (buyer or seller), shall correct its position by making the sign of its deviation from schedule changed or by	Regional entity are required to change sign due to sustained deviation in one direction was introduced in 3rd amendment so as to drive the States to plan day ahead and invest in improving their load forecasting techniques and maintain their drawal schedule. Flexibility for change of sign due to sustained deviation may be allowed to regional entity. They may be allowed to change sign within 13 th time block.

	<p>deviation from schedule changed or by remaining in the range of +/- 10 MW with reference to its schedule, at least once, latest by 13th time block.</p> <p>(b)From 01.04.2020, if the sustained deviation from schedule continues for 6 time blocks, the regional entity (buyer or seller), shall correct its position, by making the sign of its deviation from schedule changed or by remaining in the range of +/- 10 MW with reference to its schedule, at least once, latest by 7th time block.</p>	<p>remaining in the range of +/- 10 MW with reference to its schedule, at least once latest within 12 13th time blocks.</p> <p>(b)From 01.04.2020, if the sustained deviation from schedule continues for 6 time blocks, the regional entity (buyer or seller), shall correct its position, by making the sign of its deviation from schedule changed or by remaining in the range of +/- 10 MW with reference to its schedule, at least once latest within 6 7th time blocks..</p>	
4	<p>Clause (10) of Regulation 7 of the Principal Regulations</p> <p>.....Provided also that payment of additional charge for failure to adhere to sign change requirement as specified under clauses (a) & (b) of this regulation shall not be applicable to:</p> <p><i>a. renewable energy generators which are regional entities</i></p> <p><i>b. run of river projects without pondage</i></p> <p><i>c. any infirm injection of power by a generating station prior to CoD of a unit during testing and commissioning activities, in accordance with the Connectivity Regulations.</i></p> <p><i>d. any drawal of power by a generating station for the start-up activities of a unit.</i></p> <p><i>e. any inter-regional deviations.</i></p> <p><i>f. forced outage of a generating station in case of collective transactions on Power Exchanges.</i></p>	<p>Clause f(10) of regulation 7 may be removed.</p> <p>.....Provided also that payment of additional charge for failure to adhere to sign change requirement as specified under clauses (a) & (b) of this regulation shall not be applicable to:</p> <p><i>a. renewable energy generators which are regional entities</i></p> <p><i>b. run of river projects without pondage</i></p> <p><i>c. any infirm injection of power by a generating station prior to CoD of a unit during testing and commissioning activities, in accordance with the Connectivity Regulations.</i></p> <p><i>d. any drawal of power by a generating station for the start-up activities of a unit.</i></p> <p><i>e. any inter-regional deviations.</i></p> <p><i>f. forced outage of a generating station in case of collective transactions on Power Exchanges.</i></p>	<p>Collective transactions are deemed delivered once the trade has been finalized. Generation is under competition and generators are participating in the market with full knowledge of associated risks such as unit tripping. It is pertinent to mention that there is absolutely no way to determine the whether the unit has actually tripped or generator choses not to deliver because of some reason, for example, interplay of prices in the market and the prevailing DSM rates. This actually could also lead to gaming. Schedules are contracts and must be honored. The proposed clause does not solve the problem of the generators. One way to solve this issue is to allow generators to purchase power to meet their contractual obligations in case of unit tripping.</p>

Annexure-I

			Hence, part (f) may be deleted.
5	Definition not given	Definition of sustained deviation may be added in the 5 th amendment <i>(qb) "Sustained Deviation" means continued deviation in one direction either positive or negative for the number of time blocks as specified in clause 7(10) of this regulation.</i>	There is a need to clearly define sustained deviation including duration.