भारत सरकार
Government of India
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पश्चिम क्षेत्रीय विद्युत समिति
Western Regional Power Committee
एफ -3, एमआयडीसी क्षेत्र, अंधेरी (पूर्व), मुंबई - 400 093
F-3, MIDC Area, Andheri (East), Mumbai - 4000 93

आई एस ओ : 9001-2008
ISO : 9001-2008

दूरभाष Phone: 022- 28221681; 28209506; 28200194; 195;196 फैक्स Fax : 022 – 28370193
Website : www.wrpc.gov.in E-mail : opc-wrpc@nic.in

सं. : पक्षेविस /प्रचा./प्रसस-कार्यसूची/2018/ 7181 3 दिनांक: 09 NOV 2018

09 NOV 2018

सेवा में,

सूची के अनुसार

विषयः पश्चिम क्षेत्रीय विद्युत समिति की प्रचालन एवं समन्वय समिति की 513 वीं बैठक की कार्यसूची।

महोदय,

पश्चिम क्षेत्रीय विद्युत समिति की प्रचालन एवं समन्वय समिति (ओसीसी) की 513 वीं बैठक दिनांक 19 नवम्बर 2018 (सोमवार) को 11.00 बजे पश्चिम क्षेत्रीय विद्युत समिति, मुंबई में आयोजित की गई है । इस बैठक से पहले 09.00 बजे से पारेषण आउटेज योजना के विषय में चर्चा की जायेगी । बैठक की कार्यसूची आपकी सूचना एवं आगे की कार्रवाई हेतु संलग्न है ।

धन्यवाद,

भवदीय,

संलग्नः- उपरोक्तानुसार

(जे.के. राठोड)
अधीक्षण अभियंता (प्रचा.)

List of OCC Members

		Fax No.
1.	Chief Engineer (L D), GETCO, Gotri	0265-2352019
2.	Chief Engineer (Generation), GSECL, Vadodara	0265-2344734/2338847
3.	Superintendent Engineer (CP & SS), GETCO, Vadodara	0265-2337918, 2338164
4.	Chief Engineer (L D), MPPTCL, Jabalpur	0761-2664343
5.	Chief Engineer (O&M:Gen), MPPGCL, Jabalpur	0761-2664572/2668050
6.	Chief Engineer (L D), MSETCL, Kalwa	022–27601769
7.	Chief Engineer (PP), MSEDCL, Mumbai	
8.	Chief Engineer (Works),MSPGCL, Mumbai	022-26473896
9.	Superintending Engineer (LD), MSETCL Ambazari	07104-220275
10.	Chief Engineer (L D), CSPTCL /Raipur	0771-2574174
11.	Chief Engineer (O&M:GEN), CSPGCL, Raipur	0771-2574425
12.	Executive Director, PGCIL Raipur	
13.	General Manager, POSOCO, Mumbai	022-28202630
14.	General Manager (WRTS-I), Powergrid, Nagpur	0712-2641366
15.	General Manager (O & M),WRTS-II, PGCIL,Vadodara	0265-2487542
16.	Chief Engineer (Transmission), NPCIL, Mumbai	25580741/25563350
17.	Station Director, TAPS, Tarapur 1 & 2	02525-282125/244125
18.	Station Director, TAPS, Tarapur 3 & 4	02525-244021/244169
19.	Station Director, KAPP, Kakrapar	02626-231231
20.	General Manager (OS), NTPC, Mumbai	022-28216692
21.	General Manager, NTPC, Korba	07759- 237462/237552
22.	General Manager (OS), NTPC, HQ-II Raipur	0771-2544550
23.	General Manager, NTPC, Vindhyachal, M.P.	07805 –247711
24.	General Manager, NTPC, SIPAT, CG	07752-246504
25.	General Manager NTPC LARA	
26.	General Manager NTPC Solapur	
27.	General Manager, NTPC, Kawas, Surat	0261-2860290
28.	General Manager, NTPC, Gandhar	02642-287402
29.	General Manager, NTPC, Mouda	07115-281221/281219
30.	CLD TPC, Mumbai	022-25541908/67175385
31.	Head (O), Dahanu TPS, Dahanu	02528-222039
32.	Sr V P Reliance Transmission, Pune 30471555	0124-3917982/020-
33.	Vice President (Generation), Torrent Power Ltd, Ahmedabad	079-27506679
34.	Executive Director, Sugen CCPP, Torrent Power Ltd, Surat.	02621-661151
35.	Vice President (O &M), APL Mundra , Gujarat	02838-266364
36.	Head Operation CGPL Mundra	
37.	Vice President (Opn), Jindal Power Ltd.,Raigarh	07767-281993/281995
38.	AGM(OS) NSPCL Delhi	011-26717363,26717366
39.	GENERAL MANAGER (POWER), RGPPL, Ratnagiri	02359-241071/ 241011
40.	Member (Power), NCA, Indore	0731-2559888
41.	Chief Engineer (PM & C), NHDC, Bhopal	0755 4030188/4030130
42.	E. E. Elect. (Ponda), Goa	0832-2313780
43.	Executive Engineer DD (UT), Daman	0260-/2230771/2250889/2230550
44.	Executive Engineer DNH (UT), Silvassa	0260-2642338
45.	Secretary, CERC, New Delhi	011-24360010/23753923
46.	CEO, JSW Energy ltd.	011-46032343/26183546
47.	VP-Power Infra-Essar Hazira Surat	0261-6688498/022-67082198
48.	Chief Electrical Distribution Engineer CR	022-22621060
49.	Vice President EPTCL Hazira Surat	0261-6682747
50.	COO, Korba West Power Co. Ltd. Raigarh	
51.	VP(COMML) Essar Power MP Ltd MP	
52.	GM Torrent power grid ltd. Ahmedabad, Gujarat	
53.	Adani Power Maharashtra Ltd Tiroda	
54.	CGM, R K M Powergen Pvt Ltd	
55.	ED, Athena Chattishgarh Power Ltd.	
56.	Head(O&M) Dhariwal Infra Ltd C'pur	
57.	Head Operation Jaypee Nigrie STPP Singrauli.	
58.	VP(O&M), GCEL, Chhattishgarh	
59.	Head Operation DB Power, Chhattishgarh.	
60.	Head operation Hindustan Power, Anuppur MP	
61.	Head operation GMR, Warora Energy ltd.	
62.	Head O&M, Sterlite Grid Ltd Bhopal	
63.	Head Operation Balco, Chhattishgarh.	
64.	Head(O& M), SKS, SPGCL, Raigarh	

Timeline for discussion of Agenda items

Sr No.	Agenda items/description of discussion	Tentative Time duration
	Meeting to be started at 09:00 hrs	
1	Transmission element outage planning	09:00 to 11:00 Hrs.
2	Proposed planned maintenance programme of generating units.	
3	Anticipated power supply position for the months – November 2018 & December 2018	
4	Status of completion of ongoing schemes in WR during 2018-19	
	Discussion on Regular Agenda items	**11:00 Hrs onwards**
1	Opening remark by Member Secretary	5 -10 minutes
2	Introduction of participants	5-10 Minutes
3	Confirmation of minutes	3-5 minutes
4	Review of System Operation during the month of October, 2018	15-20 minutes
5	Presentation on operational aspects by SLDCs, RLDC & Expert talk.	1 hrs & 30 Minutes
6	Operational Statistics for the month October, 2018	5 minutes
7	System disturbances in western region	5 minutes
8	Healthiness status of SERs/DRs	2-3 minutes
	OCC ISSUES	
9	Quarterly review of Crisis Management Plan (CMP) and Physical & Cyber Security (P&CS) in power sector (Follow-up)	2-3 minutes
10	Monitoring of Schemes funded from PSDF(Follow-up)	2-3 minutes
11	State-wise details for Installation of capacitors to be furnished to WRPC(Follow-up)	2-3 minutes
12	First time Availability certification of STL	5-10 minutes
13	Ratification of load generation data for Validation Committee	5-10 minutes
14	PSDF proposals submitted by RGPPL and MPPMCL for appraisal of WRPC	5-10 minutes
15	Cyber security related works /activities being carried out in Western Region.	5-10 minutes
16	Operation of Hydro power projects in peaking mode	5-10 minutes
17	Compliance of new Environmental norms by WR Generators. (FGD-new target dates; CPCB list)	5-10 minutes

18	LVRT	5-10 minutes
19	Hydro status: conservation	5-10 minutes
20	REMC/Green Corridor projects/Bhuj-I, Bhuj-II	5-10 minutes
21	National Transmission Commission: 1st WRSCT meeting minutes-approved projects	5-10 minutes
22	RGMO: Letter of Interest issued by NLDC	5-10 minutes
23	Telecom, SCADA-issues	5-10 minutes
24	Crisis Management for Cybersecurity format	5-10 minutes
	WRLDC ITEMS	
25	Primary Frequency response	5-10 minutes
26	Telemetry issues of Maharashtra	5-10 minutes
27	System Operational data from MP SLDC	5-10 minutes
28	Data submission for Grid events occurred in Western region on October 2018	5-10 minutes
29	Black Start mock drill Exercise in Western Region	5-10 minutes

****

Western Regional Power Committee
Mumbai

Title:	Agenda Notes
Meeting no.:	513
Meeting name:	Operation & Coordination sub-Committee
Date & venue:	19th November, 2018 at WRPC, Mumbai.

Item No. 1: Confirmation of the Minutes

Minutes of 512th meeting of Operation & Coordination Sub-Committee (OCC) of WRPC held on 23rd October, 2018 at WRPC Mumbai were forwarded vide letter No. WRPC/OPN/OCC-Minutes/2018-19/11115 dated 26.10.2018.

No Comments have been received.

Sub-Committee may discuss and confirm the Minutes.

Item No. 2: Review of System Operation during the month of October, 2018.

2.1 A. Frequency Particulars

The frequency profile was as under:

Particulars	Frequency	Date	Time
Maximum instantaneous	50.20 Hz	28th October, 2018	12:02:20 hrs
Minimum instantaneous	49.69 Hz	20th October , 2018	17:24:10 hrs
Average	49.97 Hz		

Range	01st – 31st August, 2018 (% time)	01st – 30th September, 2018 (% time)	01st – 31th October, 2018 (% time)
IEGC band (49.9 < f < 50.05 Hz)	80.44	80.22	79.20
< 49.9 Hz	8.93	13.21	12.05
> 50.05 Hz	10.63	6.57	8.75

The frequency particulars are enclosed at **Annex-2.1**.

The Sub-Committee may kindly note.

2.1 B. State-wise Power Scenarios of the Region & Power Supply Position report

System operation during the month of **October 2018** was satisfactory. The regional demand (Ex-bus) was 55695 MW. The corresponding peak shortfall was in the range of 853.39 MW (peak deficit of 1.51%). The energy requirement during the said period was 36122.67 MUs (Ex-bus).

