RERC (Compensation for part load operation for the generating stations below the normative level of operation), 2025 [Draft]

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The RERC notified the draft on Compensation for Part Load Operation for the Generating Stations below the Normative Level of Operation, 2025, issued on December, 2025. The main objectives of the proposed draft are:

Objective: The draft order establishes a clear and transparent regulation for compensating thermal generating stations that are required to operate below the normative level of operation. In accordance with Regulation 51 of the RERC (Rajasthan Electricity Grid Code) Regulations, 2024, the draft order seeks to specify the methodology and parameters for determining compensation related to degradation in station heat rate, auxiliary energy consumption, and additional secondary fuel oil usage during part-load operation. The draft regulation aims to ensure that generators whose tariffs are determined under Section 62 or Section 63 of the Electricity Act are compensated for efficiency losses attributable to reduced scheduling, while also assigning the financial responsibility to the entity causing such part-load operation.
The document can be accessed here.

CER Opinion

1. **Contractual Primacy and Number of Start-ups / Shutdowns: In the Draft Clause (6)** state that ***"****The additional compensation for secondary fuel oil consumption shall be permissible over and above* ***seven (7) starts/stops in a year*** *for the generating station under Unit Shutdown in terms of Rajasthan Electricity Regulatory Commission (Rajasthan Electricity Grid Code) Regulations, 2024."*

   The draft order provides compensation for secondary fuel oil consumption beyond seven (7) starts/stops in a year. However, the permissible number of start-ups and shutdowns should also be governed by the provisions of the Power Purchase Agreement (PPA). Accordingly, it is suggested that where **the PPA explicitly provides for a higher number of permissible shutdowns or start-ups, such provisions should prevail, and compensation should be aligned with contractual terms rather than a uniform regulatory cap.**

2. **Additional Start-up Oil Allowance post-COD:** In the proposed Clause 6, *"Additional specific secondary fuel oil consumption of 0.2 ml/ kWh shall be provided for units operating below 55% unit loading and for Supercritical or ultra-supercritical units,* ***a 10% extra quantity of start-up oil shall be provided for a period of 3 years from the Date of Commercial Operation (CoD), due to teething or stabilization issues****. (emphasis added)"*

The provision allowing 10% extra start-up oil for a period of three years from the Date of Commercial Operation (CoD) for supercritical and ultra-supercritical units on account of teething or stabilization issues requires reconsideration. Declaration of CoD signifies that the generating unit has successfully completed all mandatory commissioning tests, trial runs, and stabilization activities and has demonstrated reliable and safe operation. Such a provision for stabilization period was accorded only for those plants, particularly those based on municipal solic waste, which face significant issues due to fuel composition and its variation. Therefore, extending a blanket allowance for stabilization-related start-up oil for three years after CoD to conventional thermal plants is technically or operationally not justified. **Such an automatic entitlement would dilute operational discipline and lead to over-compensation ultimately putting additional burden on final consumers. Therefore, no additional start-up oil allowance linked to stabilization be permitted post-CoD.**

3. **Impact of Increasing Renewable Energy Penetration in Rajasthan:** With increasing Renewable Energy (RE) capacity being added in Rajasthan, intra-state thermal generating stations are increasingly subjected to frequent hot, warm, and cold start-ups & shutdowns.
   Further, enhanced ramping capability & operational flexibility of thermal generating stations will be critical to managing the variability and uncertainty associated with renewable energy sources. **Accordingly, the regulatory framework should be designed to appropriately recognize and incentivize the provision of flexibility services and flexibility operation by thermal generating units.**

4. **Absence of a Formal Unit Commitment Framework:** In the absence of an institutionalized Unit Commitment framework at the intra-state level, commitment decisions may be driven by short-term operational exigencies rather than system-wide optimization.
   Absence of such a framework increases the likelihood of avoidable cycling, inefficient resource utilisation, and higher system costs. Recognition of this structural limitation within the regulatory framework would enable the **evolution of a transparent, rule-based Unit Commitment process that integrates demand forecasts, renewable availability, and unit-specific constraints.**

5. **Intra-state SCED:** A system wide optimization would enable better cost optimization across various contractual agreements. The economic scheduling of such contracts (including those for part load compensation), given the plant level technical constraints (including ramping, technical minimum, etc.) can be **optimized through the Security Constrained Economics Despatch (SCED)[1] implemented at the intra-state level.** The experience from national level SCED has demonstrated economic gains for the sector as a whole.

6. **Station-level Operational Optimization within Contractual Boundaries:** Thermal generating stations comprising multiple units may often exhibit technical, operational or economic differences across generating units. A strict unit-level operational decisions may,

[1] Singh A. (ed.). (2019), Opinion on "POSOCO (Procedure for Pilot on SCED for ISGS PAN India), Power Chronicle (Vol. 01 Issue 03, pp 7-8), Energy Analytics Lab (EAL), Indian Institute of Technology Kanpur https://eal.iitk.ac.in/assets/docs/power_chronicle_vol_1_issue_3.pdf
Singh A. 2019. "Security Constrained Economic Despatch – India: A Rolling Block Implementation Framework" 2019 8th International Conference on Power Systems (ICPS), 20-22 Dec. 2019, Jaipur, India. https://ssrn.com/sol3/papers.cfm?abstract_id=3626766

therefore, constrain efficient station-wide optimization.
Station level economic operation decision considering part load operation, start-up and shutdown requirements, where technically feasible and without compromising contractual entitlements, could improve operational efficiency and reduce aggregate cycling stress. Such flexibility would be particularly relevant for stations supplying multiple beneficiaries under diverse contractual arrangements.

7. **Transition from Normative to Evidence-based Compensation:** While normative benchmarks provide administrative simplicity, they may not adequately capture station-specific operational realities in a dynamically evolving system.
   Greater reliance on verifiable operational data subject to audit and validation would enhance the fairness of compensation for secondary fuel oil consumption and degradation-related impacts. **The SLDC should be empowered to seek such operational data including fuel consumption and share its analysis with the Commission enabling it to set better benchmarks.**

8. **Cost Attribution in Multi-beneficiary Supply Structures:** In cases where a generating unit supplies power to multiple DISCOMs, compensation should not arise automatically merely due to scheduling outcomes. If a beneficiary requisitions power within its entitled share, for instance up to 85% of the declared capacity, such requisition should not trigger compensation unless it can be clearly demonstrated that the specific beneficiary's requisition has directly caused additional degradation, increased start-ups, or other incremental operational impacts on the generating unit.
   Accordingly, compensation mechanisms should be strictly linked to causation of actual operational impact, rather than being based solely on scheduling or aggregate dispatch decisions.

9. **Data Transparency for Effective Regulation and Research:** Robust regulatory oversight depends on the availability of reliable and accessible operational data. Regulatory institutions as well as system operators worldwide ensure such data disclosure keeping the highest priority to transparency.

   Public disclosure of scheduling, actual injections, operational directives, and compensation calculations would facilitate informed stakeholder participation, enable regulatory scrutiny, and enhance confidence in the compensation framework. **The SLDC should enable better public data accessibility of scheduling (including various revisions) and the final injection/drawal by the power system constituents. This would also facilitate research based on Indian data rather than those in the international context with limited relevance for the Indian context.**