एन एच पी सी लिमिटेड
(भारत सरकार का उद्यम)
NHPC Limited
(A Govt. of India Enterprise)

आज़ादी का अमृत महोत्सव

NH/Comml/2022/ **Date: 30.09.2022**

The Secretary
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building,
36 - Janpath,
New Delhi- 110 001

Subject: Comments on draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022 - Reg.

Ref:- CERC Public notice No. L-1/265/2022/CERC dated 07.06.2022
CERC Public notice No. L-1/265/2022/CERC dated 30.08.2022
CERC Public notice No. L-1/265/2022/CERC dated 29.09.2022

Sir,

In reference to above public notices dated 07.06.2022, 30.08.2022 and 29.09.2022 the comments / suggestions / objections of NHPC on the draft CERC (Indian Electricity Grid Code) Regulations, 2022 are enclosed for further necessary action. The comments / suggestions / objections have been uploaded through SAUDAMINI portal under 'e-Regulation'. The soft copy of the same has also been emailed to secy@cercind.gov.in.

Thanking You,
Encl: As above

Yours Sincerely,

30/9/22

(Ajay Shrivas)
General Manager (Comml.)

पंजीकृत कार्यालय : एन एच पी सी ऑफिस कॉम्पलैक्स, सैक्टर-33, फरीदाबाद-121 003, हरियाणा
Regd.Office:NHPC Office Complex, Sector-33, Faridabad-121003, Haryana
CIN : L40101HR1975GOI032564;Website : www.nhpcindia.com
E-mail: webmaster@nhpc.nic.in; EPABX No. : 0129-2588110/2588500

Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
PREAMBLE		
Page no-3 (para-3)	Under Clause (h) of sub-section (1) of Section 86 of the Act, the State Commissions are mandated to specify the State Grid Codes consistent with the Grid Code specified by the Central Commission under clause (h) of sub-section (1) of Section 86 of the Act.	Seems to be a typing mistake in the draft statement, the correct statement should be: "Under Clause (h) of sub-section (1) of Section 86 of the Act, the State Commissions are mandated to specify the State Grid Codes consistent with the Grid Code specified by the Central Commission under clause (h) of sub-section (1) of **Section 79** of the Act."
CHAPTER-1 (PRELIMINARY)		
Regulation 3(44) (Ex-Power Plant)/Page no. 11	means net MW or MWh output of a generating station, after deducting auxiliary consumption and transformation losses.	The definition of 'Auxiliary Consumption' in Tariff Regulations 2019-24 is as under: *"Auxiliary Energy Consumption' or 'AUX' in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, such as the equipment being used for the purpose of operating plant and machinery including switchyard of the generating station and the transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station".* In above definition, the 'transformation losses' is included, therefore, the definition of "Ex-Power Plant", may be re-written as proposed below: ***"means net MW or MWh output of a generating station, after deducting auxiliary consumption"***
Regulation 3(90) (Ramp Rate) / Page no 18	means rate of change of a generating station output expressed in %MW per minute;	To bring some clarity, it is proposed to modify the definition of Ramp Rate asunder: **Means rate of change of a generating station output MW per minute expressed in %.**