The power supply position for the month of **October 2018** was as follows:

	Peak Demand Availability/Unrestricted Requirement (Ex-Bus) In (MW)								
	GUJ	**MP**	**CG**	**MAH**	**GOA**	**DD**	**DNH**	**ESIL**	**WR**
REQUIREMENT	16624	11356	4414	23864	536	342	784	875	56548
AVAILABILITY	16606	11317	4268	23159	536	341	780	875	55695
SHORTFALL	18.78	39.50	146	705	0.19	0.60	4.09	0.00	853.39
% SHORTFALL	0.11	0.35	3.31	2.96	0.03	0.17	0.52	0.00	1.51

	Energy Availability/ Requirement etc.(Ex-Bus) in (MUs)								
	GUJ	**MP**	**CG**	**MAH**	**GOA**	**DD**	**DNH**	**ESIL**	**WR**
Net Actual Energy Supplied	11161	5859	2453	15095	366	216	525	314	35992
Unrestricted Requirement	11162	5860	2454	15223	366	216	525	314	36123
SHORTFALL in MU	0	1	1	128	0	0	0	0	130
% SHORTFALL	0	0	0	1	0	0	0	0	0

Further it is requested all the utilities to furnish the monthly data e.g. unit wise generation of hydro and thermal generating unit, unit wise generation of hydro and thermal generating unit, unit wise /station wise auxiliary consumption of hydro and thermal generating unit, station-wise /state-wise generation of Solar/Wind/ Biomass, State-wise ISTS drawl etc. in new format attached at **Annexure -2.1A.**

2.2 Inter-Regional Exchanges

There was a net inter-regional export of 4715 MUs from WR to other regions against net export schedule of 4542 MUs**.**

The Sub-Committee may kindly note.

2.3 Voltage Profile

Voltage profile at some of 765/400 kV sub-stations furnished by WRLDC is enclosed at **Annex-2.3.**

The Sub-Committee may kindly note.

2.4 U/F Relay Operations

As per WRLDC records the system frequency didn't reach 49.2 Hz and no UFR operation was reported to WRLDC.

The Sub-Committee may kindly note.

2.5 Power Cuts / Load Restrictions

Details of Power Cuts and Regulatory measures as furnished by the State utilities are given in **Annex. 2.5.**

The Sub-Committee may kindly note.

2.6 Details of Generating Units under Forced Outages

Details of generating units under forced outages are given in **Annex-2.6.**

The Sub-Committee may kindly note.

2.7 Details of Generating Units under Planned Outages.

The details of generating units under Planned Outages are given in

Annex-2.7.

The Sub-Committee may kindly note.

2.8 Presentation on operational aspects by SLDCs & RLDC.

All SLDC's/RLDC, NTPC & PGCIL may kindly submit the presentation on operational aspects during last month and specific issues which need deliberations may be highlighted separately.

2.9 List of New Grid Elements added / list of elements decommissioned.

The list of New Elements added in WR Grid is attached at **Annexure-2.9.**
The Sub-Committee may like to note the same.

2.10 Submission of failure analysis of grid elements

Under regulation 27 of CEA (Grid Standards) Regulations, 2010, failure analysis of equipment failure and tower collapse is to submitted to RPC and Authority.

All the constituents are requested to report incidences of equipment failure and tower collapse to RPC and Authority as and when such incidences take place.

The Sub-Committee may like to note.

2.11 Coal stock position

In prevailing situation of scarcity of coal in the region, it is important to monitor the coal stocks on monthly basis in OCC forum so that deviation of load and generation can be kept minimum. To sensitize the issue of, latest CEA coal stock position is attached at **Annexure-2.11**. All constituents are requested to apprise the forum the efforts taken to improve the coal stock position.

The Sub-Committee may like to discuss.

Item No. 3: Operational Planning

3.1 Proposed planned maintenance programme of generating units.

The maintenance programme of generating units for the months **November 2018 & December 2018** is given in **Annex 3.1.**

The Sub-Committee may kindly discuss and finalise the outage schedule of generating units for the above period.

3.2 Outage programme of transmission lines/elements.

List of proposals for transmission elements outage to be availed during the months of **December 2018** is given in **Annex 3.2.**

The Sub-Committee may kindly discuss and finalise the outages of the transmission elements.

3.3 Anticipated power supply position for the months.

Details of anticipated restricted & un-restricted demands for the months of ***November 2018 & December 2018*** are given in **Annex 3.3.**

The Sub-Committee may like to note/update.

Item No. 4: Operational Statistics for the month October, 2018.

The details of actual generation, demand, drawl of power from grid; exchanges etc. are given in the following Annexure:

Annex 4.1 *- Actual Generation and Requirement.**A***

nnex 4.2 *- Peak Demand.*

Annex 4.3- Integrated Operation of the System and Operation of Inter State Tie lines.

Annex 4.7– Details of level of Major Reservoirs in Western Region.

The Sub-Committee may kindly note.

Item No. 5: System disturbances in western region.

There was no major grid disturbance in the Western Region during the month of **October, 2018 except tripping of 3 units at CGPL which has resulted in 2250 MW generation loss**. the details of minor incidences during the month received from WRLDC are enclosed at **Annexure-5.**

CE, SLDC Gujarat vide email dated 6th November, 2018 requested for detailed discussions on the grid disturbance occurred at CGPL on 30.10.18 at 19:22 Hrs, resulted in generation loss of 2250 MW (CGPL Unit No. 3, 4 & 5 tripped). The details of the incident furnished by CGPL is as follow:

Preliminary observations and findings for tripping of U#30, 40 and 50 at CGPL on 30thOctober 2018 at 19:22:30 hrs

Outage of 400kV Bus-1 was availed for work of Bay Extension Project by PGCIL approved by WRLDC in CGPL 400kV Switchyard in the morning of 30th October 2018. Relay Testing and Signal testing activity for new relays in Dia-4 , 411 bay was under progress by simulating the trip signals through secondary injection by Siemens engineer deputed for the work by PGCIL. For testing and simulating the trip signal of LBBU of 411 bay, secondary current was being injected in the 411 CT core of LBBU. Operation of LBBU of 411 bay led to operation of Breaker Failure Protection in Bus Bar-1 protection relay (MCU-1), as desired. This operated the 96 (Bus Bar lockout) relay of all breakers connected to Bus-1 at CGPL (which were already in Open condition). However, MCU-1 also issued Transfer Trip signal in bays BU@9 (411-New Bay under test), BU@8 (430-Main Bay of GT#50), BU@5 (421-Main Bay of GT#40) and BU@3 (415-Main Bay of GT#30). This operation of transfer trip was undesirable and was not as per the logic/ configuration of relay. This led to Unit Shutdown and outage of GT of Unit# 30, 40 and 50. Undesirable operation of Bus Bar Transfer Trip of bus bar -1 protection is under investigation with the help of relay OEM, Siemens.

Attachments:

1. *Siemens DR (.cfg file) of MCU-1 for Bus Bar Protection of 400kV Bus-1 at CGPL*
2. *Trip Log of MCU-1 for Bus Bar Protection of 400kV Bus-1 at CGPL*

Regards,

Brajesh Singh
Chief O&M, CGPL.

The Sub-Committee may like to note/discuss.

Item No. 6: Healthiness status of SERs/DRs.

The status of healthiness of SERs/DRs is given at **Annexure-6.**

All the Constituents are requested to update the status of healthiness of their SERs/DRs before the meeting.

The Sub-Committee may like to note

Item No. 7: Status of completion of ongoing schemes in WR during 2018-19.

7.1 Status of Reactors.

7.2 Status of Transmission schemes: 765/400 kV and above

7.3 Status of Generating Units

Details of these items are at **Annexure-7.**

The WR utilities may intimate the current status on above.

Item no. 8: Miscellaneous Operational Items

8.1: Quarterly review of Crisis Management Plan (CMP) and Physical & Cyber Security (P&CS) in power sector

All constituents are requested to submit current status of CMP and P&CS report (constituent wise) for the Second quarter (July to September 2018) as per format enclosed at **Annexure-8.1.**

All other constituents are requested to submit the Status Report.

8.2: Monitoring of Schemes funded from PSDF

As per the decision taken in NPC meetings, RPC may follow up with the utilities regularly in OCC to expedite the completion of various approved schemes by giving due priority. Accordingly, WRPC has been taking up this issue in OCC forum for discussion.

In this matter, the details related to State-wise sanctioned grant and disbursement amount for the approved schemes to be funded from PSDF is attached at **Annexure-8.2A.**

Also, as per the procedure, the utilities are required to furnish the information in the prescribed format by first week of every month on regular basis to Member Convener, PSDF project monitoring group (AGM, NLDC, POSOCO) with a copy to NPC & WRPC division. A copy of prescribed format is attached at **Annexure–8.2B.**

The utilities may update the current status of progress of scheme under PSDF.

8.3 State-wise details for Installation of capacitors to be furnished to WRPC

In accordance with provision in clause 1.5 (ii) of IEGC, *"RPC shall file monthly report on installation of capacitors by states vis-a-vis the requirement/targets, as decided in the RPC"*

SLDC's /DISCOMs are therefore requested to expedite the matter and ensure to furnish the status of capacitor report in format attached at **Annexure 8.3** on monthly basis regularly. SLDC's are also requested to compile the details of various utilities and send the compiled report of entire state by 8th day of every month.

The Sub-Committee may like to discuss the same.

8.4 First time Availability certification of STL.

M/s STL (Sipat Transmission Ltd.) vide letter dated 15.10.2018 (copy enclosed at **Annexure 8.4**) informed that the following lines of M/s. STL have been commissioned as per the details given below:

Sr. No.	Element Name	Trial Run for 24 hours
1.	765 KV Sipat-Bilaspur line 3 with bay 707 at Sipat end & bay 701 at Bilaspur end	06.08.2018 18:56 to 07.08.2018 18:56 Hrs

He further requested for commencement of issue of Monthly Availability Certification for the above transmission elements of STL. All the relevant documents viz ISTS license granted by Hon'ble CERC and trail run completion letter issued by WRLDC are attached at **Annexure 8.4.**

Sub-Committee may discuss /note the same.

8.5 Ratification of load generation data for Validation Committee

The load generation data for the period of January 2019 to March 2019 (Q–4) is to be ratified for POC charge calculation.

The load generation sheet received from WRLDC is enclosed at **Annexure 8.5.**

The Sub-Committee may like to discuss the same.

8.6 PSDF proposals submitted by RGPPL and MPPTCL for appraisal by WRPC

a) General Manager, RGPPL vide letter dated 07.02.2018 & 27.07.2018 submitted the following proposals for appraisal of WRPC for funding from PSDF:

Sr No	Details of proposals	Remarks*
1	Implementation of FGMO in four gas turbines at RGPPL, Ratnagiri	
2	PSS tuning of six generators (two steam & four gas turbine) at RGPPL	

The detailed proposal received from RGPPL is enclosed at **Annexure 8.6A** and he requested for recommendation from WRPC for funding from PSDF.

** RGPPL may inform the forum regarding applicable provisions of PSDF regulation 2014 for the proposals at serial no 1 and 2 . RGPPL may also furnish the appropriate information in Annexure A5 that was submitted along with the proposal.*

b) C.E (Plng. & Design), MPPTCL vide letter no-04-02/PSP-385-A/2405 dated 03.11.2018 and no-04-02/PSP-385-A/2406 dated 03.11.2018 furnished the following two proposals for appraisal of WRPC for funding from PSDF.

