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 (70 वीं)/2023/ दिनांक: 08 नवंबर, 2023

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य एवं विशेष आमंत्रित (संलग्न सूचीनुसार)
Members of NRPC & Special Invitees (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति की 70 वीं बैठक और तकनीकी समन्वय समिति (टीसीसी) की 48 वीं बैठक की कार्यसूची के संदर्भ में ।

Subject: Agenda for 70th Northern Regional Power Committee (NRPC) & 48th Technical Co-ordination Committee (TCC)-reg.

महोदय / महोदया,

उत्तरी क्षेत्रीय विद्युत समिति (एनआरपीसी) की 70 वीं बैठक दिनाँक **18.11.2023 (सुबह 10:30 बजे)** अमृतसर, पंजाब में होगी। उ.क्षे .वि.स. की बैठक से पहले तकनीकी समन्वयन समिति (टीसीसी) की 48 वीं बैठक दिनाँक **17.11.2023 (सुबह 10:30 बजे)** को उसी स्थान पर आयोजित की जाएगी । बैठकें एनएचपीसी द्वारा आयोजित की जा रही हैं । बैठक की कार्यसूची संलग्न है । कृपया बैठक में भाग लेने की कृपा करें।

यह अनुरोध किया जाता है कि प्रतिभागी (**प्रत्येक सदस्य संगठन से 2 से अधिक नहीं**) एनआरपीसी सचिवालय को निर्धारित एक्सेल शीट लिंक में **12.11.2023** तक अपनी यात्रा का विवरण सूचित कर सकते हैं।

बैठक की व्यवस्था संबन्धित नोडल अधिकारी इस प्रकार हैं:

नाम	पदनाम	संपर्क नंबर
श्री विजय कुमार	समूह वरिष्ठ प्रबंधक, एनएचपीसी	+91-9818696821
श्री लोकेश अग्रवाल	सहायक कार्यकारी अभियंता, एनआरपीसी	+91-7976753220

The **70th** meeting of Northern Regional Power Committee (**NRPC**) will be held on **18.11.2023 (10:30 AM)** at Amritsar, Punjab. NRPC meeting shall be preceded by **48th** meeting of Technical Co-ordination Committee (**TCC**) on **17.11.2023 (10:30 AM)** at the same venue. Meetings are being hosted by NHPC. Agenda for the same is attached. Kindly make it convenient to attend the same.

It is requested that participants (**not more than 2 from each member organization**) may intimate NRPC Secretariat, their journey details **latest by 12.11.2023** in prescribed format at excel sheet link.

Nodal officer(s) for facilitating meeting are as below:

Name	Designation	Contact No

Sh Vijay Kumar	Group Senior Manager, NHPC	+91-9818696821
Sh Lokesh Agarwal	Assistant Executive Engineer, NRPC	+91-7976753220

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भवदीय
Yours faithfully

Signed by Vijay Kumar Singh
Date: 08-11-2023 18:17:58
Reason: Approved

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

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

सत्यमेव जयते

उत्तर क्षेत्रीय विद्युत समिति

NORTHERN REGIONAL POWER COMMITTEE

Agenda of the
48th meeting of
Technical Co-ordination Committee &
70th meeting of
Northern Regional Power Committee

Date: 17th & 18th November 2023

Time: 10:30 AM

Venue: Le Méridien Amritsar
Ajnala Rd, Bal Schander, Raja Sansi, Bal, Amritsar, Punjab

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A. Agenda for TCC meeting

A.1 Approval of MoM of the 47th TCC meeting

A.1.1 The minutes of the 47th TCC meeting (held on 23.09.2021) was issued vide letter dtd. 25.11.2021. No comment from any utilities have been received till date, therefore, the MoM of 47th TCC meeting may be approved by the Forum.

Decision required from Forum:

Forum may consider approving the above MoM.

A.2 Sensitization on CEA Regulations (agenda by CEA)

A.2.1 In exercise of powers conferred under section 177 and other various sections of the Electricity Act, 2003 (36 of 2003), the Central Electricity Authority has notified the following regulations:

1. Central Electricity Authority (Installation & Operation of Meters), Regulations 2006
2. Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulation, 2007
3. Central Electricity Authority (Furnishing of Statistics, Returns & Information) Regulation, 2007
4. Central Electricity Authority (Grid Standards) Regulation, 2010
5. Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric Lines) Regulations, 2011
6. Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.
7. Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020
8. Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022
9. Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023
10. Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023

A.2.2 As directed by Hon'ble Minister of Power to highlight these CEA regulations and promote awareness on their importance; and to sensitize the power utilities under administrative control of State Government/ Union Territories, a letter was sent by Chief Engineer (RA Division), CEA to all the Chief Secretaries vide no. CEA-EC-15-13/3/2018-RA Division/101 dated 03.10.2023 (copy enclosed as **Annexure**-I).

A.2.3 CEA is also planning to organize one day 'Regional Workshop' for each region with participation from RPCs, RLDCs, SLDCs, CTUs, STUs, DISCOMs, Generating Companies, IPPs and other power utilities.

A.2.4 As per Article 13(i) of IEGC 2023 notified by CERC,

"All users connected to the integrated grid shall provide and maintain effective protection system having reliability, selectivity, speed and sensitivity to isolate faulty section and protect element(s) as per the CEA Technical Standards for Construction, the CEA Technical Standards for Connectivity, the CEA (Grid Standards) Regulations, 2010, the CEA Technical Standards for Communication and any other applicable CEA Standards specified from time to time".

Since above CERC Regulation is effective from 01.10.2023, all the State & Central Power Utilities/concerned stakeholders are required to follow above CEA Regulations.

Decision required from Forum:

Forum may take note of above CEA regulations for compliance.

A.3 Provision of Banking of Power feature under the PUSHp Portal (agenda by NRPC Secretariat)

A.3.1 PUShP portal (https://nationalsurpluspower.in/) has been launched on 09th March, 2023 by Hon'ble Minister of Power and NRE. Portal is a single window system providing services to diverse domains of all the entities involved and to reallocate and transfer the power in minimum time from one surplus entity to deficit entity.

A.3.2 In the same PUSHp portal, a facility has been added to the states through which the States may intimate the surplus power available to bank for a certain duration. Any other State interested in acquiring this surplus power in deficit scenario and willing to

undergo for banking with surplus state, may give requisition for this surplus power for the same duration in the Portal as per mutual agreement.

A.3.3 NPC Division, CEA has circulated procedure for availing facility of banking vide their letter dtd. 02.11.2023 attached as **Annexure-II**.

Decision required from Forum:

Forum may discuss this newly added avenue on the PUSHp Portal and convey utilities to enrich the trading mechanism with the help of the same.

A.4 Scheduling, accounting and other treatment of the legacy shared projects in Northern Region (agenda by NRPC Secretariat)

A.4.1 The issue of scheduling, accounting and other treatment of the legacy shared projects in Northern Region has been deliberated in various CSC/TCC/NRPC meetings. The details are attached as **Annexure-III**.

A.4.2 In the 52nd NRPC meeting held on 31.03.2022, it was informed that GNA Regulations will do away with the requirement of grant of LTA from particular stations, the issue of levy of transmission charges and RLDC fee & charges would be resolved for category 2, 3 and 4 projects. With reference to post-facto change in schedules based on actual generation for projects under Category-4, it was decided to be discussed in upcoming NRPC meetings.

A.4.3 Further, in 47th CSC meeting held on 28.08.2023, HP SLDC apprised that some projects in respective control area having bilateral shares in HP State are not revising their updated schedule in real time as per IEGC timeline on the WBES portal of NRLDC, which is resulting into huge financial loss to HP State. The issue of huge penalty to HP due to non-availability of metering data of Khara HEP was also deliberated. It was decided that a separate meeting may be held with concerned SLDCs, NRLDC, Gencos and NRPC sectt. to resolve the issue of shared project.

A.4.4 A meeting was held on 06.11.2023 wherein following was deliberated:

a) post-facto change in schedules based on actual generation for projects under Category-4 will be stopped w.e.f. 04.12.2023.

b) Scheduling of these plants will be done on real-time basis and revision of schedule will be made available to HPSLDC. Punjab has informed that scheduling of RSD on real-time basis is already being done. It was

deliberated that these plants may be brought under DSM of respective states.

c) Actual generation of plants in category – 4 is being published in monthly REA (Table - G and H). It was deliberated that these plants being in state control area, their energy account may be issued by States. Accordingly, REA will be issued from December, 2023.

Decision required from Forum:

Forum may deliberate on above proposals for approval.

A.5 Guidelines/ Procedure for Certification of Open Cycle Operation of Combined Cycle Gas Based Generating Stations(agenda by NRPC Secretariat)

A.5.1 Regulation 43.2 of CERC (T&C of Tariff) Regulations, 2019, provides that

"*Energy charge rate for a gas or liquid fuel-based station shall be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee during the month".*

A.5.2 Guidelines/ Procedure for Certification of Open Cycle Operation of Combined Cycle Gas Based Generating Stations were finalised in 35th Commercial Sub-Committee Meeting of NRPC held on 19.02.2018 (agenda item-T1) where Guidelines/ Procedure for Certification of Open Cycle Operation for schedule given by beneficiaries (copy enclosed at **Annexure-IV).** Timelines defined under guidelines for certification of open cycle operation are as under:

Type of Start-up	Time period upto which open cycle generation is to be certified	
	Part-module (i.e. 1st GT)	Full-module (i.e. 2nd GT onwards)
Cold	Upto 1 hour	Upto 1 hour
Warm	Upto 2.5 hours	Upto 2 hours
Hot	Upto 4 hours	Upto 2.5 hours

A.5.3 It has been noticed for past 2 years that NTPC Gas Power plants in NR, namely Anta GPP, Auraiya GPP and Dadri GPP are regularly getting schedule under TRAS-shortfall/ emergency cases (earlier RRAS) only where the gas turbines are operating under open cycle for longer duration. A brief description of the schedule given and open cycle generation by these stations is as under:

Period	Description	Anta	Auraiya	Dadri

April-Sept' 2022	Percentage of instances of total open cycle generation where RRAS/ TRAS schedule was > 5 hours	44.83%		44.56%		52.63%	
	Average hours of open cycle generations in these cases	6.58 hours		6.67 hours		7.23 hours	
April-Sept' 2023	Percentage of instances of total open cycle generation where RRAS/ TRAS schedule was > 5 hours	35.94%		9.57%		29.17%	
	Average hours of open cycle generations in these cases	10.80 hours		7.78 hours		7.49 hours	
Additional variable charges-over and above to that of closed cycle- for running one GT in open cycle at technical minimum for one hour (Rs. in lacs)		CR	RLNG	CR	RLNG	CR	RLNG
		9.0	3.4	11.5	4.3	10.3	5.4

A.5.4 An aggregate additional RRAS charges due to open cycle generation only- over and above to that due to closed cycle ECR- amounting to ₹453.53 crores was received by RRAS providers (Anta GPP, Auraiya GPP, and Dadri GPP) from Deviation and Ancillary Pool of NR Open Cycle Generation for FY 2022-23. Such is a huge financial implication on Deviation and Ancillary pool Account.

A.5.5 However, these guidelines do not cover scheduling under TRAS-shortfall/ emergency cases (earlier RRAS). Thus, there is no mechanism to certify Open Cycle Operation for schedule given under TRAS only. There is a need to review the aforesaid Guidelines for Certification of Open Cycle Operation by NRPC sectt. of Combined Cycle Gas Based Generating Stations.

A.5.6 In view of this, it is proposed to constitute a Committee of members from NLDC, NRLDC, NTPC and NRPC Sectt. to formulate revised 'Guidelines for Certification of Percentage of Open Cycle Generation' which may then be vetted in TCC & NRPC meeting.

A.5.7 Brief ToR of the committee may be as under:

a. SOP for schedule to be given by NLDC under TRAS only.

b. SOP for furnishing data for seeking certification of Open Cycle by Generator.

c. Guidelines for Certification of Percentage of Open Cycle Generation for schedule given by beneficiary as well as under TRAS by NRPC.

Decision required from Forum:

Forum may deliberate on above proposal for constitution of committee.

A.6 Issue of transmission deviation charges imposed on hydro generators (agenda by THDC & SJVN)

(a) Issue of transmission deviation charges imposed on Tehri HPP & Koteshwar HEP

A.6.1 THDCIL India Limited (THDCIL) has been supplying energy in Northern Grid from its operating Tehri HPP and Koteshwar HEP generating stations to the beneficiaries of Northern Region. Both Tehri HPP and Koteshwar HEP projects are also providing primary (FGMO) and secondary (AGC) responses to the grid in compliance of the Indian Electricity Grid Code (IEGC).

A.6.2 As per IEGC, 2010, if the ex-bus injection exceeds the sum of LTA, MTOA & STOA then charges are levied to the generating station beyond ex-bus injection in a time block in accordance with provision of Sharing of Inter-State Transmission Charges and Losses Regulations, 2020. Further, Hon'ble Commission issued amendment vide Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) (First Amendment) Regulations, 2023 and allowed that transmission deviation charges shall not be levied for the quantum of over-injection for providing primary response by a generating station, subject to verification of such over-injection by concerned RPC.

A.6.3 Despite, Tehri HPP & Koteshwar HEP are supporting the grid by providing primary (FGMO) and secondary response (Automatic Generation Control), both plants are being penalized by imposition of transmission deviation charges. It is worth mentioning here that as per the above amendment w.e.f. 01.10.2023, transmission deviation charges shall not be levied for the quantum of over-injection for providing primary response by a generating station. This exclusion shows that grid support should not be penalized.

A.6.4 Therefore, THDCIL has requested that the transmission deviation charges shall not be levied for the quantum of over-injection provided for primary and secondary

response in past and secondary response to be provided in future by a generating station. Furthermore, the charges previously remitted for transmission deviation may be revoked and refunded to the hydro-generator.

(b) Issue of Transmission Deviation charges imposed on RHPS and NJHPS

A.6.5 Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 was notified on 04.05.2020 with applicability from 01.11.2020 onwards. The relevant provisions of aforesaid Regulations are reproduced here as under:

Regulation (12): Transmission Deviation

(1) Transmission Deviation, in MW, shall be computed as under

a) *For a generating station, net metered ex-bus injection, in a time block in excess of the sum of Long Term Access, Medium Term Open Access and Short Term Open Access:*

Provided that for a hydro-generating station, overload capacity of 10% during peak season shall be taken into account.

(2) Transmission deviation rate in Rs./MW, for a State or any other DIC located in the State, for a time block during a billing month shall be computed as under:

1.05 X (transmission charges of the State for the billing month in Rs.)/ (quantum in MW of Long Term Access plus Medium Term Open Access of the State for the corresponding billing period X 2880)

A.6.6 Further, CERC vide notification dated 07.02.23 has issued first amendment of 'Sharing of Inter-State Transmission Charges and Losses' Regulations, 2020, which is applicable from 01.10.2023 onwards. The relevant clauses of Regulation impacting Hydro power generating stations are as under:

10. Amendment to Regulation 12 of the Principal Regulations*:*

(1) Clauses (1) a n d (2) of Regulation 12 of the Principal Regulations shall be substituted as under:

"(1) Transmission Deviation, in MW, shall be computed as under:

(a) For a generating station including ESS and captive generating plant, transmission deviation shall be net metered ex-bus injection, in a time block in excess of GNA of such entity:

Provided that for a hydro-generating station, schedules for overload capacity as permissible under the Grid Code during peak season shall not be considered for computing the transmission deviation:

Provided further that transmission deviation charges shall not be levied for the quantum of over-injection for providing primary response by a generating station, subject to verification of such over-injection by concerned RPC:

Provided also that each RPC shall issue necessary guidelines for furnishing the data by the generating stations regarding their primary response.

2) Transmission deviation rate in Rs./MW, for a State or any other DIC located in the State, for a time block during a billing month shall be computed as under:

1.25 X (total transmission charges for all drawee DICs located in the State, (as calculated in accordance with Regulation 5 to 8 of these regulations) for the billing month in Rs.)/ (GNA and GNARE quantum in MW of such entities located in the State, considered for billing, for the corresponding billing period X number of days in a month X 96)."

A.6.7 The relevant provisions of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fifth Amendment) Regulations, 2015 are reproduced here as under:

Quote:

(7) The first sentence of Regulation 5.2(h) of Part 5 of the Principal Regulations, shall be substituted as under:

"All coal/lignite based thermal generating units of 200 MW and above, Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of more than 50 MW each and all hydro units of 25 MW and above operating at or up to 100% of their Maximum Continuous Rating (MCR) shall have the capability of (and shall not in any way be prevented from) instantaneously picking up to 105%, 105% and 110% of their MCR, respectively, when the frequency falls suddenly."

(8) *The following shall be added at the end of Regulation 5.2 (h) of Part 5 of the Principal Regulations:*

"For the purpose of ensuring primary response, RLDCs/SLDCs shall not schedule the generating station or unit(s) thereof beyond ex-bus generation corresponding to 100% of the Installed capacity of the generating station or unit(s) thereof. The generating station shall not resort to Valve Wide Open (VWO) operation of units whether running on full load or part load, and shall ensure that there is margin available for providing Governor action as primary response……

Provided that scheduling of hydro stations shall not be reduced during high inflow period in order to avoid spillage:

Provided further that the VWO margin shall not be used by RLDC to schedule Ancillary Services."

Unquote

A.6.8 In compliance of aforesaid Regulations, during lean season/less inflow period, RLDC giving schedule up to Ex -bus installed capacity to the Hydro generating stations by keeping margin up to 110% of the MCR of the generating stations or unit thereof, for getting primary response, when frequency falls suddenly in the Grid.

A.6.9 From the above, it can be inferred that there is a contradiction in both the Regulations viz Sharing of Transmission Charges and Losses and IEGC Regulations. In accordance with the provisions of IEGC Regulations, RLDC is giving schedule to the generating stations corresponding to the 100 % of the Ex-bus Installed capacity of generating stations during peaking hrs and margin of 10 % overloading is utilized for giving primary support by the generating station. However,

as per the provision of Sharing of Transmission Charges and Losses Regulations, transmission deviation charges were levied on generating station beyond ex-bus injection in a time block in excess of the sum of Long-Term Access, Medium-Term Open Access and Short-Term Open Access for giving primary support by the generating station.

A.6.10 CERC vide notification dtd.07.02.2023 has issued first amendment of 'Sharing of Inter-State Transmission Charges and Losses' Regulations, 2020, effective from 01.10.2023 onwards, wherein primary response given by generating stations has been excluded for calculating the transmission deviation charges. However, in terms of CERC Sharing of Transmission Charges and Losses Regulations, transmission deviation charges more than crores of Rupees have been levied to NJHPS and RHPS from 01.11.2020 to 30.09.2023 by giving primary support to the Grid.

A.6.11 Issue of Transmission Deviation charges imposed on RHPS and NJHPS was also taken up in previous 47th Commercial Sub-committee meeting held on 28.08.2023. Decision of Sub-Committee as given in MOM, as under:

Letter be written to CERC regarding Transmission deviation charges of all hydro generators for the period from implementation of Sharing of Inter-State Transmission Charges and Losses Regulations, 2020 to 30th September 2023 due to primary response.

A.6.12 In compliance of CERC IEGC Regulation prevailing during the period from 01.11.2020 to 30.09.23, generator was giving peaking support to the Grid up to 10 % overloading beyond Ex-bus installed capacity, as per the droop setting defined in the CERC Regulation. Therefore, generator should not be penalized during such period from 01.11.2020 to 30.09.2023 for giving primary response to the Grid. Also, in case of reduction of frequency of Grid and generator is giving more primary support to the Grid, then such quantum may also be excluded for calculating the transmission deviation charges. Hence, some methodology/procedure may be adopted by NRPC for calculation of transmission deviation charges based on frequency of the Grid.

A.6.13 In view of above, SJVN requested forum to deliberate on following provisions of CERC Sharing of Transmission Charges and Losses Regulations:

a) For the period from 01.11.2020 to 30.09.2023, imposition of transmission deviation charges on NJHPS and RHPS, in-spite of giving primary support to the Grid in compliance of CERC IEGC Regulations.

b) Procedure for calculating primary response in consonance with CERC IEGC regulations and CERC DSM regulations especially during frequency reduction, so that imposition of transmission deviation charges on generator may be avoided for giving peaking support to the Grid.

Decision required from Forum:

Forum may deliberate the issue and decide the appropriate action in the matter.

A.7 Technical constraints in context to transmission deviation charge on Koteshwar HEP (agenda by THDCIL)

A.7.1 The CTU's bus reactor (125 MVAR) is installed at Koteshwar HEP switchyard and energy consumed/drawn by bus Reactor is being calculated in account of Koteshwar HEP as per the RTDA issued by NRPC.

A.7.2 As bus reactor is CTU's assets hence the deviation caused by this shouldn't be accounted to generating plant.

A.7.3 In view of above, THDCIL has requested that suitable metering mechanism may be explore/devised to exclude such drawl/consumption from Koteshwar HEP and the charges previously remitted for transmission deviation may be revoked and refunded to the generator.

Decision required from Forum:

Forum may discuss the issue and may facilitate suitable metering mechanism to have proper calculation of transmission deviation charges.

A.8 Exemption of the Tehri pumped storage plant (PSP) under the regulation 12 of CERC regulation on "sharing of interstate transmission charges and losses regulation 2020" and any subsequent amendments thereof (agenda by THDCIL)

A.8.1 The (4x250) MW Tehri Pumped Storage Plant (PSP) is an interstate grid connected Energy Storage System linked to the Northern Region transmission corridor. The Tehri PSP has been designed to function effectively under varying gross head conditions, ranging from 127.5m to 224m throughout the entire year, following the reservoir rule curve.

A.8.2 The rated parameters of the Tehri PSP were set at a net rated head of 188m, allowing it to both draw and inject a rated 1000 MW of power to and from the power

system. The gross head for the PSP naturally reaches up to 224m in the month of September every year and consistently remains within the maximum head range of 210-224m from September to January.

A.8.3 Due to the reversible nature of the PSP turbine, cavitation limits are provided on both the pressure and suction sides. These limits may change with respect to variations in head, and these characteristics are illustrated in the operating zone curve for mechanical input and model test for conversion loss at different head enclosed in **Annexure-V**.

A.8.4 As per the cavitation limit curve and model tests, the Tehri PSP can draw power from the grid in the range of 1064.4 MW to 1141.2 MW when the head reaches its maximum level, ranging from 210m to 224m, during the period from September to January.

A.8.5 However, it is important to note that during this specific head range, the Tehri PSP in pumping mode cannot be operated at rated power of 1000 MW due to technical minimum limitations, falling within the range of 1064.4 to 1141.2MW of pumping power. This limitation could potentially result in the imposition of transmission deviation charges due to drawing of overcapacity beyond the rated capacity. Since the pumping power is arranged by beneficiary states, they may request to inject power at the same capacity as they have arranged power for pumping.

A.8.6 It is also pertinent to mention here that the work for the Tehri Pumped Storage Plant (PSP) was awarded in 2011, and all design aspects had been finalized before the notification of this transmission deviation regulation. Given the advanced construction stage of the project and completion of manufacturing, supply & erection of two units, modifications in the plant design at this stage is not feasible.

A.8.7 In light of the aforementioned concerns and recognizing the unique characteristics of the Tehri PSP, especially within the context of the multipurpose Tehri Reservoir exemption may be granted for Tehri PSP from the imposition of transmission deviation charges for over-drawl and over-injection during periods of higher head conditions beyond the rated head under the regulation 12 of CERC Regulation on "Sharing of Interstate Transmission Charges and Losses Regulation 2020" and any subsequent amendments thereof.

Decision required from Forum:

Forum may deliberate the issue and decide the appropriate action in the matter.

A.9 Non Opening of Letter of Credit by JKPCL (formally PDD, J & K) for power supplied from NJHPS & RHPS (agenda by SJVN)

A.9.1 As per mutually signed Power Purchase Agreement and MOP, GOI various order/ gazette Notifications (e.g. 28.06.2019, 21.02.2021 and 03.06.2022), beneficiary has to establish Letter of Credit in line with payment security Mechanism.

A.9.2 The established LC should be confirmed, revolving, irrevocable and in favour of SJVN for an amount equivalent to 105% of average monthly billing of preceding 12 months with appropriate bank as mutually acceptable to both the parties. The LC shall be kept valid at all the time during the validity of the Power Purchase Agreement.

A.9.3 In spite of repeated reminders, JKPCL had not opened Letter of Credit after 13.11.2019 for power supplied from NJHPS and RHPS. As such JKPCL may be advised to submit Letter of Credit in favour of SJVN at the earliest.

A.9.4 The same matter has already been brought into kind notice of forum in the 68th NRPC meeting held on 18.08.2023.

Decision required from Forum:

Forum may deliberate the issue and facilitate the desired Letter of Credit for power supplied from NJHPS & RHPS.

A.10 Conditional payment of energy bills by BRPL (agenda by SJVN)

A.10.1 SJVN is supplying power to Delhi's DISCOMS from Nathpa Jhakri Hydro Power Project as per allocation order issued by MOP, GOI. Further, DERC had assigned power of Delhi (formally DTL) to BRPL, BYPL and TPDDL**.**

A.10.2 Energy bills are being raised as per the terms of PPA and tariff determined by CERC. The payments are to be made by the beneficiaries as per the CERC rules and regulation and terms of the Power Purchase Agreement.

A.10.3 SJVN is receiving timely payments from these DISCOMS, however, BRPL is making the conditional payments without assigning any reason and by mentioning in their letter "Without Prejudice". BRPL should specifically address the concern or objection through letters and correspondences.

A.10.4 BRPL may be requested to kindly issue Payment Receipt Letters without mentioning of the "Without Prejudice" remark as it leads to audit Objection by the SJVN auditors

and BRPL may be asked to dissuade from mentioning of "Without Prejudice" in their payment intimation letters.

Decision required from Forum:

Forum may discuss the matter and may direct BRPL for necessary action.

A.11 Uprating of low rating switchgear at 400 kV Mahendragarh (agenda by Adani Transmission India Limited)

A.11.1 In the minutes of the 39th meeting of Standing Committee on Power system planning of Northern Region (held on 29th & 30th may 2017) dated 28.07.2017 **(Annexure-VI)**, the issue regarding low rating of switchgear of 400 kV Mahendragarh- Dhanoda D/C line at Mahendragarh and Dhanoda end was discussed, and it was approved that the switchgear at both the Substations shall be upgraded.

A.11.2 The same was further clarified in the 40th meeting of Standing Committee on Power system planning of Northern Region (held on 22nd June 2018) wherein it was specified that since 400 kV Mahendragarh Substation is an ISTS Substation, the 400 kV equipment upgradation shall be carried out under ISTS (point no 1.2 of the minutes) **(Annexure-VI)**.

A.11.3 Further, the issue was discussed in the 208th OCC meeting of NRPC held on 20.06.2023 (Agenda no 17 c) and its was decided that upgradation for bays at Mahendragarh shall be carried out by Adani Transmission India Limited. This was followed by a letter from NRLDC dated 23.06.2023 wherein ATIL was asked to carry out the upgradation of switchgear at Mahendragarh Substation.

A.11.4 In compliance with the above requirements, ATIL has prepared the estimate for upgradation of Switchgear of 400 kV Mahendragarh Dhanoda line at Mahendragarh end and the same comes out to approx. Rs 7.0 crore (BoQ enclosed at **Annexure-VI**).

A.11.5 Further, the Isolators, Current Transformers and bay equipments other than Circuit breakers of 400 kV Mahendragarh Bhiwani Line (Mahendragarh end) are also of low rating, the upgradation of which would require additional 1.4 crore.

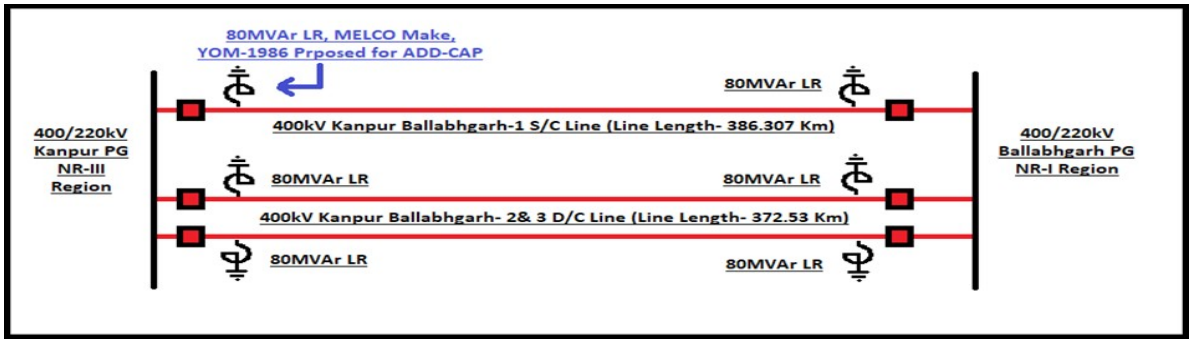
A.11.6 Therefore, forum is requested to approval for upgradation at Mahendragarh for Dhanoda and Bhiwani bays with above cost as additional Scope for which necessary approval is granted so that Adani Transmission India Limited shall proceed for implementation after necessary regulatory approval.

Decision required from Forum:

Forum may kindly discuss the above proposal and may accord technical approval accordingly.

A.12 Replacement of 420kV 80MVAR Line reactor of 400kV Kanpur-Ballabgarh-1 line at Kanpur end under Add-Cap 2024-2029 (Agenda by POWERGRID)

A.12.1 400/220kV Kanpur (PG) is connected to 400/220kV Ballabhgarh (PG) through 01 No. 400kV S/C Kanpur (PG)-Ballabhgarh (PG) CKT-1 (Line Length- 386.307Km) and 01 No. 400kV D/C Kanpur Ballabhgarh-CKT-2 & 3 (Line Length- 372.536Km each). Due to the longer lines, all 3 Circuit have been provided with non-switchable 80MVAr Line Reactors at both ends as shown in diagram below:



A.12.2 400kV, 80MVAR, MELCO (Japan) Make Line Reactor installed in 400kV S/C Kanpur Ballabhgarh-1 Line at Kanpur 400kV end is commissioned since 03.10.1988 (Year of Manufacture – 1986) in the above line. After serving a life of more than 35 years, sudden rise in fault gases observed in DGA sample dated 12.08.2023 and same was confirmed in confirmatory sample dated 21.08.2023 as per details given below:

Date of Testing	H2	CH4	C2H2	C2H4	C2H6	CO	CO2
21/08/2023	1195.50	158.00	0.0	3.80	137.10	120.00	1820.00
12/08/2023	1083.60	146.40	0.0	3.80	131.40	121.00	1801.00
07/06/2023	0.00	59.10	0.0	2.70	95.00	77.90	1891.90

A.12.3 Based on the sudden rise in DGA gas, forced shutdown of reactor was taken on 29.08.2023 to investigate the reason of rise in fault gases. During the testing, Tan Delta violation was observed in B-phase Bushing which was replaced with healthy

spare bushing and reactor taken into service after oil filtration. During the replacement of bushing, internal inspection of the reactor was also carried out and no major abnormality observed. However, even after replacement of bushing, there is steep rise in H2 (467PPM dated 12.10.2023).

Date of Testing	H2	CH4	C2H2	C2H4	C2H6	CO	CO2
12/10/2023	467.60	51.60	0.0	1.00	17.70	86.20	1074.20
04/10/2023	327.20	35.90	0.0	0.70	11.40	70.60	798.50
26/09/2023	204.70	23.50	0.0	0.80	6.90	77.20	688.90
19/09/2023	79.80	10.10	0.0	0.50	3.30	54.10	473.80

A.12.4 The rising trend of fault gases indicates partial discharges inside the Reactor which is alarming and may result in failure of the Reactor.

A.12.5 400kV S/C Kanpur Ballabhgarh Line is a long line and operation of the same without line reactor at each end is very difficult and could result in overvoltage conditions in the line.

A.12.6 As aforementioned line reactor has already completed 35 years of service life and based on current DGA trend it may fail at any point of time.

A.12.7 In view of the above and to avoid major failure & to prevent consequential damage, POWERGRID has proposed to replace the existing 420kV 80MVAR MELCO make reactor with new reactor under Add-Cap 2024-2029.

A.12.8 Matter has already been deliberated in the 212th OCC Meeting on dated 20.10.2023, wherein it was principally agreed.

Decision required from Forum

Forum may deliberate on above proposal of POWERGRID.

A.13 Implementation of Automatic Demand Management System (ADMS) in NR states/UT's (agenda by NRPC Secretariat)

A.13.1 As per Regulation 36(2) of CERC (Indian Electricity Grid Code) Regulations, 2023 SLDC, in coordination with STU and Distribution Licensee (s), shall develop Automatic Demand Management scheme with emergency controls at SLDC.

A.13.2 Initial deadline for ADMS implementation was 01.01.2011.

A.13.3 In CERC order dated 31st December 2015 in suomotu petition no. 05/SM/2014 in the matter of "Non-compliance of Regulation 5.4.2 (d) of the CERC (IEGC) Regulations, 2010" following have been directed as quoted below:

"…….*However, considering the request of the respondents to grant time to implement ADMS, we grant time till 31.06.2016 to the respondents to implement ADMS, failing which they will be liable for action under Section 142 of the Act for noncompliance of the Regulation 5.4.2 (d) of the Grid Code and order of the Commission.*

A.13.4 Status of implementation of ADMS in NR is regularly taken up as follow up agenda in the monthly OCC meetings of NRPC. Further, status of ADMS implementation in NR has also been reviewed by Member Secretary, NRPC in the special meetings held on 13.06.2023 and 17.10.2023 (MoM attached at **Annexure-VII**).

Decision required from Forum:

Forum may acknowledge the current status of ADMS implementation in NR and direct concerned utilities to expedite the implementation of the same.

A.14 Implementation of islanding schemes in NR (agenda by NRPC Secretariat)

A.14.1 Based on the decisions taken in the meeting taken by Hon'ble Minister of State (IC) for Power and New & Renewable Energy on 28.12.2020, Islanding Schemes for NR have been continuously reviewed/discussed in various forums. Latest status of Islanding Scheme of NR is attached as **Annexure-VIII.**

A.14.2 In the 187th OCC meeting held on 21.09.2021, it was decided that respective states would submit MIS report before every OCC meeting so that same may be discussed. It was also highlighted that MoP has agreed for PSDF funding for implementation of islanding schemes and states were requested to prepare and submit DPR for the same. Further, a sample DPR on implementation of Islanding scheme for PSDF funding has been already circulated vide email dated 07.10.2021 and requested to expedite the preparation of DPR.