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Regulation 3(102) (Secondary Reserve)/ Page no 19	means the maximum quantum of power which can be activated through Automatic Generation Control (AGC) to free the capacity engaged by the primary control. This reserve response shall come into service starting from 30 seconds and shall sustain up to 15 minutes;	As per the Regulation 7(1)(e) of CERC (Ancillary Services) Regulations 2022, the SRAS Provider should be capable of responding to SRAS signal within 30 seconds and providing the entire SRAS capacity obligation within fifteen (15) minutes and sustaining at least for the next thirty (30) minutes. It is therefore proposed to modify the above definition as per Clause 7(1)(e).
CHAPTER-4 (PROTECTION CODE)		
Regulation 15(6) (15. PROTECTION AUDIT PLAN)/Page no. 36	(6) Users shall submit the following protection performance indices of previous month to their respective RPC on monthly basis, which shall be reviewed by the RPC: (a) The Dependability Index defined as D= Nc/(Nc+ Nf) where, Nc is the number of correct operations at internal power system faults and Nf is the number of failures to operate at internal power system faults. (b) The Security Index defined as S= Nc/(Nc+ Nu) Where, Nc is the number of correct operations at internal power system faults Nu is the number of unwanted operations. (c) The Reliability Index defined as R= Nc/(Nc+ Ni) Where, Nc is the number of correct operations at internal power system faults Ni is the number of incorrect operations and is the sum of Nf and Nu.	In this regulation, it has been proposed that Users shall submit the protection performance indices of previous month to the respective RPC on monthly basis. However, the basis of selection of no. of correct operations and other factors has not been deliberated. Accordingly, the following may be included in this regulation: *"Users shall submit the following protection indices of previous month to their respective RPC after discussion of such event at PCC meeting of respective RPC".*

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
CHAPTER-5 (COMMISSIOING AND COMMERCIAL OPEARTION CODE)		
	Proposed for additional Regulations.	As per Tariff Regulation 2019-24, the 'Useful Life' in relation to a unit of a Hydro generating station including pumped storage hydro generating stations is 40 years. The generating company may undertake Renovation and Modernization (R&M) of the generating station or unit thereof for the purpose of extension of life beyond the originally recognized useful life. In this regard, it may kindly be clarified whether Trial Run operation and Declaration of Commercial Operation would be required for generating units after completion of R&M works for generating units.
Page no. 40 (21: NOTICE OF TRIAL RUN)	(1) The generating company proposing its generating station or a unit thereof for trial run or repeat of trial run shall give a notice of not less than seven (7) days to the concerned RLDC and the beneficiaries of the generating stations wherever identified. The concerned RLDC shall commence the trial run from the requested date or in case of any system constraints not later than seven (7) days from the proposed date of trial run. The trial run shall commence from the time and date as decided and informed by the concerned RLDC.	In order to avoid the delay in COD of hydro generating units, the notice period to start the trial run and repeat trial run operation of Hydro units may be reduced and this clause may be modified as under: *"(1) The generating company proposing its generating station or a unit thereof for trial run of trial run shall give a notice of not less than Seven (7) days to the concerned RLDC and the beneficiaries of the generating stations wherever identified.* *In case of repeat of trial run the notice period shall be for three (3) days. The concerned RLDC shall commence the trial run from the requested date or in case of any system constraints not later than three (3) days from the proposed date of trial run. The trial run shall commence from the time and date as decided and informed by the concerned RLDC".* It is pertinent to mention that as per Regulation 13(3), 13(7) and 13(9) of CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020, a generating station has to pay transmission charges for the transmission lines from the COD of transmission lines till COD of generating station. As the trial run can be carried only after transmission lines is available generator has to pay transmission charges for the period of trial run as well as the notice period. Therefore, reducing this period of notice shall in reduction of transmission charges which is being levied on the generator for no fault of its own.

