भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

दिनांक: 25 जून, 2024

सेवा में / To,

एनआरपीसी एवं टीसीसी के सभी सदस्य एवं विशेष आमंत्रित **(**संलग्न सूचीनुसार**)**
Members of NRPC & TCC & Special Invitees (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति की 74 वीं बैठक और तकनीकी समन्वय समिति (टीसीसी) की 50 वीं बैठक की अतिरिक्त कार्यसूची 2.0 के संदर्भ में ।

Subject: Additional agenda 2.0 for 74th Northern Regional Power Committee (NRPC) & 50th Technical Co-ordination Committee (TCC)-reg.

महोदय / महोदया,
उत्तरी क्षेत्रीय विद्युत समिति (एनआरपीसी) की **तकनीकी समन्वय समिति (टीसीसी) की 50 वीं बैठक 28.06.2024 (सुबह 10:00 बजे) रायपुर, छत्तीसगढ़ में होगी।** उत्तरी क्षेत्रीय विद्युत समिति (एनआरपीसी) की **74 वीं बैठक 29.06.2024 (सुबह 10:00 बजे)** को उसी स्थान पर आयोजित की जाएगी। बैठक की अतिरिक्त कार्यसूची 2.0 संलग्न है ।

The 50th meeting of Technical Co-ordination Committee (TCC) will be held on **28.06.2024 (10:00 AM) at Raipur, Chhattisgarh.** The 74th meeting of Northern Regional Power Committee (NRPC) will be held on **29.06.2024 (10:00 AM) at same place.** Additional agenda 2.0 for the above meetings is attached.

भवदीय
Yours faithfully

Signed by Vijay Kumar Singh
Date: 25-06-2024 17:33:37

(वी.के. सिंह)
(V.K. Singh)
सदस्य सचिव
Member Secretary

Copy to:
Chairperson, NRPC & MD, HPPTCL (md.tcl@hpmail.in)

सत्यमेव जयते

उत्तर क्षेत्रीय विद्युत समिति

NORTHERN REGIONAL POWER COMMITTEE

Additional agenda 2.0 of the

50th meeting of

Technical Co-ordination Committee &

74th meeting of

Northern Regional Power Committee

Date: 28th & 29th June 2024

Time: 10:00 AM

Venue: Raipur, Chhattisgarh

Contents

AA2. Additional agenda for TCC meeting

AA2.1 Shifting of NTPC Rihand stage-III generating station to northern region and opening of 400 kV Singrauli-Anpara line (agenda by NRLDC)

AA2.2.1 As per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP) held on 24.1.2020, 400 kV Singrauli – Anpara has to be opened to control the high fault levels in Anpara – Singrauli – Rihand complex.

AA2.2.2 Extract from the MoM are shown below:

6.13. After deliberations, following was agreed:

(i) The transmission system for evacuation of power from Singrauli III:

I. LILO of both circuits of Tie line (Vindhyachal Stage-IV to Vindhyachal Stage-V 400kV D/C Twin Moose line) at Singrauli Stage-III- under the scope of NTPC.

II. Reconductoring of Singrauli Stage-III - Vindhyachal stage-IV 400 kV D/C TM line (formed after above proposed LILO) with HTLS conductor - under the scope of NTPC

III. Singrauli-III–Rihand-III 400kV D/c line- under ISTS scope

IV. 2x125 MVAR Bus Reactor at Singrauli-III generation switchyard- under scope of NTPC

(ii) Singrauli- Anpara 400 kV line will be kept normally open (can be closed in emergency conditions) after commissioning of Anpara D –Unnao 765kV line to restrict high short circuit level in Singrauli-Anpara complex.

(iii) The short circuit level in Singrauli will again be studied by CEA and CTU and accordingly, would be discussed in the next NRPCTP meeting.

The above scheme may also be rectified in next NRPCTP meeting.

AA2.2.3 The agenda was then discussed in 210, 211 & 212 NR-OCC meetings. In 212 OCC meeting, NRLDC representative requested UPSLDC to provide their comments after discussion with stakeholders. UPSLDC representative stated that based on above study and concerns raised by Executive Engineer Anpara BTPS vide Letter no 373 EMD-III/BTPS/SLDC dated 11.09.2023 following are the recommendations:

1. 400 kV Anpara-Singrauli line should remain in services and flow on HVDC Vindhyachal BTB should be from NR-WR until 2X1000 MVA ICTs at Obra C and revised SPS for Anpara Complex is commissioned.
2. In case of single contingency that is tripping of either 765 kV Anpara C-Unnao OR 765 kV Anpara D-Obra C-Unnao line, 400 KV Anpara –Singrauli line should be connected (in case it is opened) as a standard operating procedure and flow on HVDC Vindhyachal BTB should be from NR to WR.
3. 400kV Singrauli-Anpara may be kept antitheft charged/ charged from one end.

AA2.2.4 No comment was received from POWERGRID, CTUIL or NTPC, accordingly it was agreed that as requested by UP, 400 kV Anpara-Singrauli line should remain in

service till commissioning of 2X1000 MVA ICTs at Obra C and revised SPS for Anpara Complex is commissioned. Thereafter, the line may be opened after discussion at OCC level.

AA2.2.5 At the time of discussion in 212 OCC meeting held in October 2023, NR import had reduced considerably and it was informed that 2X1000 MVA ICTs at Obra C would also be commissioned shortly. Therefore, opening of 400kV Anpara-Singrauli was linked with commissioning of 2X1000 MVA ICTs at Obra C as winter was approaching and fog related tripping were also suspected.

AA2.2.6 Subsequently, the matter was also discussed in first meeting of Standing Committee on Short Term & Perspective Power System Planning- Northern Region (SCSTPPSP-NR) held on 14.03.2024 at NRPC, New Delhi. In the meeting, it was recorded that

"During the meeting, UPPTCL representative informed that the 765/400 kV ICTs at Obra C are expected to be charged this summer (one in April and another in June) along with associated 400 kV lines from Obra C. This is expected to provide relief in the complex"

AA2.2.7 However, due to delay in commissioning of 765/400kV ICTs at Obra C and violations of WR-NR ATC/TTC limits, the agenda for opening of 400 kV Anpara-Singrauli line needs to be deliberated again.

AA2.2.8 With opening of 400kV Singrauli-Anpara line, following relief in 3-ph fault levels would be achieved:

- 400kV Singrauli by 16kA (below 40kA)
- 400kV Anpara by 14kA (below 40kA)
- 400kV Anpara C by 13kA (below 40kA)
- 400kV Anpara D by 11kA (below 40kA)
- 400kV Rihand by 5kA (below 40kA)

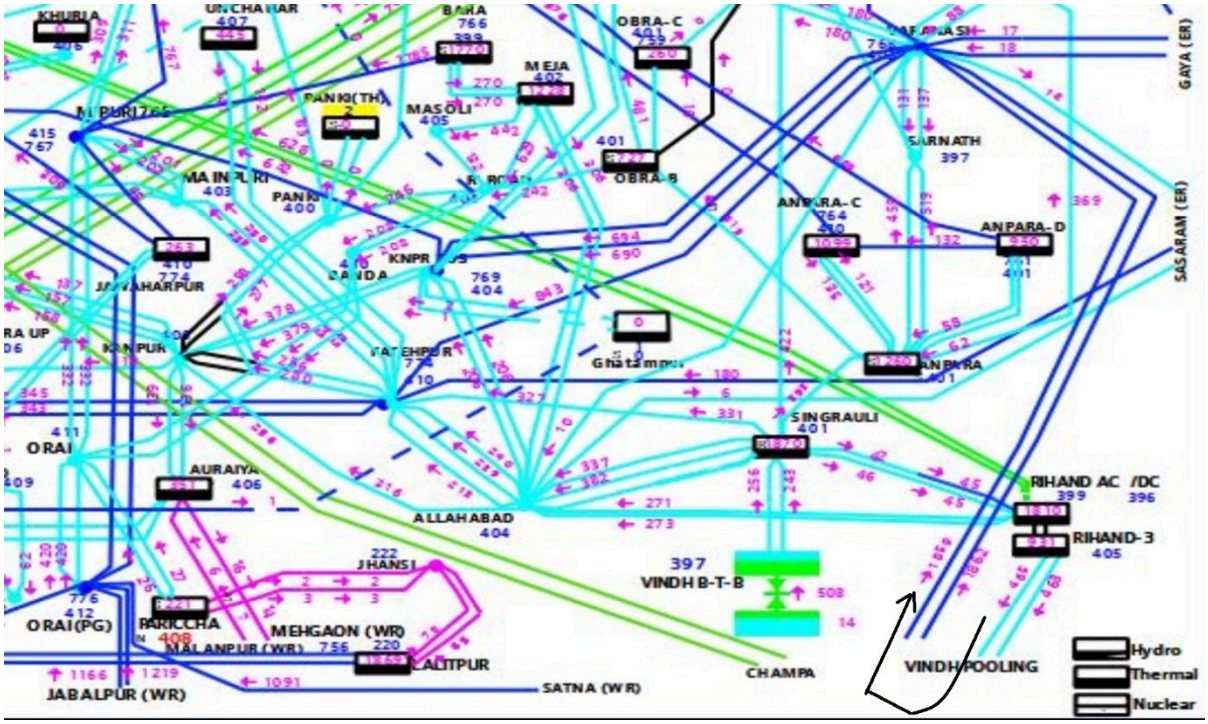
AA2.2.9 Opening of 400kV Anpara-Singrauli would also facilitate shifting of Rihand-III generation to NR and disconnection from Vindhyachal Pool in WR. Therefore, power of Rihand-III generators which is getting evacuated through Vindhyachal and again being pooled to NR through 765kV Vindhyachal-Varanasi D/C line would directly be evacuated to NR from Rihand. This shall help NR to import more power from WR-NR path and violations of WR-NR ATC and NR simultaneous import ATC could be minimized.

AA2.2.10 Transmission System associated with Rihand-III (1000MW) generation projects of NTPC were approved in 29th WR-SCM on 10.09.2009. Approved transmission system of Rihand-III was planned towards WR side by 400kV Rihand-III – Vindhyachal D/C lines. However, as the line commissioning was delayed and HVDC

Champa-Kurukshetra bipole was not commissioned, for the benefit of NR states it was agreed that Rihand-III may be evacuated directly through NR Grid till commissioning of HVDC Champa-Kurukshetra bipole. Same was also discussed in 31st TCC & 35th NRPC Meetings held on 8th and 9th July, 2015.

AA2.2.11 After operation of HVDC Champa-Kurukshetra bipole since Sep 2017, Rihand-III was shifted to its original planned transmission system in November 2017 and its generation is getting evacuated through WR since then.

AA2.2.12 No major issues were observed in NR import till previous year as HVDC Champa-Kurukhsetra bipoles were commissioned, subsequently, 765kV Vindhyachal-Varanasi D/C lines were also commissioned to increase transfer capability limits from WR to NR.



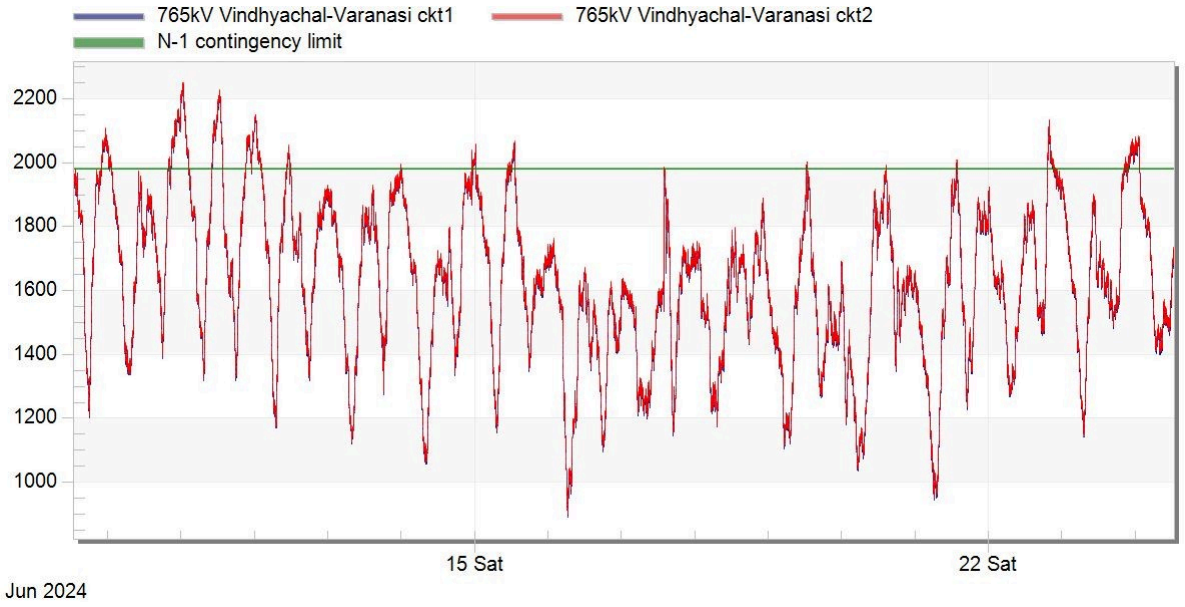
AA2.2.13 Since last year, Northern Region (NR) is experiencing a significant increase in power demand, particularly during non-solar hours in summer months. The Northern Regional import from neighboring regions (WR and ER) has also increased and the transfer capability limit (TTC/ATC) between the Western Region (WR) and Northern Region (NR) is getting breached on regular basis.

AA2.2.14 The loading on the 765 kV Vindhyachal-Varanasi D/C remains on the higher side (N-1 non-compliance also observed on few occasions) for significant period of the time. The high loading on the 765 kV Vindhyachal-Varanasi D/C is currently one of the limiting factors in facilitating further transfer of power from WR to NR apart from N-1 contingency of 765/400kV Agra (PG) ICTs.

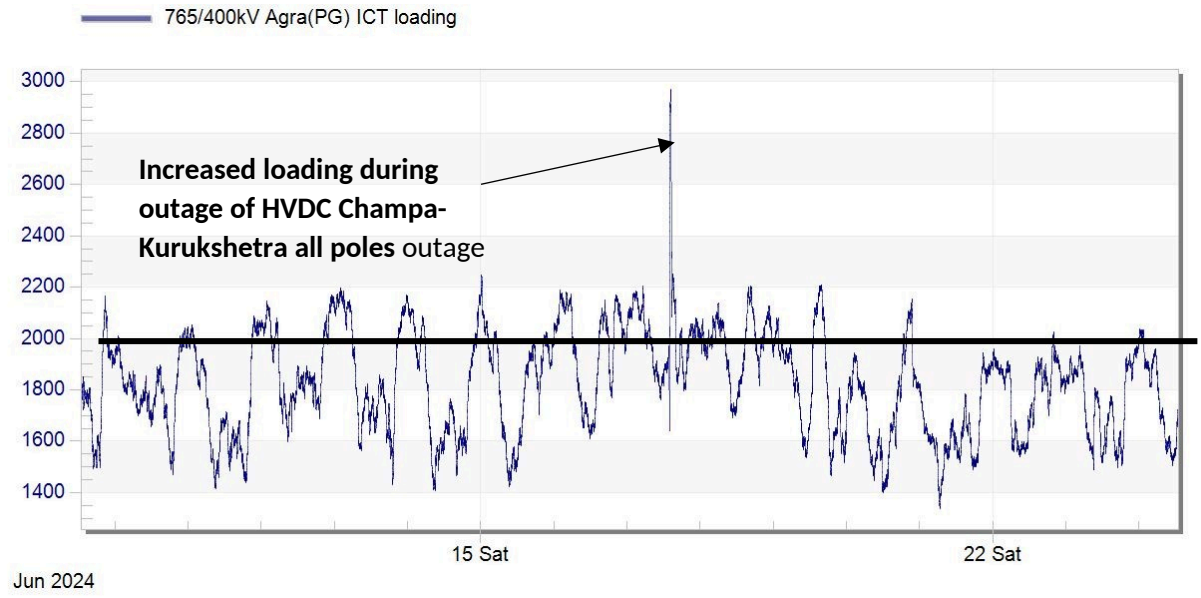
AA2.2.15 Violation of WR-NR ATC and request to remain within schedule has also been communicated from NRLDC side to NR states in real-time through mail as well as

through written communication. Communication sent from NRLDC side in this regard to all NR states is attached as **Annexure-AA**.

AA2.2.16 Violations of import transfer capability limits are also being highlighted by NLDC in real-time and congestion warning messages are also being issued in real-time. One such message is attached as **Annexure-BB**.

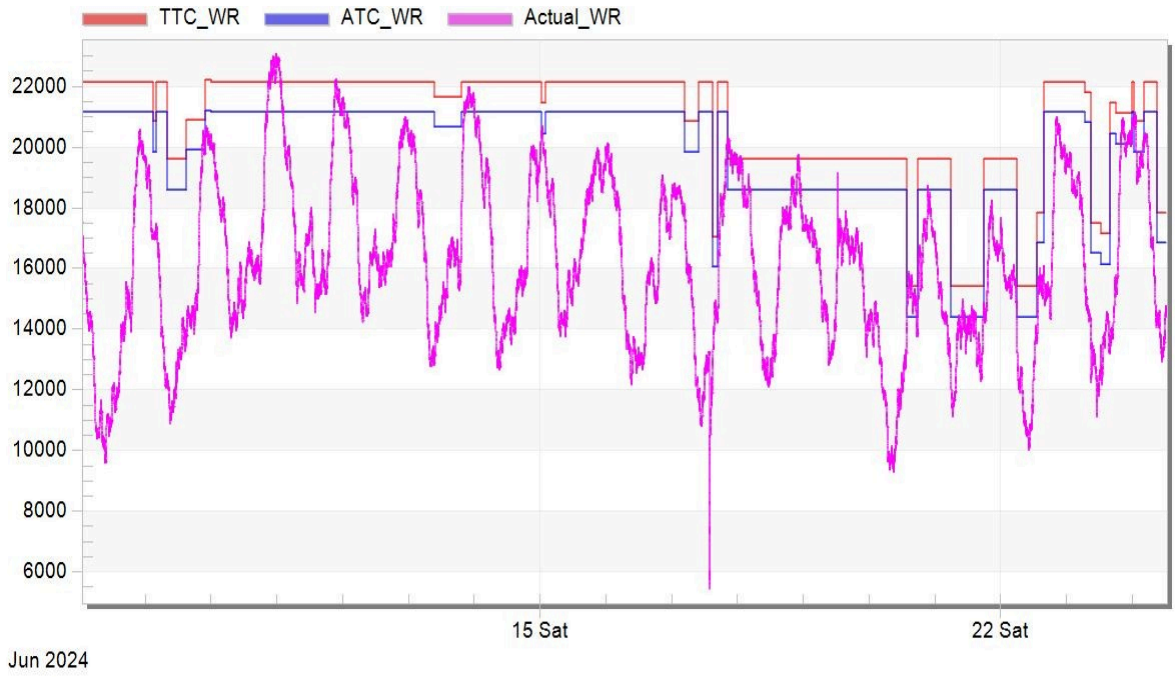


High loading, beyond N-1 limits of 765kV Vindhyachal-Varanasi D/C lines for 09-24 June 2024



High loading, beyond N-1 limits of 765/400kV 2*1500MVA Agra (PG) ICTs for 09-24 June 2024

AA2.2.17 WR-NR ATC violations in real-time would lead to situation wherein NR states would not be able to draw further power from Western region and as a result, may need to resort to overdrawl or load shedding incase internal generation in NR is not available.



AA2.2.18 At present, Rihand stage-III generating station (2x500 MW) is evacuated through Western Region via 400 KV Rihand stage-III- Vindhyachal PS D/C. Further, the station is disconnected from NR by keeping the bus coupler between Rihand-III and Rihand- I &II open. Shifting of Rihand stage-III generating station (2x500 MW) to NR by closing the bus coupler between Rihand-III and Rihand-I & II and disconnecting Rihand-III from WR by opening 400 kV Rihand stage-III - Vindhyachal PS D/C as an interim measure is proposed.

AA2.2.19 As per the system studies carried out by NRLDC and NLDC, the system is n-1 secure with the above reconfiguration. The fault levels in the generation complex are also within the breaking capacity of switchgear. There would be a relief of ~250 MW in loading of each circuit of 765 kV Vindhyachal - Varanasi D/C and the increment in WR-NR TTC/ATC after the implementation of proposed rearrangement is expected to be of the order of ~1300 MW

Sl No	Corridor	Time	Current Declared TTC	Simulated Revised Figures			Limiting Constraints
				TTC	RM	ATC	
1	NR Import	09:00-16:00	19050	**19300**	1400	17900	1. N-1 contingency of one ckt of 765 kV Vindhyanchal-Varanasi will
		other than 09:00-16:00	25500	**25750**	1400	24350	
2	WR ->	09:00-	17850	**19150**	1000	18150	

	NR	16:00					overload the other circuit 2. N-1 contingency of one ckt of 2*1500 MVA 765/400 kV ICTs at Agra-PG will overload the remaining ICT
		other than 09:00-16:00	22150	**23450**	1000	22450	
3	ER -> NR	09:00-16:00	6350	**6350**	400	5950	
		other than 09:00-16:00	6350	**6350**	400	5950	

AA2.2.20 Accordingly, an urgent meeting was convened on 14.06.2024 between NRLDC, NLDC, UP SLDC, UPPTCL, UPRVUN, NTPC to discuss the opening of 400kV Singrauli-Anpara line and subsequently connecting Rihand-III to Northern region.

AA2.2.21 In the meeting, it was agreed that:

1. Opening of 400kV Singrauli-Anpara line as per the decision taken in 1st NRPCTP meeting (to control high fault levels in the complex) was agreed. The above issue would also be discussed in upcoming 220 NR-OCC meeting scheduled on 19.06.2024 for any other inputs/comments from the stakeholders. After discussion at NR-OCC level, 400 kV Singrauli-Anpara line shall be opened.
2. The agenda regarding shifting of Rihand stage-III to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III-Vindhyachal PS-D/C shall be discussed in 220 NR-OCC as well as next WR-OCC meeting. Subsequently, the same shall be implemented.
3. Instructions will be issued to NRLDC, UP SLDC, UPPTCL, Anpara TPS, POWERGRID and NTPC to take 400kV Singrauli-Anpara in service on priority basis in case of any grid requirements.

AA2.2.22 Communication sent from NLDC side in this regard to NRPC as well as WRPC along with Minutes of meeting held on 14.06.2024 is attached as **Annexure-CC**.

AA2.2.23 To implement the decision of 1st NRPCTP and to enhance WR-NR ATC/TTC limits during the ongoing high demand season, it is requested to approve the followings:

- Opening of 400kV Singrauli-Anpara line as per decision of 1st NRPCTP
- Connecting Rihand-III to Northern region and disconnecting 400kV Rihand III-Vindhyachal D/C lines.

Decision required from Forum:

Members may please discuss and accord approval.

AA2.2 Approval of Draft SOP regarding Procurement & Installation of ISTS Interface Energy Meter (IEM) (agenda by CTUIL)

AA2.3.1 As per CEA metering regulations, 2006 and its amendments thereafter, all interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU. As per IEGC, 2023, CTU shall be responsible for procurement and installation of Interface Energy Meters and responsible for replacement of faulty meters.

AA2.3.2 In line with the above and to maintain uniformity at PAN India, a draft 'SOP regarding Procurement & Installation of ISTS Interface Energy Meter (IEM)' has been prepared by CTUIL and was floated on CTUIL website on 2nd May 2024 for stakeholder comments/feedback and comments were invited till 31st May 2024.

AA2.3.3 Comments from BBMB, SRLDC, SRPC, SLDC JSEB, Ranchi and POWERGRID were received through mail. (Attached as **Annexure-DD**)

AA2.3.4 After incorporation of comments as suitable, the draft SOP has been finalized and put up for discussion and approval. (Attached as **Annexure-EE**)

Decision required from Forum:

Forum may deliberate and approve accordingly.

AA2.3 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme "5 min Interface Energy Meter along with AMR system"-For all five regions as PAN India level (agenda by CTUIL)

AA2.4.1 A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes:

- All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).
- Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose.

AA2.4.2 In view of the above for making the system future ready for 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling,

Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal as following:

S. No.	Items	Details
1.	Name of Scheme	Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems- For all five regions NER, ER, NR, WR & SR.as PAN India.
2.	Scope of the scheme	1. Supply of AMR compatible 5 min Interface Energy Meters for all ISTS metering points of All five regions, 2. Installation of new AMR compatible IEMs by replacing existing meters in case of existing points and for newly added metering points. (Replacement work & New Installation work) 3. Supply and installation of AMR systems in dual LAN configuration at central location along with DCU, Ethernet Switch and other accessories at substation end and AMR software along with servers, consoles, historian software, database, printer, firewall, furniture, etc. at RLDC end to receive 5 min load profile data in auto mode. 4. Provision of streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purpose. 5. AMC includes Operations & Maintenance work (including data processing & report generation from AMR) for complete AMR system for 7 years. 6. On line Data storage of Raw Data & processed data for three years. The complete scope of IEM & AMR scheme shall be broadly in line with the Technical Specification (Section 1 & 2 of Part 1) circulated by NPC Division, CEA vide letter dtd. 6th July 2022. *Note: MDP system which is also part of the above TS mentioned shall be implemented by respective RLDC and would match the timeline schedule with IEM & AMR project.*
3.	Conceptual Architecture of AMR connectivity of ISTS Meters	**Annexure-FF**
4.	Objective /	For Indian Power system, commercial settlements of

S. No.	Items	Details
	Justification	energy generation and consumption are being computed through Availability Based Tariff (ABT) and Deviation Settlement Mechanism (DSM) which are in vogue for energy accounting. Availability Based Tariff was implemented in India in 2002/2003 considering the settlement period as 15-min. Government of India (GoI) has set a Renewable Energy (RE) target of 500 GW by 2030. In the last few years approximately since a decade, the need for implementing 5-minute meters along with AMR system for regional energy accounting and settlement at the Inter State level has been discussed and deliberated in various apex level forums & Committees. A PAN India pilot project on 5-minute metering was implemented as per the directive from Hon'ble CERC in 2018. A report on the pilot project covering implementation aspects, challenges and suggested way forward has been submitted by POSOCO for perusal of the Hon'ble Commission This issue was discussed in OCC/TCC/RPC meetings at regional level and it was discussed to replace the existing SEMs (15-min Block) with AMR compatible Interface Energy Meters (5-min Block) and implementation of Automated Meter Reading (AMR) and Meter Data Processing (MDP) system for efficient and faster accounting. Moreover, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system for viewing purpose to manage their drawl. A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes: • All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time

S. No.	Items	Details
		Block data to 15 min Time block data (in line with regulations). • Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose only. CTUIL sent a letter dtd. 27.06.2023 to CERC (attached as **Annexure-GG**) stating that nodal agency for AMR system implementation may be identified. CTUIL also informed NPC division, CEA vide letter dtd. 24.07.2023 (attached as **Annexure-HH**) that JC TS calls for 5 min Time block recording by ISTS IEMs whereas as per CEA metering regulation it is 15 min time block. In this regard, Grid-India NLDC specified to NPC, CEA that 5-minute time block could be considered for procurement of new ISTS IEM, AMR & MDP (attached as **Annexure-II**). Subsequently NPC CEA, coordinated a joint meeting (mail attached as **Annexure-JJ**) amongst the stakeholders comprising of CERC, Grid India (NLDC, RLDCs) & CTUIL, chaired by CEA Regulatory division dated 18th August'23 to check the feasibility for amendment of the CEA metering regulation in line with the ongoing developments and requirements of 5 min time block recording in IEMs. In view of the above mentioned system requirement of 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above mentioned project proposal.
5.	Deliberations in RPCs	The scheme was discussed in all the RPCs and the status is as below: Scheme is approved in SRPC if 50% fund is available from PSDF(July'23). Scheme is in principle approved in NERPC (June'23) and WRPC (Feb'2023) as well. Funding status to be updated to the forums. For NRPC- In 72nd NRPC meeting, CTU was advised to refer the case to NPC subgroup of communication to review the technical specifications in consultation with states. For ERPC- A special meeting was proposed in 47th TCC- Nov'22 meeting to deliberate the project in

S. No.	Items	Details
		detail in line with the life of the existing AMR system, which is going to be ended on 31st March 2026. Project Cost was informed to all RPCs during Year 2022/23,
6.	Estimated DPR Cost	Rs. 444.87 Cr. excluding AMC & Rs 152.62 Cr. for 7 years AMC *Costing to be updated considering latest no. of meters and locations at the time of tendering.
7.	Implementation timeframe	Approx. 24 months from gazette Notification.
8.	Implementation Mode	To be deliberated

AA2.4.3 Grant from PSDF for the FY 24-25 is not available as per MoP order. Accordingly, the **funding** is also to be **deliberated**. Earlier 90% of the project cost was allocated for grant.