A.14.3 In the 212th OCC meeting held on 20.10.2023 following was deliberated on islanding schemes of NR:

Islanding schemes of UP

- UPPTCL representative apprised that with regard to Lucknow-Unchahar islanding scheme, total 46 no. of UFRs were to be installed of which 35 no. of UFR have been commissioned. Installation of rest 11 no. of UFRs is expected to be completed by end of October 2023.
- With regard to Agra islanding scheme, UPPTCL representative apprised forum that a meeting was held with CPRI to deliberate the 18 Load-Generation Scenario for the islanding scheme wherein it is observed that for 2 no. of cases frequency was dropping below 47.5 Hz. Further, he mentioned that CPRI was directed to redo the CASE 11 and CASE 12 by merging UFLS Stage 2 and Stage 3 to UFLS Stage 2, but still on merging also frequency is going below 47.5 Hz for both these cases.
- NRLDC was of the view that since Under Frequency Generator Tripping happens at 3 seconds whereas frequency is dropping below 47.5 Hz for 2 seconds, there is still 1 second margin available. Therefore, NRLDC suggested that we can go ahead with the study report of CPRI.
- MS, NRPC asked UPSLDC to submit the Agra islanding scheme for approval of NRPC Board.

Islanding schemes of Rajasthan

- Representative from RRVPNL intimated forum that draft DPR for Jodhpur-Barmer Rajwest and Suratgarh Islanding scheme is under finalization which is expected to be completed by December 2023 and thereafter the scheme would be shared with NRPC Sectt. and NRLDC.

Islanding schemes of Punjab

- With regard to Patiala-Nabha Power Rajpura islanding scheme representative from Punjab SLDC informed that technical specifications for procurement of UFR relays have been submitted for approval of their management. It is expected that scheme shall be operational by 31st March 2024.

Islanding schemes of Himachal Pradesh

- With regard to Kullu-Manali Islanding scheme, representative from HPSLDC apprised forum that they have received the response from HPSEB regarding availing PSDF funding for implementation of the scheme and the response of HPSEB is being scrutinized by HPSLDC.

- With regard to Shimla-Solan Islanding scheme representative from HPSLDC has intimated that in their internal meeting with HPSEB, SE Generation circle HPSEB has communicated that BHEL has confirmed that the generator of Bhaba HEP is capable of working in the Power & opening mode and the control system of governor end is of GE make. Further, HPSEB has taken up the matter with GE for switching of Bhaba HEP to automatic mode during island formation.

Islanding schemes of Delhi

- DTL representative informed forum that the revised islanding scheme of their control area is expected to be implemented by end of October 2023.

Decision required from Forum:

Forum may note the present scenario of above islanding schemes and utilities may update implementation status.

A.15 Protection philosophy of Northern region (agenda by NRPC Secretariat)

A.15.1 In compliance of decisions of 42nd and 45th PSC meeting, an expert group has been constituted by NRPC vide letter dtd. 08.12.2022, comprising members from NRPC Sectt, NRLDC, BBMB, POWERGRID, STUs, State GENCOs, NTPC, NHPC, and RE Generator to study various recommendations related to Protection setting as well as adopted philosophy in other regions/utilities and further, to propose updated protection philosophy in time bound manner.

A.15.2 The 1st meeting of the expert group was held on 20.01.2023, wherein members were requested to share protection guidelines followed in their organization or any other protection to be added in philosophy along with supporting document.

A.15.3 The 2nd meeting of the expert group was held on 04.08.2023, wherein existing protection philosophy of Northern Region was discussed and revision was finalized. Draft of revised philosophy was issued on date 09.09.2023 in order to get comments from the utilities.

A.15.4 Subsequently, Draft of revised protection philosophy was discussed in the 48th PSC meeting held on 11.10.2023 along with the suggestions of utilities.

A.15.5 Revised protection philosophy has been prepared based on discussion in 48th PSC meeting (attached as **Annexure-IX**). The same is put up for approval.

Decision required from Forum:

Forum may discuss the revised protection philosophy and approve accordingly.

A.16 Implementation of IEGC 2023 (agenda by NRPC Secretariat)

A.16.1 IEGC 2023 has become effective since 01.10.2023 as per notification issued by Hon'ble CERC. A new chapter has been added in IEGC 2023 for Protection Code. The same is attached as **Annexure-X**.

A.16.2 The Protection Protocol, Protection Settings, Protection Audit Plan, System Protection Scheme & Recording Instruments are clauses under the Protection Code.

A.16.3 Utilities are requested for compliance of IEGC 2023.

A.16.4 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum:

Forum may please like to note the same and request utilities for compliance of all clauses under the IEGC 2023.

A.17 Furnishing and approval of protection setting by NRPC (agenda by NRPC Secretariat)

A.17.1 As per clause 14 (2) of IEGC 2023

All users connected to the grid shall:

- *furnish the protection settings implemented for each element to respective RPC in a format as prescribed by the concerned RPC;*
- *obtain approval of the concerned RPC for (i) any revision in settings, and (ii) implementation of new protection system;*
- *intimate to the concerned RPC about the changes implemented in protection system or protection settings within a fortnight of such changes;*

A.17.2 Further, as per clause 14 (3) (a) of IEGC 2023:

RPCs shall maintain a centralized database and update the same on periodic basis in respect of their respective region containing details of relay settings for grid elements connected to 220 kV and above (132 kV and above in NER).

A.17.3 In view of above following is proposed for discussion:

i. Utilities may intimate nodal officer responsible for furnishing the protection settings implemented for each element to NRPC Secretariat.

ii. Utilities may send their proposal for revision in existing setting as well as new settings 2 weeks advance to NRPC Secretariat for approval.

iii. Utilities may send intimation to NRPC Secretariat after implementation of approved settings within a fortnight.

A.17.4 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum:

Forum may please like to note and deliberate.

A.18 Annual protection audit plan for FY 2024-25 (agenda by NRPC Secretariat)

A.18.1 As per clause 15 of IEGC 2023;

- *All users shall conduct internal audit of their protection systems annually, and any shortcomings identified shall be rectified and informed to their respective RPC. The audit report along with action plan for rectification of deficiencies detected, if any, shall be shared with respective RPC for users connected at 220 kV and above (132 kV and above in NER).*
- *Annual audit plan for the next financial year shall be submitted by the users to their respective RPC by 31st October. The users shall adhere to the annual audit plan and report compliance of the same to their respective RPC.*

A.18.2 In view of above, some utilities have submitted their annual audit plans and others may submit annual audit plan for FY 2024-25 at the earliest as per IEGC 2023 the utilities were supposed to submit the same by 31.10.2023.

A.18.3 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum

Forum may please like to note and request the concerned to submit the annual audit plans for the FY 2024-25.

A.19 Submission of protection performance indices to NRPC Secretariat on monthly basis (agenda by NRPC Secretariat)

A.19.1 As per clause 15 (6) of IEGC 2023;

- *Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and above (132 kV and above in NER) system, which shall be reviewed by the RPC:*

  *(a) The **Dependability Index** defined as* $D = Nc/Nc+Nf$

  where,
  Nc is the number of correct operations at internal power system faults and
  Nf is the number of failures to operate at internal power system faults.
  *b) The **Security Index** defined as* $S = Nc/Nc+Nu$
  Where,
  Nc is the number of correct operations at internal power system faults
  Nu is the number of unwanted operations.
  *c) The **Reliability Index** defined as* $R = Nc/Nc+Ni$
  Where,
  Nc is the number of correct operations at internal power system faults
  Ni is the number of incorrect operations and is the sum of Nf and Nu

- *Each user shall also submit the reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC.*

A.19.2 In view of above, it is proposed that utilities may submit above performance indices of previous month by 7th day of next month.

A.19.3 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum

Forum may please like to note and facilitate the desired from the utilities.

A.20 Intimation of performance of SPS (agenda by NRPC Secretariat)

A.20.1 As per clause 16 of IEGC 2023;

- *The users and SLDCs shall report about the operation of SPS immediately and detailed report shall be submitted within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.*
- *The performance of SPS shall be assessed as per the protection performance indices specified in these Regulations. In case, the SPS fails to operate, the concerned User shall take corrective actions and submit a detailed report on the corrective actions taken to the concerned RPC within a fortnight.*

A.20.2 In view of above, it is proposed that utilities may submit dependability index, security index, and reliability index of previous month by 7th day of next month.

A.20.3 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum

Forum may please like to note and facilitate the desired compliance from the utilities.

A.21 Furnishing of details of non-compliant Disturbance Recorder (agenda by NRPC Secretariat)

A.21.1 As per clause 17 of IEGC 2023;

- *The time synchronization of the disturbance recorders shall be corroborated with the PMU data or SCADA event loggers by the respective RLDC. Disturbance recorders which are non- compliant shall be listed out for discussion at RPC.*

A.21.2 Accordingly, utilities are requested to share list of DRs which are non-complaint.

A.21.3 The agenda was also deliberated and agreed in 48th PSC meeting held on 11.10.2023.

Decision required from Forum

Forum may please like to note and request utilities to provide the details of non-complied DRs.

A.22 Centralized database containing details of relay settings for grid elements connected to 220 kV and above (agenda by NRPC Sectt.)

A.22.1 As per decision taken in 43rd PSC meeting, a committee was constituted vide letter dtd. 06.04.2021 which was reconstituted vide letter dated 27.01.2022 for preparing comprehensive specifications for relay setting parameters for web-based database.

A.22.2 The 1st meeting of the committee was held on 10.02.2022 and 2nd meeting of the committee was held on 14.06.2022. In these meetings, committee has finalized scope of work which was deliberated and accepted in 45th Protection sub-committee meeting (held on 24.06.2022).

A.22.3 In 46th PSC meeting, it was deliberated that as per protection code in draft CERC (Indian Electricity Grid Code) Regulations, 2022 issued by CERC on 07.06.2022, additional responsibilities have been added for RPCs regarding protection setting approval and its database. Hence, it was decided that database work may be taken up further only after notification of final IEGC by Hon'ble CERC as scope of tender may vary as per requirement. It was also decided that implementing agency and funding mode may be discussed in upcoming NRPC meetings.

A.22.4 The issue was deliberated in 64th NRPC meeting held on 24.03.2023 wherein members agreed for expenditure from NRPC Fund and POWERGRID was decided as implementing agency.

A.22.5 IEGC 2023 has become effective since 01.10.2023 as per notification issued by Hon'ble CERC.

A.22.6 As per regulation 14 (2) of IEGC 2023, all users connected to the grid shall:

(a) furnish the protection settings implemented for each element to respective RPC in a format as prescribed by the concerned RPC;

(b) obtain approval of the concerned RPC for (i) any revision in settings, and (ii) implementation of new protection system;

(c) intimate to the concerned RPC about the changes implemented in protection system or protection settings within a fortnight of such changes;

(d) ensure correct and appropriate settings of protection as specified by the concerned RPC.

(e) ensure proper coordinated protection settings.

A.22.7 As per regulation 14 (3) of IEGC 2023, RPCs shall:

(a) maintain a centralized database and update the same on periodic basis in respect of their respective region containing details of relay settings for grid

elements connected to 220 kV and above (132 kV and above in NER). RLDCs shall also maintain such database.

(b) carry out detailed system studies, once a year, for protection settings and advise modifications / changes, if any, to the CTU and to all users and STUs of their respective regions. The data required to carry out such studies shall be provided by RLDCs and CTU.

(c) provide the database access to CTU and NLDC and to all users, RLDC, SLDCs, and STUs of the respective regions. The database shall have different access rights for different users.

A.22.8 Further, IEGC 2023 has also added works such as:

(a) Annual Audit once in a year

(b) Third party audit once in 5 year or as recommend by RPCs

(c) Reporting of performance indices of protection system as well as SPS

(d) Reporting of SPS operation

A.22.9 In view of new works mentioned in IEGC 2023, a meeting of aforesaid committee was called on 19.10.2023 for deliberation. However, the meeting was cancelled due to lesser participation. Therefore, special PSC meeting was called on 31.10.2023 for wider deliberation on the issue. In the meeting, draft of scope of database portal was deliberation and finalized. The same is attached as **Annexure-XI.**

Decision required from Forum:

Forum may deliberate on scope of database portal and accord approval.

A.23 Capacity Building Programme for Northern Regional Constituents through PSDF fund (agenda by NRPC Secretariat)

A.23.1 In 45th NRPC meeting held on 08.06.2019, NRPC proposed a capacity building programme for studying the power exchange of Nordic countries, role of TSO (Transmission System Operator), Renewable Energy in power trading, EV integration with grid etc. to be carried out for Northern Region Constituents.

A.23.2 POWERGRID vide letter dated 09.10.2019 was requested to furnish the complete proposal including estimated cost details for preparing the DPR for PSDF funding.

A.23.3 In 44th TCC & 47th NRPC Meetings (held on 10th and 11th December, 2019), POWERGRID presented the detailed report and commercial implication of the program.

However, due to COVID pandemic, the program could not be completed. Therefore, a revised estimate has been taken from POWERGRID and draft of DPR for PSDF fund is attached as **Annexure-XII** for approval of forum.

Decision required from Forum:

Forum may deliberate on above DPR and accord approval.

A.24 Progress of transmission augmentation in RVPN control area (agenda by NRLDC)

A.24.1 NRLDC has already raised the concerns on the transmission related issues in past also that are being observed in RVPN control area in various forums including NRPC (last discussed in detail in the 65th NRPC meeting held on 21.04.2023) and OCC forum (last discussed in detail in the 211th OCC meeting held on 19.09.2023).

A.24.2 For majority of the issues highlighted by NRLDC, it is observed that although actions have been initiated by Rajasthan recently, their actual implementation will take some time even 2-3 years for some cases. Situation is to further deteriorate with during the upcoming high demand winter season.

A.24.3 The major issues as highlighted by NRLDC along with present issues are listed below:

a) Continuous N-1 non-compliance issues at ICT level in most of the RVPN substations are often leading to major trippings (sometimes cascade trippings) resulting in substantial load loss in major load centres. Recent cases of tripping event at 400/220kV Bikaner (load loss of 500MW on 20.08.2023), at Heerapura/Babai/Sawai Madhopur (load loss of 1750MW on 21.08.2023) are consequence of N-1 non-compliance.

Name of Substation	MVA Capacity	Total Loading (MW) (variations throughout	SPS Status*	ICT Capacity Augmentation status*

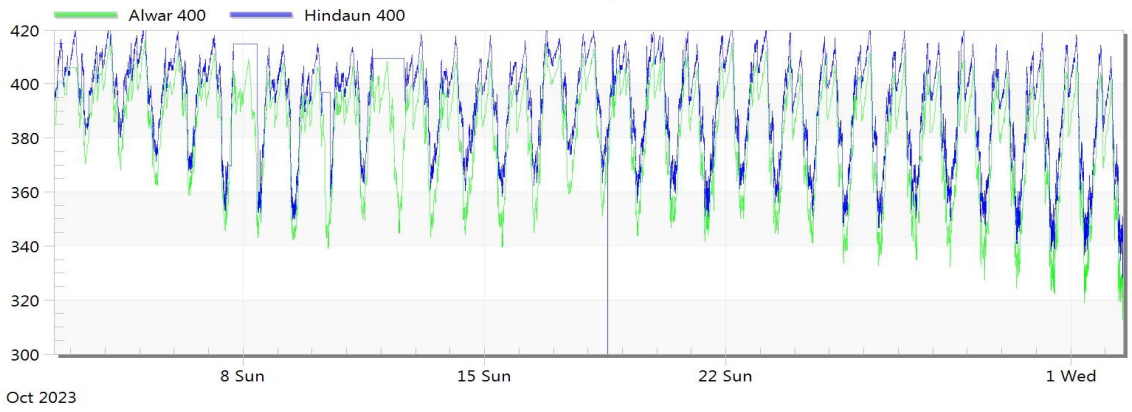
		day)		
Chittorgarh	2*315 =630	150-320#	Implemented	Augmentation expected by Nov'23
Hindaun	2*315 =630	250-450	Not implemented	New 500MVA ICT approved at each station.
Ajmer	2*315 =630	400-600	Implemented	
Merta	2*315 =630	300-550	Implemented	
Bikaner	2*315 =630	200-550	Approved but implementation pending	
Jodhpur	2*315 =630	180-280#	Implemented	
Bhilwara	1*500+1*315 =815	350-550	Not implemented	Status not available
Babai	2*315 =630	250-500	Not implemented	
Bhinmal (PG)	2*315 =630	270-500	Not implemented	

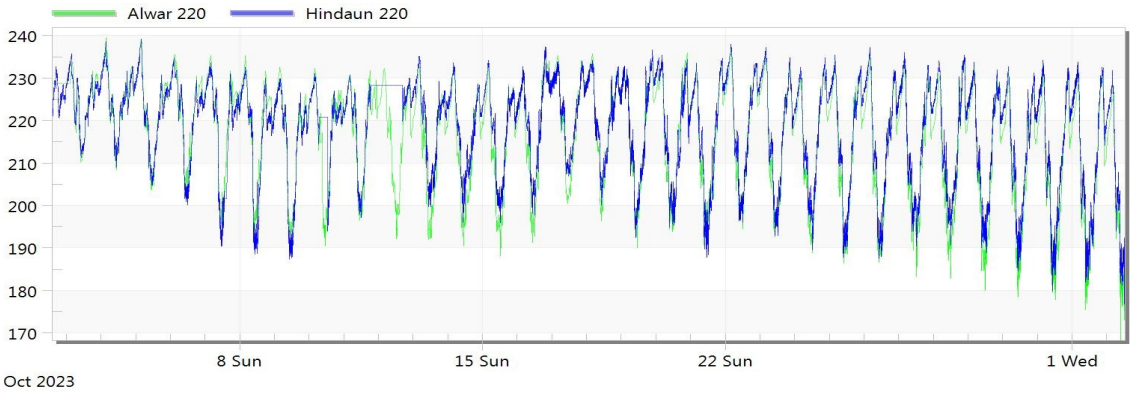
*Above data is as per status available with NRLDC on 1.11.2023.

#one ICT is under outage

As per latest status shared by RVPN, technical bids have been opened for new 500MVA ICTs at Ramgarh, Surpura, Bhadla, Ajmer, Bikaner, Hindaun, Merta, Jaisalmer-2, Babai, Kalisindh TPS. ICT capacity augmentation at 400/220kV Chittorgarh is expected by Nov'2023.

b) Sustained low voltage operations in several Rajasthan system pockets, like voltage dropping to 340 & 330 kV level at the 400kV Hindaun & Alwar substations respectively.





c) Huge MVAr drawl by RVPN network leading to very poor power factor at number of substations like Bikaner, Merta, Bhinmal(PG) etc. have resulted in the Rajasthan grid (in pockets) operating without any margin or reliability. Very often the reactive energy drawl from 400/220kV ICTs at some stations such as Bikaner (RVPN) in Rajasthan is equal or more than the corresponding active energy drawl, leading to grid reliability issue in EHV transmission system.

A.24.4 Typical Active/Reactive power loading at 400/220kVsubstations in Rajasthan during high demand period of the day are tabulated below:

ICTs MW drawl, MVAr drawl, Power factor and S/s voltage for Solar hours (10:00-14:00hrs) for Rajasthan Control area (Dec 2022)					
400/220 Sub-Station_ICTs	ICTs Capacity (MVA)	MW Drawl	MVAr Drawl	Power factor	Voltage(kV)
Bikaner(RVPN)	2*315	300-370	200-500	0.71-0.75	370-385
Jodhpur	315	170-290	$	$	380-410
Kankani	(315+500)	390-570	180-270	0.91-0.95	370-380
Merta	2*315	450-500	260-300	0.85-0.89	380-390
Bhinmal(Powergrid)	2*315	400-	160-	0.88-	375-385

		430	250	0.92	

$=Data not available

A.24.5 Poor power factor is resulting in low voltages in the system and therefore expeditious commissioning of network elements and shunt capacitor both at transmission and distribution level is required. It is also essential that load MVAR drawl management including identification of nodes at 220kV and 132kV level which are drawing huge MVAR from the grid and remedial actions for the same is carried out on priority.

A.24.6 **Status of capacitor banks of RVPN**- Proposal of Installation of 33/11 kV capacitor banks at various substations of Rajasthan has been technically approved by the NRPC in its 68th NRPC meeting on 18.08.2023. Minutes of the meeting has been issued on 11.09.2023 and the same has been posed to PSDF for sanction of the requisite grant.

A.24.7 The systemic shortcomings highlighted above (a), (b), (c) are likely to impair the grid operations during the coming winter season, when the severe transmission related constraints in state grid would compromise safe & reliable operations. Following corrective measures by RVPN may moderate the looming crisis situation in grid operations to a large extent until more long term corrective measures come into action:

1) Expediting commissioning of new ICTs at 400/220kV substations having serious N-1 violations, in line with the decision in the 62nd & 64th NRPC meetings held on 31.01.23 & 24.03.23 respectively, as the present SPS (Special protection schemes) in operation on 400/220kV ICTs in Rajasthan seem to be feeble. Prioritising transformation capacities augmentation in critical stations like 400/220kV Chittorgarh, Hindaun, Ajmer, Jodhpur and Bikaner may be a prudent approach to face the challenge.
2) Expediting commissioning of capacitor banks at various substations of RVPN and DISCOMs, in line with the decision in the 68th NRPC meeting held on 18.08.2023. The Hindaun/Alwar/Gangapur City/ Dholpur pocket loads (in Jaipur Discom area) fed from 400/220kV Hindaun & Alwar EHV Stations may be considered on priority to safeguard the transmission system reliability.
3) In line with the discussion in the 64th NRPC meeting held on 24.03.2023, expediting the commissioning of planned STATCOMs at RVPN substations (for improvement in voltage in Western Rajasthan) & 400/220kV Dholpur GSS (for improvement in voltage in Hindaun/Alwar area).

4) Enforcing the CEA technical standards on the intra-state RE generators in respect of their participation in reactive energy management at point-of-connection level, as is being practiced in case of ISGS RE generators. Their participation is expected to improve the voltage profile in Bikaner/Bhadla areas.
5) More meticulous planning for & close monitoring of the load management & voltage profile management in the Rajasthan grid till above long term measures are implemented.
6) Minimizing forced outage of intrastate thermal generating units during high demand season to avoid possibility of power shortages/ excessive drawl from the grid.
7) Rajasthan SLDC to conduct meeting with intrastate thermal generators (to provide reactive power support to minimize low voltages), DISCOMs and RE generators so that action plan is prepared and submitted in OCC forum (also requested in 211th OCC meeting held on 19.09.2023).
8) Rajasthan on various forums has requested to keep line loading of 400 KV Bhadla(RS)-Bikaner(RS) D/C transmission line in the range of 600-700 MW due to poor condition of conductor at various locations. SLDC Rajasthan is again requested to carry out the maintenance work of 400 KV Bhadla(RS)-Bikaner(RS) D/C line (Quad moose conductor) so that the full capacity of the transmission line and other EHV lines can be utilized and there is unrestricted power flow as per the conductor rating and grid requirements.

Decision required from Forum:

Forum may deliberate on the above issues and may request RVPN to take corrective actions for grid healthiness in line with grid operator.

A.25 Solar generation forecasting related issues (agenda by NRLDC)

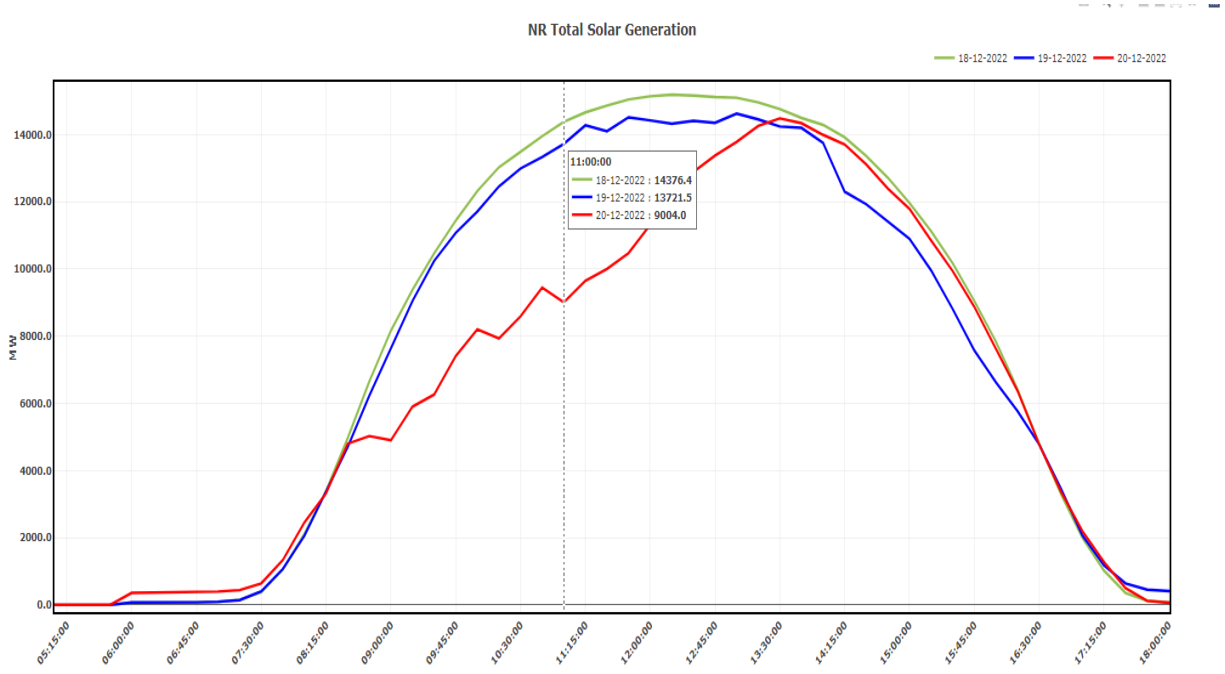
A.25.1 Scheduling for renewable energy sources at NRLDC level is being done as per CERC 'Procedure for implementation of framework on Forecasting, Scheduling and Imbalance Handling for Renewable Energy generating station including power parks based on wind and solar at inter-state level'.

A.25.2 RE generators need to provide the forecast to the concerned RLDC which may be based on their own forecast or RLDCs forecast as per the format mentioned as

'Annex-II' in the CERC procedure. RE Generators may prepare their schedule based on the forecast done by RLDC or their own forecast. Any commercial impact on account of deviation from schedule based on the forecast chosen by the wind and solar generator shall be borne by the respective generator. RE generators supplying power under LTA/MTOA are allowed to revise their schedule effective from 4th time block, the first being the time-block in which notice was given.

A.25.3 In the past year, during winter mornings it was observed that the solar generation in Northern region was on the lower side as compared to previous days due to foggy weather conditions.

A.25.4 This unavailability of generation lead to low frequency operation of the grid. For instance, on 20.12.2022, there was maximum difference of around 4-5GW in solar generation w.r.t. previous two days as shown below:



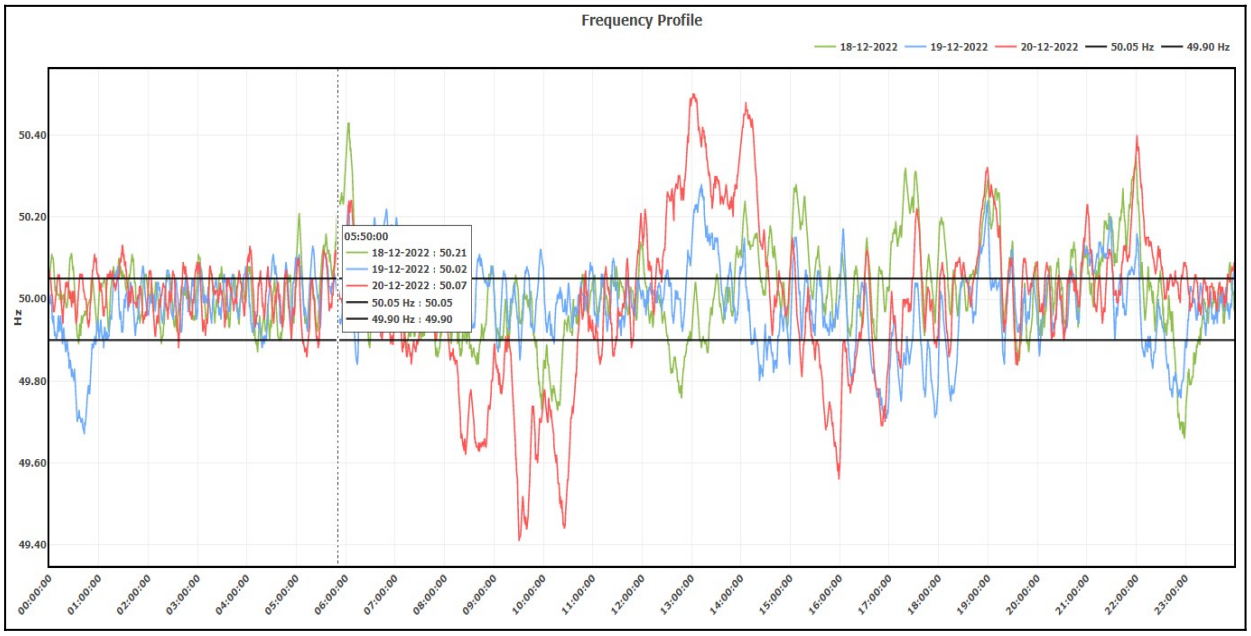
A.25.5 From the table shown below, it can also be seen that the % error was on the higher side during morning time (0800-1400 hrs) on 20.12.2022. Such large errors in forecast are big challenge to system operators in managing the frequency within the prescribed IEGC band.

Installed Capacity (MW)	Average Error as compared with	% of time error is more than 15% as	Average Error as compared with	% of time error is more than 15% as compared

	schedule (Act-Schd) *100/AVC	compared with schedule	forecast (Act-Frcst) *100/AVC	with forecast
11300.5	22.12%	52.97%	22.23%	52.08%

Note: above error data is average data for 0800-1400hrs of 20.12.2022.

A.25.6 Due to such large differences in actual generation w.r.t. scheduled generation, continuous low frequency operation of grid (minimum of **49.41Hz**) was observed on **20.12.2022** during morning hours **(09:31 hrs**) as shown below. Moreover, as the generation reached its maximum value around **1300 hrs**, high frequency (**50.50Hz**) operation was also observed on the same day as shown below:



With increasing renewable penetration such large forecast errors may prove to be detrimental for secure grid operation and requires preventive actions.

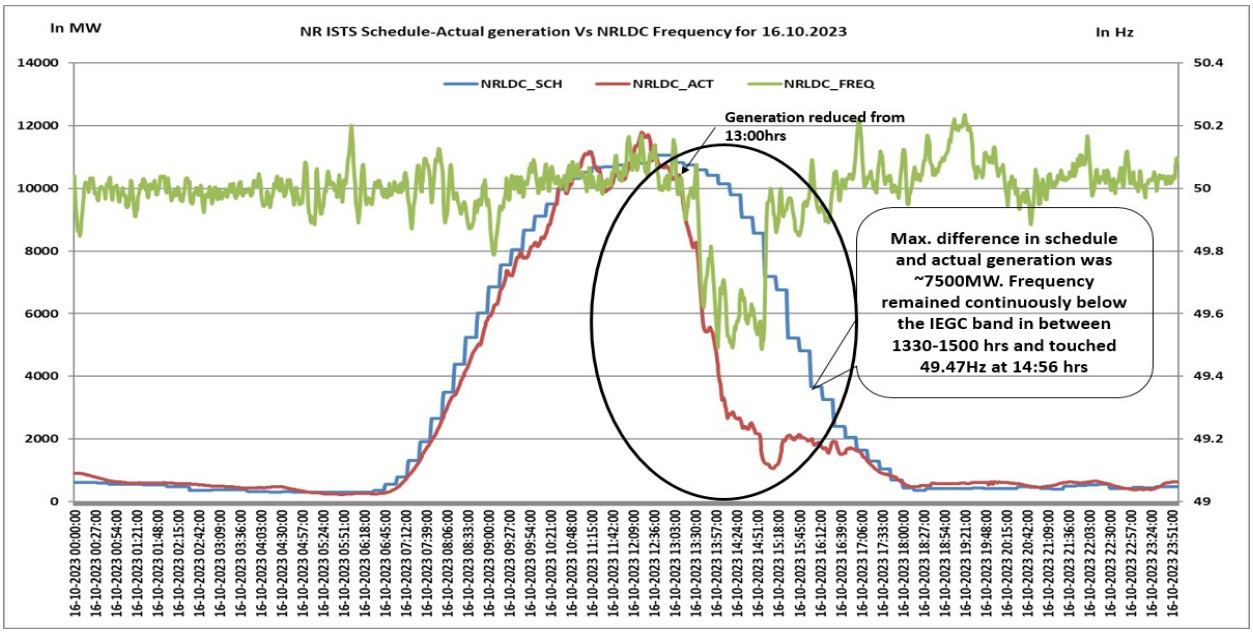
A.25.7 As per regulation No. 49 of IEGC 2023,

"(7) Revision of Declared Capacity and schedule, shall be allowed on account of forced outage of a unit of a generating station or ESS (as an injecting entity) only in case of bilateral transactions and not in case of collective transaction. Such generating station or ESS (as injecting entity) or the electricity trader or any other agency selling power from the unit of the generating station or ESS shall immediately intimate the outage of the unit along with the requisition for revision of Declared Capacity and schedule and the estimated time of restoration of the unit, to SLDC or RLDC, as the case may be. The schedule of beneficiaries, sellers and

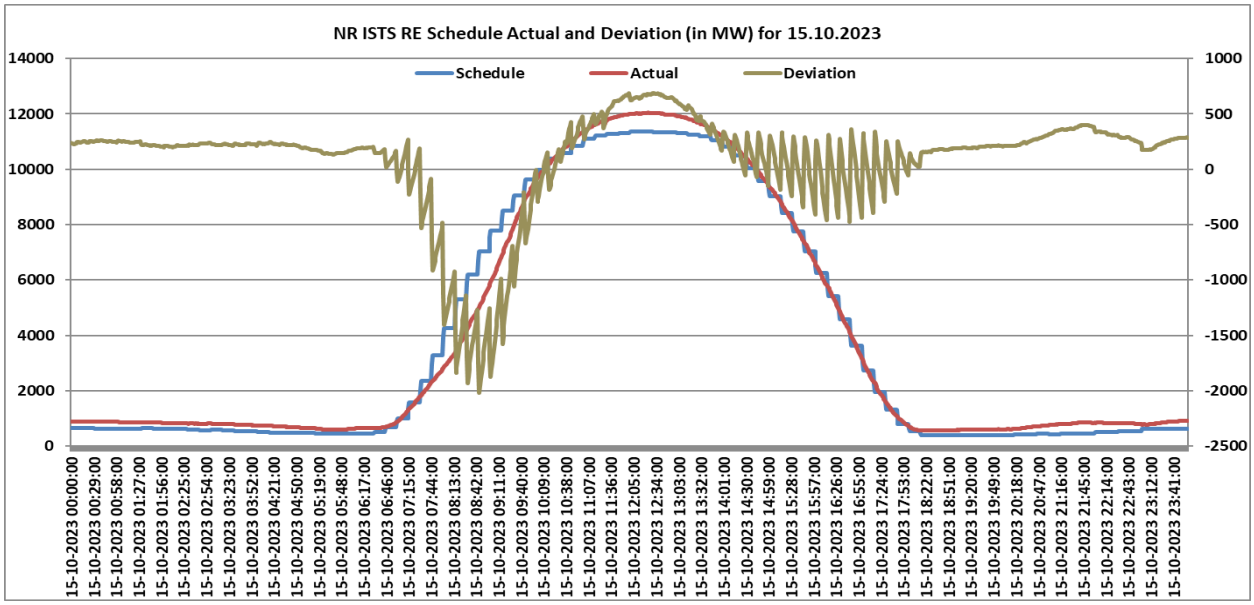
buyers of power from this generating unit shall be revised on pro-rata basis for all bilateral transactions. The revised Declared Capacity and schedules shall become effective from the time block and in the manner as specified in clause (4) of this Regulation: Provided that the generating station or ESS (as injecting entity) or trading licensee or any other agency selling power from a generating station or unit(s) thereof or ESS may revise its estimated restoration time once in a day and the revised schedule shall become effective from the 7th time block or 8th time block as per clause (4) of this Regulation, counting the time block in which the revision is informed by the generator or ESS to be the first one: Provided further that the SLDC or the RLDC as the case may be, shall inform the revised schedule to the seller and the buyer. The original schedule shall become effective from the estimated time of restoration of the unit.