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 42 (22: TRIAL RUN OF GENERATING UNIT)	(2) Trial Run of Hydro Generating Unit shall be carried out in accordance with following provisions: (a) A hydro generating unit shall be in continuous operation at MCR for twelve (12) hours: Provided that- (i) any interruption shall call for a repeat of trial run; (ii) partial loading may be allowed with the condition that the average load during the duration of trial run shall not be less than MCR; (iii) if it is not possible to demonstrate the MCR due to insufficient reservoir or pond level or insufficient inflow, COD may be declared, subject to the condition that the same shall be demonstrated immediately when sufficient water is available after COD.	The following provision of prevailing IEGC in connection with the Trial run operation of hydro units has been deleted in the proposed draft IEGC: *3. Trial Run or Trial Operation (i) The short interruptions, for a cumulative duration of 4 hours, shall be permissible, with corresponding increase in the duration of the test. Cumulative Interruptions of more than 4 hours shall call for repeat of trial operation or trial run.* Whereas, above clause is available in case of Thermal Power Plants at regulation no. 22(1)(iii) of draft IEGC. In this regard, it is proposed that the following/existing regulation may be retained under regulation "22(2) Trial Run in respect of Hydro Generating Unit" and Regulation 22(a)(i) may be modified as: *"The short interruptions, for a cumulative duration of 4 hours, shall be permissible, with corresponding increase in the duration of the test. Cumulative Interruptions of more than 4 hours shall call for repeat of trial operation or trial run".* Further, in line with the proposed changes in Regulation 22(a)(i), Regulation 22(a)(ii) may be modified as: *"Partial loading may be allowed with the condition that the average load during the duration of trial run excluding period of interruption and partial loading but including the corresponding extended period shall not be less than MCR";*

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 46 (24(3) (a) and 24(3)(b): Documents and Tests Required for Hydro Generating Stations):	**Tests/Documents required for hydro stations** **<u>DOCUMENTS</u>** (a) The generating company shall submit OEM documents for turbine characteristics curve indicating the operating zone(s) and forbidden zone(s). In order to demonstrate operating flexibility of the generating unit, it shall be operated below and above the forbidden zone(s) (b) The following tests shall be performed considering the water availability and head: (i) Primary response through injecting a frequency test signal with a step change of ± 0.1 Hz for various loadings within the operating zone. (ii) Reactive power capability as per the generator capability curve considering Over-excitation and under-excitation limiter settings. (iii) Black start capability (iv) Operation in synchronous condenser mode wherever designed	**The generating company shall submit 'Turbine Characteristic Curve' and OEM's documents indicating 'Forbidden zone' and 'Operating Zone' of individual machines.** The regulation 24(3)(a) may also be revised accordingly. The black start operation of a generation station is carried out in coordination with RLDC as conditions for black start is simulated by RLDC only. Therefore, it is proposed that generating station shall perform the black start capability test whenever the conditions are simulated by RLDC and this shall not be a mandatory condition for declaration of commercial operation.

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 48 (25. CERTIFICATE OF SUCCESSFUL TRIAL RUN)	(1) In case any objection is raised by a beneficiary in writing to the concerned RLDC with copy to all concerned regarding the trial run within two (2) days of completion of such trial run, the concerned. RLDC shall, within five (5) days of receipt of such objection, in coordination with the concerned entity and the beneficiaries, decide if the trial run was successful or there is a need for repeat trial run.	In order to avoid the delay in declaration of COD of generating units, the time period allowed to RLDC to review the objections raised by any beneficiaries may be reduced to three (3) days instead of five (5) days. In view of above, the proposed regulation may be re-written as under: *"(1) In case any objection is raised by a beneficiary in writing to the concerned RLDC with copy to all concerned regarding the trial run within two (2) days of completion of such trial run, the concerned RLDC shall, within three (3) days of receipt of such objection, in coordination with the concerned entity and the beneficiaries, decide if the trial run was successful or there is a need for repeat trial run".* Clause 2(ix) of 6.3A (Commercial operation of Central generating stations and inter-State Generating Stations) of principal regulations provides the following: *(2)(ix) The concerned RLDC or SLDC as the case may be, shall accord clearance to the generating company within seven (7) days of receiving the generation data based on the trial run.* In the above regulations, seven days' time has been given to NRLDC to accord the clearance of Trial Run Operation. In this regard, it is to proposed that this time period may be reduced to three (3) days to avoid any further delay in declaration of COD of hydro power stations. Therefore, following may be incorporated in the proposed IEGC 2022 as per given below: *"The concerned RLDC or SLDC as the case may be, shall accord clearance to the generating company within three (3) days of receiving the generation data based on the trial run".* It is pertinent to mention that as per Regulation 13(3), 13(7) and 13(9) of CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020, a generating station has to pay transmission charges for the transmission lines from the COD of transmission lines till COD of generating station. As such providing such long time for providing clearance for trial run shall add to the penalty being levied on the generating stations.

