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STAKEHOLDER COMMENT

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Regulation Details

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Attachment

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Comment		SRPC Comments on Draft IEGC Regulations-23.08.2022.pdf

SRPC secretariat Comments on Draft IEGC, Regulations 2022

Regulation No/page No	Existing	Suggested	Remarks
3(1) 1/ Page No.5	Act: means the Electricity Act, 2003;	Act: means the Electricity Act, 2003 including amended thereof;	To take care of amendments
3(8)/Page 6	'Available Transfer Capability' or 'ATC' means power transfer capability of the intercontrol area transmission system or across electrical regions or between ISTS	Available Transfer Capability' or 'ATC' means power transfer capability of the intercontrol area and bid area transmission system or across electrical regions or between ISTS	Generally ATC at Regional level is computed for Bid area
3(16), (17),(18) & (19) Page 7-8		Include at the end 'including the Amendments thereof'	As many of the Regulations have been amended and to avoid any scope of legal interpretation
3(27) Page 9	'Connectivity' means the state of getting connected to the interState transmission system by a generating station including a captive generating plant, a bulk consumer or an Inter-State Transmission licensee;	'Connectivity' means the state of getting connected to the inter-State transmission system as per CERC GNA Regulations ;	To align with CERC GNA Regulations as this definition does not cover Intra-state network connectivity to ISTS
3(31) Page 9	'Declared Capacity' or 'DC' in relation to a generating station means, the capability to deliver ex-bus electricity in MW declared by such generating station in relation to any time-block of the day as defined in the Grid Code or whole of the day, duly taking into account the availability of	Declared Capacity' or 'DC' in relation to a generating station means, the capability to deliver ex-power plant electricity in MW declared by such generating station in relation to any time-block of the day as defined in the Grid Code or whole of the day, duly taking into account the availability of	At the interface/Metering point may be included because any issue in switchyard of Generating Station may impose restriction on DC available for dispatch (In line with 2(30) of EA Act 2003 definition). Further only

	fuel or water, and subject to further qualification in the relevant regulations;	fuel or water, at the interface/metering points, after excluding the Primary response margins and subject to further qualification in the relevant regulations;	despatchable power should be allowed as DC as more and more RE is integrated there are inertia issues and Primary Response is desired always.
3(34) Page 10	'Despatch Schedule' means the ex-power plant net MW and MWh output of a generating station, scheduled to be exported to the Grid from time to time;	'Despatch Schedule' means the ex-power plant net MW and MWh output of a generating station, scheduled to be injected to the Grid in a time block and from time to time;	For generating station generally injection schedule is used and not export.
3(38) Page 10	'Drawal Schedule' means the summation of the station wise ex-power plant drawal schedules from all ISGS and drawal from/injection to regional grid under GNA and T-GNA;	'Drawal Schedule' means drawal schedule of entity at ISTS interface points under GNA Regulations;	The power can be availed from ISG Stations, Bilateral transactions, Collective transaction, open access etc
3(44) Page 11	'Ex-Power Plant' means net MW or MWh output of a generating station, after deducting auxiliary consumption and transformation losses;	'Ex-Power Plant' means net MW or MWh output of a generating station, at metering interface point as per CEA metering Regulations.	In line with CEA Metering Regulations to avoid ambiguity between Ex-bus and DC declaration/ actual injection measurement
3(46) Page 11	'Flat frequency control' means a mechanism for correcting ACE by factoring in only the frequency deviation and ignoring the deviation of net actual interchange from net scheduled interchange;	'Flat frequency control' means a mechanism for correcting ACE by factoring in only the frequency deviation and ignoring the other components of ACE	ACE equation has other components besides frequency and tie-line deviations
3(47) Page 11	Flat tie-line control' means a mechanism for correcting ACE by factoring in only the deviation of net actual	Flat tie-line control' means a mechanism for correcting ACE by factoring in only the deviation of net actual interchange from net	ACE equation has other components besides frequency and tie-line deviations

	interchange from net scheduled interchange ignoring frequency deviation;	scheduled interchange and ignoring the other components of ACE;	
3(56) Page 13	'Generating Unit' means a) for all generating stations except solar photo voltaic, wind and hybrid stations,	'Generating Unit' means a) for all generating stations except solar photo voltaic, wind , hybrid stations and ESS (d) ESS	To cover ESS in the definition of Generating Unit
3(62) Page 14	'Grid Standards' means the standards specified by the Authority under clause (d) of the Section 73 of the Act;	Can be deleted	Covered at 2(16) in Draft IEGC
3(64) Page 15	'Inertia' means the contribution to the capability of the power system to resist changes in frequency by means of an inertial response from a generating unit, network element or other equipment that is coupled with the power system and synchronized to the frequency of the power system;	'Inertia' means the contribution to the capability of the power system to resist changes in frequency by means of an inertial response from a generating unit, network element or other equipment connected to the Grid.	Inertia can be given by BESS and by demand response also as it is linked with frequency
3(72) Page 15	'Minimum Turndown Level' means minimum station loading corresponding to the units on bar upto which a regional entity generating stations is required to be on bar on account of less schedule by its buyers or as per the direction of RLDC as detailed in Chapter 7 of this Code;	'Minimum Turndown Level' means minimum station loading corresponding to the units on bar upto which a regional entity generating stations is required to be on bar on account of less schedule by its buyers or as per the direction of RLDC as detailed in Chapter 7 of this Code and It will comply to Central Electricity Authority (Flexible operation of thermal power plants)	Minimum Turn Down Level should be at least what is specified by Central Electricity Authority (Flexible operation of thermal power plants) Regulations, 2022

		Regulations, 2022.	
3(79) Page 16	'On-Bar Declared Capacity' in relation to a generating station means the capability to deliver ex-bus electricity in MW from the units on-bar declared by such generating station in relation to any time block of the day or whole of the day, duly taking into account the availability of fuel and water and subject to further qualification in the relevant regulations;	On-Bar Declared Capacity' in relation to a generating station means the capability to deliver ex- power plant electricity in MW from the units on-bar declared by such generating station in relation to any time block of the day or whole of the day, as per metering points defined in CEA Metering Regulations, after excluding the Primary response margins duly taking into account the availability of fuel and water and subject to further qualification in the relevant regulations;	To avoid ambiguity between Ex-bus and what is defined in CEA Metering Regulations. Primary response is mandatory and needs to be provided. On-Bar should be dispatchable to the beneficiaries.
3(83)Page 17	'Primary Reserve' means the maximum quantum of power which will immediately come into service through governor action of the generator in the event of sudden change in frequency. This reserve response shall start instantaneously and attain its peak in less than 30 seconds, and shall sustain upto 5 minutes;	'Primary Reserve' means the maximum quantum of power which will immediately come into service through governor action or through any other resource of the generator in the event of sudden change in frequency. This reserve response shall start instantaneously and attain its peak in less than 30 seconds, and shall sustain upto 5 minutes;	In line with Ancillary Services Regulations, 2022 as Primary Reserve can maintained on demand side also
3(1) 90/ Page 18	Ramp Rate: means rate of change of a generating station output expressed in % MW per minute;	Ramp Rate: means rate of change of active power output of a generating station output expressed in % MW per minute;	For clarity
3(92) Page 18	'Reference contingency' means the maximum positive power deviation occurring instantaneously between generation and demand and considered	'Reference contingency' means the maximum positive and negative power deviation occurring instantaneously between generation and demand	As per the given definition, Positive Power Deviation means (Generation-Load > 0) for load through off condition.

	for estimation of reserves;	and considered for dimensioning of reserves.	But what about Negative Power Deviation (generation loss or sudden increase in load)? Hence the Reference contingency may be clearly defined in both Positive and Negative direction as cost would be associated with dimensioning which would be different in both the directions.
3(96) Page 19	Regional Energy Account' or 'REA' means accounts of energy and other parameters issued by the respective RPC for the purpose of billing and settlement of charges of ISGS and other users of the concerned region;	Regional Energy Account' or 'REA' means accounts of energy and other parameters issued by the respective RPCsecretariat for the purpose of billing and settlement of charges of ISGS, energy transacted through ISTS and other users of the concerned region;	Bilateral Transactions are also to shown in REA
3(97) Page 19	'Regional Transmission Account' or 'RTA' means accounts of transmission issued by the RPC Secretariat for the purpose of billing and settlement of transmission charges of ISTS in the concerned region;	Regional Transmission Account' or 'RTA' means accounts of transmission issued by the RPC Secretariat for the purpose of billing and settlement of transmission charges of ISTS in the concerned region in line with Sharing Regulations;	For clarity and in line with Sharing Regulations.
3(102) Page 19	'Secondary Reserve' 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	Secondary Reserve' means the maximum quantum of power which can be activated through Automatic Generation Control (AGC). This reserve response shall come into service starting from 30	Even if there is no frequency correction there may be tie-line correction as per ACE formula.

	reserve response shall come into service starting from 30 seconds and shall sustain up to 15 minutes;	seconds and shall sustain up to 15 minutes;	
3(1) 103/ Page 20	Secondary Reserve Ancillary Service or SRAS: means the Ancillary Service comprising SRAS Up and SRAS-Down, which is activated and deployed through secondary control signals.	Secondary Reserve Ancillary Service or SRAS: means the Ancillary Service comprising SRAS Up and SRAS-Down, which is activated and deployed through secondary control signals in accordance with the Ancillary Services Regulations	For clarity and In line with Ancillary Services Regulations, 2022
3 (114) Page 22	‘System State’ means the operational state of the power system in relation to the operational security limits which can be normal state, alert state, emergency state, extreme emergency state and restoration state;	‘System State’ means the operational state of the power system in relation to the operational security limits which can be normal state, alert state, emergency state, extreme emergency state and restorative state;	There is restorative state used in Draft Regulations
3(116) Page 22	‘Tertiary Reserve’ means the quantum of power which can be activated in order to take care of contingencies and to cater to the need for replacing secondary reserves.;	‘Tertiary Reserve’ means the quantum of power reserve (Up and down) which can be activated by Nodal Agency (as defined in Ancillary Services Regulations, 2022) in order to take care of contingencies and to cater to the need for replacing secondary reserves.;	For clarity and In line with Ancillary Services Regulations, 2022
3(119) Page 22	Total Transfer Capability’ or ‘TTC’ means the amount of electric power that can be transferred reliably over the inter-control area transmission system under a given set of operating conditions considering the effect of occurrence of the worst	Total Transfer Capability’ or ‘TTC’ means the amount of electric power that can be transferred reliably over the inter-control area/bid area transmission system under a given set of operating conditions considering the effect of occurrence of the worst credible contingency;	Generally TTC is defined for Bid Area also

	credible contingency;		
3(123)/ Page No. 23	'User' means and includes generating company, captive generating plant, energy storage system, transmission licensee including deemed transmission licensee, distribution licensee, solar park developer, wind park developer, wind-solar photo voltaic hybrid system, or bulk consumer whose electrical plant is connected to the grid at voltage level 33 kV and above;	'User' means and includes generating company, captive generating plant, energy storage system, transmission licensee including deemed transmission licensee, distribution licensee, REpowerpark developer[solar(SPPD)/wind(WPPD)/hybrid], solar park developer, wind park developer, wind-solar photo voltaic hybrid system, or bulk consumer whose electrical plant is connected to the grid at voltage level 33 kV and above;	RE power parks roles are envisaged in Draft IEGC like reactive power settlement

New Definitions to be added:

		Central Electricity Authority or CEA: Means a Government Statutory body established under section 3 of the Electricity (Supply) Act, 1948	CEA is used at many places in the Regulations.
		General Network Access or GNA: means open access to the ISTS granted under GNA Regulations;	GNA is used at many places in the Regulations.
		Temporary GNA or T-GNA: means open access to the ISTS granted as per the GNA Regulations;	T-GNA is used at many places in the Regulations.
		Grid Code: The Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, amended from time to time specifying the philosophy and	'Grid Code' is mentioned at many places in the Regulations and needs to be defined.

		responsibilities for planning, protection, operation of Indian Power System etc.	
		Planning Reserve Margin & National coincident peak may also be defined.	To have more clarity
5(2) (i) Page 24	Demand Forecasting: (i) Each distribution licensee within a State shall estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand response, for the next five (5) years starting from 1st April of the next year and submit the same to the STU by 31 st July every year.....	Demand Forecasting: (i) Each distribution licensee within a State shall estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants power requirements , energy efficiency measures, distributed generation and roof top solar effect on demand , demand response, for the next five (5) years starting from 1st April of the next year and submit the same to the STU (in consultation with SLDC) by 31 st July every year.....	Requirement of power by captive generator is required to assess the demand. Roof top solar assessment is required for computation of net demand of DISCOMs. For more accurate demand assessment by STU inputs of STU are required.
5(2) (ii) Page 24	STU, based on the demand estimates furnished by the distribution licensees of the concerned State as per clause (i) of this sub-Regulation and in co-ordination with all the distribution licensees, shall estimate by 30th August every year, the demand for the entire State duly considering the diversity for the next five (5) years starting from 1st April of the next year.	STU (in consultation with SLDC) based on the demand estimates furnished by the distribution licensees of the concerned State as per clause (i) of this sub-Regulation and in co-ordination with all the distribution licensees, shall estimate by 30th August every year, the demand for the entire State duly considering the diversity and losses for the next five (5) years starting from 1st April of the next year. The demand estimation shall include daily load curve (hourly basis) for a typical	For more accurate demand assessment by STU inputs of STU are required. To arrive Demand at STU periphery losses would be required to be added. For planning purpose with high RE ingress granularity of demand throughout the day is required.