AA2.4.4 Implementation **mode** for the project is also to be **deliberated** by the forum before approval.

AA2.4.5 In the 72nd NRPC meeting, CTU was advised to take-up the matter to NPC subgroup of communication to review the technical specifications in view of the requirements of some states for integrating 1 minute MW data with SLDC. (Attached as **Annexure-KK**).

a. CTU took up the above issue with NPC Secretariat.
b. In the process, inputs from Grid-India were received. (Attached as **Annexure-LL)**. Grid-India highlighted that the interface energy meter data is primarily required for deviation accounting at the inter-state level in line with the prevailing CERC regulations. Any State specific requirement may be considered based on the feasibility study and without compromising the relevant standards and regulatory provisions.
c. CTU endorsed the above views of Grid-India regarding meter data and its flow as per CEA Metering Regulations & CERC Grid code and other relevant regulations and Technical Specification of IEM finalized by JC.

AA2.4.6 Subsequently, the issue was also deliberated in a meeting with NRPC secretariat, NPC, CTU, NLDC and NRLDC wherein:

a. Extract from the approved JC Technical Specification (TS) for ISTS Metering System were presented as follows:

"Utilities take decisions for their drawal management, based upon real-time MW SCADA data which generally leads to increased DSM penalty, which is computed subsequently from weekly Interface Energy Meters (IEM) energy data

In view of the new DSM regulation and its amendments, which are more stringent, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system. This instantaneous MW data is only for the purpose of taking actions/decisions in real time for grid monitoring & discipline."

b. Thus, it was agreed that the inclusion of above provision in TS reflected/confirmed that views of various stakeholders were deliberated by JC while finalizing TS.

c. It was also agreed that the present JC TS would facilitate compliance to the provisions of the CEA metering regulation which mandates that the data shall be communicated to RLDCs using secured and dedicated communication system. The same is quoted below.

"(b) The metered data shall be communicated to the respective Load Despatch Centre by using a secured and dedicated communication system".

d. NRLDC informed that AMR based metering system has become an immediate need of the sector and hence should be implemented at the earliest.

e. CTU informed that the AMR metering agenda is being taken up in all the RPCs so that the scheme is taken up in implementation at the earliest after approval of NCT. Further, 1-minute MW IEM data is already envisaged to be provided to SLDCs to take real-time operational decisions to minimize DSM penalty.

f. In view of the fact that TS for the scheme was finalized by the Joint Committee after taking views from all the stakeholders and the scheme needs to be approved & implemented without any further delay, the review of TS was not recommended at this stage. It was also agreed that any new state specific requirements, the one put up before the forum in 72nd NRPC meeting, will lead to further delay without serving any valuable purpose defined in CEA metering regulations.

AA2.4.7 The scheme has been approved in SRPC, WRPC and NER OCC (Attached as **Annexure-MM**). After approval from rest of the RPCs, the scheme shall be further

taken up to NCT for final approval for implementation. The proposed scheme may be approved by NRPC for implementation on pan-India basis.

AA2.4.8 In view of above, CTUIL has proposed that the AMR scheme may be approved.

Decision required from Forum:

Forum may deliberate on above proposal of CTU and approve accordingly.

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NRPC Members for FY 2024-25

S. No.	NRPC Member	Category	Nominated/ Notified/Delegated Member	E-mail
1	Member (GO&D), CEA	Member (Grid Operation & Distribution), Central Electricity Authority (CEA)	Member (GO&D), CEA	member.god@cea.nic.in
2	Member (PS), CEA	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	Member (PS), CEA	memberpscea@nic.in
3	CTUIL	Central Transmission Utility	Chief Operating Officer	pcgarg@powergrid.in
4	PGCIL	Central Government owned Transmission Company	Director (Operations)	tyagir@powergrid.in
5	NLDC	National Load Despatch Centre	Executive Director	scsaxena@grid-india.in
6	NRLDC	Northern Regional Load Despatch Centre	Executive Director	nroy@grid-india.in
7	NTPC	Central Generating Company	Director (Finance)	jaikumar@ntpc.co.in
8	BBMB		Chairman	cman@bbmb.nic.in
9	THDC		CGM (EM-Design)	rrsemwal@thdc.co.in
10	SJVN		CMD	sectt.cmd@sjvn.nic.in
11	NHPC		Director (Technical)	rajkumar0610.rkc@gmail.com
12	NPCIL		Director (Finance)	df@npcil.co.in
13	Delhi SLDC	State Load Despatch Centre	General Manager	gmsldc@delhisldc.org
14	Haryana SLDC		Chief Engineer (SO&C)	cesocomml@hvpn.org.in
15	Rajasthan SLDC		Chief Engineer (LD)	ce.ld@rvpn.co.in
16	Uttar Pradesh SLDC		Director	directorsldc@upsldc.org
17	Uttarakhand SLDC		Chief Engineer	anupam_singh@ptcul.org
18	Punjab SLDC		Chief Engineer	ce-sldc@punjabsldc.org
19	Himachal Pradesh SLDC		Managing Director	mdhpsldc@gmail.com
20	DTL	State Transmission Utility	CMD	cmd@dtl.gov.in
21	HVPNL		Managing Director	md@hvpn.org.in
22	RRVPNL		CMD	cmd.rvpn@rvpn.co.in
23	UPPTCL		Managing Director	md@upptcl.org
24	PTCUL		Managing Director	md@ptcul.org
25	PSTCL		CMD	cmd@pstcl.org
26	HPPTCL		Managing Director	md.tcl@hpmail.in
27	IPGCL	State Generating Company	Managing Director	md.ipgpp@nic.in
28	HPGCL		Managing Director	md@hpgcl.org.in
29	RRVUNL		CMD	cmd@rrvun.com
30	UPRVUNL		Director (Technical)	director.technical@uprvunl.org
31	UJVNL		Managing Director	mdujvnl@ujvnl.com
32	HPPCL		Managing Director	md@hppcl.in
33	PSPCL	State Generating Company & State owned Distribution Company	CMD	cmd-pspcl@pspcl.in
34	UHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	Managing Director	md@uhbvn.org.in
35	Jodhpur Vidyut Vitran Nigam Ltd.		Managing Director	md.jdvvnl@rajasthan.gov.in
36	Paschimanchal Vidyut Vitaran Nigam Ltd.		Managing Director	md@pvvnl.org
37	UPCL		Managing Director	md@upcl.org
38	HPSEB		Managing Director	md@hpseb.in
39	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Head (Commercial & Regulatory)	sanjay.bhargava@tatapower.com
40	Aravali Power Company Pvt. Ltd		CEO	brahmajig@ntpc.co.in
41	Apraava Energy Private Limited		CEO	niraj.gupta@apraava.com
42	Talwandi Sabo Power Ltd.		COO	Vibhav.Agarwal@vedanta.co.in
43	Nabha Power Limited		CEO	sk.narang@larsentoubro.com
44	Lanco Anpara Power Ltd		President	sudheer.kothapalli@meilanparapower.com
45	Rosa Power Supply Company Ltd		Station Director	Hirday.tomar@relianceada.com
46	Lalitpur Power Generation Company Ltd		Managing Director	vksbankoti@bajajenergy.com
47	MEJA Urja Nigam Ltd.		CEO	hopmeja@ntpc.co.in
48	Adani Power Rajasthan Limited		COO, Thermal, O&M	jayadeb.nanda@adani.com
49	JSW Energy Ltd. (KWHEP)		Head Regulatory & Power Sales	jyotiprakash.panda@jsw.in
50	TATA POWER RENEWABLE	IPP having less than 1000 MW installed capacity (alphabetical rotaional basis)	Zonal Head	dhmahabale@tatapower.com
51	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	Chief Engineer, JKSPDCL/JKPDD	cejkpcl2@gmail.com/sojpdd@gmail.com
52	UT of Ladakh		Chief Engineer, LPDD	cepdladakh@gmail.com
53	UT of Chandigarh		Executive Engineer, EWEDC	elop2-chd@nic.in
54	NPCL	Private Distribution Company in region (alphabetical rotaional basis)	Head-Commercial	ssrivastava@noidapower.com
55	Fatehgarh Bhadla Transmission Limited	Private transmission licensee (nominated by cetral govt.)	AVP-O&M	nitesh.ranjan@adani.com
56	NTPC Vidyut Vyapar Nigam Ltd.	Electricity Trader (nominated by central govt.)	CEO	ceonvvn@ntpc.co.in

List of addressee (via mail)

TCC Members for FY 2024-25

S. No.	TCC Member	Category	Nominated/ Notified/Delegated Member	E-mail
1	Director (Operation), HPSEBL	Chairperson, TCC		manojupretisolan@gmail.com
2	Member (GO&D), CEA	Member (Grid Operation & Distribution), Central Electricity Authority (CEA)	Chief engineer(GM Division)	cegm-cea@gov.in
3	Member (PS), CEA	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	Chief Engineer, PSPA-I Division	i.sharan@nic.in
4	CTUIL	Central Transmission Utility	Dy Chief Operating Officer	ashok@powergrid.in
5	PGCIL	Central Government owned Transmission Company	ED, NR-I	akmishra2@powergrid.in
6	NLDC	National Load Despatch Centre		nomination awaited
7	NRLDC	Northern Regional Load Despatch Centre	Executive Director	nroy@grid-india.in
8	NTPC	Central Generating Company	Regional ED, NR	rednr@ntpc.co.in
9	BBMB		Member (Power)	mp@bbmb.nic.in
10	THDC		GM (EMD)	neerajverma@thdc.co.in
11	SJVN		Director (Projects)	de.sectt@sjvn.nic.in
12	NHPC		ED (O&M)	hod-om-co@nhpc.nic.in
13	NPCIL		Outstanding Scientist & ED (commercial)	nrchoudhary@npcil.co.in
14	Delhi SLDC	State Load Despatch Centre		nomination awaited
15	Haryana SLDC		Chief Engineer/SO & Comml.	cesocomml@hvpn.org.in
16	Rajasthan SLDC			nomination awaited
17	Uttar Pradesh SLDC		Chief Engineer (PSO)/Chief Engineer (C&S)	cepso@upsldc.org
18	Uttarakhand SLDC			nomination awaited
19	Punjab SLDC		Chief Engineer	ce-sldc@pstcl.org
20	Himachal Pradesh SLDC			nomination awaited
21	DTL	State Transmission Utility	Director (Operation)	dir.opr@dtl.gov.in
22	HVPNL		Chief Engineer/SO & Comml.	cesocomml@hvpn.org.in
23	RRVPNL		Chief Engineer (PP&D)	ce.ppm@rvpn.co.in
24	UPPTCL		Director (Planning & Commercial)	director_comm@upptcl.org
25	PTCUL		Chief Engineer	ce_oandmk@ptcul.org
26	PSTCL		Director / Technical	dir-tech@pstcl.org
27	HPPTCL		GM (C&D)	gmcd.tcl@hpmail.in
28	IPGCL	State Generating Company	Director(Tech.)	corporate.ppcl@gmail.com
29	HPGCL		Director/Technical	dirtech@hpgcl.org.in
30	RRVUNL		Dy. Chief Engineer	dyce.elect.katpp@rrvun.com
31	UPRVUNL		Director (Technical)	director.technical@uprvunl.org
32	UJVNL		General Manager	kkjaiswal99@gmail.com
33	HPPCL		Director (Electrical) General Manager(Electrical)	dir_elect@hppcl.in gm_elect@hppcl.in
34	PSPCL	State Generating Company & State owned Distribution Company		nomination awaited
35	UHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)		nomination awaited
36	Jodhpur Vidyut Vitran Nigam Ltd.			nomination awaited
37	Paschimanchal Vidyut Vitaran Nigam Ltd.			nomination awaited
38	UPCL		Director (P)	dpupcl29@gmail.com
39	HPSEB			nomination awaited
40	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Head – Commercial & Regulatory	Sanjay.bhargava@tatapower.com
41	Aravali Power Company Pvt. Ltd		CEO	brahmajig@ntpc.co.in
42	Apraava Energy Private Limited			nomination awaited
43	Talwandi Sabo Power Ltd.		Dy. Head O&M	ravinder.thakur@vedanta.co.in
44	Nabha Power Limited			nomination awaited
45	Lanco Anpara Power Ltd			nomination awaited
46	Rosa Power Supply Company Ltd		VP-Technical Services	Niranjan.Jena@relianceada.com
47	Lalitpur Power Generation Company Ltd		President	rnbedi.ltp@lpgcl.com
48	MEJA Urja Nigam Ltd.		GM (O&M)	piyushkumar@ntpc.co.in
49	Adani Power Rajasthan Limited		AVP	Manoj.taunk@adani.com
50	JSW Energy Ltd. (KWHEP)		Head of Plant	kaushik.maulik@jsw.in
51	TATA POWER RENEWABLE	IPP having less than 1000 MW installed capacity (alphabetical rotaional basis)		nomination awaited
52	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.		nomination awaited
53	UT of Ladakh			nomination awaited
54	UT of Chandigarh			nomination awaited
55	NPCL	Private Distribution Company in region (alphabetical rotaional basis)		nomination awaited
56	Fatehgarh Transmission Limited	Private transmission licensee (nominated by cetral govt.)		nomination awaited
57	NTPC Vidyut Vyapar Nigam Ltd.	Electricity Trader (nominated by central govt.)		nomination awaited

Special Invitees:

1. Smt. Nandita Gorlosa, Chairman, NERPC & Hon'ble Power Minister, Govt. of Assam, Block D, Ground Floor, Janata Bhawan, Dispur, Assam, 781006 [Email: nanditagorlosa77@gmail.com], Telephone no: (0361) – 2237032(O)
2. Shri Gaurav Gupta, Chairperson, SRPC & Managing Director, Karnataka Power Corporation Limited & ACS Energy Department GoK, 240, 2nd floor Vikasa Soudha, Bengaluru, Karnataka 560001. [Email: prs.energy@gmail.com ; acs@karnataka.gov.in] Tel -08022252373
3. Shri Vishal Kumar Dev, IAS, Chairman, ERPC, Principal Secretary to Govt., Department of Energy, Govt. of Odisha, Bhubaneswar. [Email-chairman@gridco.co.in] Tel -06742540098
4. Shri P. Dayanand Chairman CSPTCL & Chairman, WRPC, Office of Chairman, Vidyut Seva Bhavan, Danganiya, Raipur 492 013 (C.G.) [Email: chairmancspc@gmail.com] Tel. 0771 2574000
5. Smt. Rishika Saran, Member Secretary, NPC, Sewa Bhawan, R. K. Puram, New Delhi-66 [Email-cenpc-cea@gov.in]
6. Shri Deepak Kumar, Member Secretary, WRPC, Plot No- F-3, MIDC Area, Marol, Opp. SEEPZ, Central Road, Andheri (East), Mumbai-40093. [email: ms-wrpc@nic.in] Tel - 02228221636
7. Shri Asit Singh, Member Secretary, SRPC, No.29, Race Course Cross Road, Bengaluru-560009. [Email: mssrpc-ka@nic.in] Tel -08022287205/9449047107
8. Shri N.S. Mondal, Member Secretary, ERPC,14,Golf Club Road, ERPC Building, Tollygunje,Kolkata-700033. [Email: mserpc-power@nic.in]- Tel 03324239651/9958389967
9. Shri K B Jagtap, Member Secretary, NERPC, NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006. [Email: ms-nerpc@gov.in] Tel -03642534077/ 8652776033

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ग्रिड-इंडिया GRID-INDIA

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर क्षेत्रीय भार प्रेषण केन्द्र / Northern Regional Load Despatch Centre
कार्यालय : 18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली-110016
Office : 18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi-110016
CIN : U40105DL2009GOI188682, Website : www.nrldc.in, E-mail : nrldc@grid-india.in, Tel.: 011 26519406, 26523869, Fax: 011 26852747

Ref: NRLDC/SO-II/TS-24/ 357-368

Date: 18-June-2024

To

As per distribution list.

Subject: Regarding continuous TTC-ATC violation during Night hours and very high import on Inter Regional lines.

Sir,

Northern Region demand has reached its all time high of 89.5 GW on 17.06.2024 and the Night time demand is also hovering in the range of 84-85 GW. Various states in the Northern Region have also recorded their highest demand met till date and power consumption even in hilly states are at a record high. The demand is expected to further increase in view of severe heat waves and continued dry spell. Further, the paddy crop load has commenced, and various NR states agriculture demand is also to be on the higher side driving further increase in consumption and putting further stress on power infrastructure of ISTS and state control area systems. Furthermore, IMD has forecasted severe heat waves at most places in the Northern Region and additionally warm night conditions at isolated places also.

The increase in demand has led to record drawl of power through the inter-regional lines. The IR lines on AC as well as HVDC have been importing huge amount of power. The import in WR-NR path particularly is being stretched to its limits. The import from Champa-Kurukshetra HVDC lines has been continuously maintained around its highest capability of 6000 MW. The import from 765 KV Vindhyachal-Varanasi D/C line has increased to the tune of 2200-2300 MW in each ckt. during this record high demand period and is not N-1 compliant. The increase in imports has led to continuous violation of WR-NR TTC in the Night hours (Approved TTC-ATC and actual drawl in WR-NR path is enclosed at Annexure-I).

Also, frequent trippings due to high WTI/OTI of ICTs, fire incidents, CT failures etc. has been reported recently in these extreme summer months. The ICTs at various ISTS and state-owned sub-stations have also been found to be N-1 non-compliant. Regular messages have been issued from Real time operators and deliberated in OCC meetings for sensitising on TTC-ATC violation and N-1 non-compliance of ICTs. States have also reported low voltages in their 220 KV and underlying network.

As you are aware the continuous violation of TTC-ATC is a threat to the grid security and there is ongoing risk of cascade trippings due to overload conditions of the Inter Regional transmission lines. To mitigate the same following measures are suggested:

I) Maintain drawl within the TTC-ATC limits as approved

II) Maximize internal generation of the running units and avoid partial outages

III) Expediting Revival of units under forced outages

IV) Staggering of agriculture loads and avoiding sudden increase in load

V) Utilising the gas plants presently under shutdown

VI) Tying up of power purchase within NR states

VII) Optimizing state control area hydro generation particularly in Night hours etc.

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर क्षेत्रीय भार प्रेषण केन्द्र / Northern Regional Load Despatch Centre
कार्यालय : 18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली-110016
Office : 18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi-110016
CIN : U40105DL2009GOI188682, Website : www.nrldc.in, E-mail : nrldc@grid-india.in, Tel.: 011 26519406, 26523869, Fax: 011 26852747

Please note that continuous WR-NR import TTC-ATC violation will lead to curtailment in the schedules of drawing states of the Northern Region which may lead to power shortages. Further, congestion charges may also be invoked for system reliability. Hence, states are requested to take measures as suggested above for maintaining NR drawl within TTC-ATC limits for safe and reliable grid operation.

Cooperation from all stakeholders is solicited.

Matter to be treated as urgent.

Thanking You.

Yours faithfully

(Sunil Kumar Aharwal)
General Manager (System Operation)

Distribution List:

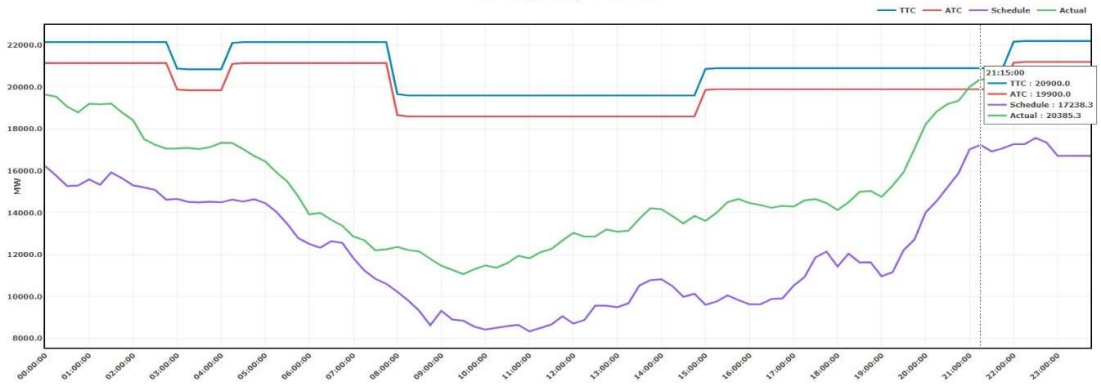
Chief Engineer: SLDC-UP/Uttarakhand/Punjab/Haryana/Rajasthan/Delhi/J&K/Chandigarh

Copy for kind information:

1. Member Secretary, NRPC, 18-A, SJSS Marg, Katwaria Sarai – 110016
2. Executive Director, NRLDC, GRID-INDIA, 18-A, SJSS Marg, Katwaria Sarai – 110016
3. Executive Director, NLDC, GRID-INDIA, B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
4. CGM(System Operation), 18-A, SJSS Marg, Katwaria Sarai – 110016,NRLDC