(8) In case of requirement of revision of schedule due to forecasting error, a WS seller may revise its schedule only in case of bilateral transactions and not in case of collective transaction. Such revision of schedule shall become effective from the time block and in the manner as specified in sub-clause (c) of clause (4) of this Regulation."

A.25.8 On 16.10.2023, frequency has remained continuously below the IEGC band during 13:35-15:00 Hrs reaching critical low of 49.48 Hz at 13:59 and 14:57 Hrs. Reduction in ISGS solar generation of approx. 7000 MW within a span of four time blocks (13:30-14:30 Hrs) was observed due to cloud cover in Rajasthan solar pocket.



Similarly, on 15.10.2023, under injection was observed during the morning hours as shown below:



A.25.9 As per latest information available with NRLDC, solar developers are not including fog forecast in their generation forecast which is leading to huge difference on fog days.

A.25.10 Two actions are required from solar developer end i.e.

- better forecasting of solar generation including for foggy days.
- quick revision in schedule in case of any change in weather scenario for maintaining load generation balance.

A.25.11 Recently a meeting was also convened on 26.10.2023 by NRLDC with all the RE developers and forecast service providers highlighting the above issues. Participants from Ayana, Mahindra, Azure, Eden, Manikaran, Aprava, Renew,Enercast, Adani, Tata, NTPC, Avada, Energy Meteo, ABCRJ attended the meeting. The major actions as agreed in the meeting are listed below:

- It was reiterated in the meeting to recognize the importance of improved forecasting to avoid deviation from schedules
- To be vigilant of weather related updates from IMD through their websites and press release on day ahead and intra-day basis
- To proactively use satellite images, RADAR images, NOWCAST as available on IMD website
- Making a practice of using Meteograms, Cloud vector technology and also installing of Visibility sensors for monitoring may vastly improve the forecasting and mitigate deviations from schedules in real time.
- RE developers were also requested to explore other sources for weather data for better RE forecasting.

A.25.12 While various measures are being taken up from NRLDC end to sensitize the RE developers and forecasters for utilizing the best tools available for better forecasting and avoid deviation from schedules, states also need to actively use the forecast provided by IMD and other forecasters so that load generation balance can be met. Further, ISGS RE plants may be rescheduling due to weather conditions and quantum of drawl schedule of states may reduce drastically. Support from state thermal/hydro plants may be required in case of low frequency operation due to foggy/cloudy weather. ADMS of SLDCs may be put in place at the earliest for getting the desired support to the grid.

Decision required from Forum:

Forum may discuss about better forecasting of weather to improve scheduling mechanism of renewable energy power.

A.26 Regarding maintaining adequate coal reserves (agenda by NRLDC)

A.26.1 Shutdown of units on coal shortage has been observed recently. Constituents have been advised to maintain adequate coal reserves and keep units on bar in view of expected rise in demand in coming winter months.

A.26.2 Along with this, adequate blending with imported coal may be carried out to fully utilize the installed capacity to meet increased demand and avoid shortages.

Decision required from Forum:

Forum may discuss and issue necessary direction to constituents.

A.27 Extension of AMC and Upgradation of Hot Line Speech Communication System implemented by M/s ORANGE (agenda by NRLDC)

A.27.1 Hot Line Speech Communication System was implemented by POWERGRID in 2016 for PAN India basis wherein NLDC, RLDCs and all SLDCs are inter-connected through Alcatel Lucent make EPABX system, VOIP/Analog phones are also installed at power plants/sub-station/IPPs, etc over dedicated OPGW network of ULDC. This scheme was executed by M/s ORANGE with provision of AMC of 7 years as part of the contract and the same is expiring in July' 2023.

A.27.2 Based on the discussions held in previous TeST meeting, offer was requested from M/s Alcatel Lucent (OEM), however, they mentioned that EPABX system which was installed in 2016, has older version i.e. 11.0, however, at present 100.1 version is running and all new hardware which is available in market, are compatible to new version only. Therefore, to continue with comprehensive AMC, we need to first upgrade/migrate the system with the latest software version then Alcatel through their authorized channel partners, can further support for minimum 5 years of AMC.

A.27.3 The issue was deliberated in 3rd meeting of CTU-ISTS communication system planning for Northern Region held on 17.02.2023, then the issue was further discussed in CTU communication planning meeting for Pan India held on 05.04.2023. A separate meeting was also convened with Alcatel Lucent on 27.04.2023 wherein CTU and Grid-India was also present. During meeting, M/s Alcatel Lucent reiterated that without upgradation of software and CPU card, continuous support for AMC is not possible as new cards (if required) will not be supported on older version of software. In case of fault, services may get hampered.

A.27.4 Further the issue was also deliberated in the 22nd TeST sub-committee meeting of NRPC held on 24.05.2023 and following points were deliberated and agreed upon – i) Extension of AMC support by M/s. Orange for at least 2 years through POWERGRID. ii) Meantime, CTU shall plan upgradation and implementation of existing Hot line speech communication or new EPABX system.

A.27.5 During the 67th NRPC Meeting held on 30th June 2023, it was approved that AMC of existing exchange shall be extended for 2 years and POWERGRID to book financial implication (i.e. approx. Rs. 60 Lac per year) in ULDC O&M charges as per the CERC norms for AMC extension through M/s ORANGE for next two years. Also it was also decided that CTU shall plan upgradation and implementation of existing Hot line speech communication or new EPABX system timely since further extension of AMC will not be possible.

A.27.6 Matter was also discussed in the 23rd TeST Meeting held on 21.09.2023 where CTU stated that they are already working for the planning of Hot Line Speech communication as advised by NRPC. However, it is understood that during the execution of the said project, RPCs approval was sought from all regions and cost of the project was booked in the ongoing Communication System packages of the respective regions. As per CERC tariff regulation, the useful life of the communication system is up to 15 years. In this regard, CTU requested POWERGRID to provide the revised depreciation order for the Hot Line Speech communication system, so that they can go for the planning and approval for new VOIP communication system.

A.27.7 During the meeting it was finalized that CTU to take up the planning and approval process in parallel as POWERGRID shall file petition to CERC in 2024. It was deliberated that as the AMC extension has been approved by POWERGRID for 2 years, meanwhile CERC order will be pursued during this time. CTU also requested that POWERGRID shall provide a copy of petition for which POWERGRID agreed.

A.27.8 This is to inform that AMC for Hotline exchange is yet to be extended by POWERGRID and NRLDC is facing continuous interruption in Voice Recording with no timely support from vendor. POWERGRID is requested to please expedite AMC extension for Hotline Voice Communication Exchange.

A.27.9 Further, process of replacement / upgradation may be initiated considering timelines for procurement and implementation. As OEM has clearly stated that further AMC extension is not possible. Forum may please decide replacement / upgradation by July 2025.

Decision required from Forum:

Forum may deliberate the issue and may request to POWERGRID/CTUIL to update the status of extension of AMC for hotline exchange.

A.28 Delay in approval of Overhead and Underneath crossing of Power lines by Power Utilities (agenda by HVPN)

A.28.1 Creation of transmission lines is a common activity among all power utilities and these utilities come across the issue of crossing either through over or beneath of transmission lines of PGCIL frequently in their state. For execution of these crossings, approval is sought from the concerned Utility. It has been observed that concurrence to allow the execution of crossing is not provided timely resulting in to delay in completion of transmission lines. Such delay may lead to the power crises and unrest in the area for which transmission system was planned besides increase in the financial liabilities on the power utilities.

A.28.2 Standard Operating Procedure (SOP) containing time lines for providing concurrence to execute such crossing is need of time.

Decision required from Forum:

Forum may deliberate on issue and may decide accordingly.

B. Agenda for NRPC meeting

B.1 Approval of MoM of the 69th NRPC meeting

B.1.1 The minutes of the 69th NRPC meeting (held on 27.09.2023) was issued vide letter dtd. 03.11.2023. Comments from CTU have been received vide mail dtd. 07.11.2023 (attached as **Annexure-XIII**)

Decision required from Forum:

Forum may consider to deliberate comments of CTU and approve the above MoM accordingly.

B.2 Approval of decisions of TCC meeting scheduled on 17.11.2023

Decision required from Forum:

Forum may deliberate on decisions of TCC and accord approval.

B.3 Renovation/ upgradation work in the NPRC office and NRPC staff quarters (agenda by NRPC Secretariat)

B.3.1 The staff quarter of NRPC are quite old and does not have modular kitchen and floor tiles. Also, the top floor of these quarters lack staircase for roof access.

B.3.2 It is to mention that all the government quarters are now being provided with the modular kitchen and the floor tiles by the GPRA as per housing upgradation scheme-2018. **(Annexure-XIVa)**

B.3.3 In line of this, NRPC, for making its quarters on par with other govt. quarters, sought the cost estimate from the CPWD for renovation/upgradation of kitchens of NRPC staff quarters into modular kitchen and installation of the floor tiles.

B.3.4 CPWD vide its letter dated 07.10.2023 has shared the cost estimate of Rs. 45,53,400/- for above mentioned work i.e. renovation/upgradation of the kitchen, placement of floor tiles and SS staircase for roof access. **(Annexure-XIVb)**

B.3.5 Further, Cost estimate for the internal and external finishing of the NRPC office and NRPC staff quarters was also sought from the CPWD as the walls and balcony of several quarters are damaged and need finishing work including paint work.

B.3.6 CPWD vide its letter dated 06-06-2023 **(Annexure-XIVc)** shared the cost estimate of Rs. 34,10,550/- for the internal and external finishing of the NPRC office and vide its letter dated 29.05.2023 **(Annexure-XIVd)** shared the cost estimate of Rs. 37,20,600/- for the internal and external finishing of the staff quarters.

B.3.7 The above expenditure is proposed to be met from NRPC fund, for which budget estimate has already been approved by NRPC Forum for FY 2023-24. Therefore, NRPC Secretariat does not need any extra amount for above mentioned works from its members.

B.3.8 As per the SoP for expenditure issued by CEA in May,2023, the expenditure upto Rs 25 lakhs may be approved by Member Secretary, NRPC. The expenditure above Rs 25 lakhs, requires the approval of NRPC Board.

Decision required from Forum

Forum may discuss and approve the above mentioned proposals.

B.4 Outstanding Contribution for the FY 2024-25 by the Constituent Members (Agenda by NRPC Secretariat)

B.4.1 Demand Letter for contribution towards NRPC fund for the year 2023-24 was sent on 31.08.2023 to all the constituent members. It was also mentioned that beyond 31st

October, 1 % simple interest shall be levied. However, NRPC Secretariat has received contributions from 36 organizations till date.

B.4.2 Details of members from which payment have not been received are as below:

S. No.	Name of Constituent	Outstanding Amount	Penalty for November	Total
1.	NTPC	10,00,000	10,000	10,10,000
2.	UJVNL	10,00,000	10,000	10,10,000
3.	Madhyanchal Vidyut Vitaran Nigam Ltd.	10,00,000	10,000	10,10,000
4.	Lanco Anpara Power Ltd	10,00,000	10,000	10,10,000
5.	RENEW POWER	10,00,000	10,000	10,10,000
6.	UT of J&K	10,00,000	10,000	10,10,000
7.	UT of Ladakh	10,00,000	10,000	10,10,000

B.4.3 It is also mentioned that reminder was also sent via email dated 19.10.2023 for pending contribution. In view of above, it is again requested to pay the contribution amount along with penalty amount.

Decision required from Forum

Forum may deliberate the above issue and facilitate contribution towards NRPC fund from the concerned utilities.

B.5 Outstanding Contribution from constituent member J&K (agenda by NRPC Secretariat)

B.5.1 NRPC Secretariat has been receiving contribution from most of the constituents in a timely manner except few members. Since FY 2021-22, there has also been provision of penalty of 1% simple interest per month on late payment as decided in NRPC meeting.

B.5.2 It is informed that JKPDCL and JKPDD have pending membership payments of 32 lakhs and 22 lakhs respectively, details of which are mentioned below:

S. No.	Name of Utility	Period (FY)	Outstanding amount (Rs.)	Penalty (Rs)	Total outstanding amount (Rs.)
1	JKPDCL	2014-15	11,00,000	-	11,00,000
2	JKPDCL	2015-16	11,00,000	-	11,00,000
3	JKPDCL	2018-19	10,00,000	-	10,00,000
4	JKPDD	2019-20	10,00,000	-	10,00,000

5	JKPDD	2021-22	10,00,000	2,10,000	12,10,000
					54,00,000

B.5.3 In this regard, pending payment status was discussed in various meetings and several reminders and D.O. letters have also been communicated by NRPC Secretariat (copy enclosed as **Annexure-XV**), however above payment is pending till date.

B.5.4 Members may appreciate that the timely payment of contribution fee is required for smooth functioning of NRPC secretariat.

Decision required from Forum:

Forum may direct J&K to clear all outstanding dues towards NRPC membership.

B.6 Hosting of next physical TCC & NRPC meeting (agenda by NRPC Secretariat)

B.6.1 A roster for hosting of meetings, was agreed in 40thTCC/43rdNRPC meetings held on 29th/30thOctober, 2018. The same was discussed in 69th NRPC meeting (held on 27.09.2023), wherein a meeting plan was finalized (attached as **Annexure**-**XVI**).

B.6.2 Accordingly, next physical TCC & NRPC meeting may be hosted by CLP Jhajjar & Lanco Anpara Power Ltd jointly in Feb 2024.

Decision required Forum:

Forum may deliberate on hosting of next physical meeting.

*****

List of addressee (via mail)

NRPC Members for FY 2023-24

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)	akghildiyal@thdc.co.in
10	SJVN		CMD	sectt.cmd@sjvn.nic.in
11	NHPC		Director (Technical)	ykchaubey@nhpc.nic.in
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		Chief Engineer	cehpsldc@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	DHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	Director (Projects)	directorprojects@dhbvn.org.in
35	Jaipur Vidyut Vitran Nigam Ltd.		Managing Director	md@jvvnl.org
36	Madhyanchal Vidyut Vitaran Nigam Ltd.		Managing Director	mdmvvnl@gmail.com
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	SRBODANKI@NTPC.CO.IN
41	CLP Jhajjar Power Ltd.,		CEO	rajneesh.setia@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@lancogroup.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	RENEW POWER	IPP having less than 1000 MW installed capacity (alphabetical rotaional basis)	CEO	sumant@renew.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, JKPTCL	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	BYPL	Private Distribution Company in region (alphabetical rotaional basis)	CEO	Amarjeet.Sheoran@relianceada.com
55	Bikaner Khetri Transmission Limited	Private transmission licensee (nominated by cetral govt.)	Vice-President	nihar.raj@adani.com
56	Adani Enterprises	Electricity Trader (nominated by central govt.)	Head Power Sales & Trading	anshul.garg@adani.com
57	Ajmer Vidyut Vitran Nigam Ltd.	Special Invitee	Managing Director	md.avvnl@rajasthan.gov.in

Special Invitees:

RE Holding companies in NR with installed capacity of more than 1000 MW (provsional members as decided in 59th NRPC meeting)

List of addressee (via mail)

TCC Members for FY 2023-24

S. No.	TCC Member	Category	Nominated/ Notified/Delegated Member	E-mail
1	Director (Projects), HVPNL	Chairperson, TCC		directorprojects@hvpn.org.in
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			nomination awaited
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	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		nomination awaited
22	HVPNL		Chief Engineer/SO & Comml.	cesocomml@hvpn.org.in
23	RRVPNL		Chief Engineer (PP&D)	ce.ppm@rvpn.co.in
24	UPPTCL			nomination awaited
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			
31	UPRVUNL		Director (Technical)	director.technical@uprvunl.org
32	UJVNL		General Manager	kkjaiswal99@gmail.com
33	HPPCL			nomination awaited
34	PSPCL	State Generating Company & State owned Distribution Company		nomination awaited
35	DHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	Director (Operation)	directoroperations@dhbvn.org.in
36	Jaipur Vidyut Vitran Nigam Ltd.			nomination awaited
37	Madhyanchal 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		GM (O&M)	sanjayasati@ntpc.co.in
42	CLP Jhajjar Power Ltd.,			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	RENEW POWER	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	BYPL	Private Distribution Company in region (alphabetical rotaional basis)	VP	Jitendra.nalwaya@relianceada.com
56	Bikaner Khetri Transmission Limited	Private transmission licensee (nominated by cetral govt.)	Associate Vice President- O&M	nitesh.ranjan@adani.com
57	Adani Enterprises	Electricity Trader (nominated by central govt.)	Manager	mayursinhd.gohil@adani.com
58	Ajmer Vidyut Vitran Nigam Ltd.	Special Invitee	Director (Technical)	DT.AVVNL@RAJASTHAN.GOV.IN

Special Invitees:

1. Shri. Chowna Mein, Hon'ble Dy. Chief Minister and I/C Power, Govt. of Arunachal Pradesh, Block No.2, 5th Floor, A.P. Civil Secretariat, Itangar-791111. [Email: chowna.mein@gov.in]Tel -03602212671
2. Shri Ginko Lingi, Chairman, TCC, NERPC & Chief Engineer (P), TPMZ , Department of Power, Govt. of Arunachal Pradesh, Vidyut Bhawan, zero Point, Itanagar-791111. [Email: ginko.lingi@gmail.com] Tel -9612153184
3. Shri K Vijayanand, Chairperson, SRPC, Chairman & Managing Director , Transmission Corporation of Andhra Pradesh Limited, Vidyut Soudha, Gunadala, Eluru Rd, Vijayawada, Andhra Pradesh 520004. [Email: cmd.aptransco@aptrandco.in ; vjanand@nic.in] Tel -08662429201
4. Shri AKV Bhaskar, Chairperson TCC, SRPC, Director (Trasmission & Grid Management), Transmission Corporation of Andhra Pradesh Limited, Vidyut Soudha, Gunadala,Eluru Rd, Vijayawada, Andhra Pradesh 520004. [Email: kannanvenkatabhaskar.angulabharanam@aptransco.co.in] Tel -.08662429209
5. Sri Nikunja Bihari Dhal, IAS, Chairman, ERPC, Additional Chief Secretary to Govt., Department of Energy, Govt. of Odisha, Bhubaneswar. [Email-chairman@gridco.co.in] Tel -06742540098
6. Shri Trilochan Panda, Managing Director, GRIDCO, Chairperson TCC, ERPC, GRIDCO Limited, Regd. Office: Janpath, Bhubaneswar – 751022. Tel -06742540877 [Email- md@gridco.co.in]
7. Shri Sanjay Dubey, Chairman, WRPC & Principal Secretary(Energy), GoMP, VB-2, Vallabh Bhawan Annex, Mantralay, Bhopal: 462 001 (M.P.), Email: psenergyn@gmail.com, Tel. 0755-2708031
8. Shri Raghuraj Rajendran, Chairman-TCC, WRPC & Managing Director MPPMCL, Block No-15, Shakti Bhawan, Vidyut Nagar, Rampur, Jabalpur-482008. [Email-mdofmppmcl@gmail.com]
9. Smt. Rishika Saran, Member Secretary, NPC, Sewa Bhawan, R. K. Puram, New Delhi-66 [Email-cenpc-cea@gov.in]
10. 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
11. Shri Asit Singh, Member Secretary, SRPC, No.29, Race Course Cross Road, Bengaluru-560009. [Email: mssrpc-ka@nic.in] Tel -08022287205/9449047107
12. Shri N.S. Mondal, Member Secretary, ERPC,14,Golf Club Road, ERPC Building, Tollygunje,Kolkata-700033. [Email: mserpc-power@nic.in]- Tel 03324239651/9958389967
13. 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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Annexure-I

भारत सरकार/ Government of India
विद्युत मंत्रालय/ Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority
आर. ए. प्रभाग/ Regulatory Affairs Division

To,

As per list.

Subject: Request to ensure compliance of CEA regulations in power sector of the States.

Sir/Madam,

As you are aware, Central Electricity Authority (CEA) is mandated under the Electricity Act, 2003 to notify various regulations concerning standards and safety of the power sector. Therefore, in exercise of powers conferred provisions of the Electricity Act, 2003 (36 of 2003), Central Electricity Authority has notified various regulations. The list of regulations notified by CEA is attached at Annex.

Since, these Regulations have been issued in accordance with the provisions of the Electricity Act, 2003, they are in the nature of subordinate legislation and carry the force of law. It is essential that all State Power Utilities and their personnel are familiar with these regulations so that they can be complied in the letter and spirit. These Regulations are available at our website and can be accessed through the link, **https://cea.nic.in/regulations-category/notified-regulations**

It is therefore requested that an intensive exercise may be carried out to familiarize management and personnel working in State Power Utilities with these regulations. If required, CEA will be willing to depute officers to carry out capacity building in the form of workshop etc.

Thanking you,

भवदीय / Yours faithfully,

Jindal 03/10/2023

(प्रदीप जिंदल/ Pardeep Jindal)
मुख्य अभियंता (आर.ए.)/ Chief Engineer (RA)

Copy for information to/ जानकारी के लिए प्रतिलिपी:

1. O/o Chairperson, CEA/ अध्यक्ष, के.वि.प्रा. का कार्यालय
2. Member (E&C), CEA/ सदस्य (आ. व वा.), के.वि.प्रा.

3. Chief Engineer (R&R), MoP/ मुख्य अभियंता (आर & आर), विद्युत् मंत्रालय

List of addresses: -

1. Chief Secretary, Govt. of Andhra Pradesh, 1st Floor, Interim Government Complex, A.P. Secretariat, Velagapudi, Guntur, Hyderabad-500022, Andhra Pradesh. Email: cs@ap.gov.in
2. Chief Secretary, Government of Arunachal Pradesh, Civil Secretariat, Itanagar - 791111. Email: cs-arunachal@nic.in
3. Chief Secretary, Government of Assam, Block- C, 3rd Floor, Assam Sachivalaya, Dispur - 781006, Guwahati. Email: cs-assam@nic.in
4. Chief Secretary, Government of Bihar, Main Secretariat, Patna - 800015. Email: cs-bihar@nic.in
5. Chief Secretary, Government of Chhattisgarh, Mahanadi Bhawan, Mantralaya, Naya Raipur - 492002. Email: csoffice.cg@gov.in
6. Chief Secretary, Government of Goa, Secretariat, Porvroim, Bardez, Goa - 403521. Email: cs-goa@nic.in
7. Chief Secretary, Government of Gujarat, 1st Block, 5th Floor, Sachivalaya, Gandhinagar – 382010. Email: chiefsecretary@gujarat.gov.in
8. Chief Secretary, Government of Haryana, Room No. 4, 4th Floor, Haryana Civil Secretariat, Sector-1, Chandigarh - 160019. Email: cs@hry.nic.in
9. Chief Secretary, Government of Himachal Pradesh, H P Secretariat, Shimla – 171002. Email: cs-hp@nic.in
10. Chief Secretary, Government of Jharkhand, 1st Floor, Project Building, Dhurwa, Ranchi-834004. Email: cs-jharkhand@nic.in
11. Chief Secretary, Government of Karnataka, Room No. 320, 3rd Floor, Vidhana Soudha, Bengaluru - 560 001. Email: cs@karanataka.gov.in; officeofcs@gmail.com
12. Chief Secretary, Government of Kerala, Secretariat, Thiruvananthapuram - 695001. Email: chiefsecy@kerala.gov.in
13. Chief Secretary, Government of Madhya Pradesh, MP Mantralaya, Vallabh Bhavan, Bhopal - 462004. Email: cs@mp.nic.in
14. Chief Secretary, Government of Maharashtra, CS Office Main Building, Mantralaya, 6th Floor, Madame Cama Road, Mumbai – 400032. Email: cs@maharashtra.gov.in
15. Chief Secretary, Government of Manipur, South Block, Old Secretariat, Imphal - 795001. Email: cs-manipur@nic.in
16. Chief Secretary, Government of Meghalaya, Main Secretariat Building, Rilang Building, Room No. 321, Meghalaya Secretariat, Shillong - 793001. Email: raoms@gov.in
17. Chief Secretary, Government of Mizoram, New Secretariat Complex, Aizawl - 796001. Email: cs_miz@rediffmail.com; csmizoram@gmail.com
18. Chief Secretary, Government of Nagaland, Civil Secretariat, Kohima- 797004. Email: csngl@nic.in
19. Chief Secretary, Government of Odisha, General Administration Department, Odisha Secretariat, Bhubaneswar - 751001. Email: csori@.nic.in
20. Chief Secretary, Government of Punjab, Punjab Civil Secretariat, Chandigarh - 160001. Email: cs@punjabmail.gov.in; cs@punjab.gov.in
21. Chief Secretary, Government of Rajasthan, Secretariat, Jaipur – 302005. Email: csraj@rajasthan.gov.in

22. Chief Secretary, Government of Sikkim, New Secretariat, Gangtok - 737101. Email: cs-skm@hub.nic.in
23. Chief Secretary, Government of Tamil Nadu, Secretariat, Chennai – 600009. Email: cs@tn.gov.in
24. Chief Secretary, Government of Telangana, Burgula Rama Krishna Rao Bhavan, 9th floor, Adarsh Nagar, Hyderabad - 500063 Email: cs@telangana.gov.in
25. Chief Secretary, Government of Tripura, New Secretariat Complex, Secretariat, Agartala-799010. Email: cs-tripura@nic.in
26. Chief Secretary, Government of Uttarakhand, 4 Subhash Road, Uttarakhand Secretariat, Dehradun - 248001. Email: csuttarakhand@nic.in; chiefsecyuk@gmail.com
27. Chief Secretary, Government of Uttar Pradesh, 1st Floor, Room No. 110, Lalbahadur Sastri Bhawan, Uttar Pradesh Secretariat, Lucknow - 226001. Email: csup@nic.in
28. Chief Secretary, Government of West Bengal, Nabanna, 13th Floor, 325, Sarat Chatterjee Road, Mandirtala Shibpur, Howrah - 711102. Email: cs-westbengal@nic.in; westbengal@nic.in
29. Chief Secretary, Union Territory of Andaman and Nicobar, Administration Secretariat, Port Blair - 744101. Email: cs-andaman@nic.in
30. Chief Secretary, Union Territory of Daman and Diu, Dadra and Nagar Haveli, Secretariat, Moti, Daman - 396220. Email: administrator-dd@gov.in; pers-dd@nic.in
31. Chief Secretary, Union Territory of Delhi, Delhi Secretariat, IP Estate, New Delhi - 110002. Email: csdelhi@nic.in
32. Chief Secretary, Government of Jammu & Kashmir, R. No. 2/7, 2nd Floor, Main Building, Civil Secretariat, Jammu - 180001. Email: cs-jandk@nic.in
    R. No. 307, 3rd Floor, Civil Secretariat, Srinagar - 190001
33. Chief Secretary, Union Territory of Lakshadweep, Secretariat Building, Lakshadweep, Kavaratti - 682555. Email: lk-admin@nic.in
34. Chief Secretary, Union Territory of Puducherry, Main Building, Chief Secretariat, Puducherry – 605001. Email: cs.pon@nic.in; cs.pondicherry@nic.in

Annex

List of Regulations issued by CEA

Sl. No.	Name of the Regulation	Date of Gazette notification
1	Central Electricity Authority (Installation & Operation of Meters), Regulations 2006 u/S 55 (1), 73 (e) and 177 (2)	22.03.2006
		1st Amendment on 4th June 2010
		2nd Amendment on 3rd December 2014
		3rd Amendment on 23rd December 2019
		4th Amendment on 28th February 2022
2	Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulation, 2007 u/S 73 (b) and 177 (2)	09.03.2007
		1st Amendment on 15th October 2013
		2nd Amendment on 8th February 2019
3	Central Electricity Authority (Furnishing of Statistics, Returns & Information) Regulation, 2007 u/S 73 (i), 74 and 177 (2)	19.04.2007
		1st Amendment on 17th March 2022
4	Central Electricity Authority (Grid Standards) Regulation, 2010 u/S 34, 73 (d) and 177 (2)	26.06.2010
5	Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric Lines) Regulations, 2011 u/S 73 (c) and 177 (1)	14.02.2011
		1st Amendment on 16th November 2022
6	Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013. U/S 177 (1)	7.10.2013
7	Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 u/S 73 (b) and 177 (1)	27.02.2020

8	Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 u/S 73 (b) and 177 (2)	27.12.2022
9	Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023 u/S 73 (b) and 177 (2)	30.01.2023
10	Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023 u/S 53 and 177 (2)	12.06.2023

Annexure-II

सत्यमेव जयते

भारत सरकार/Government of India
विद्युत मंत्रालय/Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/Central Electricity Authority
एन.पी.सी. प्रभाग/National Power Committee Division
Ist Floor, Wing-5 ,West Block-II, RK Puram, New Delhi-66

No.CEA-GO-15-14/1/2022-NPC Division/ 400 Date: 02.11.2023

To

(As per distribution list)

विषय: PUShP पोर्टल के अंतर्गत पावर बैंकिंग सुविधा का प्रावधान संबंध में।

Subject: Provision of Banking of Power feature under the PUShP Portal - reg.

It is to inform that in the PUShP Portal, a facility/provision has been provided to the States through which the States may intimate/declare the surplus power quantum which they are willing to bank for a certain period of duration. Any other state who wants to acquire this surplus power in deficit scenario and willing to undergo for banking with the surplus state, may give requisition for this surplus power for a same duration in the PUShP Portal as per their mutual agreement.

2. The salient features of provision of banking of power feature under the PUShP portal are as below:-

a) The States undergoing for Banking Mechanism shall enter into bilateral agreements outlining the terms, conditions, and tariffs for power banking.
b) The States shall take consent/permission of the NLDC/RLDCs/SLDCs before undergoing any type of Bilateral Agreements.
c) NLDC/RLDCs/SLDCs shall check the Availability of Transmission Corridor for power flow between the States and these activities are out of purview of the PUShP Portal.
d) No trading charges or trading margin shall be levied on the states undergoing Banking of the power through the PUShP Portal.

3. **Role of PUShP portal in banking of power:** - PUShP Portal shall be acting as match-making platform for banking of power. Hence, matters pertaining to Banking Regulations, Bilateral Agreements, Banking Charges and Transactions charges shall be out of the scope of the PUShP portal. The States shall strictly abide the CERC and respective SERC regulations on Banking of Power or Banking of Energy. The States shall strictly take consent/permission of the NLDC/RLDCs/SLDCs on Banking of Power or Banking of Energy.

4. For provision of **Banking of Power feature under the PUShP Portal,** a separate interface/tab facility with the name **Intimate** on the page of each beneficiary wherein after clicking the tab

(Intimate), the sub-tab with the name **Depositor/Surplus state, Bank/Deficit State and View Depositor/Surplus& Bank/Deficit State** are displayed to the states to intimate/declare the surplus power quantum which they are willing to bank for a certain period of duration or to give requisition for this surplus power for a same duration in the PUShP Portal as per their mutual agreement in deficit scenario whichever is applicable to the states as per displayed sub-tab. The information submitted by the states is also made available to the respective states.

5. The steps for availing the provision of Banking of Power feature under the PUShP Portal is attached at **Annexure-I.**

Yours faithfully,

2/11/2023

(ऋषिका शरण/Rishika Sharan)
मुख्य अभियन्ता एवं सदस्य सचिव,रा.वि.स /
Chief Engineer & Member Secretary, NPC

*****

Distribution List:

1. All Nodal Officers (CGS/ISGS/States/IPPs)

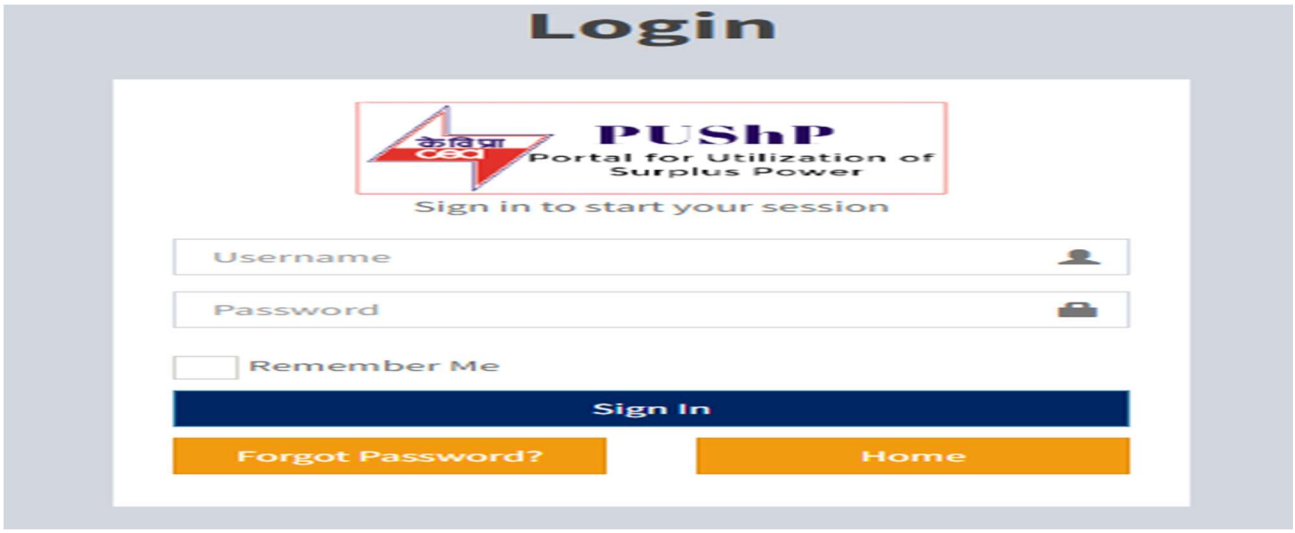
Copy for kind information to:

1. SA to Chairperson, CEA, New Delhi.
2. SA to Member (G&OD), CEA, New Delhi.

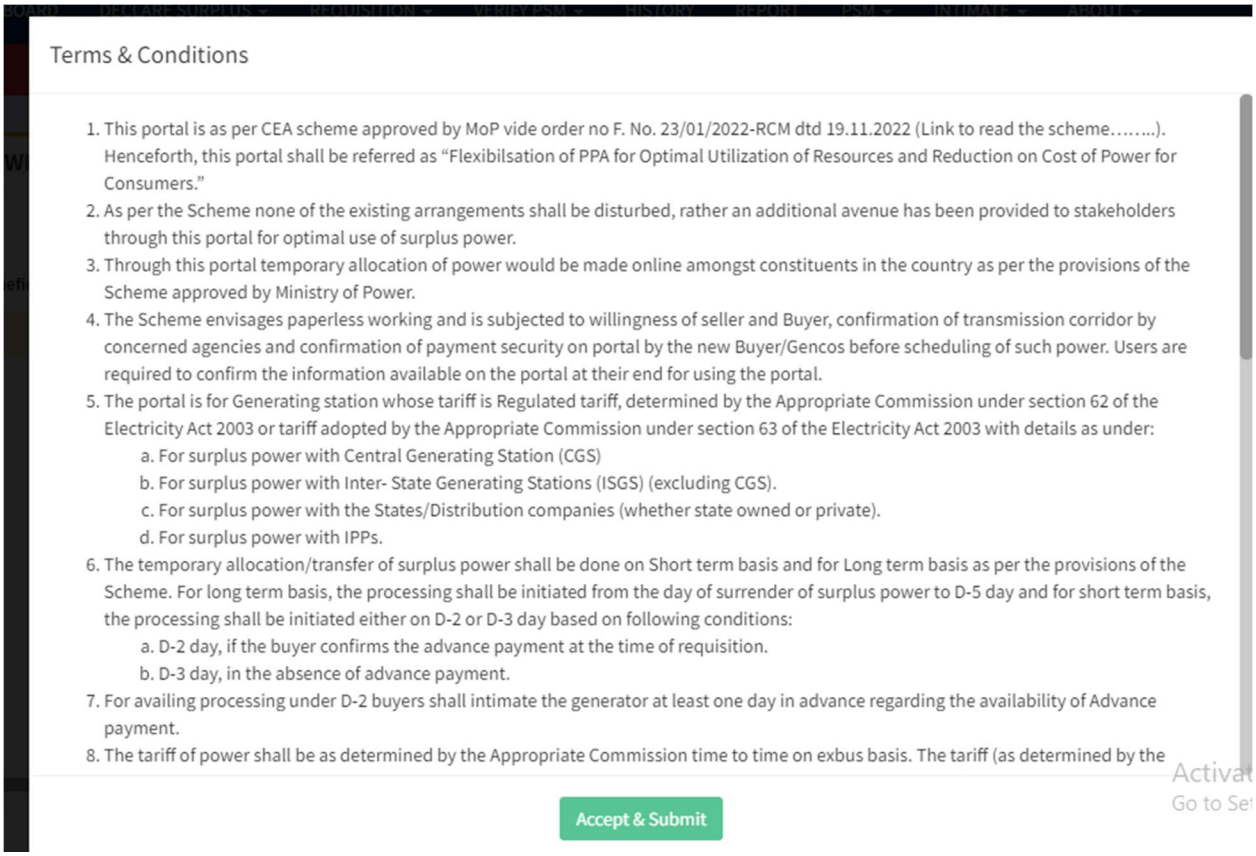
Annexure-I

Steps for availing the provision of Banking of Power feature under the PUShP Portal

Step-1: Login the PUShP portal (**URL: https://www.nationalsurpluspower.in/**) using the login credentials (Username & Password).

