NLDC response to comments from stakeholders on the Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD), and Security Constrained Economic Despatch (SCED)

Contents

A. NLDC response to comments from NTPC regarding Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD),and Security Constrained Economic Despatch (SCED)

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<tr><th>Sr.No.</th><th>Provision referred in draft procedure</th><th>Comments by NTPC</th><th>NLDC Response</th></tr>
<tr><td>1</td><td>Clauses 10.14 & 10.15 of Draft procedure provides that:
Clause 10.14 “The concerned SCED Generator would pay the indicated charges for SCED decrement within seven (07) working days of the issue of statement of SCED by the RPCs to the ‘National Pool Account (SCED)’. Payments against SCED shall not be adjusted against any other payments by the SCED Generator.”

Clause 10.15 “The concerned SCED Generator shall be paid the indicated charges for SCED increment within ten (10) working days of the issue of consolidated "National SCED Monthly Statement” by the NLDC from the ‘National Pool Account (SCED)’.</td><td>With respect to above, dates of issuance of previous months SCED statements by RPCs as well as by NLDC are tabulated below:
<table>
<tr><th></th><th colspan="5">Region-wise SCED A/C issued by RPCs</th><th>Consolidated SCED A/C issued by NLDC</th></tr>
<tr><th>Energy Month</th><th>NER</th><th>WR</th><th>SR</th><th>NR</th><th>ER</th><th>All Region</th></tr>
<tr><td>APR-22</td><td>11.05.2022</td><td>10.05.2022</td><td>17.05.2022</td><td>13.05.2022</td><td>12.05.2022</td><td>23.05.2022</td></tr>
<tr><td>“</td><td>“</td><td>“</td><td>“</td><td>“</td><td>“</td><td>“</td></tr>
<tr><td>JUL-23</td><td>03.08.2023</td><td>10.08.2023</td><td>17.08.2023</td><td>16.08.2023</td><td>07.08.2023</td><td>23.08.2023</td></tr>
</table>
From the above table, it is evident that most of the RPCs issue the monthly SCED statement during different dates of the month which acts as an anchor date for payment of charges by Generators for SCED decrement. However, NLDC issues the consolidated statement only by the end of month which acts as an anchor date for payment of charges to Generators for SCED increment. The time gap in issuance of statements by RPCs and consolidated statement by NLDC is leading to non-servicing of carrying cost of the Generators to that extent. Therefore, it is requested that generators be paid the carrying cost from the pool account or alternatively it may be provided that concerned SCED Generators shall pay the charges for SCED decrement within seven (07) working days of the issue of consolidated "National SCED Monthly Statement” by the NLDC to the ‘National Pool Account (SCED)’. In an another option generators may be paid provisionally 90% of amount corresponding to increment in schedule based on RPC account.</td><td>This involves a larger issue of harmonization of practices and timelines amongst the RPCs. The matter may be taken up accordingly.</td></tr>
</table>

Sr.No.	Provision referred in draft procedure	Comments by NTPC	NLDC Response
2	**Clauses 10.18, 10.21 & 10.22 of Draft Procedure provides that:** 10.18 “The RPCs would issue monthly "Statement of Compensation due to Part Load Operation due to SCED” (Format SCED_CC), subject to yearly computation as the heat rate computation is being done on annual cumulative basis.” 10.21 “NLDC would issue monthly “National Statement of Compensation due to Part Load Operation due to SCED” (Format SCED_DD) on the compensation to be paid to the SCED Generator for heat rate degradation, from National Pool Account (SCED) based on Format SCED_CC statement issued by respective RPCs.” 10.22 “The concerned SCED Generator shall be paid the indicated charges of compensation for heat rate degradation as per the statement issued by	It has been observed that different RPCs issues monthly compensation statements at different frequency and there is no time limit for RPCs for issuance of monthly compensation statements. It has also been observed that NLDC generally issues consolidated "National Statement of compensation” after issuance of monthly compensation statements by all RPCs/most of the RPCs. As on date, NLDC has issued consolidated "National Statement of compensation” only up-to Dec-2022. However, SRPC, ERPC and WRPC has issued compensation statement up-to Jul-2023, May-2023 and Jan-2023 respectively. It may also be noted that part load compensation amount receivable from SCED pool account gets finalised once the monthly compensation statements are issued by RPCs and NLDC just consolidates the accounts issued by RPCs. In the previous FY, on some occasions, the delay in receipt of compensation amount from SCED pool account was more than 180 days (from the month in which SCED down schedules ware given) and same got reflected in our books of accounts for which concerns were raised as well. As indicated above, due to delay in issuance of consolidated "National Statement of compensation” by NLDC, generators are unable to recover the part load compensation charges even for generating station for which RPCs have issued monthly compensation statements and amount have been finalised. Therefore, in view of above it is submitted that concerned SCED Generators may be paid provisionally the charges for part load compensation within ten (10) working days of the issue of monthly compensation statements by the RPCs/SLDCs from the ‘National Pool Account (SCED)’. Under the circumstances if the same is not feasible then for delay period generators are required to be paid carrying cost. Further the timelines for issuance of monthly compensation statement by RPCs may also be defined in the detailed procedures. NLDC may issue consolidated "National Statement of compensation” based on the monthly statement issued by respective RPCs for the purpose of accounting and	This involves a larger issue of harmonization of practices and timelines amongst the RPCs. The matter may be taken up accordingly.

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<tr><td></td><td>“National Statement of Compensation due to Part Load Operation due to SCED” by the NLDC from the National Pool Account (SCED) within seven (07) working days of the issue of the monthly statement subject to yearly computation, as the heat rate computation is being done on annual cumulative basis.”</td><td>reconciliation purpose only.</td><td></td></tr>
<tr><td>3</td><td>Para 9 & 11 of Annexure-3 (Sharing mechanism of SCED benefits) in reference to clauses 9 & 11 of Draft procedure provides that: “(9) NLDC would issue Monthly “National net SCED Benefits Distribution Statement” (after adjusting the heat rate compensation) indicating the payment to SCED generators (Format SCED_FF) and Beneficiary of SCED generator (Format SCED_GG) based on statements issued by</td><td>With reference to the above, it has been observed that, there is substantial delay in issuance of Monthly “National net SCED Benefits Distribution Statement” by NLDC. Dates of issuance of previous months SCED Benefit statements by NLDC are tabulated below:
<table>
<tr><th>Month/Period</th><th>Date of Issue of National SCED Benefits Distribution Statement</th></tr>
<tr><td>Apr-2021 to July-2021</td><td>11.10.2021</td></tr>
<tr><td>“</td><td>“</td></tr>
<tr><td>July-2023 onwards</td><td>Yet to be issued</td></tr>
</table>
It is understood that the delay in issuance of Monthly “National net SCED Benefits Distribution Statement” by NLDC is mainly due to non-issuance of monthly compensation statements by respective RPCs in time. However, due to delays on account of RPCs, the generators and beneficiaries are being forced to bear the financial implication which appears to be unjust and needs suitable remedy.

Therefore, NLDC may issue Monthly provisional “National net SCED Benefits</td><td>This involves a larger issue of harmonization of practices and timelines amongst the RPCs. The matter may be taken up accordingly.</td></tr>
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	respective RPCs/SLDC. This would be made available to the stakeholders through the NLDC website. (11) The payment to the SCED Generator and Beneficiary shall be paid within ten (10) working days of the issue of monthly "National net SCED Benefits Distribution Statement" by the NLDC from the 'National Pool Account (SCED)."	Distribution Statement" (after adjusting the compensation on provisional basis and taking suitable margin) and payment to generators and their beneficiaries may be released within 7 days of issuance of the account. The account for a particular month may be issued before the end of subsequent month (i.e. Sept-2023 account may be issued by 31.10.2023). In case of delay beyond that generators and beneficiaries are required to paid the carrying cost. Once monthly compensation accounts are finalized by all the RPCs for entire FY, NLDC may issue final "National net SCED Benefits Distribution Statement" (after adjusting the final compensation amount) and any differential payment to generator and their beneficiaries may be released within 7 days of issuance of the account. If at all, any amount is recoverable from generators and their beneficiaries, the same may be adjusted from the monthly amount due to them as per (i) above.	
4	**Annexure-3 of Draft procedure in regards with Sharing mechanism of SCED benefits provides that:** " The benefits shall be shared in the ratio of 50:50 between the generators and the concerned beneficiaries, aggregated on a monthly basis as per Regional Energy Account (REA)/	The tariff policy 2016 provides that: "The developer and the procurers signing the PPA would share the gains realized from sale, if any, of such un-requisitioned power in market in the ratio of 50:50, if not already provided in the PPA. Such gain will be calculated as the difference between selling price of such power and fuel charge. It should, however, be ensured that such merchant sale does not result in adverse impact on the original beneficiary(ies) including in the form of higher average energy charge vis-à-vis the energy charge payable without the merchant sale. For the projects under section 63 of the Act, the methodology for such sale may be decided by the Appropriate Commission on mutually agreed terms between procurer and generator or unless already specified in the PPA." Hence the gain sharing proposed is in line with tariff policy and generators are	Gain sharing proposed is in line with tariff policy.

