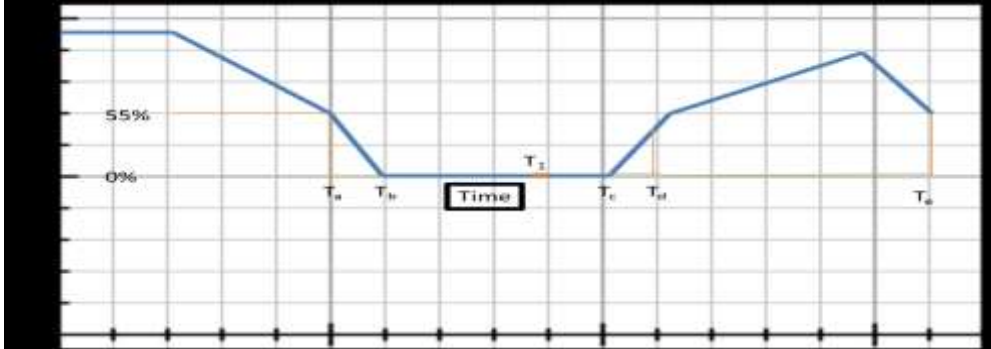


## Meeting between RPC & Expert Group on Grid Code Review- Points to be discussed

### IEGC related issues

Regulation clause-RSD Detailed Procedure-5.5	If the net EX-PP injection schedule for a generating station is less than technical minimum, the beneficiaries shall be required to review their requisition(s) and submit a revised requisition(s), by 2000 hours of current day (D-1) to the concerned RLDC.
Suggestion/Observation	<p>It is seen that a beneficiary may requisition power on D-1 day (to keep the unit on bar) and surrender in real time.</p> <ul style="list-style-type: none"> <li>➤ It needs to be ensured that if a beneficiary requisitions on D-1, the schedule to Technical Minimum should be ensured by that beneficiary.</li> <li>➤ Since there is entitlement to all the beneficiaries on On Bar DC as per share allocation, other beneficiaries also schedule the power for few blocks thus affecting the power planning of the beneficiaries which have kept the unit on bar.</li> <li>✓ <b>Sharing of power after RSD or unit was retained on bar by providing technical minimum schedule vis-à-vis the present practice of entitlements on bar capacity w.r.t. to share allocation needs to be examined.</b></li> <li>✓ <b>One of the suggestion could be that requisition on which the unit was taken for unit was taken for RSD or requisition on which the unit was kept on bar (additional requisition to keep the unit on bar else the unit would have been taken out of bars) could be used block wise to honour the schedules during violation of Technical Minimum or Normative DC.</b></li> </ul>
Regulation clause-RSD Detailed Procedure-5.8	If the grid conditions do not demand for providing technical minimum to a generating station, the concerned RLDC shall issue R-1 schedule based on the requisitions received. Under such situation, the generating station shall have the option to go for RSD with intimation to RLDC latest by 2100 hrs.
Suggestion/Observation	<p>✓ <b>If a generator keeps the unit on bar despite the requisitions are below technical minimum on few/many time blocks then on those time blocks the generation schedule should not be enhanced to Technical Minimum in real time.</b></p> <p>The real time market (when it is introduced) would help the generator to sell the power in those time blocks.</p>
Regulation clause-RSD Detailed Procedure-5.10	<p>When the machine is going under RSD :</p> <ol style="list-style-type: none"> <li>i. In case the total requisitioned power can be supplied through other units in the same generating station on bar, the generator shall be scheduled according to the requisitions received.</li> <li>ii. In case total requisitioned power cannot be supplied through other units in the same generating station on bar, the requisition from the beneficiaries shall be reduced in the ratio of requisitioned power.</li> <li>iii. In the special case of a generating station where the only running machine is going under RSD, the beneficiaries who have requisitioned power will not get any power from that generating station. In such cases, the beneficiaries may make arrangement from alternative sources.</li> </ol>
Suggestion/Observation	<p>This has been a major contentious issue among beneficiaries as the power is scheduled as per On bar DC as per original share allocation.</p> <p>✓ <b>Sharing of power after RSD or unit was retained on bar by providing technical minimum schedule vis-à-vis the present practice of entitlements</b></p>

