सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उदयम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref. No. CTU/07/IEGC

Date: 27/09/2022

Shri Harpreet Singh Pruthi
Secretary,
Central Electricity Regulatory Commission
3rd & 4th Floor, Chanderlok Building,
36, Janpath, New Delhi – 110 001

Subject: Comments / Observations on Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022- reg

Dear Sir,

This is with reference to draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022 published on its website for comments inviting comments/ suggestions/ objections from the stakeholders.

In this regard, comments/observations from CTU is enclosed herewith.

Thanking you,

Yours faithfully,

Ashok Pal

(Ashok Pal)
Dy. COO

CTU Comments on Draft Indian Electricity Grid Code 2022

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
5(4)(a)	**Chapter-2 Resource Planning Code**	**Transmission resource adequacy planning** (a) CTU shall undertake assessment and planning of the inter-State transmission system as per the provisions of the Act and shall inter alia take into account: (i) adequate power transfer capability across each flow-gate; (ii) import and export capability for each control area; (iii) import and export capability between regions; and (iv) cross-border import and export capability.	**Transmission resource adequacy planning** (a) CTU shall undertake assessment and planning of the inter-State transmission system as per the provisions of the Act, CERC Regulations, CEA planning Criteria, CEA Technical standards for Connectivity etc. and shall inter alia take into consideration import and export capability between regions;	Power transfer capability across flow gate/control area is an operational aspect and is monitored by respective RLDCs. Transmission planning of ISTS is carried out in terms of Act, Regulations, CEA Planning Criteria, CEA Technical Standards for Connectivity etc. Transmission planning inter-alia includes the transfer capability between regions and cross border. Cross border transmission systems are developed under Government-to-Government Agreement / Memorandum of Understanding (MoU). The capacity of the transmission links is finalized in in Joint Working Group (JWG)/ Joint Steering Committee (JSC) based on the Power transfer requirement between the both countries.

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
9	**Chapter -3 Connection Code**	**Connectivity Agreement** 1) In case of users seeking connectivity to the ISTS under GNA Regulations, Connectivity Agreement shall be signed between such users and the CTU.		The proposed detailed process along with the requisite formats for technical data to be submitted by Connectivity grantee for signing Connectivity Agreement are included as a part of Detailed Procedure for CERC (Connectivity and GNA to ISTS) Regulation, 2022.
		2) In case of an inter-State transmission licensee, Connectivity Agreement shall be signed between such licensee and CTU after the award of the project and before physical connection to ISTS.	2) In case of an inter-State transmission licensee***/STU***, Connectivity Agreement shall be signed between such licensee/***STU*** and CTU after the award of the project and before physical connection to ISTS.	The procedure for signing of Connectivity Agreement and submission of technical data by Inter-state Transmission licensee before physical connection to the grid would be submitted to CERC and uploaded in the CTU website.
14(3)	**Chapter -4 Protection Code**	**Protection Settings** RPCs shall: (b) carry out detailed system studies, twice a year, for protection settings and advise modifications / changes, if any, to the CTU and to all users and STUs of their respective regions.	RPCs shall: (b) carry out detailed system studies, twice a year, for protection settings and advise modifications / changes, if any, to the ~~***CTU***~~ ***Generators/ISTS licensee*** and to all users and STUs of their respective regions.	Modifications in Protection settings is an operational requirement and is being coordinated by RPCs with Generators/ISTS licensee.

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
27 (1)(c)	**Chapter -5 Commissioning and commercial operation code**	**Declaration of Commercial Operation (DOCO) And Commercial Operation Date (COD)** **(C) Transmission System** (i)……Provided also that in case a transmission system or an element thereof: executed under RTM is prevented from regular service on or after the scheduled COD for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system of other transmission licensee, the transmission licensee shall approach the Commission through an appropriate petition along with a certificate from the CTU to the effect that the transmission system is complete as per the applicable CEA Standards, for approval of the commercial operation date of such transmission system or an element thereof: Provided also that in case of inter-State Transmission System executed through Tariff Based Competitive Bidding, the	(i)……Provided also that in case a transmission system or an element thereof: executed under RTM is prevented from regular service on or after the scheduled COD for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system of other transmission licensee, the transmission licensee shall approach the Commission through an appropriate petition along with a certificate from the ~~**CTU**~~ **CEA** to the effect that the transmission system is complete as per the applicable CEA Standards for approval of the commercial operation date of such transmission system or an element thereof: Provided also that in case of inter-State Transmission System executed through Tariff Based Competitive Bidding, the transmission licensee may declare deemed COD of the ISTS	CEA issues certificate to transmission licensee itself for fulfilment of applicable CEA standards as per existing practices. **For TBCB:**