Sr No	Details of proposals	Remarks**
1	Installation of ABT compliant meter having facility of 5- minutes integration on existing interface points of MPPTCL	
2	Installation of Phasor measurement Units (PMUs) at strategic location at Madhya Pradesh and integration of the same with Phasor Data Concentrator installed under URTDSM project	

*** MPPTCL may inform the forum regarding applicable provisions of PSDF regulation 2014 for the proposals at serial no 1 . MPPTCL may also furnish the appropriate information in Annexure A5 that was submitted along with the proposal. It is also requested to use the prescribed format of A5 without any modification.*

The Sub-Committee may like to discuss the same.

8.7 Cyber security related works /activities being carried out in Western Region.

CE(IT), CEA, New Delhi vide letter dated 31.08.2018 informed that Secretary (Power) is going to review the cyber security related works /activities being carried out in Power Sector shortly. In this regard, it is requested to provide

the utilities/ State-wise status on following action points pertaining to cyber security:

1. Appointment of organization-wise Chief Information Security Officers and its status.
2. Identification of organization-wise Critical Infrastructure and its status.
3. Preparation of organization-wise Crisis Management Plan and its status.
4. Status of Cyber Security Mock Drill activity in coordination with CERT-In.
5. Status of Training / Workshops on Cyber Security organized / participated by power sector entities.
6. Status of action taken on CERT-In / NCIIPC advisories.

The agenda point had also discussed in the 512th OCC meeting wherein all the utilities had been requested to furnish the detail information related to above action points. However, all the utilities have not so far furnished the requisite details. The mane of utilities who has furnished the information and who are yet to furnish the information is listed in the following table A and table B respectively:

A. Data/information received (✓):

Sr No	Name of Utilities
1	Chhattishgarh
2	Madhya Pradesh
3	NTPC
4	TATA Power
5	WRLDC
6	NHDC
7	WRTS-I PGCIL, Nagpur
8	KSK Mahanadi
9	MB Power(Hindustan Power)

B. Data/information Awaited (✗):

1	Gujarat	13	Jhabua Power
2	Maharashtra	14	RKM Power
3	NPCIL	15	TRN Energy
4	WRTS-II, PGCIL Vadodara	16	ACBIL Energy
5	NCA	17	SKS Energy

6	DD	18	Essar Mahan
7	DNH	19	GMR Chhattishgarh
8	GOA	20	DTPS Dahanu
9	JPL	21	CGPL
10	JNSTPS	22	Sasan Power
11	APL	23	Lanco Power
12	APML		

All utilities listed in Table- B are requested to submit the point-wise information during the meeting.

Sub-Committee may discuss / note the same.

8.8 Operation of Hydro power projects in peaking mode

A sub-committee has been constituted under chairperson, CEA with heads of POSOCO, NHPC, SJVN & THDC as members and Director (H), MoP as Member convenor. In the meeting of the sub-committee, it was concluded that there is scope of 2000 MW additional power generation from hydro stations during peak hours.

In order to sensitize about the benefits of peaking mode of operation of hydro stations, the matter had been discussed during 497th, 499th OCC meeting as well. Also, a committee of FOLD members had been constituted to study the pattern of generation from hydro stations in India and suggest measures to exploit the available capabilities of hydro units while honoring the existing hydrological constraints.

During the 497th OCC, WRPC suggested all respective constituents to find the scope of complete utilisation of hydro power and discuss the practical issues in monthly OCC meetings.

The matter was further discussed during 499th OCC meeting held on 20.09.2018, wherein shifting of hydro power projects from base load operation mode to peaking mode was discussed. and SLDC's were advised to utilize the available water judiciously and schedule hydro stations for peaking

Further the following recommendations of Sub- Committee (under Chairperson CEA), shall be taken as a regular agenda item in monthly OCC.

"T*he status of peaking support provided by the hydropower stations, constraints if any for inability to provide support for peaking may be included as a standing agenda item in all future monthly Operation Co-*

ordination Committee (OCC) Meetings. Objective of this agenda item would be to maximize peaking availability by optimizing period of shut down of hydro units, monitoring of shut downs / outage of the units and follow- up to expedite revival thereof."

In view of above SLDCs may apprise OCC:

- The present status of hydro reserves in respective states
- Constraints if any for providing peaking support from hydro stations
- Actions being taken to maximize peaking availability from hydro Stations

The Sub-Committee may like to discuss the same.

8.9 Compliance of new Environmental norms by WR Generators.

Chief Engineer, TPRM Div, CEA, New Delhi vide letter no. 2/16/VIP/TPRM/2016/CEA/ 82-108 dated 01.02.2018 and subsequently WRPC letter dated 12.02.2018 requested for the status of progress of works of FGD installation and ESP up-gradation to meet the emission level as per new environmental norms (SOx, NOx and SPM).

Subsequently, the issue was deliberated During 505th OCC meeting it was decided to monitor the installation of FGD covering the details as given in **Annexure-8.9A.**

All concerned generators are requested to provide the update in status for installation of FGD & ESP as per the timelines given by Central Pollution Control Board which is at **Annexure 8.9B**
(http://cpcb.nic.in/ **uploads/direction/Direction_tpp_Combined_12.06.2018.pdf)**.

8.10 REMC /Green corridor projects in Western Region

PGCIL is requested to update the status of establishment of Renewable Energy Management Centre and progress in green corridor projects in western region.

The Sub-Committee may like to discuss the following:

1) *Timeline related to evacuation network corresponding to the timeline of commissioning of the various projects.*

2) *Expected Constraints in future related to load generation balance due to large scale of RE- generation in future and development of availability of peaking power.*

8.11 LVRT IMPLEMENTATION

All SLDC's are requested to sensitize all WTGS in their jurisdiction regarding compliance required as per OM no. 293/8/2017-Wind dated 01.03.2018 issued by Ministry of New and Renewable Energy (copy at **Annexure 8.11**).

8.12 Automatic Under Frequency Load Shedding (AUFLS) Scheme feeder mapping on SCADA and their details

The matter of mapping the AUFLS feeder to SCADA system and submission of details of the feeders connected to AUFLS and df/dt relays for load relief under distressed operation of grid was discussed in the 494th OCC held on 12.04.2017 wherein following was discussed and agreed;

Quote

A list of feeders/loads implemented under AUFLs in WR was compiled at WRPC in 2014 and same is uploaded in website of WRPC under news section and PCM Minutes section. States were requested to update the list of feeders under AUFLs and intimate the feeders which have already been mapped in their SCADA System and are presently monitored on line by them. Also constraints, if any, faced in mapping AUFLs feeders in their SCADA System may be intimated. Constituents / States were requested to initiate the process of mapping these feeders in the SCADA System & same shall be made available to WRLDC. In 493rd OCC meeting it was decided that list of feeders connected with AUFLs, available with WRPC/WRLDC shall be shared to all SLDC's by WRPC. SLDCs shall update the same and send to WRPC/WRLDC. SLDC's were requested to map the feeders where currently available telemetered AUFLs and load relief obtained. For other feeders which are not covered, SLDC's shall submit their action plan for the mapping. Subsequently WRPC sent the list of feeders connected with AUFLs, available with WRPC/WRLDC on 15.03.2017. The updated list from SLDC's are still awaited. SLDC's were requested to expedite the same.

Unquote

However, the information is still awaited.

NPC CEA vide letter dated 10.09.2018 have requested to furnish the data in the formats attached with their letter at the earliest as the same has to be submitted to MoP, GoI.

It is therefore requested to furnish the above information at the earliest to WRPC, so that the same can be furnished to NPC CEA New Delhi.

The Sub-Committee may like to discuss the same.

8.13 Availability of Emergency Restoration System (ERS) In WR

The availability of ERS is with the transmission licensee is utmost important to restore the system in minimum possible time at the time of contingency. Early restoration of transmission corridor is beneficial to ensure safe and secure grid operation. In the above background transmission, it is important to discuss the availability of ERS in the region and also planning of procurement of ERS by the transmission entities in the region.

Transmission licensee may inform to the forum the following:

1) *Availability of number of existing ERS.*
2) *Planning of procurement of ERS with time line.*
3) *Arrangement in place in case ERS in not available.*

8.14 Testing of primary frequency response of generators as per IEGC clause 5.2(g)

NLDC vide its letter no. POSOCO/NLDC/Primary Response/dated 12.10.2018 **(at Annexure 8.14)** informed that in compliance of regulation 5.2(g) of part V of principle regulation NLDC on behalf of RLDC has formulated a procedure for carrying out the primary frequency response tests. In this context NLDC invited expression of interest from interested agencies. Hon'ble CERC was appraised of this development by NLDC. This for information and necessary action for all concerned generators.

Item No 9. WRLDC Agenda Items

9.1 Primary Frequency Response

The average primary response of generators for last three events are shown below.

S.No	Generator/Station	Event-30	Event-31	Event-32	Average Response as % of Ideal
		ER-852	NR-1200	WR-2240	
		12-08-18 05:31:00	29-08-18 04:02:10	30-10-18 19:22:20	
		50.04	50.01	49.94	
		49.99	49.96	49.79	
		-0.06	-0.05	-0.16	
1	KSTPS-I (3x200)	53%	123%	17%	64%
2	Mouda-II (2x660)	129%	56%	0%	62%
3	Mouda-I(2x500)	139%	12%	34%	62%
4	GMR Warora (2x300)	28%	99%	40%	56%
5	KSTPS-II(3x500)	47%	51%	21%	40%
6	VSTPS-II(2x500)	85%	0%	0%	28%
7	VSTPS-V(1x500)	31%	42%	7%	27%
8	RKM (3x360)	4%	0%	58%	21%
9	VSTPS-III(2x500)	54%	0%	4%	19%
10	Gandhar (3x144+1+224)	23%	28%	5%	19%
11	DB Power(2x600)	9%	45%	0%	18%
12	SASAN(6x660)	6%	30%	14%	17%
13	MB Power(2x600)	0%	47%	0%	16%
14	SIPAT-I(3x660)	0%	29%	17%	15%
15	SIPAT-II(2x500)	24%	0%	12%	12%
16	MCPL (1x300)	0%	0%	31%	10%
17	Kawas (4x106+2x116)	0%	0%	28%	9%
18	Lanco (2x300)	0%	0%	26%	9%
19	JPL I (4x250)	0%	15%	9%	8%
20	VSTPS-IV(2x500)	0%	10%	7%	6%
21	Balco (4x300)	2%	0%	12%	5%
22	KSTPS-III(1x500)	0%	8%	0%	3%
23	GMR Raipur(2x685)	7%	0%	0%	2%
24	JP NIGRIE(2x660)	6%	0%	0%	2%
25	KSK(3x600)	0%	0%	5%	2%
26	Essar Mahan(2x600)	1%	0%	0%	0%
27	JPL Tamnar (Stage II)(3x600)	0%	0%	0%	0%
28	Jhabua (1x600)	0%	0%	0%	0%
29	SSP-CBPH (5x50)	0%	0%	0%	0%
30	VSTPS-I (6x210)	0%	0%	0%	0%

Zero Generation/Data Non-Current-

Based on the "report of expert group to review and suggest measures for bringing power system operation closer to national reference frequency", the minimum frequency response expected is at least 40% of ideal response.

