
Fwd: Inputs on behalf on NLDC/RLDCs on CERC Staff Paper on the "Methodology for Computing 'Deterrent Charges' for maintaining lower coal stock by coal based thermal generating stations".

From : Sunil Kumar Jain <sunil_jain@nic.in> Wed, Jun 15, 2022 11:06 AM
Subject : Fwd: Inputs on behalf on NLDC/RLDCs on CERC Staff Paper on the "Methodology for Computing 'Deterrent Charges' for maintaining lower coal stock by coal based thermal generating stations". 📎 1 attachment
To : Suman Shiva <shivvasuman@nic.in>

From: "Harpreet Singh Pruthi" <secy@cercind.gov.in>
To: "Sunil Kumar Jain" <sunil_jain@nic.in>
Cc: "sushanta chat" <sushanta_chat@yahoo.com>
Sent: Thursday, June 2, 2022 6:52:49 PM
Subject: FW: Inputs on behalf on NLDC/RLDCs on CERC Staff Paper on the "Methodology for Computing 'Deterrent Charges' for maintaining lower coal stock by coal based thermal generating stations".

From: K.V.N. Pawan Kumar (के.वी.एन. पवन कुमार) <>
Sent: 02 June 2022 17:31
To: Harpreet Singh Pruthi <secy@cercind.gov.in>
Cc: srnarasimhan@posoco.in; sbarpanda@posoco.in; debasis.de@posoco.in; scsaxena@posoco.in; ashokrajan@posoco.in
Subject: Inputs on behalf on NLDC/RLDCs on CERC Staff Paper on the "Methodology for Computing 'Deterrent Charges' for maintaining lower coal stock by coal based thermal generating stations".

Sir,

Please find attached the inputs on behalf on NLDC/RLDCs on CERC Staff Paper on the "Methodology for Computing 'Deterrent Charges' for maintaining lower coal stock by coal based thermal generating stations" submitted for kind consideration.
The delay in sending the inputs may please be condoned.

सेवा में | At service,
के.वी.एन.पवन कुमार | K V N Pawan Kumar
NLDC, POSOCO

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 **POSOCO Inputs on CERC Staff Paper Deterrent Charges Final Sent.pdf**
457 KB

Inputs on behalf of NLDC/RLDCs on the CERC Staff Paper on Methodology for Computing “Deterrent Charges” for maintaining lower coal stock by coal based thermal generating stations

1. Need for Fuel Supply Adequacy Statement

The security of fuel supply would be essential for energy security policy with close coordination with electricity sector playing an important role. There is need to ensure the security of coal supply and transparency in pricing of coal for efficient utilization of coal based thermal plants. There is a need to prepare a five year ahead fuel supply adequacy scenario statement by CEA for power sector.

2. Planning Procurement of Fuel

CERC Expert Group on Review of Indian Electricity Grid Code, in January, 2020, recommended that each distribution company of state shall furnish expected off take from each thermal generating station with whom they have long-term or medium-term power purchase agreement, on weekly and monthly basis to respective thermal generating station for planning procurement of fuel.

Further, CERC Expert Group on Review of Indian Electricity Grid Code also highlighted the issues for consideration of Commission which have not been included in Grid Code such as Fuel availability with generating stations. It was noted that unencumbered fuel/coal availability free from conditionalities is ideal for a free and intense competition in the electricity market to drive prices down and give impetus to efficiency and innovation. In the future, a situation could arise leading to deficient or negative generation reserves during peak hours although spare installed capacity of conventional generation plants is available yet are inoperative due to paucity of coal.

3. Resource Adequacy – Onsite fuel storage

Onsite fuel storage is quite important from Resource adequacy point of view. Resource adequacy is the ability of the grid to meet demand in all but the most extreme conditions ensuring availability of sufficient resources and meeting a specified reliability standard. The reliability metrics for the Indian power systems have to be mandated through appropriate standards and regulatory framework such as Value of Lost Load (VOLL), Loss of Load Expectation (LOLE), Expected Unserved Energy (EUE), Loss of Load Probability (LOLP), Effective Load Carrying Capacity (ELCC) and Planning Reserve Margin (PRM) etc.

Resource Adequacy with conventional generation with various aspects such as Forced Outage Rates (MTBF, MTTR), ramp rates, minimum level, Up time/down time and

onsite fuel storage has to be considered. Resource Adequacy planning is now no longer focused on peak demand. Assessment needs to incorporate a wide range of scenarios and capture seasonal and diurnal variation. There is a need to consider scenarios like unexpected high demand and multi-day low renewable generation. Sustained periods of low renewable generation would present the most significant reliability challenge in future. The dispatch across 8760 hours covering full spectrum of system conditions would need to be simulated.