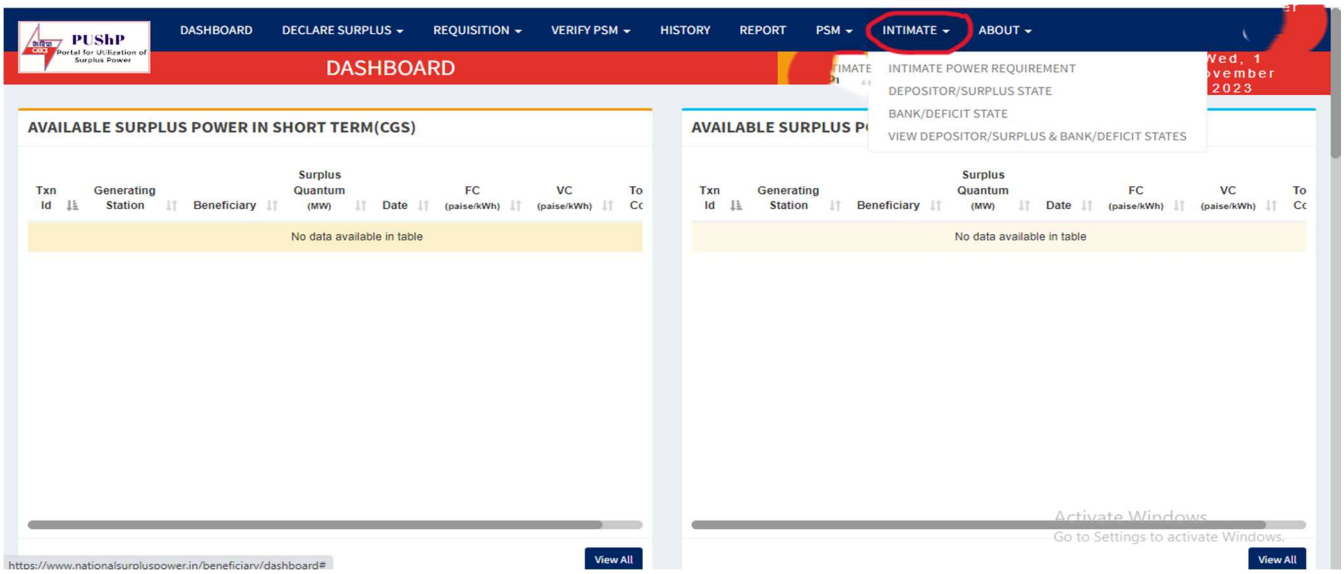


Step-2: Accept & Submit, Terms & Conditions displayed after login.

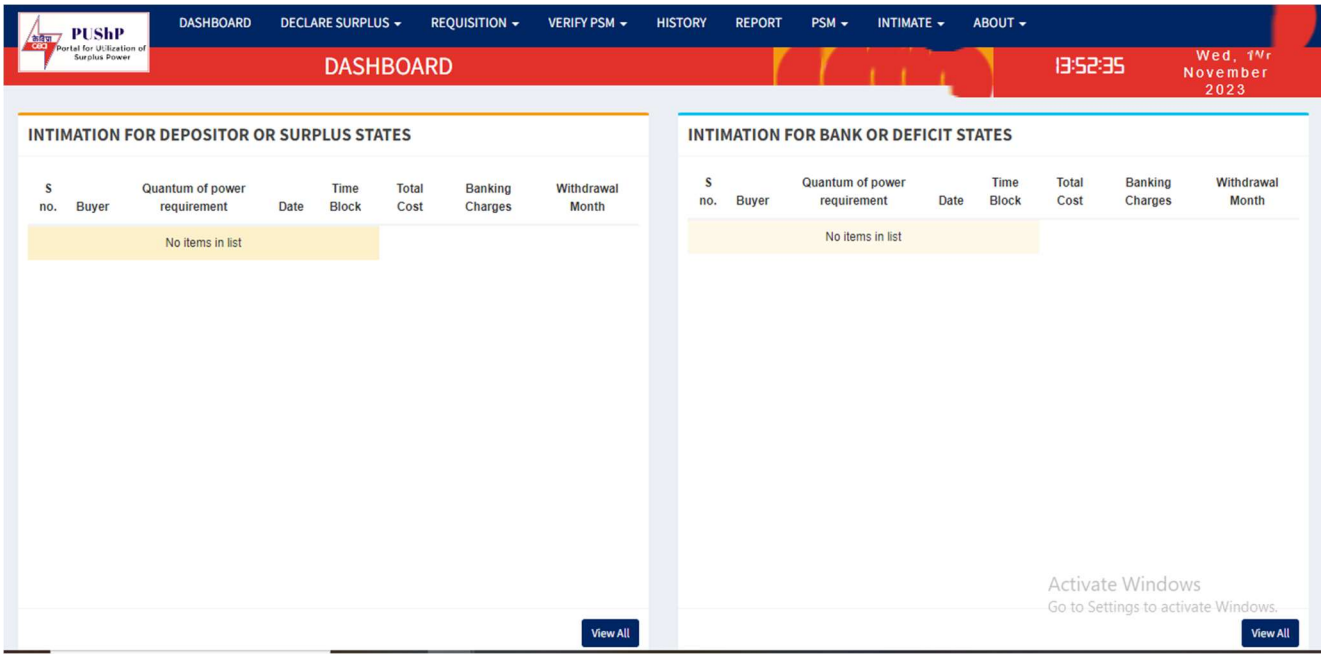


Step-3: Click on the tab **INTIMATE** (Marked with Red in the screenshot attached below). Following Sub tab will be displayed:

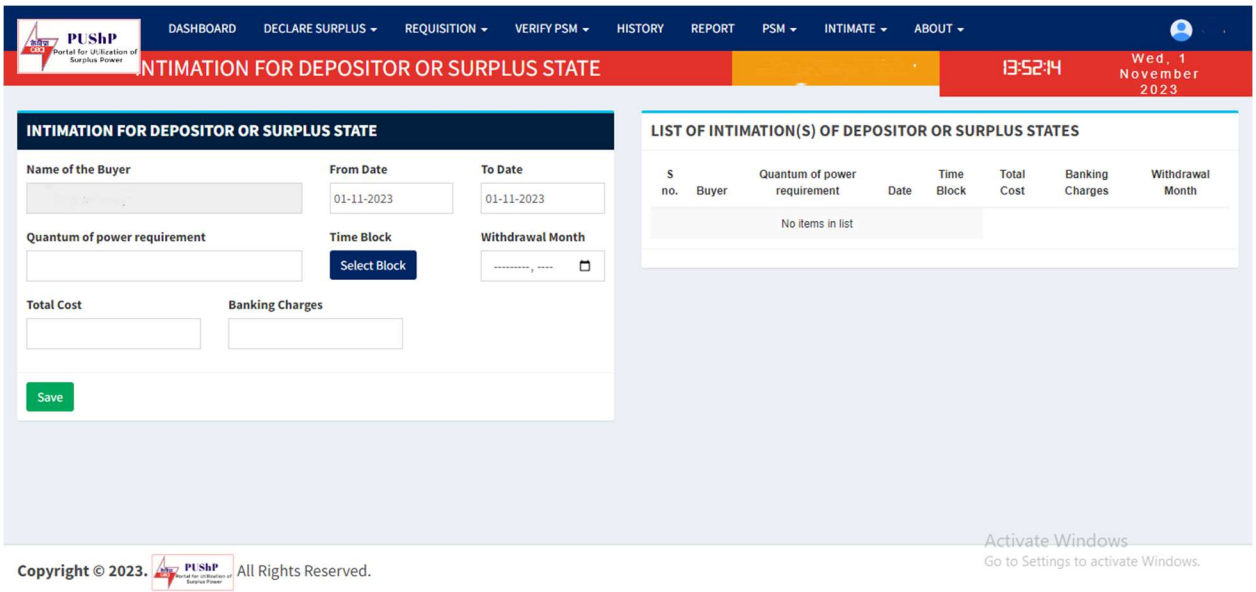
- DEPOSITOR/SURPLUS STATE
- BANK/DEFICIT STATE
- VIEW DEPOSITOR/SURPLUS STATE &BANK/DEFICIT STATE



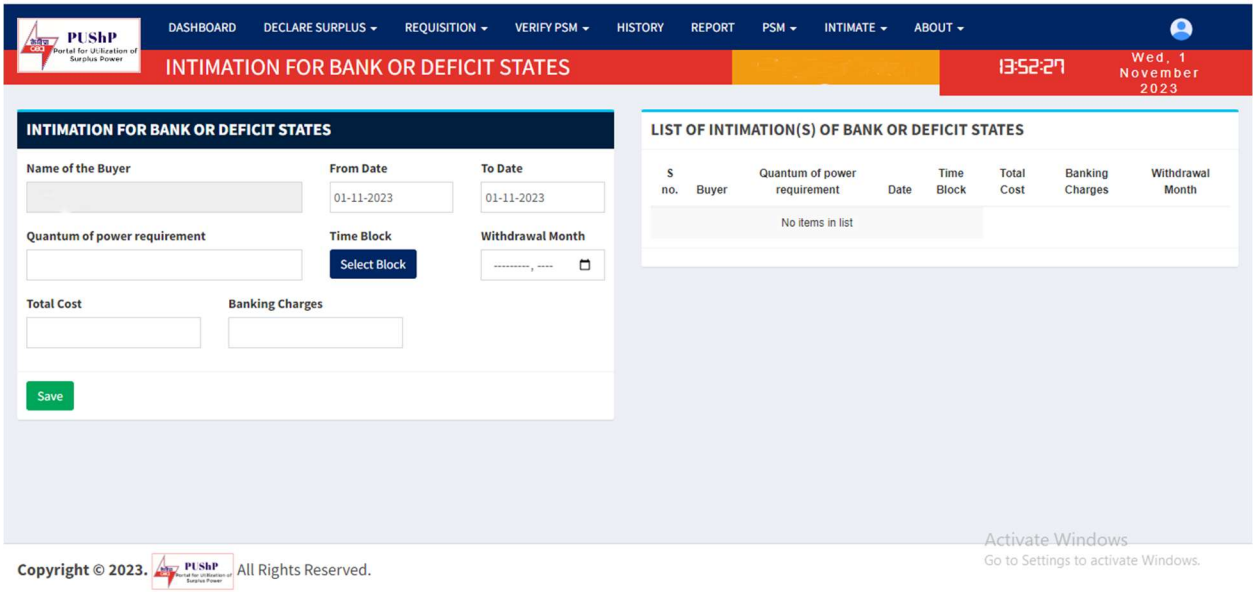
Step-4: To View Depositor/Surplus& Bank/Deficit State, click on the sub tab View Depositor/Surplus& Bank/Deficit State displayed in the Step-3. An interface will be opened clearly showing list of Depositor or Surplus states and Bank or Deficit States as shown in the below screenshot.



<u>Step-5:</u> For the states who want to intimate/declare the surplus power quantum which they are willing to bank for a certain period of duration, Click on the sub tab DEPOSITOR/SURPLUS STATE as shown in the screenshot of Step-3 above. An interface will be opened wherein the states can select date, block and quantum of power which they are willing to bank for certain period of duration. The information submitted by the states is also made available to the respective states. (In the right side portion of the screenshot attached below).



<u>Step-6:</u> For the states who want to give requisition for declared surplus power for a same duration in the PUShP Portal as per their mutual agreement in deficit scenario, Click on the sub tab BANK/DEFICIT STATE as shown in the screenshot of Step-3 above. An interface will be opened wherein the states can select date, block and quantum of power which they are willing to bank for certain period of duration. The information submitted by the states is also made available to the respective states. (In the right side portion of the screenshot attached below).



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Annexure-III

Sl. No.	Plant Name	State in which Plant is embedded	State whose entities have share in the plant	Share in %	Share in MW*	Transaction ID for Schedule in Inter-state	Category
1	Bawana	Delhi	Haryana	10	137	SH-07	Scheduled under proper Open Access (CTU) Including Tr. Charges Including RLDC Fee & Charges Schedule changes are done ex-ante as per the IEGC
	Bawana	Delhi	Punjab	10	137	SH-06	
	CLP-Jhajjar	Haryana	Delhi	10	124	LT-05	
2	Rihand hydro	UP	MP	13.75	41.25	LT-01	Considered under deemed LTA. (without formal LTA/MTOA issuance by CTU) Tr. charges considered RLDC Fee & Charges not considered. Schedule changes are done ex-ante as per the IEGC
	Matatila	UP	MP	45	13.75	LT-02	
3	Vishnu Prayag	UP	Uttarakhand	12	60	SH-01	Considered under deemed LTA. (without formal LTA/MTOA issuance by CTU) Tr. Charges not considered RLDC Fee & Charges not considered. Schedule changes are done ex-ante as per the IEGC
	Alaknanda	UP	Uttarakhand	12	40	LT-38	
	Rajghat	MP	UP	25	11.25	LT-13	
4	Khara	UP	HP	20	14.4	SH-02	Considered under deemed LTA. (without formal LTA/MTOA issuance by CTU) Tr. Charges not considered RLDC Fee & Charges not considered. Schedule of these transactions are changed post-facto based on actual generation as per legacy.
	RSD	Punjab	HP		22	SH-04	
	Chibro	Uttarakhand	HP	25	60	SH-05	
	Khodri	Uttarakhand	HP	25	30		
	Dhalipur	Uttarakhand	HP	25	12.75		
	Dhakrani	Uttarakhand	HP	25	8.43		
	Kulhal	Uttarakhand	HP	20	6		

Annexure-IV

सत्यमेव जयते

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

सं. उक्षेविस/वाणिज्यिक/210/वाउस(35)/2018/4638-4681 दिनांक: 24 April, 2018
No. NRPC/ Comml/210/CSC(35)/2018/ Dated : 24 April, 2018

सेवा में / To,

Members of Commercial Sub-Committee (As per List)
वाणिज्यिक उप समिति के सभी सदस्य (संलग्न सूचीनुसार)

विषय: वाणिज्यिक उप-समिति की 35 वीं बैठक का कार्यवृत्त ।
Subject: 35th meeting of Commercial Sub-Committee – Minutes.

महोदय ,
Sir,

उत्तर क्षेत्रीय विद्युत समिति वाणिज्यिक की उप-समिति की 35 वीं बैठक दिनांक 19 फरवरी , 2018 को उक्षेविस, नई दिल्ली में आयोजित की गई थी । इस बैठक के कार्यवृत की एक प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

35th Commercial Sub-Committee meeting of NRPC was held on 19th February, 2018 at NRPC, New Delhi. A copy of the minutes of the meeting is enclosed herewith for favour of information and necessary action.

भवदीय
Yours faithfully,

हेमन्त पाण्डे 23/4/18

(हेमन्त कुमार पाण्डेय)
(Hemant Kumar Pandey)
अधीक्षण अभियंता
Superintending Engineer

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any fault is noticed, to NRLDC and NRPC Sectt. for effective follow up.

(Action: POWERGRID & State Transmission Utilities; Time line: At the earliest)

ITEM-41 Considering Date of Presentation/Acknowledgement Date for the bills related to Wind Power of NHPC as on date of actual receipt of bills in hard copy by JdVVNL (RUVNL)

41.1 NHPC representative informed that Wind Power Project (50MW) of NHPC Ltd. is situated in Jaisalmer Distt. of Rajasthan and Power from the project is being supplied to JdVVNL (Jodhpur Vidyut Vitran Nigam Limited), a subsidiary company of Rajasthan Urja Vikas Nigam Limited (RUVNL).

41.2 He mentioned that RUVNL vide its letter dated 19.12.2017 had intimated that the invoices/bills sent though e-mail would not be considered as acknowledgement date. Further, RUVNL had clarified that the Renewable Energy Generators in Rajsthan are governed by Rajsthan Electricity Regulatory Commission (RERC), therefore, the decision taken in the meetings of NRPC would not be applicable on Renewable Energy Bills.

41.3 He intimated that NHPC vide letter dated 03.01.2018, had replied that the power from the Jaisalmer Wind Power Project is injected in Northern Grid and supplied to RUVNL (JdVVNL) who is a constituent of NRPC. Therefore, the decisions taken at the NRPC forums shall be applicable to RUVNL (JdVVNL). As a matter of acceptance of energy bills through e-mail the same had been discussed in the 31st TCC/35th NRPC (Item No. C.5) meetings held on 8th & 9th July'2015 and 30th & 31st Commercial Sub-Committee (Item No. Meetings held on 23.09.2017 & 04.07.2016 and agreed by the representative of Rajsthan Discoms also and hence shall be applicable on JdVVNL (RUVNL) for the Wind Power Project of NHPC. He stated that the issue had not been resolved even after regular follow up with RUVNL (JdVVNL).

41.4 The sub-committee advised RUVNL to follow the decisions in the NRPC, as it would facilitate all the entities, in a long run, including Rajasthan Discoms. RUVNL representative RUVNL representative agreed to abide by the decisions of NRPC regarding representation of bills.

(Action: RVUNL; Time Line: March,2018)

ITEM - T1: Guidelines for Open Cycle Certification

AEE (C), NRPC informed that as per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, Energy charge rate for a gas/liquid fuel based station is to be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee for the open cycle operation during the month. The certification was being by NRPC Sectt. .done based on established guidelines / procedure.

He added that the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment), 2016 notified in Apr,2017, and the CERC order dated 5th May,2017 , regarding detailed procedure on reserve shutdown, stipulates the technical minimum for operation in respect of CGS and ISGS as 55% of the MCR loading or installed capacity of the unit, at the generating station. In view of this stipulation, the procedure for certification of open cycle generation needed some changes.

The revised procedure was discussed in the meeting. NTPC representative stated that when one GT & one ST is already running, the time taken for coupling the second GT from synchronisation to combined cycle mode of operation is about 1.5 to 2 hours. The representative from PPCL had also given similar views. Based on the discussions the finalised guidelines/procedure for certification of Open Cycle Generation is enclosed at **Annexure-III.**

DATE AND TIME OF THE NEXT MEETING

The date and venue of next (36th) meeting of the Commercial Sub-committee would be intimated later.

Annexure-III

Guidelines/Procedure for Certification of Open Cycle Operation of Combined Cycle Gas Based Generating Stations

1. When operating under full module, if the schedule of generation given by NRLDC is less than 55% of the MCR loading of the module, one GT may go under Reserve shutdown and the unit may operate under part-module condition. Subsequently, when the injection schedule for the station is more than the on bar declared capacity of the part-module, GT under RSD may be brought on bar. Open Cycle Generation for the 2nd GT may be certified up to a maximum of 1.0 hrs in case of hot start up, 2.0 hrs in case of warm start up and 2.5 hrs in case of cold start up.
2. When operating under half module, if the injection schedule given by NRLDC is less than 55% of the MCR loading of the part-module, the entire module may go under Reserve shutdown. Subsequently, when schedule received is more than 55% of the MCR loading, then one or more GT may be brought back in operation. Open Cycle Generation for the 1st GT may be certified up to a maximum of 1.0 hrs in case of hot start up, 2.5 hrs in case of warm start up and 4.0 hrs in case of cold start up. For 2nd GT, the time certified for Open Cycle Generation would be same as in case of (1) above.
3. When operating under full module, if the schedule of generation given by NRLDC is less than 55% of the MCR loading of the part module, all GTs may go under Reserve shutdown. The procedure for open cycle certification shall be as in case (2) above.
4. No maintenance activities on unit under RSD shall be undertaken by the Generating station, otherwise Open Cycle Generation shall not be certified.
5. When a GT is started within 3 hours of shutdown, it would be considered as a hot start-up, 3 to 24 hours warm start-up, and beyond 24 hours cold start-up.
6. Open Cycle Generation shall also be certified when:
    a. If STG is under outage and instruction for running GT(s) on Open Cycle is given by NRLDC.
    b. If the unit is re-started after tripping due to grid contingencies.

c. If the unit is re-started after scheduled OEM inspection and/or statutory boiler inspection duly approved in the OCC meetings and schedule is given for running these units.

7. The generating station shall submit the requisite data to NRPC Secretariat for the period for which it seeks certification of open cycle generation.

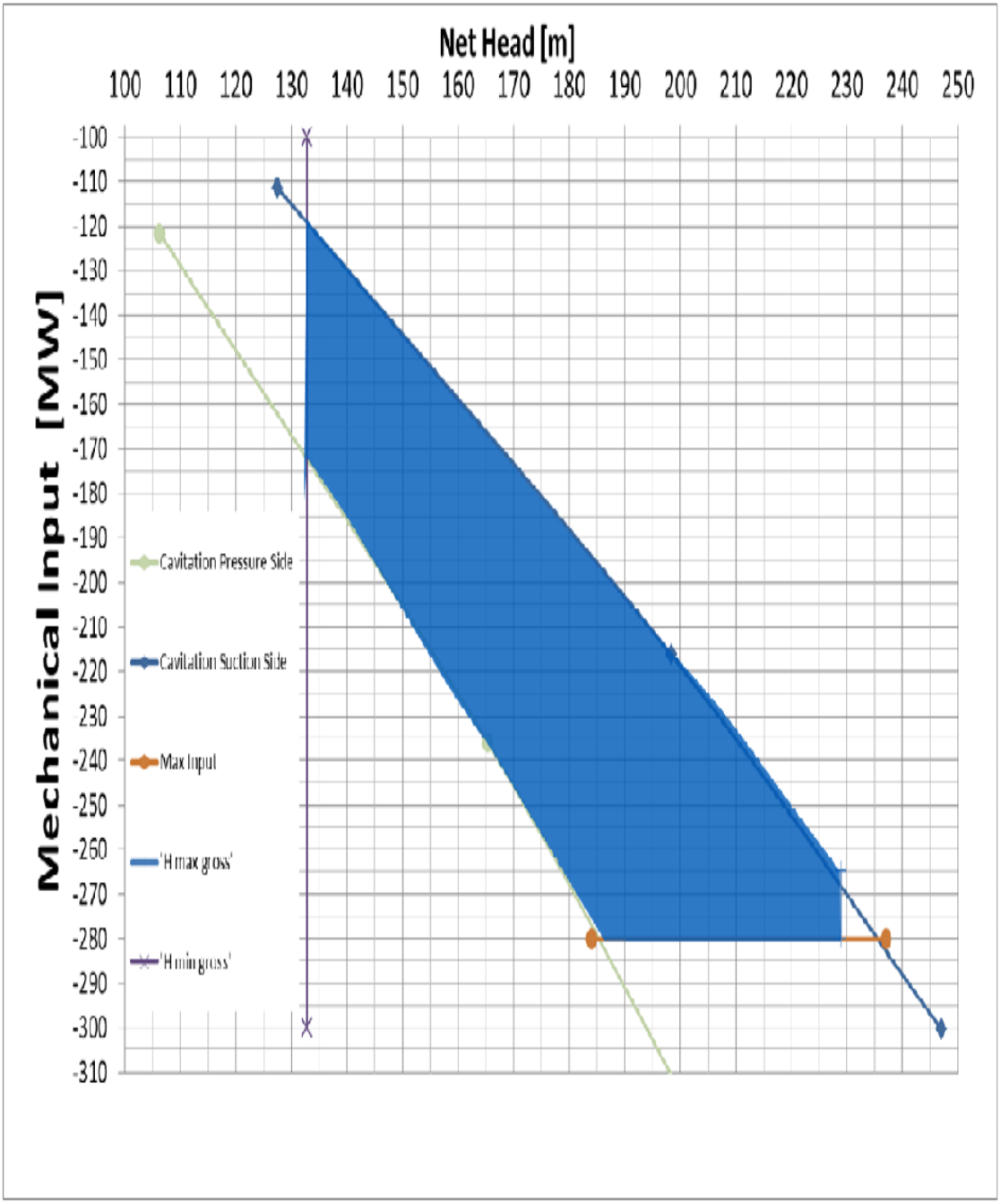

Fig. Cavitation limit curve Power at input power at Machine terminals.

Global performances simulation with minimum speed = 210 rpm

Yellow : Values taken from witnessed model test perfomances of pump turbine

Blue : calculations

Grey : Values taken from contract agreement without any change

ITEM	Unit	Min	Values									Max
Gross Head (GH)	m	127.5	140	150	160	170	180	190	200	210	220	~~227~~ 224
Duration	%	11.78%	11.40%	7.11%	7.11%	7.11%	7.11%	7.11%	7.11%	7.11%	7.46%	19.59%
Discharge per unit* (Qp)	m3/s	128.01	116.24	106.76	101.96	105.08	108.15	112.22	114.00	116.83	119.56	117.43
Duration of Pumping (Tp)	minutes	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
Volume of Water Pumped (Vp)	Cum	3225753	2929134	2690441	2569373	2647928	2725275	2828002	2872718	2944022	3012910	2959124
Head Losses initial coefficient K=3.58879 E-4 m/(m3/s)2 for 2 units		3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04	3.59E-04
Head Losses calculation	mcW	5.88	4.85	4.09	3.73	3.96	4.20	4.52	4.66	4.90	5.13	4.95
Pump Efficiency	%	0.939123	0.944806	0.946536	0.946091	0.946218	0.946339	0.946494	0.946559	0.946661	0.946756	0.94612
Continuous Pump Input	MW	178.0	174.5	170.1	172.7	189.1	206.1	225.8	241.3	259.6	278.3	278.2
Bearing losses	kW	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Generator Efficiency (including losses in the variable speed drive and IPB)	%	0.9771	0.9775	0.9768	0.9766	0.9773	0.9783	0.9791	0.9794	0.9795	0.9791	0.9789
Step-up Transformers on-load Losses	kW	370	362	355	344	365	404	447	510	567	663	696
Transformer Efficiency	%	0.9980	0.9980	0.9980	0.9980	0.9980	0.9979	0.9979	0.9978	0.9977	0.9976	0.9975
Auxiliaries Power Consumption	kW	364.9	364.9	364.9	364.9	364.9	364.9	364.9	364.9	364.9	364.9	364.9
Line Losses (from GIS to Interface building)	kW	4.46	4.31	4.16	3.93	4.37	5.14	6.00	7.27	8.42	10.35	11.01
Line Efficiency	%	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999	0.99999
Power Consumption at Interface Building	MW	183.0	179.3	175.0	177.7	194.3	211.5	231.5	247.3	266.1	285.4	285.3
Energy Consumed in Time Tp (Ep)	MWhr	1280.8	1255.0	1224.9	1243.7	1360.3	1480.5	1620.5	1731.2	1862.6	1997.7	1997.2
Overall Efficiency in Pump Mode at Interface Building[1]	%	0.871	0.888	0.895	0.898	0.899	0.901	0.901	0.902	0.902	0.902	0.902

ANNEXURE-1

Annexure-VI

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\TS-11\380

Date: 23 June 2023

To,

Managing Director & CEO
Adani Transmission Ltd.
Shantigram, Near Vaishnodevi Circle,
S G Highway, Ahmedabad-382421, Gujarat.

Sub: Uprating of low rating switchgear at 400kV Mahendragarh

Sir,

The issues related to low ratings of switchgear at Mahendragarh have been discussed in various NRPC (Northern Region Power Committee), NRPCTP (Northern Region Power Committee on Transmission Planning) & NRSCT (Northern Region Standing Commitee on Transmission) meetings. As per Transmission Planning Criteria, the thermal capacity of Quad Moose line is 2180 MVA at 45° ambient temperature. However, as the isolators at 400 kV Dhanonda and Mohindergarh stations are rated at only 2 kA, the thermal capacity of respective lines gets limited to only 1385 MVA (1.732*400*2).

Due to switchgear related issues, bypass of 400kV Mahendragarh-Dhanoda D/C and 400kV Dhanoda-Neemrana D/C at 400kV Dhanoda has been done; operating these lines as 400kV Mahendragarh-Neemrana D/C. The issue has been discussed in number of meetings & HVPNL has agreed for switchgear replacement work in these meetings. As per latest discussions held in 208 OCC meeting held on 20.06.2023, HVPNL has informed that they have floated tender for switchgear replacement work at 400kV Nawada & Dhanonda.

Since the bays at 400kV Mahendragarh are under ownership of ATIL, it is requested that switchgear replacement work are also carried out at Mahendragarh end so that after swithchgear replacement at 400kV Dhanonda, there is no limitation at Mahendragarh end and 400kV Mahendragarh-Dhanonda D/C line could be loaded to its thermal capacity in case of any contingency.

It is requested to advise the concerned for necessary actions in this regard so that full line capacity are available during grid operation without any restriction due to switchgear ratings.

Thanking You,

Yours faithfully

23/06/2023

(Somara Lakra)
Chief General Manager (System Operations)

Copy for kind information:

1. Member (Grid Operation & Distribution), Central Electricity Authority, Sewa Bhawan, R.K.Puram, Sector-1,New Delhi-110 066
2. Member Secretary, NRPC, 18-A, SJSS Marg, Katwaria Sarai – 110016
3. Chairman & Managing Director, Grid-India, B-9 Qutub Institutional Area, Katwaria Sarai, New Delhi-110016
4. Executive Director, NRLDC, 18-A, SJSS Marg, Katwaria Sarai – 110016
5. Executive Director, NLDC, 18-A, B-9 Qutub Institutional Area, Katwaria Sarai, New Delhi-110016

2	400kV Mahendragarh-Dhanonda D/C	All time	Remarks: High Loading was observed during to less/outage of generation at CLP Jhajjar (35% of time, generation was under outage & 30% of time under less generation.	The line is a 5 km quad line, but the switchgears at both the ends are of 2000A, therefore, upgradation of switchgear should be taken up by HVPNL. HVPNL was requested to carry out the upgradion works at the earliest. HVPNL informed that the average load of about 700 MW (each ckt) is continuously running on the said line. However, they agreed for carrying out the equipment upgradation at both the sub-stations.
3	400kV Singrauli-Anpara	All time	Full generation at Singrauli / Rihand and with Rihand stage-3 Unit # 5 & 6 is also evacuating through the same complex, loading of Singrauli-Anpara becomes very high. Sometime due to low generation at Anpara – A, B & C and high generation at Rihand-Singrauli Complex, 400kV Singrauli-Anpara often get overloaded. Remarks: Multiple connectivity should be ensured for Singrauli-Anpara Or uprating of existing 400kV Singrauli- Anpara	CEA stated that the problem would be relieved after commissioning of connectivity line with WR. However, joint studies could be carried out for opening of 400kV Singrauli-Anpara line. Power evacuation from the complex needs review.
4	400kV Anpara-Obra	Some times	Connected to generating station. (Anpara-B & C). Remarks: Loading on the same lines has reduced after the commissioning of 660MW generating unit-1 at Bara. The loading may likely to be increased in case of N-1 contingency of 765kV Bara – Mainpuri ckt-2 or N-1 contingency of single 765/400kV ICT at Mainpuri	UPPTCL stated that after Anpara D-Unnao 765 kv line likely to be commissioned by Nov. 2017, these will be relieved. Further joint studies would involve this line also.
5	400kV Anpara-Sarnath-1 & 2	All time	Connected to generating station (Anpara-B & C). Remarks: The loading may be reduced after commissioning of Anpara D – Unnao S/c line.	
6	400 kV Bamnoli-Jhatikara D/C line	Some time	Connected to 765 kV Jhatikara S/S	DTL informed that the incidence of tower collapse occurred on this line, however the same is expected to be erected by 15.08.2017

Minutes of 40th Meeting of Standing Committee on Power System Planning of Northern Region held on 22nd June, 2018 (Friday) in New Delhi

List of participants is enclosed at Annexure-I.

Member (Power System), CEA welcomed the participants to the 40th meeting of the Standing Committee on Power System Planning of Northern Region (SCPSPNR). He informed that Ministry of Power has constituted the "Northern Region Standing Committee on Transmission" (NRSCT) along with its Terms of Reference (ToR) and the frequency of meeting (at least once in three months). Therefore, future meetings on power system planning of NR would be held as NRSCT meetings. He requested Chief Engineer, CEA to take up the agenda.