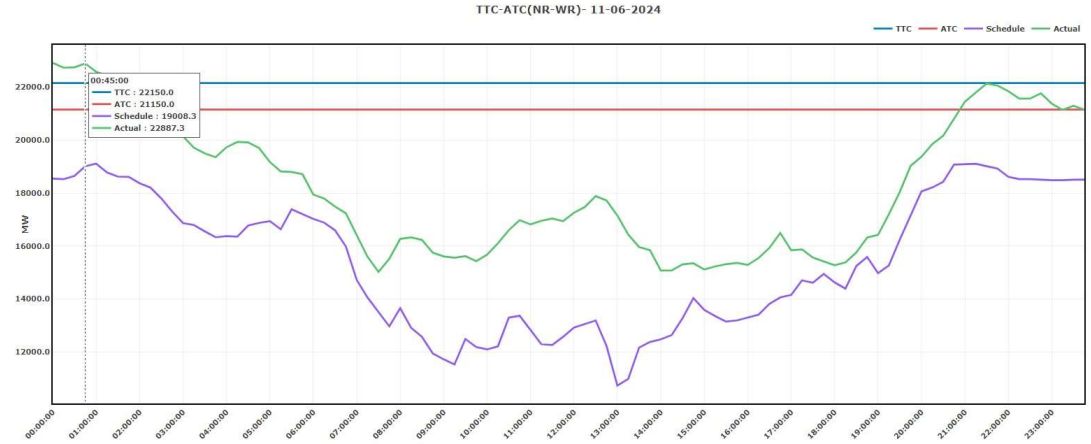
Annexure-I

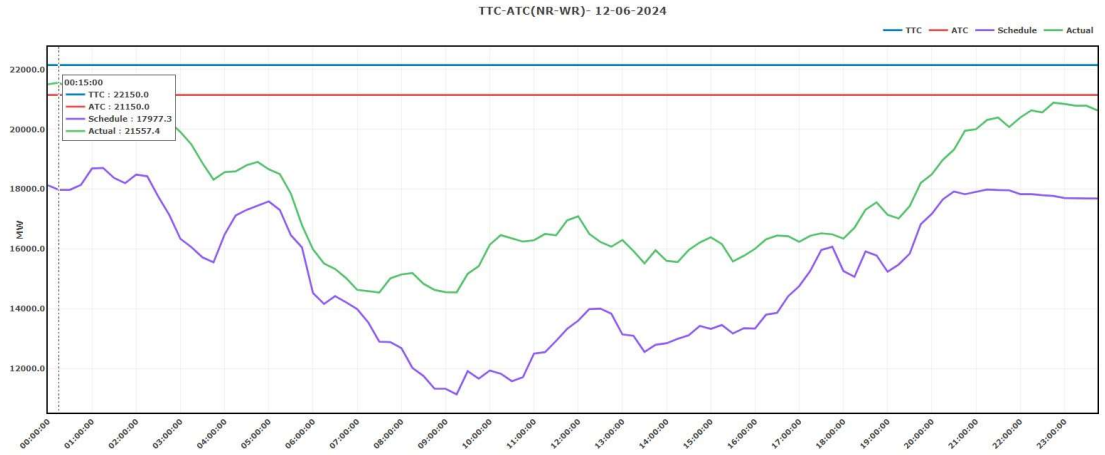
TTC-ATC(NR-WR)- 09-06-2024

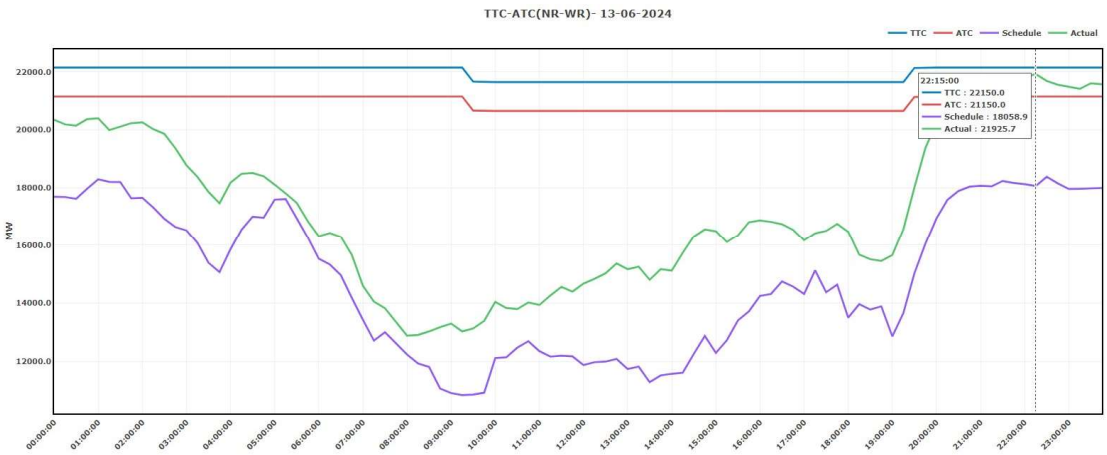


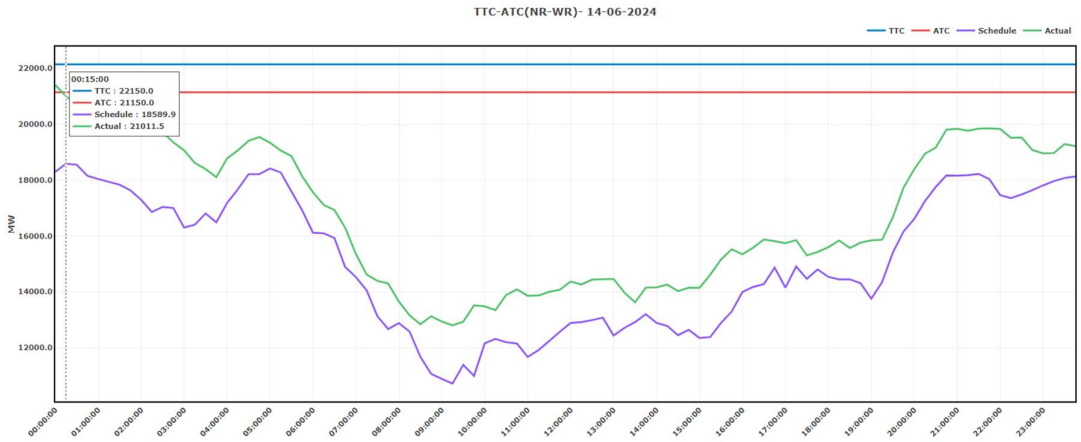
TTC-ATC(NR-WR)- 10-06-2024

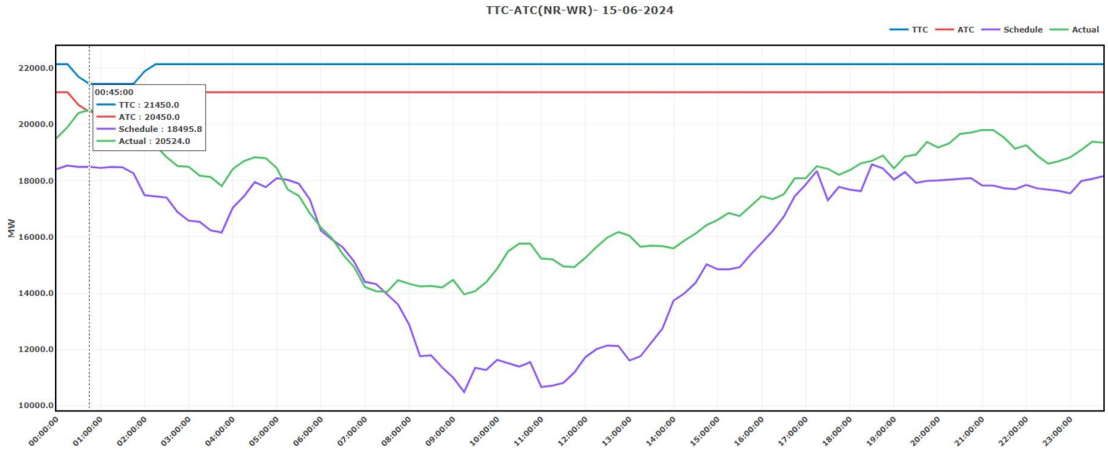
TTC-ATC(NR-WR)- 11-06-2024

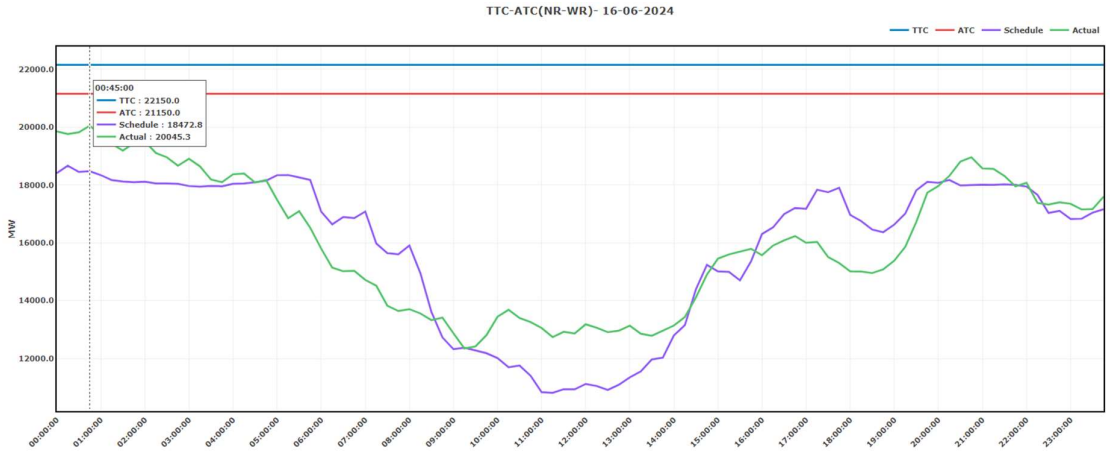


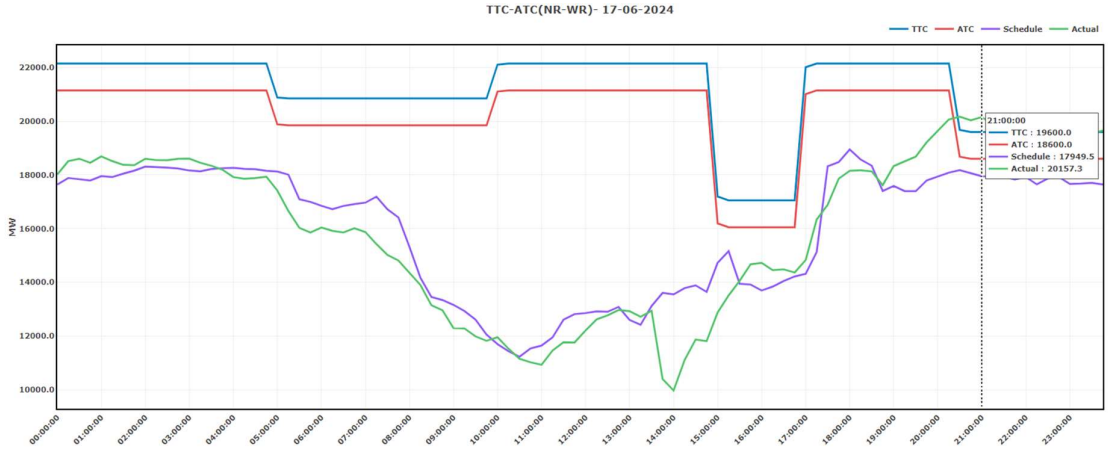

TTC-ATC(NR-WR)- 12-06-2024
TTC
ATC
Schedule
Actual
00:15:00
TTC : 22150.0
ATC : 21150.0
Schedule : 17977.3
Actual : 21557.4
MW


TTC-ATC(NR-WR)- 13-06-2024
TTC
ATC
Schedule
Actual
22:15:00
TTC : 22150.0
ATC : 21150.0
Schedule : 18058.9
Actual : 21925.7
MW


TTC-ATC(NR-WR)- 14-06-2024
TTC
ATC
Schedule
Actual
00:15:00
TTC : 22150.0
ATC : 21150.0
Schedule : 18589.9
Actual : 21011.5
MW


TTC-ATC(NR-WR)- 15-06-2024
TTC
ATC
Schedule
Actual
00:45:00
TTC : 21450.0
ATC : 20450.0
Schedule : 18495.8
Actual : 20524.0
MW


TTC-ATC(NR-WR)- 16-06-2024
TTC
ATC
Schedule
Actual
00:45:00
TTC : 22150.0
ATC : 21150.0
Schedule : 18472.8
Actual : 20045.3
MW


TTC-ATC(NR-WR)- 17-06-2024
TTC
ATC
Schedule
Actual
MW
22000.0
20000.0
18000.0
16000.0
14000.0
12000.0
10000.0
21:00:00
TTC : 19600.0
ATC : 18600.0
Schedule : 17949.5
Actual : 20157.3
00:00:00
01:00:00
02:00:00
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07:00:00
08:00:00
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Annexure-BB

163

प्रारूप III/Format III

राष्ट्रीय भार प्रेषण केंद्र / National Load Despatch Centre

नोटिस सं Notice No: NLDC/2024/06.../08.... तिथि Date 24/06/2024

जारी का समय Time of Issue: 01:04 hrs

सेवा में To

चेतावनी नोटिस
WARNING NOTICE

निम्नलिखित कॉरीडोर पर वास्तविक विद्युत प्रवाह उपलब्ध अंतरण क्षमता (एटीसी) से ऊपर है
The actual transfer of electricity on following corridors has crossed the ATC.

कॉरीडोर/नियंत्रण क्षेत्र Corridor/Control Area	ए टी सी (मेगावाट) ATC (MW)	वास्तविक प्रवाह (मेगावाट) Actual Flow (MW)
WR-NR	19850	20833
NR Import	22500	23172

प्रणाली तो अवमुक्त करने हेतु, संकुलित कॉरिडॉर के अनुप्रवाह स्थित निम्न क्षेत्रीय इकाईयों को सलाह दी जाती है कि वे अपनी निकासी कम करें/ अपना उत्पादन बढ़ाएँ:

The following regional entities, which are downstream of the congested corridor, are advised to reduce their drawal/increase their generation to decongest the system:

1. All Entities of NR which are over-drawing or
... under-injecting.

m.

प्रणाली तो अवमुक्त करने हेतु, संकुलित कॉरिडॉर के ऊध्वप्रवाह स्थित निम्न क्षेत्रीय इकाईयों को सलाह दी जाती है कि वे अपनी निकासी बढ़ाएँ/ अपना उत्पादन कम करें:

The following regional entities, which are ~~down~~UP stream of the congested corridor, are advised to increase their drawal/ reduce their generation to decongest the system:

1. All Entities of WR which are under-drawing or
... over-injecting.

n.

पाली प्रभारी प्रबन्धक / Shift Charge Manager

यह संकुलन प्रभार लागू किए जाने के पहले चेतावनी नोटिस हैं एवं के.वि.वि.आ. (वास्तविक समय प्रचालन में संकुलन अवमुक्ति के उपाय) विनियम, 2009 के अनुरूप निर्गत किया जा रहा है

This is a warning notice before levy of congestion charges and Issued in accordance with the Central Electricity Regulatory Commission (Measures to relieve congestion in real time operation) Regulations, 2009

ग्रिड-इंडिया
GRID-INDIA

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
राष्ट्रीय भार प्रेषण केन्द्र / National Load Despatch Centre

आज़ादी का अमृत महोत्सव

कार्यालय : बी-9, प्रथम एवं द्वितीय तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
Office : 1st and 2nd Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.grid-india.in, E-mail : gridindiacc@grid-india.in, Tel.: 011- 42785855

संदर्भ: NLDC/SO/NR/Import/Rihand-III/ **दिनांक:** 19th June 2024

To,

Member Secretary **Northern Regional Power Committee** 18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110 016	**Member Secretary** **Western Regional Power Committee** M.I.D.C. Central Road, Seepz, Andheri East, Mumbai, Maharashtra, 400093

विषय:– Shifting of NTPC Rihand stage-III generating station to northern region and opening of 400 kV Singrauli-Anpara line – Reg.

Sir,

The Northern Region (NR) is experiencing a significant increase in power demand, particularly during non-solar hours. The Northern Regional import from neighboring regions (WR and ER) has also increased and the transfer capability limit (TTC/ATC) between the Western Region (WR) and Northern Region (NR) is getting breached on regular basis.

The loading on the 765 kV Vindhyachal-Varanasi D/C remains on the higher side (N-1 non-compliance also observed on few occasions) for significant period of the time. The high loading on the 765 kV Vindhyachal-Varanasi D/C is currently one of the limiting factors in facilitating further transfer of power from WR to NR. The trend of WR-NR flow and loading of 765 kV Vindhyachal – Varanasi line over the last few days is attached at **Annexure-A.** The operation of 765 kV Vindhyachal-Varanasi-D/c at such high loadings and violation of import ATC of NR is a cause of concern. The situation is likely to aggravate further in July-September.

At present, Rihand stage-III generating station (2x500 MW) is evacuated through Western Region via 400 KV Rihand stage-III- Vindhyachal PS D/C. Further, the station is disconnected from NR by keeping the bus coupler between Rihand-III and Rihand- I &II open.

In order to relieve the loading of 765 kV Vindhyachal-Varanasi and facilitate higher import by NR in the upcoming high demand months, following network rearrangement is proposed:

- Shifting of Rihand stage-III generating station (2x500 MW) to NR by closing the bus coupler between Rihand-III and Rihand-I & II and disconnecting Rihand-III from WR by opening 400 kV Rihand stage-III - Vindhyachal PS D/C as an interim measure
- Opening of 400 kV Singrauli-Anpara S/C

Detailed proposal is enclosed at **Annexure-B.**

As per the system studies carried out by NRLDC and NLDC, the system is n-1 secure with the above reconfiguration. The fault levels in the generation complex are also within the breaking capacity of switchgear. There would be a relief of **~250 MW in loading of each circuit of 765 kV Vindhyachal - Varanasi D/C** and the increment in WR-NR TTC/ATC after the implementation of proposed rearrangement is expected to be of the order of **~1300 MW**.

It is also pertinent to mention here that the opening of 400 kV Singrauli – Anpara line (to control fault levels in the complex after commissioning of 765 kV Anpara D – Unnao line) is already agreed in the 1st NRPCTP meeting held on 24th Jan 2020. Relevant extract of the meeting minutes is provided at **Annexure-C.** The matter was discussed in the 212th OCC meeting of NRPC and also in a separate meeting with SLDC UP, NTPC and POWERGRID on 14th June 2024. Discussion summary is enclosed at **Annexure-D**.

It is requested to convene a special meeting of all the concerned stakeholders at respective RPC level to facilitate its implementation.

सधन्यवाद,

भवदीय,

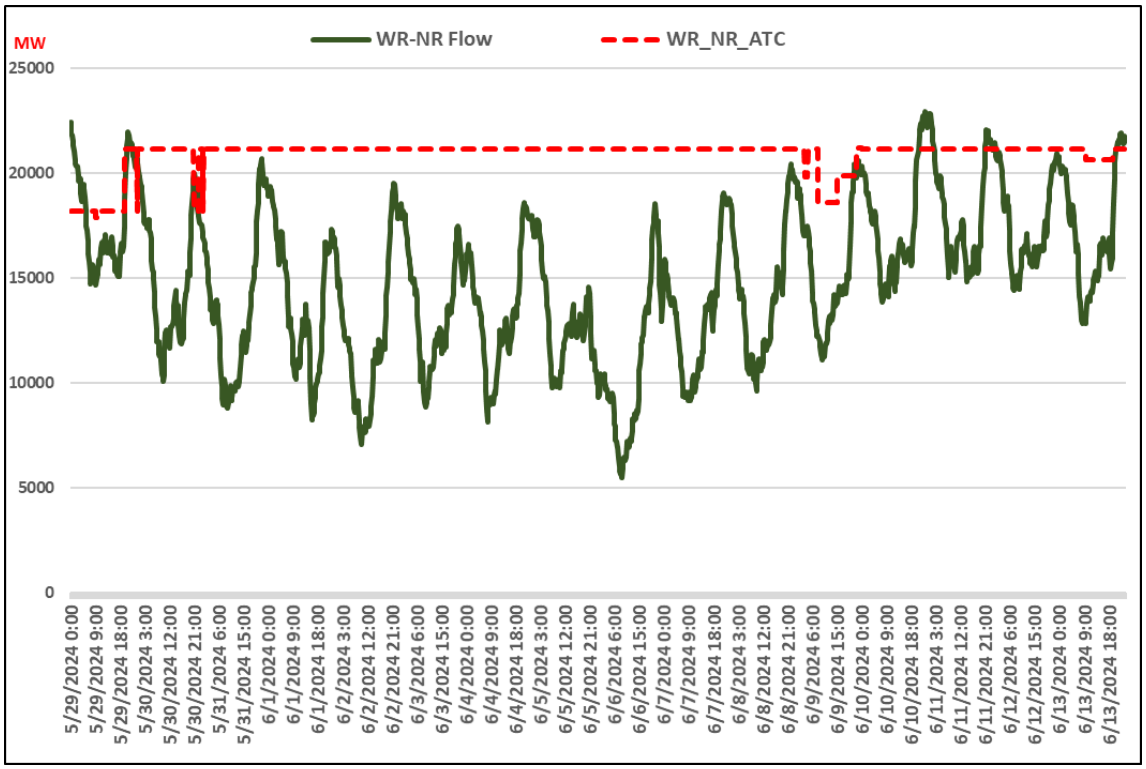
(विवेक पाण्डेय)
वरिष्ठ महाप्रबंधक (प्रणाली प्रचालन)

Encl: As above

Copy to:

1. Member (GO&D), CEA
2. Member (PS), CEA
3. CMD, Grid-India
4. Director (SO), Grid-India
5. COO, CTUIL
6. Executive Director, WRLDC / SRLDC/ERLDC/NERLDC / NRLDC

Annexure-A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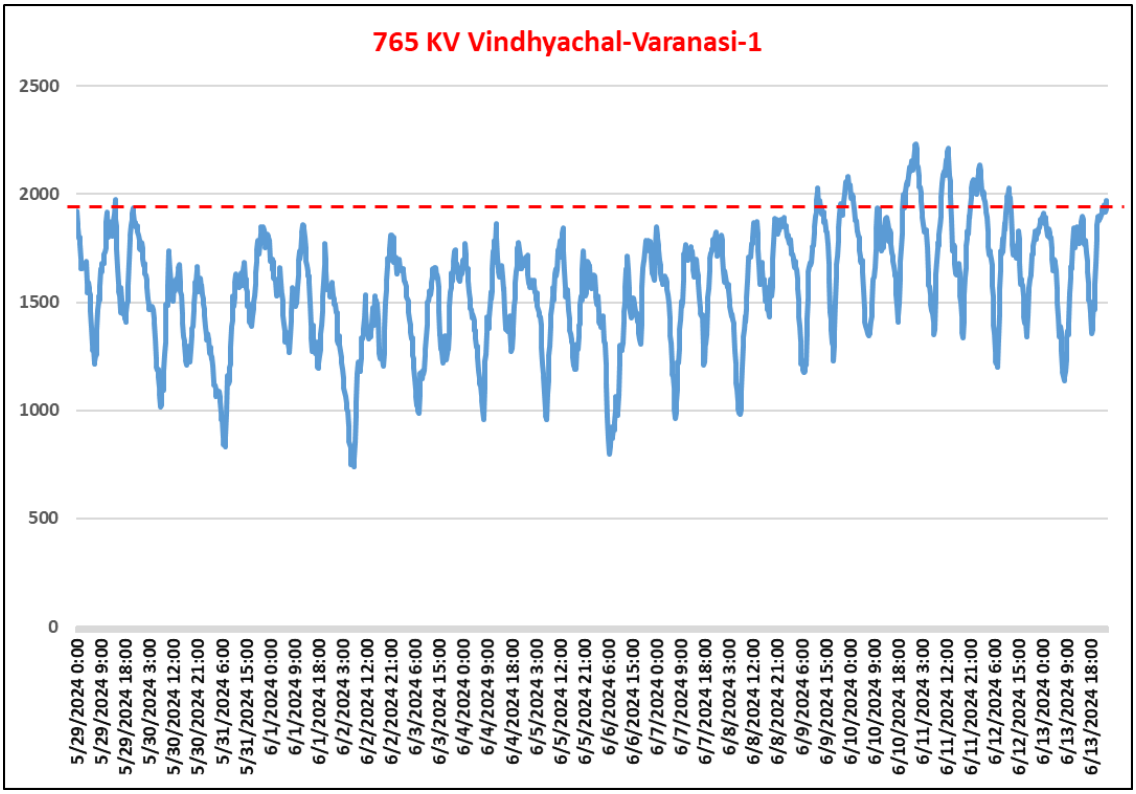
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Annexure-B

Detailed Proposal on shifting of Rihand Stage-III to Northern region & Opening of 400 KV Singrauli-Anpara-S/C

I. Background

- The Northern Region (NR) is experiencing a significant increase in power demand in ongoing summer season. The NR import is approaching ATC figure particularly during non-solar hours. High power imports is exceeding the transfer capability limit (TTC) between the Western Region (WR) and NR.
- The situation is further complicated by change in inter-regional power flow patterns. Due to changes in load profiles and high eastern region demand, the power supply from the Eastern Region (ER) to NR has decreased substantially during non-solar hours. Consequently, NR is importing heavily from the Western Region.
- NLDC has recently revised the WR-NR import TTC/ATC values. Even after increment of 2950 MW, the real time power flow in WR-NR is around ATC limit.
- NR demand is expected to be in upcoming days. During high NR import, all generation is maximized in NR. HVDC Champa-Kurukshetra is operated at its rated capacity i.e. 6000 MW.
- 765 KV Vindhyachal-Varanasi is one of the limiting constraints in WR-NR corridor. Due to high NR import, the loading on the 765 KV Vindhyachal-Varanasi-D/C remains very high and becomes N-1 non-compliant for significant period of time.
- A detailed analysis of the real-time loading trends is enclosed as Annexure-1.

II. Proposal for controlling the line loading of 765 KV Vindhyachal-Varanasi-D/C

N-1 limit of 765 KV Vindhyachal-Varanasi has been considered up to the maximum reliable value shared by the line owner. HVDCs are also operated to relieve loading on these lines. To relieve loading on 765 KV Vindhyachal-Varanasi-D/C and in order to facilitate higher power transfer from western region to the northern region, following steps are proposed

I. Opening of 400 KV Singrauli-Anpara-S/C.
II. Shifting of Rihand stage-III power station (2*500 MW) to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III-Vindhyachal PS-D/C.

- As per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP), 400 kV Singrauli – Anpara has to be opened to control the high fault levels in Anpara – Singrauli – Rihand complex.

Extract from the meeting are shown below:

6.13. After deliberations, following was agreed:

(i) The transmission system for evacuation of power from Singrauli III:

I. LILO of both circuits of Tie line (Vindhyachal Stage-IV to Vindhyachal Stage-V 400kV D/C Twin Moose line) at Singrauli Stage-III- under the scope of NTPC.

II. Reconductoring of Singrauli Stage-III - Vindhyachal stage-IV 400 kV D/C TM line (formed after above proposed LILO) with HTLS conductor - under the scope of NTPC

III. Singrauli-III–Rihand-III 400kV D/c line- under ISTS scope

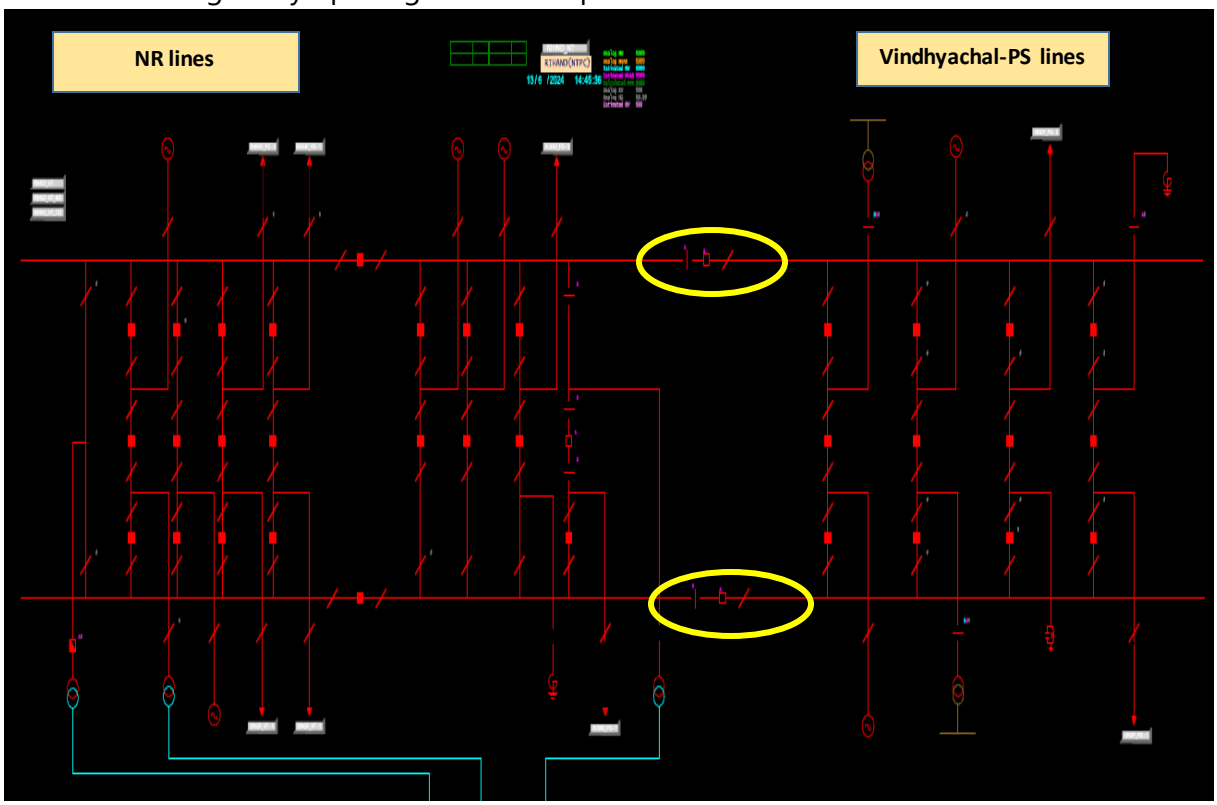
IV. 2x125 MVAR Bus Reactor at Singrauli-III generation switchyard- under scope of NTPC

(ii) Singrauli- Anpara 400 kV line will be kept normally open (can be closed in emergency conditions) after commissioning of Anpara D –Unnao 765kV line to restrict high short circuit level in Singrauli-Anpara complex.