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<table>
<tr><th>Regulation No/Page No.</th><th>Proposed in Draft IEGC</th><th>Comments of NHPC</th></tr>
<tr><td colspan="3">CHAPTER -6 (OPERATING CODE)</td></tr>
<tr><td>Page no. 68 (10: Primary Control)</td><td>(10)(h) All generating stations mentioned inTable-4 (under clause (g) of this Regulation) shall have the capability of instantaneously picking up to a minimum 105% of their operating level and up to 105% or 110% of their MCR, as the case maybe, when the frequency falls suddenly and shall provide primary response.

Any generating station not complying with the above requirements shall be kept in operation (synchronized with the regional grid) only after obtaining the permission of the concerned RLDC.</td><td>The same regulations in existing IEGC is available at 5.2(h) as under:
(h) All thermal generating units of 200 MW and above and all hydro units of 10MW and above operating at or up to 100% of their Maximum Continuous Rating (MCR) shall normally be capable of (and shall not in any way be prevented from) instantaneously picking up to 105% and 110% of their MCR, respectively, when frequency falls suddenly. Any generating unit not complying with the above requirements shall be kept in operation (synchronized with the Regional grid) only after obtaining the permission of RLDC.
Further under clause 5.2(f)(iii), following is provided:
"iii) All other generating units including the pondage upto 3 hours Gas turbine/Combined Cycle Power Plants, wind and solar generators and Nuclear Power Stations shall be exempted from Sections 5.2 (f) ,5.2 (g), 5.2 (h) and ,5.2(i) till the Commission reviews the situation"
Therefore, in Table-4 (PRIMARY RESPONSE OF VARIOUS TYPES OF GENERATING UNITS) of clause 10(g) (Page no. 67) the following (highlighted portion) is to be incorporated under "Minimum unit size/Capacity" against hydro:
<table>
<tr><th>Minimum unit size/Capacity</th><th>Minimum unit size/Capacity</th><th>Minimum unit size/Capacity</th></tr>
<tr><td>Hydro</td><td>25 MW and above non canal based (Except Run of the River Hydro Plants and plants having pondage upto 3 hours)</td><td>±10% of MCR</td></tr>
</table>
Further, as per CERC DSM Regulations, 2022, seller other than a RoR i.e. Pondage generating station or a generating station based on municipal solid waste is liable to pay deviation charges for over injection beyond 2% of schedule. In compliance of this clause of the draft regulation, generating stations shall have to pay deviation charges for supporting / stabilizing the grid. In Principle Generator must be incentivized for helping the grid & not penalized in any way.
Hence, above mentioned clause of CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2022 may be reviewed.</td></tr>
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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page -70(11: Secondary Control)	(11)(c) Secondary control signals shall be automatically generated from NLDC and shall be transmitted to SRAS Providers through the concerned RLDC exercising the control area jurisdictions for desired automated response when the Area Control Error (ACE) goes beyond the minimum threshold limit of ±10 MW, which may be reviewed from time to time based on review of performance of SRAS. Provided that as and when bi-directional communication system of SRAS providers with RLDCs is fully established, secondary control signals shall be automatically generated from the respective RLDC.	The minimum threshold limit is very narrow to initiate the signal for SRAS signal for any Regional grid as large as 70-80GW. It may lead too frequent SRAS corrections ultimately causing wear and tear in machines affecting useful life. ***Therefore, it is proposed that this band (minimum threshold limit of ±10 MW) can be suitably increased so that frequent variation in load may be avoided.***

