POSOCO Presentation on IEGC Review 2019
Indian Electricity Grid Code – Progress so far

30-10-1999: IEGC Regulations, 1999 notified (effective from 01-02-2000)

First Review
March 2002

No. 1/14/2015-Reg.A(IEGC)/46.  

In exercise of powers conferred under clause (b) of sub-section (1) of Section 79 read with clause (g) of sub-section (2) of Section 178 of the Electricity Act, 2003 (36 of 2003), and all other powers enabling it in this behalf, the Central Electricity Regulatory Commission hereby makes the following regulations to amend the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 including the first and second amendments thereof (hereinafter referred to as “the Principal Regulations”), namely:

1. Short title and commencement - (1) These regulations shall be called the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Third Amendment) Regulations, 2015.

(2) These regulations shall come into force with effect from 1st November, 2015.

2. Amendment of Regulation 1 of Part 1 of Principal Regulations: Sub-Regulation (a) under Regulation 1.4 of the Principal Regulations, shall be substituted as under:

“Part 6: Scheduling and Despatch Code: This section deals with the procedure to be adopted for scheduling and despatch of generation of the Inter-State Generating Stations (IGS) and scheduling for other transactions through long-term access, medium-term and short-term open access including complementary commercial mechanisms, on a day-ahead and intra-day basis with the process of the flow of information between the IGS, National Load Dispatch Centre (NLD), Regional Load Dispatch Centre (RLDC), Power Exchanges and the State Load Dispatch Centres (SLDC), and other concerned persons.

Most of the wind and solar energy generators are presently connected to intra-State network and in future are likely to be connected to the inter-state transmission system (ISTS) as well. Keeping in view the variable nature of generation from such sources and the effect such variability has on the inter-state grid, and in view of the large-scale integration of such sources onto the grid envisaged as view of the Government of India’s thrust on renewable sources of energy, scheduling of wind and solar generators which are regional entities, has been incorporated in this code.”

3. Amendment of Regulation 2 (Definitions) of Principal Regulations:

(i) Sub-Regulation (ee) of Regulation 2 of the Principal Regulations, shall be substituted as under:
Indian Electricity Grid Code – CERC empowered by EA 2003

Section 178. (Powers of Central Commission to make regulations): --- (1) The Central Commission may, by notification make regulations consistent with this Act and the rules generally to carry out the provisions of this Act.

(2) In particular and without prejudice to the generality of the power contained in sub-section (1), such regulations may provide for all or any of following matters, namely:-

(g) Grid Code under sub-section (2) of section 28;

Section 79. (Functions of Central Commission): --- (1) The Central Commission shall discharge the following functions, namely:-

(h) to specify Grid Code having regard to Grid Standards;

Provisions under Electricity Act 2003 to empower CERC for issuing Grid Code

Indian Electricity Grid Code (IEGC) and subsequent amendments being issued by CERC from time-to-time

CERC (IEGC), 2010 Regulations

CERC (IEGC xx Amendments), 20xx Regulations

EA 2003: Section 178, Sub-section 2, Clause (g)

EA 2003: Section 79, Sub-section 1, Clause (h)
Indian Electricity Grid Code – Progress so far

14-03-2006: IEGC Regulations, 2006 notified (effective from 01-04-2006)

28-04-2010: CERC (IEGC) Regulations, 2010 gazetted (effective from 03-05-2010)

05-03-2012: CERC (IEGC, 1st Amendment) Regulations, 2012 notified 06-03-2012: CERC (IEGC, 1st Amendment) Regulations, 2012 gazetted (effective from 02-04-2012)

Undergone several amendments till 2009

Substituted the IEGC Regulations 2006

Amendment of IEGC by CERC

Amendment of IEGC by CERC

Amendment of IEGC by CERC

Amendment of IEGC by CERC

01st Amendment of IEGC by CERC

02nd Amendment of IEGC by CERC

03rd Amendment of IEGC by CERC

04th Amendment of IEGC by CERC

05th Amendment of IEGC by CERC


Followed by: Corrigendum dated 03-07-2010 Addendum dated 03-07-2010

Followed by: Corrigendum dated 21-02-2014

Corrigendum dated 03-05-2017

Corrigendum dated 01-05-2017

Addendum dated 03-07-2010

Corrigendum dated 21-02-2014


Followed by: Corrigendum dated 03-05-2017


POSOCO_IEGC Review
28-05-2019: Expert Group constituted by CERC to review IEGC

20-06-2019: 2nd meeting of Expert Group (with participation from nominated members of POSOCO and CEA)