		day of each month.	
5(3) (c) Page 26	Generation resource procurement planning (specifying procurement from resources under State control area and regional control area) shall be undertaken in different time horizons, namely long-term, medium term and short-term to ensure.....	Generation resource procurement planning (specifying procurement from resources under State control area and through ISTS) shall be undertaken in different time horizons, namely long-term, medium term and short-term to ensure.....	Power can be procured from Regional generators within and outside regional besides going to Power Exchanges
5(3) (d) Page 26	.....For this purpose, each STU on behalf of the distribution licensees in the State shall provide to NLDC by 30th September every year, .....	.....For this purpose, each STU(in consultation with SLDC) on behalf of the distribution licensees in the State shall provide to NLDC by 30th September every year,	For more accurate demand assessment by STU inputs of STU are required.
5(3) (e) Page 26	(e) Based on the information received under clause (iv) of this sub-Regulation and after considering inter alia the national level planning reserve margin,	(e) Based on the information received under clause (d) of this sub-Regulation and after considering inter alia the national level planning reserve margin,	Typographical correction
5(4)(a) Page No. 27	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:	CTU, in consultation with RPC(s)/CEA, 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:	RPC(s) & CEA may be consulted for planning of the ISTS.
5 (4)(a) and 5 (4)(b)			Time limits may be defined for CTU/STU.
9(2) Page No. 31	In case of an inter-State transmission licensee, Connectivity Agreement shall be signed between such licensee and CTU after the award of the	In case of an inter-State transmission licensee, Connectivity Agreement shall be signed between such licensee and CTU after the grant of final	As per the GNA Regulations, 10.3. Within 30 days of the intimation of connection details by the Nodal Agency

	project and before physical connection to ISTS.	connectivity by CTU and before physical connection to ISTS.	<i>under Regulation 10.2, Connectivity Agreement shall be signed between the Nodal Agency and the entity which has been intimated final grant of Connectivity. On signing of the Connectivity Agreement such entity shall become the Connectivity grantee.</i>
11(1) Page 31	Reliable speech and data communication systems shall be provided to facilitate necessary communication, data exchange, supervision and control of the grid by the NLDC, RLDC and SLDC in accordance with the CERC (Communication System for Inter-State Transmission of Electricity) Regulations, 2017 and the CEA Technical Standards on Communication	Reliable speech, data, protection and regulation/control communication systems shall be provided to facilitate necessary communication, data exchange, supervision and control of the grid by the NLDC, RLDC and SLDC in accordance with the CERC (Communication System for Inter-State Transmission of Electricity) Regulations, 2017, the CEA Technical Standards on Communication and the CEA Connectivity Regulations	For AGC and other Regulatory Measures implementation control may be required. CEA Connectivity Regulations may be included for clarity and strength.
11(3) (Page 32)	(3) All users, STU and participating entities in case of cross-border trade shall provide, in coordination with CTU, the required facilities at their respective ends as specified in the connectivity agreement. The communication system along with data links provided for speech	(3) All users, STU and participating entities in case of cross-border trade shall provide, in coordination with CTU, the required facilities at their respective ends as specified in the connectivity agreement. The communication system along with data links provided for speech protection and	For AGC and other Regulatory Measures implementation control may be required

	and real time data communication shall be monitored in real time by all users, CTU, STU, SLDC and RLDC to ensure high reliability of the communication links.	regulation/control and real time data communication shall be monitored in real time by all users, CTU, STU, SLDC and RLDC to ensure high reliability of the communication links.	
11) Page 32		New Clause may be added 11(4)ISTS and Intra-state transmission licensees, CTU & STU would share mutually their communication system for grid operation requirements like voice, data etc	To avoid redundant communication system and invariably communication system of state and ISTS would be required to be used by each other.
12(2) (a) Page 33	for proper co-ordination of protection system in order to isolate the faulty equipment and avoid unintended operation of protection system;	for proper co-ordination of protection system in order to isolate the faulty equipment and avoid unintended operation of protection system; (a1) further for providing requisite protection for safeguarding its system from the faults originating in the grid;	In line with CEA Connectivity Regulations
13/ Page No. 34		A new clause may be added: (5) Violation of the protection protocol of the region shall be brought to the notice of concerned RPC by RLDC/SLDC.	RLDC and SLDC are the aware of protection protocol violation.
14(2)(b)/ Page 34	(b) obtain approval of the concerned RPC for (i) any revision in settings, and (ii) implementation of new protection system;	(b) obtain concurrence of the concerned RPC for (i) any revision in settings, and (ii) implementation of new protection system for voltages 220 kV and above;	For speedy implementation of revised settings, concurrence may be sufficient.
14(3)(b) / Page 35	carry out detailed system studies, twice a year, for protection settings and	carry out detailed system studies, once a year, for protection settings and	In line with Regulation 14(1)

	advise modifications / changes, if any, to the CTU and to all users and STUs of their respective regions.	advise modifications / changes, if any, to the CTU and to all users and STUs of their respective regions.	
14(3)(c) Page 35	provide the database access to CTU and NLDC and to all users , RLDC, SLDCs, and STUs of the respective regions. The database shall have different access rights for different users.	provide user based access rights of the database to CTU and NLDC, RLDC, SLDCs, and STUs of the respective regions. The data available with NLDC, RLDC, CTU, SLDC & STU shall be shared with RPC for various Protection related studies. The data after approval from Protection Sub Committee with the privacy/security clauses may be shared with Users.	Right to access database by NLDC, RLDC, SLDC, CTU & STU can with some restriction and requirement based. All other users take data with some security and privacy clauses.
15(1)/ Page No. 35	(1) All users shall conduct internal audit of their protection systems annually, and any shortcomings identified shall be rectified and informed to their respective RPC.	(1) All users shall conduct internal audit of their protection systems annually, and any shortcomings identified shall be rectified. Audit report shall be shared with Respective RPC for 220 kV and above stations.	Audit Reports of SS at 220 kV and above may only be mandated for RPC jurisdiction.
15(6) Page 36	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:	Users shall submit the following protection performance indices of previous month and for cumulative period for the FY to their respective RPC on monthly basis for 220 kV and above system , which shall be reviewed by the RPC:	
15(7) Page 36	(7) Each user shall also submit the reasons for performance indices less than unity of individual element wise protection system to the respective	(7) Each user shall also submit the reasons for poor and sustained performance indices of individual element wise protection system to the	Definition of poor and sustained can be decided by respective RPC forum as less than unity will cover all incorrect operations.

	RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC.	respective RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC.	
15/ Page No. 36/37		A new clause may be added:	
16(2) Page 37	For the operational SPS, RPCs shall perform regular dynamic studies and mock testing for reviewing SPS parameters & functions, at least once in a year.	For the operational SPS, RLDC/SLDCs shall perform regular load flow and dynamic studies. NLDC/RLDC/SLDC/Users shall coordinate Mock testing for reviewing SPS parameters & functions, at least twice a year. Mock Test will be coordinated in the RPC forum.	Operational studies may be carried out by Load dispatchers. Mock Testing is carried out by Users in coordination with Load dispatchers.
16(3) Page 37	The users and SLDCs shall report about the operation of SPS within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.	The users and SLDCs shall report about the operation of SPS within 24hrs of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.	In line with DR/EL and FIRs.
19(4) Page 39	Drawal of start-up power shall be subject to payment of transmission charges as per Sharing Regulations;	Drawal of start-up power/ Injection of Infirm power shall be subject to payment of transmission charges as per Sharing Regulations;	As per Draft Sharing Regulations, First Amendment
19(7) Page 39	(7) RLDC shall stop the drawl of the start-up Power in the following events:	(7) RLDC shall stop the drawl of the start-up Power and Injection of Infirm power in the following events: ...	For more clarity on injection also (for RE absorption) Many entities are

		New clause (c) can be added (c)Default in payment in Regulatory Charges like DSM, RLDC charges etc	paying the Regulatory Charges in timely manner
20 (1) Page 40	Minimum turndown :level % of ex-bus capacity	Minimum turndown : level % of rated capacity	As per draft CEA (Flexible operation of thermal power plants) Regulations, 2022.
21(1) Page 40	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 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 (if applicable) of the generating stations wherever identified.	In some cases there may not be any beneficiary.
22 Page 41		New clause in the beginning can be added: All Generating stations need to comply with First Time Charging (FTC) procedure of RLDC along-with the requisite metering, telemetry and protection system being in service.	For strict implementation of FTC provisions.
22(1)(a) Page 41		New clause (iv) may be added Primary response capability will be demonstrated for 5 minutes at rated/derated capacity	If Primary Response is tested for 5 mins at derated /rated capacity there would be no need to further derate the capacity on sustained basis.
22(1)(b) Page 41-42	Where on the basis of the trial run, a thermal generating unit fails to demonstrate the unit capacity corresponding to MCR, the generating	Where on the basis of the trial run, a thermal generating unit fails to demonstrate the unit capacity corresponding to MCR, the generating	Primary response is to be demonstrated only for 5 minutes while capacity has to be demonstrated for 72 hrs.

	<p>company has the option to de-rate the capacity of the generating unit or to go for repeat trial run. If the generating company decides to de-rate the unit capacity, the de-rated capacity in such cases shall be not more than 95% of the demonstrated capacity, to cater for primary response</p>	<p>company has the option to de-rate the capacity of the generating unit or to go for repeat trial run.</p>	<p>If Primary Response is tested for 5 mins at derated /rated capacity there would be no need to further derate the capacity on sustained basis.</p>
<p>22(2)(a) Page 41</p>		<p>New clause (iv) may be added Primary response capability will be demonstrated for 5 minutes as per head availability subject to the condition that the same shall be demonstrated immediately when sufficient head is available after COD.</p>	<p>To ensure Primary response and would ensure the same as and when water availability is there.</p>
<p>22(2)(b) Page 42</p>	<p>Where on the basis of the trial run, a hydro generating unit fails to demonstrate the unit capacity corresponding to MCR, the generating company shall have the option to either de-rate the capacity or to go for repeat trial run. If the generating company decides to de-rate the unit capacity, the de-rated capacity in such cases shall be not more than 90% of the demonstrated capacity to cater for primary response</p>	<p>Where on the basis of the trial run, a hydro generating unit fails to demonstrate the unit capacity corresponding to MCR, the generating company shall have the option to either de-rate the capacity or to go for repeat trial run.</p>	<p>Primary response is to be demonstrated only for 5 minutes while capacity has to be demonstrated for 12 hrs. If Primary Response is tested for 5 mins at derated /rated capacity there would be no need to further derate the capacity on sustained basis</p>
<p>22(3)(d)</p>	<p>Successful trial run of a</p>	<p>Successful trial run of a</p>	<p>To take care of COD</p>

<p>Page 44</p>	<p>pumped storage plant shall mean one (1) cycle of turbogenerator and pumping motor mode as per the design capabilities upto the rated water drawing levels with the requisite metering, telemetry and protection system being in service.</p>	<p>pumped storage plant shall mean one (1) cycle of turbogenerator and pumping motor mode as per the design capabilities upto the rated water drawing levels with the requisite metering, telemetry and protection system being in service. If it is not possible to demonstrate the MCR (Generation/pumping) mode 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</p>	<p>and ensuring technical/operational requirements and when water availability is there.</p>
<p>22(3)(f) Page 44</p>	<p>Where on the basis of the trial run, solar / wind / storage / hybrid generating station fails to demonstrate its rated capacity, the generating company shall have the option to either to go for repeat trial run or de-rate the capacity subject to a minimum aggregated de-rated capacity of 50 MW. If the generating company decides to de-rate the unit capacity, the de-rated capacity in such cases shall be not more than 90% of the demonstrated capacity to cater for primary response.</p>	<p>Applicable Solar / wind / storage / hybrid generating stations will demonstrate Primary Mandated response as per CEA Connectivity Regulations/IEGC Provisions. Where on the basis of the trial run, solar / wind / storage / hybrid generating station fails to demonstrate its rated capacity, the generating company shall have the option to either to go for repeat trial run or de-rate the capacity subject to a minimum aggregated de-rated capacity of 50 MW.</p>	<p>Primary response is to be demonstrated only for short duration while capacity has to be demonstrated for 12 hrs/4hrs. If Primary Response is tested at derated /rated capacity there would be no need to further derate the capacity on sustained basis</p>
<p>22(3) Page</p>		<p>New clause (g) may be</p>	<p>Many new RE capacity</p>

44		added RLDC in consultation with RPC shall formulate procedure to facilitate trial integration of new RE units where infirm and firm power is mixed at common metering point.	is not coming up with dedicated metering, but this has to be facilitated and metering for short duration is not desirable.
24 (9)		A new clause may be added for Nuclear as per DAE procedure. However all the generator and switchyard requirement as in case of thermal generators need to be complied by Nuclear stations?	Nuclear Station may also be covered in COD declaration.
24(2)(b)(i) Page 45	Operation at a control load of fifty (50) percent of MCR as per the CEA Technical Standards for Construction for a sustained period of four (4) hours.	Operation at a control load of mandated Minimum Turn Down Level as per the CEA (Flexible operation of thermal power plants) Regulations & CEA Technical Standards for Construction for a sustained period of four (4) hours.	The provisions of CEA (Flexible operation of thermal power plants) Regulations needs to be complied.
24(2)(b)(ii) Page 45	Ramp-up from fifty (50) percent of MCR to MCR at a ramp rate of at least one (1) percent of MCR per minute and sustained operation at MCR for one (1) hour.	Ramp-up from Minimum Turn Down Level to MCR at a ramp rate as stipulated in CEA (Flexible operation of thermal power plants) Regulations and at least one (1) percent of MCR per minute and sustained operation at MCR for one (1) hour. Any higher ramp rate than as stipulated in CEA (Flexible operation of thermal power plants) Regulations and used for scheduling will also be demonstrated.	The provisions of CEA (Flexible operation of thermal power plants) Regulations needs to be complied. Higher Ramp Rate which is used for scheduling needs to be demonstrated.
24(2)(b)(iv))	Ramp-down from MCR to fifty (50) percent of MCR at	Ramp-down from MCR to Minimum Turn Down Level	The provisions of CEA (Flexible operation of

Page 46	a ramp rate of at least one (1) percent of MCR per minute.	at a ramp rate as stipulated in CEA (Flexible operation of thermal power plants) Regulations and at least one (1) percent of MCR per minute.	thermal power plants) Regulations needs to be complied. Higher Ramp Rate which is used for scheduling needs to be demonstrated.
24(2)(b)(v) Page 46	Primary response through injecting a frequency test signal with a step change of ± 0.1 Hz at 60%, 75% and 100% load.	Primary response through injecting a frequency test signal with a step change of ± 0.1 Hz at Minimum Turn Down Level, 75% and 100% load.	Primary response at full load and minimum Turn Down Level is required.
24(2)(b)(vi), 24(3)(b)(ii) 24(4)(b)(ii) Page 44-46	Reactive power capability as per the generator capability curve as provided by OEM considering over-excitation and under-excitation limiter settings.	Reactive power capability as per the generator capability curve as provided by OEM considering over-excitation and under-excitation limiter settings. It will be ensured that it complies with CEA's Connectivity Regulations. Justification for limiter settings would be furnished by OEM.	To ensure maximum reactive power support to System Operators. Many times OEMs are giving conservative limiter settings without technical justification.
24(2)(b) 24(3) (b) 24(4)(b) 24(5)(b) 24(6)(b) 24(7)(b) 24(8)(b) Page 44-48		New clause may be added OEM recommendations based on onsite tests and site conditions would be furnished to NLDC/RLDC.	Onsite test reports and OEM recommendations are generally used by System Operators.
24(3)(b) Page 46		New clauses (v) & (vi) may be provided (v) Sustained operation for at least for 1 hr at minimum unit loading specified by OEM. (vi) Ramping capability as specified by OEM.	These tests are also critical for system operation and need to be tested.
24(5)(b)	Reactive power capability	Reactive power capability	These tests are also

(ii) Page 47	as per OEM rating at the available irradiance or the wind energy, as the case may be	for various modes (pf, voltage, fixed VAR, any other if designed) as per OEM rating at the available irradiance or the wind energy, as the case may be. Night Mode Reactive power capability will also be tested on PPC, SCADA and local mode as applicable.	critical for system operation and need to be tested.
24(6)(b) (i) Page 47	Power output capability in MW and energy output capacity in MWh.	Power output capability in MW and energy output capacity in MWh and charging capability.	Charging capability of BESS also need to be tested.
24(6)(b) Page 47		A New Clause may be added: (iv) Grid-forming capability, wherever provided, in inverter based units that may be used as black start resource.	RE with BESS can be used for Black Start and for islanding mode of operation.
25(2) Page 49	After completion of successful trial run and receipt of documents and test reports as per Regulation 24 of these regulations, the concerned RLDC shall issue a certificate to that effect to the concerned generating station, ESS or transmission licensee, as the case may be, with a copy to their respective beneficiary(ies).	After completion of successful trial run and receipt of documents and test reports as per Regulation 24 of these regulations, the concerned RLDC shall issue a certificate to that effect to the concerned generating station, ESS or transmission licensee, as the case may be, with a copy to their respective beneficiary(ies) and respective RPC.	Trial Run information is required by RPCs also.
26(1)(a)(i) Page 49	The generating station or unit thereof meets the relevant requirements and provisions of the CEA Technical Standards for Construction, CEA Technical Standards for Connectivity, CEA	The generating station or unit thereof meets the relevant requirements and provisions of the CEA Technical Standards for Construction, CEA Technical Standards for Connectivity, CEA Technical Standards for	The provisions of CEA (Flexible operation of thermal power plants) Regulations needs to be complied.