	<p>on bar capacity w.r.t. to share allocation needs to be examined.</p> <p>✓ One of the suggestion could be that requisition on which the unit was taken for unit was taken for RSD or requisition on which the unit was kept on bar (additional requisition to keep the unit on bar else the unit would have been taken out of bars) could be used block wise to honour the schedules during violation of Technical Minimum or Normative DC.</p>
Regulation clause-RSD Detailed Procedure-7.1	Once a unit is taken out under RSD, the generating station shall notify the period for which the unit will remain under RSD and the unit can be recalled any time after 8 hours. In case of system requirements, the generating unit can be revived before 8 hrs as well. The time to start a machine under different conditions such as HOT, WARM and COLD shall be as per the declaration given by the generating station under the Detailed Procedure for Ancillary Services Operations (Format AS-1 and AS-3 of the said Procedure).
Suggestion/Observation	<p>On Bar /Off Bar DC should be as per Hot, Warm &amp; Cold conditions the unit is likely to be on after RSD based on requisitions. This needs to be specified by generator itself.</p> <p>This will enable two shift operations. Further as the unit will move from warm to cold the on bar &amp; off bar DC could be modified by generator accordingly.</p> <p>Generators have been requesting if it is going to be cold RSD the beneficiary may inform them accordingly to take preservation steps accordingly.</p> <p>The revival of the generating unit before 8 hours should also be on recommendation of RLDC</p>
7.5. Illustrative diagram showing minimum run time and a flow chart for taking machines under RSD	 <p>Td-Ta = Based on the Condition of the unit(s) (Cold, Warm, Hot) and as specified byAS1 Form submitted under RRAS but less than 8 Hours.</p>
Suggestion/Observation	To revive from (Cold, Warm, Hot) the time would be $T_c$ (synchronisation)- $T_1$
4.1 &4.2 of Compensation Procedure	Multiple request for change in Compensation Account/ non timely furnishing of information by ISGS
Suggestion/Observation	<p>Many request are coming for revision of Energy Charges &amp; SFC consumption/ average landed price etc.</p> <p>✓ <b>It is suggested that Energy Charges, SHR, SFC consumption &amp; average landed price of SFC should be communicated by 15<sup>th</sup> April each year for the previous year and the Compensation Account would be issued based on these values and would not be revised for subsequent revisions.</b></p>
4.2(ii) of Compensation Procedure	Compensation (in terms of KL of Secondary Oil) shall be payable to CGS/ISGS for the year due to degradation of Secondary Fuel Oil Consumption shall be calculated by multiplying no. of start-ups exceeding 7 per unit and solely attributable to reserve shut-downs with the appropriate value of additional secondary oil consumption specified in Regulation.
Suggestion/Observation	<p>There may be hot, warm and cold RSDs but qualified RSD for compensation may be less</p> <p>✓ <b>It is suggested compensation in KL will be worked out for number of</b></p>