17-06-2019: 2nd meeting of Expert Group (with participation from nominated members of POSOCO and CEA)

10-06-2019: CERC invited comments on IEGC from stakeholders

06-06-2019: Nomination and comments from POSOCO sought by CERC

05-06-2019: First Meeting of Expert Group at CERC
Indian Electricity Grid Code – *Introduction*

Power System

**Generation**

1. Power plant
2. Step-up transformer
3. High-voltage transmission line
4. Step-down transformer (substation)
5. Step-down transformer

**Transmission**

- 12 kV
- 400 kV
- 13 kV
- 240 V

**Distribution and Supply of Electricity**

- Conglomeration of number of agencies executing various tasks

**Supply Lines**

- Overhead Lines
- Service Lines

**Works**

- Tie-lines
- Load Despatch
- Distribution Mains

Supply Lines

25 Jul 19
POSOCO IEGC Review
Indgena Electricity Grid Code – **Objective**

**Technical Rules**

**Financial Rules**

**Applicable to all entities connected or using ISTS**

**Entities connected to ISTS (or using it)**

**IEGC**

**Facilitates**

- **Documentation of principles and procedures to define relationship between** –
  - Users of ISTS
  - NLDC
  - RLDCs
  - SLDCs

- **Facilitation of various aspects of grid** –
  - Optimal operation
  - Coordinated and optimal maintenance planning of gen./trans. facilities
  - Development/Planning of economic and reliable grid

- **Facilitation of various functionalities** -
  - Power Markets
  - Ancillary Services

- **Facilitation of RE sources by specifying following for integration in grid** -
  - Technical aspects
  - Commercial aspects
Utilities need to abide by IEGC –

- **Principles**
- **Procedures**

- **Scope**

- **Indian Electricity Grid Code**

- **NLDC/RLDCs**

- **SLDCs**

- **CEA/Regional Power Committees**

- **Licensees**

- **Bhakra Beas Management Board**

- **Sardar Sarovar Project**

- **Interconnection with Neighbouring Countries (treated as separate control area)**

- **Damodar Valley Corporation**

- **POSOCO_IEGC Review**
Indian Electricity Grid Code – *Structure*

- Part 2: Role of Various Organizations and their linkages
- Part 4: Connection Code
- Part 6: Scheduling and Despatch Code
- Part 7: Miscellaneous

Structure of the IEGC contains 07 parts

- Operating Philosophy
- System Security Aspects
- Demand Estimation for Operational purposes
- Demand Management
- Periodic Reports
- Operational Liaison
- Outage Planning
- Recovery Procedures
- Event Information
<table>
<thead>
<tr>
<th>Part 1</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 2</td>
<td>Role of various organizations and their linkages</td>
</tr>
<tr>
<td>Section 2.2 Role of NLDC, 2.2.1(c)</td>
<td></td>
</tr>
<tr>
<td>Section 2.3 Role of RLDC, 2.3.2(d)</td>
<td></td>
</tr>
<tr>
<td>Section 2.4 Role of RPC, 2.4.2(f), 2.4.4</td>
<td></td>
</tr>
<tr>
<td>Part 3</td>
<td>Planning code for inter-state transmission</td>
</tr>
<tr>
<td>Section 3.2, Objective, 3.2(c)</td>
<td></td>
</tr>
<tr>
<td>Section 3.4, Planning Philosophy, 3.4(d)</td>
<td></td>
</tr>
<tr>
<td>Section 3.5, Planning Criteria General Philosophy, 3.5(a), 3.5(a)(i)(a), 3.5(b)</td>
<td></td>
</tr>
<tr>
<td>Part 4</td>
<td>Connection Code</td>
</tr>
<tr>
<td>Section 4.6 Important Technical Requirements for Connectivity to the Grid</td>
<td></td>
</tr>
<tr>
<td>Section 4.6.2, Data and Communication facilities</td>
<td></td>
</tr>
<tr>
<td>Section 4.6.3, System Recording Instruments</td>
<td></td>
</tr>
</tbody>
</table>
# INDEX