Generating stations whose frequency response is below 40% may apprise OCC, actions being taken to improve the frequency response.

9.2 Telemetry issues of Maharashtra

A. Update on the status of ICCP data exchange between Backup SLDC Maharashtra and Backup WRLDC

As per MOM of 512th OCC, Maharashtra SLDC was supposed to intimate the completion of ICCP data exchange between Backup WRLDC and Backup SLDC. *Maharashtra may update the current status as well as final date of completion.*

B. Prolonged outage of telemetry of important stations in Maharashtra

The telemetry of 400kV stations in Maharashtra mentioned in the previous OCC has improved. The status of following important 220kV stations may be updated by Maharashtra

Sr. no.	Station	Response from Maharashtra SLDC in 512th OCC	Current status
1	220kV Tillari	Since it is a remote station, there is no provider for communication link. He informed that it will be provided in one month	
2	220kV Borivli	Highly intermittent	
3	220kV Vasai	The Boisar-Vasai line has become Boisar-Nalasopara. The telemetry of Nalasopara will be provided in one month	In this case, the status of telemetry of 220kV Nalasopara to be given by Maharashtra SLDC

The above stations are crucial for real time drawl calculation from Maharashtra end.

As per the previous OCC, a meeting was to be conducted between Maharashtra SLDC operations and SCADA team, STU, LM Cell of Maharashtra, WRLDC and WRPC to sort out the issue of drawl differences between WRLDC and Maharashtra end. WRLDC proposes to hold the meeting in third week of November 2018.

9.3 System operational data from MP SLDC

WR system operation report is being prepared by WRLDC control room system operators on early hours at 5 o'clock daily and operational report is being sent to Ministry, NPMC, CEA and NLDC by 6 o'clock.in the morning. System operation report of Western region contains voluminous grid operational data of all its 8 constituents like Demand, Generation, Energy consumption, Voltage, line flow, Schedule & Drawl, Bilateral schedule, IEX,& PXIL schedule etc.

Preparation of WR system operation report depends upon the data availability of all its constituents in time. It is observed that, operational data from MP SLDC is being regularly delayed due to which preparation of Regional report is getting delayed. It is not possible to start preparation of total Regional report without having state data. Non receipt of Madhya Pradesh data in time, the entire process of preparation of report is getting delayed and there is delay in furnishing of WR system report to Ministry, NPMC, CEA and NLDC.

MP SLDC is requested to furnish system operational data to WR control room by 3 AM in the morning positively so that entire Regional report would be furnished in time.

MP SLDC may apprise OCC regarding timely submission of data.

9.4 Data submission for Grid events occurred in Western region on October 2018.

As per IEGC 5.2(r), utilities need to submit the data required to RLDC within 24 hours for all the Grid events. The list of Grid events along with the submission status of report and DR/EL is attached as Annex-I.

OCC Forum may like to discuss.

9.5 Black Start mock drill Exercise in Western Region

As mandated by IEGC, the Black start capable units need to conduct mock black start exercises once in every 6 months. Western Region has 29 generating stations with black start capability. As per the information available with WRLDC, only 10 black Start stations have completed the Mock exercise in the year 2018. The proposed tentative schedule updated by SLDCs during last OCC meeting for black start mock drill is given below.

Gujarat

Sl No	Power Station	Last Tested on	Proposed Dates for 2018 (2nd half)
1	Kawas	27.08.2016	Dec'18
2	Jhanor / Gandhar	27.08.2016	Dec'18
3	Dhuvaran	-	Sept'18
4	Kadana	04.03.2018	Nov'18
5	Sugen	-	Oct'18
6	Mini Hydro(LBC) *	-	Oct'18
7	GIPCL-I	06.02.2018	Nov'18
8	CLPIPL	02.01.2018	Dec'18
9	Ukai (H)	04.03.2018	Nov'18
10	SSP	05.03.2017	Dec'18

Maharashtra

Sl No	Power Station	Last Tested on	Proposed Dates for 2018 (2nd half)
1	Koyna I & II	28.12.17	Nov'18
2	Uran (Gas)		Sep'18
3	Ghatghar	6 Sep 18	-
4	Khopoli	12.11.17	Nov'18
5	Bhivpuri	19.02.17	Nov'18
6	Bhira	09.07.17	Nov'18
7	Bhira PSS		Nov'18
8	Paithan		Nov'18
9	Trombay		Dec'18

Madhya Pradesh

Sl No	Power Station	Last Tested on	Proposed Dates for 2018 (2nd half)
1	Rajghat	-	20 Aug 18
2	Gandhi Sagar	Jul'18	-
3	Madhikheda	29 Aug 18	Dec'18
4	Birsinghpur	-	Dec'18
5	Omkareshwar	-	Dec'18
6	Tons	23.01.2018	Nov'18
7	Indira Sagar	10.02.2018	Nov'18
8	Bargi	11.04.2018	Dec'18
9	Pench	11.04.2018	Dec'18

Koyna-I & II and Tata hydro station black start mock drill was scheduled in Nov'18.

Maharashtra SLDC may apprise OCC regarding status of Koyna-I & II mock drill and black start mock drill exercises of Bhira and Bhivpuri.

Chhattisgarh SLDC may update the status of Hasdeo Bango mock drill scheduled in Nov'18.

Only two months are left for completion black start mock drill of 19 stations in year 2018. Constituents/regional entities are requested to plan the Mock

exercise of their black start units within these two months and submit their plan for compliance of IEGC regulation 5.8(b).

Item No. 10: Date and venue of next OCC meeting

The date & venue of 514th OCC meeting will be intimated later on.

The Sub- Committee may like to note as above

****

अनुलग्नक **2.1**

अक्टोबर **2018** में आवृत्ति के आंकड़ों का विवरण

(पश्चिम क्षेत्र भार प्रेषण केन्द्र की आवृत्ति रिपोर्ट के आधार पर)

FREQUENCY PARTICULARS DURING OCTOBER 2018

(AS PER FREQUENCY REPORT OF WRLDC)

1. INTEGRATED OVER AN-HOUR
एक घंटे में समाकलित

1.1 MAXIMUM FREQUENCY 50.07 Hz. BETWEEN 0800 Hrs & 0900 Hrs on 07.10.2018
अधिकतम आवृत्ति

1.2 MINIMUM FREQUENCY 49.82 Hz. BETWEEN 1600 Hrs & 1700 Hrs Hrs. ON 22.10.2018
न्यूनतम आवृत्ति

1.3 AVERAGE FREQUENCY 49.97 Hz.
औसत आवृत्ति

2. INSTANTANEOUS तात्कालिक

2.1 MAXIMUM FREQUENCY 50.20 on 28th Oct at 12:02:20 hrs
अधिकतम आवृत्ति

2.2 MINIMUM FREQUENCY 49.69 on 20th Oct at 17:24:10 hrs
न्यूनतम आवृत्ति

3. %AGE OF TIME WHEN FREQUENCY WAS आवृत्ति का समय प्रतिशत में	अक्टोबर **2018**	सितंबर **2018**	अगस्त **2018**
3.1 Below 49.9 Hz. 49.9 हट्ज से कम	12.05	13.21	8.93
3.2 BETWEEN 49.9 Hz. AND 50.05 Hz. 49.9 हट्ज और **50.05** हट्ज के बीच मे	79.20	80.22	80.44
3.3 ABOVE 50.05 Hz. 50.05 हट्ज के ऊपर	8.75	6.57	10.63
4.1 NO. OF TIMES FREQUENCY TOUCHED 49.20 Hz.	0	0	0
4.2 NO. OF TIMES FREQUENCY TOUCHED 49.00 Hz.	0	0	0
4.3 NO. OF TIMES FREQUENCY TOUCHED 48.8 Hz.	0	0	0

विद्युतदाब रूपरेखा अक्तूबर 2018

ANNEXURE 2.3

Voltage Profile during the month of Oct'18

दिनांक	भोपाल		खंडवा		इटारसी		दमोह		नागदा		इंदौर		ग्वालियर		रायपुर		रायगढ़	
Date	Bhopal		Khandwa		Itarsi		Damoh		Nagda		Indore		Gwalior		Raipur		Raigarh	
	400kV		400kV		400kV		400kV		400kV		400kV		400kV		400kV		400kV	
	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	412	401	421	409	411	400	417	407	417	403	412	400	409	398	415	407	421	415
2	411	401	422	409	410	400	415	407	417	403	412	399	407	398	414	408	420	415
3	410	395	419	406	409	395	414	403	415	400	411	396	407	394	412	405	419	413
4	413	397	420	405	411	397	415	404	416	400	413	397	408	397	411	406	418	413
5	412	401	421	409	411	400	416	406	416	404	411	401	408	395	414	409	420	414
6	412	402	421	410	411	401	416	408	417	404	412	401	408	398	414	408	420	407
7	413	406	423	411	412	404	418	410	419	408	414	405	410	401	414	409	420	416
8	414	401	421	409	412	400	418	408	417	402	413	399	409	398	414	408	420	414
9	412	402	421	409	411	401	418	409	417	403	411	399	409	398	414	408	420	415
10	413	401	421	409	410	400	418	407	417	402	411	399	407	397	414	409	421	416
11	411	398	420	406	410	397	417	405	413	398	411	395	409	398	412	404	420	412
12	413	397	421	401	410	394	416	404	418	393	413	391	408	398	413	404	421	412
13	414	397	421	399	411	393	417	405	419	394	415	393	409	396	412	402	419	411
14	414	401	421	407	411	399	417	405	417	403	412	399	410	397	413	407	420	415
15	415	397	420	402	413	394	417	403	419	399	414	395	406	401	413	405	420	412
16	414	399	419	407	412	399	417	404	416	400	412	399	405	405	414	406	421	415
17	412	397	421	406	410	397	419	402	417	400	414	397	407	396	413	405	419	412
18	412	399	421	410	410	399	417	404	420	406	416	403	409	395	414	409	421	416
19	412	399	418	405	409	396	416	404	419	401	414	399	409	397	414	409	420	415
20	413	399	419	404	409	396	416	404	419	398	414	397	415	397	415	409	420	415
21	413	399	423	406	411	397	416	405	421	402	416	399	411	399	415	410	421	415
22	412	399	419	405	409	396	414	401	420	401	414	398	410	399	414	408	419	414
23	413	398	418	404	409	395	413	402	417	398	412	396	410	399	414	407	419	414
24	413	397	417	406	409	396	420	402	419	402	414	399	410	395	415	410	420	416
25	415	400	420	406	411	396	420	408	422	400	416	398	412	398	416	409	420	413
26	416	400	419	407	410	395	420	407	421	398	415	395	410	396	416	411	420	416
27	415	399	420	404	412	396	420	409	421	399	415	397	412	397	418	411	423	416
28	416	404	420	410	414	401	421	411	422	405	416	402	413	401	418	414	424	419
29	416	401	421	407	413	400	423	410	421	399	416	399	411	395	420	411	423	416
30	414	402	421	407	412	399	421	410	421	400	416	399	411	396	419	411	422	415
31	415	399	421	406	412	398	421	407	423	400	416	399	412	399	418	410	422	414
	416	**395**	**423**	**399**	**414**	**393**	**423**	**401**	**423**	**393**	**416**	**391**	**415**	**394**	**420**	**402**	**424**	**407**