	<b>qualified RSD for compensation based on total number of RSDs and type of RSD.</b>
4.2(v) of Compensation Procedure	Each start-up due to reserve shutdown shall be attributed to the beneficiaries, who had requisitioned below 55% of their entitlement.
Suggestion/Observation	✓ <b>The requisition on which RSD decision was taken would be considered for all the applicable blocks (&lt; 55% &amp; time period of RSD) to compute the attribution to beneficiaries.</b>
RSD Procedure	Issues raised by generators
Suggestion/Observation	<ul style="list-style-type: none"> <li>• Whether concurrent RSD of all units of a station be restricted for operational convenience?</li> </ul>
RSD Procedure	<ul style="list-style-type: none"> <li>• Whether the objective is to operate in 2 shifts</li> </ul>
Suggestion/Observation	<ul style="list-style-type: none"> <li>• RLDC/Generators need to take action for implementation of the same though it is clearly stated in Procedure.</li> </ul>
<b>Compensation – detailed procedure 5.12</b>	Regulation of Power Supply: When injection schedule of a CGS/ISGS falls below technical minimum due to imposition of regulation of power supply by the generating company or transmission licensee under the Central Electricity Regulatory Commission (Regulation of Power Supply) Regulations, 2010 and/or as per directions under the Commission order dated 2.9.2015 in Petition No.142/MP/2012, the generator may endeavour to sell the surplus power through STOA or Power Exchange(s) before opting for RSD.
Suggestion/Observation	Entities responsible to Compensate station during Regulation of Power may be explicitly mentioned as Regulation could be implemented by Generating Station or Transmission Licensee. ✓ <b>Presently it is booked in account of regulated entity.</b>
<b>SCED detailed procedure</b>	Issues
Suggestion/Observation	There have been instances of Sch> DC Ramp rate violations Technical Minimum violations RRAS & SCED schedules in opposite direction Illogical results - Kudgi STPS (costliest gen) gets SCED Up, costly stations getting SCED up though better placed in merit order are not scheduled ✓ <b>Improved automation and logic</b> ✓ <b>RRAS &amp; SCED needs to be taken up together for improved optimisation.</b>
<b>SCED detailed procedure</b>	Issues raised by Generators / NTECL
	<ul style="list-style-type: none"> <li>• They have to make payments to SCED Account but corresponding payments are not being received by them from beneficiaries</li> </ul>
<b>RGMO –IEGC- 5.2(h) – 5<sup>th</sup>amnd</b>	"(h) For the purpose of ensuring primary response, RLDCs/SLDCs shall not schedule the generating station or unit(s) thereof beyond ex-bus generation corresponding to 100% of the Installed capacity of the generating station or unit(s) thereof. <b>The generating station shall not resort to Valve Wide Open (VWO) operation of units whether running on full load or part load, and shall ensure that there is margin available for providing Governor action as primary response.</b> In case of gas/liquid fuel based units, suitable adjustment in Installed Capacity

	<p>should be made by RLDCs/SLDCs for scheduling in due consideration of prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the generating station or unit(s) thereof have been specified: Provided that scheduling of hydro stations shall not be reduced during high inflow period in order to avoid spillage: Provided further that the VVO margin shall not be used by RLDC to schedule Ancillary Services.”</p> <p>"All coal/lignite based thermal generating units of 200 MW and above, Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of more than 50 MW each and all hydro units of 25 MW and above operating at or up to 100% of their Maximum Continuous Rating (MCR) shall have the capability of (and shall not in any way be prevented from) instantaneously picking up to 105%, 105% and 110% of their MCR, respectively, when the frequency falls suddenly.”</p> <p>Order in Petition No. 205/MP/2018 ---- Needless to mention, the RLDCs shall allow the Declared Capacity declared by the generator for the purpose of PAF calculation of the generating station. ----</p> <p>IEGC 5<sup>th</sup> amnd--- 13.2.8 We are of the view that declaration of capacity including overload margins is the prerogative of the generator. Generator based on its experience about the healthiness of the units is allowed to declare its declared capability based on machine and fuel/water availability. However, it was being observed that units which were scheduled beyond ex-bus capability corresponding to 100% of IC were not able to provide primary response as these units were operating on VVO mode leaving no margins for further valve opening by governor action during frequency decrease. As such, through the addition in Regulation 5.2 (h), of IEGC, RLDCs/SLDCs have been allowed not to schedule the units beyond ex-bus generation corresponding to 100% of installed capacity. However, for the purpose of calculation of PAF, DC declared by the generator is not to be reduced. This would ensure proper incentive for the generator for keeping units in readiness for providing much needed grid support in case of frequency excursion.</p> <p>Petition No. 74/MP/2018-ROP-2 (iv)-Furnishing of DC more than ex-bus capacity which is inclusive of overload capability and acceptance of the same, if allowed, will make the entire RGMO infructuous</p>
Suggestion/ Observation	<p>All the computations are based on normative values and DC should be restricted to normative values. Any improved parameters of AEC/SHR would result in saving in fuel. DC beyond normative DC cannot be scheduled as per Regulations and generators are using it declare higher DC if not likely to achieve target PAF. Though provision to verify DC exist in IEGC but it is rarely used. Any value of DC should be schedulable. Present need of hour is to ensure primary reserve</p> <ul style="list-style-type: none"> <li>✓ <b>DC should be restricted to normative DC.</b></li> <li>✓ <b>Any DC should be dispatchable by the beneficiaries.</b></li> <li>✓ <b>Procedure needs to be developed by NLDC for measurement of RGMO/FGMO response with adequate incentive/disincentive to generators.</b></li> <li>✓</li> </ul>
<b>Regulation 5.2(j)</b>	<p>Except under an emergency, or to prevent an imminent damage to a costly equipment, no User shall suddenly reduce his generating unit output by more than one hundred (100) MW ( 20 MW in case of NER) without prior intimation to and consent of the RLDC. Similarly, no User / SEB shall cause a sudden variation in</p>