## Part 5_ Operating Philosophy
- Section 5.1, Operating philosophy, 5.1(g)
- Section 5.2, System Security Aspects, 5.2(g), 5.2(l), 5.2(n), 5.2(r)

## Part 6_ Scheduling and Despatch Code
- Section 6.3, Scope
- Section 6.5 Scheduling and Despatch procedure for long-term access, Medium –term and short-term open access, 6.5.19
- Section 6.6, Reactive Power and Voltage Control, 6.6.6, 6.6(7)

## New Chapters
1. Frequency Control
2. Cyber Security
3. Forecasting & Reserve requirement
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Date</th>
<th>Document Name</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mar-19</td>
<td>Global Electricity Network Feasibility Study</td>
<td>CIGRE</td>
</tr>
<tr>
<td>3</td>
<td>Apr-19</td>
<td>NERC_US_Reliability_Standards</td>
<td>North American Electric Reliability Corporation (NERC)</td>
</tr>
<tr>
<td>4</td>
<td>2016</td>
<td>IRENA_Grid_Codes_2016</td>
<td>International Renewable Energy Agency (IRENA)</td>
</tr>
<tr>
<td>5</td>
<td>Feb-18</td>
<td>Review of International Grid Codes</td>
<td>Electric Reliability Federal Energy Regulatory Commission</td>
</tr>
<tr>
<td>8</td>
<td>Jul-18</td>
<td>All TSOs’ scenario definition and scenario description for the year 2019 CGM creation</td>
<td>European Network of Transmission System Operators for Electricity</td>
</tr>
<tr>
<td>9</td>
<td>Aug-17</td>
<td>Establishing a guideline on electricity transmission system operation</td>
<td>European Union</td>
</tr>
<tr>
<td>10</td>
<td>Aug-18</td>
<td>All CE TSOs’ agreement on frequency estoration control error target parameters in accordance with Article 128 of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation</td>
<td>European Network of Transmission System Operators for Electricity</td>
</tr>
<tr>
<td>S.No</td>
<td>Date</td>
<td>Document Name</td>
<td>Entity</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>Jan-19</td>
<td>CONTINENTAL EUROPE SIGNIFICANT FREQUENCY DEVIATIONS</td>
<td>European Network of Transmission System Operators for Electricity</td>
</tr>
<tr>
<td>12</td>
<td>Feb-19</td>
<td>Energy Code Reviews</td>
<td>ELEXON</td>
</tr>
<tr>
<td>13</td>
<td>2015</td>
<td>Reliability Standards issued by North American Electric Reliability Corporation Ltd. (NERC) and corresponding provisions in CEA/CERC Regulations</td>
<td>North American Electric Reliability Corporation (NERC)</td>
</tr>
<tr>
<td>14</td>
<td>Sep-18</td>
<td>Guide on new generator-grid interaction requirements</td>
<td>CIGRE</td>
</tr>
<tr>
<td>15</td>
<td>May-19</td>
<td>National Electricity Rules</td>
<td>Australia</td>
</tr>
<tr>
<td>16</td>
<td>Oct-18</td>
<td>REPORT ON ASEAN GRID CODE COMPARISON REVIEW</td>
<td>ASEAN Centre for Energy (ACE)</td>
</tr>
<tr>
<td>17</td>
<td>May-19</td>
<td>THE GRID CODE- Revision 35</td>
<td>National Grid Electricity System Operator Limited</td>
</tr>
<tr>
<td>18</td>
<td>Nov-17</td>
<td>Report of the Expert Group to review and suggest measures for bringing power system operative closer to national reference frequency</td>
<td>CEA, POSOCO and CTU</td>
</tr>
</tbody>
</table>
Definitions