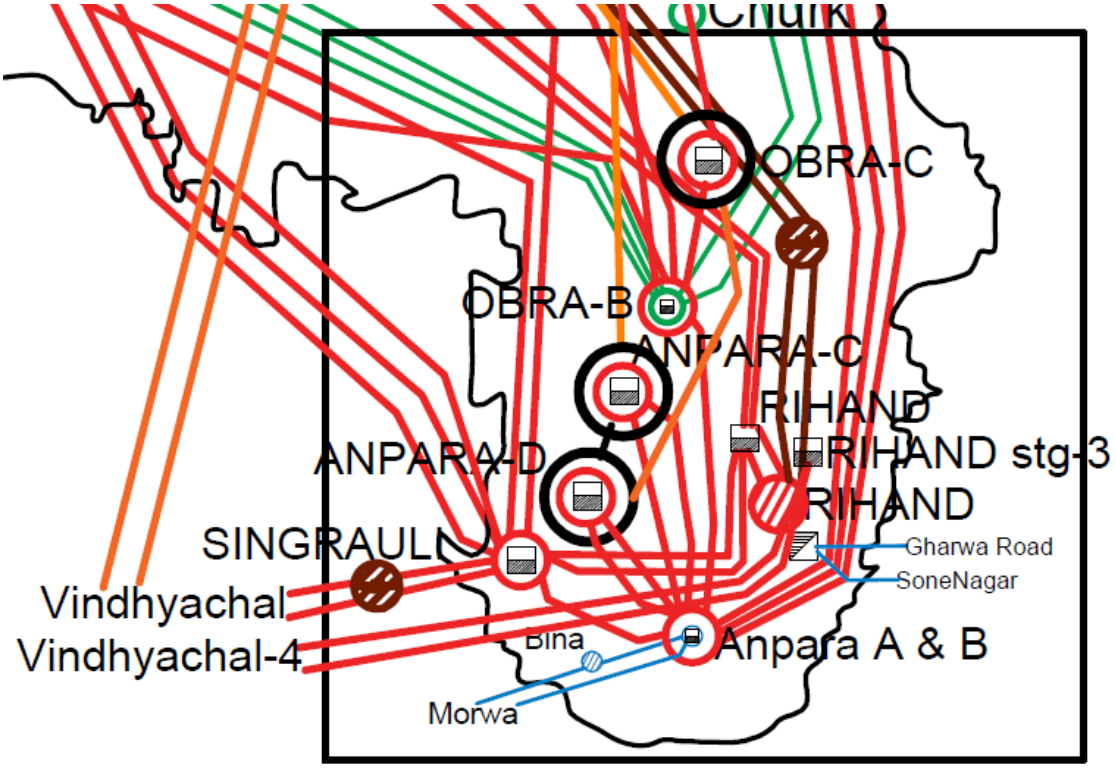
(iii) The short circuit level in Singrauli will again be studied by CEA and CTU and accordingly, would be discussed in the next NRPCTP meeting.

The above scheme may also be rectified in next NRPCTP meeting.

- Currently, Rihand stage-III power station (2*500 MW) is connected to western region through 400 KV Rihand stage-III- Vindhyachal PS-D/C. The same is disconnected from the Northern region by opening the bus coupler shown below.



- Rihand stage-III power station (2*500 MW) would be shifted to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III- Vindhyachal PS-D/C.



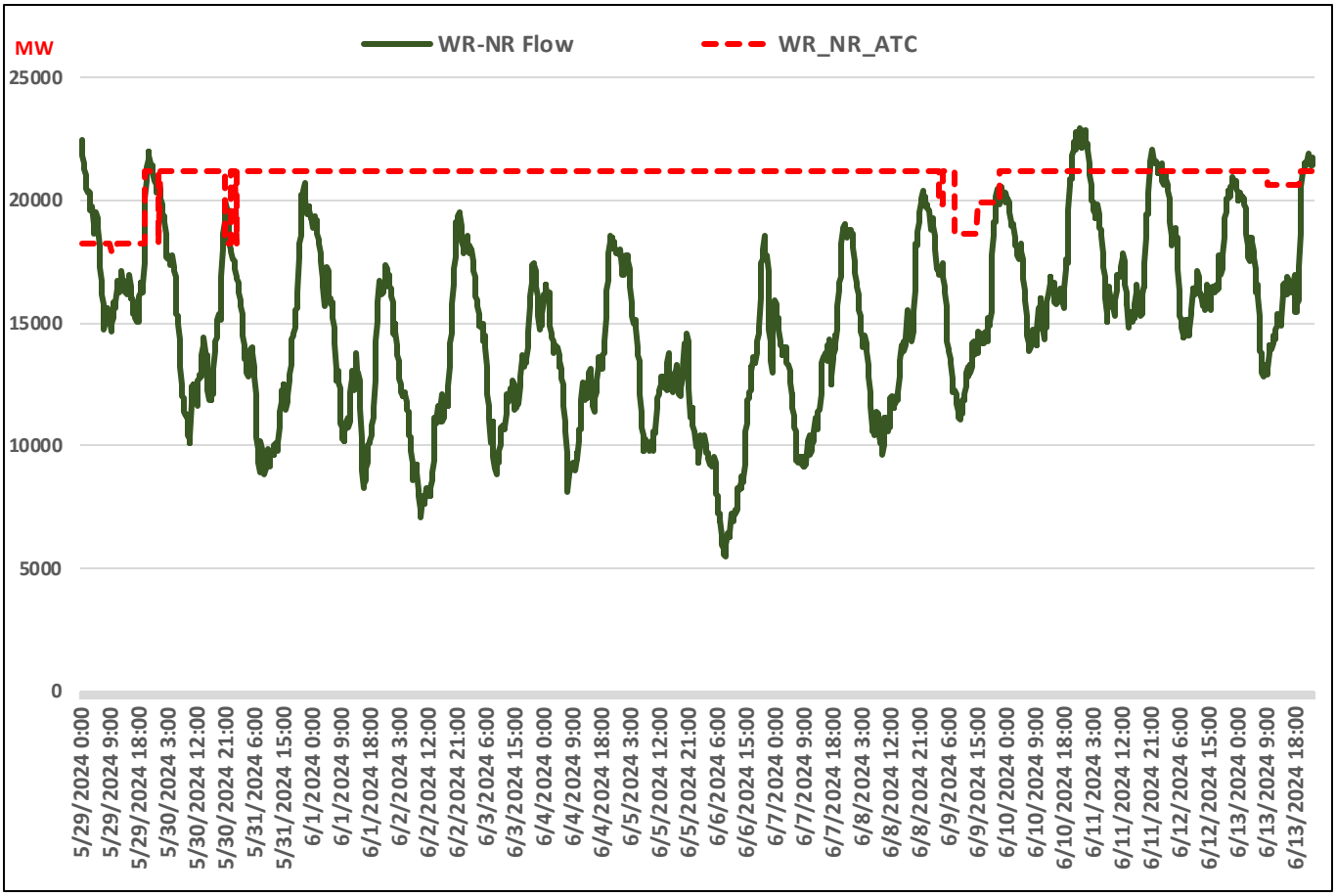
- With the above network configuration (both), significant relief in the loading on the stressed WR-NR transmission lines/ICTs observed. This relief would enhance the transfer capability of WR-NR corridor and would facilitate higher power transfer from WR to NR.

III. Benefits after network configuration as proposed above

1. **Reduced Loading and Flexible Operation**:
    a. Shifting the 1000 MW generation at Rihand Stage-III power station to NR would provide significant relief to the overloaded 765 kV Vindhyachal-Varanasi D/C line. It will result in >250 MW loading relief in each circuit of 765 kV Vindhyachal - Varanasi D/C.
    b. Relief in loading on the 400 kV Anpara-Obra line and
    c. Allow for flexible operation of the HVDC B2B Vindhyachal.
2. **Reduced Fault Level:** It will result in a reduction in the fault level of 400 kV Rihand and 400 kV Singrauli substations.
3. **Increment in WR-NR TTC/ATC figure by 1300 MW.**

It's important to note that implementing both the proposed re-arrangements is necessary to achieve the desired outcomes. This will alleviate the stress on the overloaded WR-NR corridor and significantly enhance transfer capability between the regions

Annexure-1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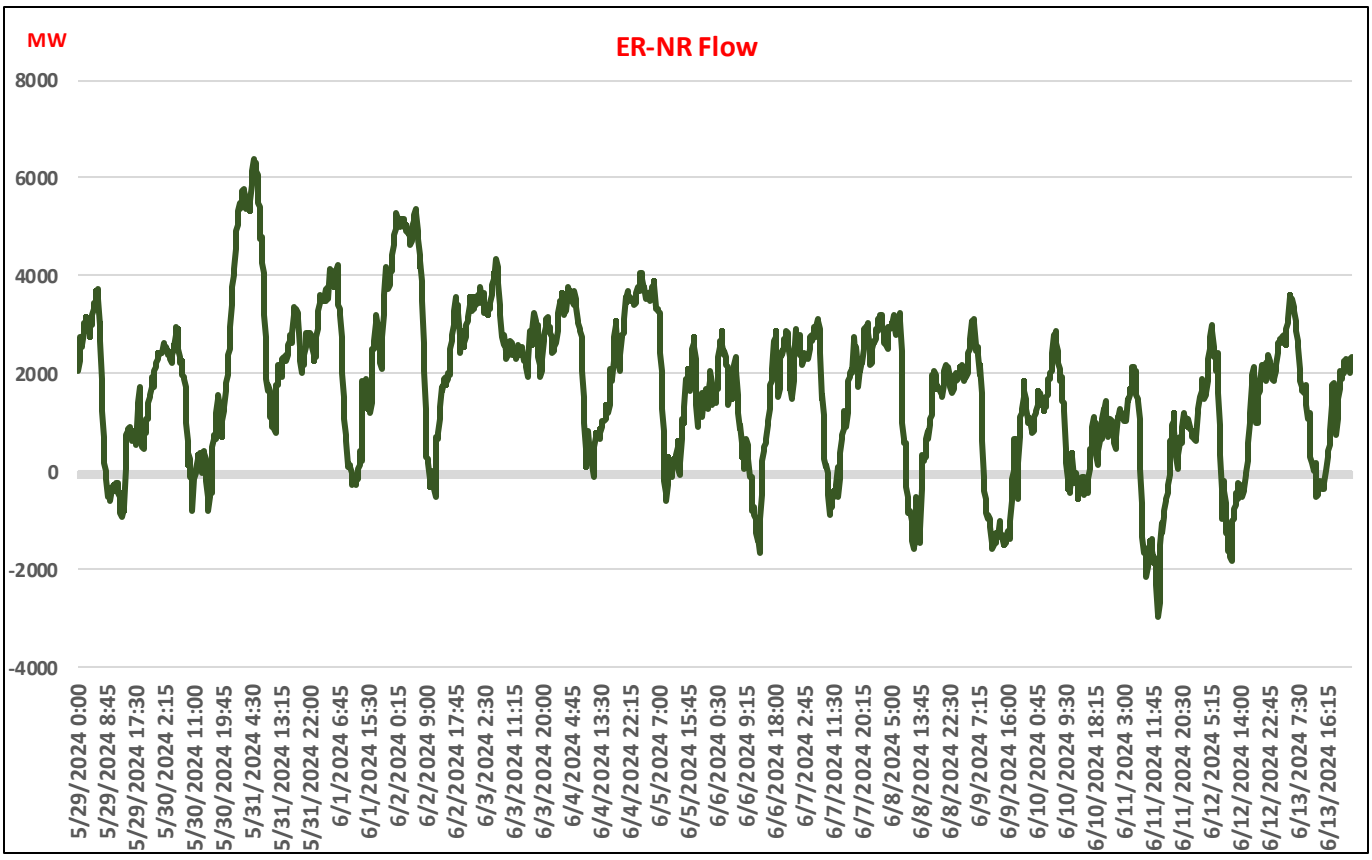
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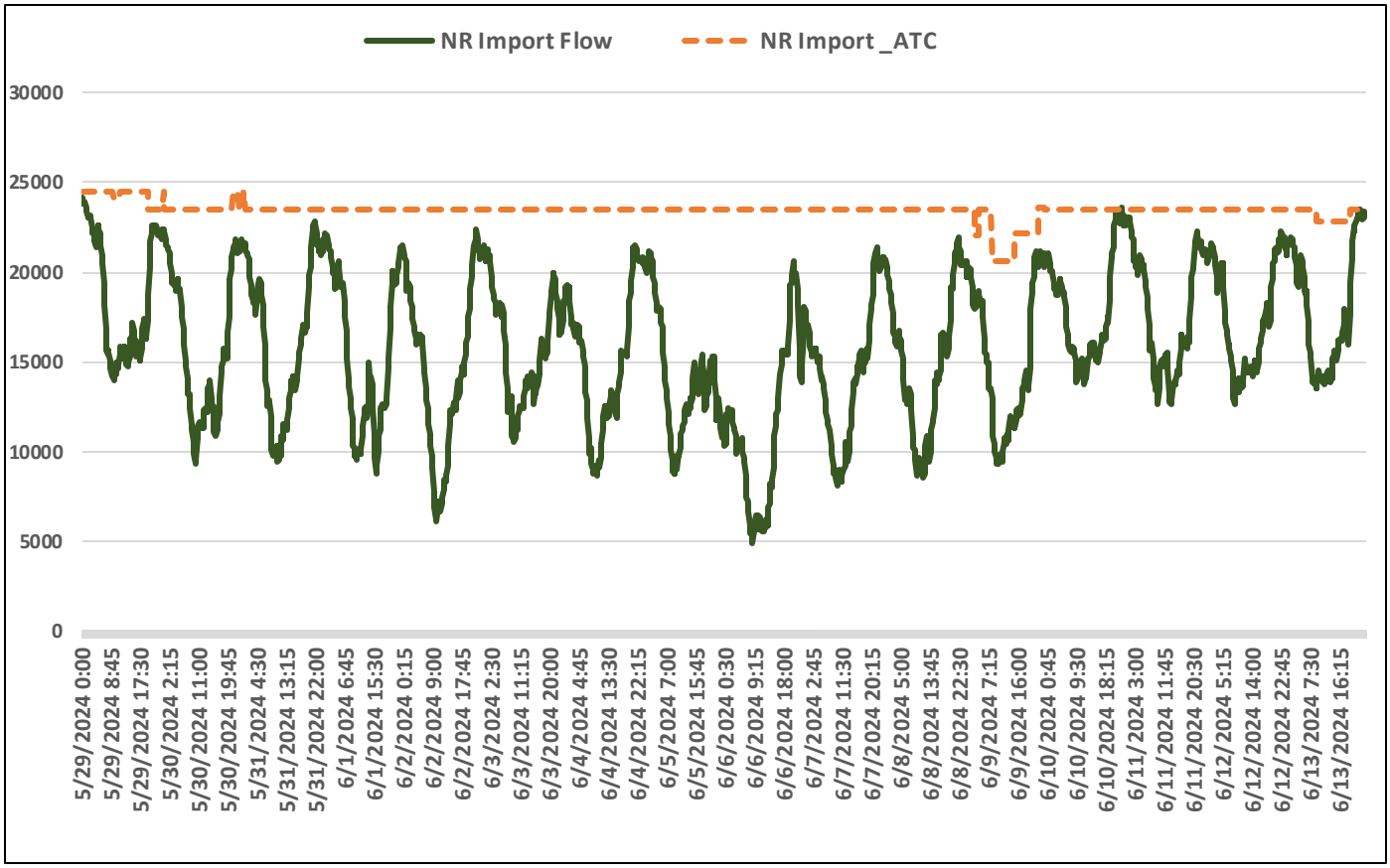
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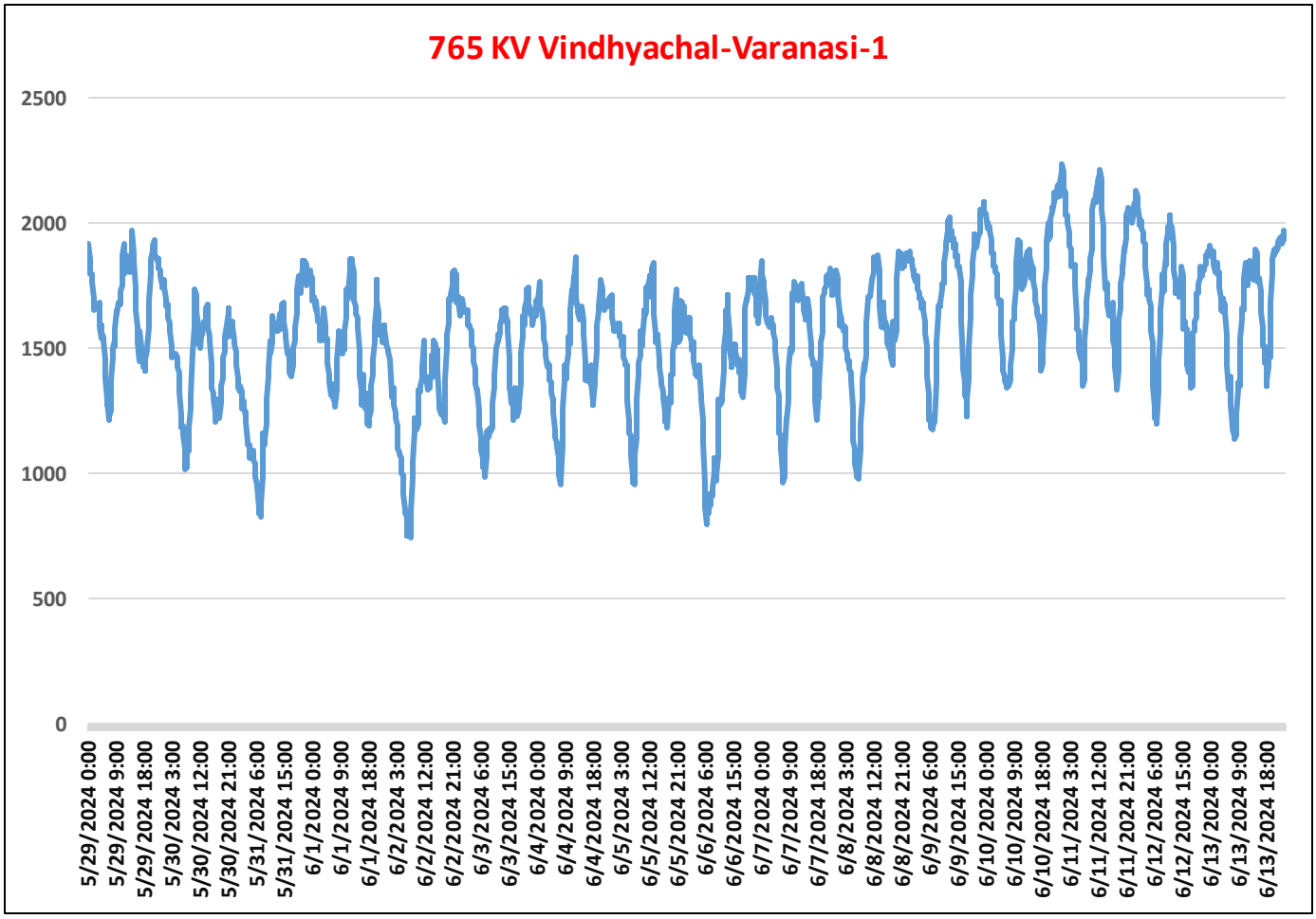
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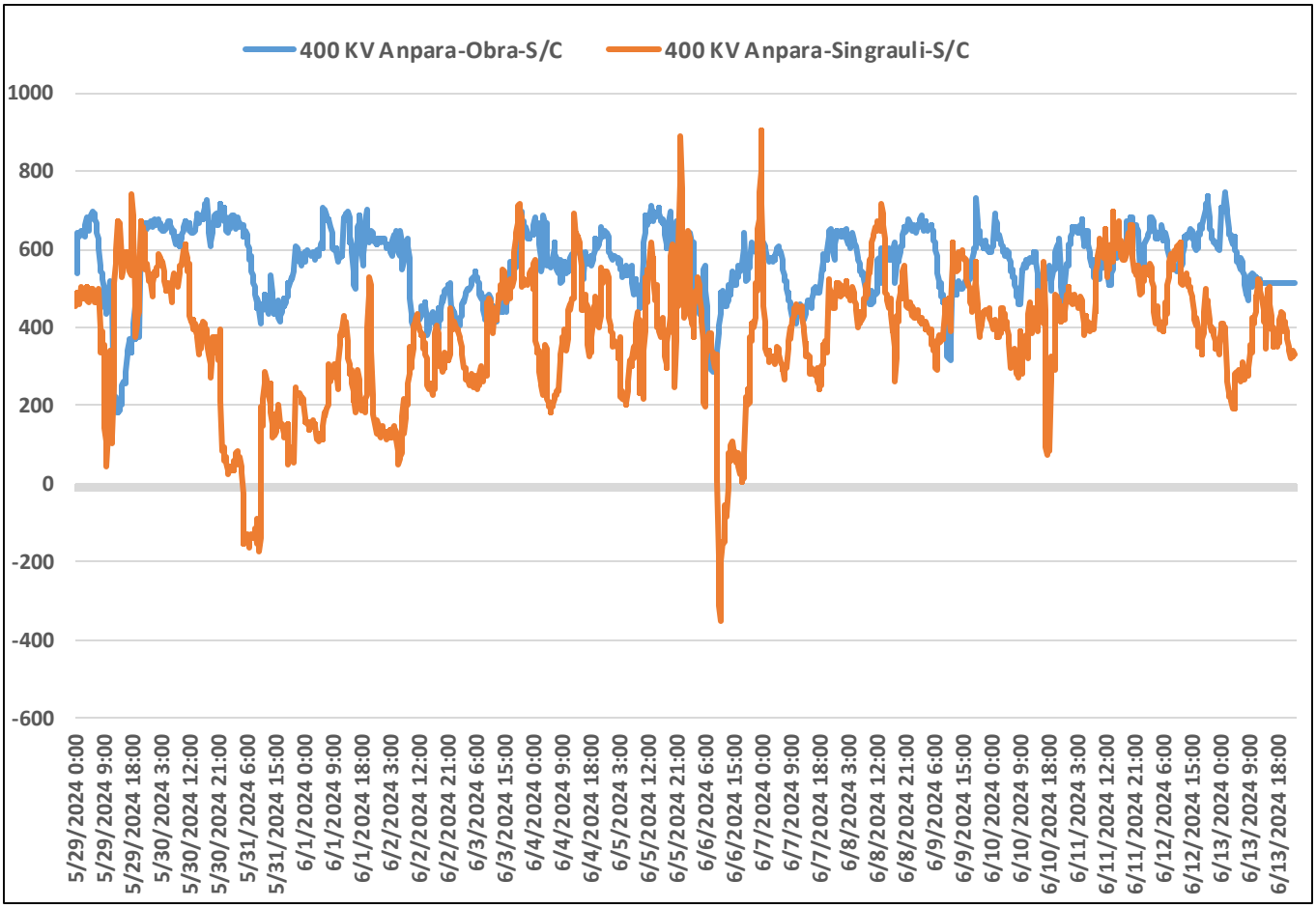
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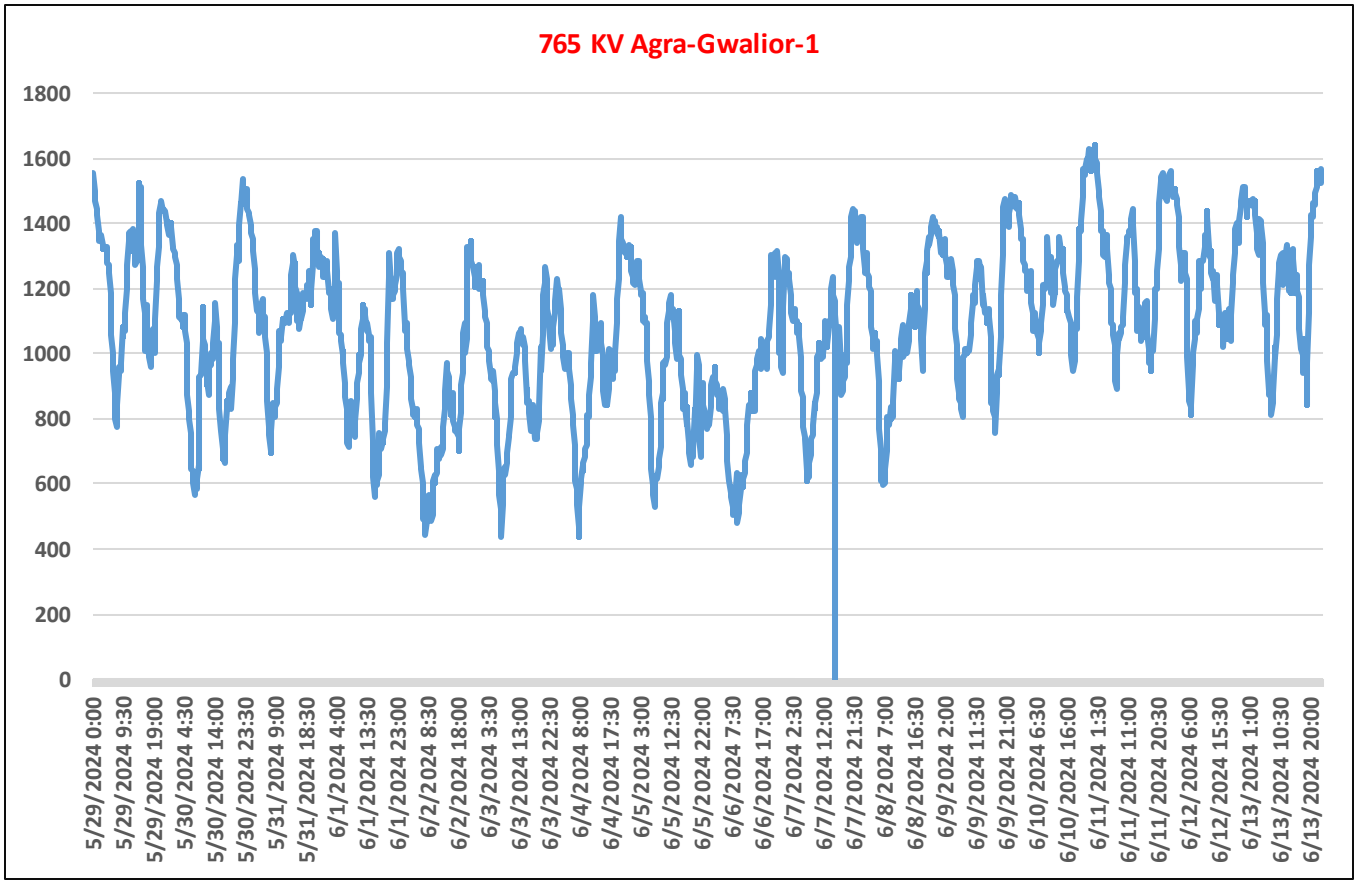
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Annexure-2

1. **Assumptions**

S. No.	Region	Demand	Generation
1	NR	80900	59200
2	WR	64000	90000
3	ER	30200	31600

S. No.	State	Demand
1	UP	29800
2	Punjab	11400
3	Rajasthan	15400
4	HP	1750
5	Uttrakhand	2350
6	J&K	3460
7	Haryana	10700
8	Delhi	7400

HVDC Set points

- Champa – Kurukshetra – 6000 MW
- Mundra – M'garh – 1750 MW
- Rihand – Dadri – 1500 MW
- Vindhyachal – blocked
- Bhiwadi-Balia-1200 MW
- APD – Agra – Blocked (both)
- Agra –BNC – 700 MW

2. Study Results

a.) The change in line loading with the proposed network configuration is as given below