	Technical Standards for Communication and these regulations, as applicable.	Communication, CEA (Flexible operation of thermal power plants) Regulations and these regulations, as applicable.	
27(1)(e) (i) Page 54	..... these regulations, and subject to fulfilment of other conditions, if any as per PPA.	..... these regulations, and subject to fulfilment of other conditions, if any as per PPA/PSA.	Many of the RE generators are having PSA.
27(2)(e)(i)	(i) The commercial operation date in case of units of a renewable generating station aggregating to 50 MW and above	(i) The commercial operation date in case of units of a renewable generating station aggregating to 5 MW and above	In line with GNA Regulations.
27(2) Page 55	Scheduling of generating station or unit thereof shall start from 0000 hours of the Commercial Operation Date of the said generating station or unit thereof.	Scheduling of generating station or unit thereof shall start from 0000 hours of the Commercial Operation Date of the said generating station or unit(s) thereof. Intimation of Commercial Operation Date shall be at least 24hrs before.	There were cases of RE requesting scheduling on the day from COD even for past blocks.
28(6) Page 56	NLDC, RLDCs and SLDCs shall have qualified operating personnel manning the control room round the clock.	NLDC, RLDCs and SLDCs shall have certified operating personnel (including for communication/SCADA) manning the control room round the clock.	Communication/SCAD A these days require 24 hrs attention for system security and commercial reasons.
29(2)(d)/ Page No. 58	... (ii) to RLDC if the element is within the control area of RLDC.	... (ii) to RLDC if the element is within the control area of RLDC, who in turn will intimate to the SLDC concerned.	For bidirectional flow of information.
29(5) Page 59	Except under an emergency, or when it becomes necessary to prevent an imminent damage to a costly equipment, no user shall	Except under an emergency, or when it becomes necessary to prevent an imminent damage to a costly equipment, no regional	If the regional entity is managing the demand and generation with its internal resources and is not passing the impact to regional grid

	cause a sudden variation in its load by more than 100 (one hundred) MW without prior permission of the respective RLDC.	entity shall cause a sudden variation in ISTS drawl by more than 100 (one hundred) MW in 10 seconds without prior permission of the respective RLDC.	it should be allowed. In 10 seconds most tripping related oscillations settle down.
29(6) Page 59	(6) All generating units shall have their automatic voltage regulators (AVRs), Power System Stabilizers (PSSs), voltage (reactive power) controllers and any other requirement in operation, as per CEA Technical Standards for Connectivity. If a generating unit with capacity higher than 50 (fifty) MW is required to be operated without its AVR in service, the generating station shall immediately intimate to the concerned RLDC along with the reasons thereof and the likely duration of such operation and obtain its permission.	(6) All generating units shall have their automatic voltage regulators (AVRs), Power System Stabilizers (PSSs), voltage (reactive power) controllers and any other requirement in operation, as per CEA Technical Standards for Connectivity. If a generating unit with capacity higher than 100 MW is required to be operated without its AVR in service, the generating station shall immediately intimate to the concerned RLDC/SLDC along with the reasons thereof and the likely duration of such operation and obtain its permission.	In line with CEA Connectivity Regulations.
29(7) Page 59	The tuning, including for low and high voltage ride through capability of wind and solar generators or any other requirement as per CEA Technical Standards for Connectivity shall be carried out:	The settings for low and high voltage ride through capability of wind generating stations, generating stations using inverters, wind-solar photo voltaic hybrid systems and energy storage systems or any other requirement as per CEA Technical Standards for Connectivity shall be carried out: Provided all incidents of LVRT & HVRT will be reported by the applicable	As per CEA Connectivity Regulations 2019 It is helpful in validating the set points, reported incidents and validating the SCADA wrt actual grid conditions

		generating stations to respective RLDC/SLDCs possibly through SOE.	
29(8) Page 60	Power System Stabilizers (PSSs), AVR of generating units and reactive power controllers shall be properly tuned by the generating station as per the plan and the procedure prepared by the concerned RPC. In case the tuning is not complied with as per the plan and procedure, the concerned RPC shall issue notice to the defaulting generating station to complete the tuning within a specified time, failing which the generating unit may be disconnected from the grid by the concerned RLDC on receipt of intimation to that effect from the concerned RPC.	Power System Stabilizers (PSSs), AVR of generating units and reactive power controllers shall be properly tuned by the generating station as per the plan and the procedure prepared by the concerned RPC. In case the tuning is not complied with as per the plan and procedure, the concerned RLDC shall issue notice to the defaulting generating station to complete the tuning within a specified time, failing which the generating unit may be disconnected from the grid by the concerned RLDC.	RPC is Statutory body and disconnection of Generating Unit is not defined in functions of RPC. RLDC are defined in EA Act with more power on such issues.
29(9) page 60	Provisions of protection and relay settings shall be coordinated periodically throughout the regional grid, as per plan finalized by the respective RPC in accordance with the Protection, Testing and Commissioning Code of these regulations	Can be deleted	Covered in Protection Code
29(10) Page 60	RPCs shall prepare the islanding schemes in accordance with Central Electricity Authority (Grid Standards) Regulations, 2010 for identified	RPCs shall prepare the islanding schemes in accordance with Central Electricity Authority (Grid Standards) Regulations, 2010 for identified	There has been some delay observed in implementation of Islanding set points and some may require purchase and

	generating stations, cities and locations and ensure its implementation. The islanding schemes shall be reviewed and augmented depending on assessment of critical loads at least once in 3 (three) years.	generating stations, cities and locations and ensure its implementation. The islanding schemes shall be reviewed and augmented depending on assessment of critical loads at least once in a year or whenever required. All the concerned entities would complete the scope of work on their equipment/element within 6 months of finalization by RPC.	commissioning. Set points can be done in 1 month time while purchase related activities may be completed in 6 months' time.
29(11) Page 61	Mock drill of the islanding schemes shall be carried out annually by the respective RLDCs in coordination with the concerned SLDCs and other users involved in the islanding scheme.	Mock drill of the Study simulations of islanding schemes shall be carried out annually by the respective RLDCs in coordination with the concerned SLDCs, RPCs and other users involved in the islanding scheme.	Physical Mock Drill of Islanding scheme may not be possible and it can be study based only. RLDCs are more equipped to carry out simulation studies.
29(13) (d)Page 62	.....SLDC shall take corrective measures within a reasonable period and inform the respective RLDC and RPC.	.....SLDC shall ensure corrective measures within six months and inform the respective RLDC and RPC.	To ensure timely remedial actions.
29(13) (e)Page 62	RPC shall undertake monthly review of UFR and df/dt scheme and also carry out random inspection of the under-frequency relays. RPC shall publish such monthly review along with exception report on its website.	RPC shall undertake monthly review of UFR and df/dt scheme and also carry out random inspection of the under-frequency relays. RPC shall publish such monthly review along with exception report on its website.	UFR and df/dt are being reviewed in OCC of RPC and they operate rarely. Separate publishing on website may not be required.
29(14) Page 62	NLDC, RLDCs, SLDCs, CTU, STUs or users may	NLDC, RLDCs, SLDCs, CTU, STUs or users may identify	SPS for increasing the TTC/ATC are required

	<p>identify the requirement of System Protection Schemes (SPS) (including inter-tripping and run-back) in the power system to operate the transmission system within operating limits and to protect against situations such as voltage collapse, cascade tripping and tripping of important corridors/flow-gates.....If any SPS at intra-regional level is to be taken out of service, permission of the concerned RLDC shall be required.</p>	<p>the requirement of System Protection Schemes (SPS) (including inter-tripping and run-back) in the power system to operate the transmission system within operating limits and to protect against situations such as voltage collapse, cascade tripping and tripping of important corridors/flow-gates or for increasing the TTC/ATC.....If any SPS at intra-regional level is to be taken out of service, permission of the concerned RLDC/SLDC shall be required.</p>	<p>and may be included. Taking out of intra-state SPS should be known to SLDC</p>
<p>29(17) Page 63</p>	<p>Transmission licensees and distribution licensees shall implement defense mechanisms as finalized by the respective RPCs to prevent voltage collapse and cascade tripping.</p>	<p>All Users shall implement defense mechanisms as finalized by the respective RPCs to prevent voltage collapse and cascade tripping.</p>	<p>Implementation may be required by Users and not only transmission licensees and distribution licensees</p>
<p>30(1)/ page No.64</p>	<p>(1) The National Reference Frequency shall be 50.000 Hz and shall be measured with a resolution of +/- 0.001 Hz. The frequency data measured at every second shall be archived by RLDCs.</p>	<p>(1) The National Reference Frequency shall be 50.00 Hz and shall be measured with a resolution of +/-0.01 Hz. The frequency data measured at every second shall be archived by RLDCs.</p>	<p>Technical feasibility may be considered before making it a regulation.</p>
<p>30(4) (a)(iii) Page 64</p>	<p>Secondary reserves including automatic generation control and demand response shall be deployed by a control area as per these regulations or the Ancillary Services Regulations, as the case may be.</p>	<p>Secondary reserves shall be deployed by a control area as per these regulations or the Ancillary Services Regulations or the SERCs Ancillary Services Regulations/Grid code, as the case may be.</p>	<p>To have demarcation of jurisdiction of CERC/SERC.</p>

30(4)(a) (iv) Page 65	Tertiary reserves shall be deployed by a control area as per these regulations or the Ancillary Services Regulations, as the case may be.	Tertiary reserves shall be deployed by a control area as per these regulations or the Ancillary Services Regulations or the SERCs Ancillary Services Regulations/Grid code, as the case may be.	To have demarcation of jurisdiction of CERC/SERC.
30(4) (b) Page 65	Black Start reserves: Generating stations having black start capability shall be identified by NLDC and RLDCs to act as black start reserves.	Black Start reserves: Generating stations having black start capability shall be identified by NLDC, RLDCsand SLDCs to act as black start reserves.	Many generators are under Control area of SLDCs.
30(9) Page 65-66	.....NLDC shall reschedule generation including curtailment of wind, solar and wind-solar hybrid generation, if required....	.....NLDC shall monitor the inertia and reschedule generation including curtailment of wind, solar and wind-solar hybrid generation, if required....	Without monitoring rescheduling of generators will not serve the desired intention.
30(10) (c) Page 66	The minimum quantum of PRAS required for reference contingency shall be declared by NLDC at the start of each financial year.	The minimum quantum of PRAS required for reference contingency shall be declared by NLDC at the start of each financial year. This will be distributed and specified for each control area by NLDC/RLDCs.	The distribution of PRAS needs to be done centrally for uniformity.
30(10) (e) Page 66	NLDC may also identify other resources such as ESS and demand resource to provide PRAS for which PRAS Providers shall be compensated in accordance with the Ancillary Services Regulations.	NLDC may also identify other resources such as ESS and demand resource to provide PRAS for which PRAS Providers shall be compensated in accordance with the Ancillary Services Regulations. If required Control Area not providing PRAS as per clause (c) and the concerned PRAS resources may be charged for shortfall of PRAS from the Control Area.	Charging of entity not providing PRAS may make them accountable and would cause less strain on Pool.

<p>30(10) (h) Page 68</p>	<p>All generating stations mentioned in Table-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.</p>	<p>All generating stations mentioned in Table-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, or reducing to 95% of their operating level upto their minimum turn down level constraint as the case maybe, when the frequency falls/rises 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.</p>	<p>Governor response in down direction is also required during sudden tripping of loads.</p>
<p>30(10) (l) Page 69</p>	<p>Each control area shall assess its frequency response characteristics and share assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for state control area.</p>	<p>Each control area shall assess its frequency response characteristics and share assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and at most 10 (ten) seconds for state control area.</p>	<p>If better data storage and retrieval facility is there it should be used.</p>
<p>30(10) (o) Page 69</p>	<p>NLDC, RLDCs and SLDCs shall grade the median Frequency Response Performance annually, considering at least 10 reportable events. In case the median Frequency Response Performance is</p>	<p>NLDC, RLDCs and SLDCs shall grade the median Frequency Response Performance annually, considering at least 10 reportable events. In case the median Frequency Response Performance is</p>	<p>Some action is required for poor FRP.</p>

	less than 0.75 as calculated as per Annexure-2, NLDC, RLDCs, SLDCs, as the case may be, after analyzing the FRP shall direct the concerned entities to take corrective action.	less than 0.75 as calculated as per Annexure-2, NLDC, RLDCs, SLDCs, as the case may be, after analyzing the FRP shall direct the concerned entities to take corrective action and persistent poor FRP would be reported to appropriate Commission.	
30(11) (a) Page 69	Secondary control is a centralized automatic function to regulate the generation or load in a control area to restore the frequency within the allowable band or replenish deployed primary reserves.	Secondary control is a centralized automatic function to regulate the generation or load in a control area to restore the ACE within the allowable band or to replenish deployed primary reserves.	Secondary control is wired for ACE control.
30(11) (b) Page 69	Secondary Control shall be provided by a generating station or an entity having energy storage resource or an entity capable of providing demand response, on standalone or aggregated basis, connected to inter-State transmission system or intra-State transmission system, as Secondary Reserve Ancillary Service (SRAS) Provider, as specified in the Ancillary Services Regulations.	Secondary Control shall be provided by a generating station or an entity having energy storage resource or an entity capable of providing demand response, on standalone or aggregated basis, connected to inter-State transmission system or intra-State transmission system, as Secondary Reserve Ancillary Service (SRAS) Provider, as specified in the Ancillary Services Regulations of appropriate Commission.	To have demarcation of jurisdiction of CERC/SERC.
30(11) (c) Page 70	..... Provided that as and when bi-directional communication system of SRAS providers with RLDCs is fully established, secondary control signals shall be automatically	..... Provided that as and when bi-directional communication system of SRAS providers with RLDCs is fully established, secondary control signals of Regional ACE shall be	Signals from RLDC will be used for correction of Regional ACE only.