- "Control Centre" definition can be added (NLDC or RLDC or REMC or SLDC or Area LDC or Sub-LDC or DISCOM LDC including main and backup as applicable).
- Communication system may be defined
- Security Constrained Economic Despatch (SCED), Reference Frequency, Frequency Control Continuum, Reference contingency, Minimum frequency, Quasi steady state frequency, Area Control Error (ACE), Automatic Generation Control, minimum nadir frequency, Frequency Response Obligation, Rate of change of frequency (ROCOF), frequency bias coefficient Inertia etc. may be defined
- Qualified coordinating Agency (QCA), Forecasting Service Provider (FSP), REMC, Energy Storage etc. may be defined
Part-2  Role of various organizations and their linkages

- Inclusion of Renewable Energy Management Center operation in Role of SLDC/RLDC/NLDC
- Protection setting database to be managed by RPC and shared to RLDC/NLDC
  Inclusion in role of RPC
- RPC to publish the certified monthly availability on its website, the practice of issuing provisional availability certificate may be discontinued
- Role of RLDC: Inclusion of “Verification of outage records”
- Managing Cross border connections may be included in NLDC role
- Role of National Power Committee (NPC) and its linkages to LDCs/RPCs may be added
- Role of NPC: NPC will harmonize the various meetings in RPC
- Role of CTU: to ensure development of an efficient, co-ordinated and economical system of inter-State transmission lines including reliable National backbone Communication System
Part-3 Planning code for inter-state transmission

• Planning Code, development of models and collection of data
• Data submitted by users for planning study should also be verified and validated by the CTU prior to using the same for planning study. Existing system may also be validated once every 24 months.*
• CTU shall perform the Generating plant Interconnection study to analyse the impact of individual new power plant on the grid and vice versa as per the Model Data provided by the Generator prior to actual commissioning of the power plant will share the report of interconnection with CEA/NLDC/RLDC/RPC/User along with the model data for feedback
• CTU shall carry out planning studies to analyse the impact of reduction in inertia in grid under high RE penetration scenario#
• The planning criterion must ensure that pre fault conditions reflect a credible system operating arrangement
• ISTS shall be capable of withstanding and be secured with sufficient active and reactive power reserves against the following contingency outages**

*MOD-033: NERC, Document Data validation process
#EU system operation guidelines: Section 39(3) (b)
**EU system operation guidelines: Section 18(3) Classification of system states
Part-3 Planning code for inter-state transmission (contd.)

• Under certain extreme circumstances for operation XLDC can take cognizance of (n-G-1) & (n-2) and may be considered as credible contingency
• Outage of single Bus at 220kV/400kV/765kV may also be included in n-1 criterion
• CTU shall carry out short circuit calculations where measured short circuit currents are close to equipment rating. Proper X/R ratio studies be carried out so that associated switchgear operate correctly.
• For RE integration planning, maximum renewable that can be connected to substation may be considered based on the Equivalent Short Circuit Ratio (ESCR)
• Special attention may be accorded for reactive exchange by RE sources. Further studies may be focussed on effect of large scale integration of inverter based resources
• Assess the probability and expected duration of an absence of adequacy and the expected energy not supplied as a result of such absence*

*EU system operation guidelines: Article 105(b), Control area adequacy analysis
*NERC ,Resource Adequacy analysis, BAL-502-RF-03
Part 4  Connection Code

• Model data submission by the user to RLDC six month prior to synchronisation
• The ISTS owner or assigned entity under site responsibility schedule shall maintain the evidence (in hard copy or electronic format ) for time synchronisation of system recording instrument with adjacent stations
• A common communication guideline for SCADA, PMU, Meteorological Data and Forecast Data telemetered at respective RLDC shall be developed.
• These need to be specified along with accuracy, redundancy and resolution with alternate technology.
• Installation of high-resolution Phasor Measurement Unit at all outgoing feeders for all New substation, FACTS, generating station including Renewable Energy connected to ISTS be ensured. Availability of synchronisation display at operator console in all SAS substation may be ensured help resoration/recovery.
• CTU shall process the application for grant of connectivity in accordance with due considerations to provisions of Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017.
• CTU/STU and the concerned Users shall be responsible availability of redundant channels for real time data.
• Data Acquisition system such as Remote Terminal Unit/ SAS Gateway, DC Power Supply System, Multiplexers, Battery Systems, Phasor Measurement Units, time synchronized HVDC measurement system shall always be kept in working condition.
Part 5_ Operating Philosophy

• The updated copy of SLDC operating procedure shall be published on its website at the start of each financial year.