From Bus		To Bus		Ckt ID	Base Case loading (MW)	Loading after Shifting Rihand-III to NR (in MW)	Loading after opening 400kV Anpara-Singrauli +Shifting Rihand-III to NR (in MW)
154057	[RIHAND-G 400.00]	324044	[RIHAND-III 400.00]	1	0	-892.4	-892.4
324033	[VINDHYACL-PS400.00]	324044	[RIHAND-III 400.00]	B1	-445.8	0	0
324033	[VINDHYACL-PS400.00]	324044	[RIHAND-III 400.00]	B2	-445.8	0	0
154014	[ANPARA4 400.00]	154056	[SINGRL4 400.00]	T1	-413.8	-781.4	0
154014	[ANPARA4 400.00]	154018	[OBRA4 400.00]	T1	667.6	770.5	510.9
154056	[SINGRL4 400.00]	154057	[RIHAND-G 400.00]	T2	-12.3	-361.5	-270.9
157010	[VARANASI-PG 765.00]	327007	[VINDHYACL-PS765.00]	H1	-2167.5	-1946	-1975
157010	[VARANASI-PG 765.00]	327007	[VINDHYACL-PS765.00]	H2	-2167.5	-1946	-1975
327002	[SATNA-PG 765.00]	327013	[ORAI 765.00]	B1	1162.6	1085.5	1072.4
157006	[FATEH-PG 765.00]	157010	[VARANASI-PG 765.00]	B1	-886.3	-815.1	768.5
154053	[ALLAHABA 400.00]	154056	[SINGRL4 400.00]	T2	-311.8	-381.8	-530
157018	[ALIGARH 765.00]	157019	[GNOIDA765.00]	H1	1599.7	1534.9	1529.9
154049	[FATEH-PG 400.00]	154056	[SINGRL4 400.00]	T1	-309	-372.7	495.1
157007	[AGRA-PG 765.00]	327003	[GWALIOR-PG 765.00]	B1	-1591.5	-1530	1527.2
154023	[MAU4 400.00]	154054	[BAL74-PG 400.00]	T1	-812	-751.1	836.4
327002	[SATNA-PG 765.00]	327003	[GWALIOR-PG 765.00]	B2	1111.7	1052	1046.7
327007	[VINDHYACL-PS765.00]	327008	[SASAN-UMPP_A765.00]	B2	-1701.2	-1644.4	-1649.6
154014	[ANPARA4 400.00]	154019	[SARNATH4 400.00]	T1	430.8	484.7	387.1
154015	[ANPARA4 400.00]	154023	[MAU4 400.00]	T1	307.4	352.5	276
157000	[ANPARAC 765.00]	157002	[UNNAO7 765.00]	B1	956.6	1009.5	891.4

b). The Fault level with the proposed network configuration is as given below

Sl. No	Substation	Base case		After opening 400kV Anpara-Singrauli		After Shifting Rihand-III to NR		After opening 400kV Anpara-Singrauli +Shifting Rihand-III to NR	
		Fault MVA	Fault current (kA)	Fault MVA	Fault current (kA)	Fault MVA	Fault current (kA)	Fault MVA	Fault current (kA)
1	400 KV Singrauli	32690	47	21916	32	34157	49	23369	34
2	400 KV RIHAND-1 & 2	22262	32	18991	27	25258	36	21989	32
3	400 KV Vindhyachal-PS	39166	57	39165	57	36386	53	36384	53
4	400 KV ANPARA	36287	52	26636	38	36676	53	26639	38
5	400 KV ANPARA C	35524	51	26315	38	35892	52	26318	38
6	400 KV ANPARA-D	32024	46	24471	35	32317	47	24474	35
7	765 KV ANPARA C	30521	23	27722	21	30623	23	27725	21
8	765 KV ANPARA-D	30485	23	27723	21	30586	23	27725	21
9	400 KV OBRA	20101	29	19029	27	20155	29	19034	27
10	765 KV OBRA_C	21322	16	20205	15	21364	16	20207	15

C. WR-NR/NR Import TTC/ATC has been reviewed and the proposed figures are tabulated below.

Sl No	Corridor	Current Declared TTC (MW)	Proposed Figures			Remarks	Limiting Constraints
			TTC	RM	ATC		
1	NR Import	24950	25200 **(+250)**	1400	23800	Obtained from simulation studies	1.N-1 contingency of one ckt of 765 kV Vindhyanchal-Varanasi will overload the other circuit. 2.N-1 contingency of one ckt of 2*1500 MVA 765/400 kV ICTs at Agra-PG will overload the remaining ICT
2	WR -> NR	22150	23450 **(+1300)**	1000	22450	Obtained from simulation studies	
3	ER -> NR	6700	6700	400	6300	The flow from ER to NR in simulation case is around 1700 MW which is in the range of power flow observed in real-time. However, the same may be kept unchanged considering the uncertainties observed in the LGB of Eastern region.	

Annexure-C

Relevant Extracts of 1st NRPCTP meeting held on 24th Jan 2020

6.13. After deliberations, following was agreed:

(i) The transmission system for evacuation of power from Singrauli III:

I. LILO of both circuits of Tie line (Vindhyachal Stage-IV to Vindhyachal Stage-V 400kV D/C Twin Moose line) at Singrauli Stage-III- under the scope of NTPC.

II. Reconductoring of Singrauli Stage-III - Vindhyachal stage-IV 400 kV D/C TM line (formed after above proposed LILO) with HTLS conductor - under the scope of NTPC

III. Singrauli-III–Rihand-III 400kV D/c line- under ISTS scope

IV. 2x125 MVAR Bus Reactor at Singrauli-III generation switchyard- under scope of NTPC

(ii) Singrauli- Anpara 400 kV line will be kept normally open (can be closed in emergency conditions) after commissioning of Anpara D –Unnao 765kV line to restrict high short circuit level in Singrauli-Anpara complex.

(iii) The short circuit level in Singrauli will again be studied by CEA and CTU and accordingly, would be discussed in the next NRPCTP meeting.

The above scheme may also be rectified in next NRPCTP meeting.

Annexure-D

Record Notes of discussion held on 14.06.2024 to discuss opening of 400kV Singrauli-Anpara line

Background: Northern Region(NR) is experiencing severe heat wave conditions and maximum NR demand reached all time high of 87046 MW on 14th Jun 2024. On 13th Jun 2024, maximum NR import reached 24048 MW which is violation of present NR import ATC value of 23550 MW. 765 kV Vindhyachal-Varanasi-D/c is one of the high power corridors carrying power between western region to northern region. The loading on these lines is also one of the limiting constraints in import of power by NR. During periods of high NR import, when NR import crosses ATC limits, the flows on 765 kV Vindhyachal-Varanasi-D/c becomes non-compliant to N-1 reliability criteria. The operation of 765 kV Vindhyachal-Varanasi-D/c at such high loadings and breach of import ATC by NR is a cause of concern. NLDC/NRLDC/WRLDC have already taken all possible measures to enhance the reliability during high NR import. Based on previous years' data, it is observed that NR demand and maximum NR import is on rising trend during the period of June to September months. The possibility of increasing NR imports in coming days requires exploring other possible measures in advance. As per simulation studies carried out by NLDC/NRLDC, it was gathered that shifting of Rihand Stage-III generation from existing WR to NR is expected to enhance NR import capability and may be considered as one of the possible measures. This may be implemented as an interim measure to contain NR import during ongoing high demand period in NR. It was also gathered from study that the shifting of Rihand Stage-III from WR to NR is expected to increase the already high fault levels at generating stations of Rihand, Singrauli and Anpara. The fault levels at these generating stations are already on the higher side and to control the high fault level , planners had recommended opening of 400 kV Singrauli-Anpara line. As per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP), 400 kV Singrauli-Anpara is to be opened and the matter has been discussed at various NRPC meetings and is pending for agreement of all the stakeholders. Therefore, an urgent meeting was convened on 14.06.2024 with participants from NRLDC, NLDC, UP SLDC, UPPTCL, UPRVUN, NTPC and POWERGRID to discuss on the proposal of:

1. Opening of 400 KV Singrauli-Anpara-S/C.

2. Subsequently, shifting of Rihand stage-III power station (2*500 MW) to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III- Vindhyachal PS-D/C

Discussion in the meeting:

1. NRLDC representative presented the congestion issues being observed in the grid during high import of power by Northern region from Western region. It was highlighted that Northern Region (NR) is experiencing a significant increase in power demand, particularly during non-solar hours. This high demand has led to a high power import scenario, where the transfer capability limit (TTC/ATC) between the Western Region (WR) and Northern Region (NR) is getting breached on regular basis. Due to the prevailing high NR import, the loading on the 765 KV Vindhyachal-Varanasi-D/C remains one the higher side (N-1 non-compliant) for significant period of the time. The high loading on the 765 KV Vindhyachal-Varanasi-D/C is the limiting factor in facilitating further transfer of power from WR to NR.

2. NRLDC representative further informed that as per the recommendations of the 1st Meeting of Northern Regional Power Committee (Transmission Planning) (NRPCTP), 400 kV Singrauli – Anpara has to be opened to control the high fault levels in Anpara – Singrauli – Rihand complex. Extract from the NRPCTP meeting minutes as presented in the aforesaid meeting is shown below:

6.13. After deliberations, following was agreed:

(i) The transmission system for evacuation of power from Singrauli III:

I. LILO of both circuits of Tie line (Vindhyachal Stage-IV to Vindhyachal Stage-V 400kV D/C Twin Moose line) at Singrauli Stage-III- under the scope of NTPC.

II. Reconductoring of Singrauli Stage-III - Vindhyachal stage-IV 400 kV D/C TM line (formed after above proposed LILO) with HTLS conductor - under the scope of NTPC

III. Singrauli-III–Rihand-III 400kV D/c line- under ISTS scope

IV. 2x125 MVAR Bus Reactor at Singrauli-III generation switchyard- under scope of NTPC

(ii) Singrauli- Anpara 400 kV line will be kept normally open (can be closed in emergency conditions) after commissioning of Anpara D –Unnao 765kV line to restrict high short circuit level in Singrauli-Anpara complex.

(iii) The short circuit level in Singrauli will again be studied by CEA and CTU and accordingly, would be discussed in the next NRPCTP meeting.

The above scheme may also be rectified in next NRPCTP meeting.

The issue was also discussed in 210, 211 & 212 NRPC OCC meetings. During 212 OCC meeting, it was agreed that as requested by UP, 400 kV Anpara-Singrauli line should remain in service till commissioning of 2X1000 MVA ICTs at Obra C and revised SPS for Anpara Complex is commissioned. Thereafter, the line may be opened after discussion at OCC level.

3. NRLDC representative added that at the time of discussion in 212 OCC meeting held in October 2023, NR import had reduced considerably and it was informed that 2 X 1000 MVA ICTs at Obra C would also be commissioned shortly. Therefore, opening of 400 kV Anpara-Singrauli was linked with commissioning of 2 X 1000 MVA ICTs at Obra C as winter was approaching and fog related tripping were also suspected.

   Subsequently, the matter was also discussed in first meeting of Standing Committee on Short Term & Perspective Power System Planning- Northern Region (SCSTPPSP-NR) held on 14.03.2024 at NRPC, New Delhi. In the meeting, it was recorded that

   "*During the meeting, UPPTCL representative informed that the 765/400 kV ICTs at Obra C are expected to be charged this summer (one in April and another in June) along with associated 400 kV lines from Obra C. This is expected to provide relief in the complex*"

   However, due to delay in commissioning of 765/400kV ICTs at Obra C, the agenda for opening of 400 kV Anpara-Singrauli line can be deliberated again. As this would be pre-requisite for implementation of the proposed remedial measures for high NR import.

   It was informed that with opening of 400kV Singrauli-Anpara line, following relief in 3-ph fault levels would be achieved:

   - 400kV Singrauli by 16kA (below 40kA)
   - 400kV Anpara by 14kA (below 40kA)
   - 400kV Anpara C by 13kA (below 40kA)
   - 400kV Anpara D by 11kA (below 40kA)
   - 400kV Rihand by 5kA (below 40kA)

Major study observations were also presented in the meeting:

- Opening of 400 kV Singrauli – Anpara will result in a reduction in the fault level in the complex
- Relieve the loading of 400 kV Anpara - Obra line
- Facilitate Flexible operation of HVDC B2B V'Chal
- Facilitate shifting of Rihand – III (1000 MW) generation NR which will result in **>250 MW** loading relief in each circuit of 765 kV Vindhyachal - Varanasi D/C. The relief in the loading of 765 kV V'chal – Varanasi D/C will relive the congestion in WR-NR corridor and facilitate high import of NR in the upcoming high demand/import period.

4. It was also mentioned that as per simulation studies done at NRLDC end, the system appears to be N-1 compliant even if the proposed rearrangement is carried out before the commissioning of 400 kV lines from Obra C and 765/400kV 2x1000 MVA ICTs at Obra-C. Moreover, it was proposed that 400 kV Anpara – Singrauli line may be kept charged from 400kV Anpara end and may be synchronized as per grid requirement in real-time. It was

also mentioned that relief of 60-70 MW is observed on 400kV Anpara-Obra line with commissioning of 765/400kV Obra-C ICTs and 400kV lines from ObraC.

Accordingly, following was proposed from GRID-INDIA side:

I. Opening of 400 KV Singrauli-Anpara-S/C as per the decision taken in 1st NRPCTP meeting at the earliest after deliberation in upcoming NRPC OCC meeting scheduled on 19.06.2024
II. Subsequently, shifting of Rihand stage-III power station (2*500 MW) to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III-Vindhyachal PS-D/C for high NR demand period.

5. NTPC Rihand representative highlighted grid event that took place in 2017, when there was complete station outage at Rihand TPS. It was also highlighted that with the proposed arrangement of shifting of Rihand-III to NR, availing shutdowns in the Rihand-SIngrauli complex becomes difficult. Further, as meeting has been arranged on short notice, NTPC Rihand would also consult NTPC-Engg team for their inputs.

   NRLDC representative stated that this agenda would also be discussed in upcoming NR-OCC meeting scheduled on 19.06.2024 and the inputs of NTPC-Engg team may be taken by that time. NRLDC representative also added that system would be N-1 compliant with proposed arrangements and shutdowns would be provided as per the grid condition.

6. NLDC representative stated that the 2017 generation loss event highlighted by NTPC is a rare event which occurred due to failure of multiple protection systems. Further, a committee was also constituted after the event and the measures suggested by the committee have been implemented to improve the system reliability in the complex. As of now Rihand III generation is being evacuated only through two lines After the proposed arrangement, the reliability of Rihand-III plant would also improve.

7. Anpara TPS representative stated that recently two 765kV lines tripped from Anpara to Unnao and under such case, 400kV lines from Anpara TPS got overloaded. Flow on 400kV Anpara-Obra crossed 900 MW when both 765kV lines tripped and 400kV Singrauli-Anpara was also in service.

   NRLDC representative stated that 400kV Singrauli-Anpara line shall be kept charged from one end and would be synchronized from other end in case of grid requirement under N-1-1 or N-2 contingency. Moreover, SPS has also been proposed from UP SLDC side to manage line loadings in case of double contingency. The proposal from UP SLDC would also be discussed in 220 NRPC OCC meeting scheduled on 19.06.2024.

8. POWERGRID representative stated that with this rearrangement fault levels in complex would get reduced. As the line would be out due to grid requirements, deemed availability needs to be provided.

   NRLDC representative stated that with this arrangement, loading of 400/220kV Allahabad(PG) ICTs will increase and accordingly SPS under discussion for 400/220kV

ICTs at Allahabad(PG) needs to be implemented at the earliest till new ICT is commissioned. Further, as 400kV Singrauli-Anpara would be kept charged from one end, deemed availability would be provided to POWERGRID.

9. Chief Engineer, UP SLDC stated that two events involving outage of two 765kV lines from Anpara to Unnao and three ICT outages at Unnao have been seen in the past. In such cases, Anpara generation evacuation would be under threat.

   NLDC representative stated that the concern of UP SLDC is understood, however ongoing high NR import conditions requires urgent attention as well as more alert and optimised approach in operational planning. The reliability of Anpara generation complex alongwith reliability of WR-NR inter-regional corridor has been analysed with proposed arrangements. It is suggested that during any contingency situation in Anpara generation complex, 400kV Singrauli-Anpara line can be closed based on the real time system conditions, this is expected to help in safe evacuation of Anpara generation. The line is suggested to be charged from one end for faster revival.

   NLDC representative shared that with collective coordinated measures from stakeholders, the suggested measures may be adopted. Under the given circumstances, the arrangement proposed by Grid India appears to be optimised solution.

10. UP SLDC representative stated that even if 400kV Singrauli-Anpara line is opened, no major issues are observed for N-1 contingency, however issues are observed for double contingency. It was informed that UP SLDC shall take up the matter for charging of 765/400kV Obra C ICT at the earliest with Obra C.

    Chief Engineer, UP SLDC stated that 400kV Singrauli-Anpara line may be opened after commissioning of 765/400kV ICT at Obra C. Moreover, 400kV Singrauli-Anpara line may be kept closed from 400kV Anpara end and may be synchronised at 400kV Singrauli end in case of requirement. Further, revised SPS for Anpara complex is also to be discussed in 220 OCC meeting scheduled on 19.06.2024 which will make system secure compliant for double contingencies.

It was deliberated that revised SPS proposed by UP SLDC also takes care of double contingencies. Accordingly, the apprehension of UP SLDC (overloading under N-2 contigency scenario) would also get addressed with implementation of revised SPS.

After detailed deliberations, following was agreed:

1. Opening of 400kV Singrauli-Anpara line as per the decision taken in 1st NRPCTP meeting (to control high fault levels in the complex) was agreed. The above issue would also be discussed in upcoming 220 NR-OCC meeting scheduled on 19.06.2024 for any other inputs/comments from the stakeholders. After discussion at NR-OCC level, 400 kV Singrauli-Anpara line shall be opened. **(Action Point: NRLDC)**

2. The agenda regarding shifting of Rihand stage-III to NR by closing the bus coupler and disconnecting from WR by opening 400 KV Rihand stage-III- Vindhyachal PS-D/C shall be discussed in 220 NR-OCC as well as next WRPC-OCC meeting. Subsequently, the same shall be implemented. **(Action Point: NRLDC/NLDC)**

3. NRLDC, UP SLDC, UPPTCL, Anpara TPS, POWERGRID and NTPC to be more vigilant on the network for smooth coordination during any contingency.

4. UP SLDC to take up with UP RVUNL to expedite early commissioning of 765/400 kV ICTs at Obra-C

(Action Point: UP SLDC)

5. Instructions will be issued to NRLDC, UP SLDC, UPPTCL, Anpara TPS, POWERGRID and NTPC to take 400kV Singrauli-Anpara in service on priority basis in case of any grid requirements. **(Action Point: UP SLDC/ POWERGRID)**

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Participant list:

S. No.	Name	Organisation
1	A J Siddique	UP SLDC
2	Mohsin Khan	UP SLDC
3	S K Sudhakar	NTPC
4	Ravi Kumar	NTPC
5	Abhishek Khanna	NTPC
6	Manoj Prasad	Anpara TPS
7	Bikas Kumar Jha	NRLDC
8	Kamaldeep	NRLDC
9	Gaurav Malviya	NRLDC
10	Akash Tomar	NRLDC
11	Vivek Pandey	NLDC
12	Rahul Shukla	NLDC
13	Priyam Jain	NLDC
14	Raj Kishan	NLDC
15	Gaurab Dash	NLDC
16	Superintending Engineer	UPPTCL
17	Gunjan Agrawal	POWERGRID
18	Ashish Kumar Singh	POWERGRID

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Comments of on Draft SOP for supply, installation & replacement of ISTS IEM as per IEGC 2023 and CEA Metering regulations 2006 and its amendment thereafter

Comments of BBMB are as under:

i) **CEA Metering Regulations** provide that all interface meters installed at the points of interconnection with Inter-State Transmission system (ISTS) for the purpose of electricity accounting and billing **shall be owned by CTU. As per IEGC 2023,** CTU is responsible for procurement & installation of Interface meters **at the cost of respective entity.** As the cost of SEM has to be borne by the respective entity as per IEGC 2023, the ownership status of newly installed/replaced SEMs may be clarified.

ii) Procurement/replacement of Data Collection Device (DCD), cable used for fetching/dumping SEM data etc. & Installation/up-dation of SEM Software at utility locations may also be covered in the SOP along with Special Energy Meters (SEMs)

iii) As per Clause 18 (b) of CEA Metering Regulations 2006, all interface meter shall be tested at least once in 5 years. Calibration of SEM is under whose scope (CTU or Respective Entity), please clarify.

iv) The details of the CTU Nodal officers along with PGCIL Nodal officers for the said purpose be made available to all entities.

Preliminary Feedback/comments of SRLDC on "Draft SOP for supply, installation & replacement of ISTS IEM as per IEGC 2023 and CEA metering regulations 2006 and its amendment thereafter"

A. Procedure for replacement of Faulty ISTS IEM/SEM

The timelines for replacement of Faulty meters can go to a maximum of 34 days for replacement as per the draft procedure. Accordingly, the timelines may be reduced.

- RLDC shall communicate the entity within **3 working days** from the detection of defective IEM/SEM.
- Within **3 working days** from receipt of above communication from RLDC, the Entity shall send a communication (through letter or e-mail) to CTUIL
- CTUIL shall advise POWERGRID to replace the defective IEM/SEM within **3 working days** from receipt of the said communication.

The information to be provided by entity to CTUIL, RLDC & RPC shall also mention the type of meter whether main, check or standby

B. Procedure for Installation of ISTS IEM/SEM for new systems

- Renewable Energy accounting would require measurement of non-ISTS points also apart from ISTS points in line with CEA Regulations and decisions/approval of RPC forum. Accordingly, the same may be suitably incorporated.
- The draft procedure mentions *"The Entity shall request for installation of new IEM/SEM to CTUIL along with the metering scheme issued by respective RLDC".* The metering approval is given by SRPC forum and not by SRLDC in southern region. It can be suitably modified.

C. Bulk Procurement of ISTS IEM/SEM

- The draft procedure mentions *"CTUIL/STU shall provide the details of ISTS projects coming up in the next 2 years to respective RLDC."* CTU/STU has to provide detailed SLD with clear description about bays and 220KV lines. A format can be mentioned for submission of data.
- Projected requirement towards replacement of defective IEM/SEM based on past 2-year trend is would be available with CTUIL as per the process flow envisaged in the procedure.

Others

- The Process of getting SEM calibration may also be covered
- The process of maintenance if any after warranty period may also be covered

A meeting may be called with the stakeholders for discussion and feedback for southern region constituents.

Stakeholders Comments on Draft SOP for supply, installation & replacement of ISTS IEM as per IEGC 2023 and CEA metering regulations 2006 and its amendment thereafter

Date: 30-04-2024

As per IEGC 2023, CTUIL shall be responsible for procurement & installation of Interface Energy Meters and replacement of faulty meters. Further as per CEA, all interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU.

Accordingly, CTUIL has prepared a draft SOP for supply, installation & replacement of ISTS IEM/SEMs which is put up for stakeholders' comments by 31st May, 2024 in compliance to IEGC 2023 and CEA metering regulations.

Stakeholders (Generators, Bulk consumers, STUs, RLDCs, SLDC and other ISTS users) may give their observations, if any, latest by 31.05.2024 at mail ids; rshakya@powergrid.in & tanay@powergrid.in

Standard Operating Procedure (SOP)

Procurement & Installation of ISTS Interface Energy Meter (IEM/SEM)

Introduction:

This Standard Operating Procedure (SOP) for Procurement and Installation of Interface Energy Meter (IEM/SEM) will be applicable only for the IEM/SEM falling under the purview of CTU as per the provisions under Regulations 49.12 (a) of CERC (Indian Electricity Grid Code), Regulations, 2023 and as per CEA (Installation and Operation of Meters) Regulations and amendments thereof. The Regulation 49.12(a) is re-produced below:

"*49.12* ***Energy Metering and Accounting:***

(a) The CTU shall be responsible for procurement and installation of Interface Energy Meters (IEM/SEM), at the cost of respective entity, at all the ISTS interface points, points of connections between the regional entities, cross border entities and other identified points for recording of actual active and reactive energy interchanged in each time-block through those points, and its operation and periodic calibration shall be done by the respective entity. CTU shall be responsible for replacement of faulty meters."

The objective of this procedure is to ensure timely installation of IEM/SEM in the new ISTS system and timely replacement of the defective IEM/SEM.

Presently, POWERGRID is an authorized agency for procurement of IEM/SEM, installation of new IEM/SEM and replacement of defective IEM/SEM. Any mention of POWERGRID in this procedure shall also mean any other agency authorized by CTUIL to carry to aforesaid functions. CTUIL may authorize any other agency to carry to aforesaid functions in future. Replacement/Installation of IEM/SEM shall mean all the activities including supply of new meter and its installation, testing and commissioning.

The complete cycle of installation/replacement of IEM/SEM has been divided in various steps as described in Part A & B. Since timely procurement and availability of sufficient no. IEM/SEM is the key ~~a~~ critical requirement, Part C of this procedure deals with timely estimation of requirement & procurement of IEM/SEM. Part D & Part E are for inventory management and maintenance respectively.

A. Procedure for replacement of Faulty ISTS IEM/SEM

1. Identification of faulty IEM/SEM and communication to CTU:

1.1 Any Entity who wants IEM/SEM replacement shall inform concerned RLDC about such requirement along-with reasons. RLDC also identify inconsistent SEM/IEM based on its observations on IEM/SEM data (received through AMR system or otherwise). The RLDC shall send a communication to the entity within 5 working days from the detection of inconsistent data or defective IEM/SEM.

1.2 Based on the inputs from respective RLDC ~~& its observations on the meter data (received through AMR system or otherwise)~~, the Entity in whose premises the said IEM/SEM for ISTS is installed, shall identify the defective IEM/SEM which requires replacement.

1.3 The Entity shall take immediate steps to get issues rectified within 7 working days from receipt of above communication from RLDC. If the issue is not rectified within 7 working days or if it is established that IEM/SEM is to be replaced the Entity shall send a communication (through letter or e-mail) to CTUIL requesting replacement of the defective IEM/SEM within next 5 working days. The said communication shall include the followings:

a. The location, serial no. and make of the defective IEM/SEM

b. The date of installation of the above IEM/SEM
c. The observations wrt the said defective IEM/SEM

A copy of this communication shall be sent to respective RLDC and regional nodal officer of POWERGRID. The contact details of POWERGRID Nodal officers shall be made available on CTUIL's website. The latest charges as received from POWERGRID would be made available on CTUIL's website for the following

a) Supply of only SEMs
b) Supply, installation and commissioning of SEMs at site
c) Commissioning certificate complying to CEA/CERC Regulations as required by Grid-India/SLDCs

1.4 In line with applicable Regulations, the replacement of IEM/SEM shall be on a chargeable basis as per the services availed. The Entity shall undertake in the said communication that they will make payment for supply & installation of the IEM/SEM having automatic remote meter reading facility as per the invoice raised by POWERGRID within 45 working days from the date of installation/replacement of IEM/SEM.

2. Communication to POWERGRID:

2.1 On receipt of the above communication from the Entity, CTUIL shall advise POWERGRID to replace the defective IEM/SEM within 5 working days from receipt of the said communication.
A copy of the advice shall also be sent to the respective Entity.

3. Replacement of Faulty IEM/SEM:

3.1 The POWERGRID shall raise the invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall replace the defective IEM/SEM within 8 ~~10~~ working days from date of issuance of invoice. POWERGRID shall inform CTUIL after replacement of the defective IEM/SEM.

3.2 After replacement of faulty IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same with necessary details within 2 days. The verification testing with Grid-India/SLDC shall be ensured by the Entity.