<table>
<tr><th>Reg. No.</th><th>Chapter Name</th><th>CTU's function in draft IEGC</th><th>Proposed Amendments</th><th>Remarks</th></tr>
<tr><td></td><td></td><td>transmission licensee may declare deemed COD of the ISTS in accordance with the provisions of the Transmission Service Agreement after obtaining a certificate from the CTU to the effect that the transmission system is complete as per the specifications of the bidding guidelines and applicable CEA Standards.</td><td>in accordance with the provisions of the Transmission Service Agreement after obtaining a certificate as follows:

1. From CEA to the effect that the transmission system is completed as per the applicable CEA Standards.

2. from CTU to the effect that the transmission system is completed as per the specifications of the bidding guidelines.</td><td>CEA may certify for compliance of applicable CEA Standards as per existing practices.

CTU may certify only the Scope of work and fulfilment of specifications of the bidding guidelines.</td></tr>
<tr><td>29(3)</td><td>Chapter -6 Operating Code- System security</td><td>Maintenance of grid elements shall be carried out by the respective users, transmission licensees, STUs and CTU in accordance with the provisions of the Central Electricity Authority (Grid Standards) Regulations, 2010…..</td><td>Maintenance of grid elements shall be carried out by the respective users, transmission licensees, STUs <s>and CTU</s> in accordance with the provisions of the Central Electricity Authority (Grid Standards) Regulations, 2010…..</td><td>CTU is not tasked with carrying out maintenance of Grid Elements</td></tr>
<tr><td>29 (15)</td><td></td><td>NLDC, RLDCs, SLDCs, CTU, STUs and users shall operate in a manner to ensure that the steady state grid voltage as per the Central Electricity Authority (Grid Standards) Regulations, 2010 remains within the following operating range:
<table>
<tr><th colspan="3">Voltage (kV rms)</th></tr>
<tr><td>Nominal</td><td>Maximum</td><td>Minimum</td></tr>
<tr><td>765</td><td>800</td><td>728</td></tr>
<tr><td>400</td><td>420</td><td>380</td></tr>
<tr><td>220</td><td>245</td><td>198</td></tr>
</table></td><td>NLDC, RLDCs, SLDCs, <s><u>CTU, STUs</u></s> and users shall take all possible measures to ensure that the steady state grid voltage as per the Central Electricity Authority….

230kV voltage level may also be introduced.</td><td>CTU and STUs are only planning agency and not involved in grid operation.</td></tr>
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<tr><td>132</td><td>145</td><td>122</td></tr>
<tr><td>110</td><td>121</td><td>99</td></tr>
<tr><td>66</td><td>72</td><td>60</td></tr>
<tr><td>33</td><td>36</td><td>30</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td>32(3)</td><td></td><td>OUTAGE PLANNING
(c) RPCs shall finalize the outage plans in consultation with NLDC and respective RLDCs. The final outage plan and the final LGBR shall be intimated to NLDC, concerned RLDC, Users, STUs, CTU, the generating stations connected to the ISTS.

The final outage plan and the final LGBR shall be made available on the websites of the respective users, RPCs, RLDCs and NLDC.

(d) The timeline for Outage Planning Process shall be as follows:
<table>
<tr><th>Activity</th><th>Agency</th><th>Cut-off date</th></tr>
<tr><td>Submission of proposed outage plan for the next financial year to RPC with the earliest start date and latest finishing date</td><td>CTU, STUs, transmission licensees and generating stations</td><td>31st October</td></tr>
</table>
</td><td>(c) RPCs shall finalize the outage plans in consultation with NLDC and respective RLDCs. The final outage plan and the final LGBR shall be intimated to NLDC, concerned RLDC, Users, STUs, <s>CTU</s>, the generating stations connected to the ISTS.

The final outage plan and the final LGBR shall be made available on the websites of the respective users, RPCs, RLDCs and NLDC.