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	State Energy Account (SEA) and NLDC monthly SCED accounts ”	required to be shared the gains accrued in line with tariff policy. Further it may please be noted generators are required to ramp up and ramp down their machines as per the requirement of SCED schedules and needs to be compensated suitably due to faster aging of equipment and wear and tear during such frequent ramping. The DSM liability if any and fuel cost variations on account of such change in schedules is also in generators account. Therefore, above factors also needs to be considered for gain sharing. It is also submitted that considering the above factors the same mechanism may be kept for sharing the net savings from sale in day ahead collective market, for generating stations whose tariff is determined under Section 62 of the Act.	
5	**Clause 3.0 of the Draft procedure provides that:** 3.0 Scope 3.1 This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. A thermal generating station which opts to participate in SCUC is mandated to participate	It may please be noted that as per the provisions of IEGC the participation in SCED is based on willingness of the generating station. The relevant provisions of IEGC 2023 are mentioned below: 49 (2)(a)(iii) The generating stations which are willing to participate in SCED shall declare the energy charge, or the SCED Compensation Charge (after factoring in the likely changes in fuel cost and part load compensation, if any), as applicable, to NLDC on weekly basis. Further the condition as mentioned in draft procedure that “A thermal generating station which opts to participate in SCUC is mandated to participate in SCED” is not mentioned in IEGC 2023. As the above condition has been mentioned in draft procedure, but no reason has been mentioned for putting such condition, therefore, the necessity for putting such condition may please be provided and elaborated.	SCUC only ensures that units are scheduled up to technical minimum, based on reserve requirement. SCED would run after the SCUC process, and it would strictly ensure that the final net schedules are the most economical based on the variable cost subject to grid-security and ramping constraints. For example, say Rihand (500 MW) (2 Rs/kWh variable cost) is not committed by its beneficiaries till technical minimum. SCUC ensures Rihand is scheduled up to 275 MW (55%). SCED ensures that Rihand is scheduled up to the full 500 MW as it is a cheaper plant in

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	in SCED.		the stack. Hence, it would be optimal if the units participating in SCUC, participate in SCED also. 'Willingness/opting to participate in SCED' is intended to bring non-section-62 plants under SCED. Operational reasons for non-participation under SCED may be provided to NLDC/RLDCs, and the same can be facilitated for a few days. The scope has been modified as below – "3.1 This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. Section 62 regional entity thermal generating stations with full tied-up capacity shall participate in SCUC and SCED. A thermal generating station which opts to participate in SCUC shall participate in SCED."

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6	**Clause 6.15.5 of Draft procedure provides that:** Additionally, units with longer startup time that are required on bar on the dates of D-1, and D, shall be published on a D-2 basis at 1000 hrs, considering the startup time, and anticipation/forecast. Refer Format 3(b).	IEGC Regulation 46 (a) 46.5(b) and 46.5(c) provides that: (a) In case NLDC anticipates based on assessment that adequate reserves may not be available on D-1 Day or D-day either under day ahead SCUC or under Ancillary Services Regulations, it may also carry out SCUC three (3) days in advance of the actual day of scheduling for the regional entity generating stations. NLDC, through RLDC shall advise the regional entity generating station or unit(s) thereof to commit the unit by 1000 Hrs of D-2 day under cold start condition. The criteria for assessment of adequacy or inadequacy of reserves and identification of the generating stations or units thereof for SCUC three days in advance, shall be stipulated in the Detailed Procedure by NLDC after obtaining approval of the Commission. (b) NLDC shall announce the requirement of SCUC three days in advance on its website by specified time on "D-3 "day as per the Detailed Procedure. (c) All regional entity generating stations shall declare DC for 'D' day within 2 hours of announcement by NLDC, for consideration under three-day ahead SCUC. The results of SCUC along with time to commit unit (s) on bar shall be informed by NLDC to RLDCs for onward information to the generating stations. RLDC shall ensure that intimation is sent to the generating station sufficiently in advance keeping in view its start-up time. As per IEGC, NLDC is required to announce the requirement of SCUC three days in advance on its website by specified time on "D-3 "day as per the Detailed Procedure. However, the procedure is silent in this regard. Further as the clause 6.15 of procedure provides that: If the entire incremental reserve (R=Z-X-Y) requirement is not fulfilled by Cat#1	As mentioned in the workshop, the total preparation time for bringing the unit on bar would be more than the start-up time considered in the algorithm. This is because SCUC notification would be made twice daily @1000 hrs (advance intimation for units that are needed on the (next+1)th day and later) and @1500 hrs (for units to come on bar on the next day). Hence, sufficient lead time would be available for the plant to make preparations. The intent of D-3 intimation is to equip the power plants with sufficient preparation time to come on bar. This has been dovetailed in this procedure with the other Regulations of IEGC, and the associated procedures. To facilitate the same, NLDC would inform the generating stations required to be on bar (to start up from cold state and synchronize) by 1000 Hrs of D-2 day under cold start condition. For example, @1000

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		units, then new units have to be committed from Cat#2 units, for future resource and reserve adequacy management. While bringing units on bar from the Cat#2 stack, the three-day ahead block-wise inter-state generation requirement forecasted shall be considered, including Up and Down reserves. Information of units committed for the periods under Cat#1 would be factored while bringing units on bar under Cat#2. It is submitted that the details of three-day ahead block-wise inter-state generation requirement forecasted including Up and Down reserves may also be published facilitating the generators in assessing the units requirements on 3 days advance basis. Further no provision has been provided in draft procedure for DC declaration when machine is being committed by SCUC in D-3 as mentioned in IEGC 2023, the same may also be provided in line with provisions of IEGC.	hrs of D-2, intimation would be provided to Kudgi to come on bar from cold state and synchronize to the grid by 0100 hrs of "D" day. This means Kudgi will get 39 hours of preparation time!
7	**Clause 6.13 of the draft procedure provides that:** "The allowable time for revival of units under hot, warm, and cold start up shall be 4 hours, 8 hours, and 12 hours respectively. The total time available for the revival of the unit would be the duration between the time of instruction by NLDC/RLDCs and the target time for synchronization of the unit."	Since as per OEM recommendation every unit has different start-up time, a standard allowable time of 4 hours, 8 hours, and 12 hours for revival of units under hot, warm & cold start-up respectively is not feasible. It may further be noted that supercritical units require almost 36 hrs for cold start up due to the requirement of cold clean up and hot clean up to bring the water chemistry parameters. The startup time is already being declared and it is required to have allowable start-up time in-line with start-up time being declared by units in AS-1 form.	Sufficient lead time would be provided for cold startup of plants. The procedure provides additional 6 hours for units under wet preservation/for de-aeration of feed water. Standardized timings are required for uniform application of the rules to all the power plants while decision making is done by the SCUC algorithm.

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8	**Clause 6.14.1 of the draft procedure provides that:** "A minimum dispatch duration of forty-eight (48) time blocks i.e., twelve hours (12) hours shall be given to the thermal (coal/lignite based) generators by default." Similarly **Clause 6.14.2 of Draft procedure provides that:** "A minimum dispatch duration of twelve (12) time blocks i.e., three (3) hours shall be given to the gas/RLNG/liquid-based thermal generators by default."	It may be noted that though a minimum dispatch duration has been mentioned for coal and gas stations however considering the OEM recommendations and based on the OEM re-experience of operation the large fleet of thermal machines, following are the submission in regards with minimum dispatch duration: i. For category-1 units, which are brought up to technical minimum level under SCUC, should be scheduled to technical minimum schedule for all 96-time blocks of the day instead of 48-time blocks. ii. For category-2 units, which are brought on- bar under SCUC should be kept-on bar for at least 72 hours considering the requirement of stabilisation period and effective utilization of such resources. iii. If a gas station is brought under SCUC up to technical minimum level in open cycle, it is required to be scheduled to technical minimum schedule for at least 6 hours to avoid very frequent start-stops which is detrimental to life of plant equipment's. iv. If a gas station is brought under SCUC up to technical minimum level in combined cycle, it should be scheduled to at least technical minimum schedule for 72 hrs. considering the requirement of stabilisation and effective utilisation of such resources.	On the effective utilization of resources, SCUC algorithm will automatically ensure that the units are committed for the most optimal period of time, considering the startup cost. Although the minimum period to remain on-bar is given as 48 blocks, the actual on-bar requirement period may more than that, if that is the optimal condition decided by the SCUC algorithm. Gas stations already operate 3-4 hours in open cycle. For combined cycle, below clause has been added- "6.14.2.1 For combined cycle mode of operation, a minimum dispatch duration of forty eight (48) time blocks i.e., twelve hours (12) hours shall be given."