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page -74 (11: Secondary Control)	(11)(t) All thermal and hydro generating stations shall make arrangements to enable automatic operation of plant from the appropriate load dispatch centre by integrating the controls and tele-metering features of their system into the automatic generation control in accordance with the CEA Technical Standards for Construction and the CEA Technical Standards for Connectivity. The communication system shall be established in accordance with the CEA Communication Regulations	Hon'ble CERC vide order dated 28th August 2019, in the matter of Implementation of Automatic Generation Control (AGC) implementation in India, the following is provided under the clause 34(ix) regarding its implementation: *"All new thermal ISGS stations with installed capacity of 200 MW and above and hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC shall mandatorily have the capability to provide AGC support".* As per above regulations, Run of River Hydro Power Stations are exempted for implementation of Automatic Generation Control (AGC), in view of above, it is proposed that the proposed regulation may be reviewed as per under: **(t) All thermal (installed capacity of 200MW and above) and hydro generating stations having capacity exceeding 25MW (excluding Run-of-River Plants irrespective of size) shall make arrangements to enable automatic operation of plant from the appropriate load dispatch centre by integrating the controls and tele-metering features of their system into the automatic generation control in accordance with the CEA Technical Standards for Construction and the CEA Technical Standards for Connectivity. The communication system shall be established in accordance with the CEA Communication Regulations.**

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 87 (34. SYSTEM RESTORATION)	(34)(3) Detailed procedures for restoration post partial and total blackout of each user system within a region shall be prepared by the concerned user in coordination with the concerned SLDC, RLDC or NLDC, as the case may be. The concerned user shall review the procedure every year and update the same. The user shall carry out mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station, VSC based HVDC black-start support at least once in a year under intimation to the concerned SLDC and RLDC. Diesel generator sets and other standalone auxiliary supply source to be used for black start shall be tested on weekly basis and the user shall send the test reports to concerned SLDC, RLDC and NLDC on a quarterly basis.	The purpose of this regulation is about preparedness for mock trial run as well as mock black start exercise to be carried out by the utilities. In this regard, it is mentioned that *"Diesel Generator sets and other standalone auxiliary supply source to be used for black start shall be tested on weekly (daily) basis and the user shall send the test reports to concerned SLDC, RLDC and NLDC on a quarterly basis".* In this regard it is to be submitted that the testing of DG sets and other standalone associated systems are being down regularly even daily basis, but submission of each test report to concerned SLDC, RLDC and NLDC shall un-necessarily need extra manpower and time. Therefore, the regulation may be revisited accordingly.

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 87 (34. SYSTEM RESTORATION)	(34)(4) Simulation studies shall be carried out by each user in coordination with RLDC for preparing, reviewing and updating the restoration procedures considering the following: (a) Black start capability of generator; (b) Ability of black start generator to build cranking path and sustain island; (c) Impact of block load switching in or out; (d) Line/transformer charging; (e) Reduced fault levels; (f) Protection settings under restoration condition.	As per the proposed regulations of draft IEGC, the mock black start exercises by the generators, line charging and other activities to be done through simulation. In this regard, it is to submit that these mock exercises are being performed by the generators as & when asked by the RLDC/RPC. Therefore, the simulation study of same may not be required. In view of above, it is proposed that the proposed regulation may be reviewed accordingly.
Page No. 88 (34: System Restoration)	(34)(9) Any entity extending black start support by way of injection of power as identified in clause (6) of this Regulation shall be paid for actual injection @ 110 % of normal rate of charges for deviation in accordance with DSM Regulations for the last block in which the grid was available.	The Draft IEGC introduced various types of Ancillary services including Primary Reserve Ancillary Services (PRAS) like ramp-up/ramp-down, voltage control, black start etc. The proposed regulation has incentivised the black start service. It is proposed that other PRAS like *ramp-up/ramp-down, reactive power support, voltage support etc. may also be considered for incentive.*
Page No. 99 (39. REACTIVE POWER MANAGEMENT)	(39)(9) Hydro and gas generating units having capability shall operate in synchronous condenser mode operation as per instructions of RLDC or SLDC of the respective control area. Standalone synchronous condenser units shall operate as per instructions of RLDC or SLDC, as per respective control area.	Capable Hydro/Gas generators are being operated under condenser mode operations. However, the generators are not being incentivized since the mechanism to incentivize the condenser mode operations are not available in regulations. Therefore, it is proposed that the services for operation of Condenser Mode may be incentivized suitably so that the participation in the same is increased.