4. Relevant extracts from the Comments on behalf of Regional Load Despatch Centres (RLDCs) and National Load Despatch Centre (NLDC) on the Consultation Paper on Terms and Conditions of Tariff Regulations for the period 1st April 2019 to 31st March 2024 is reproduced as follows:

"...Normative Annual Plant Availability (sections 26.3.11 to 26.3.15)

The normative annual plant availability for full recovery of fixed charges is 85%, with exceptions in some cases. A suggestion has been made to reduce the annual availability to say monthly or quarterly or half yearly and ensure that generators declare higher availability during high demand periods.

In this connection, it is felt that deciding in advance a higher availability target for certain months might be difficult as the same is highly dependent on factors such as the onset and intensity of the south west monsoon from June to September and filling up of hydro reservoirs in the country. In case a high target of availability is decided for these months before the commencement of financial year, a normal or excess rainfall would lead to less demand during these months and vice-versa.

It is therefore proposed that in case the methodology indicated in section 2.0 above is implemented, the generators and beneficiaries would jointly forecast their availability and/or Annual Contracted Quantities to ensure high availability during the high demand months as any spare capacity would ensure a higher return through the Day Ahead Market (DAM).

A more important issue is that the availability calculations are based on day ahead availability which doesn't adequately capture the on-site fuel stocks with its attendant impact on reliability. Generators are allowed interest on working capital corresponding to

a. 15 days fuel stock for pit head coal/lignite based generators

b. 30 days fuel stock for non-pit head coal/lignite based generators

c. 30 days fuel stock for Open-cycle Gas Turbine/Combined Cycle thermal generating stations

d. 15 days liquid fuel stock for Open-cycle Gas Turbine/Combined Cycle thermal generating stations

It has been observed during real time operation that generators are declaring full availability for the day but not maintaining enough fuel stock as required under the regulations. This becomes evident during periods of continuous high demand where they are not able to generate on sustained basis up to the DC values as illustrated in Fig 2 below for a typical Inter State Generating Station (ISGS).