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9	**Clause 6.18 of Draft procedure provides that:** "NLDC shall indicate the reserve quantum earmarked in each unit brought on bar under SCUC by 1500 hrs to the scheduling system. Such quantum of power identified as reserves shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. The quantum of power over and above the identified quantum of reserves can be rescheduled by the beneficiaries or scheduled by way of selling in the market."	i. The IEGC in regards with such quantum provides that: 46(2) Reserves shall be procured and deployed in accordance with the Ancillary Services Regulations, and SCUC shall supplement such procurement of reserves under certain conditions, as specified in this Regulation. 46(4)(h) The URS power over and above the minimum turn down level, available after declaration of RTM results, in the generating station or unit thereof, brought on-bar under sub-clause (d) of this clause shall be deemed to be available for use as SRAS or TRAS or both in terms of the Ancillary Services Regulations Therefore, as the quantum is being kept reserve for the serving the reserve requirement of the system and shall be providing the Ancillary services hence compensation as per the extant Ancillary Services Regulation needs to be provided as envisaged in IEGC and the same may please be mentioned in procedure. ii. In case relinquished power which is available as merchant power with the generator and regulated power is considered for SCUC operation, then markup charges in addition to fixed charges, energy charges, startup cost, compensation charges etc. needs to be provided and the same may be mentioned in procedure.	Power plants selected under SCUC would be scheduled to the turndown level, and energy charges for such quantum would be provided from the DSM pool. As SCUC activity is for creating reserves in the system when there is scarcity of reserves, some reserves are being earmarked by SCUC, for dispatch under ancillary services by NLDC, when needed. Although no commitment charges are being given for the earmarked capacity under SCUC, charges for energy dispatched and incentive / mark-up charges would be paid for MWh dispatched in line with CERC (Ancillary Services) Regulations, 2022. Power plants also have the option of bidding their reserves in the DAM-AS. The capacity other than the earmarked reserves, remaining after requisitioning can be bid by the generator under RTM-AS also.

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			The only relevant costs for the purpose of SCUC are the variable charge and the start up cost. The clause has been modified in line with IEGC-2023 provisions as below – "Startup cost would be in line with IEGC Regulations. Regulation 6.3B of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 along with Appendix-II "Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units" as issued by CERC dated 5th May 2017 vide No. L-1/219/2017-CERC shall continue to be in force, till further regulations are issued by CERC."
10	**Clause 7.2 of Draft Procedure provides that:** "In case a generating	As per the above clause, if the generator opts for USD due to schedule below minimum turndown level, supply obligation is required to be met through alternate sources. But there are multiple constraints in exercising the options	The supply obligation clause in the NLDC detailed procedure has been slightly modified as

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	station opts to go under unit shut down (USD), the generating company owning such generating station shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD [i.e., before 1530 hrs], by arranging supply either. 7.2.1 by entering into a contract(s); or 7.2.2 by arranging supply from any other generating station or unit thereof owned by such generating company; or 7.2.3 rely on SCED for arranging the schedule 30 minutes before dispatch."	mentioned in Clause 7.2.1, 7.2.2, 7.2.3, which are beyond the reasonable control of generators. Some of the constraints are explained below: A. Contracts: The decision for opting USD can be taken only after 15:00 hrs. of D- 1, but the quantum of supply obligation shall got fixed only when the unit taken under shut down e.g. if the unit has received schedule less than TM from 12.00 hrs. onwards on D day then till gate closer of 12.00 hrs. beneficiaries may revise the schedule and generator cannot tie up the power through market as the supply obligation may change. The same may be taken care suitably in procedure. B. Supply from Alternate generating Station of generating Company: Clause 5.3.3 of Draft procedure Provides that: "Generating stations which have declared DC and choose to go under Unit Shut Down (USD) due to schedule below minimum turndown level shall fulfil their obligations to supply electricity to beneficiaries by arranging alternate supply through contracts, other generating stations, or SCED. Though the draft procedure mentions the provision However, no procedure has been provided for making arrangement of alternate supply by availing the URS of other station. In order to arrange power though this option the suitable procedure may please be provided. Similarly, the methodology for arranging the supply by procuring through RTM has also not been mentioned. C. SCED: As mentioned in clause 8.5.3 that there is no guarantee that SCED can provide the incremental schedule to meet the minimum turn down level, and hence this feature may be used as last resort to accommodate small quantum. It is required that SCED mechanism may be suitable revised so that it can accommodate the complete obligation of supply requirements. It is pertinent to mention that in the PPAs signed, the parties have agreed that these thermal generating stations shall operate as base load stations. Despite	under for more clarity – "7.2 In case a generating station opts to go under unit shut down (USD), the generating company owning such generating station shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD [i.e., before 1430 hrs of D-1], by arranging supply either…." Beneficiaries cannot revise requisitions after 1430 hrs of D-1. The onus lies on the generator to arrange alternate supply. Some suggested modes (not limited to) are as below – • T-GNA Exigency 'buy' by the obligated generator under USD, and 'sell' by an alternate generator. • By buying of generation from the RTM by the obligated generator One of the main changes

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		that many times, stations are getting infeasible schedules. While IEGC Regulations have not prescribed any provisions stipulating beneficiaries to provide feasible schedules, however obligations have been imposed on generators to supply power under unit shutdown condition. Similarly issues such as extra cost incurred by generators for arranging such power through alternative mechanism and compensation for extra operational expenses owing to USD have also not been addressed. In the absence of suitable provisions beneficiaries, shall continue to give full schedule during peak hours and very low or infeasible schedules during off peak hours thereby creating technical issues in regards with operation of the units. Such practice is also not conducive to safe operation of thermal generating units. Therefore, it is submitted that suitable provisions, stipulating beneficiaries to provide feasible schedules may please be provided in procedure. Further if the unit opts for USD as per the schedule of D Day, subsequently when the generator receives the full schedule for the D+1 day at 15.30 hrs of D Day then also Unit will not able to come on bar due to its high startup time requirements to fulfil the schedule of D+1 day. The same may please be suitable addressed.	introduced by IEGC-2023 is the inclusion of generator's obligation to supply electricity to its beneficiaries. Recall that the basic premise of introduction of SCED pilot project in 2019, was to re-align the 2%-3% sub-optimal requisitions made by the states in the on-bar plants in the decentralized scheduling process. Hence, it may not be feasible for SCED to meet the complete obligation of supply requirements of the off-bar plants, while ensuring adequate reserves on priority in the system. Stipulating beneficiaries to provide feasible schedules to ISGS, in the decentralized scheduling process, would need harmonized procedures and timelines at the intra-state level. Same could be taken up in RPC forums, workshops, etc.

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11	**Clause 7.4 of Draft Procedure provide that:** "In case of emergency conditions, for reasons of grid security, a generating station or unit thereof, which is under USD may be directed by NLDC to come on bar, and in such event the generating station or unit thereof shall come on bar under hot, warm and cold conditions as per Format-3(a) or Format-3(b)."	i. It is submitted that under such circumstances if the unit is directed to come on bar the startup cost needs to be served and same may please be mentioned. ii. Regulation 47 (4) IEGC in regards with such requirement provides that: Once a generating station is brought on bar as per clause (3) of this Regulation, it shall be treated as a unit under SCUC and scheduled and compensated as per Regulation 46 of these regulations. Hence the quantum served by the unit is required to be considered and paid as per Ancillary Services Regulation accordingly.	Payments for the stations where incremental power is scheduled and beneficiaries of those stations to ensure Resource and Reserve Adequacy under the head "SCUC" in the scheduling system, shall be made to/from the Deviation and Ancillary Services Pool Account @ variable charges/compensation charges. The dispatch of the reserves earmarked using SCUC would be done through Ancillary Services. Payment would be made through existing SRAS and TRAS mechanisms.
12	**Clause 6.8 of Draft Procedure provides that:** "6.8. If the Total TRAS Reserve Requirement say "Z" MW is more than the total cleared MW in TRAS-DAM and TRAS-RTM (i.e., X+Y MW), for some time blocks, then system would need additional reserves for such duration.	The methodology for the reserves anticipated to be available in Section 62 plants may please be suitably explained and provided in Draft procedure	Reserve estimation methodology would be as per a separate detailed procedure approved by CERC. The draft has already been floated on NLDC website for stakeholder comments.