	its load by more than one hundred (100 MW) without prior intimation to and consent of the RLDC. [All users and SEBs shall ensure that temporary over voltage due to sudden load rejection and the maximum permissible values of voltage unbalance shall remain within limits specified under Central Electricity Authority (Grid Standards) Regulations, 2010.
Suggestion/ Observation	100 MW limit for user/SEB is becoming too small to comply keeping in view the Solar Ingress and larger systems. Further there are > 100 MW pumps coming up in Telangana and Andhra Pradesh and taking concurrence for every switching operation may not be feasible. Further impact to regional grid is more important and it can be regulated by internal load generation. The clause without time qualification is also leading to interpretation issues. The clause could be modified and rephrased.
<b>RRAS</b>	
Suggestion/ Observation	Not done optimally, vis-à-vis grid conditions. Needs to ✓ <b>Needs to be taken up in SCED timeframe.</b> ✓ <b>It will be close to real time and reduce the RRAS requirement.</b>
<b>Regulation 6.4.2 (b)</b>	The following generating stations shall come under the respective Regional ISTS control area and hence the respective RLDC shall coordinate the scheduling of the following generating stations : ..... [Ultra Mega Power Projects including projects based on wind and solar resources and having capacity of 500 MW and above]
Suggestion/ Observation	<ul style="list-style-type: none"> <li>➤ Many Ultra Mega Power Projects based on solar are not coming under RLDC scheduling.</li> <li>➤ Further clarity on pooling station fulfilling criteria of 500 MW of wind and solar (though many SPD or WPD) is required for implementation.</li> </ul>
<b>6.5</b>	Scheduling and Despatch procedure for long-term access, Medium –term and short-term open access (to be read with provisions of Open Access Regulations 2008 as amended from time to time. <b>The scheduling procedure for medium-term open access transactions shall be similar to the scheduling procedure for long-term access transactions and is as given below</b> , except where it is specifically mentioned for collective transactions):
Suggestion/ Observation	<b>Issues raised by KAR SLDC in OCC</b> <ul style="list-style-type: none"> <li>➤ The procedure for LTA/MTOA scheduling is different to scheduling of ISG Stations.</li> <li>➤ If LTA/MTOA generator is located in some other region and beneficiary is in some other region, both the entities have to coordinate and enter same values. Few times discrepancy is coming.</li> <li>➤ The Procedure being followed for LTA/MTOA needs to be discussed and streamlined considering the increased Inter-regional transactions.</li> </ul>
<b>Regulation 6.6 of IEGC</b>	6. The ISGS and other generating stations connected to regional grid shall generate/absorb reactive power as per instructions of RLDC, within capability limits of the respective generating units, that is without sacrificing on the active generation required at that time. No payments shall be made to the generating companies for such VAR generation/absorption.
Suggestion/ Observation	The need of reactive support from Generators including RE has come up more significantly with high RE penetration ✓ <b>Generators are not supporting the grid as required</b> ✓ <b>RE generators reactive capability needs to be utilized</b> ✓ <b>Incentive/disincentive scheme needs to be implemented for desired reactive</b>

	<p>support from generators/RE generators</p> <p>✓ Present reactive billing needs to be relooked. Differential payments to and from pool could also be considered.</p>
<p><b>RE Framework Procedure under IEGC/DSM</b></p>	<p>Number of discrepancy</p>
<p>Suggestion/Observation</p>	<p>Needs to be addressed</p>