(d) The timeline for Outage Planning Process shall be as follows:
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</table>
</td><td>Outage planning for transmission system is carried out for approval of outages in real time operation by RPC in consultation with NLDC/RLDCs.</td></tr>
</table>

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<table>
<tr><td>Submission of LGBR of the control area to RPC for both peak and off-peak scenarios</td><td>SLDC</td><td>31st October</td></tr>
<tr><td>Publishing draft LGBR and draft outage plan of regional grid for next financial year on the concerned RPC's website for inviting suggestions, comments, objections etc. of stakeholders.</td><td>RPC</td><td>30th November</td></tr>
<tr><td>Publishing final LGBR and final outage plan of regional grid for next financial year on the concerned RPC's website</td><td>RPC</td><td>31st December</td></tr>
</table>
(f) All users, CTU, STUs, licensees shall follow the annual outage plan. If any deviation is required, the same shall be allowed only with prior permission of the
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</table>
(f) All users, ~~CTU~~, STUs, licensees shall follow the annual outage plan. If any deviation is required, the same shall be allowed only with prior permission of the concerned RPC, which shall consult the concerned RLDC and NLDC.
</td>
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</tr>
</table>

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
		concerned RPC, which shall consult the concerned RLDC and NLDC.		
34(2)		**System Restoration** (2) Each RLDC, in consultation with NLDC, CTU, and the concerned STUs, SLDCs, users and RPC, shall prepare detailed procedures for restoration of the regional grid under partial and total blackout which shall be reviewed and updated annually by the concerned RLDC.	(2) Each RLDC, in consultation with NLDC, CTU, and the concerned STUs, SLDCs, users, RPC ***and ISTS Licensee*** shall prepare detailed procedures for restoration of the regional grid under partial and total blackout which shall be reviewed and updated annually by the concerned RLDC.	Inter-state Transmission licensees may also be involved in preparation of system restoration procedure.
37(2)(g)	POST DESPATCH ANALYSIS – Event Reporting	The implementation of the recommendations of final report shall be monitored in the protection sub-committee of the RPC. NLDC shall disseminate the lessons learnt from each event to all the RPCs for necessary action in the respective regions.	The implementation of the recommendations of final report shall be monitored in the protection sub-committee of the RPC. NLDC shall disseminate the lessons learnt from each event to all the RPCs for necessary action in the respective regions. **Further, NLDC shall also disseminate such information to CTU concurrently and also through Operational feedback.**	It is suggested that feedback of lessons learnt from Grid disturbances/Incidences may also be given to CTU for information purposes to enable better transmission system planning.
47.9	**Procedure for Scheduling and Despatch for Inter-State**	**(9) Energy Metering and Accounting** (a) The CTU shall be responsible for installation, operation and periodic calibration of Interface Energy Meters (IEMs) covering all the ISTS interface points, points of connections between the regional entities, cross border entities and other identified points for recording of actual	(a) The CTU **shall provide** special energy meters/Interface Energy Meters to all transmission licensees/ GENCO's/ Utilities for all inter connections between the regional entities and other identified points for recording of actual net MWh interchanges and MVArh drawls.	

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
		active and reactive energy interchanged in each time-block through those points.		
		(d) CTU shall provide access to such metering data to concerned RLDC and SLDCs.	The clause may be deleted	As per CEA metering regulation, **"meter data recording and sending to RLDC are the responsibilities of respective Generation company or licensee in whose premises the meters are installed"**. Moreover it is stated that, the metering data is either stored in the meter or local PC at the substation premises. CTU does not have any access to this data.
		(e) CTU shall be responsible for installation of Automatic Meter Reading and shall ensure that all IEMs not capable of having the facility of AMR are phased out within two (2) years on effectiveness of these regulations.	(e) CTU shall be responsible for installation of Automatic Meter Reading.	Installation of AMR would automatically include phasing out of AMR non-compliant meters.
		(f) Entities in whose premises the IEMs are installed shall be responsible for (ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility	(f) Entities in whose premises the IEMs are installed shall be responsible for (ii.a) **Ensuring healthiness of the AMR facility within the substation.** (ii.b) taking weekly meter readings for the seven days period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings	In case of AMR facility, the substation owner shall ensure data transmission through AMR system.