• Periodic testing by third party should be conducted at regular interval once in two years through independent agencies selected by RLDCs or SLDCs as the case may be for governor response/model validation/AVR/PSS and capability curve assessment. **

• Periodic third-party protection audit of all station above 132/110/100 kV shall be prepared by the protection Sub-Committee of the RPC at every three-year basis and compliance of the audit to be monitored by the respective RPC.

• All events discussed in RPC Protection sub-committee should come with various findings which need to be categorised under two parts: Category 1 (the ones which need additional finance) and Category 2 (the ones which do not need additional finance).

• RPC to share the compliance of both Category on Quarterly basis to NPC and CERC.

• Any operational issue in the grid affecting the system security and reliability adversely if could not be resolved within three months after discussion in the respective RPC Forum, shall be notified to the commission on priority by respective RPC or RLDC/NLDC

** Reliability Standards for the Bulk Electric Systems of North America: MOD-025,026,027
Part 5  Operating Philosophy (Contd.)

• All users having control devices (FACTS, HVDC) will have their automatic controller in operation. These include the Power Oscillation Damping (POD), Reactive Power Controller (RPC), frequency controller or any other controller specific to these devices.

• If any of these devices is required to be operated without any of its controller in service, the RLDC shall be immediately intimated about the reason and duration, and its permission obtained.

• The control devices wherever provided shall be properly tuned by the respective user as per the plan prepared for the purpose by the CTU/RPC/RLDC/NLDC from time to time.

• All the Users, STU/SLDC or entity assigned in site responsibility schedule shall upload the desired information (format agreed in respective RPC) on a dedicated portal managed by RLDC within [24 hours] for purpose of analysis of any grid disturbance/event. The monthly violations i.e. failure or delay in uploading the details in desired format will be reported by RLDC to the commission.*

• Mechanisms and facilities at SLDCs shall be created to facilitate on-line estimation of demand for daily operational use for each 15 minutes block.

* Reliability Standards for the Bulk Electric Systems of North America, DR trigger format
* Reliability Standards for the Bulk Electric Systems of North America: EOP-004-4, Event Reporting
Part 5  Operating Philosophy (Contd.)

- Any Operation code provided by SLDC/RLDC will be valid for next 30 minutes.
- In case the specified switching operation could not be completed by the utility then they will take a new code from respective SLDC/RLDC and also provide details why the operation could not be completed in the previous code.
- RPC shall monitor the event and that resulted in system frequency excursions below the initializing set points of the UFLS program, shall carry out a joint assessment report, independent assessment reports and letters describing likely reasons for differences in conclusions and recommendations*
- The pump storage plants should be tripped if the frequency falls below say 49.6 Hz.
- SLDC shall also furnish the import/export capability of their control area for estimation of inter-state Total Transfer Capability/Available Transfer Capability."
- SLDC/RLDC may direct a wind farm to vary its VAr drawl/injection as per reactive power capability curve for secure system operation of the grid.
- RLDC may direct a hydro generator to run in synchronous condensor mode for absorbing the Var from the grid for secure operation of the grid
- While performing RE curtailment, LDCs need to report the RPC whether it was balancing requirement or not
- Procedure shall be developed by each LDC for estimating RE curtailment

* NERC Reliability Guidelines: PRC-006-3, Automatic Underfrequency Load Shedding
New Chapter- On Frequency Control

- Each state control area, region and the neighbouring countries shall work out the Area Control Error (ACE), display, monitor and archive the same.
- For the purpose of ACE calculation, the bias could be set as 4% of Area load per Hz which can be refined over time.
- The inter-state and inter-regional tie line values as well as frequency measurements should be treated as Class A telemetry values and updated at a faster rate than ten (10) seconds at SLDCs/RLDCs/NLDC.
- ACE data is also required to be stored every 10 seconds.
- The ACE, worked out as above, should cross zero value and change sign at least once every hour to start with which would be narrowed down to half an hour. Persistent violation of this condition would render the utility liable for penalties.
- The deviations from the schedule as worked out through Special Energy Meter (SEM) data and schedules shall be closely monitored for all time blocks where average frequency is below 49.95 Hz and above 50.05 Hz. On a monthly basis, the 90th percentile value of over-drawals below 49.95 Hz and under-drawals above 50.05 Hz shall be monitored. This should not exceed 150 MW.
- Any violation could render the utility liable for penalties.
New Chapter- On Frequency Control