	generated from the respective RLDC.	automatically generated from the respective RLDC.	
30(11) (e) Page 71	<p>Frequency Bias Coefficient (Bf) shall be assessed and declared by NLDC in coordination with RLDC for each region.</p> <p>Frequency Bias Coefficient (Bf) shall be assessed and declared by SLDC for each State.</p> <p>Frequency Bias Coefficient shall normally be based on median Frequency Response Characteristics (FRC) during previous financial year of each control area and refined from time to time.</p>	<p>Frequency Bias Coefficient (Bf) shall be assessed and declared by NLDC in coordination with RLDC for each region. Frequency Bias Coefficient (Bf) shall be assessed and declared by RLDC and SLDC for each Control Area under its jurisdiction. Frequency Bias Coefficient shall normally be based on size of each control area and refined from time to time.</p>	<p>Bf may not be based on FRC but rather on size of the system. FRC is better for performing entity and the performing entity need not provide more frequency correction in ACE.</p>
30(11) (i) Page 71	<p>RLDCs and SLDCs shall compute the ACE of the respective regional or state control area in real time based on telemetered data. ACE data shall be archived at the interval of 10 seconds or lower. RLDCs shall share the data with NLDC.</p>	<p>RLDCs and SLDCs shall compute the ACE of the regional entities and state control area in real time based on telemetered data. ACE data shall be archived at the interval of 10 seconds or lower. SLDCs/RLDCs will share the data with RLDCs /NLDC.</p>	<p>RLDC computes the ACE of Regional Entities and is required for verification later.</p>
30(11)(k) Page 72	<p>With due regard to the requirement of planning reserve margin and resource adequacy referred to in clause (3) of Regulation 5 of these regulations, and based on the following methodologies, the secondary reserve capacity shall be estimated by RLDCs for their respective regional control areas : The</p>		<p>Some clauses are at Variance with Annexure 3</p>

	<p>positive and negative secondary reserve capacity for any control area for a financial year shall be equal to 99 percentile of positive and negative ACE respectively of that control area during the previous financial year (Detailed Procedure shall be as per Annexure-3 to these regulations),</p> <p>OR The secondary reserves capacity for any control area shall be equal to the 110 % of largest unit size in the respective regional control area or state control area plus load forecast error plus wind forecast error plus solar forecast error during the previous financial year.</p>		
30(11)(n) Page 73	<p>All India secondary reserves requirement for the regional control area and the State control area shall be estimated by NLDC based on reference contingency and other factors such as forecast errors.</p> <p>All India secondary reserves capacity for the regional control area and the State control area shall be estimated by NLDC based on reference contingency and other factors such as forecast errors.</p>	<p>All India secondary reserves requirement for the regional control area and the State control area shall be estimated by NLDC based on clause(k) and on reference contingency and other factors such as forecast errors.</p> <p>All India secondary reserves capacity for the regional control area and the State control area shall be estimated by NLDC.</p>	<p>Typographical correction.</p> <p>All India secondary reserves capacity estimation is defined and covered in Procedure.</p>
30(11)(r)	If a State falls short of		How it will be deployed

Page 73	maintaining secondary reserve capacity as allocated to it in terms of clause (o) of this Regulation, the NLDC through RLDC shall procure such Secondary reserve capacity on behalf of the State and allocate the cost of procurement of such capacity on that State based on the methodology specified in the Ancillary Service Regulations.		needs to be assessed. Reserve can be deployed through instruction and passed on as schedule otherwise the reserve may not be wired for State's ACE. If Technically and accounting not feasible it may not be included in IEGC.
30(11)(t) Page 74	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.	All SRAS service providers 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.	All SRAS service providers need to be wired.
30(11)(u) Page 74	All renewable energy generating stations and ESS shall be enabled with frequency controller to provide secondary control in accordance with the CEA Connectivity	Participating renewable energy generating stations and ESS shall be enabled with frequency controller to provide secondary control, and the communication system shall be established	For renewable energy generating stations and ESS secondary control is not mandated in CEA Connectivity Standards.

	Standards and the communication system shall be established in accordance with the CEA Technical Standards for Communication.	in accordance with the CEA Technical Standards for Communication.	
30(12)(g)(i)) Page 75	(i) To replenish the secondary reserve, in case the secondary reserve has been deployed continuously in one direction for fifteen (15) minutes for more than 100 MW;	(i) To replenish the secondary reserve, in case the secondary reserve has been deployed continuously in one direction for fifteen (15) minutes	Some states/UT total secondary requirement may be less than 100 MW
31(2)(c) Page 78	The demand estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling. In case, SLDC observes major change in demand in real time for the day, it shall immediately submit the revised demand estimate to concerned RLDC for demand estimate correction.	The demand estimation by each SLDC shall be done on two day ahead, day ahead and weekly basis with time block wise granularity for the daily operation and scheduling. In case, SLDC observes major change in demand in real time for the day, it shall immediately submit the revised demand estimate to concerned RLDC for demand estimate correction. The system may be	Major Procurements like requisitioning from ISGS, DAM etc are done on D-1 therefore demand estimation should be done on D-2 which may be corrected on D-1. Even reserve requirements are to be finalized on D-1.
31(2)(d) Page 78	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVA on monthly and quarterly basis for the nodes 132 kV and above for preparation of scenarios for computation of TTC and ATC by the concerned RLDC and NLDC.	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVA for next 12 months on rolling basis for the nodes 132 kV and above for preparation of scenarios for computation of TTC and ATC by the concerned RLDC and NLDC. Each SLDC would furnish the TTC and ATC of its control area to RLDCs along	In line with GNA Regulations and Congestion Procedure.

		with above data.				
31(2)(e) Page 78	SLDC shall also estimate peak and off-peak demand (active as well as reactive power) on weekly and monthly basis for load - generation balance planning as well as for operational planning analysis, which shall be a part of the operational planning data. The demand estimates mentioned above shall have granularity of a time block. The estimate shall cover the load incident on the grid as well as net load incident taking into account embedded generation in the form of roof-top solar and other distributed generation.	SLDC shall also estimate peak and off-peak demand (active as well as reactive power) and net demand (Demand - grid connected RE) on weekly and monthly basis for load - generation balance planning as well as for operational planning analysis, which shall be a part of the operational planning data. The demand estimates mentioned above shall have granularity of a time block. The estimate shall cover the load incident on the grid as well as net load incident taking into account embedded generation in the form of roof-top solar and other distributed generation.	Net demand assessment is required for SCUC, Ramps and other grid requirements.			
31(2)(f) Page 78	Based on the demand estimate furnished by the SLDCs, each RLDC shall prepare the regional demand estimate and submit to NLDC. NLDC, based on regional demand estimate furnished by RLDCs, shall prepare national demand estimate.	Based on the demand and net demand estimate furnished by the SLDCs, each RLDC shall prepare the regional demand and net demand estimate and submit to NLDC. NLDC, based on regional demand and net demand estimate furnished by RLDCs, shall prepare national demand and net demand estimate.	Net demand assessment is required for SCUC, Ramps and other grid requirements.			
31(2)(g) Page 78	Timeline for submission of demand estimate data by SLDCs to respective RLDC and RPC shall be as follows:	Timeline for submission of demand estimate data by SLDCs to respective RLDC and RPC shall be as follows: TABLE 5: TIMELINE FOR DEMAND ESTIMATION <table border="1" data-bbox="727 1829 1024 1871"> <tr> <td>Dem</td> <td>Time</td> <td>Furni</td> </tr> </table>	Dem	Time	Furni	In line with the Outage Planning/ LGBR and to get more accurate data.
Dem	Time	Furni				

		and Estimation	line	shed to	
		Daily	By 10:00 hrs of D-1 & D-2	RLDC	
		Weekly	First working day of previous week	RLDC	
		Monthly	Fifth day of previous month	RLDC & RPC	
		Yearly	31st October of the previous year	RLDC & RPC	
31(2)(h) Page 79	... The computed forecasting errors shall be made available by SLDCs, RLDCs and NLDC on their respective websites.	...	The computed forecasting errors shall be made available by SLDCs, RLDCs and NLDC on their respective websites. A	report on yearly forecast	To ensure accountability and improving the forecast errors.

		errors including the action plan for improving the same shall be submitted to appropriate Commission.	
31(3)(b) Page 79	RLDC shall forecast generation from wind and solar generating stations which are regional entities for different time horizons as referred to in clause (1) of Regulation 31 of these regulations for the purpose of operational planning.	RLDC/SLDC shall forecast generation from wind and solar generating stations which are regional/state entities for different time horizons as referred to in clause (1) of Regulation 31 of these regulations for the purpose of operational planning.	SLDC also need to forecast RE for reserve estimation and other grid requirements like inertia, Primary response.
31(4)(b) Page 80	SLDCs shall furnish time block-wise information for the following day in respect of all intra-state entities to the concerned RLDC who shall validate adequacy of resources with due regard to the following: (i) Demand forecast aggregated for the control area; (ii) Renewable energy generation forecast for the control area; (iii) Injection schedule for intra-State entity generating station; (iv) Requisition from regional entity generating stations.	SLDCs shall furnish time block-wise information for the following day in respect of all intra-state entities to the concerned RLDC who shall validate adequacy of resources with due regard to the following: (i) Demand forecast aggregated for the control area; (ii) Renewable energy generation forecast for the control area; (iii) Injection schedule for intra-State entity generating station; (iv) Requisition from regional entity generating stations. (v) Purchases planned from DAM & RTM (vi) SRAS & TRAS	Resource adequacy requires Planned purchases from DAM/RTM and also Reserve requirements.
32(2)(c) page 81	The outage plan of hydro generation plant, wind and solar generation plant and its associated evacuation network shall be prepared with a view	(c) The outage plan for regional entity wind, solar, hybrid generation and ESS and its associated evacuation network shall be prepared by the respective	Wind and solar outages are coordinated by the respective developers to achieve maximum availability and as such there is no outage

	to extract maximum generation from these sources. Example: Outage of wind generator shall be planned during lean wind season. Outage of solar generator, if required, shall be planned during the rainy season. Outage of hydrogenerator could be planned during the lean water season.	entity and furnished to RPC. Example: Outage of wind generator shall be planned during lean wind season. Outage of solar generator, if required, shall be planned during the rainy season or off solar hours. Outage of hydro generator could be planned during the lean water season.	planning for these resources.
32(2) Page 81		New sub clause (e) can be added For Intra-state network, RPCs will finalize the outage plan of 400 kV and above (220 kV and above for NER), interstate links and important elements identified under Regulation 39(2)(b). RPCs shall plan the outages of generating units 50 MW and above.	To avoid voluminous outage planning which does not impact Regional Grid.
32(3) (b)Page 81	RPCs shall prepare LGBR based on the LGBR submitted by SLDCs for their respective states	RPCs shall prepare LGBR based on the LGBR submitted by SLDCs for their respective states and by Regional Entity Generators/ISTS Transmission Licensees.....	Many of the data is furnished by Regional Entities for LGBR preparation.
32(3) (f)Page 82	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.	All users, CTU, STUs, licensees shall follow the annual outage plan. During exigency, If any deviation is required, the same shall be allowed only with prior permission of the concerned RPC, which shall be discussed in OCC of RPC and if the shutdown is before next OCC, RLDC shall consult the NLDC and	In between OCC, RLDC are empowered for deviations while other outage deviation is coordinated in RPC forum.

		concerned RPC.	
32(3) (g)Page 82	Each user shall obtain the final clearance from NLDC or the concerned RLDC, prior to the planned outage of any grid element. All deviations from the outage plan shall be uploaded on the RPC website.	Each user shall obtain the final clearance from SLDC and for important grid elements from NLDC or the concerned RLDC, prior to the planned outage of any grid element. All deviations from the outage plan shall be uploaded on the RPC website for which monthly update shall be furnished by SLDCs and RLDCs.	Only for Important Grid Element clearance of RLDC/NLDC is required. Many a times monthly updates are coming.
32(3) (h)Page 82	In case of grid disturbances, system isolation, partial black-out in a State or any other event in the system that may have an adverse impact on the system security due to proposed outage, (i) NLDC or RLDC, as the case may be, shall have the authority to defer the planned outage;	In case of grid disturbances, system isolation, partial black-out in a State or any other event in the system that may have an adverse impact on the system security due to proposed outage, (i) NLDC or RLDC or SLDC, as the case may be, shall have the authority to defer the planned outage	SLDC are also empowered to defer outages of the elements under their Control Area.
32(4) Page 83	To facilitate coordinated planned outages of grid elements, a common outage planning procedure shall be formulated by each RPC in consultation with NLDC and concerned RLDC	To facilitate coordinated planned outages of grid elements, a common outage planning procedure shall be formulated by each RPC in consultation with NLDC and concerned RLDC and users. RLDC would develop the Outage Coordination Portal to facilitate the Outages in online mode.	Users input are required for formalising the Outage Procedure. Outage Coordination Portal contains all activities related to outages including the approvals.
33(3)(a) Page 84	... (a)assessment and declaration of total transfer capability (TTC) and available transfer capability (ATC) for	... (a)assessment and declaration of total transfer capability (TTC) and available transfer capability (ATC) for import or export	In line with GNA regulations.

	import or export of electricity by the State. TTC and ATC shall be revised from time to time based on commissioning of new elements and other grid conditions and shall be published on SLDC website with all the assumptions and limiting constraints;	of electricity by the State month-wise for one year on rolling basis. TTC and ATC shall be revised from time to time based on commissioning of new elements and other grid conditions. TTC and ATC shall be published on SLDC website with all the assumptions and limiting constraints;	In line with Congestion Procedure.
33(4)(a) Page 84	assessment of TTC and ATC at inter-regional, intra-regional and inter-state level;	assessment of TTC and ATC at inter-regional, intra-regional, bid areas of power exchanges and inter-state level month-wise for one year on rolling basis; TTC/ATC shall be published on RLDC/NLDC website with all the assumptions and limiting constraints;	In line with GNA regulations.
33(6) Page 85	Operational planning study shall be done to assess whether the planned operations shall result in deviations from any of the system operational limits defined under these regulations and applicable CEA Standards.	Operational planning study shall be done to assess whether the planned operations shall result in deviations from any of the system operational limits defined under these regulations and applicable CEA Regulations/Standards.	CEA have many Regulations.
33(8) Page 85	NLDC, RLDCs, RPCs and SLDCs shall have operating plans to address potential deviations of system operational limit identified as a result of the operational planning study. These operating plans shall be intimated to users in advance to take corrective measures.	NLDC, RLDCs and SLDCs shall have operating plan to address potential deviations of system operational limit identified as a result of the operational planning study. These operating plans shall be intimated to users in advance to take corrective measures. In case any user is unable to adhere to such operating plan, it shall	Plan has to be developed by SLDCs, RLDCs and NLDC. In Real time there should not be any right on deviations of Regulations.