दिनांक	भिलाई		वर्धा		धुले		परली		बोईसर		कलवा		कराड़		असोज		देहगाम	
Date	Bhilai		Wardha		Dhule		Parli*		Boisar		Kalwa		Karad		Asoj		Dehgam	
	400kV		400kV		400kV		400kV		400kV		400kV		400kV		400kV		400kV	
	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	412	404	420	410	430	407	407	407	423	398	430	397	425	409	415	398	428	413
2	411	405	419	413	432	406	407	407	419	402	426	402	424	412	414	397	428	413
3	409	402	418	408	425	406	407	407	419	395	426	394	424	408	412	396	428	412
4	409	402	420	408	432	401	407	407	419	397	428	400	429	414	416	396	429	412
5	411	406	419	412	430	406	407	407	421	409	428	408	426	412	413	399	428	414
6	411	404	420	412	434	409	407	407	423	400	429	400	425	407	414	399	429	415
7	411	406	419	412	432	407	407	407	419	401	424	402	424	409	416	404	431	420
8	411	405	422	412	431	407	407	407	420	397	426	394	427	407	415	399	431	417
9	411	405	419	410	431	406	407	407	416	395	425	394	424	408	415	400	431	417
10	411	406	420	410	429	410	407	407	418	394	423	391	421	401	414	399	429	416
11	410	401	417	403	426	404	407	407	416	392	422	394	422	408	412	396	429	415
12	410	401	417	403	427	401	407	407	418	401	424	399	422	407	413	392	429	410
13	409	399	416	397	432	397	407	407	416	391	422	391	422	403	412	389	428	408
14	410	404	421	409	430	404	407	407	415	402	418	400	422	407	415	400	430	416
15	410	402	420	402	431	402	407	407	414	396	417	393	423	408	414	398	428	414
16	411	404	420	406	427	406	407	407	419	398	423	394	423	407	413	396	429	411
17	411	403	421	407	429	405	407	407	417	398	423	397	424	410	414	399	429	415
18	412	407	421	413	430	407	407	407	421	411	427	412	426	413	416	404	431	420
19	411	406	418	408	430	406	407	407	423	406	431	404	424	410	412	397	430	413
20	412	406	420	412	429	406	407	407	419	396	425	397	423	406	413	396	427	411
21	412	407	421	414	430	406	407	407	416	402	425	402	423	409	416	401	430	415
22	411	405	420	410	430	408	407	407	417	398	422	395	423	407	415	400	429	417
23	411	404	420	409	427	407	407	407	417	397	424	394	422	403	414	400	429	415
24	412	407	421	411	426	408	407	407	417	397	423	395	428	405	414	401	428	415
25	414	406	423	413	430	409	407	407	420	401	425	402	427	408	417	402	430	418
26	414	408	423	412	429	405	407	407	420	406	426	404	425	410	414	399	429	415
27	415	408	421	411	430	406	407	407	419	405	425	403	424	408	415	400	429	415
28	416	411	423	415	430	408	407	407	420	407	426	400	425	411	417	405	431	419
29	417	408	423	412	431	409	407	407	417	403	427	400	425	410	415	400	429	415
30	416	408	423	411	430	408	407	407	421	402	428	399	427	407	415	402	429	417
31	416	407	422	411	432	411	407	407	422	404	429	404	426	409	416	402	430	417
	417	**399**	**423**	**397**	**434**	**397**	**407**	**407**	**423**	**391**	**431**	**391**	**429**	**401**	**417**	**389**	**431**	**408**

* Parli MS Telemetry is down

दिनांक	कासोर		जेतपुर		अमरेली		वापी		मापुसा		कला		मगरवाड़ा		हज़ीरा		बीना		इंदौर	
Date	Kasor		Jetpur		Amreli		Vapi		Mapusa		Kala		Magarwada		Hazira		**Bina**		**Indore**	
	400kV		400kV		400kV		400kV		400kV		400kV		400kV		400kV		765Kv		765Kv	
	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम
	Max	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**
1	422	408	404	384	408	391	416	395	428	403	419	398	422	404	418	401	789	767	785	759
2	422	408	405	380	408	384	412	396	426	408	416	400	419	405	418	401	784	771	779	755
3	421	408	403	382	406	388	413	392	425	404	416	396	420	400	418	398	783	762	779	743
4	422	407	403	380	409	383	414	393	426	397	418	395	420	399	419	398	784	766	787	750
5	422	411	403	389	406	395	414	401	426	403	417	403	420	414	417	399	786	766	779	756
6	422	412	405	386	410	391	416	398	426	402	418	399	422	400	419	401	786	771	779	757
7	424	414	405	389	409	395	414	398	425	406	416	400	420	404	421	405	788	777	782	764
8	422	411	405	388	411	395	415	395	423	398	417	397	420	400	421	402	789	770	781	754
9	422	409	409	388	415	394	415	395	426	404	414	397	421	398	421	400	787	772	778	756
10	422	408	412	394	417	400	413	394	421	398	415	397	419	400	419	400	786	771	783	757
11	421	409	409	391	414	395	411	391	424	406	412	393	417	397	419	399	786	766	781	750
12	422	407	411	392	415	397	412	393	425	401	415	394	417	401	419	400	784	762	789	751
13	421	403	409	389	414	395	410	386	424	398	412	388	417	393	418	392	784	758	790	746
14	423	410	412	391	417	396	413	400	422	403	418	403	419	406	418	398	787	769	787	757
15	421	407	409	388	415	394	411	392	425	396	414	394	417	399	417	398	786	760	788	749
16	419	404	408	386	413	392	416	395	430	396	418	398	422	402	419	400	786	765	793	753
17	422	410	412	395	416	402	413	394	426	405	415	395	418	400	417	398	785	761	788	752
18	423	413	408	393	413	399	414	404	426	409	417	405	421	413	420	402	785	764	783	761
19	421	410	410	392	416	397	416	397	426	403	416	401	424	409	420	398	782	764	782	757
20	422	406	409	389	413	394	413	392	424	400	416	394	421	398	417	395	785	763	787	757
21	424	411	411	391	418	398	412	395	424	407	414	397	417	404	419	398	789	768	784	754
22	423	411	413	396	417	402	412	394	425	404	414	396	417	399	418	393	786	767	786	754
23	422	411	410	395	417	401	411	393	423	395	416	397	418	397	416	395	788	765	787	757
24	423	413	412	400	417	405	411	393	426	398	415	396	418	400	416	398	786	762	783	755
25	426	414	414	400	419	408	413	396	425	404	416	399	420	402	418	399	791	766	785	756
26	423	412	411	399	418	405	413	397	426	406	416	400	420	405	417	393	787	766	790	752
27	424	412	412	400	417	405	413	396	427	405	415	398	420	404	418	397	790	767	785	758
28	426	416	416	399	421	405	414	400	428	408	416	404	420	408	419	403	792	775	787	767
29	424	408	412	396	419	403	414	399	429	407	416	402	420	405	419	399	791	766	786	758
30	424	411	418	397	422	404	415	396	422	405	418	400	420	402	417	393	790	767	785	759
31	424	413	416	405	422	410	416	398	422	403	418	400	421	406	415	394	790	766	785	756
	426	**403**	**418**	**380**	**422**	**383**	**416**	**386**	**430**	**395**	**419**	**388**	**424**	**393**	**421**	**392**	**792**	**758**	**793**	**743**

दिनांक	सासन		सतना		तमनार		कोटरा		वडोदरा		दुर्ग		ग्वालियर		सिपत		सियोनि		वर्धा	
Date	Sasan		Satna		Tamnar		Kotra		Vadodara		Durg		Gwalior		**Sipat**		**Seoni**		**Wardha**	
	765Kv		765Kv		765Kv		765Kv		765Kv		765Kv		765Kv		765Kv		765Kv		765Kv	
	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	अधिकतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम	अधिकतम	न्युनतम
	Max	**Min**	**Max**	**Min**	**Max**	**Max**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**
1	772	764	779	768	794	782	795	783	798	764	801	781	794	770	770	758	788	765	796	769
2	771	765	778	768	792	786	789	785	789	757	798	786	789	774	768	761	785	768	793	774
3	769	758	775	761	792	783	789	781	787	755	797	781	790	765	767	759	783	763	793	766
4	766	757	771	758	792	782	789	785	799	753	796	782	790	769	767	759	785	764	793	770
5	768	757	774	759	793	784	795	784	788	761	799	784	791	766	770	761	788	771	794	775
6	769	762	774	764	793	785	792	784	789	761	800	787	792	771	770	762	789	772	796	776
7	771	765	777	770	794	787	792	788	793	767	799	789	796	777	771	765	789	774	794	777
8	771	762	778	765	794	784	792	784	789	758	800	783	795	771	771	762	790	768	801	770
9	769	763	777	766	796	787	794	787	788	760	799	781	792	772	771	763	781	781	793	770
10	771	763	777	766	799	789	797	790	789	760	801	787	789	772	772	763	788	774	797	770
11	774	764	783	764	796	780	793	780	784	754	797	771	792	772	769	757	783	755	794	754
12	770	757	773	757	796	779	796	780	790	745	797	772	791	771	768	754	783	752	793	756
13	770	759	775	758	793	777	793	777	794	738	793	765	794	767	769	755	781	745	789	744
14	771	763	775	762	797	786	797	789	788	761	800	782	794	773	775	763	788	765	797	769
15	772	759	777	756	797	781	797	781	793	758	799	773	785	779	772	759	786	754	796	761
16	774	762	781	760	798	786	799	787	794	756	800	781	785	785	772	763	786	763	798	766
17	773	760	776	757	795	782	795	783	791	765	800	776	788	770	768	756	787	760	800	767
18	773	759	777	760	798	787	799	787	792	769	801	784	792	768	771	762	788	772	799	777
19	772	760	779	760	795	786	794	786	784	757	797	779	790	771	768	760	785	766	789	766
20	769	758	775	760	796	788	794	790	787	756	799	786	795	767	769	762	788	769	792	772
21	775	756	784	756	797	787	798	788	791	761	799	787	797	773	769	760	787	769	794	776
22	771	763	777	767	794	786	800	785	789	760	798	784	794	770	767	760	785	766	792	771
23	772	760	779	762	796	782	798	781	786	760	799	778	794	770	769	755	785	760	793	767
24	768	759	776	760	795	786	795	785	788	764	798	786	793	763	767	760	784	768	794	773
25	771	758	780	759	796	784	796	782	794	766	800	782	797	768	768	757	788	765	796	772
26	769	761	777	763	797	787	796	786	789	759	799	786	793	766	770	760	786	766	794	773
27	770	760	778	758	801	789	801	787	791	760	804	787	798	768	773	760	789	765	796	771
28	770	762	778	764	803	791	802	789	792	770	805	788	799	775	774	766	794	775	800	782
29	769	758	774	758	801	786	801	785	790	762	804	781	794	763	774	763	792	768	802	772
30	768	758	775	757	795	786	795	785	789	765	800	784	795	767	772	762	789	767	795	767
31	767	759	775	759	796	783	796	783	793	764	800	780	797	772	773	762	788	764	795	766
	775	**756**	**784**	**756**	**803**	**777**	**802**	**777**	**799**	**738**	**805**	**765**	**799**	**763**	**775**	**754**	**794**	**745**	**802**	**744**