Chief Engineer (PSPA-I), CEA stated that we are meeting after a gap of one year and the agenda for the meeting interalia, includes important issues viz. evacuation of power from Singruli STPP, Khurja STPP, 4000 MW of Solar Park in Budelkhand area etc. He requested members to be specific in deliberation so that decisions could be arrived at through consensus. This is the last meeting of the SCPSPNR and the next meeting will be called the first meeting of NRSCT. The constitution of NRSCT mandates the meeting to be held every quarter. He requested constituents to send their proposals to CEA as soon as they conceive them, so as to facilitate preparation of the agenda for NRSCT in advance. He requested Director (PSPA-I), CEA to take up the agenda items for discussions.

1.0 Confirmation of the Minutes of the 39th meeting of the Standing Committee on Power System Planning of Northern Region held on 29-30th May, 2017.

1.1 CEA stated that the minutes of 39th meeting of the SCPSPNR were issued vide CEA letter no. 1/9/39/2017/PSP&PA-I/783-802 dated 28thJuly, 2017. Subsequently, PGCIL, HVPNL, PTCUL and RRVPNL had made some observations on the minutes of the meeting. Based on their observations a corrigendum to the minutes of 39th meeting of SCPSPNR was issued vide CEA's letter no. 1/9/39/PSP&A-I/2017/1462-1480 dated 28.12.2017 (copy enclosed at **Annexure-II).** No further comments have been received from the constituents.

1.2 He further stated that in the 39th meeting of SCPSPNR, upgradation of equipment at both ends of 400 kV Mahendragarh-Dhanonda D/C line was agreed (under Sl no. 2 of Item no. 20 'Operational feedback'). In the corrigendum to the minutes of 39th meeting of SCPSPNR, it was mentioned that the equipment upgradation at Dhanonda end would be carried out by HVPNL. However, regarding equipment upgradation at Mahendragarh end nothing was mentioned. Mahendragarh being an ISTS sub-station, the 400 kV equipment upgradation at the sub-staion would be carried out under ISTS.

1.3 Members were requested to confirm the minutes of the meeting along with the Corrigendum and 400 kV equipment upgradation works at Mahenderagarh substation under ISTS.

1.4 Members confirmed the same.

OCC forum agreed that the matter may be discussed separately between CTUIL, POWERGRID, NRPC, NRLDC and RE developers and then discussed again in OCC forum.

c) Uprating of low rating switchgear at 400kV Nawada, Dhanoda & Mahendragarh

The issues related to low ratings of switchgear at Nawada, Dhanoda & Mahendragarh have been discussed in various NRPC (Northern Region Power Committee), NRPCTP (Northern Region Power Committee on Transmission Planning) & NRSCT (Northern Region Standing Commitee on Transmission) meetings. As per Transmission Planning Criteria, the thermal capacity of Quad Moose line is 2180 MVA at 45˚ ambient temperature. However, as the isolators at 400 kV Nawada, Dhanonda and Mohindergarh stations are rated at only 2 kA, the thermal capacity of respective lines gets limited to only 1385 MVA (1.732*400*2).

These limitations have already caused constraints in real-time operation on many occasions and accordingly the switchgear related issues were raised by NRLDC through written communication and in various meetings (NRPC, OCC, NRSCT, NRPCTP). Due to switchgear related issues, bypass of 400kV Mahendragarh-Dhanoda D/C and 400kV Dhanoda-Neemrana D/C at 400kV Dhanoda has been done; operating these lines as 400kV Mahendragarh-Neemrana D/C.

The issue has been discussed in number of meetings & HVPNL has agreed for switchgear replacement work in these meetings. However, as per information available with NRLDC, the switchgear replacement work are yet to be completed.

In the meeting, HVPN representative informed that the price bid have been opened for switchgear replacement at Nawada & Dhanoda.

OCC forum discussed that for bays at Mahendragarh, switchgear replacement work may be carried out by ATIL (Adani Transmission) and asked HVPN to expedite switchgear upgradation work at Nawada & Dhanoda.

d) Issues in declaration of AVC by RE Plants

NRLDC representative stated that it has been observed that some RE plants such as (300MW Azure Mapple, 300 MW Acme Heergarh, RSRPL connected at Bikaner (PG), 130 MW Azure Power 34 at Bhadla (PG) and 200 MW Azure at Adani Bhadla and 300 MW Thar Surya 1 at Bikaner (PG)) are submitting full AvC (Available capacity) whereas the maximum generation is far less than the AvC/contract capacity/Installed Capacity and also Low CUF are being observed in these plants compared to other RE plants. Matter was already apprised in 204th OCC forum, CEA and Bidding agencies such as SECI, MSEDCL.

Annexure-3

UPRATING OF SWITCHGEARS AT 400kV MAHINDERGARH Station for Dhanoda Circuits					
Sr. No.	**Description**	**Unit**	**Existing Equipment designation**	**Qty**	**Spare Qty**
1.0	**420 kV, 3150A Circuit Breakers, 50kA** (3pole) along with operating mechanism, all accessories, auxiliaries and marshalling boxes/kiosks along with support structure(3 phase unit)	nos.	20C02.A-QO, 20C02.B-QO, 20C02.C-QO 20C03.A-QO, 20C03.B-QO, 20C03.C-QO	6	1
2.0	**Current Transformers** (1 Phase) SF6 Type 420kV, 3150A, 5 Core CT, 50 kA, 1 Sec.	Nos.	20C02.A-T1, 20C02.B-T11, 20C02.C-T1, 20C03.A-T1, 20C03.B-T11, 20C03.C-T1, 20C02.C-T2, 20C03.A-T2	24	2
3.0	**Isolators/Disconnecting Switches** 420kV Disconnector with 1 grounding switch (3 phase unit) 3150A, 50kA, 1 sec	Nos.	20C02A-Q1/-Q51, 20C02.A-Q6/-Q52, 20C02.B-Q61/-Q51, 20C02.B-Q62/-Q52, 20C02.C-Q9/-Q8, 20C02.C-Q2/-Q51, 20C02.C-Q6/-Q52 20C03A.Q9/-Q8, 20C03.A-Q1/-Q51, 20C03.A-Q6/-Q52 20C03.B-Q61/-Q51, 20C03.B-Q62/-Q52 20C03.C-Q2/-Q51, 20C03.C-Q6/-Q52	14	2
4.0	Conductor ACSS 31.77 mm	metre	Twin Bersimis	LOT	
5.0	Clamps and connector suiatble for HTLS to Bersimis Conductor and above equipment connectors	nos.	existing	LOT	
6.0	Al. Tube 4inch	metre	4 Inch EHIPS Tube	LOT	1
7.0	Cabling works Augmentation	metre	existing	LOT	
8.0	Earthing works Augmentation		existing	LOT	
a	Earth rod	metre	existing	LOT	
b	GI Flats	Metre	existing	LOT	
c	Gravelling	Cu.m	existing	LOT	
9.0	Civil Cost	LS			

UPRATING OF SWITCHGEARS AT 400kV MAHINDERGARH Station for Bhiwani Circuits					
Sr. No.	**Description**	**Unit**	**Existing Equipment designation**	**Qty**	**Spare**
1.0	**Current Transformers** (1 Phase) SF6 Type 420kV, 3150A, 50 kA, 1 Sec.	Nos.	20C02.A-T2, 20C03.C-T2	6	1
2.0	**Isolators/Disconnecting Switches** 420kV Disconnector with 1 grounding switch (3 phase unit) 3150A, 50kA, 1 sec	Nos.	20C02A-Q9/-Q8, 20C02.C-Q9/-Q8,	2	1
3.0	Wave trap 3150 A, 1 mH(1 Phase)	Nos.		4	
4.0	Conductor ACSS 31.77 mm	metre	Twin Bersimis	LOT	
5.0	Clamps and connector suiatble for HTLS to Bersimis Conductor and above equipment connectors	nos.	existing	LOT	
6.0	Al. Tube 4inch	metre	4 Inch EHIPS Tube	LOT	
7.0	Cabling works Augmentation	metre	existing	LOT	
8.0	Earthing works Augmentation		existing	LOT	
a	Earth rod	metre	existing	LOT	
b	GI Flats	Metre	existing	LOT	
c	Gravelling	Cu.m	existing	LOT	
9.0	Civil Cost	LS			

I/31405/2023

ANNEXURE-VII

सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

विषय: Minutes of the meeting to discuss the status of Automatic Demand Management Scheme (ADMS) implementation in Northern Region-reg.

Kindly find attached the minutes of the meeting held on **17.10.2023 (11:00 AM)** to discuss the status of Automatic Demand Management Scheme (ADMS) implementation in Northern Region.

Signed by Santosh Kumar
Date: 03-11-2023 15:14:11
Reason: Approved

(संतोष कुमार)

अधीक्षण अभियंता (प्रचालन)

सेवा में,

1. GM, NRLDC
2. Chief Engineer of all SLDC's of NR region

Minutes of the meeting held on 17.10.2023 (11:00 HRS) to discuss the status of Automatic Demand Management Scheme (ADMS) implementation in Northern Region

1. SE(O), NRPC welcomed all the participants and mentioned that Status of implementation of ADMS in Northern Region is regularly taken up as follow up agenda in the monthly OCC meetings of NRPC. Further, status of ADMS implementation in NR has also been reviewed by Member Secretary, NRPC in the special meetings held on 13.06.2023. To expedite the implementation of ADMS in NR, this meeting has been called.
2. EE(O), NRPC briefed the participants that as per Regulation No. 36 (2) of the Indian Electricity Grid Code, 2023 which states that every SLDC, in coordination with STU and Distribution Licensee (s), shall develop Automatic Demand Management Scheme with emergency controls at SLDC to ensure network security.
3. In this regard, SE(O) NRPC asked concerned SLDC's of NR States/UT to apprise the present status of ADMS in their control area and highlight constraints, if any faced by them in its implementation.
4. GM, NRLDC mentioned that clause 45.7 outlines the objective of ADMS, which is to maintain the **ACE (Area Control Error)** close to zero.

   "The concerned Load Despatch Centre and other drawee regional entities shall keep their Area Control Error close to zero (0) by rescheduling, deploying reserves and automatic demand management scheme."
5. Representative from Punjab SLDC mentioned that at SLDC level, 200 No. 66 kV feeders corresponding to 68 no. RTU stations are already configured in SCADA system at Punjab for carrying out Remote Load Shedding. Further, PSPCL has submitted a list of 89 No. 66 kV feeders out of the above 200 No. feeders list, which have been verified by PSPCL for performing remote operation, which will not cause outage of any important feeders down the lines i.e. Airport feeders, Industrial/Hospital feeders etc.
6. Further, Punjab SLDC mentioned that other logics for ADMS scheme will be decided during the execution of ULDC PH-III, keeping in mind scenario of Network conditions at that point of time, as there is a continuous change in Network Grid & Loading conditions owing to LILO of lines, New Substations, Upgradation of Sub-stations etc.
7. SE(O), NRPC asked Punjab SLDC to give a timeline for implementation of ADMS in their control area to which Punjab SLDC replied that ULDC Ph-III work is expected to be completed by December'24.
8. Representative from RVPN informed that RVPN has pilot tested the logic of ADMS which is to be implemented in Rajasthan. Further, he also intimated that in co-ordination with RUVNL they have come up with the criteria for operation of ADMS

system and have developed the logic for all three discoms in the state of Rajasthan.

9. However, the total drawl of Rajasthan and frequency which is available on SLDC SCADA servers could not be fetched to the command control centre's server (STNAMS project) due to the issue of cyber security of ICCP link. RVPN is working towards resolving this issue.

10. Representative from Delhi SLDC apprised that manual intervention is there in the operation of ADMS for Delhi. He mentioned that their discoms have reservation that in case where Delhi as a whole is under drawing and one DISCOM is overdrawing, a fully automatic ADMS would shed the load of that DISCOM, leading Delhi as a whole to under drawl more from the grid. As discussed in the 64th NRPC meeting, to overcome above issue it has been suggested to add a logic to the ADMS that could sense the overall drawl of Delhi before its operation to ensure certainty of action.

11. GM, NRLDC asked Delhi SLDC to decide the base line frequency of operation of ADMS in their control area in coordination with its discom as per their system requirement.

12. Representative from UPSLDC informed that to formulate the roadmap for the implementation of ADMS at DISCOM level, a meeting was scheduled on 21st August 2023, However, in the said meeting the cited agenda could not be discussed due to absence of representative from UP DISCOMs.

13. SE(O), NRPC asked UPSLDC to highlight this matter at highest level of its management as no response is received from UP DISCOMs till date.

14. Representative from Haryana SLDC intimated that to proceed on action for implementation of ADMS in Haryana, a joint meeting was conveyed by the Director Technical HVPN wherein it was decided that a team of officers from SLDC, HVPN and both the discoms of Haryana would visit a State with similar load pattern, wherein ADMS is operation. Accordingly, a team of officers visited Jaipur, RRVPNL to have an insight into the implementation status of ADMS. Based upon their learning SLDC has prepared a roadmap of the ADMS implementation plan to be executed in the state of Haryana.

15. Haryana SLDC representative intimated that internally it has been decided that to begin with the voltage level for ADMS implementation may be limited to 33kV. At present, there are 167 no. of 33kV feeders wired for remote operation from the control centre. Essential feeders would have to be filtered out by discoms among these feeders, for consideration under ADMS along with providing the priority of operation based on the quantum of load required to be shed.

16. Further, he mentioned that revised road map of implementation of ADMS at 33kV level is under approval of their management and it would be shared with NRPC Sectt. and NRLDC upon approval of the same by their management.

17. SE(O), NRPC asked Haryana SLDC to begin with they may start with the feeders where the telemetry is available.

18. Representative from HPSLDC stated that roadmap for implementation of ADMS in HP state has been submitted to NRPC. As per the proposed logic for ADMS operation whenever frequency is less than or equal to 49.85 Hz load shed will be equal to the overdrawl quantum so as to make Area Control Error zero. Further, when frequency goes above 49.85 Hz a restore signal shall be generated from ADMS system to respective stations.

19. SE(O), NRPC stated that the logic proposed by HPSLDC needs to be reviewed as they have proposed case with frequency below 49.4 Hz at which UFR operation would come into effect. Hence, he asked HPSLDC to share its proposed logic with NRLDC and NRLDC to submit its observation on the same.

20. Representative from HPSLDC further informed that HPSEBL has identified and supplied the detail of 142 Nos. feeders that may be operated through ADMS functionality and work related to interfacing control wiring with existing Interposing Relay and RTU is pending at discom end.

21. Uttarakhand Discom representative intimated that they are targeting to implement ADMS in their control area at 11kV level for which they are conducting a field study which they expect to complete by this month. Uttarakhand Discom has informed that they have floated a tender for automatic demand response at 11kV level.

22. SE(O) asked Uttarakhand SLDC to identify the feeders at which the remote operation is possible that can be considered for ADMS implementation.

23. After detailed deliberation in the meeting, following were decided:

- Delhi SLDC to add a logic to the ADMS that could sense the overall drawl of Delhi before its operation to ensure certainty of action. Further, Delhi SLDC to decide the base line frequency of operation of ADMS in their control area in coordination with its discom as per their system requirement.

- UPSLDC to highlight the issue at the highest level of its management of non-cooperation/support from its DISCOMS on implementation of ADMS.

- Haryana SLDC to submit its road map for ADMS implementation after approval of its management.

- HPSLDC to submit its logic cases for ADMS implementation to NRLDC for review as they have considered frequency of operation below 49.4 Hz.

- Uttarakhand SLDC to identify the feeders at which the remote operation is possible that can be considered for ADMS implementation.

Meeting ended with vote of thanks to the Chair.

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ANNEXURE-VIII

MIS Report for Status of Islanding Schemes

Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healitheness	SOP	SCADA Display Page	Remarks
1	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
2	RAPS IS	Rajasthan	Implemented	16-Aug-21	Yes	Yes	List of officials in-charge, format for generation, islanding scheme sld and relays in RAPP IS submitted by RVPN on 04.12.2021.

Under Implementation/ Newly Proposed/Under Discussion

Sl. No.	Islanding Scheme	SLDC	Status	Details of progress	DPR for PSDF funding (Require	Timelines Status - Proposed/Actual									
						Study		Design		Approval		Procurement		Commissioning	
						Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
1	Lucknow-Unchahar IS	UP	Under Implementation	Scheme has been approved in 59th NRPC meeting held on 31.10.2022. Installation of Ufrs is almost complete. Timeline to be intimated by UPPTCL.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Under Study	UP has placed offer to CPRI for dynamic study in July, 2022. Final Study report has been submitted by CPRI to UPPTCL. Timeline to be intimated by UPPTCL		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022.Preparation of DPR is under finalization. Timeline to be intimated by RVPN	-	-		-	-	-	-	-	-	-	-
4	Suratgarh IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Preparation of DPR is under finalization. Timeline to be intimated by RVPN	-	-		-	-	-	-	-	-	-	-
5	Patiala-Nabha Power Rajpura IS	Punjab	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Implementation timeline: March,2024		-		-	-	-	-	-	-	-	-
6	Pathankot-RSD IS	Punjab	Implemented	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Scheme has been implemented in April 2023 as informed by Punjab in 206th OCC. Testing Reports submitted by Punjab.		-		-	-	-	-	-	-	-	-
7	Kullu-Manali-Mandi IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Timeline to be intimated by HPSLDC		-		-	-	-	-	-	-	-	-
8	Shimla-Solan IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. Timeline to be intimated by HPSLDC		-		-	-	-	-	-	-	-	-
9	Delhi IS	Delhi	Under Implementation	Scheme has been approved in 68th NRPC meeting held on 18.08.2023. Revised scheme is expected to be impletented by Nov'23.		-		-	-	-	-	-	-	-	-

ANNEXURE-IX

Draft of Revised Protection Philosophy/Protocol of Northern Region

S.N.	Protection Setting/Protocol	Mandated Setting
1	**Protection Scheme**	**220kV and above:** Independent Main-I and Main-II protection (of different make OR different type/different algorithm) of non-switched numerical type is to be provided with carrier aided scheme. **132kV and below:** One non-switched distance protection scheme and, directional over current and earth fault relays, should be provided as back up.
2	**Distance Protection Zone-1**	80% of the Protected line; Time Setting: Instantaneous.
3	**Distance Protection Zone-2**	0.35 second *(considering LBB time of 200mSec, CB open time of 60ms, resetting time of 30ms and safety margin of 60ms)* For a long line followed by a short line: 0.6 second
4	**Distance Protection Zone-3**	Zone-3 should overreach the remote terminal of the longest adjacent line by an acceptable margin (typically 20% of highest impedance seen) for all fault conditions. Time Setting: 800-1000 msec
5	**Distance Protection Zone- 4**	The Zone-4 reverse reach must adequately cover expected levels of apparent bus bar fault resistance. Time may be coordinated accordingly.

		Where Bus Bar protection is not available, time setting: 160 msec
6	**Lines with Series and other compensations in the vicinity of Substation**	• Zone-1: 80% of the protected line with 100ms-time delay. POR Communication scheme logic is modified such that relay trips instantaneously in Zone-1 on carrier receive. • Zone-2: 120 % of uncompensated line impedance for single circuit line. For Double circuit line, settings may be decided on basis of dynamic study in view of zero sequence mutual coupling. • Phase locked voltage memory is used to cope with the voltage inversion. Alternatively, an intentional time delay may be applied to overcome directionality problems related to voltage inversion. • over-voltage stage-I setting for series compensated double circuit lines may be kept higher at 113%.
7	**Power Swing Blocking**	Block tripping in all zones, all lines. Out of Step tripping to be applied on all inter regional tie lines. Deblock time delay = 2s
8	**Protection for broken conductor**	Negative Sequence current to Positive Sequence current ratio more than 0.2 (i.e. I2/I1 ≥ 0.2) Only for alarm: Time delay = 3-5 sec
9	**Switch on to fault (SOTF)**	Switch on to fault (SOTF) function to be provided in distance relay to take care of line energization on fault

10	**VT fuse fail detection function**	VT fuse fail detection function shall be correctly set to block the distance function operation on VT fuse failure.
11	**Carrier Protection**	To be applied on all 220kV and above lines with the only exception of radial feeders.
12	**Back up Protection**	On 220kV and above lines with 2 Main Protections: • Back up Earth Fault protections alone to be provided. • No Over current protection to be applied. At 132kV and below lines with only one Main protection: • Back up protection by IDMT O/C and E/F to be applied.
13	**Auto Re-closing with dead time.**	AR shall be enabled for 220 kV and above lines for single pole trip and re-closing. Dead time = 1.0s. Reclaim time = 25.0s Auto-recloser shall be blocked for following: • faults in cables. • Breaker Fail Relay • Line Reactor Protections • O/V Protection • Received Direct Transfer trip signals • Busbar Protection • Zone 2/3 of Distance Protection • Circuit Breaker Problems.
14	**Busbar protection**	To be applied on all 220kV and above sub stations with the only exception of 220kV radial fed bus bars.

15	**Local Breaker Backup (LBB)**	For 220 kV and above level substations as well as generating stations switchyards, LBB shall be provided for each circuit breaker. LBB Current sensor I > 20% In LBB time delay = 200ms
16	**Line Differential**	For cables and composite lines, line differential protection with built in distance back up shall be applied as Main-I protection and distance relay as Main-II protection. For very short line (less than 10 km), line differential protection with distance protection as backup (built-in Main relay or standalone) shall be provided mandatorily as Main-I and Main-II.
17	**Over Voltage Protection**	FOR 765kV LINES/CABLE: Low set stage (Stage-I): 106% - 109% (typically 108%) with a time delay of 5 seconds. High set stage (Stage-II): 140% - 150% with a time delay of 100 milliseconds. 400kV LINES/CABLE: Low set stage (Stage-I): 110% - 112% (typically 110%) with a time delay of 5 seconds. High set stage (Stage-II): 140% - 150% with a time delay of 100 milliseconds. FOR 220 KV LINES: No over-voltage protection shall be used. FOR 220 KV CABLE: Low set stage (Stage-I): 110% - 112% (typically 110%) with a time delay of 5 seconds.

		High set stage (Stage-II): 140% - 150% with a time delay of 100 milliseconds. Drop-off to pick-up ratio of overvoltage relay: better than 97% Grading: Voltage as well as time grading may be done for multi circuit lines/cable.
18	**Resistive reach / blinder setting to prevent load point encroachment**	Following criteria may be considered for deciding load point encroachment: • Maximum load current (Imax) may be considered as 1.5 times the thermal rating of the line or 1.5 times the associated bay equipment current rating (the minimum of the bay equipment individual rating) whichever is lower. (Caution: The rating considered is approximately 15minutes rating of the transmission facility). • Minimum voltage (Vmin) to be considered as 0.85pu (85%).
19	**Direct Inter-trip**	To be sent on operation of following: Overvoltage Protection LBB Protection Busbar Protection Reactor Protection Manual Trip
20	**Permissive Inter-trip**	To be sent on operation of Distance Protection

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CHAPTER 4

PROTECTION CODE

12. GENERAL

(1) This chapter covers the protection protocol, protection settings and protection audit plan of electrical systems.

(2) There shall be a uniform protection protocol for the users of the grid:

(a) for proper co-ordination of protection system in order to protect the equipment/system from abnormal operating conditions, isolate the faulty equipment and avoid unintended operation of protection system;

(b) to have a repository of protection system, settings and events at regional level;

(c) specifying timelines for submission of data;

(d) to ensure healthiness of recording equipment including triggering criteria and time synchronization; and

(e) to provide for periodic audit of protection system.

13. PROTECTION PROTOCOL

(1) All users connected to the integrated grid shall provide and maintain effective protection system having reliability, selectivity, speed and sensitivity to isolate faulty section and protect element(s) as per the CEA Technical Standards for Construction, the CEA Technical Standards for Connectivity, the CEA (Grid Standards) Regulations, 2010, the CEA Technical Standards for Communication and any other applicable CEA Standards specified from time to time.

(2) Back-up protection system shall be provided to protect an element in the event of failure of the primary protection system.

(3) RPC shall develop the protection protocol and revise the same, after review from time to time, in consultation with the stakeholders in the concerned region, and in doing so shall be guided by the principle that minimum electrical protection functions for equipment connected with the grid shall be provided as per the CEA Technical Standards for Construction, the CEA Technical Standards for Connectivity, the CEA Technical Standards for Communication, the CEA (Grid Standards) Regulations, 2010, the CEA (Measures relating to Safety and Electric Supply) Regulations, 2010, and any other CEA standards specified from time to time.

(4) The protection protocol in a particular system may vary depending upon operational experience. Changes in protection protocol, as and when required, shall be carried out after deliberation and approval of the concerned RPC.

(5) Violation of the protection protocol of the region shall be brought to the notice of concerned RPC by the concerned RLDC or SLDC, as the case may be.

14. PROTECTION SETTINGS

(1) RPCs shall undertake review of the protection settings, assess the requirement of revisions in protection settings and revise protection settings in consultation with the stakeholders of the respective region, from time to time and at least once in a year. The necessary studies in this regard shall be carried out by the respective RPCs. The data including base case (peak and off-peak cases) files for carrying out studies shall be provided by RLDC and CTU to the RPCs:

(2) All users connected to the grid shall:

(a) furnish the protection settings implemented for each element to respective RPC in a format as prescribed by the concerned RPC;

(b) obtain approval of the concerned RPC for (i) any revision in settings, and (ii) implementation of new protection system;

(c) intimate to the concerned RPC about the changes implemented in protection system or protection settings within a fortnight of such changes;

(d) ensure correct and appropriate settings of protection as specified by the concerned RPC.

(e) ensure proper coordinated protection settings.

(3) RPCs shall:

(a) maintain a centralized database and update the same on periodic basis in respect of their respective region containing details of relay settings for grid elements connected to 220 kV and above (132 kV and above in NER). RLDCs shall also maintain such database.

(b) carry out detailed system studies, once a year, for protection settings and advise modifications / changes, if any, to the CTU and to all users and STUs of their respective regions. The data required to carry out such studies shall be provided by RLDCs and CTU.

(c) provide the database access to CTU and NLDC and to all users, RLDC, SLDCs, and STUs of the respective regions. The database shall have different access rights for different users.

(4) The changes in the network and protection settings of grid elements connected to 220kV and above (132 kV and above in NER) shall be informed to RPCs by CTU and STUs, as the case may be.

(5) The elements of network below 66kV and radial in nature which do not impact the National Grid may be excluded as finalized by the respective RPC.

15. PROTECTION AUDIT PLAN

(1) All users shall conduct internal audit of their protection systems annually, and any shortcomings identified shall be rectified and informed to their respective RPC. The audit report along with action plan for rectification of deficiencies detected, if any, shall be shared with respective RPC for users connected at 220 kV and above (132 kV and above in NER).

(2) All users shall also conduct third party protection audit of each sub-station at 220 kV and above (132 kV and above in NER) once in five years or earlier as advised by the respective RPC.

(3) After analysis of any event, each RPC shall identify a list of substations / and generating stations where third-party protection audit is required to be carried out and accordingly advise the respective users to complete third party audit within three months.

(4) The third-party protection audit report shall contain information sought in the format enclosed as Annexure–1. The protection audit reports, along with action plan for rectification of deficiencies detected, if any, shall be submitted to the respective RPC and RLDC or SLDC, as the case may be, within a month of submission of third party audit report. The necessary compliance to such protection audit report shall be followed up regularly in the respective RPC.

(5) Annual audit plan for the next financial year shall be submitted by the users to their respective RPC by 31st October. The users shall adhere to the annual audit plan and report compliance of the same to their respective RPC.

(6) Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and above (132 kV and above in NER) system, which shall be reviewed by the RPC:

(a) The Dependability Index defined as $D = \frac{Nc}{Nc+Nf}$

where,

N_c is the number of correct operations at internal power system faults and

N_f is the number of failures to operate at internal power system faults.

(b) The Security Index defined as $S = \frac{Nc}{Nc+Nu}$

Where,

N_c is the number of correct operations at internal power system faults

N_u is the number of unwanted operations.

(c) The Reliability Index defined as $R = \frac{Nc}{Nc+Ni}$

Where,

N_c is the number of correct operations at internal power system faults

N_i is the number of incorrect operations and is the sum of N_f and N_u

(7) Each user shall also submit the reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC.

(8) In case any user fails to comply with the protection protocol specified by the RPC or fails to undertake remedial action identified by the RPC within the specified timelines, the concerned RPC may approach the Commission with all relevant details for suitable directions.

16. SYSTEM PROTECTION SCHEME (SPS)

(1) SPS for identified system shall have redundancies in measurement of input signals and communication paths involved up to the last mile to ensure security and dependability.

(2) For the operational SPS, RLDC or NLDC, as the case may be, in consultation with the concerned RPC(s) shall perform regular load flow and dynamic studies and mock testing for reviewing SPS parameters & functions, at least once in a year. RLDC or NLDC shall share the report of such studies and mock testing including any short comings to respective RPC(s). The data for such studies shall be provided by CTU to the concerned RPC, RLDC and NLDC.

(3) The users and SLDCs shall report about the operation of SPS immediately and detailed report shall be submitted within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.

(4) The performance of SPS shall be assessed as per the protection performance indices specified in these Regulations. In case, the SPS fails to operate, the concerned User shall take corrective actions and submit a detailed report on the corrective actions taken to the concerned RPC within a fortnight.

17. RECORDING INSTRUMENTS

(1) All users shall keep the recording instruments (disturbance recorder and event logger) in proper working condition.

(2) The disturbance recorders shall have time synchronization and a standard format for recording analogue and digital signals which shall be included in the guidelines issued by the respective RPCs.

(3) The time synchronization of the disturbance recorders shall be corroborated with the PMU data or SCADA event loggers by the respective RLDC. Disturbance recorders which are non- compliant shall be listed out for discussion at RPC.

Scope of work for
Centralized Database containing details of relay settings for grid elements connected to 220 kV and above

Scope of software shall be broadly as below for all elements in Northern Region connected to 220 kV and above voltage level:

A. **Protection Settings Database Management System.**
B. **Protection Setting Calculation and Study Tool.**
C. **Repository of DR/EL and analysis.**
D. **Application of protection settings by utilities and its approval by NRPC.**
E. **Reporting of performance indices by utilities.**
F. **Repository of protection audit reports.**

A. Protection Settings Database Management System

1. To create facility to store all types of relay settings of all power system elements (connected to 220 kV and above in Northern Region such as lines, cable, ICT, Reactor/Capacitor, generator, GT, STATCOM/SVC, FSC/TCSC, HVDC) in one system irrespective of the manufacturer and relay type and controlled access to users.
2. Complete modeling of elements with relevant system parameters **based on data received from utilities** for transmission lines, generators, transformers, reactors, substation layouts, and associated protective relays in the substations. The model should include CT, PT, Isolator, Breaker and other bay equipment's ratings along with rating of the BUS and the type of conductor used for the BUS. The modeling should be done as per bus-breaker philosophy instead of node-oriented model.
3. Creation of necessary relay templates of all make and model existing in grid. **Template for electro-mechanical relay shall also be required to be created. Users shall have option to provide settings of electro-mechanical relay.**
4. Option to users to upload relay setting files (downloaded from relay) directly.
5. To capture the life cycle of protection settings and template.
6. To create an interface with Protection Setting Calculation and Study Tool.

7. To provide Role based access control.
8. Building the entire Northern region network data for load flow and fault calculation, Protection database and substation SLD preparation.
9. Hardware setup and software package capable of meeting the above objectives. Associated servers for installation and Deployment of application and database software along with standard Operating System –With Main and Back up.
10. Work flow Management.
11. Availability of historical fault data for predicting nature of fault.
12. The tool should be capable of analyzing, storing, and handling all fault records (Disturbance record, Event Logger, COMTRADE files, etc.) for a minimum period of prescribed years; and the updated database to be used for fault analysis should be permanently available.
13. Reports:
    a. Feature to generate reports as per user requirement.
    b. User can generate report in standard format like .xls, .pdf.
14. History log: All user activities such as user operations, data management, template management, configuration management and workflow shall be logged to track the user activities.
15. Import and Export: There shall be an option to import template and data from any third party application in standard formats like .xml and .xls
16. Relay characteristics curve can be drawn from the setting data.
17. Provision to attach documents to relay template and relay data can be made available. Option to accept setting data as per the audit and verify/compare the field setting with protection database setting and generate error report.
18. Provision to store and retrieve audit reports.
    c. Provision to store and retrieve relay tripping incidence report.
    d. Facility to store and retrieve setting guidelines as per various committees.
    e. Automatic Reconciliation Tool should be available which will generate automatic reconciliation requests for relay settings in the database.
    f. Up-to-date application guides and user manuals of all relays is a part of the relay library.
19. A user-friendly interface with features such as
    a) Web based System.

b) Role based access control
c) Flexible customization of user roles, grants, actions from Master control panel
d) User Access Monitor
e) Relay Template Management
f) Create\Edit\Delete relay templates
g) Viewing relay template
h) Locking and Unlocking templates
i) Copy & Edit templates from the existing template
j) Import and Export templates
k) Relay Data management
l) Create\Edit\Delete relay data
m) Viewing relay data
n) Locking and Unlocking relay data
o) Copy & Edit relay data from the existing data
p) Import and Export relay data

20. Built with standard relays library data for different manufacturers, including but not restricted to the following protection features:

i. Transmission Line & cable (including compensated):

Distance, over current, earth fault, over voltage, Line Differential protection.

ii. Power Transformer:

Differential Protection, Under Impedance protection, Over fluxing Protection, Thermal Overload Protection, Low Impedance Restricted Earth Fault Protection, High Impedance Restricted Earth Fault Protection, back-up over current (Directional/ Non-Directional) and earth fault protection (Directional/ Non-Directional).

iii. Shunt Reactors:

Differential protection, Restricted Earth Fault, Back Up Protection (Impedance / overcurrent)

iv. Generator:

Differential Protection, Stator Earth Fault Protection (Both 95% and 100% protection), Inter – Turn Differential Protection, Backup impedance, Voltage Controlled O/C, Negative Sequence, Field Failure,

Reverse Power/Low forward Power, Pole Slipping, Overload, Over voltage, Under Frequency, Dead Machine, Rotor Earth Fault, Over Fluxing.

v. **Generator Transformer/ Unit Auxiliary Transformer:**

Differential Protection, Back up Earth Fault Protection, Back up over current, Restricted Earth Fault.

vi. **HVDC:**

- Converter Protection: Valve Short Circuit Protection, DC Differential Protection, DC Harmonic Protection, DC Under voltage Protection, DC Overvoltage Protection, AC Over voltage Protection, AC Under voltage Protection, AC Voltage Stress Protection of Converter, Group Differential Protection, Bridge Differential Protection, Overcurrent Protection, Sub-Synchronous Resonance Protection, AC Valve Winding Ground Fault Supervision,
- DC Filter Protection: Capacitor Differential Over current Protection, Capacitor Unbalance Supervision, Inverse Overcurrent Time Protection, DC Filter Differential Protection,
- DC Line Protection: Travelling Wave Front Protection, Under voltage Sensing Protection, Under voltage Operation Protection, DC Line Differential Protection, AC-DC Conductor Contact Protection.
- Electrode Line Protection: Electrode Bus Differential Protection, Electrode Current Balance Protection, Electrode Over Current Protection, Electrode line open circuit Over voltage Protection, Station Ground Overcurrent Protection, Open Conductor Electrode Line Protection
- DC Busbar Protection: HV Side DC Bus bar Differential Protection, Neutral Side DC Busbar Differential Protection, DC Differential Backup Protection, Valve Protection
- Converter Transformer Protection: differential protection, high impedance, restricted earth fault protection, ground earth fault overcurrent protection, thermal overload protection, over-fluxing protection, directional definite time / inverse-time overcurrent protection and directional earth fault overcurrent protection.