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
			have not been transmitted through automatic remote meter reading (AMR) facility	
48	**Cyber Security**	(2) All users, NLDC, RLDCs, SLDCs, CTU and STUs shall have in place, a cyber security framework in accordance with Information Technology Act, 2000; CEA (Technical Standards for Connectivity) Regulations, 2007; CEA (Cyber Security in Power Sector) Guidelines, 2021 and any such regulations issued from time to time, by an appropriate authority, so as to support reliable operation of the grid.	2) All users, NLDC, RLDCs, SLDCs, CTU, STUs, ***Inter-State Transmission Licensee and ISGS-GENCOs*** shall have in place, a cyber security framework in accordance with Information Technology Act, 2000; CEA (Technical Standards for Connectivity) Regulations, 2007; CEA (Cyber Security in Power Sector) Guidelines, 2021 and any such regulations issued from time to time, by an appropriate authority, so as to support reliable operation of the grid.	
52	**Monitoring and Compliance code**	**Assessment of Compliances** The performance of all users, CTU, STUs, NLDC, RLDCs, SLDCs and RPCs with respect to compliance of these regulations shall be assessed periodically.	The performance of all users, CTU, STUs, NLDC, RLDCs, SLDCs, RPCs, ***Inter-state Transmission Licensee and ISGS-GENCOs*** with respect to compliance of these regulations shall be assessed periodically.	
53		**(2) Self –Audit:** (a) All users, CTU, STUs, NLDC, RLDCs, RPCs and SLDCs shall conduct annual self-audits to review compliance of these regulations and submit the reports by 31st July of every year. **(3) Independent Third-Party Compliance Audit:**	(a) All users, CTU, STUs, NLDC, RLDCs, RPCs ***Inter-state Transmission Licensee, ISGS-GENCOs*** and SLDCs shall conduct annual self-audits to review compliance of these regulations and submit the reports by 31st July of every year. **(3) Independent Third-Party Compliance Audit:**	

Reg. No.	Chapter Name	CTU's function in draft IEGC	Proposed Amendments	Remarks
		The Commission may order independent third-party compliance audit for any user, CTU, NLDC, RLDC and RPC as deemed necessary based on the facts brought to the knowledge of the Commission.	The Commission may order independent third-party compliance audit for any user, CTU, NLDC, RLDCs, RPCs, ***Inter-state Transmission Licensee, ISGS-GENCOs*** as deemed necessary based on the facts brought to the knowledge of the Commission.	

Annexure-7

Entity Responsible	Reporting Requirement and Frequency	Proposed Amendments	Remarks
A. Reporting Requirements			
CTU	• All India transmission review (yearly)	• All India transmission review (yearly)	• In accordance with the Electricity Rules, 2021, CTU is drawing up plan for ISTS for up to next 5 years on rolling basis every year in consultation with Stakeholder including operational feedback from POSOCO. The network plan is reviewed on half-yearly basis. Toward this, the ISTS Planning Procedure has already been prepared and available on CTU website.
	• Planned inter-regional and ISTS-STU power transfer capability for the next 3-5 years(yearly)	• Planned inter-regional ~~and ISTS-STU~~ power transfer capability for the next 3-5 years(yearly)	• Declaration of Planned inter-regional power transfer capability for upcoming 4 years is done by CTU on regular basis considering the expected commissioning date of inter-regional transmission system and the same is available at CTUIL website. • In terms of regulation 5(4), STU shall undertake assessment and planning of the intra-State transmission system as per the provisions of the Act and shall inter alia take into account: (i) import and export capability across ISTS and STU interface; and (ii) adequate power transfer capability across each flow-gate.
B. Procedure Drafting Requirements			
CTU	• <u>All India transmission review</u>	• <u>All India transmission review</u>	• In accordance with the Electricity Rules, 2021, CTU is drawing up plan for ISTS for up to next 5 years on rolling basis every year in consultation with Stakeholder including operational feedback from POSOCO. The network plan is reviewed on half-yearly basis. Toward this, the ISTS Planning Procedure has already been prepared and available on CTU website.
	• Planned inter-regional and ISTS-STU power transfer	• <u>Planned</u> inter-regional ~~and ISTS-STU~~ power transfer	• Declaration of Planned inter-regional power transfer capability for upcoming 4 years is done by CTU on regular basis considering the

Entity Responsible	Reporting Requirement and Frequency	Proposed Amendments	Remarks
	capability for the next 3-5 years	capability for the next 3-5 years	expected commissioning date of inter-regional transmission system and the same is available at CTUIL website. • In terms of regulation 5(4), STU shall undertake assessment and planning of the intra-State transmission system as per the provisions of the Act and shall inter alia take into account: (i) import and export capability across ISTS and STU interface; and (ii) adequate power transfer capability across each flow-gate.