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	The following shall be factored while calculating the TRAS Reserve Requirement “Z”, for the purpose of SCUC for the next day. 6.8.1 The reserves created due to action of SCUC in the previous 7 days 6.8.2 The reserves anticipated to be available in Section 62 plants 6.8.3 Advance reserves procured, and reserve position intimated by the states.		
13	**Clause 7.1 of Draft Procedure provides that:** “The generating stations or units not brought on bar under SCUC, shall have the option to operate at a level below the minimum turn down level or to go under Unit Shut Down (USD)”	It is submitted that sometimes when NTPC stations get schedule below technical minimum for few blocks intermittently, stations have to resort to oil support to keep the units on bar for such short duration. As per CERC approved mechanism for compensation for Degradation of Heat Rate, Aux Compensation and Secondary Fuel compensation due to part load operation and multiple start /stop of units para 4.3 provides that " In case generating station runs below technical minimum schedule, it shall be entitled for compensation corresponding to technical minimum schedule." Therefore, oil compensation for 0.5 ml/kWh oil for quantum of power gap between actual schedule and technical minimum is to be compensated which will take care of oil consumption during below technical minimum and the same may be published monthly by RLDC or RPC.	The same can be taken up with beneficiaries. IEGC-2023 has continued the previous practices for heat rate compensation, until further orders. The practices already in vogue that have been continued by CERC in IEGC-2023, would continue as usual.

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14	**Clause 8.5 of Draft procedure provides that:** "In case a regional entity generating station gets scheduled below minimum turndown level and wishes to go under USD after arranging power scheduled by its buyers through SCED, it shall submit consent to NLDC before gate closure [at least 75 minutes before the delivery time block] for arranging the scheduled power for such generating station through SCED. NLDC shall consider the drawal schedules in respect of such generating station, under SCED subject to: **8.5.1** Availability of reserves such that entire drawal schedule against such generating station can be accommodated under SCED."	It is submitted that as per the procedure NLDC shall consider the drawal schedules under SCED only if the entire drawal schedule against such generating station can be accommodated under SCED. However, in order to facilitate the generating station a provision may be provided to accommodate whatever is the quantum available under SCED for fulfilling obligation of supply, in case it is not feasible to accommodate the full quantum if consented by generator. This will ensure the availability of power in the system and decrease the DSM liability of generator.	Power shall be scheduled through SCED as per the merit order only if sufficient reserves are available. Partial/pro-rata allocation has not been allowed in IEGC-2023. Sufficient avenues are available for the generator to fulfil supply obligation and avoid DSM liability.

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15	**Clause 9.1.3 of Draft Procedure provides that:** "Compensation for part load operation of a generating station or unit thereof brought on bar under SCUC shall be paid from the Deviation and Ancillary Services Pool Account."	As per the above clause, part-load compensation shall be provided to the station brought on bar under SCUC. Part-load compensation should also be provided to stations for which schedule reduction has been done under "SCUC-Down". (SIS)	Any power plant providing SCUC-Down would also be provided heat rate compensation for part load operation. Added the below clause for clarity – "9.1.3.1. Plants whose schedule has been reduced by SCUC/SCED through SCUC-Down or SCED-Down would also be eligible for the compensation for part load operation."
16	**Clause 9.4 of Draft Procedure provides that:** "No startup cost shall be paid to the generator brought under SCUC/SCED."	It is worthwhile to mention that IEGC 2023 provides that: REPEAL AND SAVINGS (1) Save as otherwise provided in these regulations, the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 and all subsequent amendments thereof shall stand repealed from the date of commencement of these Regulations. (2) Regulation 6.3B of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 along with Appendix-II "Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units" as issued by CERC 168 dated 5th May 2017 vide No. L-1/219/2017-CERC shall continue to be in force till the regulations or Order under clause (12) of Regulation 45 of these regulations are issued. Therefore, the compensation for multiple start stop of the units is available as per the extant existing mechanism and is paid by the beneficiaries causing	The clause has been modified in line with IEGC-2023 provisions as below – "Startup cost would be in line with IEGC Regulations. Regulation 6.3B of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 along with Appendix-II "Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil

Sr.No.	Provision referred in draft procedure	Comments by NTPC	NLDC Response
		such multiple start/stop of the units. The same may be suitably mentioned in the procedure. At present Start up Secondary Fuel oil compensation for RSD is being provided by the Beneficiary who has compelled the Unit to go under RSD. Similarly, if a Unit is stopped after starting the Unit under SCUC commitment, the oil compensation need to be paid from pool account. Under the circumstances if unit has been asked to come on bar and in case the decision is revised, the unit needs to serve the startup cost as based on requirement the unit might have started the startup process. As per current scenario, NTPC coal & gas-based stations are incurring high start-up cost due to frequent start-ups done in the interest of grid security. Since generators under SCUC are required to bring the units on-bar for Grid security and for improving the availability of reserves in the Grid, Variable cost/charges involved in the start-up of units may be compensated. Till date FY'24 saw considerably high no. of start-ups of Gas Stations of NTPC in the interest of Grid security and incurred considerable cost on account of such startups. Further, these start up are going to increase in future due to flexing requirement owing to RE. So, compensation on account of startup needs to be provided to generating units so that they are able to support the Grid.	Consumption, due to Part Load Operation and Multiple Start/Stop of Units" as issued by CERC dated 5th May 2017 vide No. L-1/219/2017-CERC shall continue to be in force, till further regulations are issued by CERC." In case there are any issues, generators may take up with CERC.
17		In case, any beneficiary (ies) wants to withhold the consent, the same shall be informed in writing by the beneficiaries by 09:30 AM on 'D-1' to the concerned Generator with copy to concerned RPC, RLDC and NLDC.	This is in line with IEGC-2023.

Sr.No.	Provision referred in draft procedure	Comments by NTPC	NLDC Response
18	**As the Regulation 47 (2) of IEGC provides that:** 47 (2) In case a generating station, or unit thereof, opts to go under unit shut down (USD), the generating company owning such generating station or unit thereof shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD.	Hence it may please be provided in procedure that the obligation of supply shall only be against the requisition given before the unit going under USD and there shall not be any obligation of supply for requisition given when the unit is under USD.	Obligation of supply would be there for off-bar requisitions submitted by beneficiaries until 1430 hrs D-1. This would be applicable for units under USD that have declared DC. Refer the Annexure "SCUC Scenarios & Gate Closures".
19		At 15:30 hrs. of D-1 Day, if generating station's schedule for D-Day is below technical min and generator opts for USD of one or more units of the station, Declared Capacity of unit expected to go under USD should be blocked for further scheduling by RLDC and transferred to Off-bar capacity. Subsequently, supply obligation for D-day shall be limited to On-bar DC or Schedule at the time of USD declaration, which is greater.	Obligation of supply would be there for off-bar requisitions submitted by beneficiaries until 1430 hrs D-1. This would be applicable for units under USD that have declared DC. Refer the Annexure "SCUC Scenarios & Gate Closures".