	In case any user is unable to adhere to such operating plan, it shall intimate the respective SLDC, RLDC and NLDC in advance with detailed reasons and explanation for the non-adherence. These detailed reasons and explanation shall be discussed in the monthly operation sub-committee of the respective region and a quarterly report shall be submitted to the Commission and CEA.	intimate the respective SLDC, RLDC and NLDC in advance with detailed reasons and explanation for the non-adherence (however in real time the system is to be operated within the IEGC provisions/developed Operating Procedure) These detailed reasons and explanation shall be discussed in the monthly operation sub-committee of the respective region and a quarterly report shall be submitted to the Commission and CEA.	
33(9) Page 86	Each SLDC shall undertake study on the impact of new elements to be commissioned in intra-state system in the next six (6) months on the TTC and ATC for the State.	May be deleted. Each SLDC shall undertake study on the impact of new elements to be commissioned in intra-state system in the next six (6) months on the TTC and ATC for the State.	Covered in 33(3)(a). In line with GNA regulations.
33(10) Page 86	Each RLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intra-state system on the inter-state system.	May be deleted. Each RLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intra-state system on the inter-state system.	Covered in 33(4)(a). In line with GNA regulations.
33 (11) Page 86	NLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-regional system, (b) cross-border link and (c) intra-	May be deleted. NLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-	Covered in 33(4)(a). In line with GNA regulations.

	regional system on the inter-regional system.	regional system, (b) cross-border link and (c) intra-regional system on the inter-regional system.	
33 (12) Page 86	NLDC, RLDCs and SLDCs shall compare the results of the studies of impact of new elements on the system and transfer capability addition with those of the interconnection and planning studies by CTU and STUs, and any significant variations observed shall be communicated to CTU and STUs for immediate and long-term mitigation measures.	NLDC, RLDCs and SLDCs shall compare the results of the studies of impact of new elements on the system and transfer capability addition with those of the interconnection and planning studies by CTU and STUs, and any significant variations observed shall be communicated to CEA, RPC , CTU and STUs for immediate and long-term mitigation measures.	For information flow.
34 (4) Page 87	Simulation studies shall be carried out by each user in coordination with RLDC for preparing, reviewing and updating the restoration procedures considering the following:	Simulation studies shall be carried out by each user in coordination with SLDC /RLDC for preparing, reviewing and updating the restoration procedures considering the following:	SLDC play major role in preparation of Restoration Procedure.
34 (5) Page 88	The thermal and nuclear generating stations shall be prepared for house load operation as per design. Concerned user and SLDC shall report the performance of house load operation of a generating station in the event where such operation was required.	The thermal and nuclear generating stations shall be prepared for house load operation as per design and as per CEA's Regulations . Concerned user and RLDC/SLDC shall report the performance of house load operation of a generating station in the event where such operation was required.	Many units are not equipped with House Load Operation though mandated in CEA Regulations.
34 (6) Page 88	NLDC, RLDC and SLDC shall identify the generating stations with black start, grid forming	NLDC, RLDC and SLDC shall identify the generating stations with black start, grid forming capability,	Frequent awareness on Restoration Procedure is required for System Operators.

	capability, house load facility, inter-State or inter-regional ties, synchronizing points and essential loads to be restored on priority	house load facility, inter-State or inter-regional ties, synchronizing points and essential loads to be restored on priority and made part of restoration procedure. Shift operating personnel at LDCs shall be trained on restoration procedure.	
34 (9) Page 88	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.	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 procedure in this regard shall be prepared by NLDC in consultation with stakeholders.	Procedure would help in addressing the finer details.
35(1) Page 89	35. REAL TIME OPERATION (1) System state Power system shall be categorized under normal, alert, emergency, extreme emergency and restoration state	35. REAL TIME OPERATION (1) System state Power system shall be categorized under normal, alert, emergency, extreme emergency and restorative state	Restorative State is defined.
35(1)(c) Page 89	.....extreme measures such as load shedding, generation unit tripping, line tripping or closing,	.....extreme measures such as load shedding, generation unit tripping, transmission element tripping or closing,	Many times tripping of transmission element is required during system state.
35(1)(d)		New paramay be added - Generation support from SRAS/TRAS or under direction by NLDC/RLDC/SLDC. Any non-identified entity under	Generation support may be required.

		<p>SRAS/TRAS extending support by way of injection of power 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.</p>	
<p>35(1)(e) Page 91</p>		<p>New paramay be added</p> <ul style="list-style-type: none"> - Generation support from SRAS/TRAS or under direction by NLDC/RLDC/SLDC. Any non-identified entity under SRAS/TRAS extending support by way of injection of power 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. 	<p>Generation support may be required</p>

<p>35(5)(b) Page 92</p>	<p>(b)Any planned operation activity in ISTS system [such as transmission element opening or closing (including breakers), protection system outage, SPS outage and testing etc.] shall be done by taking operational code from RLDC or NLDC, as the case may be....</p>	<p>Any planned operation activity in ISTS system [such as unit synchronization/desynchronization, transmission element opening or closing (including breakers), protection system outage, SPS outage and testing etc.] shall be done by taking operational code from RLDC or NLDC, as the case may be....</p>	<p>Unit taking in and out may be covered.</p>
<p>36(1) Page 92</p>	<p>The demand and load shall be managed for ensuring grid security.</p>	<p>The demand and load shall be managed for ensuring grid security. SLDC may in coordination with STU/Distribution Licensee may develop Automatic Demand Management scheme with emergency controls at SLDC.</p>	<p>ADMS with emergency control at SLDCs is required.</p>
<p>36 (2)(a) Page 92</p>	<p>the respective distribution licensee shall abide by directions of SLDC to secure the system, and extreme measures like load shedding may be carried out as a last resort.</p>	<p>the respective distribution licensee, bulk consumers connected to STU shall abide by directions of SLDC to secure the system, and extreme measures like load shedding may be carried out as a last resort.</p>	<p>Bulk Consumers connected to STU may also support the grid.</p>
<p>36 (2)(b) Page 93</p>	<p>SLDC or RLDC through SLDC may direct distribution licensee to restrict drawal from the grid or curtail load for ensuring the stability of the grid: Provided that load shedding shall be resorted to after the</p>	<p>SLDC or RLDC through SLDC may direct distribution licensee, bulk consumers connected to STU to restrict drawal from the grid or curtail load for ensuring the stability of the grid: Provided that load shedding shall be resorted to after</p>	<p>Bulk Consumers connected to STU may also support the grid.</p>

	demand response option has been exhausted	the demand response option has been exhausted	
36 (2)(c) Page 93	The load disconnected, if any, shall be restored as soon as possible on clearance from SLDC, in coordination with RLDC if required, after the system has been normalized.	The load disconnected, if any, shall be restored as soon as possible only on clearance from SLDC, in coordination with RLDC if required, after the system has been normalized.	Many times loads are restored locally without concurrence from SLDC.
37(1)(a) (i) Page 93	Pattern of demand met, frequency profile, voltage and tie-line flows, angular spread, area control error, reserve margin, ancillary services despatched, transmission congestion and (n-1) violations;	Pattern of demand met, under and over draws, frequency profile, voltage and tie-line flows, angular spread, area control error, reserve margin, load and RE forecast errors, ancillary services despatched, transmission congestion and (n-1) violations;	Pattern of UD & OD and Load & RE forecast are key parameters to be covered.
37(1)(e)	For the purpose of analysis and reporting, telemetered data shall be archived with granularity of not more than five (5) minutes and higher granularity for special events. Such data shall be stored by SLDCs, RLDCs and NLDC for at least fifteen (15) years and reports shall be stored for twenty-five (25) years for operational analysis	For the purpose of analysis and reporting, telemetered data shall be archived with granularity of not more than five (5) minutes and higher granularity for special events. Such data shall be stored by SLDCs, RLDCs and NLDC for at least fifteen (15) years and reports shall be stored for twenty-five (25) years for operational analysis. PMU data will be stored at least for five years.	With technical feasibility storage of PMU may be specified.
37(2) (f) Table 8	Draft report submission deadline (RLDC/ NLDC)	<ol style="list-style-type: none"> 1. TABLE 8: REPORT SUBMISSION TIMELINE Near miss row and definition may be deleted. 2. The days may be modified to +60 days for the column "Discussion 	<p>Near miss incidents are already covered in GI.</p> <p>Discussion in protection meetings may be restricted to events involving mal-</p>

		<p>in protection committee meeting and final report submission deadline (RPC)”.</p> <p>3. Note may be added to the Table: Discussion in protection meetings may be restricted to events involving mal-operations/ non-operation of Protection system.</p>	operations/ non-operation of Protection system.
38(2) Page 97	Daily and monthly reports covering the performance of the regional grid shall be prepared by each RLDC based on the inputs received from SLDCs and users	Daily and monthly reports covering the performance of the regional grid shall be prepared by each RLDC based on the inputs received from SLDCs and users and with data availability at RLDC.	Voluminous data is available at RLDCs/NLDC.
38(3) Page 97	(viii) Major generation and transmission outages;	(viii) Major generation and transmission outages and anticipated revival date; A new clause xii) Break up of Power scheduled from ISTS (GNA and TGNA, DAM, RTM)	Anticipated revival dates and power exchanged may be included.
38(4) Page 97	The NLDC shall prepare a quarterly report providing operational feedback for grid planning and re-optimization and submit to CTU and CEA and upload on its website.	The NLDC shall prepare a quarterly report providing operational feedback for grid planning and re-optimization and submit to CTU and CEA and upload on its website. The SLDC shall prepare a quarterly report providing operational feedback for grid planning and re-optimization and submit to STU and CEA and upload on its website.	Feedback of SLDC to STU and CEA is required as many bottlenecks are coming up in InSTS.
39 (4)	NLDC, RLDCs or SLDCs	NLDC, RLDCs or SLDCs	Direction may be shall

page 98	<p>may direct the users about reactive power set-points, voltage set-points and power factor control to maintain the voltage at interconnection points.</p>	<p>shall direct the users about reactive power set-points, voltage set-points and power factor control to maintain the voltage at interconnection points.</p>	<p>and not may.</p>
39 (11) page 98	<p>If voltages are outside the limit as specified in clause (15) of Regulation 29 of these regulations and the means of voltage control set out in Clause (6) of this Regulation are exhausted, in that event SLDCs, RLDCs or NLDC shall take all reasonable actions necessary to restore the voltages so as to be within the relevant limits including opening of lines considering security of system</p>	<p>If maximum voltages are outside the limit as specified in clause (15) of Regulation 29 of these regulations and the means of voltage control set out in Clause (6) of this Regulation are exhausted, in that event SLDCs, RLDCs or NLDC shall take all reasonable actions necessary to restore the voltages so as to be within the relevant limits including opening of lines considering security of system.</p> <p>If minimum voltages are outside the limit as specified in clause (15) of Regulation 29 of these regulations and the means of voltage control set out in Clause (6) of this Regulation are exhausted, in that event SLDCs, RLDCs or NLDC shall take all reasonable actions necessary to restore the voltages so as to be within the relevant limits including giving directions to curtail high reactive loads (tripping of feeders with high reactive consumption) considering security of system.</p>	<p>For correcting high voltages, opening of lines may be resorted to by system operator.</p> <p>For correcting low voltages opening of heavy MVAR drawing lines may be allowed as last resort.</p>
40(3) Page 101	<p>Table 9 Non synchronous</p>	<p>Table 9 Non synchronous Generator</p>	

	<p>Generator (Solar/Wind) (4) Fault Ride through Test (sample testing of a unit in the generating stations)</p>	<p>(Solar/Wind) (4) Fault Ride through Test (sample testing of a unit in the generating stations for each 50 MW block connected to Common Point of Coupling) (5) HVR Test (sample testing of a unit in the generating stations for each 50 MW block connected to Common Point of Coupling)</p>	<p>Better to specify 50 MW limit</p>
<p>43.(4) Page 103</p>	<p>The entities connected only to inter-State transmission system shall be under control area jurisdiction of RLDCs for scheduling and despatch of electricity for such entities.</p>	<p>The entities connected only to inter-State transmission system and CGS having share in more than one state shall be under control area jurisdiction of RLDCs for scheduling and despatch of electricity for such entities.</p>	<p>For accounting purpose all data should come through RPCs from respective RLDCs and if control area jurisdiction is shifted to SLDCs, there may be issues in computation of PAF, RRAS, SCED optimisation etc. To have a uniform and smooth implementation of RRAS/SCED and ease of accounting and billing the Control Area of CGS with more than one beneficiary may be with RLDC.</p>
<p>43.(5) Page 103</p>	<p>Entities connected to both inter-State transmission system and intra-State transmission system shall be under control area jurisdiction of RLDC, if more than 50% of quantum of connectivity is with ISTS, and if more than 50% of the quantum of connectivity is with intra-State transmission system, then it shall be</p>	<p><i>Clause may be deleted if CGS having share in more than one state shall be under control area jurisdiction of RLDCs.</i> <i>Else may be amended as below</i> Entities connected to both inter-State transmission system and intra-State transmission system shall be</p>	<p>Shares of beneficiary, DSM, RRAS, SCED, SCUC are more relevant criteria for scheduling by RLDC rather than connectivity. 50 % connectivity each to ISTS & In-STS not covered in Regulation</p>

	under control area jurisdiction of SLDC.	under control area jurisdiction of RLDC, if more than 50% of quantum of connectivity is with ISTS, and if 50% and above of the quantum of connectivity is with intra-State transmission system, then it shall be under control area jurisdiction of SLDC.	
43.(6) Page 103	In case an entity is connected to both inter-State transmission system and intra-State transmission system, the load despatch centre responsible for scheduling such entity shall coordinate with the concerned RLDC or SLDC, as the case may be, with a view to ensuring grid security.	In case an entity is having share of more than one beneficiary and is scheduled by SLDC then the SLDC will coordinate with the respective RLDC in respect of all Scheduling and Ancillary service aspects.	Scheduling and Ancillary Services are more relevant in Scheduling chapter. Grid security is covered in other chapters.
43.(7)		New clause (7) may be added – CGS only connected to intra state network and having share only to home state may be scheduled by SLDCs	For clarity CGS hundred % for a state and supplying power to home state may be scheduled by respective SLDC.
43.(8)		New clause (8) may be added – In case of mutual consensus at RPC level, an entity may be scheduled by RLDC or SLDC as the case may be	Scheduling is for convenience of beneficiaries and generators and for implementation of SCUC, SCED and RRAS by NLDC/SRLDC and freedom may be left to RPC forum in cases where there is ambiguity.
44(1)Page 103-104	The Regional Load Despatch Centre, in discharge of its functions under the Act, shall be responsible for the following, within its regional control area:		Some functions are not as per EA 2003. Additional functions may be mentioned separately
44(1)(e)(ii)	Assessment of TTC and	Assessment of TTC and ATC	Responsibility of