3.3 The Entity shall make payment to POWERGRID within 45 working days from the date of replacement of IEM/SEM.

4. Payment and Warranty:

4.1 The payment towards supply & replacement of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) ~~working~~ days ~~from its~~, failing which late payment surcharge @ 0.04% of the invoice amount per day shall be payable for the delayed period.

4.2 IEM/SEM once replaced, shall be under ~~the~~ warranty as per OEM supply contract (which will be informed by POWERGRID to the Entity) which will be at least of 1 year from the date of installation. During this warranty period, the entity shall take up the matter pertaining to the replaced IEM/SEM directly with OEM/POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15 working days from the date of intimation by the entity.

B. Procedure for Installation of ISTS IEM/SEM for new systems

1. The Entity shall request for installation of new IEM/SEM to CTUIL along with the metering scheme issued by respective RLDC or the approved scheme by RPC, if any, (Suggestive format for metering scheme is attached with this SOP). Entity shall send

its request to CTUIL for supply, installation, commissioning and certification (as applicable) of IEM/SEM at least three months in advance.

2. CTUIL shall communicate, within 5 working days from receipt of communication from entity to POWERGRID for installation of new IEM/SEM.

3. The POWERGRID shall raise the invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall install the IEM/SEM within 8 ~~10~~ working days from date of issuance of invoice. POWERGRID shall inform CTUIL after installation of IEM/SEM.

4. After installation of IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same with necessary details within 2 days. The verification testing with Grid-India/SLDC shall be ensured by the Entity.
5. The Entity shall make payment to POWERGRID within 45 ~~working~~ days from the date of installation of IEM/SEM.

6. Payment and Warranty:

   6.1 The payment towards supply & installation of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) ~~working~~ days ~~from its~~, failing which late payment surcharge @ 0.04% of the invoice amount per day shall be payable for the delayed period.

   6.2 IEM/SEM once installed, shall be under ~~the~~ warranty ~~as~~ as per OEM supply contract (which will be informed by POWERGRID to the Entity) which will be at least of 1 year from the date of installation. During this warranty period, the entity shall take up the matter pertainingto the installed IEM/SEM directly with OEM/POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15 working days from the date of intimation by the entity.

C. Bulk Procurement of ISTS IEM/SEM

1. By the end of September of each year, CTUIL/STU shall provide the details of ISTS projects coming up in the next 2 years to respective RLDC.

2. RLDC shall work out the metering scheme for total requirement of IEM/SEM under the following heads:

   i. For new ISTS system
   ii. Spares @10% of the IEM/SEM population in the region
   iii. Projected requirement towards replacement of defective IEM/SEM based on past 2-year trend.

   RLDC will get the total IEM/SEM quantity approved by respective RPCs and inform to CTUIL by November end.

3. On ~~receive~~ receipt of the IEM/SEM quantity from RLDCs, CTUIL shall aggregate the requirement on PAN India basis and issue procurement advice to POWERGRID by December end.

D. Inventory Management

Each month RLDC would furnish the report on SEM/IEMs working, suspect and defective to CTUIL. Each month Powergrid would furnish the status and details of spares to CTUIL. Based on the report CTUIL may issue suitable directions for diversion of spares from one region to another or initiate timely action for procurement of spares.

E. Maintenance

The operation, testing and maintenance of all types of meters shall be carried out by the generating company or the licensee, as the case may be.

AMC Procedure, if any, shall be followed.

Regarding stakeholder comments on draft SOP for supply, installation and replacement of ISTS IEM as per IEGC 2023 and CEA Metering Regulation 2006 (with amendments)

SLDC,JSEB Ranchi <sldcranchi@gmail.com>

Thu 30-05-2024 14:03

To:Rahul Kumar Shakya {} <rshakya@powergrid.in>;Tanay Jaiswal {Tanay Jaiswal} <tanay@powergrid.in>

Some people who received this message don't often get email from sldcranchi@gmail.com. Learn why this is important

Sir,
While going through draft SOP, it is requested to clarify on following points:

1.1 - What does Entity means in the draft SOP, it should be specified.

- Respective transmission licensees?
- STU?
- DISCOM?

1.2

-(b) At present the date of installation is available with POWERGRID, NO information is available with SLDC or respective transmission licensee, Guidelines may be issued that who will maintain the history.

1.3- One-time undertaking may be taken from the respective Entity (STU/Transmission licence/DISCOM). The draft of undertaking may also form a part of SOP.

Nodal officers may also be incorporated for each Entity.

--
Regards,
State Load Despatch Centre (SLDC)
Jharkhand Urja Sancharan Nigam Limited, Ranchi
Mobile: (+91) 9431135537, 7781017818
Landline: 0651-3500920

Email: sldcranchi@gmail.com
sldcranchi.report@gmail.com

POWERGRID comments on draft 'SOP regarding Procurement & Installation of ISTS Interface Energy Meter (IEM)'- proposed by CTUIL

Following revisions are proposed in the draft Standard Operating Procedure (SOP) for Procurement & Installaton of ISTS Interface Energy Meter (IEM/SEM) shared by CTUIL.

2. Communication to POWERGRID:

Existing:

2.1 On receipt of the above communication from the Entity, CTUIL shall advise POWERGRID to replace the defective IEM/SEM within 5 working days from receipt of the said communication. A copy of the advice shall also be sent to the respective Entity.

Modified:

2.1 On receipt of the above communication from the Entity, CTUIL shall advise POWERGRID to replace the defective IEM/SEM within 5 working days from receipt of the said communication along with the undertaking form the entity for payment towards supply & installation of meter. A copy of the advice shall also be sent to the respective Entity.

3. Replacement of Faulty IEM/SEM:

Existing

3.1 The POWERGRID shall raise the proforma invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall replace the defective IEM/SEM within 10 working days from date of issuance of proforma invoice. POWERGRID shall inform CTUIL after replacement of the defective IEM/SEM.

3.2 After replacement of faulty IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same.

3.3 The Entity shall make payment to POWERGRID within 45 working days from the date of replacement of IEM/SEM

Modified:

3.1 The POWERGRID shall raise the proforma invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall replace the defective IEM/SEM within 10 working days from date of issuance of proforma invoice. POWERGRID shall inform CTUIL after replacement of the defective IEM/SEM.

3.2 After replacement of faulty IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same.

3.3 The Entity shall make payment to POWERGRID within 45 working days from the date of replacement of IEM/SEM

3.4 POWERGRID shall proceed with the replacement of new meters in an entity, only if the pending payment by the entity is not due for more than 60 days.

4. Payment and Warranty:

Existing:

4.1 The payment towards supply & replacement of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) working days from its, failing which late payment surcharge @ 0.04% of the proforma invoice amount per day shall be payable for the delayed period.

4.2 IEM/SEM once replaced, shall be under the warranty of 1 year from the date of installation. During this period, the entity shall take up the matter pertaining to the replaced IEM/SEM directly with POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15 working days from the date of intimation by the entity.

Modified:

4.1 The payment towards supply & replacement of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) working days from its, failing which late payment surcharge @ 0.04% of the proforma invoice amount per day shall be payable for the delayed period.

~~4.2 IEM/SEM once replaced, shall be under the warranty of 1 year from the date of installation. During this period, the entity shall take up the matter pertaining to the replaced IEM/SEM directly with POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15 working days from the date of intimation by the entity.~~ (This point needs to be deleted as the supplied LOA for meters are having warranty as per LOA date and issuing meter warranty to entity from the date of installation is not possible for POWERGRID).

B. Procedure for Installation of ISTS IEM/SEM for new systems

Existing:

3. The POWERGRID shall raise the proforma invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall install the IEM/SEM within 10 working days from date of issuance of proforma invoice. POWERGRID shall inform CTUIL after installation of IEM/SEM.

5. The Entity shall make payment to POWERGRID within 45 working days from the date of installation of IEM/SEM.

6. Payment and Warranty:

6.1 The payment towards supply & installation of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) working days from its, failing which late payment surcharge @ 0.04% of the proforma invoice amount per day shall be payable for the delayed period.

6.2 IEM/SEM once installed, shall be under the warranty of 1 year from the date of installation. During this period, the entity shall take up the matter pertaining to the installed IEM/SEM directly with POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15 working days from the date of intimation by the entity.

Modified:

3. The POWERGRID shall raise the proforma invoice on the Entity within 7 working days from the receipt of the advice from CTUIL and shall install the IEM/SEM within 10 working days from date of issuance of proforma invoice. POWERGRID shall inform CTUIL after installation of IEM/SEM.

5. The Entity shall make payment to POWERGRID within 45 working days from the date of receipt of proforma invoice.

6. Payment and Warranty:

6.1 The payment towards supply & installation of IEM/SEM by POWERGRID shall be made by entity within 45 (Forty-Five) working days from its, failing which late payment surcharge @ 0.04% of the proforma invoice amount per day shall be payable for the delayed period.

~~6.2 IEM/SEM once installed, shall be under the warranty of 1 year from the date of installation. During this period, the entity shall take up the matter pertaining to the installed IEM/SEM directly with POWERGRID's nodal officers with copy to CTUIL. POWERGRID's nodal officers shall arrange to replace such IEM/SEM within 15~~

~~working days from the date of intimation by the entity.~~ (This point needs to be deleted as the supplied LOA for meters are having warranty as per LOA date and issuing meter warranty to entity from the date of installation could not be possible. This clause may be removed as warranty is governed from date of supply of meters by vendor).

Standard Operating Procedure (SOP)

Procurement & Installation of ISTS Interface Energy Meter (IEM/SEM)

Introduction:

This Standard Operating Procedure (SOP) for Procurement and Installation of Interface Energy Meter (IEM/SEM) will be applicable only for the IEM/SEM falling under the purview of CTU as per the provisions under Regulations 49.12 (a) of CERC (Indian Electricity Grid Code), Regulations, 2023 and as per clause 6 (1)(a) of CEA (Installation and Operation of Meters) Regulations and amendments thereof. The Regulation 49.12(a) & 6 (1) is re-produced below:

"*49.12* ***Energy Metering and Accounting:***

(a) The CTU shall be responsible for procurement and installation of Interface EnergyMeters (IEM/SEM), at the cost of respective entity, at all the ISTS interface points, points of connections between the regional entities, cross border entities and other identified points for recording of actual active and reactive energy interchanged in each time-block through thosepoints, and its operation and periodic calibration shall be done by the respective entity. CTU shall be responsible for replacement of faulty meters."

"6. ***Ownership of meters-***

(1) ***Interface meters*** *(a) All interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU.*

The objective of this procedure is to ensure timely installation of IEM/SEM in the new ISTS system and timely replacement of the defective IEM/SEM by CTU or their authorized agency. The procedure also aims for timely payment by the respective entities to authorized agency of CTUIL against supply & installation of the IEM/SEM.

Presently, POWERGRID is the authorized agency for procurement of IEM/SEM, installation of new IEM/SEM and replacement of defective IEM/SEM. Any mention of POWERGRID in this procedure shall also mean any other agency authorized by CTUIL, if any, to carry out the aforesaid functions. CTUIL may authorize any other agency to carry out the aforesaid functions in future. Replacement/Installation of IEM/SEM shall mean all the activities including supply of new IEM/SEM, its installation, testing and commissioning.

The complete cycle of installation/replacement of IEM/SEM has been divided in various steps as described in Part A & B. Since timely procurement and availability of sufficient no. IEM/SEM is the key requirement, Part D of this procedure deals with timely estimation of requirement & procurement of IEM/SEM. Part C and Part E are for payment & warranty and inventory management respectively.

Applicability:

The procedure shall be applicable for the entities which are in the RLDCs control area and whose metering and energy accounting is done at the regional level. Thus, all Gencos including RE generators and all other utilities connected to ISTS Grid are the entities for the purpose of this procedure.

Effectiveness:

The date of effectiveness of this procedure shall be notified separately on CTUIL website.

A. Procedure for replacement of Faulty ISTS IEM/SEM

1. Identification of faulty IEM/SEM and communication to CTU:

1.1 Any Entity who wants IEM/SEM replacement shall inform concerned RLDC about such requirement along with the reasons thereof. RLDC also identify inconsistent SEM/IEM based on its observations on IEM/SEM data (received through AMR system or otherwise). The RLDC shall send a communication to the entity within 3 working days from the detection of inconsistent data or defective IEM/SEM.

1.2 The Entity shall take immediate steps to get all the issues rectified within 7 working days from receipt of above communication from RLDC. If the issue is not rectified within 7 working days or if it is established that IEM/SEM needs to be replaced, the Entity shall send a communication (through letter or e-mail) to CTUIL, within next 3 working days requesting replacement of the defective IEM/SEM. The said communication shall include the followings:

a. The location, serial no., make and model of the defective IEM/SEM along with accessories (required if any)
b. The date of installation of the above IEM/SEM
c. The observations w.r.t. the said defective IEM/SEM
d. Consent for payment, as per the provision of this procedure, towards supply and installation of IEM/SEM

A copy of this communication shall be sent to respective RLDC and regional nodal officer of POWERGRID. The contact details of POWERGRID Nodal officers shall be made available on CTUIL's website. The amount to be charged by POWERGRID towards Supply & Installation of the IEM/SEM shall be made available on CTUIL website.

1.3 In line with applicable Regulations, the replacement of IEM/SEM shall be on a chargeable basis. The Entity shall undertake in the said communication that they will make payment for supply & installation of the IEM/SEM, in accordance with the provisions of this procedure, as per the invoice raised by POWERGRID.

2. Communication to POWERGRID:

2.1 On receipt of the above communication from the Entity, CTUIL within 3 working days from receipt ofthe said communication, shall advise POWERGRID to replace the defective IEM/SEM. A copy of the advice shall also be sent to the respective Entity.

3. Replacement of Faulty IEM/SEM:

3.1 The POWERGRID shall raise the invoice on the concerned Entity within 7 working days from the receipt of the advice from CTUIL and shall replace the defective IEM/SEM within 8 working days from date of acceptance of invoice by the entities. POWERGRID shall inform CTUIL after replacement of the defective IEM/SEM.

3.2 After replacement of faulty IEM/SEM, the entity shall inform respective RLDC & CTUIL about the same with necessary details (Meter Sl.No, Make, Model, Date of replacement and meter location) within 2 days. The verification testing with respective RLDC shall be ensured by the Entity.

B. Procedure for Installation of ISTS IEM/SEM for new systems

1. The Entity shall request CTUIL for installation of new IEM/SEM along with the Metering Scheme Letter issued by respective RLDC in line with the scheme approved by RPC, if any. Entity shall make such request to CTUIL at least three months in advance of the anticipated COD of the new system.

2. On receipt of the above request from the Entity, CTUIL within 5 working days from receipt ofthe said request, shall advise POWERGRID to install the IEM/SEM in the new system as per the scheme suggested by RLDC. A copy of the advice shall also be sent to the respective Entity.

3. The entity shall approach POWERGRID along with the CTUIL letter regarding requirement of IEM/SEM along with required accessories, intimating the timeframe for IEM/SEM installation. Accordingly, POWERGRID shall raise the invoice on the Entity. The entity shall accept the invoice in next 7 days thereafter.

4. The entity shall approach POWERGRID regarding requirement of IEM/SEM and the accessories along with the CTUIL letter intimating the timeframe for IEM/SEM installation. Accordingly, POWERGRID shall raise the invoice on the Entity. The entity shall accept the invoice in next 7 days thereafter.

5. POWERGRID shall install IEM/SEM in the new system at least 15 days before anticipated COD of the new system. POWERGRID shall inform CTUIL after installation of the IEM/SEM in the new system.

6. After installation of IEM/SEM, the entity shall inform respective RLDC & CTUILabout the same with necessary details (Meter Sl.No, Make, Model, Date of replacement and meter location) within 2 days. The verification testing with RLDC shall be ensured by the Entity.

C. Payment and Warranty:

1. The Entity shall make payment to POWERGRID within 45 days from the date of replacement of IEM/SEM failing which the late payment surcharge @ 0.04% of the invoice amount per day shall be payable for the delayed period. In no case, the delayed period shall exceed 60 days. In case, any payment is pending even after 60 days from the date of last IEM/SEM replaced for the particular entity, no further supply/replacement of any IEM/SEM for that entity will be carried out. In such a case, the onus of continuing with the defective IEM/SEM shall solely be on the entity.

2. IEM/SEM once replaced, shall be under warranty for a period of 1 year from the date of installation. During this warranty period, the entity shall take up the matter directly with POWERGRID's nodal officers with a copy to CTUIL. POWERGRID's nodal officer shall arrange to replace such faulty IEM/SEM within 15 working days from the date of intimation by the entity.

D. Standardized charges for Supply, and Supply and Installation of IEM:

1. CTU, in consultation with POWERGRID, shall device region wise standardized rate for Supply, and Supply and Installation of IEM for each Financial Year.

E. Bulk Procurement of ISTS IEM/SEM

1. By the end of September of each year, CTUIL/STU shall provide the details of ISTS projects coming up in the next 2 years to respective RLDC.

2. RLDC shall work out the metering scheme for total requirement of IEM/SEM under the following heads:

   i. For new ISTS system
   ii. Spares @10% of the IEM/SEM population in the region
   iii. Projected requirement towards replacement of defective IEM/SEM based on past 2-year trend.

   RLDC will get the total IEM/SEM quantity approved by respective RPCs and inform to CTUIL by November end.

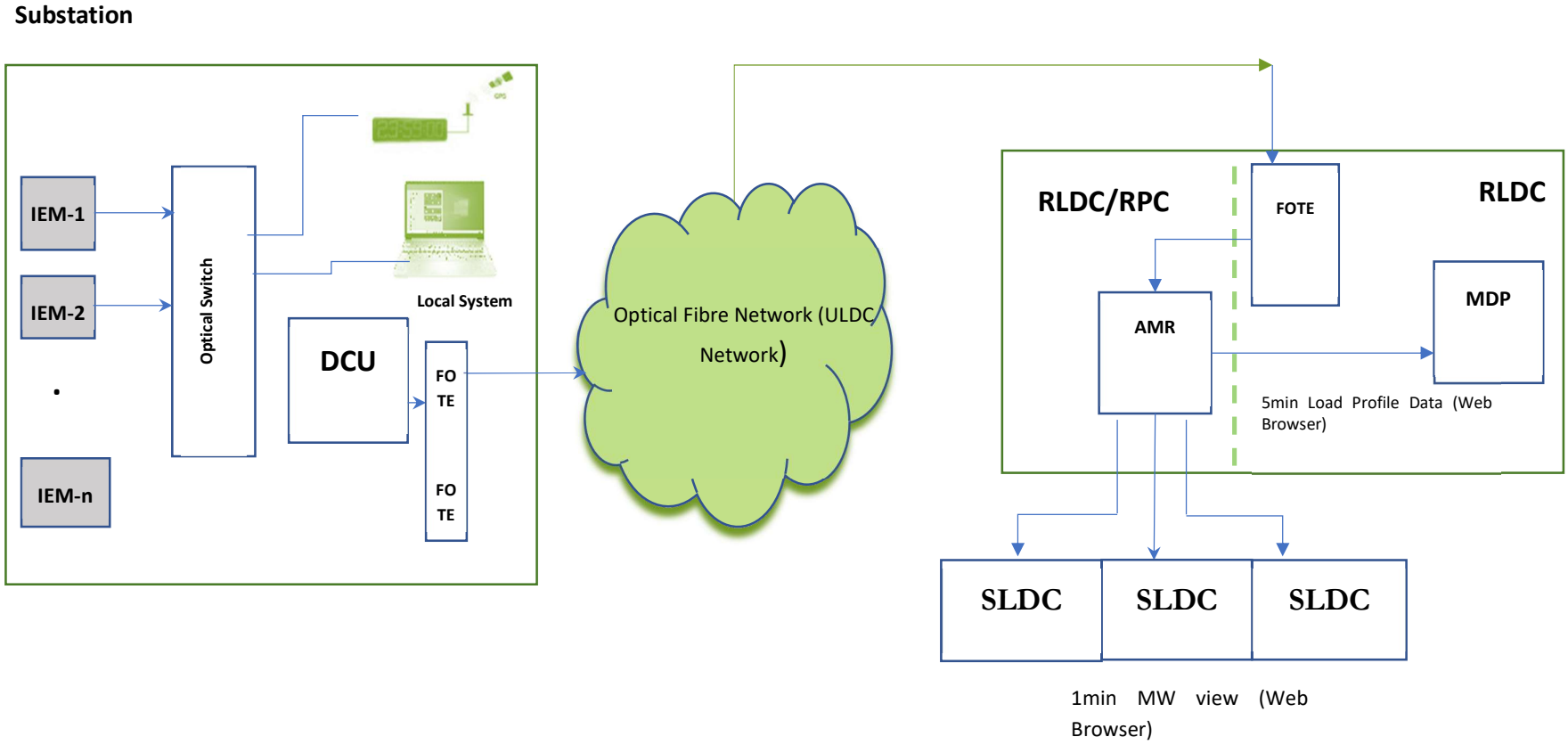
3. On receipt of the IEM/SEM quantity from RLDCs, CTUIL shall aggregate the requirement on PAN India basis and issue procurement advice to POWERGRID by December end.

F. Inventory Management

Each month RLDC would furnish the report on working, suspect and defective IEM/SEM in respective region to CTUIL. POWERGRID would furnish the region-wise numbers of the IEM/SEM available with them to CTUIL.
Based on this input CTUIL may issue suitable directions for diversion of spares from one region to another or initiate timely action for procurement of spares.

*****

Appendix-I


Substation
IEM-1
IEM-2
IEM-n
Optical Switch
Local System
DCU
FO TE
FO TE
Optical Fibre Network (ULDC Network)
RLDC/RPC
FOTE
RLDC
AMR
MDP
5min Load Profile Data (Web Browser)
SLDC
SLDC
SLDC
1min MW view (Web Browser)

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

Ref: C/CTUIL/IEGC/2023/1

Dated: 27/06/2023

To,
The Secretary,
Central Electricity Regulatory Commission,
3rd Floor, Chandralok Building,
36, Janpath, New Delhi-110001.
Kind Attn.: Mr. H S Pruthi

Sub: Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 notified dtd. 29.05.2023

Dear Sir,

This is in reference to the **Clause no 49. 12: "Energy Metering and Accounting" of recently notified** Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 notified dtd. 29.05.2023. In this regard, we would like to highlight some clauses of IEGC & CEA Metering regulation as follows:

➢ Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023

- *Clause no 49.12.(b)*

The installation, operation, calibration and maintenance of Interface Energy Meters (IEMs) with automatic remote meter reading (AMR) facility shall be in accordance with the CEA Metering Regulations 2006.

- *Clause no 2. 2.(b)*

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 Generator, as the case may be, ...

- *Clause no 49.12.(e)*

Entities in whose premises the IEMs are installed shall be responsible for ...(ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility .."

➢ Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2019

- *Clause no 4. (1).(a) -"(1) (a) all new Interface Meters and Energy Accounting and Audit Meters shall be of static type and shall have automatic remote meter reading facility."*

सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
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(A Government of India Enterprise)

- *Clause no 14. (1). (a)*

"It shall be the responsibility of the Generating Company or the licensee, in whose premises the meter has been installed, to download the meter data, record the metered data and furnish such data to various agencies as per the procedure laid down by the Appropriate Commission".

In view of the above, following are our observations/suggestions:

➢ **Nodal agency for implementation of Automatic Meter Reading (AMR):**

Nodal agency for AMR (Automated Meter Reading) system implementation has not been addressed either in the CEA metering regulations or the notified IEGC 2023.

As per the regulations, the responsibility of recording, downloading, and sending meter data to RLDC is with the concerned agencies, in whose premises the meters are installed. And the responsibility of processing the meter data is with RLDC.

Automatic Meter reading (AMR) system is to perform the above tasks of acquiring meter data automatically from all ISTS IEMs and processing of such meter data to compute time block wise actual net injection and drawal of regional entities.

In view of above, RLDC(GRID-INDIA) may be assigned as nodal agency for finalization of metering scheme and for implementation of AMR system comprising of meter data acquisition and its processing to compute time block wise actual net injection and drawal of regional entities and cross border entities within their control area.

Accordingly following clauses may be considered for suitable inclusion in Grid Code or as appropriate.

- **RLDC shall be the nodal agency for implementation of Automatic Meter Reading (AMR) system.**
- **RLDC/SLDC shall finalize the metering scheme in line with Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and its amendments thereafter and provide the same to concerned agencies (with an information to CTU) for installation.**

Thanking you,

Yours faithfully

Nutan Mishra

Sr. GM (UNMS & Metering)

सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
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(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref: C/CTUIL/Metering/NPC/2023/1 Dated: 24/07/2023

To,
The Member Secretary,
National Power Committee Division
Central Electricity Authority,
1st Floor, Wing-5, West Block-II,
R K Puram, New Delhi-66

Kind Attn.: Smt. Rishika Sharan.

Sub: Metering Regulatory Provisions in CEA & IEGC and Technical Specification by JC- NPC; Time block of ISTS Interface Energy meters reg.

Dear Madam,

This is in reference to the Time Block of ISTS Interface Energy Meters. In this regard we would like to bring to your kind notice that there is a mismatch between Metering Regulations and Technical Specification for ISTS Metering System prepared by Joint Committee (constituted in Nov'2020) under NPC.

- **CEA metering regulation 2019 amendment- Year 2019**

  As per CEA metering regulation 2019 amendment, the time block for recording of meter data by the ISTS meters is defined as 15 minutes as quoted below:

  Quote

  "Provided that the time block for recording of meter data by the meter shall be 15 minutes or as specified by the Central Commission."

  Unquote

- **Technical Specification by JC, NPC- July'2022**

  The Technical Specification finalized by JC, calls for 5 min time block configuration for all new ISTS IEMs quoted as below:

  Quote

  ." All the new IEMs shall be factory manufactured as 5 min Time Block and the AMR system shall collect 5 min Load Survey data from all interface points and share the same with MDP system. In case the MDP application chooses the settlement period to be 15 min, then the collected data of 5 min interval shall be converted to 15 min interval in MDP application software before sharing the data with RPC for energy accounting for all interface points."

  .

  .

  "All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system. AMR system shall share [. npc] file of 5 min Time Block data to POSOCO

through reliable communication. MDP at its end shall do the necessary computation to convert 5 min Time Block data to 15 min Time block data until complete replacement of 15 min existing IEMs with new 5 min IEM"
Unquote

- **Metering Regulations Provisions in IEGC 2023- Issued by CERC- May'2023**

Further as per recently issued IEGC 2023, monthly data asked from Solar plant generation, Wind plant generation in 15 min time block only. The mentioned formats are also in 15 min time block.

- **SRPC sub-committee deliberation, June 2023**

The Time Block for ISTS meters in light of issued IEGC was deliberated in 55th Meeting of Commercial Sub-Committee of SRPC and the same is as below:

"...and the forum clarified that as per TS of AMR SEMs should be capable of 5min recording but currently since scheduling and accounting is 15min, the same shall be set as default configuration is AMR SEMs."

Keeping in view aforesaid regulations and RPC deliberations, wherein the CEA Metering Regulations & CERC IEGC 2023 mentions regarding 15 Min Time block, and Technical Specification by JC mentions about 5 minute Time block and subsequent deliberation of SRPC CCM, you are requested to review and advise us expeditiously regarding the time block to be considered for procurement of new ISTS meters, AMR & MDP to be implemented region wise in PAN India basis.
Matter may be treated most urgent.