Sr.No.	Provision referred in draft procedure	Comments by NTPC	NLDC Response
20		If a station/unit is already under USD and beneficiary schedules above technical minimum at 14:00 hrs. of D-1 day for 00:00 hrs. of D-day, units with higher start-up time may not be able fulfil the schedule during initial blocks. Supply obligation of generator may be limited to 90% of technical minimum schedule till identified time for synchronisation (as per declared start up time) is over.	This is beyond the purview of the procedure.
21	**(Ref: IEGC Chapter-7, Clause 45(9)).**	Ramp-up rate of less than 1% per min for coal stations & less than 3% per min for gas stations should be allowed in line with the OEM recommendations post synchronisation till the stabilisation period of the unit as ramp-up at the rate of 1% or 3% per min is not feasible due to technical constraints like high turbine thermal stress, LP & HP heaters charging in process etc. during this period. (Ref: IEGC Chapter-7, Clause 45(9)).	Ramp rates mentioned in the procedure are in line with the IEGC-2023.
22		During ramp-up or ramp-down, for the blocks where the scheduled ramp in preceding block was less than 0.5% per min, scheduled ramp in present block should be limited to 0.5% per min because with ramping-up or down at 1% per min, 15-min average generation will change corresponding to 0.5% per min ramp only.	Such restrictions are already placed in the scheduling software, in consultation with NTPC.
23		To change the direction of ramping, two consecutive blocks of same schedule must be provided as it will not be possible for generator change 15-min average generation in opposite direction corresponding to 1% ramp per min.	Schedules would depend on the system conditions.
24		It may happen that beneficiaries give full schedule by 8.00 hrs. and then may subsequently revise the schedule by 15.30 hrs. below technical minimum. Under such circumstances the generator shall not be able to participate in DAM and SCUC to get the Technical minimum schedule and is left with no other option but to provide supply from alternate source if it takes unit under USD. The option given to beneficiaries to revise the schedule without any	The gate closure for beneficiary requisitions on day ahead basis is up to 1430 hrs of D-1. For day "D", upward requisition is allowed up to (DConbar-reserves earmarked) MW, till 7-

Sr.No.	Provision referred in draft procedure	Comments by NTPC	NLDC Response
		restriction is detrimental for secure grid operation and beneficiaries needs to be mandated to maintain certain minimum schedule of schedule during non-peak hours in comparison to the schedule given during peak hours.	8 TB before delivery TB on “D”. In a decentralized scheduling mechanism, continuous portfolio balancing is essential for grid balancing, as the on site demand requirements are best assessed by the states.
25		As many changes have been done in WBES/NOAR for accommodating the aspects of IEGC 2023 so a help window may be provided describing the roles, responsibility of different stake holder and data required to be filled by Generators for smooth roll out of IEGC.	Noted. Some workshops have already been conducted. More workshops are also planned to be organized. RLDCs and NLDC assistance would be available during transition phase. Cooperation is also requested from stakeholders for facilitating these landmark roll-outs.

B. NLDC response to comments from SRPC regarding Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD),and Security Constrained Economic Despatch (SCED)

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
5.3.6/ Page 4	Generating stations shall adjust their injection based on schedules under SCED, either increasing or decreasing generation, as required.	Generating stations shall adjust their injection based on schedules including schedule under SCED, either increasing or decreasing generation, as required.	There are number of schedules, AGC signal and Generation has to be maintained according to final injection schedule.	Ok. Change included as – "Generating stations shall adjust their injection including schedule under SCED, either increasing or decreasing generation, as required."
5.3.7/ Page 4	Generating stations shall ensure that the quantum of power identified as reserves by NLDC in the SCUC process is not made available for scheduling by beneficiaries or for sale.	~~Generating stations shall ensure that the quantum of power identified as reserves by NLDC in the SCUC process is not made available for scheduling by beneficiaries or for sale.~~	The power blocked under SCUC should not be made available for scheduling by beneficiaries and generators. This has to enabled by NLDC/RLDC through WBES as scheduling being done by beneficiaries through WBES.	The restrictions would be placed in WBES for blocking earmarked reserves. The intent of the clause is to sensitize stakeholders that the SCUC earmarked reserves portion would not be available for sale/requisition. The clause has been deleted to avoid confusion.
6.7/ Page 7	The block wise TRAS-RTM-Up and TRAS-RTM-Down reserves expected to be available (say "Y" MW) shall be considered as the minimum of the last 7	The block wise TRAS-RTM-Up ~~and TRAS-RTM-Down~~ reserves expected to be available (say "Y" MW) shall be considered as the minimum of the last 7 days data.	For SCUC TRAS Down may not be significant and not fits in the formula	Ok. Change included as below – "The block wise TRAS-RTM-Up reserves expected to be available (say "Y" MW) shall be considered as the minimum of the last 7 days data."

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
	days data.			
6.8.2/ Page 7	The reserves anticipated to be available in Section 62 plants	This needs to be elaborated in detail: Regional Entity (States) can schedule power and keep reserves (Secondary and Tertiary) in Regional Generator. Though keeping secondary reserve in Regional Generator may be difficult till upgradation/procedure is finalised in this regard. Regional Generators are also mandated to bid the URS in DAM. The power identified by State/SLDC under TRAS should not be available to State/SLDC for normal scheduling and should be made available to State/SLDC > 1 Time Block. This power identified as reserve should also be not available to other beneficiaries as URS. The power sold by Regional Generator in DAM should also be not available to original beneficiary for scheduling nor it can be identified as reserve by original beneficiary nor can it be made available as URS to any beneficiary. Suitable locks in WBES needs to ensure to achieve this. During tripping of unit the reserves will be lost (marginal/full), and priority of schedules/reserves needs to be elaborated in Procedure. It is suggested that reserves may have least priority.		Adequate reserves are required to be maintained in a distributed manner at the regional level and at the State level for each state control area. The segregation is also provided in the SRAS/TRAS reserve assessment procedure. It is expected that the obligated quantum of reserves to be maintained at state level would be maintained within the intra-state generators, and despatched through intra-state AGC, intra-state scheduling software, etc. Intra-state ancillary services mechanism could be evolved for facilitating transparent accounting and settlement of the intra-state ancillary services provided by the intra-state generators. NLDC would maintain the reserves at the central sector level through mechanisms provided in the CERC Regulations, viz., Market-based procurement of reserves using TRAS mechanism, and Security Constrained Unit Commitment (SCUC). Presently, the reserves anticipated to be available in

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
				Section 62 plants is taken as the minimum of last 7 days, as a pessimistic number. This value would be an estimated value at best, as the behaviour of stakeholders and weather, etc., would decide the final availability. During tripping of units, some URS would be dispatched to ensure grid security, some reserves earmarked in those units also would be lost. Maintaining grid security by immediate schedule and dispatch of reserves would have higher priority over maintaining reserves.
6.8.4/Page 7		New clause The reserves anticipated to be available generators participating in SCUC/SCED other than Section 62 plants	Clause 3 of Procedure *…….other regional entity thermal generating stations which may opt to participate under SCUC/SCED. A thermal generating station which opts to participate in SCUC is mandated to participate in SCED.*	As the availability of reserves from such plants could be slightly uncertain for both blocking and dispatch, same has been deliberately omitted. Reserve requirement would be based on assumptions as per another procedure submitted for approval by CERC.
6.16.3/Page10-11	Once SCUC support has been extended by NLDC (intimated to the scheduling system	Once SCUC support has been extended by NLDC then technical minimum schedule of each	Only difference between beneficiary schedule and Technical Minimum has to be extended through SCUC	A summary table explaining different scenarios and timelines under SCUC is provided as an Annexure "SCUC Scenarios & Gate

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
	by SCUC software), then downward revision of requisition by the beneficiaries of that power plant would be blocked in those power plants from 1500 hrs of D-1.	beneficiary and SCUC from unit/station will be fixed, the reserve to be maintained (SRAS & TRAS) for each 96 block will be fixed and intimated to the scheduling system by SCUC software. Downward revision of requisition by the beneficiaries for the blocks where SCUC support has been extended would be blocked from 1500 hrs of D-1. The beneficiaries will be allowed to schedule the power upto Technical Minimum support extended through SCUC in real time.	in each block, therefore it is necessary to know that whenever Technical Minimum schedule is not met in any block then which beneficiary or SCUC will booked to meet the technical minimum schedule. SRAS and TRAS needs to be earmarked in each block which is not available to beneficiaries for scheduling or as URS. If the beneficiary avail the power upto Technical Minimum (which is despatched through SCUC) it will lead to overall optimisation of cost as the generator need not be paid from pool and part load compensation charges due to SCUC will also come down.	Closures," for additional clarification.
6.18/Page 11	NLDC shall indicate the reserve quantum earmarked in each unit brought on bar under SCUC by 1500 hrs to the scheduling system. Such quantum of power identified as	NLDC shall indicate the reserve quantum (TRAS & SRAS including under shortfall/emergency) earmarked in each unit brought on bar under SCUC by 1500 hrs to the scheduling system. ~~Such~~	TRAS & SRAS (normal, shortfall, emergency) needs to be segregated as deployment, treatment and payments are different. Balance power which is identified as reserve by states/ SCUC and the URS	Ok. Some changes included suitably. Clause 6.18 modified by adding the below- Plant may actively place the bids for the remaining power in RTM for sale.