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
CHAPTER-7 (SCHEDULING AND DESPATCH CODE)		
Page no. 108 (45. GENERAL PROVISIONS)	(45) (8) Declaration of Declared Capacity by Regional entity generating stations (a) The regional entity generating station shall declare ex-bus Declared Capacity, limited to 100% MCR, on day ahead basis as per provisions of Regulation 47 of these regulations. Provided that in case of REGS or ESS the available capacity shall be declared by such regional entity generating station.	In the existing, IEGC under the regulation "6.5 Scheduling and Despatch procedure for long-term access, Medium – term and short-term open access", the following regulation for hydro generating stations are provided: *12. Run-of-river power station with pondage and storage type power stations are designed to operate during peak hours to meet system peak demand. Maximum capacity of the station declared for the day shall be equal to the installed capacity including overload capability, if any, minus auxiliary consumption, corrected for the reservoir level. The Regional Load Despatch Centers shall ensure that generation schedules of such type of stations are prepared and the stations dispatched for optimum utilization of available hydro energy except in the event of specific system requirements/constraints.* The proposed draft regulation, limits the declaration by the generating stations upto 100% MCR, which is not appropriate. The generating station can declare based on the availability of fuel/source of energy and capability of machines. Therefore, this regulation may be reviewed as under: *"The regional entity generating station shall declare ex-bus Declared Capacity, limited to 100% MCR or installed capacity including overload capability, if any, minus auxiliary consumption (depending on availability of fuel/inflow) on day ahead basis as per provisions of Regulation 47 of these regulations. "*
Page no. 109 (45. GENERAL PROVISIONS)	(45)(9) Ramping Rate to be Declared for Scheduling: (a) The regional entity generating station shall declare the ramping rate along with the declaration of day-ahead declared capacity in the following manner, which shall be accounted for in the preparation of generation schedules:	Ramping rate of hydro power station is not a variable parameter. The ramping rate of each generating unit may be obtained once in a year and the same can be tested, if required and data can be used by RLDC for corresponding year. Daily punching of Ramp-rate may not be required. Accordingly, the proposed regulation may be reviewed.

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 116 (47. Procedure for Scheduling and Despatch for Interstate Transactions)	**(47)(1)(a) Declaration of Declared Capacity by generating stations:** (ii) ..... (d) Time block-wise Ramp up rate (MW/min) for on-bar capacity; (e) Time block-wise Ramp down rate (MW/min) for on-bar capacity; (f) Unit-wise forbidden zones in MW and percentage (%) of ex-bus installed capacity	Ramping rate and Forbidden zone of hydro power station is not a variable parameter. The ramping rate and Forbidden zone of each generating unit may be obtained once in a year and the same can be referred by RLDC in subsequent period. Daily punching of Ramp-rate and Forbidden zone while punching the daily DC may lead extra time. **Accordingly, the regulation may be reviewed so that daily submission of following are not required by Hydro generators:** (d) Time block-wise Ramp up rate (MW/min) for on-bar capacity; (e) Time block-wise Ramp down rate (MW/min) for on-bar capacity; (f) Unit-wise forbidden zones in MW and percentage (%) of ex-bus installed capacity;
Page no. 116 (47. Procedure for Scheduling and Despatch for Interstate Transactions)	Issuance of day-ahead schedule: RLDC shall convey the following for the next day to all regional and other entities involved in inter-state transactions after each step of finalisation of schedules for GNA grantees and T-GNA grantees: (i) The ex-power plant schedule to each of the regional entity generating station, in MW for different time blocks along with breakup of schedule for each beneficiary or buyer. (ii) The "net drawal schedule" for each regional entity in MW for each time block. (iii) All requisitions and schedules shall be rounded off to the nearest two decimals at each control area boundary for each of the transaction and shall have a resolution of 0.01 MW.	The regulation does not provide the time by which RLDC shall issue the final day ahead schedule hence it is proposed to add following clause to these regulations: **The RLDC shall issue the final schedule to all regional and other entities involved in inter-state transactions by 23:00 Hrs of 'D-1' day.**