ANNEXURE - 5

अक्टोबर 2018 के दौरान पश्चिम क्षेत्र में विद्युत कटौतियां/ पाबंदियां
Power Cut/Restrictions in Western Region for the month of October-2018

क : गुजरात Gujarat

1 उद्योगों के लिये विद्युत कटौतियां / पाबंदियां , राज्य में भार नियमन आदि

1 **Power Cut/ Restriction on Industries, Load Shedding in the state etc**

विवरण Details	विद्युत कटौती की मात्रा Quantum of power cut (MW)	पाबन्दी का समय Restriction Timing From	Total Energy Cut (MUs /day	प्रति दिन कुल ऊर्जा कटौती Total Energy Cut (MUs /day	Remark
(a) Power Restrictions(Evening peak Hour) on non continuous process HT/LT Industries	शून्य Nil	शून्य Nil	शून्य Nil	शून्य Nil	All industries are allowed to run their units on all days of week & if they want to avail staggered holiday, then they will have to stagger on notified day only & cannot avail as per their choice. All industries are required to keep their recess timings staggered.
(b) भार नियमन Load Shedding	शून्य Nil	शून्य Nil	शून्य Nil	शून्य Nil	
(c) अन्य जानकारी Other information					
1.Weekly Off	शून्य Nil	शून्य Nil	शून्य Nil	शून्य Nil	
2.Staggering of power supply	शून्य Nil	शून्य Nil	शून्य Nil	शून्य Nil	

2 कृषि क्षेत्र को विद्युत आपूर्ति

2. **Power supply to Agricultural Sector: -**

विवरण Details	से From दिनांक Date	तक To दिनांक Date	प्रति दिन आपूर्ति घंटे Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
2.1 Three phase supply	01.10.2018	31.10.2018	10:00:00 *	8:00	8:05
2.2 Single Phase supply	01.10.2018	31.10.2018	16:00	16:00	16:00

08 Hrs. power supply in staggered form in rotation of day & night is given to AG. During 21.07.2017 to 28.07.2017 -- 10 hours AG supply given to Lunavada area for paddy crops. 10 Hrs. power supply in staggered form in rotation of day & night is given to AG from 17.08.2017 to 31.08.2017. In PGVCL area 10 Hrs. AG Supply given from 17.09.2017 to 1.10.2017. In all Gujarat 10 Hrs. AG Supply given from 05.10.2017 to 19.10.2017 and further from 24.10.2017 to 20.11.2017. In all Gujarat 10 Hrs. AG Supply given from 02.12.2017 to 31.12.2017. In DGVCL area 10 Hrs. AG supply given to 118 feeders for paddy crops from 20.01.2018 to 28.02.2018. During July-18, 10 Hrs. AG supply given in Mehsana Dist. from 07.07.18 to 24.07.18, in Gandhinagar Dist. from 10.07.18 to 24.07.18, in Lunavada region from 10.07.18 to 24.07.18 to paddy crop feeders, in Mehmdavad Taluka from 21.07.18 to 24.07.18, in Dholka Taluka from 14.07.18 to 30.07.18 and in Daskoi, Sanand & Bavla Taluka from 17.07.18 to 30.07.18. Single Phase supply given during rest of 16 Hrs by providing LSTC. 10:00 Hrs. AG supply given to all AG feeders of Gujarat from 08.08.2018. Only in Banaskantha district 08:00 Hrs. AG supply from 27.09.18 and from 29.09.18, 8:00 Hrs. AG supply in UGVCL, further 9:00 Hrs. AG supply in Mehsana district from 03.10.2018.

3 अन्य जानकारी

3. **Any other information**

1. Jayotigram Yojana-24 hours.
2. There is no load shedding in Urban areas

ख : मध्य प्रदेश Madhya Pradesh

1 उद्योगों के लिये विद्युत कटौतियां / पाबंदियां , राज्य में भार नियमन आदि

1 **Power Cut/ Restriction on Industries, Load Shedding in the state etc**

विवरण Details	विद्युत कटौती की मात्रा Quantum of	पाबन्दी का समय Restriction Timing	प्रति दिन कुल ऊर्जा कटौती Total Energy Cut

	power cut (MW)	से From	तक To	(MUs /day
(a) Power Restrictions(Evening peak Hour) on non continuous process HT/LT Industries	-	-	-	-
(b) भार नियमन Load Shedding	-	-	-	-
(c) अन्य जानकारी Other information 1.Weekly Off	-	-	-	-
2.Staggering of power supply	-	-	-	-

2 कृषि क्षेत्र को विद्युत आपूर्ति

2. **Power supply to Agricultural Sector: -**

विवरण Details	से From दिनांक Date	तक To दिनांक Date	प्रति दिन आपूर्ति घंटे Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
2.1 Three-Phase Supply(Mixed)	01.10.2018	31.10.2018	23:32	22:57	23:11
2.2 Three-Phase Supply(DLF)	01.10.2018	31.10.2018	23:37	23:10	23:21
2.3 Three-Phase Supply(Irrigation)	01.10.2018	31.10.2018	09:51	09:44	09:47

3 अन्य जानकारी

3. **Any other information**

शहरी क्षेत्रों में नियमन विद्युत कटौतियां Scheduled Power cuts in Urban Areas

विवरण Details	से From दिनांक Date	तक To दिनांक Date	ओसत प्रतिदिन आपूर्ति घंटे Average Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
3.1 Commissionary H. Qtrs.	01.10.2018	31.10.2018	23:55	23:31	23:47
3.2 District Head Qtrs.	01.10.2018	31.10.2018	23:57	23:32	23:49
3.3 Tehsil Head Qtrs.	01.10.2018	31.10.2018	23:51	23:34	23:43

ग : महाराष्ट्र Maharashtra

1 उध्योगों के लिये विद्युत कटौतियां / पावंदियां , राज्य में भार नियमन आदि

1 Power Cut/ Restriction on Industries, Load Shedding in the state etc

Details	Quantum of power cut (MW)	Restriction Timing		Total Energy Cut (MUs /day
		From	To	
(a) Power Restrictions(Evening peak Hour) on non-continuous process HT/LT Industries (b) Load Shedding	NIL			
(c) Other information 1.Weekly Off 2.Staggering of power supply	NIL			

2. **Power supply to Agricultural Sector: -**

Details	From Date	To Date	Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)

2.1 Three-Phase Supply (DLF)	01.10.2018	31.10.2018	Not Applicable		
2.1 Three-Phase Supply (Irrigation)	01.10.2018	31.10.2018	10	8	9
2.1 Three-Phase Supply (Mixed)	01.10.2018	31.10.2018	24	24	24

3. **Scheduled Power cuts in Urban Areas**

Details	From Date	To Date	Average Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
3.1 Commissionary H. Qtrs.	01.10.2018	31.10.2018	NIL	NIL	NIL
3.2 District Head Qtrs.	01.10.2018	31.10.2018	NIL	NIL	NIL
3.3 Tehsil Head Qtrs.	01.10.2018	31.10.2018	NIL	NIL	NIL

4. **Any other information**

	Date	Avg Mus/Day
3. Load Shedding due to Transmission Constraint in real time.	08/10/2018 to 13/10/2018	@ 4.2 Mus/Day
	15/10/2018 to 17/10/2018	
	19/10/2018 to 25/10/2018	

घ : छत्तीसगढ़ Chhattisgarh:

उद्योगों के लिये विद्युत कटौतियां / पाबंदियां , राज्य में भार नियमन आदि

1 **Power Cut/ Restriction on Industries, Load Shedding in the state etc**

विवरण Details	विद्युत कटौती की मात्रा Quantum of power cut (MW)	पाबन्दी का समय Restriction Timing		प्रति दिन कुल ऊर्जा कटौती Total Energy Cut (MUs /day)
		से From	तक To	
(a)Power Restrictions(Evening peak Hour) on continuous process HT/LT Industries M	-	-	-	-
(b) भार नियमन Load Shedding	146 MW (Max.) on 08.10.2018	18:00	19:00	0.025
(c) अन्य जानकारी Other information 1.Weekly Off 2.Staggering of power supply	शून्य Nil शून्य Nil	शून्य Nil शून्य Nil	शून्य Nil शून्य Nil	शून्य Nil शून्य Nil

2 कृषि क्षेत्र को विद्युत आपूर्ति

2. **Power supply to Agricultural Sector: -**

विवरण Details	से From दिनांक Date	तक To दिनांक Date	प्रति दिन आपूर्ति घंटे Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
2.1 Three-Phase Supply(Mixed)	01.10.2018	31.10.2018	-	-	-
2.2 Three-Phase Supply(DLF)	01.10.2018	31.10.2018	-	-	-
2.3 Three-Phase Supply(Irrigation)	01.10.2018	31.10.2018	18:00	18:00	18:00

3 अन्य जानकारी

3. **Any other information**

शहरी क्षेत्रों में नियमन विद्युत कटौतियां Scheduled Power cuts in Urban Areas

विवरण Details	से From दिनांक Date	तक To दिनांक Date	ओसत प्रतिदिन आपूर्ति घंटे Average Supply Hours per day		
			Max. (Hrs)	Min. (Hrs)	Average (Hrs)
3.1 Commissionary H. Qtrs.	01.10.2018	31.10.2018	24:00	24:00	24:00
3.2 District Head Qtrs.	01.10.2018	31.10.2018	24:00	24:00	24:00
3.3 Tehsil Head Qtrs.	01.10.2018	31.10.2018	24.00	24:00	24:00

****

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

पश्चिम क्षेत्र भार प्रेषण केन्द्र
एफ-3, सेन्ट्रल रोड, एम.आई.डी.सी. एरिया, मरोल, अन्धेरी (पूर्व), मुंबई - 400 093.
दूरभाष : 022-28202691 • फैक्स : 022-28235434, 28202630 • ई-मेल : wrldc@posoco.in
WESTERN REGIONAL LOAD DESPATCH CENTRE
F-3, Central Road, MIDC Area, Marol, Andheri (East), Mumbai – 400 093.
Phone : 022-28202691 • Telefax : 28235434, 28202630 • E-mail : wrldc@posoco.in
CIN : U40105DL2009GOI188682