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
	reserves shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. The quantum of power over and above the identified quantum of reserves can be rescheduled by the beneficiaries or scheduled by way of selling in the market	Quantum of power identified as reserves (through SCUC/or by beneficiaries) shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. The quantum of power over and above the identified quantum of reserves and cleared in DAM through Generator can be rescheduled by the beneficiaries or scheduled by way of selling in the market. The left over power needs to put in RTM by Regional Entity Generator.	power sold by generator in DAM is only available to beneficiaries for scheduling. Balance power which is left over needs to be put in RTM by the respective Generator.	
6.20/Page 11		New Clause For Part Load compensation new entity SCUC will be created with Entitlement of unit retained/revived under SCUC. This will done block-wise This would include TRAS/SRAS under SCUC and scheduled under SCUC upto Technical Minimum. Balance	In SCUC reserves are maintained but that can be availed under SRAS/TRAS. These reserves cannot be availed by beneficiaries and generators also. Unlike SCED where decrement generation is there, in SCUC though reserves are kept but they can be availed under	Suggestion noted for consideration during the software design. Necessary data would be provided to RPCs for ensuring a smooth accounting and settlement process.

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
		Entitlement will be with the beneficiaries. RLDC would furnish this compensation file separately to RPCs for computing part load compensation for the generator.	SRAS/TRAS. The part loading needs to be appropriately considered under SCUC.	
6/Page 6-11		If Generators are instructed to put the power scheduled upto Technical Minimum under SCUC mandatorily under RTM, then the outgo from Pool Account may reduce. This may be thought off.		This option is already available for the generator to ensure technical minimum.
7.3/Page 12	The power scheduled from alternate supplier shall be reduced from the schedule of the generating station.	The power from alternate source (other stations/bilateral /collective/ SCED) will be scheduled to generator. The power scheduled from alternate supplier shall be reduced from the schedule of the generating station. The shortfall or surplus will be settled under DSM by generator.	It needs to clearly stated in Procedure whether the power would be scheduled from alternate source to beneficiary or from alternate source to generator obligated to supply power. The net injection schedule after beneficiary schedule, DAM, RTM, TRAS schedule, SRAS instruction, bilateral minus the power scheduled from alternate source to generator would form the basis of DSM.	Ok. Included suitably. Added the below clauses- 7.3.1 The power would be scheduled from the alternate source to the generator obligated to supply. 7.3.2 In case the generator under USD is unable to arrange alternate supply, and fulfil its obligation, then the quantum for which alternate supply could not be arranged, would be settled under DSM. 7.3.3 The net injection schedule after beneficiary schedule, DAM, RTM, TRAS schedule, SRAS instruction, bilateral minus the power scheduled from alternate source to generator would form the basis of DSM.

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
7.5/Page 12	The reserve quantum earmarked in each unit brought on bar under SCUC shall remain blocked for use by NLDC and shall not be available for requisition by beneficiaries or sale by generating station.	The reserve quantum earmarked in each unit brought on bar under SCUC shall remain blocked for use by NLDC and shall not be available for requisition by beneficiaries or sale by generating station. On grid condition and adequacy of reserve NLDC may release some reserves for beneficiaries for scheduling and under URS or for Generators to bid under RTM.	This will optimise the outgo from Pool.	Over-availability of reserves, when it happens, would be taken care of automatically on the next day, as the procurement formula already factors the available un-despatched reserves in the generators in the past 7 days.
8.5/Page 13		If many generators have given request to meet the beneficiary schedule for unit(s) under USD through SCED, then how power would be allocated to such generators in each Time Block needs to be specified in the Procedure.		Power shall be scheduled through SCED as per the merit order only if sufficient reserves are available. Partial/pro-rata allocation has not been envisaged in IEGC-2023.
9.1.4/Page 14	Compensation for part load operation of a generating station or unit thereof brought on bar under SCUC shall be paid from the Deviation and Ancillary Services Pool Account.	Compensation for part load operation of a generating station or unit thereof brought on bar under SCUC shall be paid from the Deviation and Ancillary Services Pool Account. For this an Entity under SCUC will be created along-with	For SCUC, Entitlement under SCUC needs to be created and Final Compensation File needs to be communicated to RPCs for computing the compensation.	Suggestion noted for consideration during the software design. Necessary data would be provided to RPCs for ensuring a smooth accounting and settlement process.

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
		Entitlement. The Compensation file for computing the compensation will be furnished to RPCs by RLDC/NLDC. Any decrement under SCED would be with Nil Entitlement.		
9.1.5/Page 15		New Clause The generating station where decremental energy has been scheduled to balance the additional energy above, the compensation would be computed for SCED and SCUC with Nil Entitlement.		Necessary data would be communicated to RPCs for computing the compensation.
9/Page 14-15		Power decrement under SCUC may be used for SRAS or TRAS under normal or Emergency or Shortfall then it should be shown in Ancillary Account and in SCUC decrement only balance energy which was not utilised but decrement under SCUC may be shown under SCUC decrement. This would avoid circular payments among SCUC and Ancillary and energy will not be duplicated in two accounts		To avoid circular payment, a net payable/receivable amount could be calculated including SCUC, TRAS, and SRAS. Data shall be shared with RPCs in Format-SCUC_BB.
Format SCUC_AA /Page 30	(A) x V.C. ..... (B) x V.C.	(A) x (V.C. or C.C.) ..... (B) x (V.C. or C.C.)		Ok. Included
Format		Ancillary Account is prepared as per AS		This is for creating a net payment

Para/ Page No	Existing in the draft procedure	Recommended by SRPC	Reason/Comment by SRPC	NLDC comments
SCUC_BB/ Page 31		Regulations/Procedure and this format may not be required		figure and avoid circular payments.
Format SCUC_CC: Page 32	Compensation Amount Payable due to SCUC up to the month(in ₹)*	Whether this will come? There can be compensation payable under SCUC and not receivable. There may be some compensation receivable due to compensation being computed on cumulative basis but not due SCUC Up		Noted
Format SCUC_CC: Page 32		A Note may be added: 1.Compensation for decrement under SCUC after factoring in TRAS an SRAS schedule would be payable to generator from Pool. 2.The Compensation File for SCUC affected generator (recalled/retained under SCUC or decrement under SCUC)would be furnished to RPCs for compensation accounting		Noted
General Comment				
Scheduling, Ancillary, SCUC and SCED procedure need to be harmonised by suitable interlinking, suitable interlocks in WBES, interaction of WBES with other software to have clarity, mandatory duties of the entities and there should not be any ambiguity in account preparation. A guideline or procedure for scheduling encompassing all this can be made for clarity and smooth preparation of accounts.				The chapter on Scheduling in NLDC operating procedure may be referred.

C. NLDC response to comments from NLC regarding Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD),and Security Constrained Economic Despatch (SCED)

SNo	Provision referred in draft procedure	Comments by NLC	NLDC Response
1	The clause 8.4 states that "The net demand for performing SCED would be the total schedule of all the generators plus the total quantum in the "SCUC" head in the latest revision of the scheduling system."	SCUC schedule is already a part for total schedule. The current statement of" .. the total schedule of all the generators plus the total quantum in the "SCUC " leads to duplication of SCUC schedule. This may be modified as suited.	It is clarified hereby that there would not be any duplication of the schedule components. The clause has been modified as below – "8.4 The net demand for performing SCED would be the total schedule of all the generators plus the total quantum in the "SCUC" head in the latest revision of the scheduling system. 8.4.1 SCUC-Up and SCUC-Down shall be evaluated/re-adjusted for every generator, for each time block under consideration factoring the up-revision by the beneficiaries, and any market sale transactions by the generator."