) Page 104	ATC for import or export of electricity for a State in coordination with concerned SLDC and submit to NLDC.	for import or export of electricity for a State as computed by SLDC in coordination with concerned SLDC and submit to NLDC.	TTC/ATC of state lies with state only and only assessment or vetting can be done by NLDC/RLDC.
44(2)(g) Page 105	Furnishing availability of transmission corridors to the Power Exchange(s) for day ahead and real time collective transactions and in case of congestion, allocating available transmission corridors among Power Exchange(s) in the ratio of initial unconstrained market clearing volume in the respective Power Exchange(s).	Furnishing availability of transmission corridors to the Power Exchange(s) for day ahead and real time collective transactions and in case of congestion, allocating available transmission corridors among Power Exchange(s) as per CERC approved procedure.	Procedure needs to be approved by Commission.
44(2) Page104 & 105	The National Load Despatch Centre, in discharge of its functions under the Act,		Some functions are not as per Ministry of Power (MOP) notification, New Delhi dated 2 nd March 2005. Additional functions may be mentioned separately
44(2)Page 105		New Clause (h) can be added Review and define/delete Bid Areas for Power Exchanges	New Bid Areas may come due to skewed LGB or generation or load not materialising as anticipated. Further some bid areas may lose its congestion on larger time frame and may need to be deleted.
44(2)Page 105		New Clause (i) can be added Secure operation of grid by: (i) performing functions in accordance with these regulations and Ancillary Services Regulations	As per Ancillary Services Regulations NLDC is the nodal Agency for SRAS & TRAS while in draft IEGC role of NLDC is

			only for estimation of reserves
44(3) Page 105-106	The State Load Despatch Centre in discharge of its functions under the Act and for stable, smooth and secure operation of the integrated grid, shall be responsible for the following in its control area:		Some functions are not as per EA 2003. Additional functions may be mentioned separately
44(3)(e) Page 106	Maintaining and despatching reserves;	Maintaining and despatching reserves in accordance with SERC notified Ancillary Services Regulations; Provided till the Ancillary Services Regulations are notified by SERCs, maintaining and despatching reserves would be in accordance with these regulations	To have clarity on Control Area Jurisdiction.
44(3)(f) page 106	Declaring Total Transfer Capacity and Available Transfer Capacity in respect of import and export of electricity of its control area with inter-State transmission system in coordination with the Central Transmission Utility and revising the same from time to time based on grid conditions'	Declaring Total Transfer Capacity and Available Transfer Capacity in respect of import and export of electricity of its control area with inter-State transmission system in coordination with the Central Transmission Utility, RLDC and STU and revising the same from time to time based on grid conditions'	SLDC need to interact with RLDC and STU for correct assessment of TTC/ATC. Further STU need to have the feedback from DISCOMs and other Bulk consumers.
45(2) Page 106	The regional entity generating stations must be capable of receiving the load set point signals from the RLDCs/NLDC as per CEA Technical Standards for Connectivity.	The regional entity generating stations and entities participating in Ancillary Services must be capable of receiving the load set point signals from the RLDCs/NLDC as per CEA Technical Standards for	All Regional Entities and entities participating in Ancillary Services need to be wired to receive signal from Load Despatch Centres.

		Connectivity.	
45(3) page 107	RLDCs shall update on quarterly basis the list of all drawee regional entities within their respective control area and post the same on their websites along with allocated or contracted quantum from all entities excluding the intra-State entities within their control area.	RLDCs shall update on quarterly basis the list of all drawee regional entities within their respective control area and post the same on their websites along with allocated or contracted quantum; intra-State drawee entities using ISTS allocated or contracted quantum can be shown separately within Regional entities	To have complete information at one location on complete ISTS Users of a Region. The information of State embedded ISTS Users may be collected from SLDCs.
45(7) Page 108	(7) Area Control Error: The concerned Load Despatch Centre and other drawee regional entities shall keep their Area Control Error close to zero (0) by deploying reserves and automatic demand management scheme.	(7) Area Control Error: The concerned Load Despatch Centre and other drawee regional entities shall keep their Area Control Error close to zero (0) by deploying reserves, automatic demand management scheme, load shedding and generation reduction	Sometime measures like deploying reserves and ADMS may not be sufficient and load shedding or generation reduction may be required to be resorted to control the ACE.
45(8), (9), (10) & (11) 108-111		Proviso under 45(8) & 45(11) may be inserted Provided the revised DC would be implemented from 7 th /8 th Time Block as applicable	It is not clear on revision of DC/Forecast by Generating stations. DC revisions on technical grounds and during outages need to be allowed for generators to ensure the correct LGB of the grid and less strain on reserves.
45(8) (a) Page 108	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.	The regional entity Central generating station shall declare ex-bus Declared Capacity, limited to 100% MCR after keeping primary reserve margin and for other regional entity generating station as per	DC needs to be schedulable as Primary Reserve is mandatory. This avoids any possibility of gaming on DC if injection schedule is being restrictive to Normative Ex-bus.

		PPA /LTA clauses , on day ahead basis as per provisions of Regulation 47 of these regulations.	
45(8) (b) Page 108	The regional entity generating stations may be required to demonstrate the declared capacity of their generating stations as and when directed by the concerned RLDC. For this purpose, RLDC, in coordination with SLDC and the beneficiaries, shall schedule the regional entity generating station upto its declared capacity as declared on day ahead basis at time of first declaration. RLDC shall ask each generating station, at least once in a year, to demonstrate the declared capacity.	The regional entity generating stations shall demonstrate the declared capacity of their generating stations as and when directed by the concerned RLDC. For this purpose, RLDC, in coordination with SLDC and the beneficiaries, shall schedule the regional entity generating station upto its declared capacity as declared on day ahead basis at time of first declaration. RLDC shall ask each generating station, at least once in a year, to demonstrate the declared capacity.	The Generating Station needs to demonstrate the DC whenever directed by RLDC.
45(8) (c) Page 109	The charges for the first mis-declaration for a block or multiple blocks in a day shall be the charges corresponding to two days fixed charges at normative availability. For the second mis-declaration, the charges shall be corresponding to four days fixed charges at normative availability and for subsequent misdeclarations, the charges shall increase in a geometric progression over a period of a month.	The charges for the first mis-declaration for a block or multiple blocks in a day shall be the charges corresponding to two days fixed charges at normative availability. For the second mis-declaration, the charges shall be corresponding to four days fixed charges at normative availability and for subsequent misdeclarations, the charges shall increase in a geometric progression over a period of the Financial Year.	The counter of misdeclaration sets to zero in each month, while demonstration is mandatory only once a year. To be real deterrent on faithful DC declaration the misdeclarations should be charged for a Financial Year.
45(11) (a)	The regional entity	The regional entity	Pooling by QCA among

Page 110	renewable energy generating station(s) or Projects based on energy storage system(s) connected at a particular ISTS substation or at multiple ISTS substations may appoint a QCA on their behalf to coordinate and facilitate scheduling for such generating stations or energy storage system(s).	renewable energy generating station(s) or Projects based on energy storage system(s) connected at a particular ISTS substation or at multiple ISTS substations in a Region may appoint a QCA on their behalf to coordinate and facilitate scheduling for such generating stations or energy storage system(s).	different region would be difficult for DSM and grid management by RLDCs, therefore QCA may be allowed to pool RE entities within a Region only.
45(12) Page 111	Provided that the Commission may fix through an order a different minimum turndown level of operation in respect of specific unit(s) of a regional entity thermal generating station: Provided further that such generating station on its own option may declare a minimum turndown level below 55% of MCR:.	Provided that the Commission may fix through an order a different minimum turndown level of operation in respect of specific unit(s) of a regional entity thermal generating station keeping in view CEA (Flexible operation of thermal power plants) Regulations, 2022 Provided further that such generating station on its own option may declare a minimum turndown level below as specified by the CEA / Commission	Once CEA (Flexible operation of thermal power plants) Regulations, 2022 are notified they need to be complied. Further operating the plant below mandated Turn Down Level offers flexibility to system operator/beneficiaries and also allows the generators to participate in Reserves and power market.
45(14) Page 112	A generating station or ESS or a drawee entity shall be allowed to schedule injection or drawal only upto its effective GNA quantum or T-GNA quantum, as applicable, in accordance with the GNA Regulations.	A generating station or ESS or a drawee entity shall be allowed to schedule injection or drawal only upto its effective GNA quantum and T-GNA quantum, as applicable, in accordance with the GNA Regulations.	In line with GNA Regulations
45(16) Page 112		The decisions of RPC, arrived at by consensus regarding operation of the regional grid and scheduling, despatch and	To take care of the issues which are not specifically covered in IEGC and other CERC Regulations

	energy has been scheduled as per sub-clause (d) of clause 4 of this Regulation shall be paid from the Deviation and Ancillary Services Pool Account, for the energy charge equivalent to the incremental energy scheduled, and the generating station from which reduction in generation has been directed as per sub-clause (e) of clause (4) of this Regulation shall pay back to the Deviation and Ancillary Services Pool Account, the energy charge equivalent to the decremental energy		part load operation and unit shut down charges after SCUC or revival after SCUC may be brought out.
46(4)(h)(i) & (ii)	UNIT SHUT DOWN (USD)	<p>The issue of Entitlement, requisition and scheduling both by needy beneficiary and beneficiary not needing power remains unresolved. One of the major cause is creation of Entitlement base on share allocation % both for On Bar and Off Bar DC by POSOCO which is not in line with the need of the beneficiaries. The Entitlement creation for On Bar and Off Bar DC on which right to schedule power is vested is not resolved.</p> <p>A new clause may be added (iii) RPC may formalize a procedure in consultation with stakeholder for implementation in the Region whenever unit is taken under USD for creating On Bar and Off Bar Entitlement based on requirement and surrender of power by beneficiary.</p>	
47(1)(a)(i) Page 115	The generating station based on coal and lignite	The generating station based on coal and lignite	In line with CEA (Flexible operation of

	<p>shall submit the following information for 0000 hours to 2400 hours of the 'D' day, by 6 AM on 'D-1' day,:</p> <p>(a) Time block-wise On-bar Declared Capacity (MW) for on-bar units;</p> <p>(b) Time block-wise Off-bar Declared Capacity (MW) for off-bar units;</p>	<p>shall submit the following information for 0000 hours to 2400 hours of the 'D' day, by 6 AM on 'D-1' day,:</p> <p>(a) Time block-wise On-bar Declared Capacity (MW) for on-bar units;</p> <p>(b) Time block-wise Off-bar Declared Capacity (MW) for off-bar units;</p> <p>(c) Time block-wise Ramp up rate (MW/min) for on-bar capacity; (d) Time block-wise Ramp down rate (MW/min) for on-bar capacity;</p> <p>(e) MWh capability for the day;</p> <p>(f) Minimum turndown level (MW) and in percentage (%) of rated capacity on-bar;</p> <p>(g) Time for revival of unit (s) under USD (synchronization and reaching Minimum turndown level)</p>	<p>thermal power plants)Regulations, 2022</p> <p>Time for synchronization from hot, warm & cold and reaching to minimum turn down level is critical to number of grid operation decisions.</p>
47(1)(a)(iii) Page 117	(f) Minimum turndown level (MW) and in percentage (%) of ex-bus capacity on-bar	(f) Minimum turndown level (MW) and in percentage (%) of ex-bus capacity on-bar (g) Time for revival of unit (s) under USD (synchronization and reaching Minimum turndown level)	Time for synchronization from hot, warm & cold and reaching to minimum turn down level is critical to number of grid operation decisions.
47(1)(a) Page 117		New clause (vii) may be added DC declaration will be limited to schedulable power and primary response will be over and above the DC declaration.	DC needs to be schedulable as Primary Reserve is mandatory.
47(1)(b)(i) Page 117	For generating station, where Central Government has allocated	For generating station, where Central Government has allocated power, each	On bar / Off bar entitlement cannot be computed on share

	<p>power, each State shall be entitled to a MW despatch up to the State's Share in the station's declared capacity for the day. Accordingly, based on declared capacity of such generating station, RLDC shall declare entitled share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day</p>	<p>State shall be entitled to a MW despatch up to the State's Share in the station's declared capacity for the day. Accordingly, based on declared capacity of such generating station, RLDC shall declare entitled share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day. On bar and off bar entitlements would be computed based on requisition of the beneficiaries.</p>	<p>allocation % and it needs to be computed based on requirement of the beneficiaries. On Bar entitlement of the beneficiary(ies) who have made the unit to go under USD needs to be reduced. This takes care of compensation also as it has to shared based on difference of on bar entitlement and schedule.</p>
<p>47(1)(b)(ii)) Page 117</p>	<p>The generating station other than those having allocation of power by the Central Government shall indicate the declared capacity along with respective share of the beneficiary(ies) or buyers in accordance with the contracts entered with them. Based on declared capacity of such generating station and share of the beneficiaries or buyers as indicated by such generating station, RLDC shall declare share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day.</p>	<p>The generating station other than those having allocation of power by the Central Government shall indicate the contract wise declared capacity along with respective share of the beneficiary (ies) or buyers in accordance with the contracts entered with them. Based on contract wise declared capacity of such generating station and share of the beneficiaries or buyers as indicated by such generating station, RLDC shall declare share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day.</p>	<p>Other than CGS contract-wise DC and scheduling provisions are required.</p>
<p>47(1)(o) Page 122</p>	<p>Issuance of day-ahead schedule:</p>	<p>A new proviso can be added Power Exchange(s) shall furnish the detailed break up of regional/bid area injection and drawal to NLDC/RLDC</p>	<p>Similar to clause 47(1)(p)(ii)</p>

<p>47(2)(a) (iii) Page 123</p>	<p>The generating stations, including those for which the tariff is determined by the Commission under Section 62 of the Act, willing to participate in SCED shall declare at their discretion, the variable charges upfront to NLDC on weekly basis after factoring in likely changes in fuel cost and part load compensation, if any.</p>	<p>The generating stations, including those for which the tariff is determined by the Commission under Section 62 of the Act, willing to participate in SCED shall declare at their discretion, the variable charges upfront (both for SCED Up and SCED down) to NLDC on weekly basis after factoring in likely changes in fuel cost and part load compensation, if any.</p>	<p>The variable rates for SCED up and SCED down may be different for competitive participation. SCED down may have to factor part load cost implications while SCED up may have a VC less than VC.</p>
<p>47(2)(a) (vii) Page 124</p>	<p>For any increment in the generation schedule on account of SCED, the participating generator shall be paid from the 'National Pool Account (SCED)' at the rate of its variable charge declared upfront by the generator. For any decrement in the generation schedule on account of SCED, the participating generator shall pay to the 'National Pool Account (SCED)' at the rate of variable charge.</p>	<p>For any increment in the generation schedule on account of SCED, the participating generator shall be paid from the 'National Pool Account (SCED)' at the rate of its SCED Up variable charge declared upfront by the generator. For any decrement in the generation schedule on account of SCED, the participating generator shall pay to the 'National Pool Account (SCED)' at the rate of SCED Down variable charge declared upfront by the generator.</p>	<p>In line with modification suggested in 47(2)(a) (iii) above</p>
<p>47(2)(b) Page 125</p>	<p>For the purpose of ensuring primary response, RLDCs and SLDCs, as the case may be, shall not schedule the generating station or unit(s) thereof beyond exbus generation corresponding to 100% of the installed capacity of the generating station or unit(s) thereof. The</p>	<p>For the purpose of ensuring primary response, the generating station shall give DC upto schedulable power and Primary Response margin shall always be ensured. The generating station shall not resort to Valve Wide Open (VWO) operation of units, whether running on full load or part load, and shall ensure that</p>	<p>DC restriction/ declaration should be by Generator itself and not with RLDC. The Primary reserves are mandatory in nature and beneficiaries' schedules should be upto DC. All the FC charge computations are based on normative Ex-Bus and</p>