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page No. 127-128 (Power to revise Schedule)	(47)(3)(b) In the event of bottleneck in evacuation of power due to outage, failure or limitation in the transmission system or any other constraint necessitating reduction in generation, the RLDC shall revise the schedules. Provided that generation and drawal schedules revised by the Regional Load Despatch Centre shall become effective from 7th block or 8th block depending on time block in which schedule has been revised as first time block.	The following provisions are given in case of bottleneck in evacuation system under clause no. 16 of Chapter 6.5 (Scheduling and Despatch procedure for long term access, Medium term and short-term open access): *"16. In the event of bottleneck in evacuation of power due to any constraint, outage, failure or limitation in the transmission system, associated switchyard and substations owned by the Central Transmission Utility or any other transmission licensee involved in inter-state transmission (as certified by the RLDC) necessitating reduction in generation, the RLDC shall revise the schedules which shall become effective from the 4th time block, counting the time block in which the bottleneck in evacuation of power has taken place to be the first one. Also, during the first, second- and third-time blocks of such an event, the scheduled generation of the ISGS shall be deemed to have been revised to be equal to actual generation, and the scheduled drawals of the beneficiaries shall be deemed to have been revised accordingly".* As per prevailing regulation, in case outage of Transmission line or due to unavailability of evacuation path, the RLDC revise the schedules of generators, which shall become effective from the 4th time block, counting the time block in which the bottleneck in evacuation of power has taken place to be the first one. Also, during the first, second- and third-time blocks of such an event, the scheduled generation of the ISGS is revised to be equal to actual generation. Due to such revision in schedules, the generators are not being penalized due to disturbance in transmission lines. However, in the draft regulation, it is proposed that the schedule of generators shall be revised from 7th or 8th time block, in the event of bottleneck in evacuation of power due to outage of transmission lines, which will lead to additional DSM penalty to the generators upto 7th or 8th time block. This DSM penalty to generator is not correct as tripping of transmission is not under the control of generators. Therefore, it is proposed that this clause may be reviewed as under: *"(b)In the event of bottleneck in evacuation of power due to outage, failure or limitation in*

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		the transmission system or any other constraint necessitating reduction in generation, the RLDC shall revise the schedules. *The revision in schedule shall become effective from the 7th/8th time block, counting the time block in which the bottleneck in evacuation of power has taken place to be the first one. Also, during the first to seventh/eighth time blocks of such an event, The scheduled generation of the ISGS shall be deemed to have been revised to be equal to actual generation, and the scheduled drawals of the beneficiaries shall be deemed to have been revised accordingly".*