- All Users, SEB, SLDCs, RLDCs, and NLDC shall measure the grid frequency with a resolution of +/-0.001 Hz. The frequency data is expected to be stored at the rate of one sample every second as well as 10 seconds.
- Need to suitably replace the terms Free Governor Mode of Operation (FGMO) and Restricted Governor Mode of Operation (RGMO). There is no blanket waiver from primary response for wind and solar generators.
- The term Ripple Filter shall be removed from Grid code.
- Phase out the RGMO and instead have speed control with droop.
- AGC must be implemented throughout the country at the earliest in line with the Commission’s recommendation of treating a region as a balancing.
- AGC at the intra state level, particularly for large states, can be implemented in line with directions by the Appropriate Commission(s).
- A procedure for Reserve Forecasting may be evolved
- Monitoring inertia of the system and inertial response
- To control Indian grid frequency within defined limits, compliance factors using ACE may be formulated, the formulation can be shared by POSOCO

Power Number of INDIAN Power System

MW/Hz

<table>
<thead>
<tr>
<th>Date</th>
<th>Power Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-Jan-15</td>
<td>5500</td>
</tr>
<tr>
<td>2-Aug-15</td>
<td>3500</td>
</tr>
<tr>
<td>18-Feb-16</td>
<td>5500</td>
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<td>5-Sep-16</td>
<td>11500</td>
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<tr>
<td>24-Mar-17</td>
<td>13500</td>
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<tr>
<td>10-Oct-17</td>
<td>15500</td>
</tr>
<tr>
<td>28-Apr-18</td>
<td>15500</td>
</tr>
<tr>
<td>14-Nov-18</td>
<td>15500</td>
</tr>
</tbody>
</table>
On 10th July 2018, at 08:15 hrs 400 KV Rangpo – Binaguri I tripped on R-B phase fault & SPS – I operated resulting into tripping of one unit each at Dikchu, Chuzachen, Jorethang, Tashiding and bus Coupler at Teesta III. At the same time 400 KV Teesta 3- Rangpo line also tripped due to SPS-2 operation and then all units at Teesta III & Dikchu tripped due to loss of evacuation path. Total generation loss was 1025 MW.

**Graph:**
- **Frequency**
  - **DADRI**
  - **KOLAR**
  - **NTPC-VINDHYACHAL**
  - **TALCHER**
  - **VIJAYAWADA**

- **50.034 Hz at 08:14:34:00**
- **49.972 Hz (Quasi steady state Frequency) at 08:14:57:60**
- **49.946 Hz (Nadir Frequency) at 08:14:45:360**
New Chapter on Cyber security

• Proper guideline should be created for the exchange of information/data among RLDC-NLDC, Exchanges, CTU, SLDC, FSP etc. which shall ensure exchange of data/information as cyber secure to avoid unauthorized access.

• To identify and categorize Cyber Systems and their associated Cyber Assets for the application of cyber security requirements commensurate with the adverse impact that loss, compromise, or misuse of those Cyber Systems could have on the reliable operation of the grid. Identification and categorization of Cyber Systems support appropriate protection against compromises that could lead to misoperation or instability in the BES.*

• Responsible Entities may be identified for the requirement.

• All utilities shall carry out third party cyber security audits annually consisting of stage Vulnerability Assessment (VA) and Penetration Test (PT) and appropriate measures shall be implemented to comply with the findings of the audits. The audits shall be conducted by CERT-In certified third-party auditors. Preferably all utilities should strive to be certified in some International Standard for Cyber Security (Ex. ISO 27001 etc)

* Reliability Standards for the Bulk Electric Systems of North America: CIP-002-5.1(a)
Part 6_ Scheduling and Despatch Code

• RE COD standard procedure may be notified

• Scheduling of power from the generating station or unit thereof shall commence from 0000 hrs of D+2 day considering D as the receipt day of COD declaration from generator at RLDC/RPC end along with share allocation from RPC if applicable.