संलग्नक Annex-2.6

अनिवार्य युनिट आऊटेज का अक्तूबर 2018 का विस्तारित ब्यौरा

Details of forced unit outages during the month of Oct' 2018

अनु क्रमांक Sl.No	युनिट Unit	संघटक Constituent /IPP	क्षमता मेगावॉट Cap.MW	से From समय Time	दिनांक Date	तक To समय Time	दिनांक Date	कारण Reason
1.	जीआईपीसीएल स्टेज GIPCL STG 2	GSECL	165	00:00	01-03-2018	Still out	Still out	No schedule
2.	बीईसीएल BECL 1	GSECL	250	11:07	02-07-2018	05:30	24-10-2018	Lignite shortage
3.	डीजीबीपी DGBP 1	GSECL	107	12:54	25-09-2018	Still out	Still out	Tripped due to tripping of evacuation lines/ Later turbine gear problem developed
4.	□□□□□□□□ SLPP 3	GSECL	125	21:46	29-09-2018	11:02	10-10-2018	BTL
5.	□□□□ GPEC 2	GSECL	218	23:53	01-10-2018	23:25	04-10-2018	RSD
6.	डीजीबीपी DGBP 3	GSECL	375	01:14	02-10-2018	23:45	04-10-2018	RSD
7.	□□□□□□□□ SLPP 2	GSECL	125	19:30	02-10-2018	11:54	05-10-2018	BTL
8.	□□□□□□□ GSEG 2	GSECL	165	19:38	05-10-2018	Still out	Still out	Turbine bearing vibration high
9.	□□□□□□□□ GPPC 1	GSECL	351	03:56	06-10-2018	15:29	10-10-2018	RSD
10.	□□□□□□□□ Wanakbori 1	GSECL	210	23:00	09-10-2018	Still out	Still out	Due to heavy steam leakage
11.	□□□□ GPEC 1	GSECL	218	22:17	11-10-2018	14:56	15-10-2018	RSD
12.	□□□□□□□□ GPPC 1	GSECL	351	06:40	12-10-2018	18:34	16-10-2018	RSD
13.	डीजीबीपी DGBP 3	GSECL	107	18:10	12-10-2018	16:31	25-10-2018	RSD
14.	जीसेग स्टेज GSEG STAGE II 1	GSECL	351	22:10	12-10-2018	18:21	23-10-2018	RSD
15.	□□□□□□□□ GPPC 2	GSECL	351	23:59	13-10-2018	21:27	16-10-2018	RSD
16.	□□□□ GPEC 2	GSECL	218	23:02	15-10-2018	21:46	20-10-2018	RSD
17.	□□□□ GPEC 3	GSECL	218	08:32	16-10-2018	05:31	23-10-2018	RSD
18.	उतरण स्टेज UTRAN STG II 1	GSECL	375	10:15	17-10-2018	21:48	20-10-2018	RSD
19.	□□□□□□□□ GPPC 2	GSECL	351	20:47	17-10-2018	Still out	Still out	RSD
20.	□□□□□□□□ GPPC 1	GSECL	351	23:15	17-10-2018	02:22	22-10-2018	RSD
21.	बीईसीएल BECL 2	GSECL	250	22:49	20-10-2018	Still out	Still out	Boiler inspection
22.	□□□□ Ukai 3	GSECL	200	04:34	24-10-2018	21:36	04-11-2018	Flame failure
23.	□□□□ Ukai 4	GSECL	200	14:53	25-10-2018	13:34	02-11-2018	Turbine vibration high
24.	उतरण स्टेज UTRAN STG II 1	GSECL	375	02:35	26-10-2018	19:50	29-10-2018	RSD

25.	□□□□□□ Gandhinagar 3	GSECL	210	10:50	26-10-2018	00:58	02-11-2018	HP Turbine Tube leakage
26.	□□□□ GPEC 1	GSECL	218	19:25	27-10-2018	20:00	30-10-2018	RSD
27.	□□□□ GPEC 2	GSECL	218	19:44	27-10-2018	20:24	30-10-2018	RSD
28.	बीईसीएल BECL 1	GSECL	250	12:21	28-10-2018	16:20	04-11-2018	BTL.
29.	जीसेग स्टेज GSEG STAGE II 1	GSECL	351	23:25	31-10-2018	Still out	Still out	RSD
30.	परली Parli 4	MAHAGENCO	210	19:47	05-07-2015	Still out	Still out	Economic shutdown
31.	डबल्यूपीसीएल WPCL 1	MAHAGENCO	135	17:03	16-02-2016	Still out	Still out	RSD/No PPA
32.	डबल्यूपीसीएल WPCL 2	MAHAGENCO	135	21:46	29-02-2016	Still out	Still out	RSD/No PPA
33.	पायोनीर PIONEER(262+126) 1	MAHAGENCO	388	17:45	07-02-2017	Still out	Still out	RSD
34.	भुसावल Bhusawal 3	MAHAGENCO	210	00:02	07-06-2018	Still out	Still out	Coal shortage
35.	घाटघर Ghatghar 2	MAHAGENCO	125	01:12	29-06-2018	Still out	Still out	Stator earth fault
36.	उरण Uran 7	MAHAGENCO	108	12:53	20-07-2018	Still out	Still out	Compressor & Turbine Blade Failure.
37.	कोराडी Koradi 7	MAHAGENCO	210	15:54	03-08-2018	Still out	Still out	Coal shortage.
38.	खापरखेड़ा Khaparkheda 1	MAHAGENCO	210	23:57	11-08-2018	Still out	Still out	Poor Coal receipt (Coal Shortage)
39.	उरण URAN B0 1	MAHAGENCO	120	12:19	08-09-2018	Still out	Still out	Transformer shifting work
40.	उरण Uran 8	MAHAGENCO	108	22:08	08-09-2018	Still out	Still out	Withdrawn due to unit B0 & U-7 heat rate high
41.	पारस Paras 3	MAHAGENCO	250	00:55	15-09-2018	Still out	Still out	Stator Earth Fault
42.	चंद्रपुर Chandrapur 3	MAHAGENCO	210	08:48	01-10-2018	Still out	Still out	Condenser tube leakage
43.	खापरखेड़ा Khaparkheda 2	MAHAGENCO	210	10:19	07-10-2018	16:25	10-10-2018	Attending PRDF leakage
44.	कोराडी KORADI(MSEDCL) 8	MAHAGENCO	660	10:18	09-10-2018	23:05	19-10-2018	Poor coal quality
45.	VIPL 1	MAHAGENCO	300	00:30	17-10-2018	Still out	Still out	Coal shortage.
46.	परली Parli 7	MAHAGENCO	250	00:23	19-10-2018	Still out	Still out	Poor coal receipt
47.	कोराडी Koradi 6	MAHAGENCO	210	05:48	20-10-2018	Still out	Still out	BTL
48.	चंद्रपुर Chandrapur 5	MAHAGENCO	500	22:30	20-10-2018	17:18	28-10-2018	Coal shortage
49.	नासिक NASIK 3	MAHAGENCO	210	11:58	21-10-2018	11:40	26-10-2018	ID fan tripped.
50.	नासिक NASIK 5	MAHAGENCO	210	12:15	26-10-2018	Still out	Still out	Boiler license validity extension
51.	चंद्रपुर Chandrapur 8	MAHAGENCO	500	09:00	28-10-2018	20:52	31-10-2018	BTL
52.	चंद्रपुर Chandrapur 4	MAHAGENCO	210	07:54	31-10-2018	Still out	Still out	Sparking at slippering carbon brush
53.	□□□□□ Satpura II 6	MPPGCL	200	13:45	22-09-2018	08:48	04-11-2018	ID Fan Vibration high/coal shortage w.e.f 22-09-2018
54.	□□□□□ Satpura II 7	MPPGCL	250	15:40	24-09-2018	09:58	27-10-2018	Coal Shortage
55.	□□□□ □□□□ MB Power 1	MPPGCL	600	18:00	22-10-2018	11:39	29-10-2018	ID fan Problem
56.	सिंगाजी Singaji 3	MPPGCL		19:20	30-10-2018	Still out	Still out	Maintenance
57.	□□□□ Korba(W) 3	CSPGCL	210	00:23	21-10-2018	03:12	28-10-2018	Boiler License renewal
58.	एपीएल मुँदरा APL Mundra 6	Adani Power Ltd	660	23:50	26-09-2018	Still out	Still out	Hydrogen leakage
59.	एपीएल मुँदरा APL Mundra 5	Adani Power Ltd	660	02:08	03-10-2018	Still out	Still out	Due to steam leakage from Turbine HPCV 2.
60.	एपीएल तिरोड़ा APML Tiroda 3	Adani Power Ltd	330	20:29	15-10-2018	08:27	19-10-2018	Withdraw due to problem in aph-3b support bearing.
61.	ट्रोम्बे Trombay 6	TPC	500	00:00	06-03-2016	Still out	Still out	Economic shutdown
62.	आरजीपीपीएल	RGPPL	320	23:00	31-03-2014	Still out	Still out	Dry preservation/Gas