- AC Filter Sub-bank Protection (Shunt/Capacitor/Resistor): Differential, overcurrent, overload, unbalance supervision, Zero Sequence Overcurrent.

vii. STATCOM:

- Transformer Protection: Differential protection, REF protection, Directional Overcurrent protection, Ground Overcurrent, over flux protection, Transformer mechanical trips.
- STATCOM (MV) Bus protection: Bus Differential protection, Ground over current protection, used with neutral Grounding Transformer, Under/ Over Voltage protection, Over voltage (Open Delta) protection.
- STATCOM Branch Protection: Differential protection and/or O/C protection, Ground over current protection , Valve Overcurrent protection (in Controls), DC overvoltage protection (in Controls)
- MSR/TCR Branch Protection: Differential protection, Ground over current protection, Reactor branch unbalance protection, Thermal Overload protection.
- MSC/TSC Branch Protection: Differential protection, Ground over current protection, Capacitor Overvoltage (Using current signal) protection, Capacitor unbalance protection, over current protection.
- Harmonic Filter Protection: Ground over current protection, Capacitor Overload (Using current signal) protection, over current protection, Neutral Voltage shift.
- Auxiliary Transformer Protection: Over current, open delta voltage protection.

viii. SVC:

- Coupling Transformer (HV & MV) Protection: Differential protection, REF protection, Directional Overcurrent protection, Ground Overcurrent, over flux protection, Transformer mechanical trips.
- SVC Bus Bar protection: Bus Differential protection, Ground over current protection, used with neutral Grounding Transformer, Under/ Over Voltage protection, Over voltage (Open Delta) protection.

- TCR Protection: Differential protection, Ground over current protection, Reactor branch unbalance protection, Thermal Overload protection.
- TSC Protection: Differential protection, Ground over current protection, Capacitor Overvoltage (Using current signal) protection, Capacitor unbalance protection, over current protection.
- Harmonic Filter Protection: Differential protection, Ground over current protection, Capacitor Overvoltage (Using current signal) protection, Capacitor unbalance protection, over current protection, Neutral Voltage shift.
- Auxiliary Transformer Protection: Over current, open delta voltage protection.

ix. **FSC & TCSC:** Capacitor unbalance, Capacitor overload, Line current supervision, MOV overload, MOV short term energy protection, MOV high current protection, MOV high temperature protection, MOV failure protection, Flashover to platform protection, Spark Gap protection, Trigger circuit supervision, Sub-harmonic protection, Pole disagreement protection, Bypass switch failure protection,

x. **BUSBAR & LBB**: Differential protection, Beaker Failure Protection

21. Protection Settings Database Management System shall be suitable for integration with other portals, software of protection. It shall be able to integrate any third party application to share data between protection database management software and calculation engine/tool and vice versa.
22. Training of utilities.
23. AMC.

B. Protection Setting Calculation and Study Tool.

This module shall be capable of giving recommendation of Protection Setting for protections of elements as mentioned under point no. 20 of para A. Calculation Tool should be capable of performing the following:

1. Relay co-ordination for power system elements. Co-ordination check shall be conducted for relays of all make.
2. Primary/back-up relay pairs generation.
3. Fault calculation will be a part of relay co-ordination program.

4. Transparent Fault calculation results.
5. Simulation engines for protection co-ordination, power flow analysis, fault calculation, transient stability studies, electromagnetic transient analysis, and protection relay operation post-mortem analysis. There should be features to study low frequency oscillations, 3rd zone tripping, PSS tuning support and Voltage collapse prediction feature.
6. The protection calculation tool should be capable of interacting with the relay data in the database.
7. Tool for simulating the performance/ behavior of the protection system under all possible normal and abnormal operating conditions of the power system, including effect of changing one or more parameter setting of the relays.
8. Diagnostics Tool for verifying proper coordination among various protective relays.
9. Computation of critical clearing time.
10. Plotting Log-Log grid and graphs.
11. Option to check existing relay settings with respect to field or vice versa.
12. Computation of Out of Step Tripping Protection Settings.
13. Display of sequence operation of relays with respect to tripping time.
14. Switching status for all relays elements from the screen.
15. Association of relays to power system elements.
16. Disturbance analysis can be done on mapping of disturbances files with corresponding relay.
17. It shall have standard power system components and relay symbols.
18. Automatic computation of zone setting for distance protection.
19. Feature for viewing existing and newly computed relay settings.
20. Pre-loaded standard relay curves.
21. Directional and non-directional feature for relays.
22. Overload factor, unbalance factor and discrimination time (user defined/selectable) for each relay.
23. Inbuilt discrimination time calculator for grading of relays.
24. Facility to model the back-up protection settings of generating units / GTs.

C. Repository of DR/EL and analysis.

a) Platform for upload of DR/EL by utilities and access to all.

b) Tracking of non-compliance in uploading.

c) Tool for analysis of DR/EL.

d) Tool shall be integrated with outage portal of NRLDC so that it can capture details of outages of elements automatically from NRLDC portal so that users can upload DR, EL, FIR, tripping report, analysis report.

D. Application of protection settings by utilities and its approval by NRPC.

a) Platform for application of protection setting by utilities.

b) Hierarchical role for scrutiny and approval of setting by NRPC.

c) Intimation of approval of settings by NRPC.

d) Intimation of implementation of settings by utilities.

E. Reporting of performance indices by utilities.

a) Platform for reporting of performance indices by utilities.

b) Feature for scrutiny and intimation of errors to utilities by NRPC.

c) Recording of justification note for non-compliance.

F. Repository of protection audit reports.

a) Platform for reporting of internal and external audit report of all utilities.

b) Tracking non-compliance and next due date.

c) Web-based Checklist for protection audit should be made available for Constituents to self-auditing.

*****

ANNEXURE-XII

Capacity Building programme on "International Best Practices in Energy Transition" for Constituents of Northern Regional Power Committee (NRPC)

Proposal Submitted by Member Secretary on behalf of Northern Regional Power Committee

Table of Content

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1. About Northern Regional Power Committee

- With an objective to facilitate integrated operation of power system in Northern Region, Government of India, under the provision of Section 2, Subsection 55 of the Electricity Act 2003 vide resolution F.No. 23/21/2021-R&R dated 3rd December 2021 (repealed resolution dated. 25.05.2005) published in the Gazette of India has established the Northern Regional Power Committee comprising of states of Delhi, Haryana, Himachal Pradesh, Punjab, Rajasthan, Uttaranchal and Uttar Pradesh and the Union Territories of Chandigarh, Jammu & Kashmir and Ladakh.
- Manpower is posted by Central Electricity Authority (CEA).
- RPCs have been envisioned as self-financed. The expenditure of RPCs is met from contribution collected from constituent members of region.
- Member Secretary is HoD of NRPC Secretariat and is convenor of RPC.

2. Members of NRPC:

a.) Member (Grid Operation), Central Electricity Authority (CEA).

b.) One representative each of Central Generating Companies, Central Transmission Utility (CTU), Central Government owned Transmission Company, National Load Despatch Centre (NLDC) and the Northern Regional Load Despatch Centre (NRLDC).

c.) From each of the States in the region, the State Generating Company, State Transmission Utility (STU), State Load Despatch Centre (SLDC), one of the State owned distribution companies as nominated by the State Government and one distribution company by alphabetical rotation out of the private distribution companies functioning in the region.

d.) 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.

e.) A representative each of every generating company (other than central generating companies or State Government owned generating companies) having more than 1000 MW installed capacity in the region.

f.) A representative of the generating companies having power plants in the region (not covered in (b) to (e) above) by alphabetical rotation.

g.) A representative of one private transmission licensee, nominated by Central Government, operating the Inter State Transmission System, by alphabetical rotation out of such Transmission Licensee operating in the region.

h.) One member representing the electricity traders in the region by alphabetical rotation, which have trading volume of more than 500 million units during the previous financial year.

i.) A representative each of every Nodal Agency appointed by the Government of India for coordinating cross-border power transactions with the countries having electrical inter-connection with the region

j.) Member Secretary, NRPC – Convenor

3. SUB-COMMITTEES OF NRPC

- Technical Co-Ordination Sub-Committee (TCC)
- Operation Co-Ordination Sub-Committee (OCC)
- Protection Sub-Committee (PSC)

- Commercial Sub Committee (CCM)
- Telemetry, SCADA and Telemetry Sub-Committee (TeST)
- Other Sub Committees as decided as per requirement

4. FUNCTION OF NRPC

Function of NRPC is to facilitate the stability and smooth operation of the integrated grid and economy & efficiency in the operation of power system in the region. NRPC is carrying out following functions: -

1. To undertake Regional Level operation analysis for improving grid performance.
2. To facilitate inter-state/inter-regional transfer of power.
3. To facilitate all functions of planning relating to inter-state/ intra-state transmission system with CTU/STU.
4. To provide views on the inter-state transmission system planned by CTU within 45 days of receipt of the proposal by NRPC. The views of NRPC will be considered by National Committee on Transmission for sending their recommendation to Ministry of Power for approval of new inter-state transmission system.
5. To coordinate planning & maintenance of generating machines of various generating companies of the region including those of inter-state generating companies supplying electricity to the Region on an annual basis and also to undertake review of maintenance programme on a monthly basis.
6. To undertake planning of outage of transmission system on a monthly basis.
7. To undertake operational planning studies including protection studies for stable operation of the grid.
8. To undertake planning for maintaining proper voltages through review of reactive compensation requirement through system study committee and monitoring of installed capacitors.
9. To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

10. Issuance of various Energy accounts mandated by various CERC regulations
    i. Monthly Energy Accounts:
        a. Regional Energy Account (REA) including Ramping Capability of CGSs, Thermal Generators, Heat Rate Compensation for part load operation and Secondary Oil Compensation.
        b. Regional Transmission Account (RTA)
        c. Regional Transmission Deviation Account (RTDA)
        d. SCED Account

    ii. Weekly Statement of Deviation Settlement Charges, Reactive Energy Charges and Ancillary Services Charges.
    iii. Quarterly statement of Interest Charges on Late Payment of above weekly accounts.

11. Allocation of Power from Central Generating Station of NR.

SUMMARY OF PROPOSAL

For Official Use - To be filled by the Nodal Agency
Project Proposal Number : _____ Date of Receipt : _____

To be filled by the Requesting Organization / Project Entity	
1. Name of the requesting Organization / Utility :	Northern Regional Power Committee (NRPC)
2. Short Summary of Project / Scheme / Activity	
a. Name and location of the Project / Scheme / Activity :	Capacity Building programme on "International Best Practices in Energy Transition" for Constituents of Northern Regional Power Committee (NRPC)
b. Objective of the Project / Scheme / Activity :	1. To understand the factors that contributed to the success of the power market liberalization in the Nordic region. 2. To learn from international best practices in Hydro Power Development, Power Markets, energy transition – Hydrogen, decarbonization and offshore wind. 3. Overview of Power Markets/Nord Pool at a Glance/ Intra day Trading demonstration. 4. To understand Norwegian Hydrogen Economy and Low Carbon Society. 5. Capacity building programme to handle trading of short term surplus power on the Power exchange. 6. Interaction with EV Association, Norway on The Norwegian EV Experience. 7. Price discovery in Nord pool. 8. Determination of transmission tariff and sharing of transmission charges and losses. 9. Financial settlement of power trades, imbalances.

	10. Organization of forwards, futures and options market in power, their operation procedures, hedging etc. 11. Retail supply market. 12. Market clearing and settlement. 13. Market surveillance. 14. Imbalance settlement procedure. 15. Roles and responsibilities of various stakeholders. 16. Reporting and information sharing. 17. Optimum power reserve estimation. 18. Real time system operation and management. 19. Efficient maintenance practices of transmission grids. 20. Better Understanding of the regulatory and policy framework of the power market in European countries. 21. EV integration in the grid along with hydrogen powered vehicle. 22. Learning the best industry practices in Nordic power market. 23. Enhancement of productivity and performance.
c. Authorized Person For this Project / Scheme / Activity	Name : Vijay Kumar Singh, Member Secretary, NRPC E-mail ID : ms-nrpc@nic.in Land line No : 011-26511211 Mobile No. : 9810177609 Fax No : 011-26868528
d. Nature of the Project / Scheme / Activity: Inter – State / Intra – State (Please Specify)	Training and Capacity Building of constituents of Northern Region
e. Identified Beneficiaries	Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Transmission Licensees in Northern Region), Grid Controller of India Limited and Northern Regional Power

	Committee (NRPC) Secretariat. Participation from Central Electricity Authority (CEA), Ministry of Power, GoI has also been envisaged.
f. Merits of the scheme	Nord Pool runs the largest market for electrical energy and electric vehicle in Europe, measured in volume traded (TWh) and in market share. The capacity building programme will contribute towards capacity building and assist the development of a commercially viable and vibrant power market in India. It will also give a unique opportunity to the Indian participants to learn from the best industry practices and most enriching experiences of Nordic countries in running one of the most successful power exchanges in the world. The programme will enable to understand: 1. Business Environment – Power Sector and Strategy framework 2. Energy Transition 3. Power Market Development 4. Energy transformation and decarbonisation Further detailed in **Annexure-A**.
g. Limitations, if any	No limitations
h. Time frame for Implementation	FY 2024-25 3 batches (each of 20 officials)
i. Estimated Cost of Project / Scheme / Activity	Rs. 7,61,73,720/--
j. Category under which the project is classified (Please refer Para 5.1 of the Guidelines/Procedure)	Para 5.1(e)

Signature: _____

Date: _____

Name: _____

(Authorized Representative)

DETAILED PROPOSAL (DP)

1. Details of the Requesting Organization / Project Entity

1.1 Details of Organization / Entity

Name of Organization / Entity	Northern Regional Power Committee
Acronym or Abbreviation (if applicable)	NRPC

1.2 Details of Head of the Organization

Name (Mr / Ms / Mrs)	Mr. Vijay Kumar Singh
Designation	Member Secretary
E-mail Address	ms-nrpc@nic.in
Landline No.	011-26511211
Fax No.	011-26868528
Address	18-A, Shaheed Jeet Singh Marg, Katwaria Sarai,
City	New Delhi
Postal Code	110016

1.3 Details of Project Incharge / Project Manager (Authorized Person) for this project/scheme/activity (Not below the rank of Dy. General Manager / Superintending Engineer)

Name (Mr / Ms / Mrs)	Mr. Vijay Kumar Singh
Designation	Member Secretary
E-mail Address	ms-nrpc@nic.in
Landline No.	011-26511211
Mobile No.	9810177609
Fax No.	011-26868528
Address	18-A, Shaheed Jeet Singh Marg, Katwaria Sarai,
City	New Delhi
Postal Code	110016

2. Justification of the Proposal

2.1 Analysis of the Objective

- The Electricity Act 2003 opened the power sector by laying down provisions for promoting competition in the power market. By identifying electricity trade

as a distinct activity, Electricity Act 2003, along with pursuant regulations from the CERC, paved the way for a paradigm shift in the power sector.

- The Act envisages development of a competitive power market for promoting efficiency, economy and for mobilisation of new investments in the power sector. These transformations in power sector were supported by creation of institutions to enhance efficiency in markets via bilateral trading and later in 2008 through trading on power exchanges.
- In addition, the fundamentals of power trading – such as licensing electricity traders and ensuring open, non-discriminatory access to transmission services – have been put into place to allow for expansion of opportunities in all markets. As a result, there has been a paradigm shift in generation, transmission and distribution activities, which have facilitated power trading.
- Nord Pool Spot runs the largest market for electrical energy in Europe, measured in volume traded (TWh) and in market share.
- It operates in Norway, Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Germany and the UK. More than 80% of the total consumption of electrical energy in the Nordic market is traded through Nord Pool Spot.
- The capacity building programme will help personnel involved in Grid operation and transmission planning & implementation in understanding the policy and regulatory framework of Nordic power trading market.
- It will be immensely helpful as the participants will get to know about the successful working of Europe's leading power exchange, the integrated power markets and the financial derivative market.
- The program will include exposure to all the key issues related to a competitive power market, price determination, congestion management, imbalance management, reference price, risk management and market surveillance.
- European countries have high share of renewable energy in their power system. The effect of this RE power in power trading can be studied thoroughly by this capacity building program. As India is planning to add 175 GW of renewable energy by 2022 under its commitment towards global

climate change, the program will surely help in this direction. Also refer **Annexure-A**

2.2 Identified Beneficiaries of the Project

Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.

2.3 Identified Source of Funding

The programme is to be funded fully from PSDF. As mentioned in the Para 6.3(III) of the guidelines/procedure for disbursement of PSDF approved by Government of India that up to 100 % grant to be given in case the project (Capacity Building) mentioned under Para 5.1(e) of the same.

2.4 Details of Activities for Project / Scheme / Activity

- The programme will be implemented in three batches.
- Eight days (6 days training and 2 days travel) Training Program is proposed to be conducted for each batch.
- The programme will be held between 01.04.2024 and 31.03.2025.
- The training programmes will be held in Norway and Finland.
- 3 batches each of 20 participants will participate for each 8-day program from various utilities of Northern Region including CTU, SLDCs, STUs, Generators, ISTS Licensees, DISCOM, Grid-India, NRPC Sectt, CEA and Ministry of Power.
- Training Modules to cover various aspects of Power market operations, impact of renewables through imbalance handling in energy trading as well as cross border trading with neighbouring countries. The programme is

designed to meet the needs of top officials of electricity utilities of India to understand:

a. Business Environment – Power Sector and Strategy framework
b. Energy Transition
c. Power Market Development
d. Energy transformation and decarbonisation

- Training Modules for such programs have been designed after consultation with POWERGRID.
- Field visits will be arranged during the programs to impart practical training to the participants.

2.5 Executing Agency

POWERGRID will be the executing agency through Administrative Staff College of India (ASCI).

2.6 Time line for Implementation of Project / Scheme / Activity

The programme is to be completed in FY 2024-25.

Timeline of the Project / Scheme / Activity	
Duration of Project (in Months)	Between 01.04.2024 and 31.03.2025 (12 months). 3 batches each of 20 participants.
Likely Start Date	01.04.2024
Likely Completion Date	31.03.2025

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Sl. No	Description	Dec'23	April'24	May'24	June'24	July'24
1	Programme Approval					
2	1st Program (proposed)					
3	2nd Program (proposed)					
4	3rd Program (proposed)					
6	Programme Report					

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Summary of Detailed Project Report (DPR)

Objective: Capacity building of the personnel involved in Grid Operation, transmission planning & implementation and overall policy & decision making towards creation of efficient power markets and participation in power trading.

Executing Agency: The programme is to be executed by POWERGRID and all arrangements like designing modules in consultation with ASCI, and power system experts of NR utilities and coordination with Nordic countries, signing of contract with Norwegian agencies, selecting travel partner, visa etc. shall be undertaken by Powergrid Corporation of India Limited.

No of Programs and participants: Total 3 nos. of programs are proposed to be conducted over one year. Each batch having 20 nos. of participants from NRPC constituents. Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.

Venue of Programme: The capacity building programme will be held at Norway and Finland starting from POWERGRID, Manesar.

Duration of Programme:

Participants per batch	Duration of each Program (in days) each year	Total years for which program will run
20	8 days (6 + 2 days for travel)	1 year

Course Content/ Training Modules: The tentative topics to be covered are placed below.

1. To understand the factors that contributed to the success of the power market liberalization in the Nordic region.
2. Capacity building programme to handle trading of short term surplus power on the Power exchange
3. Price discovery in Nord pool.
4. Determination of transmission tariff and sharing of transmission charges and losses.
5. Financial settlement of power trades, imbalances.
6. Organization of forwards, futures and options market in power, their operation procedures, hedging etc.
7. Retail supply market
8. Market clearing and settlement
9. Market surveillance
10. Imbalance settlement procedure
11. Roles and responsibilities of various stakeholders
12. Reporting and information sharing
13. Optimum power reserve estimation
14. Real time system operation and management
15. Efficient maintenance practices of transmission grids
16. Better Understanding of the regulatory and policy framework of the power market in European countries.
17. EV integration in the grid along with hydrogen powered vehicle.
18. Learning the best industry practices in Nordic power market.
19. Enhancement of productivity and performance.

Total Cost of Training (refer Format A4):

No of Programs of 8 days duration	Total (In Rs.)
3	7,61,73,720/- (including GST)

- Cost is inclusive of all taxes. However, tax rates are subject to revision by Government.
- Final payment will be made on the basis of actuals

Terms of payment:

(1) 80% of payment for first batch on signing of contract

(2) 20% payment for first batch ten days before departure of group from India

(3) For subsequent batches, 80% payment on finalization of dates and balance 20% ten days before departure of group from India

Summary of DPR given - Yes. **Copy of the Proposal attached. – Yes**

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Financial Implication of the Scheme

*(**Guidelines:** The financial implications of the proposal may be worked out as accurately as possible and should be detailed in this section. Further, the manner in which the expenditure is proposed to be borne may also be clearly indicated. Please provide the project cost estimate for its scheduled duration along with a break-up of year-wise, component-wise expenses segregated into non-recurring and recurring expenses.)*

1. Summary

S.No.	Item	Amount in Rs.
1.	Total Cost Estimate	7,61,73,720/-
2.	Funding Proposed from PSDF	7,61,73,720/-
3.	Contribution from Internal Sources	Nil
4.	External Borrowings	Nil

2. Details (Proposal POWERGRID is at **Annexure-C**)

2.1 Cost Estimate

1.Estimated cost for three batches (consisting 20 persons each):Rs. 7,61,73,720/-

(Includes tuition fees for domestic & Overseas, training kit including trolley bags & Blazer, Boarding & Lodging and other land arrangements including airport transfers at overseas, Visa charges, Tickets (if any) to official engagements (entry tickets to sight-seeing, conferences etc. and membership to ASCI alumni network. Air fare economy class (Delhi to Oslo, Helsinki to Delhi), Medical cum travel insurance, Airport transfer in India, Boarding & Lodging at PAL, Conferencing charges at PAL, POWERGRID Manpower engagement cost, and Overheads, Miscellaneous and Contingency etc. Incidental charge ($50 per person for 6days) @1USD~INR83.24)

2. Estimated cost per batch (consisting 20 persons each): Rs. 2,53,91,240/-

3. Funding

3.1 Funding Proposed from PSDF as grant

The programme is to be funded completely from PSDF. As mentioned in the Para 6.3(III) of the guidelines/procedure for disbursement of PSDF approved by Government of India

that up to 100 % grant to be given in case the project (Capacity Building) mentioned under Para 5.1(e) of the same.

3.2 Contribution from Internal Sources: Nil

3.3 External Borrowings: Nil

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Brief Details of the Project Appraisal by CTU / STU / RPC

The applicant utility shall submit project appraisal by CTU / STU / RPC in the given format and a copy of the Appraisal Report should be attached at Annexure.

Item	Details to be filled by Applicant Utility	
Appraisal By:	**CTU** ☐ **ST** ☐ √	
Date of Submission to CTU / STU / RPC for approval	------	
Name of the Scheme	Capacity Building programme on "International Best Practices in Energy Transition" for Constituents of Northern Regional Power Committee (NRPC).	
Details of the Appraisal Report by CTU/STU / RPC (Attached at Annexure)	Attached at Annexure-B	
	Summary of Proposal Appraised	
	Technical Observations	
	Financial Observations	
	Compliance of Grid Standards / Codes by the Applicant	
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	
	Recommendations of CTU/STU/RPC	

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

I, Shri VIJAY KUMAR SINGH son of ---------- and presently working as Member Secretary, Northern Regional Power Committee hereby undertake to comply with the following terms and conditions with regard to funding of the "Capacity Building programme on "International Best Practices in Energy Transition" for Constituents of Northern Regional Power Committee (NRPC)" with disbursement from PSDF:

- **No tariff shall be claimed for the portion of the scheme funded from PSDF.**
- **Amount of grant shall be refunded in case of transfer/disposal of the facility being created under this proposal to any other scheme for funding.**
- **Shall specifically mention if for the scheme under the proposal, the grant from any other agency is being taken / proposed to be taken.**
- **The grant shall be refunded back to PSDF in case of non-utilisation of the grant within one year of release of instalment.**

Date: .11.2023

Signature: _____

Name: Vijay Kumar Singh
(Authorized Representative)

Supplementary Information

1. In 45th NRPC meeting held on 08.06.2019, NRPC proposed a capacity building programme for studying the power exchange of Nordic countries, role of TSO (Transmission System Operator), Renewable Energy in power trading, EV integration with grid etc. to be carried out for Northern Region Constituents.
2. POWERGRID vide letter dated 09.10.2019 was requested to furnish the complete proposal including estimated cost details for preparing the DPR for PSDF funding.
3. In 44th TCC & 47th NRPC Meetings (held on 10th and 11th December, 2019), POWERGRID presented the detailed report and commercial implication of the program.
4. Due to COVID pandemic, the program could not be completed.
5. Therefore, a revised estimate has been taken from POWERGRID and proposal of Capacity Building programme on “International Best Practices in Energy Transition” for Constituents of Northern Regional Power Committee (NRPC) has been approved in …… .
6. The justification for selection of Nord Pool is given in DPR. Further, a detailed analysis is given in **Annexure-A.**
7. POWERGRID has been selected as implementaing agency by NRPC Forum.
8. Total 3 nos. of programs are proposed to be conducted over one year. Each batch having 20 nos. of participants from NRPC constituents. Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.
9. Criteria for Selection: The officers nominated must have at least 3 years of service left.
10. A copy of the minutes approved by Chairperson is enclosed for reference (refer **Annexure-B)**

Annexure-A

Justification for NORD Pool

Introduction: Power is a vital element that supports our modern lives at home and at work. As power production and transmission capacity has been extended over the years, transmission of power between countries has become more common. As a result, a dynamic market has evolved where power can be bought or sold across areas and countries more easily.

The power price is determined by the balance between supply and demand. Factors such as the weather or power plants not producing to their full capacity can impact power prices.

While the price of power is determined according to supply and demand, it also becomes clear where there are issues in the grid when the price of power goes up. This makes it easier to identify where production or capacity is lacking, as there is too high demand compared to production supply.

The Indian Context: The Indian power market consists of OTC Bilateral trades and non-mandatory power exchange structure. With increasing participation from the private players the trading on the exchange is bound to increase in the future. Further, to meet the requirements of customers, power exchanges have to bring out newer products such as derivatives. Also, more and more players are becoming eager to purchase power in short term on the exchanges. The integration of renewables will also give a push towards innovative products for handling of this power. The market, regulatory environment and the operator have to jointly discuss and prepare the ground for a vibrant power market in India. A competitive power market will reduce prices and increase welfare.

Although, India has deregulated generation, the power market does not have sufficient depth as most of the power sales are dictated according to long term contracts. Day by day the commercial settlements and system operation are getting complex as decisions of the operator in a regulated environment affect the financial obligations of the players. The road ahead lies in reducing regulatory rule making and letting the market take over some of the pricing signals.

It is seen from recent experience that beneficiaries of many of the generators who have long term contracts under two-part tariff are reluctant to purchase power under the long term PPA and try to economize their portfolio through buying and selling power on the OTC markets and also on the exchange. Therefore, constituents feel a need to participate in power markets.

The national tariff policy 2005 stated thus:

5.2 The *real benefits of competition would be available only with the emergence of appropriate market conditions*.

9.0 The Act provides that the Appropriate Commission ..... necessary. Though *there is a need to promote trading in electricity* for making the markets competitive, the Appropriate Commission should monitor the trading transactions continuously and ensure that the electricity traders do not indulge in profiteering in situation .....

However, the directions of the tariff policy could not have been implemented fully. The CERC report on Short Term Power Market in India: 2015-16 has the following to offer:

1. Of the total electricity procured in India in 2015-16, the short-term power market comprised 10%. The balance 90% of generation was procured mainly by distribution companies through long-term contracts and short-term intra-state transactions.

   Therefore, the participation in short term power market is still in nascent stages

2. In terms of volume, the size of the short-term market in India was 115.23BU (Billion Units) in the year 2015-16. As compared to the volume of electricity transacted through short-term market in the year 2014-15 (98.99BU), this was about 16% higher.

   There is a desire for increased participation in the short term power markets.

7. During 2015-16, about 93% of the volume of electricity transacted through traders was at a price less than Rs. 6/kWh. About 61% of the volume was transacted at a price less than Rs. 4/kWh.

8. During 2015-16, IEX transacted 99% of the volume of electricity at a price less than Rs. 6/kWh while about 92% of the volume was transacted at a price less than Rs 4/kWh. During the year, PXIL transacted 99% of the volume of electricity at a price less than Rs. 6/kWh while about 76% of the volume was transacted at less than Rs. 4/kWh.

   Purchase of power in short term power markets is cost effective.

11. Competition among the trading licensees was shown for the period from 2004-05 to 2015-16. During the period, number of traders who were undertaking trading increased from 4 to 27 and concentration of market power (HHI based on volume of trade undertaken by the licensees) declined from high concentration (HHI of 0.5512) to non-concentration (HHI of 0.1432).

    The Indian Power market is competitive with non-concentration of market power.

Government of India have also proceeded with the SAARC Framework Agreement for Energy Cooperation (Electricity) which will facilitate trading of electricity among member nations of SAARC. This will create challenges as well as opportunities for electricity trade as different regulatory regimes will come into picture. *The development of a cross border market for electricity is also not far.*

Recently, as per Tariff Policy, 2016, Central generating stations unable to get their power scheduled are bringing their power to market for sale.

Although all the ingredients of a successful power market are present participants have to build confidence to come out of their comfort zone of long term PPA and buy and sell power on the market. In turn the market has to give that confidence to the participants.

It is natural that a commodity likes electricity, non availability of which has huge negative welfare implications would make the buyers shaky in case the market fails to operate optimally. Therefore, a visit to Nord Pool which operates one of the oldest and one of the biggest power markets in Europe would help in building confidence.

International Context: The last decade has seen the deregulation of several power markets around the world, and especially the US and EU electricity supply industries are undergoing a process of fundamental change. A central feature of most liberalised markets is a Power Exchange, PX, with an optional or mandatory spot market, and, as a complement, a market for financial instruments (futures, forwards and options)

The spot market accommodates suppliers and consumers in an auction determining market clearing prices and quantities, while the financial market performs price hedging. In Europe today, there are PXs with spot markets in England and Wales, The Netherlands, Scandinavia (Denmark, Finland, Norway and Sweden), Spain and Switzerland. The Scandinavian deregulation led to the establishment in 1993 of the joint Nordic Electricity Exchange, otherwise known as Nord Pool.

Scandinavia, where countries have traded power for decades, has the world's most developed international market for electric power. Recently the trading system has changed dramatically, moving from the old model of cooperation among the leading vertically integrated utilities in each country, under the Nordel agreement, to competitive market rules. The Nordic countries deregulated their power markets in the early 1990s and brought their individual markets together into a common Nordic market. Estonia, Latvia and Lithuania deregulated their power markets, and joined the Nord Pool market in 2010-2013. To attract customers, a non-mandatory PX needs a spot market that creates confidence among its actual and potential participants. Effective competition in the spot market is important from several perspectives, directly for cost efficiency, transaction costs and the potentially large distributional effects of market power, indirectly for its impact on related financial markets.

The Nord Pool has over the years established itself as a very efficient and transparent wholesale power market having the confidence of the market participants.

Nord Pool has played an important role in setting up of various other National/International Power Exchanges such as the Leipzig power exchange (LPX) in Germany, developing the power market in South African Power Pool (involving 12 countries), etc. Nord Pool is one of the regional power pool having mature regional electricity market and facilitate more than 80% of the total Nordic electricity consumption through Nord Pool spot market.

In addition to the spot market, Nord Pool offers futures contracts, which are traded as weekly contracts four to seven weeks ahead, as blocks of four weeks up to fifty-two weeks ahead, or as seasons up to three years ahead. The futures are purely financial contracts used for price hedging. About fifteen brokering companies offer services to the electricity market. The bulk of the volume traded is in standardized financial contracts, often referred to as over-the-counter (OTC) contracts. The liquidity of the OTC market is quite high, particularly for the nearest season. Contracts can be resold, or a position netted out by making an opposite contract.
Just as for bilateral trade, the PX-based financial market is heavily dependent on a well functioning spot market to provide a relevant reference price. Any unnecessary uncertainty in the spot price, due to possible strategic pricing, lends an extra uncertainty to the financial contract prices. This leads to a diminished trade on the financial market which in turn decreases the possibility for all participants in the electricity market to hedge their contracts, thus reducing liquidity in the whole market. Research also indicates that the presence of a well functioning financial (futures) market might actually reduce market power on the spot market.
Nord Pool has well established and transparent futures products in electricity. By providing tools for risk management, the financial market contributes to the efficient functioning of both wholesale and end-user markets. The listed derivatives at Nord Pool are traded with a reference price based on the system price in the Nordic day-ahead spot market. The financial market is as such a purely financial market where all contracts are traded and settled irrespective of transmission capacity.

The Nordic financial electricity market Report 8/2010 of NordREG (NordREG is a cooperation of the Nordic energy regulators) states:

NordREG has found that the general view is that the Nordic financial electricity market functions well and has a good liquidity in the basic products. There is also a general consensus that there is trust in the market. The Nordic power market is often ranked highest in Europe regarding transparency and efficiency. The Nordic power market also has the highest turnover in exchange trading in relation to consumption in the area.

A Chronology of the development of Nord Pool over the years.

2016: Nord Pool Spot is rebranded to Nord Pool.

Nord Pool is appointed NEMO in Belgium, Germany, Luxembourg and Poland. Nord Pool is together with IBEX opening the Bulgarian power market and together with Cropex opening the Croatioan power market.

2015: Nord Pool Spot introduce a new Day Ahead Web and Intraday Web. Nord Pool Spot is appointed Nominated Electricity Market Operator (NEMO) across 10 European power markets; Austria, Denmark, Estonia, Finland, France, GB, Latvia, Lithuania, the Netherlands and Sweden.

2014: Nord Pool Spot takes sole ownership of the UK market. North-Western European power markets are coupled through the Price Coupling of Regions (PCR) project. Nord Pool Consulting is launched.

2013: Elspot bidding area opened in Latvia. Intraday market, Elbas, introduced in both Latvia and Lithuania.

2012: Nord Pool Spot opens bidding area in Lithuania.

2011: Elbas licensed to APX and Belpex as the intraday market in the Netherlands and Belgium respectively.

2010: Nord Pool Spot and NASDAQ OMX Commodities launch the UK market N2EX. Nord Pool Spot opens a bidding area in Estonia and delivers the technical solution for a new Lithuanian market place.