	<p>generating station shall not resort to Valve Wide Open (VWO) operation of units, whether running on full load or part load, and shall ensure that there is margin available for providing governor action as primary response. In case of gas or liquid fuel-based units, suitable adjustment in Installed Capacity should be made by RLDCs and SLDCs, as the case may be, for scheduling in due consideration the prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the generating station or unit(s) thereof have been specified:</p> <p>Provided that the hydro generating stations shall be permitted to schedule ex-bus generation corresponding to 110% of the installed capacity during high inflow periods to avoid spillage:</p>	<p>there is margin available for providing governor action as primary response. In case of gas or liquid fuel-based units, suitable adjustment in Installed Capacity should be made by generating stations, for scheduling in due consideration the prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the generating station or unit(s) thereof have been specified:</p> <p>Provided that the hydro generating stations shall be permitted to schedule ex-bus generation corresponding to 110% of the installed capacity during periods to avoid spillage:</p>	<p>Normative-Ex bus does not include in Primary Response. Therefore there should not be any restriction on schedulable quantum to beneficiaries by RLDCs and it is also mandatory on behalf of generators to provide Primary response on any declared DC.</p>
<p>47(2) (b)</p>	<p>In case of gas or liquid fuel-based units, suitable adjustment in Installed Capacity should be made by RLDCs and SLDCs, as the case may be, for scheduling in due consideration the prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the</p>	<p>In case of gas or liquid fuel-based units, suitable adjustment in Installed Capacity would be made by generating station and inform to RLDCs and SLDCs, as the case may be, for scheduling in due consideration the prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions</p>	<p>The Generating station has taken decision of setting up the plant considering ambient conditions prevalent at site and it will reflect in DC declared by Generating station. Restriction of schedules by RLDC</p>

	generating station or unit(s) thereof have been specified:	on which installed capacity of the generating station or unit(s) thereof have been specified: The same would be vetted by RLDC/SLDC for giving dispatch schedule. Or The clause can be deleted	based on ambient condition may not be the right way. It is also mandatory on behalf of generators to provide Primary response on any declared DC.
47(3) & 47 (4)Page 126-131 47(1)(g) Page 119-122 45(5) Page 107 Annexure-6 (1) (d)	Power to revise schedules:	<u>Clarity may be given in view of the following:</u> T-GNA creates a mapping of source and sink while Regulation 36.2 of GNA Regulations states that GNA Grantee is eligible to schedule any power under any contract. Further GNA may be less than the existing quantum of contracts or a drawee GNA entity may go into new contract for which GNA is not required. Therefore to implement curtailment under 47(3) and 47(1) (g) in each block power under GNA and under T-GNA for each contract needs to be known to respective RLDC/SLDC. In Regulation 47(4) it is entities may revise their schedules under GNA in accordance with their contract, however entity may be availing bilateral/collective within its GNA. While T-GNA schedules cannot be revised but entity may be availing its despatchable contract under T-GNA.	
47(3)(b) Page 127-128	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	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 in the block specified by RLDC and maximum upto from 7th block or 8th block depending on time block in	The System may be already under alert or emergency schedule and allowing injection and drawl for 1.5 hrs may be threat to system security.

	time block.	which schedule has been revised as first time block.	
47(3) (c) Page 128	<p>In case of contingencies such as critical loading of lines, transformers, abnormal voltages or threat to system security, the following steps as considered necessary, may be taken by RLDC:</p> <p>(i) Issue directions to concerned entities to adhere to the schedules;</p> <p>(ii) Deployment of ancillary services; (iii) Switching off pump storage plants operating in pumping mode;</p> <p>(iv) Despatching emergency demand response measures; (v) Direct the SLDCs or other regional entities to increase or decrease their drawal or injection by revising their schedules and such directions shall be immediately acted upon.</p>	<p>In case of contingencies such as critical loading of lines, transformers, abnormal voltages or threat to system security, the following steps as considered necessary, may be taken by RLDC:</p> <p>(i) Issue directions to concerned entities to adhere to the schedules;</p> <p>(ii) Deployment of ancillary services; (iii) Switching off units running on pump mode / lift irrigation pumps(>50 MW);</p> <p>(iv) Despatching emergency demand response measures;</p> <p>(v) Direct the SLDCs or other regional entities to increase or decrease their drawal or injection and also by revising their schedules and such directions shall be immediately acted upon.</p>	<p>Irrigation pumps of high Installed capacity are coming up in grid and during contingencies they may be set for tripping.</p> <p>Suo-moto revisions of schedule also help in addressing the contingencies.</p>
47(4)(b)	<p>The request for revision of scheduled transaction for 'D' day, shall be allowed to be made in any time block starting 2 PM on 'D-1' day subject to the following:</p> <p>(i) In respect of a generating stations whose tariff is determined under Section 62 of the Act, upward revision of schedule shall be allowed starting 2 PM on 'D-1' day; only in respect of the remaining available</p>	<p>The request for revision of scheduled transaction for 'D' day, shall be allowed to be made in any time block starting 2 PM on 'D-1' day subject to the following: (i) In respect of a generating stations whose tariff is determined under Section 62 of the Act, revision of schedule shall be allowed starting 2 PM on 'D-1' day</p>	<p>Revision of schedule only in upward direction is not in secure grid operation point of view. This may lead to huge underdrawal during sudden high ingress of RE or sudden fall in load and there are virtually no payments envisaged for underdrawal in DSM Regulations. The need of the hour is to allow</p>

	<p>quantum of unrequisioned surplus after finalization of schedules under day ahead market.</p>		<p>the beneficiaries to correct their deficit and surplus upto the extent possible as close to real time as possible and then only SLDC/RLDC/NLDC (System Operators) should come in picture.</p>
<p>47(5)/Page 130 and 47(5)(a)</p>	<p>Grid disturbance of category GD-5: GD-5 is defined under Regulation 11(2) of CEA Grid Standards as "When forty per cent or more of the antecedent generation or load in a regional grid is lost".</p>	<p>All Grid-disturbances GDs as defined under Regulation 11(2) of CEA Grid Standards.</p>	<p>What about other all Grid Disturbances where there is loss of generation of ISTS connected generator? Will the grid operate with inadequate load generation balance when the system is in alert, emergency, extreme emergency and restoration state? Adequate revisions in generation schedule and corresponding changes in drawl schedule are required to bring the planned generation stage. Generators must be required to change their injection schedule else RLDC must be empowered to change the schedule on suo moto and time periods need to be defined. Till injection /drawl schedules are implemented the system can be managed though secondary and tertiary reserves but these reserves are to be</p>

			restored at the earliest for next contingency.
47(5)(c) & (d) /Page 130	<p>Scheduled generation of all the affected regional entity generating stations supplying power under bilateral transactions shall be deemed to have been revised to be equal to their actual generation for all the time blocks affected by the grid disturbance. Such regional entity generating station shall pay back the energy charges received by it for the scheduled generation revised as actual generation to the pool account.:</p> <p>Provided that, in case the beneficiaries or buyers of such regional entity generating station are also affected by such grid disturbance, the scheduled drawals of such beneficiaries or buyers shall be deemed to have been revised to corresponding actual generation schedule of regional entity generating stations. Provided further that in case the beneficiaries or buyers of such regional entity generating station are not affected by such grid disturbance and they continue to draw power, the scheduled drawals of such beneficiaries or buyers shall not be</p>	<p>Clauses may be require suitable amendment keeping in view the following:</p> <p>In the sub proviso it is mentioned that in case the beneficiaries or buyers of such regional entity generating station are not affected by such grid disturbance and they continue to draw power, the scheduled drawals of such beneficiaries or buyers shall not be revised. It would lead to situation deficit in generation.</p> <p>In any situation grid needs to be operated close to its LGB. Any difference created between injection schedule and drawl schedule needs to be corrected as soon as possible.</p> <p>Generators and RLDC should endeavour to correct the injection schedule and RLDC should do the matching reduction in drawl schedule to reach new LGB equilibrium.</p> <p>Further the case where both bilateral and collective transactions are there, how scheduled generation of all the affected regional entity generating stations shall be deemed to have been revised to be equal to its actual generation.</p>	

	<p>revised.</p> <p>((d) The scheduled generation of all the affected regional entity generating stations supplying power under collective transactions shall be deemed to have been revised to be equal to their actual generation. Such regional entity generating stations shall refund the charges received towards such scheduled energy to the DSM pool account.</p>		
47(5)(e)	<p>The declaration of grid disturbance shall be done by the concerned RLDC at the earliest. A notice to this effect shall be posted at its website by the RLDC of the region in which the grid disturbance has occurred which shall be considered as declaration of the grid disturbance by RLDC. All regional entities shall take note of the grid disturbance and take appropriate action at their end</p>	<p>The declaration of grid disturbance shall be done by the concerned RLDC at the earliest. A notice to this effect shall be posted at its website by the RLDC of the region in which the grid disturbance has occurred which shall be considered as declaration of the grid disturbance by RLDC. All regional entities shall take note of the grid disturbance and take appropriate action at their end:</p> <p>Provided RLDC shall suo moto revise the schedules of effected generators and drawal schedules immediately and intimate the all the concerned.</p>	<p>For the reasons stated for Regulation 47(5)(c) & (d).</p>
47(5)(f)/P age 131	<p>.....Provided that generation and drawal schedules revised by the Regional Load Despatch Centre shall become effective from 7th block or</p>	<p>.....Provided that generation and drawal schedules revised by the Regional Load Despatch Centre shall become effective from the time</p>	<p>For the reasons stated for Regulation 47(5)(c) & (d).</p>

	8th block depending on block in which schedule has been revised as first block.	block specified by RLDC and should be within 7th block or 8 th block depending on block in which contingency has taken place as first block.	
47(5)/Page 131		New clause (g) may be added For all other grid disturbances/grid incidents and based on system condition alert state, emergency state, extreme emergency state and restoration state, generation and drawal schedules including collective transactions would be revised by the Regional Load Despatch Centre shall become effective from the time block specified by RLDC and should be within 7th block or 8 th block depending on block in which contingency has taken place as first block.	For the reasons stated for Regulation 47(5)(c) & (d).
47(9) (h)	RLDC shall, based on the IEM readings, compute time block wise actual net injection and drawal of regional entities and cross border entities within their control area.	RLDC shall, based on the IEM readings, compute time block wise actual net injection and drawal of active and reactive power regional entities and cross border entities within their control area.	Required for Reactive power accounts preparation for High and Low voltages cases.
47(9)(i) Page 134	(i) In case any error or omission is detected by self analysis or brought to notice by an entity, the RLDC or RPC or NLDC, as the case may be, shall make a	(i) In case any error or omission is detected by self analysis or brought to notice by an entity, the RLDC or RPC or NLDC, as the case may be, shall make a complete check and	Data error is generally by entity, RLDC or NLDC and revised data is to be furnished for accounting by RPC. Once the data error is reported to RPC the

	complete check and rectify the error within a period of a month from date of such detection.	rectify the error within a period of a month from date of such detection and furnish the revised data to RPC	time period to revise the account by RPC starts.
47(9)(j) Page 134	(j) RLDC shall forward the IEM readings and the implemented schedule to the concerned RPC on a weekly basis by each Friday for the preceding seven days period ending on the preceding Sunday mid-night, to enable the latter to prepare and issue the various accounts such as Deviation Settlement Mechanism (DSM), reactive charges, congestion charges, ancillary services, SCED, heat rate compensation charges and regional transmission deviation in accordance with relevant regulations.	(j) RLDC shall forward the IEM readings, computed time block wise actual net injection and drawal of active and reactive power of regional entities and the implemented schedule to the concerned RPC on a weekly basis for the preceding seven days period ending on the preceding Sunday mid-night, to enable the latter to prepare and issue the various accounts such as Deviation Settlement Mechanism (DSM), reactive charges, congestion charges, ancillary services, SCED, part load compensation charges and regional transmission deviation in accordance with relevant regulations as per the timelines mentioned in the DSM Regulations 2022	As per DSM Regulations 2022, 9. Accounting of Charges for Deviation and Ancillary Service Pool Account (1) By every Thursday, the Regional Load Despatch Centres shall provide the data for deviation calculated as per Regulation 6 of these regulations, for the previous week ending on Sunday mid-night to the Secretariat of the respective Regional Power Committees. (2) After receiving the data for deviation from the Regional Load Despatch Centre, the Secretariat of the Regional Power Committee shall prepare and issue the statement of charges for deviation prepared for the previous week, to all regional entities by ensuing Tuesday:
49/Page	CYBER SECURITY AUDIT All users shall conduct Cyber Security Audit as per the guidelines mentioned in the CEA (Cyber Security in Power Sector) Guidelines, 2021	CYBER SECURITY AUDIT All users, NLDC, RLDCs, SLDCs, CTU, STUs and Control Centres shall conduct Cyber Security Audit as per the guidelines mentioned in the CEA	System Operators and Control Centres Cyber Security Audit is critical and they are not covered in Users.

	and any other guidelines issued by an appropriate Authority.	(Cyber Security in Power Sector) Guidelines, 2021 and any other guidelines issued by an appropriate Authority.	
Annexure-1 (1) (1) Page 142	The audit reports, along with action plan for rectification of deficiencies found, if any, shall be submitted to RPC or RLDC within a month of submission of report by auditor.	The audit reports, along with action plan for rectification of deficiencies found, if any, shall be submitted to RPC and RLDC/SLDC within a month of submission of report by auditor.	For clarity
Annexure-1 (1) (2) Page 142	The third-party protection system checking shall be carried at site by the designated agency. The agency shall furnish two reports: I. Preliminary Report: This report shall be prepared on the site and shall be signed by all the parties present. II. Detailed Report: This report shall be furnished by agency within one month after carrying out detailed analysis.	The third-party protection system checking shall be carried at site by the designated agency. The agency shall furnish the detailed report covering the following within one month: I. Field Observations: The field observations shall be prepared on the site and shall be signed by all the parties present. II. Audit Recommendations:	Two reports within one month may be difficult to follow up and one Report within one month may suffice for Third Party Protection Audit. It is in line with present TP Protection Audits also.
Annexure-1 (2) (1) (1) Table J Page 143		A new clause may be added (n) Time synchronization facility	It is critical for event analysis.
Annexure-1 (2) (2) Table J Page 143	Disturbance Recorder out available for last 6 tripping's (Y/N)	Disturbance Recorder/Event Logger out available for last 6 tripping's (Y/N)	Event Logger is also critical tool for event analysis.
Annexure-1 (4)		A new clause (h) For any other equipment (STACOM, SVC etc) the detailed list shall be prepared by checking and	The Standard Protection format not available for elements may be developed at RPCs.