SNo	Provision referred in draft procedure	Comments by NLC	NLDC Response
2	The clause 6.18 states that "NLDC shall indicate the reserve quantum earmarked in each unit brought on bar under SCUC by 1500 hrs. to the scheduling system. Such quantum of power identified as reserves shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. The quantum of power over and above the identified quantum of reserves can be rescheduled by the beneficiaries or scheduled by way of selling in the market" Similarly, clause 8.4.l states that "SCUC-Up and SCUC-Down shall be evaluated/readjusted for every generator, for each time block under consideration factoring the up revision by the beneficiaries, and any market sale transactions by the generator".	These above two clauses contradict each other. As mentioned in clause 6.18 quantum of power under SCUC shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. This quantum is purely keeping as reserve to keep generators at technical minimum schedule in order to meet peak demands. So, these SCUC schedule should not be changed once freezes at 1500 Hr. of D-1 day. It is also suggested that any revisions in SCED shall be based on the beneficiary schedule over & above Technical minimum schedule and RTM schedule shall not be included. The generators may have difficulty in operating at technical minimum and shall trade the power in exchange for sustainable operations compromising energy charges. Scheduling of SCED down after generator has brought supply requirement higher than their technical minimum will nullify the effect of R TM trading and hence will not solve the difficulty arising due to lower load operation.	Clause 6.18 talks about the reserves. Reserves earmarked in the SCUC plants would be blocked from scheduling after 1500 hrs of D-1 till the end of the day D. Say for example, 25 MW reserve has been earmarked in NNTPP (500 MW), as the same has been given support under SCUC. Clause 8.4.1. Talks about the schedule components. For example, an NNTPP unit (500 MW) is requisitioned up to only 200 MW, and has been provided SCUC-Up of 75 MW to meet the technical minimum (55%). Commensurate 75 MW SCUC-Down would be given to other plants. Say, close to real-time, i.e., 8 blocks before delivery time, beneficiaries requisitioned 475 MW from NNTPP. Then SCUC-Up quantum should become zero and SCUC-Down quantum in other plants will become zero. SCED runs 30 minutes prior to the delivery period after RTM, and is expected mop up any residual sub-optimality created from the decentralized scheduling process including RTM.

SNo	Provision referred in draft procedure	Comments by NLC	NLDC Response
3	The clause 9.4 states that "No startup cost shall be paid to the generator brought under SCUC/SCED. "	Start-up cost may be included in compensation procedure for the stations which are already under shut down & brought on bar under SCUC. For units under USD for a longer period which would require them to be put under Wet Preservation, charges towards utilisation of chemicals and DM water will be incurred. Further, excess DM water consumption during Unit Startups due to boiler blowdown shall be included in startup charges. Compensation for SCUC identified units as per clause 46(4)(i) [USD] shall be determined differently with additional compensation since startup charges will be incurred. Also, in accounting of SCED other than monthly payment/ reimbursement, heat rate compensation adjustments along with interest for delay is introduced with revised gain sharing mechanism and removal of cap rate.	Clause 9.4 has been modified as below- "Startup cost would be in line with IEGC Regulations. Regulation 6.3B of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 along with Appendix-II "Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units" as issued by CERC dated 5th May 2017 vide No. L-1/219/2017-CERC shall continue to be in force, till further regulations are issued by CERC." In case there are any issues, generators may take up with CERC.
4	The clause 5.3.3 states that "Generating stations which have declared DC and choose to go under Unit Shut Down (USD) due to schedule below minimum turndown level shall fulfil their obligations to supply electricity to beneficiaries by arranging alternate supply through contracts, other generating stations, or SCED, for the periods they declare Declared Capacity	A system may be envisaged by NLDC to "arrange supply" from other generating stations in case of opting USD in order to meet generator's obligation to meet beneficiary requisition. Similarly, Generator going under USD due to lesser requisitions from beneficiaries may be allowed to buy power from Exchange to meet above obligation.	Alternate supply can be arranged by the generators through – • T-GNA Exigency 'buy' by the obligated generator under USD, and 'sell' by an alternate generator. • By buying of generation from the RTM by the obligated generator

SNo	Provision referred in draft procedure	Comments by NLC	NLDC Response
	(for Section 62 generating stations) or as per the contracts (other than Section 62)"		
5	Clause 3.1 states that "This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. A thermal generating station which opts to participate in SCUC is mandated to participate in SCED." NLC India Limited has established and operating 5 lignite-based power stations in Neyveli namely, TPS2 (STGl & STG2), TPSI Expansion, TPS2 Expansion and Neyveli New Thermal Power stations. NLCIL being an integrated mine-cum-power company and NLCIL Thermal Stations are integrated with linked pit head mines, scaling down of generation in the thermal power plants due to SCED decrement scheduling will cause significant reduction in the lignite production resulting in under recovery of fixed cost of Mines due to decrease in the capacity utilization of the linked mines. • During weekends and public holidays, generating stations are already experiencing heavy surrender of power and SCED down scheduling will result in furthermore heavy back down of	• If capacity utilization of Neyveli mines becomes lesser than Annual Target Quantity (ATQ), there will be under recovery from mines operation. • Under the above circumstances SCED decrement scheduling would result in enormous reduction of power generation by NLCIL Power Plants vis -a vis lignite production, which ultimately lead to under utilisation of mines and under recovery of lignite cost and cascading impact on the financials of the company. • Also, in CFBC Boilers, the following Technical difficulties were faced when operating the units at low load or cyclic operations o High Combustor Differential Pressure. o Non-Fluidization of Fluidized Bed Heat Exchangers (FBHEs). o Super Heater & Re-heater metal temperature and pressure variation o Refractory Failure. o High Station Heat Rate. o High Auxiliary Power Consumption. o Back Pass Hanger Tube Failures. • Unlike PF boilers, because of thermal inertia in CFBC boiler, it requires process time to raise the bed material temperature and ultimately main stream pressure to accommodate the requirement of additional loads. The Ramping down is also challenging to achieve in one block duration as the thermal ine1iia of CFBC boiler is very high and the refractory and the bed material have the capacity to retain heat for quite some time. So, generating stations based on CFBC boilers cannot operate sustainably frequent Ramp .Up and Ramp Downiffthe-Schedule. • On account of specific issues summarized above, NLCIL Thermal Power Stations operating with lower caloric value fuel	Clause 3.1 has been modified as below – SCUC only ensures that units are scheduled up to technical minimum, based on reserve requirement. SCED would run after the SCUC process, and it would strictly ensure that the final net schedules are the most economical based on the variable cost subject to grid-security and ramping constraints. For example, say Rihand (500 MW) (2 Rs/kWh variable cost) is not committed by its beneficiaries till technical minimum. SCUC ensures Rihand is scheduled up to 275 MW (55%). SCED ensures that Rihand is scheduled up to the full 500 MW as it is a cheaper plant in the stack. Hence, it would be optimal if the units participating in SCUC, participate in SCED also. 'Willingness/opting to participate in SCED' is intended to bring non-section-62 plants under SCED. Operational reasons for non-participation under SCED may be provided to NLDC/RLDCs, and the same can

SNo	Provision referred in draft procedure	Comments by NLC	NLDC Response
	generation.	i.e. lignite and being an integrated mining cum power generation company, it is suggested to make provisions, such that the participation in SCED based on the willingness of Generators.	be facilitated for a few days. The scope has been modified as below – "3.1 This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. Section 62 regional entity thermal generating stations with full tied-up capacity are mandated to participate in SCUC and SCED. A thermal generating station which opts to participate in SCUC is mandated to participate in SCED."

D. NLDC response to comments from APCPL-ISGTPP Jhajjar regarding Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD),and Security Constrained Economic Despatch (SCED)

Sr.No.	Provision referred in draft procedure	Comments by APCPL-IGSTPP	NLDC Response
1	Pt 7 .0 Unit Shutdown (USD) In case a generating station opts to go under unit shut down (USD), the generating company owning such generating station shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD [i.e., before 1530 hrs], by arranging supply either 7.2.1 by entering into a contract(s); or 7.2.2 by arranging supply from any other generating station or unit thereof owned by such generating company; or 7.2.3 rely on SCED for arranging the schedule 30 minutes before dispatch	➢ The generator is going under USD when there is less requirement from major beneficiaries owing to less demand, surplus and cheaper power available in the market. Therefore, the beneficiaries with smaller share can easily buy power from exchange. ➢ Thus, the liability of the generator to supply the power to beneficiaries who had given requisition before the generator going under USD should be only till such time when the opportunity or window for buying power from power exchange is not available with the beneficiaries i.e. If the generator is going under USD from 0000 hours of D day, then the mandatory obligation of the generator should be till 2400 hours of D day. ➢ The beneficiary can buy power from the exchange at 0945 hours of D day for D+1 day.	One of the main changes introduced by IEGC-2023 is the inclusion of generator's obligation to supply electricity to its beneficiaries. In line with the same, the clause in the NLDC detailed procedure has been slightly modified as under for more clarity – "7.2 In case a generating station opts to go under unit shut down (USD), the generating company owning such generating station shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD [i.e., before 1430 hrs of D-1], by arranging supply either…."