Thanking you,

Yours faithfully

24/7/23

Nutan Mishra
Sr. GM (UNMS & Metering)

Enclosure: Relevant clause of CEA Metering Regulation, IEGC 2023 & Technical Specification

CC:

1. Member (PS), CEA
2. Chief (Engg), CERC
3. MS, NRPC, ERPC, SRPC, NERPC & WRPC
4. ED, NLDC

Grid Controller of India Limited
(A Govt. of India Enterprise)
(Formerly Power System Operation Corporation Limited)
National Load Despatch Centre

Date:28.07.2023

Grid-India Inputs regarding the time block to be considered for procurement of new ISTS IEM, AMR & MDP to be implemented region wise in PAN India basis.

Ref: Email from NPC division of CEA dtd 25.07.2023

With reference to above, Input from Grid-India is as below:

1. **CERC** in Petition No. 07/SM/2018, in the matter of "Pilot Project on 05-Minute Scheduling, Metering, Accounting and Settlement for Thermal/Hydro, and on Hydro as Fast Response Ancillary Services (FRAS)", has given order on 16.07.2018**(Attached as Annexure-1).** Relevant part of the order is as follows:

Quote
……. All future procurements of Interface Energy Meters should ideally have recording at 5- min interval and frequency resolution of 0.01 Hz. They should be capable of recording Voltage and Reactive Energy at every 5-min and should have feature of auto-time synchronization through GPS…….
Unquote

2**. CEA** vide notification dated 23.12.2019 has notified Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2019**(Attached as Annexure-2).** Relevant part of the Regulations is as follows
Quote

"under the Schedule Part II (Standards for interface meters), 1 b (viii),
…. Provided that the time block for recording of meter data by the meter shall be 15 minutes or **as specified by the Central Commission**."
Unquote

3. **NPC (CEA) Joint Committee** after due deliberation has finalised the "Technical Specification (TS) of Interface Energy Meters, Automatic Meter Reading system and Meter Data Processing system" and notified the same on 06.12.2022**(Attached as Annexure-3).** Relevant part of the provisions covered in the Technical Specifications is as follows:

Quote
"All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system. AMR system shall share [. npc] file of 5 min Time Block data to POSOCO through reliable communication. MDP at its end shall do the necessary computation to convert 5 min Time Block data to 15 min Time block data until complete replacement of 15 min existing IEMs with new 5 min IEMs."
Unquote

4. Group constituted by **Ministry of Power** for "Development of Electricity Market in India" proposed comprehensive solutions to address key issues, inter-alia, implementation of 5-minutes based metering, scheduling, dispatch, and settlement in May 2023. **(Attached as Annexure-4).**

In view of above, 5 minute time block could be considered for procurement of new ISTS IEM, AMR & MDP.

This in reference to the Time Block of ISTS Interface Energy Meters in which CTU has raised a problem of mismatch between CEA (Installation and Operation of Meters) regulations, 2019 and Technical Specification for ISTS Metering System prepared by Joint commission (Nov' 2020) under NPC. In light of this, **a meeting has been scheduled on 18 August 2023 at 11:00 AM in Room No: 628, 6th floor, Sewa Bhawan, Sector 1, R K Puram, New Delhi 110066.**

You are requested to nominate a person well versed with subject to attend the meeting. Further, documents related to above pertaining matter is attached for your reference.

Regards,
Vandana Singhal,
Chief Engineer(Distribution Policy and Regulatory Division),
Central Electricity Authority
Ph: 011-26732661
Fax: 011-26102793

From: "Vandana Singhal" <cedpr-cea@gov.in>
To: cenpccea@gmail.com, secy@cercin.gov.in, "Awdhesh Kumar Yadav" <chiefengg@cercind.gov.in>, cmd@grid-india.in
Sent: Tuesday, August 8, 2023 12:49:03 PM
Subject: Letter to NPC- IEM Meters & Time Block Reg.

This in reference to the Time Block of ISTS Interface Energy Meters in which CTU has raised a problem of mismatch between CEA (Installation and Operation of Meters) regulations, 2019 and Technical Specification for ISTS Metering System prepared by Joint commission (Nov' 2020) under NPC. In light of this, **a meeting has been scheduled on 18 August 2023 at 11:00 AM in Room No: 628, 6th floor, Sewa Bhawan, Sector 1, R K Puram, New Delhi 110066.**

You are requested to nominate a person well versed with subject to attend the meeting. Further, documents related to above pertaining matter is attached for your reference.

Regards,
Vandana Singhal,
Chief Engineer(Distribution Policy and Regulatory Division),
Central Electricity Authority
Ph: 011-26732661
Fax: 011-26102793

CEA-GO-17-14(13)/1/2023-NRPC

I/39534/2024

Annexure-KK

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

सं. उक्षेविस/वाणिज्यिक/ 209/ आर पी सी (72)/ 2024 दिनांक:19 अप्रैल, 2024

सेवा में/To,
एनआरपीसी एवं टीसीसी के सभी सदस्य एवं विशेष आमंत्रित (संलग्न सूचीनुसार)
Members of NRPC & TCC & Special Invitees (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति (एनआरपीसी) की 72 वीं और तकनीकी समन्वय समिति (टीसीसी) की 49 वीं बैठक का कार्यवृत।

Subject: MoM of 72th Northern Regional Power Committee (NRPC) & 49th Technical Co-ordination Committee (TCC)-reg

महोदय/महोदया,

तकनीकी समन्वयन समिति (टीसीसी) की 49 वीं बैठक दिनाँक 29.03.2024 (सुबह 09:30 बजे) एवं उत्तर क्षेत्रीय विद्युत समिति की 72 वीं बैठक दिनांक 30.03.2024 (सुबह 09:30 बजे) को लखनऊ, उत्तर प्रदेश में आयोजित की गयी थी। बैठक का कार्यवृत संलग्न है। यह उ.क्षे.वि.स. की वेबसाइट (http://164.100.60.165/) पर भी उपलब्ध है।

49th meeting of Technical Co-ordination Committee (TCC) was held on 29.03.2024 (09:30 AM) and 72th meeting of Northern Regional Power Committee (NRPC) was held on 30.03.2024 (09:30 AM) at Lucknow, Uttar Prdesh. MoM of the same is attached herewith. The same is also available on NRPC Sectt. Website (http://164.100.60.165/).

भवदीय
Yours faithfully

19/04/2024

(वी.के. सिंह)
(V.K. Singh)
सदस्य सचिव
Member Secretary

प्रतिलिपि: एमडी, एचवीपीएनएल एवं अध्यक्ष, एनआरपीसी (md@hvpn.org.in)

18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली-110016 फोन: 011-26513265 ई-मेल: ms-nrpc@nic.in वेबसाइट: www.nrpc.gov.in
18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016 Phone: 011-26513265 e- mail: ms-nrpc@nic.in Website: www.nrpc.gov.in

A.25.7 Forum decided that a separate sub-committee may be formed for RE in Northern Region that may meet quarterly.

NRPC Deliberation

A.25.1 Forum agreed on deliberations of TCC.

Decision of Forum:

A separate sub-committee shall be formed for RE in Northern Region. The committee shall meet at least quarterly. Conduct of Business Rules of NRPC may be modified accordingly.

A.26 Implementation of 5-minute IEMs along with AMR system in NR (Agenda by NRLDC)

TCC Deliberation

A.26.1 NRLDC representative apprised that NRLDC has consistently highlighted the ongoing challenges in metering and emphasized the benefits of transitioning to 5-minute metering infrastructure, particularly in preparation for 5-minute scheduling and settlement implementation.

A.26.2 In the 48th Commercial Sub-Committee Meeting, NRLDC had flagged the issue of clarity in CEA regulation regarding requirement of IEMs to "record and send 5 min block data and other specifications as finalized in the JC- Jul 2022" and adaption of newly TS meters which can be calibrated both for 5 min and 15 min recording in IEMs for a seamless transition from 15 min to 5 min scheduling and settlement process.

A.26.3 NRLDC also mentioned issues related with existing AMR infrastructure and need of a robust and completely integrated AMR infrastructure for 5 minute metering.

A.26.4 The forum had acknowledged NRLDC's concerns, recognizing the necessity of robust metering and AMR infrastructure for accurate energy accounting.

A.26.5 Recently, CTU had placed an agenda on “Implementation of 5-min meter along with AMR system from PAN India” in 14th meeting of NPC held on 03.02.2024. The deliberations were as follows:

i. Grid-India Informed that the provision of migrating to 5 min scheduling was made in their WBES and other application and similar provision need to be made in Unified Accounting software (UAS) of RPCs.

ii. CTU representative informed that the proposal of the scheme "5 min Interface Energy Meter along with AMR system" for Southern Region was put up to 17th NCT meeting held on 31st Jan'2024. After deliberation, it was decided that the same scheme shall be worked out for complete PAN India National level.

iii. Chairperson NPC was of the view that 5 min IEM with AMR system may be implemented for pan India for smoother transition from 15 min to 5 min regime. He further opined that the proposal/DPR for 5 min IEM with AMR system for pan India may be prepared by PGCIL based on the input provided by CTUIL regarding the ISTS metering points in consultation with Grid India. CTU may prepare the roadmap and activities to be done for transition from 15 min to 5 min regime based on the previous studies/ reports in present context. He emphasized that the timeline of the activities may also be prepared and it may be in sync and coordination with each activity for smoother implementation of the project. The PSDF funding may not be possible because limited funds in PSDF. The funding of the project may be decided in the NCT meeting.

A.26.6 Further, as per decision of NPC:

i. The agenda for 5 min Interface Energy Meters along with AMR system for PAN India (for all five regions) needs deliberations in all RPC. Agenda may be taken up in the upcoming meetings of all RPCs.

ii. The proposal/DPR for 5 min IEM with AMR system for pan India may be prepared by PGCIL based on the input provided by CTUIL regarding the ISTS metering points in consultation with Grid India.

iii. CTU may prepare the roadmap and activities to be done for transition from 15 min to 5 min regime based on the previous studies/ reports in present context. The timeline of the activities may also be prepared and it may be in sync and coordination with each activity for smoother implementation of the project.

A.26.7 Forum decided to club this agenda with agenda no. 30 of CTU.

NRPC Deliberation

NRPC agreed upon the deliberations of TCC.

Decision of Forum

CTU was advised to refer the case to NPC sub-group (of Communication) to review technical specifications in consultation with states.

A.27 Status of compliance with the directions of CERC order dtd. 14.08.2023 para no. 31 (Petition No. 156/MP/2022) (Agenda by NRLDC)

TCC Deliberation

A.27.1 NRLDC representative apprised that CERC order dtd. 14.08.2023 para no. 31 (Petition No. 156/MP/2022) is quoted below:

"31.The action plan submitted by the State SLDCs was discussed during the above said meetings with NRLDC during December 2022- January 2023. Subsequent to the meetings, State SLDCs submitted revised action plan. ***Considering the submissions of the Petitioner, Respondents and the detailed action plan submitted by NRLDC in discussion with the respective State SLDCs, we direct as follows:***

(a) The states to expedite work on the implementation of ADMS (Automatic Demand Management Scheme). Till the implementation of ADMS, manual load shedding of radial feeders identified by SLDCs may be done based on instructions of the concerned SLDCs, without any delay during emergency conditions shall be shared with NRLDC. ***The Status of the implementation of ADMS shall be updated to the NRLDC on quarterly basis by the respective SLDC.***

*(b) All the Respondent states should have in place better demand forecasting/ estimation systems so that there is minimum deviation from the schedule allocated to each drawing entity. Due to the intermittent nature of renewable sources, accurate Forecasting & Scheduling of renewable energy is required. Therefore, SLDCs needs to improve its current forecasting infrastructure for accurate forecasting of renewable generation. Further, Specialized RE forecasting tools for accurate RE forecasting & Scheduling shall be developed so that variability of RE Generation can be handled in advance by the SLDCs****. States should focus on reduction in forecast error to less than 2% in the day ahead forecast.***

(c) ***Management of the load in such a manner that the demand ramp should be limited to not more than 100 MW.*** *There should be efficient coordination with*

LGBR for 2024-25 regarding their plan for proposed shutdown. Moreover, proposal involves long outage of two hydro power plants totaling to 1400 MW and beneficiary States are also not agreed for the proposed shutdown. In view of above, shutdown may not be given at this time.

A.29.7 He suggested THDCIL to apply for outage in monthly OCC meeting.

A.29.8 THDCIL was also suggested to approach MoP for their requirement of shutdown in this summer.

NRPC Deliberation

A.29.9 Forum approved the deliberation held in TCC and denied the desired outage.

Decision of Forum

Forum suggested THDC to apply for outages in monthly OCC meetings so that outage can be provided at the earliest feasible time and also recommended THDC to approach MoP on this matter as commissioning of PSP is also very crucial.

A.30 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme "5 min Interface Energy Meter along with AMR system"-For all five regions as PAN India level (agenda by CTUIL)

TCC Deliberation

A.30.1 CTUIL representative apprised that a Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes:

- All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary

computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).

- Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose.

A.30.2 In view of above for making the system future ready for 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal as following:

S.No.	Items	Details
1.	Name of Scheme	Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems- For all five regions NER, ER, NR, WR & SR.as PAN India.
2.	Scope of the scheme	1. Supply of AMR compatible 5 min Interface Energy Meters for all ISTS metering points of All five regions, 2. Installation of new AMR compatible IEMs by replacing existing meters in case of existing points and for newly added metering points. (Replacement work & New Installation work) 3. Supply and installation of AMR systems in dual LAN configuration at central location along with DCU, Ethernet Switch and other accessories at substation end and AMR software along with servers, consoles, historian software, database, printer, firewall, furniture, etc. at RLDC end to receive 5 min load profile data in auto mode. 4. Provision of streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purpose.

S.No.	Items	Details
		5. AMC includes Operations & Maintenance work (including data processing & report generation from AMR) for complete AMR system for 7 years. 6. On line Data storage of Raw Data & processed data for three years. The complete scope of IEM & AMR scheme shall be broadly in line with the Technical Specification (Section 1 & 2 of Part 1) circulated by NPC Division, CEA vide letter dtd. 6th July 2022. *Note: MDP system which is also part of the above TS mentioned shall be implemented by SRLDC/POSOCO and would match the timeline schedule with IEM & AMR project.*
3.	Objective / Justification	For Indian Power system, commercial settlements of energy generation and consumption are being computed through Availability Based Tariff (ABT) and Deviation Settlement Mechanism (DSM) which are in vogue for energy accounting. Availability Based Tariff was implemented in India in 2002/2003 considering the settlement period as 15-min. Government of India (GoI) has set a Renewable Energy (RE) target of 500 GW by 2030. In the last few years approximately since a decade, the need for implementing 5-minute meters along with AMR system for regional energy accounting and settlement at the Inter State level has been discussed and deliberated in various apex level forums & Committees. A PAN India pilot project on 5-minute metering was implemented as per the directive from Hon'ble CERC in 2018. A report on the pilot project covering

S.No.	Items	Details
		implementation aspects, challenges and suggested way forward has been submitted by POSOCO for perusal of the Hon'ble Commission This issue was discussed in OCC/TCC/RPC meetings at regional level and it was discussed to replace the existing SEMs (15-min Block) with AMR compatible Interface Energy Meters (5-min Block) and implementation of Automated Meter Reading (AMR) and Meter Data Processing (MDP) system for efficient and faster accounting. Moreover, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system for viewing purpose to manage their drawl. A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes: ● All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations). ● Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose. CTUIL sent a letter dtd. 27.06.2023 to CERC (attached as **Annexure-XXXVI**) stating that nodal

S.No.	Items	Details
		agency for AMR system implementation may be identified. CTUIL also informed NPC division, CEA vide letter dtd. 24.07.2023 (attached as **Annexure-XXXVII**) that JC TS calls for 5 min Time block recording by ISTS IEMs whereas as per CEA metering regulation it is 15 min time block. In this regard, Grid-India NLDC specified to NPC, CEA that 5-minute time block could be considered for procurement of new ISTS IEM, AMR & MDP (attached as **Annexure-XXXVIII**). Subsequently NPC CEA, coordinated a joint meeting (mail attached as **Annexure-XXXIX**) amongst the stakeholders comprising of CERC, Grid India (NLDC, RLDCs) & CTUIL, chaired by CEA Regulatory division dated 18th August'23 to check the feasibility for amendment of the CEA metering regulation in line with the ongoing developments and requirements of 5 min time block recording in IEMs. In view of the above mentioned system requirement of 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above mentioned project proposal.
4.	Deliberations in RPCs	The scheme was discussed in all the RPCs and the status is as below: Scheme is approved in SRPC if 50% fund is available from PSDF(July'23). Scheme is in principle approved in NERPC (June'23) and WRPC (Feb'2023) as well. Funding status to be updated to the forums.

S.No.	Items	Details
		For NRPC- In 48th Commercial (Jan'24) Sub-Committee, M/s NRPC directed to take up the agenda in next NRPC meeting for approval. For ERPC- A special meeting was proposed in 47th TCC- Nov'22 meeting to deliberate the project in detail in line with the life of the existing AMR system, which is going to be ended on 31st March 2026. Project Cost was informed to all RPCs during Year 2022/23,
5.	Estimated DPR Cost	Rs. 444.87 Cr. excluding AMC & Rs 152.62 Cr. for 7 yr AMC *Costing to be updated considering latest no. of meters and locations at the time of tendering.
6.	Implementation timeframe	Approx. 24 months from gazette Notification.
7.	Implementation Mode	To be deliberated

A.30.3 Grant from PSDF for the FY 24-25 is not available as per MoP order. Accordingly, the funding is also to be deliberated. Earlier 90% of the project cost was allocated for grant.

A.30.4 MS, NPC stated that this scheme is for all ISTS metering points.

A.30.5 Rajasthan representative desired to get the data of such meters for them to send to Urja Vikas who do day ahead calculation of procurement of power and will help to minimize the error.

A.30.6 Director, UPSLDC enquired about provision of integration of these meter data with SAMAST Portal. He demanded to have integration of the same with SCADA at least.

A.30.7 Director, UPSLDC conveyed that the one-minute MW data is to be made available for SLDC preferably through integration with SCADA system.

A.30.8 Himachal Pradesh representative raised the concern over integration of 1-minute instantaneous meter data with existing system of SLDCs through api and correlating the same with SAMAST meters. That will help in calculation of transmission losses.

A.30.9 Haryana representative was in the same view of Himachal Pradesh.

A.30.10 CTUIL representative conveyed that 1-minute instantaneous data will go to the AMR system and then SLDC can view this through secure web browser. Further it was informed that these requirements of Integration are not part of JC Technical Specification for Metering & AMR. The scope for integration/ exchange of data in line with CERC applicable regulations is part of MDP, to be implemented by Grid-India as per JC Technical Specification for MDP.

A.30.11 MS, NRPC suggested CTUIL to look into the concern of various states and may come into next NRPC meeting.

NRPC Deliberation

A.30.12 Forum accorded the decision held in TCC meeting and directed CTUIL & RLDC to address the queries of SLDCs and STUs.

A.30.13 MS, NPC informed that most of members of JC have got transferred and retired. Hence in order to review the TS, NPC sub group members, CTUIL, RLDC may discuss and review the issues for finalization of TS.

Decision of Forum

CTU was advised to refer the case to NPC sub-group (of Communication) to review technical specifications in consultation with states.

A.31 Transmission scheme for evacuation of power from Ratle HEP (850MW) (agenda by CTUIL)

TCC Deliberation

A.31.1 GM, CTUIL apprised that System Study for evacuation of power from Ratle HEP (850 MW) was discussed and agreed in 26th CMETS-NR meeting held on 20.12.23. Subsequently, reactive compensation of above scheme was deliberated in recent 28th CMETS-NR meeting held on 27.03.24.

FW: Issues raised in 72nd NRPC on TS of IEM reg

Nutan Mishra {नूतन मिश्रा} <nutan@powergrid.in>

Wed 12-06-2024 09:51

To:Atul Kumar Agarwal {अतुल कुमार अग्रवाल} <atul_ag@powergrid.in>
Cc:Sangita Sarkar {संगीता सरकार} <jana.sangita@powergrid.in>;Rahul Kumar Shakya {} <rshakya@powergrid.in>; Tanay Jaiswal {Tanay Jaiswal} <tanay@powergrid.in>

For kind information Sir.
Regards

From: Nutan Mishra {नूतन मिश्रा}
Sent: Wednesday, June 12, 2024 9:44 AM
To: Rishika Sharan, NPC,CEA <cenpccea@gmail.com>; ramakrishna.meka78@gov.in; Shyam Kejriwal <shyam.kejriwal@gov.in>; deepak.gawali@gov.in; Praveen <praveen.cea@gov.in>; Omprakash Rajput <omprakashrajput002@gmail.com>; Sai <seshasaireddy007@gmail.com>; anusha.jdas@gov.in; singh.dinesh39@gov.in; RAJIB DAS <d.rajib2009@gmail.com>; agnivachatterjee.cea@gov.in; sagar.paladugu@nic.in; S. C. Saxena (एस. सी. सक्सेना) <scsaxena@grid-india.in>; agnivachatterjee1993@gmail.com; eeop.erpc@gov.in
Cc: sharan Rishika <rishika_sh@yahoo.com>; satyendra dotan <skdotan21@gmail.com>; NARESH BHANDARI <ms-nrpc@nic.in>; N. S. Mondal <mserpc-power@nic.in>; MEMBER SECRETARY <mssrpc-ka@nic.in>; Member Secretary NERPC <ms-nerpc@gov.in>; Member Secretary <ms-wrpc@nic.in>; Vivek Pandey (विवेक पांडे) <vivek.pandey@grid-india.in>
Subject: Issues raised in 72nd NRPC on TS of IEM reg

Dear Madam/Sir,

We endorse the views of Grid-India regarding Meter data and its flow as per CEA Regulations & CERC Grid code and other relevant regulations and Technical Specification of IEM finalized by JC.
The proposed scheme in NRPC needs to be approved for implementation for the said purpose.
Kind Regards,

Nutan Mishra
Sr GM, CTUIL

From: Vivek Pandey (विवेक पांडे) <vivek.pandey@grid-india.in>
Sent: Tuesday, June 11, 2024 8:14 PM
To: Rishika Sharan, NPC,CEA <cenpccea@gmail.com>; ramakrishna.meka78@gov.in; Shyam Kejriwal <shyam.kejriwal@gov.in>; deepak.gawali@gov.in; Praveen <praveen.cea@gov.in>; Omprakash Rajput <omprakashrajput002@gmail.com>; Sai <seshasaireddy007@gmail.com>; anusha.jdas@gov.in; singh.dinesh39@gov.in; RAJIB DAS <d.rajib2009@gmail.com>; agnivachatterjee.cea@gov.in; sagar.paladugu@nic.in; Nutan Mishra {नूतन मिश्रा} <nutan@powergrid.in>; S. C. Saxena (एस. सी. सक्सेना) <scsaxena@grid-india.in>; agnivachatterjee1993@gmail.com; eeop.erpc@gov.in
Cc: sharan Rishika <rishika_sh@yahoo.com>; satyendra dotan <skdotan21@gmail.com>; NARESH BHANDARI <ms-nrpc@nic.in>; N. S. Mondal <mserpc-power@nic.in>; MEMBER SECRETARY <mssrpc-ka@nic.in>; Member Secretary NERPC <ms-nerpc@gov.in>; Member Secretary <ms-wrpc@nic.in>
Subject: RE: Final SOP on Communication system Audit and Communication system outage planning considering GRID-India comments-reg.

Madam/Sir,

Inputs from Grid India on the issue raised in the 72nd NRPC meeting regarding the Technical Specifications of the 5-Minute IEM, AMR, and MDP systems are as under:

A committee comprising of the members from each RPC, CEA, CTUIL, PGCIL & Grid-India (erstwhile POSOCO) had prepared the Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for ISTS for pan-India deployment. The Technical Specifications were deliberated in various Forums. The scheme needs to be approved so that further work can be started.

The scheme would facilitate compliance to the provisions of the CEA metering regulation which mandates that the data shall be communicated to RLDCs using secured and dedicated communication system. The same is quoted below.

"(b) The metered data shall be communicated to the respective Load Despatch Centre by using a secured and dedicated communication system"

Further Indian Electricity Grid code 2023 clause 49.12. (e), mandates as under:

"(e) Entities in whose premises the IEMs are installed shall be responsible for (i) monitoring the healthiness of the CT and PT inputs to the meters, (ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility (iii) monitoring and ensuring that the time drift of IEM is within the limits as specified in CEA Metering Regulations 2006 and (iv) promptly intimating the changes in CT and PT ratio to RLDC."

In view of above, the accurate energy meter data needs to be transmitted in a timely and secure manner to the RLDCs/NLDC through a dedicated communication system.

Further the interface energy meter data is primarily required for deviation accounting at the interstate level in line with the regulations. Any State specific requirement may be considered based on the feasibility study and without compromising the relevant standards and regulatory requirement.

Regards
Vivek Pandey

From: Rishika Sharan, NPC,CEA <cenpccea@gmail.com>
Sent: Monday, June 3, 2024 5:55 PM
To: ramakrishna.meka78@gov.in; Shyam Kejriwal <shyam.kejriwal@gov.in>; deepak.gawali@gov.in; Praveen <praveen.cea@gov.in>; Omprakash Rajput <omprakashrajput002@gmail.com>; Sai <seshasaireddy007@gmail.com>; anusha.jdas@gov.in; singh.dinesh39@gov.in; RAJIB DAS <d.rajib2009@gmail.com>; agnivachatterjee.cea@gov.in; sagar.paladugu@nic.in; Nutan Mishra {नूतन मिश्रा} <nutan@powergrid.in>; S. C. Saxena (एस. सी. सक्सेना) <scsaxena@grid-india.in>; Vivek Pandey (विवेक पांडे) <vivek.pandey@grid-india.in>; agnivachatterjee1993@gmail.com; eeop.erpc@gov.in
Cc: sharan Rishika <rishika_sh@yahoo.com>; satyendra dotan <skdotan21@gmail.com>; NARESH BHANDARI <ms-nrpc@nic.in>; N. S. Mondal <mserpc-power@nic.in>; MEMBER SECRETARY <mssrpc-ka@nic.in>; Member Secretary NERPC <ms-nerpc@gov.in>; Member Secretary <ms-wrpc@nic.in>
Subject: Final SOP on Communication system Audit and Communication system outage planning considering GRID-India comments-reg.

****Warning****
This email has not originated from Grid-India. Do not click on attachment or links unless sender is reliable. Malware/ Viruses can be easily transmitted via email.

Madam/Sir,

In the meeting of the commercial sub-group held on 03.06.2024, the GRID-India comments on SOPs on Communication system Audit and Communication system outage planning were deliberated and revised accordingly. The final version of SOPs is attached herewith for your reference and compliance.

The issue raised in the 72nd NRPC meeting on Technical Specifications of 5 Min IEM, AMR and MDP system was not deliberated in the meeting due to absence of representation from GRID-India.

CTU and Grid India are requested to provide inputs/comments on the issue raised in the 72nd NRPC meeting regarding the Technical Specifications of the 5-Minute IEM, AMR, and MDP systems by 07.06.2024 for further necessary action from our end.