		validation team in consultation with concerned entity, RLDC and RPC.	
Annexure-2 (1)(1) /Page 149	Assessment of reference contingency,	Assessment of reference contingency in both directions	Same quantum of reserve in both directions are not required.
Annexure-2 (2)(1) /Page 149		Criteria for reserve in downward direction needs to be specified	
Annexure-2 (2)(2) (a)/Page 149	The all India minimum target frequency response characteristic (MW/Hz) shall be reference contingency quantum (MW) divided by maximum steady frequency deviation (Hz) allowable for the reference contingency event.	The all India minimum target frequency response characteristic (MW/Hz) shall be reference contingency quantum (MW) divided by maximum steady frequency deviation (Hz) allowable for the reference contingency event in both directions.	Same quantum of reserve in both directions are not required.
Annexure-2 (3)/Page 150	Calculation of Frequency Response Obligation (FRO) of each control area: The minimum Frequency Response Obligation (FRO) of each control area in MW/Hz shall be calculated as: $FRO = (\text{Control Area average Demand} + \text{Control Area average Generation}) * \text{minimum all India Target Frequency Response Characteristic} / (\text{Sum of peak or average demand of all control areas} + \text{Sum of average generation of all control areas})$	Calculation of Frequency Response Obligation (FRO) of each control area: The minimum Frequency Response Obligation (FRO) of each control area (including regional generators for whom Primary Response is mandated) in MW/Hz shall be calculated as: $FRO = (\text{Control Area average Demand} + \text{Control Area average Generation}) * \text{minimum all India Target Frequency Response Characteristic} / (\text{Sum of average demand of all control areas} + \text{Sum of average generation of all control areas})$ Note for generators Control Area Average demand will be	Peak can be removed to ensure complete allocation of FRC. If generators FRO is to be specified it can be included in the Regulation itself.

		zero.	
Annexure-2 (4)/Page 151	Criteria for reportable event: The frequency response characteristic (FRC) calculation shall be carried out by each control area for any load or generation loss incident involving net change of more than 1000 MW of load or generation or a frequency change involving 0.1 Hz or more. The event shall be notified by the NLDC.	Criteria for reportable event: The frequency response characteristic (FRC) calculation shall be carried out by each control area for any load or generation loss incident involving net change of more than 1000 MW of load or generation and a frequency change involving 0.1 Hz or more. The event shall be notified by the NLDC.	Being a large system now both loss and frequency should criteria for FRC.
Annexure-2 (5)(a)/Page 151 5(a)(i)	Frequency Response Characteristics (FRC) will be computed for all events involving a sudden 1000 MW or more load or generation loss or a step change in frequency by 0.10 Hz i.e. f	Frequency Response Characteristics (FRC) will be computed for all events involving a sudden 1000 MW or more load or generation loss and a step change in frequency by 0.10 Hz i.e. f	Same as above
Annexure-3 (5) Page 157	The total reserves in a region shall be algebraic sum of reserves in each state control area. However, due to diversity within the region, the Region as a whole might need lesser reserves of secondary and tertiary reserves. As such, All India reserve capacity is taken as equal to reference contingency i.e 4500 MW and this reserve requirement shall be distributed pro-rata amongst the regions based on regional ACE which shall further be divided to identify the share of each state based	The total reserves in a region shall be algebraic sum of reserves in each state control area. However, due to diversity within the region, the Region as a whole might need lesser reserves of secondary and tertiary reserves. As such, All India reserve capacity is taken as equal to reference contingency i.e 4500 MW and this reserve requirement shall be distributed pro-rata amongst the regions based on regional ACE and the secondary and tertiary reserve at regional level will be maintained accordingly.	Presently Tertiary Reserves are to be maintained equal to Secondary Reserves and it may be brought out clearly in Regulations.

	on 99 percentile ACE of such State control area	The same Regional Secondary and Tertiary Reserve shall further be divided to identify the share of each state based on 99 percentile ACE of such State control area	
Annexure-3 (6) Page 157	The amount of reserve to be kept with each State control area at Step 5 shall be validated against the maximum unit size of the intra-state generator of that control area such that reserve requirement is not more than unit size of maximum intra-state generator.	The amount of reserve to be kept with each State control area at Step 5 shall be validated against the maximum unit size of the intra-state generator of that control area such that reserve requirement is not more than unit size of maximum intra-state generator. Secondary reserve and tertiary reserve capacity shall be finalized accordingly.	Presently Tertiary Reserves are to be maintained equal to Secondary Reserves and it may be brought out clearly in Regulations.
Annexure-3 (7) & (8) Page 158		(7) & (8) can be deleted and can be replaced with (7)The secondary reserves and tertiary reserve for each control area obtained at Step 5 shall be maintained by each state. (8) NLDC will bring out Detailed Procedure in this regard.	It is left to the states in what mechanism they want to maintain reserves (market or regulated). If the secondary reserves are to be maintained at ISG Stations then it may not be possible to provide secondary ancillary service at regional level(it cannot get two signals from regional and state level). If ISG Stations are to maintain Tertiary Reserve then it should be instantly dispatchable for implementation and it cannot wait for 7/8 time blocks.
Annexure-	The regional entities are	The regional entities are	Presently grids are

<p>4 (1)(1) Page 159</p>	<p>therefore expected to provide local VAR compensation or generation such that they do not draw VARs from the EHV grid, particularly under low-voltage condition.</p>	<p>therefore expected to provide local VAR compensation or generation such that they do not draw VARs from the EHV grid, particularly under low-voltage condition and inject VARs into from the EHV grid, particularly under high-voltage condition</p>	<p>more prone to high voltages</p>
<p>Annexure-4 (1)(2) Page 159</p>	<p>The charge for VARh shall be at the rate of 5 paise/kVARhw.e.f.the date of effect of these regulations. This rate shall be escalated at 0.5paise/kVARh per year thereafter, unless otherwise revised.</p>	<p>The charge for VARh shall be at the rate of 5 paise/kVARh for payment into pool and the charge for VARh shall be at the rate of 2.5paise/kVARh for receiving payment from the pool w.e.f. the date of effect of these regulations. This rate shall be escalated at 0.5 paise/kVARh (payment to pool) and 0.25 paise/kVARh (receivable from pool) per year thereafter, unless otherwise revised</p>	<p>It has been seen that more receivables are there than payables in Regional Reactive Account. If differential amount is not created (higher for payable and lesser for receivable) there may be huge outflow from pool account.</p>
<p>Annexure-4 (1)(3) Page 159</p>	<p>All the Inverter Based Resources (IBRs) covering wind, solar and energy storage shall ensure that they have the necessary capability, as per CEA Connectivity Standards, all the time including non-operating hours and night hours for solar. The active power consumed by these devices for purpose of providing reactive power support, when operating under synchronous condenser/night-mode, shall not be charged under deviations and shall be</p>	<p>All the Inverter Based Resources (IBRs) covering wind, solar and energy storage shall ensure that they have the necessary reactive power capability, as per CEA Connectivity Standards, all the time. Further reactive power absorption/injection would be ensured under direction of SRLDC/SLDC during non-operating hours and night hours for solar. The active power consumed by these devices for purpose of providing reactive power support, when operating</p>	<p>Grid security is of paramount importance and sometimes directions of RLDC/SLDC may be required and commercial scheme may not be adequate to handle grid situations. For uniformity and avoiding any commercial dispute procedure for arriving active power consumed by these devices for purpose of providing reactive</p>

	treated as transmission losses in the ISTS.	under synchronous condenser/night-mode, shall not be charged under deviations and shall be treated as transmission losses in the ISTS. NLDC would come out with Procedure for arriving active power consumed by these devices for purpose of providing reactive power support would be brought out by NLDC.	power support may be brought out by NLDC.
Annexure-4 (1) Page 160		New clause 5 may be added The weekly reactive power at Regional Level account will be made Net Zero if receivables are more than payable. If payable are more than receivable in a week the balance amount will be transferred to Reactive Pool Account.	It has been seen that more receivables are there than payables in Regional Reactive Account. If differential amount is not created (higher for payable and lesser for receivable) there may be huge outflow from pool account if accounts are not settled on weekly basis.
Annexure-4 (2) Case-1 Page 160		Below Case-1 following may be added; Net VARh imported at S/S-B, while voltage < 97% = X3 Net VARh imported at S/S-B, while voltage > 103% = X4 (i) State-B pays to State-A for X3 and (ii) State-A pays to State-B for X4	For more clarity to cover all cases
Annexure-4 (2) Case-2 Page 160		Below Case-2 following may be added; Net VARh imported at S/S-A, while voltage < 97% = X1 Net VARh imported at S/S-A, while voltage > 103% = X2 (i) State-A pays to State-B for X1 and	For more clarity to cover all cases

		(ii) State-B pays to State-A for X2	
Annexure-4 (3) (c) Page 161	The concerned regional entities shall pay the amounts into regional reactive pool account operated by the RLDC within 10 (ten) days of issue of statement.	The concerned regional entities shall pay the amounts into regional reactive pool account operated by the RLDC within 7 (Seven) days of issue of statement.	Timeline in line with DSM Regulations
Annexure-4 (3) (c)Page 162	The regional entities who have to receive the money on account of VAR charges would then be paid out from the regional Deviation and Ancillary Service Pool Account, within two(2) working days from the receipt of payment in the Deviation and Ancillary Service Pool Account.	The regional entities who have to receive the money on account of VAR charges would then be paid out from the regional Deviation and Ancillary Service Pool Account, within two(2) working days from the receipt of payment in the reactive pool account.	Payment to and from and may be made reactive pool account.
Annexure-4 (3) (d)Page 162	If payments against the above VAR charges are delayed by more than two days, i.e., beyond twelve (12) days from issue of the statement by RPC Secretariat, the defaulting regional entity shall pay simple interest @ 0.04% for each day of delay. The interest so collected shall be paid to the regional entities who had to receive the amount, payment of which got delayed.	If payments against the above VAR charges are delayed by more than seven (7) days from issue of the statement by RPC Secretariat, the defaulting regional entity shall pay simple interest @ 0.04% for each day of delay. The interest so collected shall be paid to the regional entities who had to receive the amount, payment of which got delayed.	Timeline in line with DSM Regulations
Annexure-4 (3)(e) Page 161	Persistent payment defaults, if any, shall be reported by the RLDC to the Member Secretary, RPC, for initiating remedial action.	Persistent payment defaults, if any, shall be reported by the RLDC to the Member Secretary, RPC, for initiating remedial action. If the issue is still not resolved, the payment	RPC can follow up for payments. For defaults finally the issue needs to be reported to Commission.

		default beyond 6 months would be reported to Commission.	
Annexure-5 (2)(1)(a)Page 163	concerned RLDC a	concerned RLDC a	Typographical error
Annexure-5 (2)(1)(b)(vi)Page 165	Undertake commercial settlement for deviation as per applicable Regulations issued by the Commission.	Undertake commercial settlement for deviation as per applicable Regulations issued by the Commission. Further commercial settlement will be settled between QCA & generating stations being represented by QCA. All the payments as applicable Regulations issued by the Commission would be made by QCA irrespective of settlement issues between QCA and Generating Stations.	Disputes between QCA and its Developers needs to be settled among themselves or resorting to legal recourse and at RPC level it should not be reported or handled.
Annexure-5 (2)(1)(viii)Page 165	(viii) Use Automatic meter reading technologies for transfer, analysis and processing of interface meter data	(viii) Use Automatic meter reading technologies for transfer of interface meter encrypted data.	User should not analyse and process the data.
Annexure-5 (2)(1)(b)(xi)Page 165	Shall establish protocol for communication with individual generators to implement the instructions of RLDCs effectively.	Shall establish protocol for communication with individual generators to implement the instructions of RLDCs effectively in line with CEA Connectivity Regulations and as directed by concerned RLDC.	To give authority to RLDC to establish communication protocols.
Annexure-5 (2)(2)(b)(xi)Page 165	The concerned RLDC will be responsible for processing the interface meter data and computing the net injections at pooling station represented by each QCA or REGS or Lead	The concerned RLDC will be responsible for processing the interface meter data and any downstream meter data for computing the net injections at pooling station represented by each QCA or REGS or Lead Generator, as	In RE Pooling Station may meters data is required for correct apportionment and with QCA it may become more complex. That work needs to be carried out by RLDCs.

	Generator, as the case may be, as specified in Annexure- V.	the case may be, as specified in Annexure- V.	
Appendix-I Page 173	For Solar generating stations: Static data points: 3. Turbine Power Curve 10.Manufacturer and Model (of Important Components, Such as Turbine, Concentrators, Inverter, Cable, PV Module, Transformer, Cables)	For Solar generating stations: Static data points: 3. Power Curve 10.Manufacturer and Model (of Important Components, Such as Concentrators, Inverter, Cable, PV Module, Transformer, Cables)	Typographical errors
Annexure-6 (1)(d)Page 183	Energy Accounts inter-alia shall indicate Declared Capability of generating stations, Entitlements, Requisitions, Scheduled loss, Scheduled transactions GNA and T-GNA and actual Interchange.	For the entities being scheduled by RLDCs, energy Accounts inter-alia shall indicate Declared Capability of generating stations, Scheduled transactions GNA and T-GNA and DSM Accounts, Reactive Power Accounts, SCED scheduled energy etc. and any other accounts to be issued under CERC Regulations.	There is no clarity on the accounting of the entities being scheduled by SLDCs. Entitlement and Requisitions are only used for scheduling purpose and not for accounting purpose. Losses are computed by POSOCO and displayed on their website. Actual Interchange is used for DSM or for replacing with scheduled energy
Annexure-6 (1)(f)Page 183	Each regional entity (whether a generating station, REGS, captive Power Plant, OA customer connected to ISTS, any other entity) in a region shall be a member of the regional pool and separately accountable for deviations. For cross border transactions,the Settlement Nodal Agency (SNA) as appointed by the Government of India	Each regional entity (whether a generating station, REGS, captive Power Plant, OA customer connected to ISTS, QCA , any other entity) in a region shall be a member of the regional pool and separately accountable for deviations. For cross border transactions, the Settlement Nodal Agency (SNA) as appointed by the Government of India would	QCA will be member of Pool

	would be a member of the regional pool.	be a member of the regional pool.	
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