Sr.No.	Provision referred in draft procedure	Comments by APCPL-IGSTPP	NLDC Response
2	Regarding upward revision of Declared Capacity	➢ Upward revision of DC may be allowed from 7th or 8th time block as per the existing practice. ➢ Upward revision of DC is beneficial for the beneficiaries and important for the grid security & stability. ➢ Therefore, the restriction on Upward Revision of DC should not be there.	Beyond purview of this procedure
3	Regarding Downward revision of DC	➢ Due to system complexities in thermal generating stations, mechanical & electrical failures are bound to happen despite following best preventive and proactive maintenance practices. Sometime due to poor coal quality or sudden equipment failure, the generator is not able to achieve full load and has no option left but to reduce its Declared Capability. This option is not available in IEGC-2023. It is requested to provide some relief to the generator during such unforeseen events & circumstances which are beyond the control of the generator.	Beyond purview of this procedure

E. NLDC response to comments from APL regarding Draft Detailed Procedure for Security Constrained Unit Commitment (SCUC), Unit Shut Down (USD), and Security Constrained Economic Despatch (SCED)

Sr.No.	Provision referred in draft procedure	Comments	NLDC Response
1	**Clause no. 3.1: -** This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. A thermal generating station which opts to participate in SCUC is mandated to participate in SCED	➢ Clarification from NLDC is required regarding applicability of generating stations or units, if it is not fully tied up under Section 62 & having balance capacity is free for merchant sale.	➢ The scope has been modified as below. "This procedure shall be applicable to regional entity thermal generating stations or units thereof, for which tariffs are determined under section 62 of the Act, and other regional entity thermal generating stations which may opt to participate under SCUC/SCED. Section 62 regional entity thermal generating stations with full tied-up capacity are mandated to participate in SCUC and SCED. A thermal generating station which opts to participate in SCUC is mandated to participate in SCED."

Sr.No.	Provision referred in draft procedure	Comments	NLDC Response
2	**Clause no. 6.13.1: -** In case the unit is under wet preservation, then an additional 6 hours start up time shall be allowed for units under cold start up.	➢ During long shutdown of operating plants in coastal region, along with Boiler preservation, Turbines are also being preserved to protect from corrosive ambient conditions. Turbine preservation includes de-humidifiers connection with turbine drains by NRVs, LP turbine manhole cover normalization, and associated piping set- up etc. It takes 12-14 Hrs of time to normalize the system from preservation set-up. Hence, additional 12 Hrs of time against boiler & turbine preservation should be allowed for the coastal power plants.	➢ As mentioned in the procedure and workshop, the total preparation time for bringing the unit on bar would be more than the start-up time considered in the algorithm. This is because SCUC notification would be made twice daily @1000 hrs (advance intimation for units that are needed on the (next+1)th day and later) and @1500 hrs (for units to come on bar on the next day). Hence, sufficient lead time would be available for the plant to make preparations.
3	**Clause no. 6.18: -** NLDC shall indicate the reserve quantum earmarked in each unit brought on bar under SCUC by 1500 hrs to the scheduling system. Such quantum of power identified as reserves shall not be available for scheduling by the beneficiaries or for sale by the generating station through the energy market. The quantum of power over and above the	➢ Compensation mechanism needs to be devised for earmarked reserve quantum of power. The quantum of the reserve needs to be clarified as well. Further, APL suggest that, all generators should get compensation charge for earmarked quantum.	➢ Power plants selected under SCUC would be scheduled to the turndown level, and energy charges for such quantum would be provided from the DSM pool. As SCUC activity is for creating reserves in the system when there is scarcity of reserves, some reserves are being earmarked by SCUC, for dispatch under ancillary services by NLDC, when needed. Although no commitment charges are being given for the earmarked

Sr.No.	Provision referred in draft procedure	Comments	NLDC Response
	identified quantum of reserves can be rescheduled by the beneficiaries or scheduled by way of selling in the market		capacity under SCUC, charges for energy dispatched and incentive charges would be paid for MWh dispatched in line with CERC (Ancillary Services) Regulations, 2022. ➢ Power plants also have the option of bidding their reserves in the DAM-AS. The capacity other than the earmarked reserves, remaining after requisitioning can be bid by the generator under RTM-AS also.
4	**Clause no. 7.1: -** The generating stations or units not brought on bar under SCUC, shall have the option to operate at a level below the minimum turn down level or to go under Unit Shut Down (USD).	➢ A generating station should not be given schedule belowits minimum turn down level.	➢ Schedule goes below minimum turn down level only when beneficiaries don't requisition, and the unit is not selected by SCUC. Several market based options are also available at the disposal of the plant. They are encouraged to actively participate in the same to ensure minimum turn down level. After all the avenues are exhausted, USD may be considered in consultation with RLDC.

Sr.No.	Provision referred in draft procedure	Comments	NLDC Response
5	**Clause no. 7.2: -** In case a generating station opts to go under unit shut down (USD), the generating company owning such generating station shall fulfil its obligation to supply electricity to its beneficiaries who had made requisition from the said generating station prior to it going under USD [i.e., before 1530 hrs], by arranging supply form alternate source.	➢ It is submitted that the generator must not be liable to supply power from alternate source in case of USD which is due to technically unfeasible requisitions given by beneficiaries which doesn't suffice the minimum technical loading/requirements of generating units thus leading to Reserve Shutdown/Unit Shutdown of the unitsand also incurring extra operational expenses.	➢ Alternate power supply obligation has been mandated in IEGC-2023.
6	**Clause no. 9.4: -** No startup cost shall be paid to the generator broughtunder SCUC/SCED.	➢ As the minimum dispatch duration is only 12 Hrs that too the schedule may be equal to minimum turndown levels,hence it may not be economical for generator to bear the start-up or frequent start-up cost.	➢ The clause has been modified in line with IEGC-2023 provisions as below – "Startup cost would be in line with IEGC Regulations. Regulation 6.3B of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 along with Appendix-II "Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil

			Consumption, due to Part Load Operation and Multiple Start/Stop of Units" as issued by CERC dated 5th May 2017 vide No. L-1/219/2017-CERC shall continue to be in force, till further regulations are issued by CERC."

Annexure: SCUC Scenarios & Gate Closures

SCUC/ Non-SCUC	On-bar plant (CB on)	Plant under USD (CB off)
Plant under SCUC No change in DC after 0600 hrs of D-1 SCUC intimation by 1500 hrs of D-1	• Generator scheduled up to at least minimum turndown level (55%*Normative IC) ➢ Equivalent quantum shall be scheduled as SCUC down in on-bar plants participating in SCUC/SCED. • Reserves earmarked and blocked from sale/requisition • Downward requisition restricted up to TM [till 7-8 TB before delivery TB on "D"]. • Upward requisition allowed up to (DConbar-reserves earmarked) MW, till 7-8 TB before delivery TB on "D".	• Generator to make arrangements for start up (Start-up cost regulations same as per IEGC-2010 4th amendment) • DC on bar revision window to remain open during 1500 hrs - 2230 hrs of D-1 for SCUC plants, to facilitate entry of on bar DC for "D" day. • Shall be scheduled from the notified date and time up to TM through SCUC ➢ Equivalent quantum shall be scheduled as SCUC down in on-bar plants participating in SCUC/SCED.
Non-SCUC plant No change in DC after 0600 hrs of D-1 Intimate "NO SCUC" by 1500 hrs of D-1	• Generator scheduled up to total requisition (can be < TM also). • No reserves earmarked. • Upward requisition allowed up to DC till 1430 hrs of D-1. • Downward requisition allowed up to 0 MW till 0800 hrs of D-1. Up to 0830 hrs of D-1 in case of transmission constraints. ➢ Again, downward requisition allowed up to 0 MW from 1430 hrs of D-1, till 7-8 time blocks before delivery on "D" day. • There is no alternate supply obligation, as long as the plant is generating.	• Generator scheduled up to total requisition (can be non-zero also). • No reserves earmarked • Downward requisition allowed up to 0 MW till 0800 hrs of D-1. Up to 0830 hrs of D-1 in case of transmission constraints. • Upward off-bar requisition allowed up to DC till 1430 hrs of D-1. • There is alternate supply obligation to the extent of requisition made up to 1430 hrs of D-1.

Note:

a. In case of forced outage of units under SCUC, the Declared Capability and DC on bar can be revised by the power plants for the blocks of which gate closure has not been applied yet (i.e., after 7-8 time blocks).

b. No changes shall be made to the DC to accommodate derating/partial outage of units after 0600 hrs of D-1.