• Ambiguity in Clause 6.3.A.3.i, Trail run procedure of generating stations : whether after short interruption of cumulative time more than 4 hours, generator has to wait for another trial run date with 7 day prior notice to the beneficiaries/RLDC as per the clause or Generator can again start its repeat trial run operation same day or any day effective from the time of machine synchronizes without any 7 day prior notice.

• Scheduling Procedure and time line for SCED,FRAS, RRAS and secondary reserve need to be added in the 6.4 and 6.5
Part 6  Scheduling and Despatch Code

- Technical Minimum for state units may be specified in line with IEGC
- GT tap at Nominal at Generating bus to allow the units to regulate MVAR as per the grid requirement
- STOA revision for RE similar to existing provisions (unit tripping)
- Treatment of Infirm power for renewable
- The time taken by unit to bring on load under different circumstances (ex: Hot / Warm/ Cold Start)
Annexure

Ambiguities: Part 6_ Scheduling and Despatch Code
Clarification in some clauses of Commissioning of Generator & Transmission Elements

Existing Clause: Section 6.3.A.1.IV & 6.3.A.2.IV Trail run procedure of generating stations:

“......the generating company shall submit approval of Board of Directors to the certificates as required under clause (iii) within a period of 3 months of the COD to RPC/RLDC/CEA/CERC.”
POSOCO comments on Part-6

Existing Clause: 6.3.A.1.X & 6.3.A.2.XI, Trail run procedure of generating stations:

“Scheduling of power from the generating station or unit thereof shall commence from 0000 hrs after declaration of COD.”

Update:

“Scheduling of power from the generating station or unit thereof shall commence from 0000 hrs of D+2 day considering D as the receipt day of COD declaration from the generator at RLDC/SLDC/RPC end”
POSOCO comments on Part-6

Existing Clause : 6.3.A.3.i, Trail run procedure of generating stations:

“i) The short interruptions, for a cumulative duration of 4 hours, shall be permissible, with corresponding increase in the duration of the test. Cumulative Interruptions of more than 4 hours shall call for repeat of trial operation or trial run.”

....

“iii) Where the beneficiaries have been tied up for purchasing power from the generating station, the trial run or each repeat of trial run shall commence after a notice of not less than seven days by the generating company to the beneficiaries and concerned RLDC or SLDC, as the case may be.”

Comments:

In case cumulative short interruption more than 4 Hrs during trial run operation

Option -1:- Whether to start repeat trial run operation again with a new 7 day notice to Beneficiaries/RLDC/SLDC.

or

Option 2: To start repeat trial run operation again after 24 Hour or 2 day with the same trial run intimation

Need to be drafted clearly regarding repeat trial run process.
POSOCO comments on Part-6

Existing Clause: 6.4.2 Demarcation of responsibility section for scheduling of generator under RLDC control area or under SLDC

Comments

• Any generating station connected both to ISTS and state network, whether scheduling to be done by RLDC or SLDC?
• As on date the procedure of scheduling and loss application as the case may be is done on the basis of different CERC orders.
• This part need to be clearly drafted in the new IEGC.
POSOCO comments on Part-6

Existing Clause: 6.4.19 & 20 (DC demonstration by the Generator):

As per the 5th amendment of IEGC of clause 5.2.h

"For the purpose of ensuring primary response, RLDCs/SLDCs shall not schedule the generating station or unit(s) thereof beyond ex bus generation corresponding to 100% of the Installed capacity of the generating station or unit(s) thereof......”

Comments:

As per clause 5.2.h, schedules prepared by RLDC is restricted to the normative DC of the generating station. Accordingly whenever generator declared higher DC (more than normative DC), schedule is restricted to normative DC.