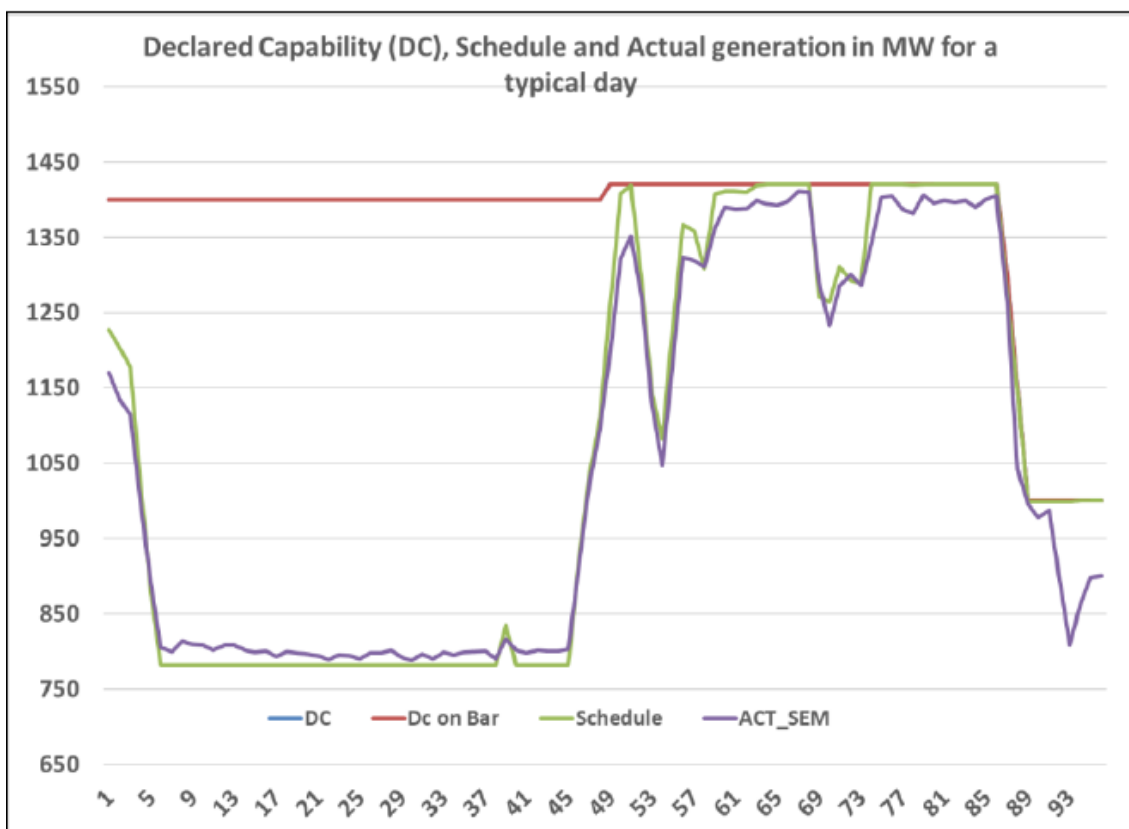


Fig 2: Declared Capability, Schedule and Actual generation for a sample ISGS

The generation output plots of Auraiya Gas for the month of September 2017 is provided in Fig 3 below for kind reference. Here it can be observed that as generation was scheduled as per the availability, the DC declared started coming down over the month.

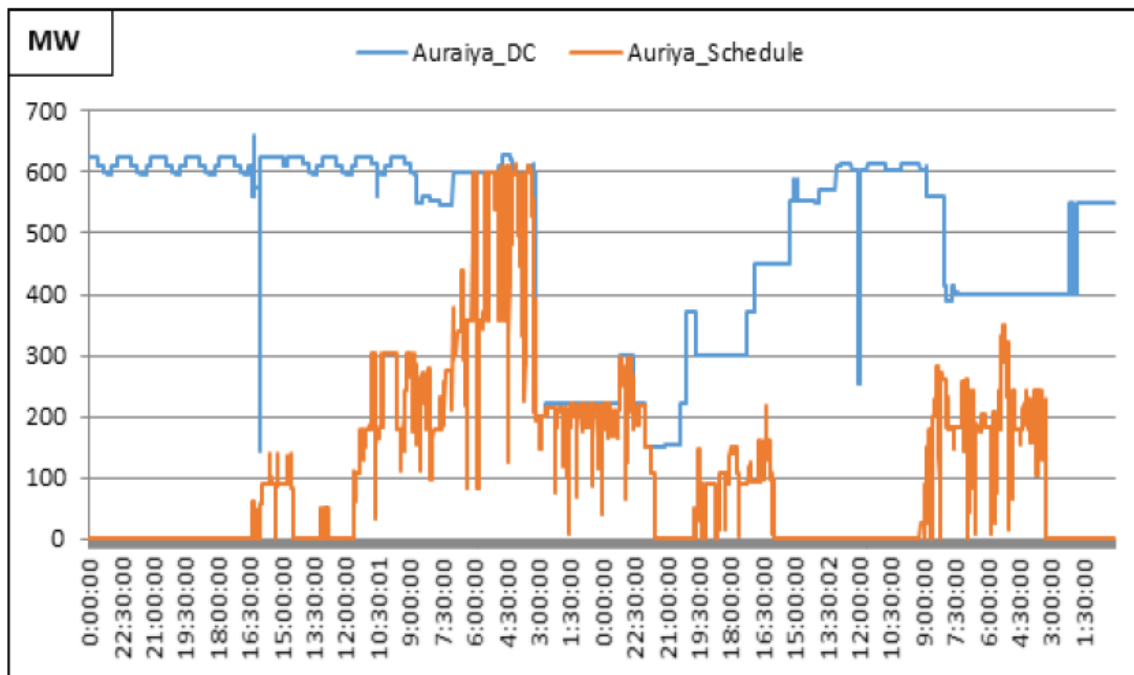


Fig. 3. Declared Capability (DC) and schedule in MW for Auraiya power station

The above behaviour is within the regulations which specify the day ahead availability declaration and opportunity to revise the same in the course of the day. It raises a false sense of comfort on the generation availability front. The comfort turns into a surprise when the plant actually starts getting despatched and is unable to sustain the high generation level for more than a day and reduces the declared availability.

Therefore, it is proposed that generators declare weekly availability depending on the fuel stock position in addition to the day ahead availability. The weekly availability should factor the fuel stock as well as the anticipated daily fuel receipts as well as fuel consumption. A suitable weightage (say 20%) may be given to this weekly availability figure and the day ahead availability (say 80%) for working out the plant availability. A monthly certificate from auditor in this regard may be made mandatory for fixed charge recovery. This will ensure security and reliability of power supply for DISCOMs. In case of gas power stations where there is no provision of gas storage, any reduction in DC as illustrated above should invite penal consequences such as reduction of availability for the last ten (10) days for every such instance reported by RLDCs..."