2009: Norway joins the Elbas intraday market. The European Market Coupling Company relaunches the Danish-German market coupling on 9 November. Nord Pool Spot implements a negative price floor in Elspot.

2008: Highest turnover and market share recorded in the company's history until then. Elspot market share 70%.

2007: Western Denmark joins the Elbas market. SESAM, the new Elspot trading system is set into production.

2006: Nord Pool Spot launches Elbas in Germany.

2005: Nord Pool Spot opens the Kontek bidding area in Germany, which geographically gives access to the Vattenfall Europe Transmission control area.

2004: Eastern Denmark joins the Elbas market.

2002: Nord Pool's spot market activities are organized in a separate company, Nord Pool Spot AS.

2000: The Nordic market becomes fully integrated as Denmark joins the exchange.

1999: Elbas is launched as a separate market for balance adjustment in Finland and Sweden. Elspot area trade begins 1 July.

1998: Finland joins Nord Pool ASA. Nord Pool opens an office in Odense, Denmark.

1996
A joint Norwegian-Swedish power exchange is established. The exchange is renamed Nord Pool ASA.

1995: The framework for an integrated Nordic power market contracts was made to the Norwegian Parliament. Together with Nord Pool's license for cross-border trading (given by the Norwegian Water Resources and Energy Administration), this report made the foundation for spot trading at Nord Pool.

1993: Statnett Marked AS is established as an independent company. Total volume in the first operating year is 18.4 TWh, at a value of NOK 1.55 billion.

1991: Norwegian parliament's decision to deregulate the market for trading of electrical energy goes into effect.

Annexure-B

Will be attached after approval.

Annexure-C

Details of Cost Estimate Calculations

S/N	Scope of Work		Amt (INR)
1	Activities under the scope of ASCI	Includes tuition fees for domestic & Overseas, training kit including trolley bags & Blazer, Boarding & Lodging and other land arrangements including airport transfers at overseas, Visa charges, Tickets (if any) to official engagements (entry tickets to sight-seeing, conferences etc. and membership to ASCI alumni network.	18891800
	Activities under the scope of POWERGRID	Air fare economy class (Delhi to Oslo, Helsinki to Delhi), Medical cum travel insurance, Airport transfer in India, Boarding & Lodging at PAL, Conferencing charges at PAL, POWERGRID Manpower engagement cost, and Overheads, Miscellaneous and Contingency etc.	6000000
		**Incidental charge ($50 per person for 6days)@1USD~INR83.24	499440
	Total including GST for one batch	**25391240**	
	Total including GST for three batches	**76173720**	

****

ANNEXURE-XIII

Email **Reeturaj Pandey**

Request for corrigendum of Minutes of Meeting of 69th NRPC meeting held on 27.09.23

From : Prakhar Pathak {प्रखर पाठक} <prakharpathak321@powergrid.in> Tue, Nov 07, 2023 02:47 PM

Subject : Request for corrigendum of Minutes of Meeting of 69th NRPC meeting held on 27.09.23

To : LokeshAgrawal <lokesh.cea@gov.in>

Cc : pcgarg@powergrid.in, ashok@powergrid.in, hsk@powergrid.in, tejprakash@powergrid.in, Reeturaj Pandey <pandeyr.cea@gov.in>, Kaushik Panditrao <kaushik.panditrao@gov.in>

Dear Sir

This is with reference to Minutes of Meeting (MoM) dtd. 01.11.23 of 69th NRPC meeting held on 7.09.23. CTUIL have few observations on the minutes which is given below as the same will be required while submitting the agenda for approval of NCT:

Existing clauses needs to be modified as below			
S.No.	**MoM Reference**	**Existing MoM**	**Corrigendum to be issued**
1	Agenda A.5 , Clause 5.9	Forum accorded approval to proposal of CTUIL for OPGW installation on LILOed portion of existing 400kV Kota- Merta line at Shri Cement under RTM	Forum accorded approval to the proposal of CTUIL for OPGW installation on existing 400kV Kota- Merta line **(254 kms.) along with LILO portion of Shri Cement (54 kms.) (254+54=308Km) under RTM *mode to POWERGRID***.
2	Agenda A15 , Clause 15.6	Forum approved the above proposal for supply and installation of OPGW on 400kV Fatehgarh 1 (Adani)-Fatehgarh 2 (PG) line under RTM in line with decisions taken in 23rd TeST meeting held	Forum approved the above proposal for supply and installation of OPGW on 400kv Fatehgarh 1 (Adani)-Fatehgarh 2 (PG) line **(6.5 Km on second earthwire peak)** under RTM ***mode to ADANI* Transmission Ltd**. in line with decisions

		on 21.09.23	taken in 23rd TeST meeting held on 21.09.23
3	Agenda A16 , clause 16.5	Forum approved the supply and installation of 12 nos of FOTE and additional ethernet (125 nos.) cards for existing FOTE	Forum approved the supply and installation of 12 nos of FOTE and additional ethernetcards (125 nos.) for existing FOTE **under RTM mode *by POWERG RID***.
4	Agenda A17 , clause 17.6	Forum approved the proposal of CTU for supply and installation of 11 nos. of FOTE equipment at backup SLDCs in NR & backup NRLDC	Forum approved the proposal of CTU for supply and installation of 11 nos. of FOTE equipment at backup SLDCs in NR and backup NRLDC **under RTM mode *by POWERGRID.***

Regards
Prakhar Pathak
Assistant Engineer (T)
CTUIL

ANNEXURE-XIV

F. No. 18/25/2015-W-I/DG
Government of India
Ministry of Housing and Urban Affairs
Works Division
****

Nirman Bhawan, New Delhi-110011
Dated 08th March 2018

Office Memorandum

Subject:- Additions/alterations in Housing Upgradation Scheme, 2018 (HUS–2018) for General Pool Residential Accommodation.

The undersigned is directed to state that under this Ministry's Office Memorandum No.28012/1/2003-WI dated 14th March, 2008, it has been provided that works of addition/alteration of non-structural nature can be carried out in General Pool Residential Quarters at the request of the occupants and to provide these facilities on vacation of residential quarters and also on payment of a part of cost by the allottees in respect of occupied quarters.

2. It has now been decided to provide the prescribed facilities under Housing Upgradation Scheme, 2018 (HUS-2018) subject to availability of funds in all GPRA quarters as well as quarters in other pools which are being maintained by CPWD whether occupied or vacant (except for Type-I Quarters) in each colony with the consent of the concerned allottees.

3. A list of permissible civil and electrical items/works under (HUS-2018) of additions/alterations is enclosed as per **Annexure-I.**

4. The list of civil and electrical items of addition/alterations other than HUS-2018 which may be carried out at the request of the allottees, the specified percentage of the cost of the works that will be paid by the allottee, has been revised as per **Annexure-II**.

5. No other work of addition/alteration which involves structural changes in the allotted quarters would be carried out. The decision of the CPWD as to whether any work of addition/alteration requested by an allottee is of a structural nature shall be final.

6. The works of addition/alteration in a house as per prescribed specification shall be completed within a maximum period of two months from the date of handing over the possession of house to CPWD.

7. The proposed new Up-gradation Scheme 2018 shall be applicable for existing GPRA units of age 10 to 60 years. Flats of age more than 60 years are not included in the new scheme. Only minimum maintenance shall be allowed to keep them functional.

8. The newly constructed GPRA Flats (below 10 years of age) shall not be included in HUS-2018 till they attain the age of 10 years.

9. The GPRA Colonies included in the Redevelopment Scheme irrespective of their age and those likely to be included in the next 10 years shall not be covered under HUS-2018.

10. The existing Upgradation Scheme 2008 shall be stopped upon coming into effect of the Housing Upgradation Scheme-2018.

11. The GPRA Flats already upgraded as per 2008 norms may be upgraded as per HUS-2018 to the extent that there is no undoing of upgradation work already done as per Upgradation Scheme 2008 norms and only such items would be upgraded so as to bridge the gap of upgradation norms laid down in upgradation scheme 2018.In this regard, strict monitoring is to be done at CE/ Division level for which a monitoring mechanism will be put in place.

12. This Memorandum issues in supersession of all previous instructions, including the OM mentioned in paragraph 1 above and with the concurrence of Integrated Finance Division vide Computer No.3141085, dated 29.01.2018. The instructions will be effective from the date of issue.

Hindi version will follow.

(I. M. Khan)
Under Secretary to the Government of India
Telephone No. 23061151

To

1. All Ministries/Departments of the Government of India.

2. CAG of India, Bahadur Shah Zafar Marg, New Delhi.
3. Secretary General, Rajya Sabha/Lok Sabha Secretariat, New Delhi.
4. Chief Secretaries of the states/Union Territories.
5. Director General (Works), CPWD, New Delhi.
6. Director of Estate, Ministry of Housing and Urban Affairs, New Delhi.

Copy to:

1. PS to Minister of State (I/C) for Housing and Urban Affairs.
2. PPS to Secretary (HUA)
3. All Addl. Secys./ Joint Secretaries/Directors/DS/US in M/o Housing & UA
4. All Desks/Sections in M/o Housing and Urban Affairs.
5. Hindi Section for Hindi version.
6. IT Cell, MoHUA – for uploading on e-office and Ministry's website.

Specification prescribed for Up-gradation on vacation as well as in occupied quarters (Free of cost)

ANNEXURE-I

S No.	Items	Proposed Up-gradation Scheme 2018Norms for Type-II and III	Proposed Up-gradation Scheme 2018 Norms for Type-IV and above	
1	2	4	5	
A	**Civil works**			
1	**Kitchen**			
1.1	General			
1.1.1		Removal of chimney wherever existing.	Removal of chimney wherever existing.	
1.1.2		Built in cupboard with drawers with 18 mm thick pre-laminated board shutters.	Factory made Modular Kitchen with cooking platform and provision of Electric Chimney of approved make (Chimney not to be provided by the Deptt.) and Built in cupboard with drawers and suitable SS modules. (ii)Built in cupboard with drawers with 18 mm thick pre-laminated board shutters in servant quarters.	
1.1.3		Plumbing for water purifier and geyser in kitchen for hot and normal water supply through unified faucet at sink.	Plumbing for water purifier and geyser in kitchen for hot and normal water supply through unified faucet at sink.	
1.1.4		Separate additional storage tank of 100L/150L capacity for kitchen as per NBC 2015. Provision of Separate tank for WC & Drinking water if feasible.	Separate additional storage tank of 100L/150L capacity for kitchen as per NBC 2015. Provision of Separate tank for WC & Drinking water if feasible.	
1.2	**Kitchen Sink**			
1.2.1		Stainless steel kitchen sink with deep single bowl & drain board.	Stainless still kitchen sink with deep single bowl & drain board suitable for modular kitchen.	
1.3	**Dado**	Full height Ceramic tiles (size not less than 300 mm x450 mm) as per approved design and pattern.	Full height Ceramic tiles (size not less than 300 mm x450 mm) as per approved design and pattern.	

1.4	**Work-top/ kitchen counter**			
1.4.1		18mm thick gang-saw cut pre-polished granite stone in pleasing shade with pre-molded nosing.	18mm thick gang-saw cut pre-polished granite stone in pleasing shade with pre-molded nosing.	
1.5	**Flooring**			
1.5.1		Anti-Skid vitrified tiles of size not less than 400 mm x 300mm with water absorption less than 0.08% laid with joint finish with matching grout.	Anti-Skid vitrified tiles of size not less than 600 mm x 600 mm with water absorption less than 0.08% laid with joint finish with matching grout.	
2	**Toilets & bathrooms**			
2.1	**Wash Basin & Mirror**			
2.1.1		Counter wash basin with single lever CP brass mixer for hot & cold water with quarter turn ceramic cartridges. One in each toilet/ washroom and one for dining area as per design.	Counter wash basin with single lever CP brass mixer for hot & cold water with quarter turn ceramic cartridges. One in each toilet/ washroom and one for dining area as per design.	
2.1.2		Looking mirror of size 450 mm x 600 mm with beading and CP brass glass shelf.	Looking mirror of size 600 mm x900 mm with wooden beading and CP brass glass shelf.	
2.1.3		Anodized aluminum or Stainless steel pegs in bathroom/ towel rings (1 no.) as per feasibility.	CP Brass towel rack & pegs in bathroom, CP brass towel ring at wash basin.	
2.1.4		CP Brass towel rod & pegs in bathroom, CP brass towel ring at wash basin.		
2.1.5		Water Jet/health faucet with European WC preferably wall mounted WC.	Water Jet/health faucet with European WC preferably wall mounted WC.	
2.1.6		C.P. Brass bib cock provided with quarter turns ceramic cartridges (toilet, bath & WC)	C.P. Brass bib cock provided with quarter turns ceramic cartridges (toilet, bath & WC)	

2.1.7		Shower with single lever CP Brass mixer for hot & cold water with quarter turn ceramic cartridges in Bathroom.	Shower with single lever CP Brass mixer for hot & cold water with quarter turn ceramic cartridges one in each Bathroom.	
2.1.8		CP Brass toilet paper holder with European WC.	CP Brass toilet paper holder with European WC (one in each Toilet).	
2.1.9		Soap rack/niche as per Architectural design and specifications.	Soap rack/niche as per Architectural design and specifications.	
2.1.10		Plumbing for geysers for hot and cold water supply through unified faucet/ single lever CP brass mixer with quarter turn ceramic cartridges at all necessary points.	Plumbing for geysers for hot and cold water supply through unified faucet/ single lever CP brass mixer with quarter turn ceramic cartridges at all necessary points.	
2.2	**Flooring & Dado**			
2.2.1	**Flooring – Living /drawing room, dining and family lounge**	Vitrified/ceramic tile flooring (not less than 400 mm X 400 mm) of approved design and pattern.	18mm gang-saw cut pre-polished granite/anti-skid double charge vitrified tiles of size note less than 600 mm x 600 mm with water absorption less than 0.08 % finish with matching grout / scratch resistance engineered wood/ laminated wooden flooring in living/drawing room.	
2.2.2		Scratch resistant ceramic tiles/ vitrified tiles of approved design and pattern.	Vitrified tiles of size note less than 600mmx600mm with water absorption less than 0.08 % finish with matching grout/ scratch resistance engineered wood rf laminated wooden flooring in living/drawing room.	
2.2.3	**Bathrooms**		Pre-finished/Pre-polished granite threshold 100 mm high and 100mm wide in shower area in combined toilet.	
2.3	**Dado**	Full height rectified ceramic tiles of approved design and pattern.	Full height rectified ceramic tiles of approved design and pattern.	
3	**Living/Bed rooms**			

3.1	**Flooring of rooms and internal area**	**Vitrified/ceramic tile flooring of approved design and pattern.**	**18m thick Gang-saw cut pre-polished granite/double charged vitrified tiles of size not less than 600mm x 600m/ scratch resistance engineering wood or laminated wooden flooring in living/ drawing room**	
4	**In Common Circulation area and Staircases**			
4.1		Gang saw cut pre-polished granite stone flooring.	Gang saw cut pre-polished granite stone flooring.	
4.2		Dado of gang saw cut pre-polished granite stone upto 120 cm height including pre polished pre- molded granite stone nosing.	Dado of gang saw cut pre-polished granite stone upto 120 cm height including pre polished pre- molded granite stone nosing.	
5	**Others Fixtures and amenities**			
5.1		Magic eye in front entry door.	Magic eye in front entry door.	
5.2		Curtain rods with brackets.	Drapery rods with brackets on all windows and doors in all rooms except kitchen, toilet/bath/WC.	
5.3		Built in cupboards with pre-laminated board in bedrooms as per standard drawings where no cupboard provided earlier, where openings are available the same will be covered with built in cupboard as per approved drawings. In case of such openings with existing concrete/stone shelves, only cupboard shutters with wooden frames shall be provided.	Factory-made steel wardrobe carcases, shelves, drawers etc. with Wardrobe shutter in 12 mm thick plywood finished with exterior grade post formed laminated/ natural veneer with melamine polish as per the approved sample.	

5.4		Glazing of verandah/balcony with powder coated aluminum section of approved design and shade or UPVC with glazing	Glazing of verandah/balcony with color anodized aluminum section of matching shade or UPVC with glazing.	
5.5		Wire gauze shutters for window with powder coated aluminum section of matching shade or UPVC wire gauge shutter.	Wire gauze shutters of window with color anodized aluminum UPVC wire gauze shutters.	
6	**Internal finishing**			
6.1		All walls & Ceiling to be treated with cement based wall putty (one time only) and painted with low VOC acrylic washable distemper. Polishing on natural veneers of wood work and synthetic enamel paint on steel works	All walls & Ceiling to be treated with cement based wall putty (one time only) and painted with low VOC plastic Emulsion paints. Polishing on natural veneers of wood work and synthetic enamel paint on steel works.	
B	**Electrical works**			
1				
1.1		Power points (15 Amp. 6 - pins) two nos. for each room and two no. for kitchen and one no. in utility area	Power points (15 Amp. 6- pins) a. Type IV and type IV (Spl.) Two No. in each room, two no. in kitchen and one in utility area. b. Type V & Type VI - three nos. in drawing room, three nos. in dining room, two nos. in each bed room, two nos. in kitchen, one no. in utility area c. Type VII & type VIII – two Nos. in office, four nos. In drawing room, three nos. in dining room, two nos. In family lounge, two nos. In each bed room, two nos. in kitchen and one no. in utility area. d. One No. in each Servant Room.	

1.2.1	**AC point with MCB connected socket outlet with wiring**	One No. in each room except kitchen and toilet.	One No. in each room except kitchen and toilet.	
1.2.2	**Geyser point with MCB connected socket outlet with wiring**	One No. in each Bathroom/ Toilet	One No. in each Bathroom/ Toilet	
1.3		Electrical points and 5 Amp. Plug points. Two No. in each room, one no. in balcony, 1 no. call bell point,	Electrical points and 5 Amp. Plug points. a. Type IV and Type IV Spl. – 2 Nos. In each room, 1 no. in balcony, and 2 nos. Call bell. b. Type V and Type VI – 2 nos. In each room, one in store, one in balcony, and 3 nos. Call bell. c. Type VII and type VIII – 2 nos. In office, 2 nos. In each room, one no. in each balcony, one in utility area and 3 Nos. for call bell.	
1.4	**Bracket lights With Normal fitting excluding lamp/bulb**	1 No. in each room, 1 no. in kitchen, 1 no. in each toilet, 1 no. in utility area and 1 no. balcony.	1 No. in each room, 1 no. in kitchen, 1 no. in each toilet, 1 no. in utility area and 1 no. balcony.	
1.5	**Decorative lighting fittings without lamp/bulb on wall/ceiling**	--------	a. Type IV & Type IV (Spl.) – 2 nos. In each room, 1 no. in kitchen, 1 no. in each toilet, 1 no. in utility area and 1 no. in each balcony. b. Type V & Type VI-3nos. In drawing room, 3no.s in dining room, 2 nos. In each bedroom, 1no. in kitchen, 1	

			no. in each balcony. c. Type VII& Type VIII-3nos. In drawing room, 3no.s in dining room, 2 nos. In each bedroom, 1no. in kitchen, 1 no. in each balcony.	
2				
2.1	**Ceiling fan**	a. Type II & type III – 1 no. in drawing, 1 no. in living room, 1 no. in each bedroom, 1 no. in balcony/Verandah.	i. Type IV & Type IV (Spl.) – 2 no. in living room, 1 no. in dining room, 1 no. in each bed room, 1 no. in each balcony. ii. Type V& type VI – 2 no. in drawing room, 2 no. in dining/family lounge, 1 no. in each bed room, 1 no. in each balcony. iii. Type VII and type VIII – 1 no. in office, 2 no. in drawing room, 2 no. in dining/family lounge, 1 no. in each bed room, 1 no. in each balcony	
3	**Tube Light Fittings**	LED tube light fitting with tube complete in each room, living area and kitchen.	LED tube light fitting with tube in each room, living area and kitchen. (including servant quarter)	
4				
4.1		Modular switches	Modular switches	
5	**Others**			
5.1		One No. Door call bell	Door call bell a. Type IV& type IV (spl.) – 2 no. b. Type V & type VI – 2 nos. (1 with image display system) c. Type VII & type VIII – 2 nos. (1 with image display system	

5.2		--	Call bell from main house to servant quarter.	
5.3		Recessed conduit wiring	Recessed conduit wiring	
5.4		Call bell point from ground floor at stair entrance to first floor quarters where grill door has been provided on stair entry)	Call bell point from ground floor at stair entrance to first floor quarters where grill door has been provided on stair entry)	
5.5		One no Fresh air fan/exhaust fan in kitchen and Toilet/bath/ WC.	One no Fresh air fan/exhaust fan in kitchen and Toilet/bath/ WC. One Fresh air fan/exhaust fan in Servant Quarters in living room and Toilets.	
5.6		LED tube light fitting complete in common circulation area/staircase.	LED tube light fitting complete in common circulation area/staircase.	
5.7		Cable TV point (1 no in living room and 1 no in each bedroom)	a. Type IV, Type IV (Spl.), Type V and Type VI - Cable TV point (1 no in drawing room , 1 no in dining/living area, and 1 no in each bedroom) b. Type VII and type VIII- - Cable TV point (1 no in drawing room , 2 no in dining/living area, and 1 no in each bedroom	
5.8		Telephone point (1 in living room and 1 in bed room)	Telephone point (1 no in drawing room, 1 no in dining/living area, and 1 no in each bedroom)	
5.9		This Wire gauze shutters for main entrance door will be made of MS tube/angle iron with grills and wire gauge as per approved design. In case of balcony, wire gauge shutters for door to be provided only in those quarters where balconies have not been covered.	Wire gauze shutters for main entrance door. This will be made of MS tube/angle iron with grill and wire gauge as per approved design. In case of balcony, wire gauge shutters for door to be provided only in those quarters where balconies have not been covered.	
5.10		Pre-coated chain link fencing with iron gate, if feasible. The height of pre-coated chain link fencing with 90cm over 30cm high toe wall with permanent finish to be provided. (Area	Pre-coated chain link fencing with iron gate, if feasible. The height of pre-coated chain link fencing with 90cm over 30cm high toe wall with permanent finish to be provided. (Area around the quarter to be	

		around the quarter to be defined/restricted for proper aesthetics and to facilitate parking of vehicles of upper floor houses as per site condition and in an approved uniform manner.	defined/ restricted for proper aesthetics and to facilitate parking of vehicles of upper floor houses as per site condition and in an approved uniform manner.	

Annexure II

Items of works under payment basis of the estimated cost.

(Balance items excluding the items already covered in up-gradation works)

A. **Civil Works**

i. Items for which 10% of the estimated cost is to be charged from allottees.

- Pavement of areas around the premises with suitable material in an approved manner.

Note: Pavement of areas to be done with chequered tile or plain cement concrete or interlocking blocks including C.C. edging

ii. Items for which 100% of the estimated cost is to be charged from allottees:

- Changing of Indian WC to European WC & vice versa. (It will be free of cost once for an allottee.

Note: All connected costs of dismantling, relaying tiles, finishing etc to be including for changing of Indian WC to European WC & vice versa.

B. **ELECTRICAL WORKS**

i. **Items for which 10% of the estimated cost is to be charged from allottees:**

- Additional power plug points/light plug points/light points.

Note: Additional Points to be provided only when feasible as per electrical load.

ii. **Items for which 100% of the estimated cost is to be charged from allottees:**

- Fancy light fittings.
- Change of cable from feeder pillar to house, if required due to increased load in house.

Tel. : 20861332,20861331
E-Mail: deleecv.cpwd@nic.in

कार्यपालक अभियंता
वी–मण्डल, के0 लो0 नि0 वि0
ईस्ट ब्लॉक–3, तल–5,
आर.के.पुरम्, नई दिल्ली–110066

Executive Engineer
V-Division, CPWD
East Block-3, Level -5
R.K.Puram, ND - 110066

भारत सरकार GOVERNMENT OF INDIA
केन्द्रीय लोक निर्माण विभाग Central Public Works Department

सं0 डीबी / अनुमान / वी मं/2023–2024 3062 दिनांक 07-10-23

सेवा में

Superintending Engineer
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016 .

उ.क्षे.वि.स. डायरी सं./No. 1136 Date/Date 12/10/2023

विषयः निक्षेप कार्यो का निष्पादनः– **Renovation/ Upgradation of kitchens of NRPC staff quarters into modular kitchen and P/L of floor tiles, SS staircase for roof access, New Delhi. dg 2023-24 (SH: Civil works.)**

अनुमानित लागत रू. **45,53,400/-**

उपर्युक्त कार्य केन्द्रीय लोक निर्माण विभाग द्वारा के0लो0नि0वि0 संहिता के पैरा 118–119 के अधीन निम्नलिखित के अनुसार निक्षेप कार्य के रूप में किया जा सकता हैः

1 कार्य को निष्पादन हेतु लिए जाने से पहले कार्यार्थी विभाग को के0लो0नि0वि0 द्वारा परिकलित कार्य की पूरी अनुमानित लागत जमा करानी होंगी। इस जमा राशि के लिये के0लो0नि0वि0 द्वारा कार्यार्थी विभाग को कोई ब्याज नही दिया जाएगा।

2 कार्यार्थी विभाग के0लो0नि0वि0 को भूमि स्थल का खाली कब्जा देगा। के0लो0नि0वि0 अपेक्षित होने पर मौजूदा भवनों/ढॉचों के ढहाने/निपटान करने की जिम्मेदारी ले सकता है।

3 के0लो0नि0वि0 कार्य को अनुमानित लागत के भीतर पूरा करने के लिये बाध्य नही है। यदि अतिरिक्त निधि कि आवश्यकता होगी तो वह कार्यार्थी विभाग को उपलब्ध करानी होंगी। अपेक्षित होने पर आवश्यक संशोधित अनुमान प्रस्तुत कर दिया जाएगा।

4 उक्त कार्य की संविदा के प्रचालन के संबंध में कोई विवाद होने पर वह संविदा करार में दिए गये उपबंध के अनुसार मध्यस्थम् के अधीन होगा। के0लो0नि0वि0 यथासंभव मध्यस्थम कार्यवाही का प्रतिवाद करेगा और मध्यस्थ के पंचाट की यथोचित प्राधिकारी द्वारा जांच करवायेगा। के0लो0नि0वि0 में उस पंचाट को स्वीकार करने या उससे न्यायालय में चुनौती देने के लिये सक्षम प्राधिकारी का निर्णय कार्यार्थी विभाग पर बाध्यकारी होगा।

SE (Comm) 14/10/23

5 निक्षेप कार्य के संबंध में न्यायालय, अधिकरण द्वारा घोषित की जा सकने वाली या मध्यस्थम् के पंचाट द्वारा घोषित सभी राशियों का भुगतान करने के लिये निधि कार्यार्थी विभाग द्वारा तत्काल उपलब्ध करायी जाएगी, भले ही वह न्यायालय, अधिकरण या मध्यस्थ् के समस्त पार्टी हो या ना हो। इस प्रकार के भुगतान कार्य के निष्पादन हेतु ठेकेदारों के किए गए भुगतान के अलावा होंगें।

Contd.. 2

6 कार्यार्थी विभाग से प्रशासनिक अनुमोदन/व्यय स्वीकृति (ए/ए और ई/एस) मिलने के बाद के0लो0नि0वि0 विभिन्न विस्तृत वास्तुकीय आरेख और सेवा योजना /नक्शे आदि/ तैयार करेगा और उन्हें सभी स्थानीय निकायों को प्रस्तुत करेगा जिनका निर्माण कार्य शुरू करने से पहले अनुमोदन लेना आवश्यक होगा। स्थानीय निकाय स्वतंत्र संगठन होते हैं और उन पर के0लो0नि0वि0 का कोई नियंत्रण नही होता। ये स्थानीय निकाय योजनाओं को अनुमोदित करने में समय लगाते हैं। इस प्रकार के अनुमोदन लेने के लिये अपेक्षित समय को अनुमान में उल्लिखित निर्माण के समय में शामिल नही किया गया है। हॉलांकि के0लो0नि0वि0 इस प्रकार के अनुमोदन में यथाशीध्र प्राप्त करने का पूरा प्रयास करेगा तथापि कार्यार्थी विभाग के लिये भी यह आवश्यक होगा कि वह स्थानीय निकायों से शीध्र अनुमोदन प्राप्त करने के लिये प्रयास करें।

7 के0लो0नि0वि के पास इस कार्य में निवेश करने के लिये अपनी कोई धन–राशि नही है। अतः कार्यार्थी को यह सुनिश्चित करना चाहिये कि इस कार्य के निष्पादन के लिये कि0लो0नि0वि0 के पास प्रर्याप्त धन राशि उपलब्ध रहे। यदि कार्यार्थी विभाग तथा अपेक्षित धन राशि उपलब्ध कराने में असफल रहता है तो के0लो0नि0वि के लिये कार्य को निलंबित करना/छोडना आवश्यक हो सकता है। ऐसी स्थिति में कार्यार्थी विभाग कार्य को बंद करने/छोडने के कारण होने वाले सभी परिणामों तथा मुआवजे/नुकसान के लिये किये जाने वाले ठेकेदारों के दावों के लिये पूरी तरह जिम्मेदार होगा।

8 कार्यार्थी विभाग के0लो0नि0वि0 के (क) ठेकेदारों को मजदूरों के लिए झोपडियॉ बनाने के लिए निःशुल्क स्थान उपलब्ध कराने, (ख) ठेकेदारें के सामान और मजदूरों के कार्य स्थल पर आवागमन के लिये निर्बाध रास्ता उपलब्ध कराते, (ग) कार्य के निष्पादन के लिए सामान्य प्रकारों के भुगतान पर बिजली का कनैक्शन उपलब्ध कराने, (ध) संबंधित विद्युत बोर्ड/प्राधिकरण से विद्युत लोड की मंजूरी दिलवाने और लोड दिलवाने में सहायता करेगा।

9 यदि धन राशि किस्तों में जमा कराई जाएगी तो ऐसे मामलों में समय पर धन राशि न मिलने के कारण कार्य में होने वाले किसी विलंब, नुकसान काम बंद करने, मुआवजे/नुकसान आदि के लिए ठेकेदारों द्वाराकिए जाने वाले दावों के लिए के0लो0नि0वि0 जिम्मेदार नही होगा।

10 इस कार्य के लिए चैक "Executive Engineer, "V" Division, CPWD, New Delhi" के नाम पर भेजने का कष्ट करें।

11 उक्त प्रारम्भिक अनुमान केवल एक वर्ष तक की अवधि हेतु वैध है, यदि एक वर्ष की अवधि के दौरान उक्त प्रारम्भिक अनुमान हेतु प्रषासनिक अनुमोदन एंव व्यय स्वीकृति जारी नही की जाती है तो ग्राहक विभाग को नया मांग पत्र देना होगा।

अनुरोध है कि उपर्युक्त स्वीकृति से अद्योहस्ताक्षरी को सूचित करने का प्रबन्ध करें जिससे आगे की कार्यवाही कर सके।

संलग्नः उपरोक्तानुसार

भवदीय

कार्यपालक अभियंता

प्रतिलिपि :

1 सहायक अभियंता V/वी मंडल, के0 लो0 नि0 वि0, नई दिल्ली ।

कार्यपालक अभियंता

HISTORY

Name of work: - **Renovation/ Upgradation of kitchens of NRPC staff quarters into modular kitchen and P/L of floor tiles, SS staircase for roof access, New Delhi. dg 2023-24 (SH: Civil works.)**

Funds:-

Major Head	Minor Head	Detailed Head

Preliminary cum detailed Estimate framed by Er. Krishan Chand, Assistant Engineer - 2/V and checked by Er. V.K. Meena, Executive Engineer, "V" Division, CPWD for the probable cost of Rs. **45,53,400/-** including 7% Cost index, 1.06335 GST, 4.25% for ESI & EPF and 5% contingencies.

REPORT

HISTORY:- This preliminary cum detailed estimate amounting to **Rs. 45,53,400/-** i/c 5% contingencies has been framed to cover the probable cost of the above cited work for accord of A/A & E/S of the competent authority.

A requisition has been received vide letter no. CEA-GO-17-12(23)/1/2023-NRPC dairy no. 2189 dated 26/06/2023 from NRPC authorities New Delhi for the submission of estimate. Hence this estimate has been prepared after discussion with client at site.

Design & Scope:- The following provision have been made in the estimate:-

1. Providing and fixing 18 mm thick gang saw cut, mirror polished, pre moulded and pre polished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations.
2. Providing and fixing Ist quality ceramic glazed wall tiles.
3. Providing and fixing stainless steel fancy handle.
4. Providing and fixing stainless steel soft closing spring hinges.
5. Providing and fixing stainless steel soft closing heavy type telescopic drawer channels.
6. Providing and fixing ready made 304 grade stainless steel Modular kitchen basket and accessories.
7. Providing and fixing 2mm thick 16 to 19mm wide PVC edge binding tape.
8. Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc.
9. Providing and laying Vitrified tiles in floor in different sizes.
10. Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid board one side white color.
11. Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain white color board for backing of cup boards and bathroom/kitchen.

Specifications: -		The work shall be executed as per CPWD specification 2019 with upto date correction slips.
Rate	:-	Market Rates/ DSR 2021.
W.C. Staff	:-	Shall be met out from contingencies
Cost	:-	**Rs. 45,53,400/-**
Method	:-	Through contract after Call of tender.
T & P	:-	Shall be arranged by the Contractor.
Land	:-	Available
Time	:-	02 Months after award of work.

Assistant Engineer(P)

Executive Engineer
"V" Division, CPWD

ABSTRACT OF COST

Name of Work:- Renovation/Upgradation of kitchens of NRPC staff quarters into modular kitchen and P/L of floor tiles, SS staircase for roof access, New Delhi. dg 2023-24 (SH: Civil works.)