- As per clause 6.4.19 &20, if RLDC feels ISGS to demonstrate the Declared Capacity, then it should be up to the declared capacity as declared by the generator not as per DC scheduled by RLDC.
- During DC demonstration, whether schedule for the same generator shall be changed or not?
POSOCO comments on Part-6

Existing Clause : Clause 6.4.22:
“As per this clause weekly meter data to be forwarded by RLDC to RPC secretariat by each Thursday noon.
Thursday need to be replaced with Friday -- as meter data forwarded to RPC secretariat by each Friday as per the procedure in MoU & KPI.”

New Points to be included on

“Scheduling Procedure and time line for SCED,FRAS, RRAS and secondary reserve need to be added in the 6.4 and 6.5.”
Existing Clause: Clause 6.5.19,

“Notwithstanding anything contained in Regulation 6.5(18), in case of forced outage of a unit for a Short Term bilateral transaction, where a generator of capacity of 100 MW and above is seller, the generator shall immediately intimate the same along with the requisition for revision of schedule and estimated time of restoration of the unit, to SLDC/RLDC as the case may be. With the objective of not affecting the existing contracts, the revision of schedule shall be with the consent of the buyer till 31.07.2010. Thereafter, consent of the buyer shall not be a pre-requisite for such revision of schedule. The schedule of the generator and the buyer shall be revised, accordingly. The revised schedules shall become effective from the 4th time block, counting the time block in which the forced outage is declared to be the first one.. The RLDC shall inform the revised schedule to the seller and the buyer. The original schedule shall become effective from the estimated time of restoration of the unit. However the transmission charges as per original schedule shall continue to be paid for two days.

Provided that the generator or trading licensee any other agency selling power from the generating station or unit(s) thereof may revise its estimated restoration time once in a day and the revision schedule shall become effective from the 4th time block, counting the time block in which the revision is advised by the generator to be the first one.

19.A. In case revision of a schedule of a generating unit, the schedules of all transactions under the long term access, medium-term open access and short term open access(except collective transactions through power exchange) shall be reduced on pro rata basis.”
Comments on Clause 6.5.19

- Details Short-term transactions to be revised along with MW reschedule quantum of each STOA to be submitted by the generator at the time of intimation to RLDC.

- No revision shall be allowed in case of planned shutdown.

- Transmission Charge refund procedure in detail for unit tripping and if reschedule of restoration time done.

- New provision shall be introduced in this clause for PX curtailment.
- Provision of STOA revival considering ramp may be included.

- In Clause 6.5.19 A ---- generating units replaced with generating station.

- Pro-rata Reduction of STOA/MTOA/LTA in case of unit tripping shall be done by generator at their end and submitted to RLDC along with unit tripping.
Clause 6.5.34

• While availability declaration by ISGS shall have a resolution of one decimal (0.1) MW and one decimal (0.1) MWh, all entitlements, requisitions and schedules shall be rounded off to the nearest six decimals at each control
New Clauses to be added for following issues

• In case schedule of the generator more than NOC or maximum scheduling limit – Provision of curtailment of the transaction to bring down schedule to NOC may be included.

• It has been observed that CTU is operationalizing LTA but the same is not getting scheduled due to various reasons such as readiness not received from the recipient state, operational LTA more than the installed capacity of a generating station etc.
  – In this regard clarification In IEGC is required whether that all the LTAs which have been operationalized shall be scheduled by RLDCs as soon as the confirmation is received from the CTU.
  – In case where the LTA is not getting scheduled due to reasons mentioned above or any other reason, then the scheduled quantum would be considered as zero. This must get reflected in the schedules issued by RLDCs.
POSOCO comments on Part-6

Existing Clause : 6.6.6:

“The ISGS and other generating stations connected to regional grid shall generate/absorb reactive power as per instructions of RLDC, within capability limits of the respective generating units, that is without sacrificing on the active generation required at that time. No payments shall be made to the generating companies for such VAr generation/absorption.”

Comments:

• Recording provision of of 15 minute VAR to be included.
• In case, generating plant persistently do not absorb/inject Var as per the capability curve then RLDC based on non-performance details may ask generators to undergo the Reactive capability testing.
• Any deviation from the declared capability curve submitted by generators, constraints and variation from technical standards of CEA, to be notified after testing to CEA and Central commission.
• Reduction of ROE or provision for penalty to the generator for continuous failure of supply/absorb VAR as per the capability curve and grid requirement may be included.
Thank You