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
	Additional Proposal	DSM Charges levy to the generators due to outages of machines in exceptional circumstances of increased silt due to cloud burst and heavy rains etc. Clause (18) of Regulation 6.5 of Part 6 of the Principal Regulations of IEGC, is given below, wherein, the regulations for schedule revision is given: *"18. Revision of declared capability by the ISGS(s) having two part tariff with capacity charge and energy charge and requisition by beneficiary (ies) for the remaining period of the day shall also be permitted with advance notice. Any revision in schedule made in odd time blocks shall become effective from 7th time block and any revision in schedule made in even time blocks shall become effective from 8th time block, counting the time block in which the request for revision has been received by the RLDCs to be the first one."* As per above regulations, the schedule of generators is being revised from 7th or 8th time block, in case the machines are forced to shut down due to high silt in water, which may occur due to flash flood or cloud burst etc. In this regard, it submitted that protocols are followed for regular measurement of silt and in case, the silt content is increased suddenly due to cloud burst and heavy rain accordingly to safeguard the underwater components and to avoid entry and accumulation of silt in Head Race Tunnel, hydro generator needs shutdown. Further, it is also to be submitted that an agenda on "Levy of DSM charges under exceptional circumstances of increased silt, cloud burst etc." was discussed during 198th OCC Meeting of NRPC, the following is recorded in the Minutes (Copy of Minutes attached): ***"After discussing the matter, the OCC forum took cognizance of the fact that the issue of DSM charges under exceptional circumstances of increased silt, cloud burst, etc is genuine concern of Hydro Generators. However, OCC forum was of the view that as the***

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		matter is related to the regulations of the Central Commission, hence necessary petition may be filed by the Hydro generators before the Commission". In view of above difficulties, it is proposed to incorporate the following regulations in the upcoming IEGC 2022, to safeguard the generating plants in long run under exceptional condition such as high silt due to heavy rain, cloud burst: ***"In the event of high silt due to heavy rain, cloud burst or any other constraint, which is beyond the control of generators, necessitating reduction in generation, the RLDC shall revise the schedules as per given below.*** ***"The revision in schedule shall become effective from the 7th/8th time block,*** *counting the time block in which the bottleneck for generation due to high silt has taken place to be the first one. Also, during the first to seventh/eighth time blocks of such an event, the scheduled generation of the ISGS shall be deemed to have been revised to be equal to actual generation, and the scheduled drawals of the beneficiaries shall be deemed to have been revised accordingly".*

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Regulation No/Page No.	Proposed in Draft IEGC	Comments of NHPC
Page no. 131 (Revision in Schedule)	(47)(5)(f) Energy and deviation settlement for the period of any grid disturbance causing disruption in injection or drawal of power shall be done by the concerned RPC(s) in consultation with the concerned RLDC(s). Provided that generation and drawal schedules revised by the Regional Load Despatch Centre shall become effective from 7th block or 8thblock depending on block in which schedule has been revised as first block.	The existing clause in prevailing IEGC under "6.5 Scheduling and Despatch procedure for long-term access, Medium – term and short-term open access" for revision in schedule during grid disturbance is as under *17. In case of any grid disturbance, scheduled generation of all the ISGS and scheduled drawal of all the beneficiaries shall be deemed to have been revised to be equal to their actual generation/drawal for all the time blocks affected by the grid disturbance. Certification of grid disturbance and its duration shall be done by the RLDC.* **This regulation may be retained in place of proposed regulation (f) of (47)(5).**
Page no 161 Payment for Reactive Energy Exchanges on State Owned Lines Annexure-4	Note: I. Net VArh and net payment may be positive or negative. II. In case X1 is positive and X3 is negative, or vice-versa, there shall be no payment under (i) above. III. In case X2 is positive and X4 is negative, or vice-versa, there shall be no payment under (ii) above.	From Note, it seems that no payment shall be made for reactive compensation whether X1 is greater than X3 or vice versa, which may be reviewed.
	Additional Point	In the existing, IEGC under the regulation "6.5 Scheduling and Despatch procedure for long-term access, Medium – term and short-term open access", the following regulation for hydro generating stations are provided: *"11. Since variation of generation in run-of-river power stations shall lead to spillage, these shall be treated as must run stations. All renewable energy power plants, except for biomass power plants, and non-fossil fuel-based cogeneration plants whose tariff is determined by the CERC shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order Despatch' principles.* **It is proposed that the above regulation may be incorporated under the Chapter "SCHEDULING AND DESPTCH CODE".**

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