Item No	DSR 2021	Description	Qty	Unit	Rate	Amount
1	6.13	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
	6.13.2	Cement mortar 1:4 (1 cement :4 coarse sand)	5.00	sqm	1018.05	5090
2	8.2	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size,approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement,mixed with matching pigment, epoxy touch ups, including rubbing, curing,moulding and polishing of edges to give high gloss finish etc. complete at all levels.				
2.1	8.2.2.1	Area of slab upto 0.50 sqm	4.48	Sqm	4679.35	20963
2.2	8.2.2.2	Area of slab over 0.50 sqm	46.56	Sqm	4425.35	206044
3	8.31	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS. 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	86.00	Sqm	1063.45	91457
4	9.170	Providing and fixing stainless steel fancy handle of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.				
	9.170 1	200 mm	800.00	Each	153.15	122520
5	9.171	Providing and fixing stainless steel soft closing spring hinges at 0degree hinges (hydraulic type) of approved make/brand to cupboard shutters with full threaded steel screws including making necessary recess in board and finished etc. complete as per direction of Engineer-in-charge.	880.00	Each	226.75	199540
6	9.172	Providing and fixing stainless steel soft closing heavy type telescopic drawer channels of approved make 500 mm long with screws etc. complete as per directions of Engineer- in-charge.	240.00	One set	749.70	179928

7	9.173	Providing and fixing ready made 304 grade stainless steel Modular kitchen basket and accessories such as right angle basket (Plain Cup & Saucer, plant, Partition, Bottle rack, Thali, Cutlery) kitchen utensil basket, Dinner set basket, kitchen grain basket, Multi purpose basket as per site equirement including finishing (wherever required) and fittings. The same shall be fixed with necessary stainless steel nuts & bolts, Stainless Steel screws & telescopic channel etc. as per direction of Engineer-in-charge. (For payment purpose only weight of Stainless steel basket shall be considered excluding weight of all fixing accessories such as nuts, bolts, fasteners telescopic basket channels etc. Payment of providing and fixing telescopic channel shall be paid separately)	480.00	Kg	423.70	203376
8	9.174	Providing and fixing 2mm thick 16 to 19mm wide PVC edge binding tape of approved quality for cupboard/wardrobe shutters including necessary synthetic resin hot pressed to edges on binding machine etc. complete as per directions of Engineer- in-charge.	608.00	Mtr	38.45	23378
9	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same withnecessary stainless steel nuts and bolts complete, i/c fixing the railingwith necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge,(for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts,fasteners etc.).	88.06	kg	612.25	53914
10	11.41A	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, ofapproved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc.Thetiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
	11.41A.2	Glazed vitrified floor tiles polished finish of size				
	11.41A.2.1	Size of Tile 600 x 600 mm	1048.00	Sqm	1338.50	1402748
11	11.42	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles and jointing with grey cement slurry @ 3.3 kg/ sqm.	-1048.00	Sqm	735.30	-770594
12	11.43	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	1048.00	Sqm	633.60	664013

13	15.2	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
		Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	3.36	cum	2007.10	6744
14	15.7	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
	15.7.4	In cement mortar	2.00	Cum	1698.45	3397
15	15.23	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	15.23.1	For thickness of tiles 10 mm to 25 mm	54.00	Sqm	60.50	3267
16	15.60	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	50.00	Cum	219.30	10965
17	17.10	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :				
	17.10.2	Kitchen sink without drain board				
	17.10.2.1	610x510 mm bowl depth 200 mm	5.00	Each	4274.40	21372
18	26.89	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid board one side white color and other side of board laminted with PVC foil of minimum 14 micron thickness of approved design pasted with hot melt adhesive for cup boards, work stations and athroom/ kitchen cabinet etc. of required sizes comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 (Face) & 900 N (Edge), minimum compressive strength 50 N/ mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel piano hinges/soft close clip on concealed hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel piano hinges/soft close clip on concealed hinges and necessary S.S screws shall be paid separately)				
	26.89.1	18 mm thick	397.00	Sqm	2714.15	1077518

19	26.90	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain white color board for backing of cup boards and bathroom/kitchen cabinets etc. of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel screws etc. all as per direction of Engineer-In- Charge. (Note: stainless steel screws shall be paid separately)				
	26.90.1	6 mm thick	133.00	Sqm	982.00	130606
					Total	3656246
					Add Cost Index @ 7% upto from item no. 1 to 19	255937
					Total	3912183
					Add 18% GST applicable on work contract by reversible multiple factor 1.0633 asperoffice memorandum no.	4159824
					Add 4.25 % EPF ESI	176793
					Total	4336617
					Add contigencies @ 5%	216831
					Total	4553448
					Say Rs.	45,53,400/-

Asstt. Engineer(P)
"V" Division, CPWD

Executive Engineer
"V" Division, CPWD

Tel. : 20861332,20861331
E-Mail: deleecv.cpwd@nic.in

कार्यपालक अभियंता
वी–मण्डल, के० लो० नि० वि०
ईस्ट ब्लॉक–3, तल–5,
आर.के.पुरम्, नई दिल्ली–110066

Executive Engineer
V-Division, CPWD
East Block-3, Level -5
R.K.Puram, ND - 110066

सत्यमेव जयते

भारत सरकार GOVERNMENT OF INDIA
केन्द्रीय लोक निर्माण विभाग Central Public Works Department

सं० डीबी / अनुमान / वी मं / 2023–2024 / 1781 दिनांक 06.06.2023

No. 644 9/6/2023

सेवा में

Superintending Engineer
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016 .

विषयः निक्षेप कार्यो का निष Internal and External White Washing including paint of doors and windows of NRPC Office, New Delhi.

अनुमानित लागत रू. **34,10,500/-**

उपर्युक्त कार्य केन्द्रीय लोक निर्माण विभाग द्वारा के०लो०नि०वि० संहिता के पैरा 118–119 के अधीन निम्नलिखित के अनुसार निक्षेप कार्य के रूप में किया जा सकता है:

1 कार्य को निष्पादन हेतु लिए जाने से पहले कार्यार्थी विभाग को के०लो०नि०वि० द्वारा परिकलित कार्य की पूरी अनुमानित लागत जमा करानी होंगी। इस जमा राशि के लिये के०लो०नि०वि० द्वारा कार्यार्थी विभाग को कोई ब्याज नही दिया जाएगा।

2 कार्यार्थी विभाग के०लो०नि०वि० को भूमि स्थल का खाली कब्जा देगा। के०लो०नि०वि० अपेक्षित होने पर मौजूदा भवनों / ढॉचों के ढहाने / निपटान करने की जिम्मेदारी ले सकता है।

3 के०लो०नि०वि० कार्य को अनुमानित लागत के भीतर पूरा करने के लिये बाध्य नही है। यदि अतिरिक्त निधि कि आवश्यकता होगी तो वह कार्यार्थी विभाग को उपलब्ध करानी होगी। अपेक्षित होने पर आवश्यक संशोधित अनुमान प्रस्तुत कर दिया जाएगा।

4 उक्त कार्य की संविदा के प्रचालन के संबंध में कोई विवाद होने पर वह संविदा करार में दिए गये उपबंध के अनुसार मध्यस्थम् के अधीन होगा। के०लो०नि०वि० यथासंभव मध्यस्थम कार्यवाही का प्रतिवाद करेगा और मध्यस्थ के पंचाट की यथोचित प्राधिकारी द्वारा जांच करवायेगा। के०लो०नि०वि० में उस पंचाट को स्वीकार करने या उससे न्यायालय में चुनौती देने के लिये सक्षम प्राधिकारी का निर्णय कार्यार्थी विभाग पर बाध्यकारी होगा।

5 निक्षेप कार्य के संबंध में न्यायालय, अधिकरण द्वारा घोषित की जा सकने वाली या मध्यस्थम् के पंचाट द्वारा घोषित सभी राशियों का भुगतान करने के लिये निधि कार्यार्थी विभाग द्वारा तत्काल उपलब्ध करायी जाएगी, भले ही वह न्यायालय, अधिकरण या मध्यस्थ् के समस्त पार्टी हो या ना हो। इस प्रकार के भुगतान कार्य के निष्पादन हेतु ठेकेदारों के किए गए भुगतान के अलावा होगें।

EE(S)
In earlier letter estimated cost was Rs. 37,20,600/- → both are different. Pls. discuss
Sd/- 12/6

SE (NRPC)
Sd/- 07/06/23

Contd.. 2

sanction latter

6 कार्यार्थी विभाग से प्रशासनिक अनुमोदन/व्यय स्वीकृति (ए/ए और ई/एस) मिलने के बाद के0लो0नि0वि0 विभिन्न विस्तृत वास्तुकीय आरेख और सेवा योजना /नक्शे आदि/ तैयार करेगा और उन्हें सभी स्थानीय निकायों को प्रस्तुत करेगा जिनका निर्माण कार्य शुरू करने से पहले अनुमोदन लेना आवश्यक होगा। स्थानीय निकाय स्वतंत्र संगठन होते हैं और उन पर के0लो0नि0वि0 का कोई नियंत्रण नही होता। ये स्थानीय निकाय योजनाओं को अनुमोदित करने में समय लगाते हैं। इस प्रकार के अनुमोदन लेने के लिये अपेक्षित समय को अनुमान में उल्लिखित निर्माण के समय में शामिल नही किया गया है। हॉलांकि के0लो0नि0वि0 इस प्रकार के अनुमोदन में यथाशीध्र प्राप्त करने का पूरा प्रयास करेगा तथापि कार्यार्थी विभाग के लिये भी यह आवश्यक होगा कि वह स्थानीय निकायों से शीध्र अनुमोदन प्राप्त करने के लिये प्रयास करें।

7 के0लो0नि0वि के पास इस कार्य में निवेश करने के लिये अपनी कोई धन–राशि नही है। अतः कार्यार्थी को यह सुनिश्चित करना चाहिये कि इस कार्य के निष्पादन के लिये कि0लो0नि0वि0 के पास प्रर्याप्त धन राशि उपलब्ध रहे। यदि कार्यार्थी विभाग तथा अपेक्षित धन राशि उपलब्ध कराने में असफल रहता है तो के0लो0नि0वि के लिये कार्य को निलंबित करना/छोडना आवश्यक हो सकता है। ऐसी स्थिति में कार्यार्थी विभाग कार्य को बंद करने/छोडने के कारण होने वाले सभी परिणामों तथा मुआवजे/नुकसान के लिये किये जाने वाले ठेकेदारों के दावों के लिये पूरी तरह जिम्मेदार होगा।

8 कार्यार्थी विभाग के0लो0नि0वि0 के (क) ठेकेदारों को मजदूरों के लिए झोपडियॉ बनाने के लिए निःशुल्क स्थान उपलब्ध कराने, (ख) ठेकेदारें के सामान और मजदूरों के कार्य स्थल पर आवागमन के लिये निर्बाध रास्ता उपलब्ध कराते, (ग) कार्य के निष्पादन के लिए सामान्य प्रकारों के भुगतान पर बिजली का कनैक्शन उपलब्ध कराने, (ध) संबंधित विद्युत बोर्ड/प्राधिकरण से विद्युत लोड की मंजूरी दिलवाने और लोड दिलवाने में सहायता करेगा।

9 यदि धन राशि किस्तों में जमा कराई जाएगी तो ऐसे मामलों में समय पर धन राशि न मिलने के कारण कार्य में होने वाले किसी विलंब, नुकसान काम बंद करने, मुआवजे/नुकसान आदि के लिए ठेकेदारों द्वाराकिए जाने वाले दावों के लिए के0लो0नि0वि0 जिम्मेदार नही होगा।

10 इस कार्य के लिए चैक "Executive Engineer, "V" Division, CPWD, New Delhi" के नाम पर भेजने का कष्ट करें।

11 उक्त प्रारम्भिक अनुमान केवल एक वर्ष तक की अवधि हेतु वैध है, यदि एक वर्ष की अवधि के दौरान उक्त प्रारम्भिक अनुमान हेतु प्रषासनिक अनुमोदन एंव व्यय स्वीकृति जारी नही की जाती है तो ग्राहक विभाग को नया मांग पत्र देना होगा।

अनुरोध है कि उपर्युक्त स्वीकृति से अद्योहस्ताक्षरी को सूचित करने का प्रबन्ध करें जिससे आगे की कार्यवाही कर सके।

संलग्नः उपरोक्तानुसार

भवदीय

कार्यपालक अभियंता

प्रतिलिपि :

1 सहायक अभियंता V वी मंडल, के0 लो0 नि0 वि0, नई दिल्ली ।

कार्यपालक अभियंता

HISTORY SHEET

Name of work: - **Internal and External White Washing including paint of doors and windows of NRPC Office, New Delhi.**

Funds:-

Major Head	Minor Head	Detailed Head

Preliminary cum detailed Estimate framed by Er. Sanjay Kumar Rao, Assistant Engineer - 2/V and checked by Er. V.K. Meena, Executive Engineer, "V" Division, CPWD for the probable cost of Rs. **34,10,500/-** including 7% cost index, 4.25% for ESI & EPF and 5% contingencies.

REPORT

HISTORY:- This preliminary cum detailed estimate amounting to **Rs. 34,10,500/-** i/c 5% contingencies has been framed to cover the probable cost of the above cited work for accord of A/A & E/S of the competent authority.

Requisition has been received vide letter no. NRPC/SER/172023/1743 dated - 17/02/2023 from NRPC Authority, for the submission of estimate. This estimate has been finally prepared after discussion with client at site.

Design & Scope:- The following provision have been made in the estimate:-

1. Finishing walls with Acrylic Smooth exterior paint
2. Wall painting with acrylic emulsion paint
3. Painting with synthetic enamel paint
4. Providing and applying white cement based putty
5. Removing white or colour wash.
6. Repairs to plaster.

Specifications: -		The work shall be executed as per CPWD specification 2019 with upto date correction slips.
Rate	:-	DSR 2021.
W.C. Staff	:-	Shall be met out from contingencies
Cost	:-	**Rs. 34,10,500/-**
Method	:-	Through contract after Call of tender.
T & P	:-	Shall be arranged by the Contractor.
Land	:-	Available
Time	:-	01 Months after award of work.

Assistant Engineer(P)

Executive Engineer
"V" Division, CPWD
New Delhi.

ABSTRACT OF COST

Name of Work : Internal and External White Washing including paint of doors and windows of NRPC Office, New Delhi.

SI NO.	DSR 21 NO	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE	AMOUNT
1	13.46	Finishing walls with Acrylic Smooth exterior paint of required shade :				
	13.46.1	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	4800.00	Sqm	166.85	800880
2	13.60	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade :				
	13.60.1	Two or more coats on new work	7484.00	Sqm	137.85	1031669
3	13.61	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	13.61.1	Two or more coats on new work	294.00	Sqm	131.45	38646
4	13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	5040.00	Sqm	123.85	624204
5	13.88	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	12043.00	Sqm	16.35	196903
6	14.1	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.				
	14.1.1	With cement mortar 1:4 (1 cement : 4 fine sand)	100.00	Sqm	462.3	46230
					Total	2738532
		Add Cost Index @ 7%				191697
		Total				2930229
		Add 18% GST applicable on work contract by reverible multiple factor 1.0633 asperoffice memorandum no. 158/SE(TAS)/GST/2022/331-(H), dated 10/08/2022				3115712
		Add 4.25 % EPF ESI				132418
		Total				3248130
		Add contigencies @ 5%				162407
		Total				3410537
					Say Rs.	34,10,500/-

Asstt. Engineer(P)
"V" Division, CPWD

Executive Engineer
"V" Division, CPWD

Tel. : 20861332,20861331
E-Mail: deleecv.cpwd@nic.in

कार्यपालक अभियंता
वी–मण्डल, के0 लो0 नि0 वि0
ईस्ट ब्लॉक–3, तल–5,
आर.के.पुरम्, नई दिल्ली–110066

Executive Engineer
V-Division, CPWD
East Block-3, Level -5
R.K.Puram, ND - 110066

भारत सरकार GOVERNMENT OF INDIA
केन्द्रीय लोक निर्माण विभाग Central Public Works Department

सं0 डीबी / अनुभाग / वी मं/2023–2024 /1704 दिनांक 29/5/23

सेवा में

Superintending Engineer
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016 .

Dy. No. 643 9/6/2023

विषयः निक्षेप कार्यों का निष्पादन Internal & External finishing including paint of doors & Windows of NRPC Staff Qtrs, New Delhi during 2023-24

अनुमानित लागत रू. 37,20,600/-

उपर्युक्त कार्य केन्द्रीय लोक निर्माण विभाग द्वारा के0लो0नि0वि0 संहिता के पैरा 118–119 के अधीन निम्नलिखित के अनुसार निक्षेप कार्य के रूप में किया जा सकता है:

1 कार्य को निष्पादन हेतु लिए जाने से पहले कार्यार्थी विभाग को के0लो0नि0वि0 द्वारा परिकलित कार्य की पूरी अनुमानित लागत जमा करानी होंगी। इस जमा राशि के लिये के0लो0नि0वि0 द्वारा कार्यार्थी विभाग को कोई ब्याज नही दिया जाएगा।

2 कार्यार्थी विभाग के0लो0नि0वि0 को भूमि स्थल का खाली कब्जा देगा। के0लो0नि0वि0 अपेक्षित होने पर मौजूदा भवनों / ढाँचो के ढहाने / निपटान करने की जिम्मेदारी ले सकता है।

3 के0लो0नि0वि0 कार्य को अनुमानित लागत के भीतर पूरा करने के लिये बाध्य नही है। यदि अतिरिक्त निधि कि आवश्यकता होगी तो वह कार्यार्थी विभाग को उपलब्ध करानी होगी। अपेक्षित होने पर आवश्यक संशोधित अनुमान प्रस्तुत कर दिया जाएगा।

4 उक्त कार्य का संविदा के प्रचालन के संबंध में कोई विवाद होने पर वह संविदा करार में दिए गय उपबंध के अनुसार मध्यस्थम के अधीन होगा। के0लो0नि0वि0 यथासंभव मध्यस्थम कार्यवाही का प्रतिवाद करेगा और मध्यस्थ के पंचाट की यथोचित प्राधिकारी द्वारा जांच करवायेगा। के0लो0नि0वि0 में उस पंचाट को स्वीकार करने या उससे न्यायालय में चुनौती देने के लिये सक्षम प्राधिकारी का निर्णय कार्यार्थी विभाग पर बाध्यकारी होगा।

5 निक्षेप कार्य के संबंध मे न्यायालय, अधिकरण द्वारा घोषित की जा सकने वाली या मध्यस्थम् के पंचाट द्वारा घोषित सभी राशियों का भुगतान करने के लिये निधि कार्यार्थी विभाग द्वारा तत्काल उपलब्ध कराई जाएगी, भले ही वह न्यायालय, अधिकरण या मध्यस्थ् के समस्त पार्टी हो या ना हो। इस प्रकार के भुगतान कार्य के निष्पादन हेतु ठेकेदारों के किए गए भुगतान के अलावा होंगें।

SE(NRPC) 9/6/23
EE(S) Pls. discuss SK 12/6

Contd.. 2

6 कार्यार्थी विभाग से प्रशासनिक अनुमोदन/व्यय स्वीकृति (ए/ए और ई/एस) मिलने के बाद के0लो0नि0वि0 विभिन्न विस्तृत वास्तुकीय आरेख और सेवा योजना /नक्शे आदि/ तैयार करेगा और उन्हें सभी स्थानीय निकायों को प्रस्तुत करेगा जिनका निर्माण कार्य शुरू करने से पहले अनुमोदन लेना आवश्यक होगा। स्थानीय निकाय स्वतत्र संगठन हाते हैं और उन पर के0लो0नि0वि0 का कोई नियंत्रण नही होता। ये स्थानीय निकाय योजनाओं को अनुमोदित करने में समय लगाते हैं। इस प्रकार के अनुमोदन लेने के लिये अपेक्षित समय को अनुमान में उल्लिखित निर्माण के समय में शामिल नही किया गया है। हॉलांकि के0लो0नि0वि0 इस प्रकार के अनुमोदन में यथाशीध्र प्राप्त करने का पूरा प्रयास करेगा तथापि कार्यार्थी विभाग के लिये भी यह आवश्यक होगा कि वह स्थानीय निकायों से शीध्र अनुमोदन प्राप्त करने के लिये प्रयास करें।

7 के0लो0नि0वि के पास इस कार्य में निवेश करने के लिये अपनी कोई धन–राशि नही है। अतः कार्यार्थी को यह सुनिश्चित करना चाहिये कि इस कार्य के निष्पादन के लिये कि0लो0नि0वि0 के पास प्रर्याप्त धन राशि उपलब्ध रहे। यदि कार्यार्थी विभाग तथा अपेक्षित धन राशि उपलब्ध कराने में असफल रहता है तो के0लो0नि0वि के लिये कार्य को निलंबित करना/छोडना आवश्यक हो सकता है। ऐसी स्थिति में कार्यार्थी विभाग कार्य को बंद करने/छोडने के कारण होने वाले सभी परिणामों तथा मुआवजे/नुकसान के लिये किये जाने वाले ठेकेदारों के दावों के लिये पूरी तरह जिम्मेदार होगा।

8 कार्यार्थी विभाग के0लो0नि0वि0 के (क) ठेकेदारों को मजदूरों के लिए झोपडियॉ बनाने के लिए निःशुल्क स्थान उपलब्ध कराने, (ख) ठेकेदारें के सामान और मजदूरों के कार्य स्थल पर आवागमन के लिये निर्बाध रास्ता उपलब्ध कराते, (ग) कार्य के निष्पादन के लिए सामान्य प्रकारों के भुगतान पर बिजली का कनैक्शन उपलब्ध कराने, (ध) संबंधित विद्युत बोर्ड/प्राधिकरण से विद्युत लोड की मंजूरी दिलवाने और लोड दिलवाने में सहायता करेगा।

9 यदि धन राशि किस्तों में जमा कराई जाएगी तो ऐसे मामलों में समय पर धन राशि न मिलने के कारण कार्य में होने वाले किसी विलंब, नुकसान काम बंद करने, मुआवजे/नुकसान आदि के लिए ठेकेदारों द्वाराकिए जाने वाले दावों के लिए के0लो0नि0वि0 जिम्मेदार नही होगा।

10 इस कार्य के लिए चैक "Executive Engineer, "V" Division, CPWD, New Delhi" के नाम पर भेजने का कष्ट करें।

11 उक्त प्रारम्भिक अनुमान केवल एक वर्ष तक की अवधि हेतु वैध है, यदि एक वर्ष की अवधि के दौरान उक्त प्रारम्भिक अनुमान हेतु प्रषासनिक अनुमोदन एंव व्यय स्वीकृति जारी नही की जाती है तो ग्राहक विभाग को नया मांग पत्र देना होगा।

अनुरोध है कि उपर्युक्त स्वीकृति से अद्योहस्ताक्षरी को सूचित करने का प्रबन्ध करें जिससे आगे की कार्यवाही कर सके।

संलग्नः उपरोक्तानुसार

भवदीय

कार्यपालक अभियंता

प्रतिलिपि :

1 सहायक अभियंता J/वी मंडल, के0 लो0 नि0 वि0, नई दिल्ली ।

कार्यपालक अभियंता

HISTORY SHEET

Name of work: - Internal & External finishing including paint of doors & Windows of NRPC Staff Qtrs, New Delhi during 2023-24.

Funds:-

Major Head	Minor Head	Detailed Head

Preliminary cum detailed Estimate framed by Er. Sanjay Kumar Rao, Assistant Engineer - 2/V and checked by Er. V.K. Meena, Executive Engineer, "V" Division, CPWD for the probable cost of Rs **37,20,600/-** including 7% cost index, 4.25% for ESI & EPF and 5% contingencies.

REPORT

HISTORY:- This preliminary cum detailed estimate amounting to **Rs. 37,20,600/-** i/c 5% contingencies has been framed to cover the probable cost of the above cited work for accord of A/A & E/S of the competent authority.

Requisition has been received vide letter no. NRPC/SER/172023/1743 dated - 17/02/2023 from NRPC Authority, for the submission of estimate. This estimate has been finally prepared after discussion with client at site.

Design & Scope:- The following provision have been made in the estimate:-

1. Distempering with 1st quality acrylic distemper(New work)
2. Painting with synthetic enamel paint
3. Providing and applying white cement based putty
4. Distempering with 1st quality acrylic distemper(Old work)
5. Removing dry or oil bound distemper Repairs to plaster.
6. Repairs to plaster
7. Finishing walls with Acrylic Smooth exterior paint
8. Removing white or colour wash.

Specifications: -		The work shall be executed as per CPWD specification 2019 with upto date correction slips.
Rate	:-	DSR 2021.
W.C. Staff	:-	Shall be met out from contingencies
Cost	:-	**Rs. 37,20,600/-**
Method	:-	Through contract after Call of tender.
T & P	:-	Shall be arranged by the Contractor.
Land	:-	Available
Time	:-	02 Months after award of work.

Assistant Engineer(P)

Executive Engineer
"V" Division, CPWD
New Delhi.

ABSTRACT OF COST

Name of Work : Internal & external finshing including paint of doors & Windows of NRPC Staff Qtrs New Delhi during 2023-24.

SI NO.	DSR 21 NO	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE	AMOUNT
1	13.42	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification.				
	13.42.1	Two or more coats on new work	5810.00	Sqm	92.75	538878
2	13.46	Finishing walls with Acrylic Smooth exterior paint of required shade :				
2.1	13.46.1	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	4568.00	Sqm	166.85	762171
3	13.61	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	13.61.1	Two or more coats on new work	1582.00	Sqm	131.45	207954
4	13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	9033.00	Sqm	123.85	1118737
5	13.88	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	4568.00	Sqm	16.35	74687
6	13.90	Distempering with 1st quality acrylic distemper (Ready mix) having VOC content less than 50 grams/ litre of approved brand and manufacture to give an even shade :				
	13.90.1	Old work (one or more coats)	1345.00	Sqm	56.8	76396
7	13.91	Removing dry or oil bound distemper,waterproofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	4465.00	Sqm	20.85	93095
8	14.1	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.				
	14.1.1	With cement mortar 1:4 (1 cement : 4 fine sand)	250.00	Sqm	462.3	115575
					Total	2987493
					Add Cost Index @ 7%	209125
					Total	3196618
		Add 18% GST applicable on work contract by reverible multiple factor 1.0633 asperoffice memorandum no. 158/SE(TAS)/GST/2022/331-(H), dated 10/08/2022				3398964
		Add 4.25% for ESI & EPF				144456
						3543420
					Add contigencies @ 5%	177171
					Total	3720591
					Say Rs.	37,20,600/-

सहायक अभियन्ता (यो.)
'बी' मंडल, के.लो.नि.वि.
ईस्ट ब्लॉक-3, लेवल-5
आर.के. पुरम, नई दिल्ली-66

कार्यपालक अभियन्ता
'बी' मंडल, के.लो.नि.वि.
ईस्ट ब्लॉक-3, लेवल-5
आर.के. पुरम, नई दिल्ली-66

ANNEXURE-XV

सत्यमेव जयते

विजय कुमार सिंह
सदस्य सचिव

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

अर्ध शासकीय पत्र सं. NRPC/SER/310/2022-23/6744
D.O. No.

दिनांक 19 सितम्बर, 2023
Date :.....

Dear Shri Prasad Ji,

As you are aware that Northern Regional Power Committee (NRPC) was constituted vide Government of India's Resolution dated 25.05.2005 and subsequent Amendments dated 29.11.2005 and 9.05.2008. Further, as per Government of India, Ministry of Power's letter dated 23.02.2006; the activities of RPCs are to be fully financed by the constituent members (copy enclosed). For this purpose, NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to time.

In this regard, I want to invite your attention to my D.O. letter No.NRPC/SER/310/2022-23/6124 dated 21st July 2023 (Copy enclosed), wherein I conveyed the delay in payments of contribution amount by J&K (JKPDD and JKPDCL). Once again, details of pending payments are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty (Rs.)	Total outstanding amount (Rs.)
1	J&K State Power Development Corp. Ltd.	2014-15	11,00,000	-	11,00,000
2		2015-16	11,00,000	-	11,00,000
3		2018-19	10,00,000	-	10,00,000
4	J&K State Power Development Department	2019-20	10,00,000	-	10,00,000
5		2021-22	10,00,000	1,80,000	11,80,000
				Grand Total	**53,80,000**

This matter was further raised in 68th NRPC Meeting held on 18.08.2023, in which J&K representative stated that as per their records, all the pending amount has already been paid except for contribution fee for year 2021-22. The J&K was requested to send all the receipts of transactions to NRPC Secretariat so that payments received from J&K can be checked again for reconciliation of the matter. However, no communication has been received in this matter till date.

NRPC Secretariat has re-checked in its records and has found no details of payments as mentioned by representative of J&K in 68th NRPC Meeting. Therefore, total amount of Rs.32,00,000/- and Rs.21,80,000/- is still pending with JKPDD and JKPDCL respectively. If payment has already been done, J&K is again requested to send the details of payment.

I would like to mention that NRPC Secretariat has communicated with your offices many times (copy enclosed) and my predecessor Member Secretary, NRPC also written number of D.O. letters to your office in this regard (copy enclosed).

I request you to please intervene in the matter and give directions to both the departments for making payment of aforementioned contribution amount on priority for smooth functioning of NRPC Secretariat. The payment could be made through Demand Draft drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No.3083000105096078 RTGS / NEFT Code: PUNB0308300).

Yours sincerely,

19/09/2023

(Vijay Kumar Singh)

Shri H. Rajesh Prasad, IAS
Principal Secretary,
Power Development Department, J&K,
Civil Secretariat, Jammu –180001

Copy to:

1. Chief Engineer (OM), Ministry of Power, New Delhi
2. Managing Director, JKPDCL, SLDC Building, 1st Floor, Gladni Grid Station, Narvel Bala, Jammu-180004

विजय कुमार सिंह
सदस्य सचिव

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

अर्ध शासकीय पत्र सं.
D.O.No.NRPC/SER/310/2022-23/6124

दिनांक:
Dated, the 21st July, 2023

Dear Shri Prasad Ji,

As you are aware that Northern Regional Power Committee (NRPC) was constituted vide Government of India's Resolution dated 25.05.2005 and subsequent Amendments dated 29.11.2005 and 9.5.2008. Further, as per Government of India, Ministry of Power's letter dated 23.02.2006; the activities of RPCs are required to be fully financed by the constituent members (copy enclosed). For this purpose, NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to time.

In this regard, I convey my sincere gratitude to J&K on behalf of NRPC, for its cooperation and support to regional grid and help in functioning of NRPC activities so far. However, there are some pending payments of NRPC membership fee to be paid by J&K (JKSPDCL and JKPDD), details of which are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty amount (Rs.)	Total Outstanding amount (Rs.)
1.	J&K State Power Development Corporation Ltd. (JKPDCL)	2014-15	11,00,000	-	11,00,000
2.		2015-16	11,00,000	-	11,00,000
3.		2018-19	10,00,000	-	10,00,000
4.	J&K State Power Development Department (JKPDD)	2019-20	10,00,000	-	10,00,000
5.		2021-22	10,00,000	1,70,000	11,70,000
				Grand Total	**53,70,000**

The payment could be made through Demand Draft drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली- 110016 फोन:011-26511211 ई-मेल: ms-nrpc@nic.in वेबसाईट: www.nrpc.gov.in
18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016 Phone: 011-26511211 e- mail: as-nrpc@nic.in Website: www.nrpc.gov.in

I would like to bring it to your knowledge that NRPC Secretariat has communicated with your offices several times (copy enclosed) and my predecessor Member Secretary, NRPC also written number of D.O. letters to your office in this regard (copy enclosed), but pending payment has not been done till date.

I request you to please look into the matter and give direction to both the departments for making the payment of aforementioned contribution amount at the earliest for smooth functioning of NRPC Secretariat.

Yours sincerely,

21/07/2023

(Vijay Kumar Singh)

Shri H. Rajesh Prasad, IAS
Principal Secretary,
Power Development Department, J&K,
Civil Secretariat, Jammu – 180001

Copy to:

1. Chief Engineer (OM), Ministry of Power, New Delhi
2. Managing Director, JKPDCL, SLDC Building, 1st Floor, Gladni Grid Station, Narvel Bala, Jammu- 180004

Annexure-E

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

संख्या: NRPC/SER/ 301 /2022/ 2032-2034 Dated: 23.02.2022

To,

Joint Secretary (OM),
Ministry of Power,
Room No-408,
4th Floor, Shram Shakti Bhawan,
Rafi Marg, New Delhi

विषय: Regarding long outstanding overdues of J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD)

References: NRPC letters to Secretary (Power) PDD, dated 07.02.2022, 29.12.2021, 26.07.2021, 11.09.2020, 28.01.2020, 31.10.2019 & 16.09.2019. NRPC letters addressed to MD, J&K State Power Development Corporation Ltd., dated 28.01.2020, 31.10.2019, 08.03.2019, 25.10.2018, 16.10.2018, 30.08.2017, 20.10.2015, 28.04.2015, 10.03.2015 & 30.12.2014.

Sir,

In accordance to the MoP communication to CEA vide letter no. A-60016/59/2005 Adm-I dated 23rd February 2006 (copy enclosed) which stipulates that

"The activities of the Regional Power Committees (RPCs) will be fully financed by the constituent Members with effect from 01.04.2006 and Central Electricity Authority will take immediate steps in this regard."

NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to-time, for reimbursing NRPC expenditure to GoI and meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson.

However, contribution from some members i.e J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD) is pending from a long time. NRPC is constantly following up with the officials of JKPDD & JKPDC through above referred letters. Details of pending outstanding contribution fees is shown below:

Sl. No.	Name of the constituent	Period (FY)	Outstanding amount (RS)	Late payment penalty amount (Rs)	Total outstanding amount (Rs)
1	JKPCL / JKPDD	2021-22	10,00,000/-	10,000/-	10,10,000/-
		2019-20	10,00,000/-	-	10,00,000/-
Total outstanding amount					20,10,000/-
2.	JKPCL / JKPDC	2018-19	10,00,000/-	-	10,00,000/-
		2015-16	11,00,000/-	-	11,00,000/-
		2014-15	11,00,000/-	-	11,00,000/-
Total outstanding amount					32,00,000/-
Grand total					**52,10,000/-**

This is for you kind information and kind assistance in the subject matter.

नरेश भंडारी 23/02/22

(नरेश भंडारी)

सदस्य सचिव

Encl: As above

Copy to:

1. Managing Director, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004

2. Chief Engineer, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004

Meeting Plan for FY 2023-24

S.N.	Month	Meeting	Host	Mode
1	Apr-2023	65th NRPC	SJVN	Physical
2	May-2023	66th NRPC	NRPC Secretariat	VC
3	June-2023	67th NRPC	NRPC Secretariat	VC
4	Jul-2023	-	-	-
5	Aug-2023	68th NRPC	NTPC	Physical
6	Sep-2023	69th NRPC	NRPC Secretariat	VC
7	Oct-2023	70th NRPC	NRPC Secretariat	VC
8	Nov-2023	71st NRPC & 48th TCC	NHPC	Physical
9	Dec-2023	72nd NRPC	NRPC Secretariat	VC
10	Jan-2024	73rd NRPC	NRPC Secretariat	VC
11	Feb-2024	74th NRPC & 49th TCC	Combined by CLP Jhajjar & Lanco Anpara Power Ltd	Physical
12	Mar-2024	75th NRPC	NRPC Secretariat	VC

Meeting Plan for FY 2024-25

S.N.	Month	Meeting	Host	Mode
1	Apr-2024	76th NRPC	NRPC Secretariat	VC
2	May-2024	77th NRPC & 50th TCC	UPPTCL	Physical
3	June-2024	78th NRPC	NRPC Secretariat	VC
4	Jul-2024	79th NRPC	NRPC Secretariat	VC
5	Aug-2024	80th NRPC & 51st TCC	Member Trader	Physical
6	Sep-2024	81st NRPC	NRPC Secretariat	VC
7	Oct-2024	82nd NRPC	NRPC Secretariat	VC
8	Nov-2024	83rd NRPC & 52nd TCC	DTL	Physical
9	Dec-2024	84th NRPC	NRPC Secretariat	VC
10	Jan-2025	85th NRPC	NRPC Secretariat	VC
11	Feb-2025	86th NRPC & 53rd TCC	Adani Power Ltd	Physical
12	Mar-2025	87th NRPC	NRPC Secretariat	VC