--

Regards,

O/o Chief Engineer (National Power Committee Division)
Central Electricity Authority
Phone No: 011-26732014
New Delhi - 110066.

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Annexure-MM

E-Mail /Website

भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति 29, रेसकोर्स क्रास रोड बेंगलूर- 560 009	सत्यमेव जयते	Government of India Central Electricity Authority **Southern Regional Power Committee** 29, Race Course Cross Road Bengaluru-560 009
Email:mssrpc-ka@nic.in		Phone: 080-22287205
सं/No. SRPC/50 (SRPC)/2024/1688 - 1764		दिनांक/ Date **19.04.2024**

सेवा में / To:

(वितरण सूची के अनुसार / *As per the distribution list)*

विषय : एसआरपीसी की 50वीं बैठक (16.03.2024) और टीसीसी की 48वीं बैठक (15. 03.2024) के कार्यवृत - के संबंध में

Subject: Minutes the 50th Meeting of SRPC (16.03.2024) & 48th Meeting of TCC (15.03.2024)-reg.

महोदय /महोदया
Sir/Madam,

एसआरपीसी की 50वीं बैठक 16 मार्च 2024 और एसआरपीसी की टीसीसी की 48 वीं बैठक 15 मार्च 2024 बैठकों के कार्यवृत संगलग्न है । कार्यवृत को एसआरपीसी वेबसाईट में अपलोड कर दिया गिया है ।

Please find minutes of the 50th meeting of SRPC and 48th Meeting of TCC of SRPC held on 16.03.2024 & 15.03.2024 at Kochi. The same has been uploaded on SRPC website.

धन्यवाद / Thanking you,

भवदीय/Yours faithfully,

(**असित सिंह /Asit Singh**)
सदस्य सचिव/Member Secretary

SRPC deliberations

e) SRPC secretariat highlighted on the regulatory as well as the operational requirement of Resource Adequacy Assessment.

f) TANGEDCO noting that peak requirements are for few hours, opined that NTPC may contract out some of the gas based stations through PSDF/DSM fund so that states can purchase the power from these stations for their peak requirements.

g) CEA informed that PSDF fund may not be viable, which had already been established. A scheme which looks in to the possibility of contracting gas stations at a larger scale for meeting peak hour requirements are under consideration of MoP.

h) TANGEDCO requested CEA to follow up with Ministry in this regard to ensure that the said scheme may be firmed up at the earliest so that peak hour requirements of States during coming months may be met at ease.

12) IMPLEMENTATION OF AUTOMATIC METER READING (AMR) IN SOUTHERN REGION

a) The following had been noted in the earlier meetings of SRPC:

- In the 24th Meeting of SRPC held on 15.03.2014, SRPC had approved implementation of the AMR scheme in SR by PGCIL.
- In the 37th meeting of SRPC held on 01.02.2020, SRPC had approved the estimated cost of Rs. 36.86 Crores for implementation AMR scheme in SR. However, the scheme was not implemented by PGCIL citing that Pan India Technical Specifications for the AMR were not available.
- NPC Division, CEA, vide email dated 6th July 2022, had intimated that the Joint Committee after due deliberation has finalized the "*Technical Specification (TS) of Interface Energy Meters, Automatic Meter Reading system and Meter Data Processing system*" and circulated the Final copy of the Technical Specifications.
- In the 43rd meeting of SRPC held on 23rd September 2022, SRPC had recommended CTUIL to come forward with the proposal for implementation of the AMR-MDP scheme in SR.
- In the 44th Meeting of SRPC (05.11.2022), CTUIL furnished the proposal for implementing the AMR scheme in Southern Region in RTM mode through PGCIL. In the proposal, CTUIL had mentioned the estimated cost for the scheme in SR is ₹ 100 crores (approximately). The estimated cost of Rs. 100 Crores does not include any communication system and Meter Data Processing (MDP). MDP is to be developed by POSOCO. After deliberations the following was concluded:
  - PGCIL/CTUIL was suggested to seek PSDF funding of IEM/AMR scheme for implementation in SR. If at least 50% funding is available it may approach NCT. If any change in PSDF funding, PGCIL/CTUIL would bring back the proposal to SRPC. This needs to be expedited by PGCIL/CTUIL.

- POSOCO may also consider PSDF funding for MDP and match the implementation with AMR schedule.

b) The issue was deliberated in the 45th Meeting of SRPC (04.03.2023), 47th SRPC (22.07.2023), 48th SRPC Meetings held on (13.10.2023) and in the 47th TCC and 49th SRPC Meetings held on 08.12.2023 & 09.12.2023 respectively and noted the following:

- PGCIL vide letter dated 24.11.2023 had submitted that the subject project may be implemented through one time reimbursement mode.
- PGCIL apprised the forum that AMR system is being implemented for first time in Southern Region, and work is spread across wider geographical area across many utilities and PGCIL will have to deploy huge resources for implementation of the project. As per TS of AMR, 10 years AMC is required. However, since currently vendors are giving AMC for 7 years, the AMC cost provided by vendors for 10 years is observed to be very high and increasing year on year. Hence getting this high AMC cost approved in CERC would be a challenge.
- SRPC forum noted that CTUIL/PGCIL to comply with SRPC decision of implementing through RTM mode with PSDF Funding. Higher AMC of the project is acknowledged by constituents. Based on difficulties faced in AMC in other projects, the project may include 7 years AMC and provide a provision for extension of the same for additional 3 years on the mutually agreed same terms & conditions.

c) The matter was discussed further in 58th CCM held on 16.02.2024 wherein the following status updates were provided by CTUIL:

- CTUIL updated that the scheme of 5 minute interface energy meters with AMR system was discussed in 17th NCT meeting held on 31st January 2024. In the meeting Chairperson CEA suggested that the scheme should be designed for implementation on PAN India basis so that system can be put into effective use. Subsequently, the matter of national scheme for 5 min interface energy meters with AMR system for all regions was discussed in the 14th NPC meeting held on 03.02.2024. It was decided then that the proposal for 5 min interface energy meters with AMR system for implementation on PAN India basis, along with roadmap for transition from 15 minutes to 5 minutes, shall be prepared by the CTUIL/PGCIL. The same would be presented for approval of all RPCs.

d) The issue was discussed in 14th NPC meeting held on 03.02.2024 and following was decided by the committee.

- ***The agenda for 5 min Interface Energy Meters along with AMR system for PAN India (for all five regions) needs deliberations in all RPC. Agenda may be taken up in the upcoming meetings of all RPCs.***
- ***The proposal/DPR for 5 min IEM with AMR system for pan India may be prepared by PGCIL based on the input provided by CTUIL regarding the ISTS metering points in consultation with Grid India.***

- ***CTU may prepare the roadmap and activities to be done for transition from 15 min to 5 min regime based on the previous studies/ reports in present context. The timeline of the activities may also be prepared and it may be in sync and coordination with each activities for smoother implementation of the project.***

TCC Deliberations

e) SRPC secretariat pointed out that implementation of AMR had been in discussion in various forums since 2014. CTUIL had submitted the scheme of 5 minute interface energy meters with AMR system for approval in the 17th NCT meeting held on 31st January 2024. As per the direction of Chairperson CEA the scheme was discussed in 14th NPC so that it may be designed for implementation on PAN India basis for effective use of the system. NPC requested CTUIL to put up proposal for PAN India implementation of AMR along with roadmap for transition from 15minute to 5 minute. They also informed that the project cost for SR would be nearly 126 Crores.

f) CTUIL had furnished the roadmap for transition from 15 minute to 5 minute (**Annexure-12A)**.However, it was noted that necessary minimum details, such as mode of implementation etc., were missing in the roadmap. Requirement of AMR for data for accounting and real-time visibility was emphasized by SRLDC and SR States and requested CTUIL/ PGCIL to come up with the scheme accordingly. The forum noted that in the backdrop of addition of several RE generators, existing practice of manually obtaining the data would not be feasible and AMR is necessary. CTUIL along with PGCIL shall put up the proposal for implementation of AMR including all necessary details. CTUIL raised concern regarding implementation of 5 min IEMs, vis-à-vis, CEA metering Regulations. It was informed that the matter had been adequately deliberated in various meetings and CTUIL shall implement the project as per Technical specifications of the JC.

g) The following was concluded

- TCC forum noted that implementation of AMR is essential for RLDC and SLDCs and CTUIL/ PGCIL to put up the proposal for AMR (including all necessary details) as noted in NPC.
- Region wise cost, mode of funding and cost sharing may be indicated in the proposal.

SRPC Deliberations

h) TANGEDCO opined that CTUIL proposal for 5 minute IEM with AMR shall ensure that 15 minute data is continued to be provided to all concerned (integrating 5minute values in the SEM itself) till scheduling and accounting continues on 15 minute basis. When Regulations mandates 5 minute scheduling and accounting, data shall accordingly be provided to all stakeholders.

i) CTUIL responded that AMR and IEMs have capability to record 5 minute and 15minute data and would provide data as per the requirement of prevailing Regulations. The agenda was brought to RPCs as per direction of the Chairperson, CEA for implementation on Pan India basis.

j) The following was concluded

- **Accorded in-principle approval for implementation of AMR on pan India basis and PGCIL/ CTUIL shall prepare proposal/ DPR accordingly.**
- **Region wise cost, mode of funding and cost sharing may be indicated in the proposal.**

13) COMPLIANCE OF CEA CONNECTIVITY REGULATION FOR RENEWABLE ENERGY GENERATORS

a) SRLDC vide mail dated 29.02.2024 (***refer Annexure 5A***) had furnished the agenda stating that due to high renewable energy penetration in Southern region, it is important that existing Renewable Energy Generators provide the various Grid Support services like the conventional synchronous machines. The Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019 was notified on 6th Feb 2019. and the Compliance to these regulations (Amendments) by RE generators is to be monitored at regional and state level. SLDCs to apprise the status of compliance of CEA Regulations.

b) During First time charging of RE elements, all regulatory and technical compliance pertaining to IEGC-2023 and CEA standards for connectivity to grid need to be ensured. This is necessary to ensure grid support services from RE generators and to avoid any undesired operational challenges after integration with the grid. As per IEGC 2023 clause 8 (4), SLDC shall prepare procedure for first time energization of new or modified power system elements to intra-State transmission system. In the absence of such procedure of SLDC, the NLDC procedure shall apply for the elements of 220 kV and above (132 kV and above in case of North Eastern region). Each SLDC, is requested to inform regarding the procedure for first time energization of new or modified power system elements to intra-State transmission system.

TCC Deliberations

c) SRPC secretariat explained to the forum regarding requirement of procedure for first time energisation/charging (FTC) of new or modified power system elements getting connected/connected to intra-State transmission system, to be prepared by SLDCs. It was informed that in the absence of such SLDC procedure, the NLDC procedure shall be followed for FTC of elements at 220 kV level and above.

d) **TCC forum noted the above mandatory regulatory compliance**.

SRPC Deliberations

e) **SRPC forum noted the above for appropriate action**.

f) TANGEDCO opined that CEA connectivity Regulations may cover technical issues such as requirement of reactive compensation for various types of RE entities also. CEA stated that CEA connectivity Regulations are holistic in nature and covers technical as well as connectivity requirements. At ISTS level CTUIL and RLDCs are taking care of the requirements for connectivity and FTC, similarly, for RE entities getting connected

भारत सरकार
Government of India
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पश्चिम क्षेत्रीय विद्युत समिति
Western Regional Power Committee
एफ -3, एमआयडीसी क्षेत्र, अंधेरी (पूर्व), मुंबई - 400 093
F-3, MIDC Area, Andheri (East), Mumbai - 400 093
दूरभाष Phone: 022- 28221636; 28200194/95/96; फैक्स Fax : 022 – 28370193
Website : www.wrpc.gov.in E-mail : as-wrpc@nic.in

सं. : पक्षेविस/ 49वीं/ पक्षेविस बैठक/ सहा.स. /2024/ दिनांक: 03 MAY 2024
No. : WRPC/49th/ WRPC Mtg./A.S./2024/ 4837-4944 Dated:

सेवा में/To,

(संलग्न सूची के अनुसार/
As per enclosed list)

विषय : पश्चिम क्षेत्रीय विद्युत समिति (पक्षेविसमिति) की 49 वीं बैठक का कार्यवृत्त।
Sub : Minutes of 49th meeting of Western Regional Power Committee (WRPC).

महोदय/Sir,

इस पत्र के साथ दिनांक 13 अप्रैल, 2024 को दमन में आयोजित पश्चिम क्षेत्रीय विद्युत समिति की 49 वीं बैठक एवं इससे पहले दिनांक 12 अप्रैल, 2024 को आयोजित तकनीकी समन्वय समिति की बैठक का कार्यवृत्त आपकी सूचना एवं आवश्यक कार्रवाई हेतु संलग्न है ।
बैठक का कार्यवृत्त पक्षेविस की वेबसाइट www.wrpc.nic.in पर भी उपलब्ध है ।

यह सदस्य सचिव, पक्षेविसमिति के अनुमोदन से जारी किया जाता है ।

Please find enclosed herewith the Minutes of the 49th meeting of Western Regional Power Committee held on 13th April, 2024 at Daman preceded by Technical Coordination Committee meeting held on 12th April, 2024 for your kind information and necessary action.

Minutes of the meetings is also available in the WRPC website: www.wrpc.nic.in.

This issue with the approval of Member Secretary, WRPC.

धन्यवाद / Thanking you,

भवदीय / Yours faithfully,

संलग्न: उपरोक्तानुसार/As above

Anil Gautam
(अनिल गौतम/Anil Gautam)
सहायक सचिव / Assistant Secretary

Scanned with OKEN Scanner

consideration by National Committee on Transmission. Further, Para 6(3A) & Para 11 of MoP Gazette dated 03.12.2021 on resolution for establishment of WRPC stipulates the following:

> *"3A- To provide views on the inter-state transmission system planned by CTU within 45 days of receipt of the proposal by the concerned RPC. The views of RPC will be considered by National Committee on Transmission for sending their recommendation of Ministry of Power for approval of new inter-state transmission system."*

49th TCC/WRPC Discussions:

MS, WRPC briefed the transmission line augmentation proposal submitted by CTU. He informed that the MoP directive says that views of RPC are required for proposals costing more than Rs. 500 Crores before consideration by National Committee on Transmission (NCT).

CTU emphasied that all three proposals are related to the evacuation of Green Hydrogen/Ammonia potential in the state of Gujarat. They clarified that the transmission lines projects are planned in three phases in sync with the timelines of Green Hydrogen/Ammonia projects indicated by MNRE. The transmission projects proposed at present are for the 1st phase only which is expected to come up by 2027-28.

TCC/WRPC recommended the proposals for implementation.

Item No. 3: Installation of new Interface Energy meters, AMR system and Meter Data Processing (MDP) system

(PGCIL/WRPC)

Background:

i. In the 36th WRPC meeting, it was decided that POWERGRID shall replace existing meters with New Interface Energy Meters (IEMs), Automatic Meter Reading (AMR) systems and Meter Data Processing (MDP) systems having specifications as approved in 34th WRPC meeting and recover the cost from the entities on one-time basis. Later on, in subsequent WRPC meetings, PGCIL requested that the matter be referred to CEA.

ii. A Joint Committee constituted by CEA comprising members from CEA, NPC, RPCs, CTU/PGCIL and POSOCO finalize the Technical Specifications (TS) for IEMs, AMR system and MDP system for Interstate transmission system (ISTS) in April 2022 after due deliberation. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes:

a) All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).

b) Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purposes.

iii. 87th CCM Discussions (held on 10.01.2023): CTU representative informed that the data will be split into 2 parts which will be 5 Minute data and 1 Minute data. The 1-minute data will be provided to SLDCs for online monitoring and 5-minute meter data will be provided to RLDCs for accounting purposes. The cost of the entire project will be around 125 crores for WR excluding MDP. The cost included the one-time cost and the recurring cost on O&M, Spares, Cyber security Audit etc including AMC for 10 years. For funding the project in all 5 regions, CTU has already submitted an initial request for PSDF funding. The detailed DPR will be submitted once the initial funding request through PSDF is accepted. The project will be executed through POWERGRID-RTM and the proportion of funding will be between PSDF and RTM as accepted by PSDF. Gujarat, Maharashtra, Madhya Pradesh, Chhattisgarh & Goa representatives consented to the same.

iv. 46th WRPC (held on 03.02.2023): It was concluded that for the AMR project, the PSDF route will be explored and in case the funding request is not approved by PSDF Committee, the same will be discussed again by WRPC to decide on the cost-sharing. It was also agreed that the AMC of the AMR project will be recovered through the

PoC mechanism. Regarding MDP system, the same will be implemented by Grid-India through their RLDC fees and charges.

90th CCM discussion:

It was informed that the matter was discussed in the 14th NPC meeting and the updates are as follows;

a) CTU informed that the proposal for 5 min IEM with AMR system for SR was put up for PSDF funding.
b) Chairperson NPC opined that the proposal for 5 min. IEM with AMR system for pan India may be prepared along with the roadmap and activities to be done for the transition from 15 min. to 5 min. regime. He emphasized that the timeline of the activities may also be prepared.

Updates:

a) CTU has now submitted the proposal for pan India (Annexure – 3.1).
b) Estimated Project Cost: Rs. 444.87 Cr. excluding AMC of Rs 152.62 Cr. for 7 yr.
c) Estimated timeline for completion: Approx. 24 months from gazette Notification.

As grant from PSDF for the FY 24-25 is not available as per MoP order, the funding is required to be deliberated.

49th TCC Discussions:

CTU briefly explained the above agenda position. They informed the decision of 14th NPC meeting that the agenda for 5 min Interface Energy Meters along with AMR system for PAN India (for all five regions) needs deliberations in all RPCs. After obtaining consent from RPCs, the proposal would be put up before NCT. CTU has, accordingly, put up this proposal before TCC/WRPC. The DPR for the project is to be prepared by PGCIL. The estimated project cost is Rs. 444.87 Cr. excluding AMC of Rs 152.62 Cr. for 7 years for all India AMR systems. They also informed that the project was approved in WRPC way back in 2017 and since then, its implementation is pending. The meters in WR are very old and they need to be replaced.

MS WRPC informed that WRPC had already approved the project in its 36th meeting with funding proposed through PSDF. Now the route of PSDF funding is not available, therefore, other funding options are required to be explored.

CTU proposed that RTM mode of funding may be agreed.

MSEDCL opined that the cause of rejection of funds through PSDF should be ascertained. Also, as the constituents/beneficiaries are making huge payments to the regional pools towards the DSM and the surplus is going to PSDF, it seems unlikely that there is no money left in PSDF.

WRLDC informed that the surplus in the regional pool accounts is being deployed for availing the ancillary services and at present, hardly any surplus is going to PSDF from the regional pools.

Maharashtra SLDC stressed that this is a very important scheme for states also since the project envisages 1 min data to be made available to SLDCs for monitoring and therefore, there shall not be any further delay in the implementation of the project.

NPCIL stated that since the funding from PSDF is not available for FY 2024-25 only, the possibility of PSDF funding may again be explored in the next year. They also enquired whether any other recourse is available for funding the project or if it has to be funded by WRPC members as fait accompli. On which, MS WRPC clarified that the members may take a call on this issue and it is not a fait accompli situation.

NPCIL opined that the project has not been rejected on its merit rather it has been withheld. Therefore, considering the importance of the project, the necessity of the project is required to be impressed upon the PSDF Committee. He further suggested that in the meantime, the project may be funded for getting it implemented without any further delay.

CTU informed that the PSDF funding cannot be guaranteed. However, they will again approach the PSDF committee for funding.

MS WRPC proposed that the project may be approved and the procurement process may be initiated by CTU without waiting further. However, they shall again approach PSDF committee for funding.

TCC recommended for initiating the procurement process and approaching PSDF again for funding by CTU.

49th WRPC Discussions:

CTU briefly explained the above discussions held in TCC meeting.

Member (Grid Operation & Distribution), CEA opined that being a very important project, it would not be appropriate to wait for PSDF funding. The proposal may be submitted to CEA and simultaneously, the procurement process be taken up so that by the time the decision comes from PSDF committee, CTU will be in a position to take up implementation either through the PSDF grant or through RTM route.

MS, WRPC informed that TCC has already recommended for going ahead with the project in its meeting held yesterday with a rider that CTU shall pursue it with PSDF committee parallelly.

WRPC agreed to the recommendations of TCC.

Item No. 4: Notification of Procedures on "Centralized supervision for Quick fault detection and restoration of Communication System" and "Maintenance & Testing of Communication System" By CERC in Jan'2024

(CTUIL)

i. Hon'ble CERC vide order dated 19.01.2024 notified Procedures on "Centralized supervision for Quick fault detection and restoration of Communication System" and "Maintenance & Testing of Communication System"; these are SOP for Centralised Supervision & Maintenance for ISTS Communication Network.

सत्यमेव जयते

भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
उत्तर पूर्वी क्षेत्रीय विद्युत समिति
North Eastern Regional Power Committee
एन ई आर पी सी कॉम्प्लेक्स, डोंग पारमाओ, लापालाङ, शिल्लोंग-७९३००६, मेघालय
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website: www.nerpc.gov.in

No.: No. NERPC/SE (O)/OCC/2021/ 644-686 May 31, 2024

To
As per list attached

Sub: Minutes of 214th OCC Meeting.

Sir/Madam,

Please find enclosed herewith the minutes of the 214th OCC Meeting held at NERPC conference Hall, Shillong on 17th May, 2024 for your kind information and necessary action. The minutes is also available on the website of NERPC: www.nerpc.gov.in.

Any comments/observations may kindly be communicated to NERPC Secretariat at the earliest.

भवदीय / Yours faithfully,

(अनिल कवरानी/ Anil Kawrani)
निदेशक / Director

Encl: As above

S. No.	Items	Details
7.	Implementation Mode	Through RTM to POWERGRID
8.	Location of National UNMS	Main UNMS at NLDC, Katwaria Sarai, and Backup UNMS at RLDC, Kolkata

Deliberation of the sub-committee

MS, NERPC requested all the States to deliberate internally on the matter and provide feedbacks to CTU. He opined that as the matter pertains to communication system, a special meeting needs to be organized shortly with all stake holders.

C.3 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme "5 min Interface Energy Meter along with AMR system"-For all five regions as PAN India level

1. A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes:
   - All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).
   - Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose.
2. In view of the above for making the system future ready for 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling,

Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal as following:

S. No.	Items	Details
1.	Name of Scheme	Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems- For all five regions NER, ER, NR, WR & SR.as PAN India.
2.	Scope of the scheme	1. Supply of AMR compatible 5 min Interface Energy Meters for all ISTS metering points of All five regions, 2. Installation of new AMR compatible IEMs by replacing existing meters in case of existing points and for newly added metering points. (Replacement work & New Installation work) 3. Supply and installation of AMR systems in dual LAN configuration at central location along with DCU, Ethernet Switch and other accessories at substation end and AMR software along with servers, consoles, historian software, database, printer, firewall, furniture, etc. at RLDC end to receive 5 min load profile data in auto mode. 4. Provision of streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purpose. 5. AMC includes Operations & Maintenance work (including data processing & report generation from AMR) for complete AMR system for 7 years. 6. On line Data storage of Raw Data & processed data for three years.

S. No.	Items	Details
		The complete scope of IEM & AMR scheme shall be broadly in line with the Technical Specification (Section 1 & 2 of Part 1) circulated by NPC Division, CEA vide letter dtd. 6th July 2022. *Note: MDP system which is also part of the above TS mentioned shall be implemented by RLDC/POSOCO and would match the timeline schedule with IEM & AMR project.*
3.	Conceptual Architecture of AMR connectivity of ISTS Meters	**Appendix-I**
4.	Objective / Justification	For Indian Power system, commercial settlements of energy generation and consumption are being computed through Availability Based Tariff (ABT) and Deviation Settlement Mechanism (DSM) which are in vogue for energy accounting. Availability Based Tariff was implemented in India in 2002/2003 considering the settlement period as 15-min. Government of India (GoI) has set a Renewable Energy (RE) target of 500 GW by 2030. In the last few years approximately since a decade, the need for implementing 5-minute meters along with AMR system for regional energy accounting and settlement at the Inter State level has been discussed and deliberated in various apex level forums & Committees. A PAN India pilot project on 5-minute metering was implemented as per the directive from Hon'ble CERC in

S. No.	Items	Details
		2018. A report on the pilot project covering implementation aspects, challenges and suggested way forward has been submitted by POSOCO for perusal of the Hon'ble Commission This issue was discussed in OCC/TCC/RPC meetings at regional level and it was discussed to replace the existing SEMs (15-min Block) with AMR compatible Interface Energy Meters (5-min Block) and implementation of Automated Meter Reading (AMR) and Meter Data Processing (MDP) system for efficient and faster accounting. Moreover, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system for viewing purpose to manage their drawl. A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes: • All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation

S. No.	Items	Details
		to convert 5 min Time Block data to 15 min Time block data (in line with regulations). • Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose. CTUIL sent a letter dtd. 27.06.2023 to CERC (attached as **Annexure-C.3.1**) stating that nodal agency for AMR system implementation may be identified. CTUIL also informed NPC division, CEA vide letter dtd. 24.07.2023 (attached as **Annexure-C.3.2**) that JC TS calls for 5 min Time block recording by ISTS IEMs whereas as per CEA metering regulation it is 15 min time block. In this regard, Grid-India NLDC specified to NPC, CEA that 5-minute time block could be considered for procurement of new ISTS IEM, AMR & MDP (attached as **Annexure-C.3.3**). Subsequently NPC CEA, coordinated a joint meeting (mail attached as **Annexure-C.3.4**) amongst the stakeholders comprising of CERC, Grid India (NLDC, RLDCs) & CTUIL, chaired by CEA Regulatory division dated 18th August'23 to check the feasibility for amendment of the CEA metering regulation in line with the ongoing developments and requirements of 5 min time block recording in IEMs. In view of the above-mentioned system requirement of 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal.

S. No.	Items	Details
5.	Estimated DPR Cost	Rs. 444.87 Cr. excluding AMC & Rs 152.62 Cr. for 7 yr. AMC as per the DPR cost received from POWERGRID in March 2024. *Costing to be updated considering latest no. of meters and locations at the time of tendering.
6.	Implementation timeframe	Approx. 24 months from gazette Notification.
7.	Implementation Mode	To be deliberated

3. Grant from PSDF for the FY 24-25 is not available as per MoP order. Accordingly, the funding is also to be deliberated. Earlier 90% of the project cost was allocated for grant.
4. Implementation mode for the project is also to be deliberated by the forum before approval.

Sub-committee may deliberate

After detailed deliberation, the forum provided in-principal approval to the AMR system and referred the matter to upcoming Commercial Subcommittee meeting for obtaining financial approvals from the States. CTU added that an SoP regarding implementation of the scheme has been prepared by CTU and will be circulated shortly to the constituents.

Agenda from NERLDC

C.4 Power Procurement from Market to ensure Zero Load Shedding during Summer Season

CE(GM), CEA vide letter dated 29.04.2024(**Annexure-C.4**) had communicated to all Principal Chief Secretaries of States regarding efforts to be put to ensure adequate availability of power had emphasized that it is imperative that proactive steps are