	RGPPL-1B							shortage
63.	आरजीपीपीएल RGPPL-1A	RGPPL	320	13:30	8-07-2014	Still out	Still out	Less requisition
64.	आरजीपीपीएल RGPPL 3A	RGPPL	230	13:47	27-09-2018	20:31	04-11-2018	Unit change over; less gas availability
65.	आरजीपीपीएल RGPPL 2B	RGPPL	230	00:22	10-10-2018	19:48	15-10-2018	Unit change over; less gas availability
66.	आरजीपीपीएल RGPPL 3B	RGPPL	230	22:00	15-10-2018	14:02	04-11-2018	unit change over; less gas availability
67.	जेपीएल स्टेज JPL Stg-II 1	JPL	600	22:30	12-08-2018	Still out	Still out	Hydrogen leakage in generator
68.	जेपीएल स्टेज JPL Stg-I 2	JPL	250	21:15	30-08-2018	Still out	Still out	Condenser tube leakage/Coal shortage since 00:00hrs of 02-09-2018
69.	जेपीएल स्टेज JPL Stg-II 4	JPL	600	00:18	08-09-2018	12:36	26-10-2018	Coal feeding problem (wet coal)
70.	जेपीएल स्टेज JPL Stg-I 1	JPL	250	00:00	05-10-2018	21:18	11-10-2018	Coal shortage
71.	जेपीएल स्टेज JPL Stg-II 2	JPL	600	20:49	11-10-2018	05:25	15-10-2018	BCW pump-A discharge valve leakage.
72.	जेपीएल स्टेज JPL Stg-II 3	JPL	600	19:55	26-10-2018	Still out	Still out	Coal shortage
73.	जेपीएल स्टेज JPL Stg-I 1	JPL	250	00:00	24-10-2018	Still out	Still out	Coal shortage
74.	ईपीजीएलEPGL 2	ESSAR	600	20:25	24-10-2017	Still out	Still out	Coal shortage
75.	ईपीजीएल EPGL 1	ESSAR	600	18:51	23-01-2018	Still out	Still out	Coal shortage
76.	एस्सार महान Essar(Mahan) 2	ESSAR	600	17:37	06-10-2018	18:00	09-10-2018	Due to ID fan trip
77.	एस्सार □□□□ Essar(Mahan) I	ESSAR	600	23:55	13-10-2018	23:35	17-10-2018	Abnormal Sound in APH
78.	एस्सार □□□□ Essar(Mahan) 2	ESSAR	600	19:25	23-10-2018	00:11	31-10-2018	Due to FD fan blade Pitch problem
79.	एस्सार □□□□ Essar(Mahan) I	ESSAR	600	10:19	27-10-2018	06:57	02-11-2018	APH flue gas path duct leakage
80.	उनोसुजन UNOSUGEN-1	TPGL	382	21:55	04-03-2016	Still out	Still out	RSD
81.	डीजीईएन DGEN-52	TPGL	400	20:00	25-11-2016	Still out	Still out	No schedule(NO PPA)
82.	डीजीईएन DGEN-53	TPGL	400	19:12	23-12-2016	Still out	Still out	No schedule(NO PPA)
83.	डीजीईएन DGEN-51	TPGL	400	00:00	22-05-2018	Still out	Still out	No schedule(NO PPA)
84.	केडब्लूपीसीएल KWPCL 1	KWPCL	600	22:12	22-05-2017	Still out	Still out	Stator earth fault protection operated/maintenance
85.	केएसके महानदी KSK Mahanadi 2	KMPCL	600	14:30	29-09-2018	14:46	07-10-2018	ID fan vibration problem
86.	केएसके महानदी KSK Mahanadi 3	KMPCL	600	02:29	03-10-2018	14:46	07-10-2018	APH problem.
87.	केएसके महानदी KSK Mahanadi 3	KMPCL	600	02:29	03-10-2018	14:46	07-10-2018	APH problem.
88.	आईईपीएल IEPL I	IEPL	270	21:26	28-08-2018	Still out	Still out	Coal Shortage
89.	सीजीपीएल CGPL 2	CGPL	830	00:02	20-09-2018	Still out	Still out	COH & Bottom hopper seal damaged
90.	एसकेएस पावर SKS Power 1	SKS	300	00:06	23-09-2018	Still out	Still out	Turbine vibration high
91.	डीबी पावर DB Power 2	DBPL	600	00:03	05-10-2018	09:22	10-10-2018	Coal shortage
92.	बालको BALCO-2	BALCO	300	21:20	08-10-2018	17:33	28-10-2018	Due to Ash handling issue
93.	एमको EMCO II	EMCO	300	00:11	09-10-2018	10:55	14-10-2018	withdrawn on ID Fan vibrations/out on Coal Shortage since 10-10-2018

94.	लॅन्को Lanco 2	LANCO	300	04:40	08-10-2018	03:30	12-10-2018	BTL
95.	झाबुआ पावर Jhabua Power 1	JHABUAP	600	00:00	07-10-2018	05:35	15-10-2018	Coal Shortage
96.	टीआरएन एनर्जि TRN Energy 1	ACBIL	300	00:30	20-10-2018	07:12	06-11-2018	Coal shortage
97.	आरकेएम RKM Power 2	RKMPPL	360	18:33	17-10-2018	Still out	Still out	Coal shortage
98.	कॅप्स KAPS 1	NPCIL	220	08:52	11-03-2016	Still out	Still out	Reactor side problem
99.	टॅप्स TAPS 2	NPCIL	160	21:09	31-07-2018	18:44	25-10-2018	Refueling outage.
100.	टॅप्स TAPS 3	NPCIL	540	09:47	04-10-2018	01:27	12-10-2018	Reactor side problem.
101.	टॅप्स TAPS 1	NPCIL	160	13:48	06-10-2018	07:16	11-10-2018	Unavailability of emergency condenser motor operated valve
102.	गांधार Gandhar 4	NTPC	224	22:11	31-08-2018	Still out	Still out	Rotor earth fault
103.	मौदा Mouda 4	NTPC	660	07:29	02-10-2018	22:04	06-10-2018	BTL/coal shortage w.e.f 17:00hrs/03-10-2018
104.	गांधार जीटी Gandhar GT 3	NTPC	144	02:29	04-10-2018	10:19	08-10-2018	RSD
105.	मौदा Mouda 3	NTPC	660	11:10	06-10-2018	13:20	09-10-2018	BTL suspected
106.	मौदा Mouda 4	NTPC	660	14:02	07-10-2018	20:54	12-10-2018	BTL
107.	गांधार Gandhar GT 3	NTPC	144	00:01	11-10-2018	15:52	15-10-2018	RSD
108.	गांधार Gandhar GT 2	NTPC	144	00:21	11-10-2018	11:42	15-10-2018	RSD
109.	कावास Kawas GT 1B	NTPC	106	21:17	11-10-2018	20:00	15-10-2018	Load compartment fan tripped
110.	मौदा Mouda 4	NTPC	660	20:42	13-10-2018	15:41	19-10-2018	Suspected BTL
111.	गांधार जीटी Gandhar GT 1	NTPC	144	20:56	15-10-2018	17:01	22-10-2018	RSD
112.	गांधार जीटी Gandhar GT 3	NTPC	144	13:38	17-10-2018	16:38	05-11-2018	Less schedule/RSD
113.	□□□□□ □□□□ Kawas GT 2B	NTPC	219	23:45	18-10-2018	19:35	20-10-2018	RSD
114.	मौदा MOUDA 3	NTPC	660	12:32	25-10-2018	22:53	30-10-2018	Coal shortage
115.	गांधार जीटी Gandhar GT 2	NTPC	144	12:37	25-10-2018	17:25	30-10-2018	RSD/less schedule
116.	मौदा Mouda 4	NTPC	660	07:23	30-10-2018	19:53	04-11-2018	BTL
117.	वीएसटीपीएस VSTPS 4	NTPC	210	04:57	31-10-2018	14:06	04-11-2018	BTL
118.	गांधार जीटी Gandhar GT 2	NTPC	144	09:24	31-10-2018	17:54	05-11-2018	RSD

Note: Units out for more than 72 hrs are only included.

संलग्नक **Annex-2.7**

नियोजित युनिट आऊटेज का अक्तूबर 2018 का विस्तारित ब्यौरा

Details of planned unit outages during the month of Oct. 2018

अनु क्रमांक Sl.No	युनिट Unit	संघटक Constituent/ IPP	क्षमता मेगावॉट Cap.MW	से From समय दिनांक		तक To समय दिनांक		कारण Reason
				Time	Date	Time	Date	
1.	के□□□□□□□□ KSTPS 3	NTPC	200	00:18	21-10-2018	Still out	Still out	AOH

****

						ANNEXURE 3.1
DETAILS OF PROPOSED MAINTENANCE PROGRAM OF GENERATING UNITS DURING NOVEMBER 2018 & DECEMBER 2018						
S. No.	**Unit**	**No.**	**Capacity**	**Outage Plan**		**Reason**
			(MW)	**From**	**To**	
1	**GUJARAT**					
1	Akrimota Lignite TPS	2	125	19-Nov-18	30-Nov-18	**AOH**
2	Wanakbori TPS	4	210	20-Nov-18	19-Dec-18	Inspection work
3	AE Co D	D	120	21-Nov-18	08-Dec-18	AOH
4	SUGEN 30	30	382.5	03-Dec-18	08-Dec-18	AOH
5	Akrimota LTPS	1	125	10-Dec-18	09-Jan-19	Inspection work
6	AE Co E	E	121	11-Dec-18	09-Jan-19	AOH
7	GPPC 1	1	350	14-Dec-18	28-Dec-18	Station S/D for sea water sump cleaning and HRSG
8	GPPC 2	2	350	14-Dec-18	28-Dec-18	Station S/D for sea water sump cleaning and HRSG
9	DGB Stage 2	2	112	26-Dec-18	24-Jan-19	AOH
2	**MADHYAPRADESH**					
3	**CHHATTISHGARH**					
3.1	KORBA WEST # 1	210	28-Nov-18	21-Dec-18		ESP Augmentation
3.2	MTTPP # 1	500	30-Dec-18	29-Jan-19		AOH
4	**MAHARASHTRA**					
5	**Central Sector and IPPs**					
5.1	VINDHYACHAL - 9	500	20-Nov-18	14-Dec-18		BLR+GEN+LPT+GT bushing replacement.
5.2	TAPS-4	540	17-Nov-18	16-Dec-18		COOLANT CHANNEL REPLACEMENTS
5.3	SIPAT -4	500	01-Dec-18	01-Dec-18		AOH
5.4	KSTPS 6	500	15-Dec-18	08-Jan-19		AOH

Transmission element outage planning for the month of December 2018.

Annexure 3.2

Sr. No	KV	Line / Element	From		To		Basis	Reason	System	Agency	Type
			Date	Time	Date	Time					
1	220	Bus coupler Bay (201 Bay) at Bhachau	1-Dec-18	8:00	1-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
2	765	ICT6_765/400kv_CHAMPA	01-Dec-18	9:00	01-Dec-18	17:30	Daily	For Relay Replacement Work	WRTS-I	WRTS-I	R
3	220	220KV Bus-I at Boisar	1-Dec-18	9:00	1-Dec-18	17:30	Daily	For AMP	POWERGRID	WR-II	R
4	220	220 KV Bus-I at Bhatapara	01-Dec-18	9:00	01-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
5	765	765KV JABALPUR 4 MAIN BAY(727) AT DHARAMJAYGARH(KORBA) SS	01-Dec-18	9:00	01-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
6	765	765kV ICT1 & BR1 TIE BAY (722)_KOTRA PS	01-Dec-18	9:00	01-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
7	400	400 kV BUS - II AT INDORE PS	1-Dec-18	9:00	1-Dec-18	18:00	DAILY	FOR EQUIPMENT CONNECTION OF TO BE COMMISSIONED 400 KV UJJAIN - INDORE LINE	POWERGRID	WR-II	C
8	765	765 KV Wardha -ICT-1 Main Bay 703 at Wardha	01-Dec-18	9:00	01-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
9	400	315MVA ICT-1 at Itarsi SS (Dia shall be kept open)	1-Dec-18	9:00	1-Dec-18	18:00	Daily	Outage of ICT-1 for installation, testing and commissioning of Backup Impedance Relay at Itarsi SS.	POWERGRID	WR-II	C
10	765	765kV SEONI-BILASPUR I	01-Dec-18	9:00	01-Dec-18	18:00	Daily	Shut down nature defect (for attend spacer cum damper open,X-arm cleate plate bolt loose, Arcing horn bolt loose.)	WRTS-I	WRTS-I	R
11	400	400 Kv Bhopal- Bina 1 Line at 400KV S/s Bhopal	1-Dec-18	9:00	1-Dec-18	18:00	Daily	Testing work of Tie CB. Line will be under shutdown	MPPTCL	MPPTCL	R
12	765	765 Kv Bus# 2 at Durg PS	01-Dec-18	9:00	01-Dec-18	18:00	Daily	Jharsuguda Bay Extn. Work	WRTS-I	WRTS-I	C
13	400	424 bay,765kV/400kV ICT-1 main bay at Bina	1-Dec-18	9:15	1-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
14	400	402 Tie Bay of 400 kV Bus Reactor at BDTCL	01-Dec-18	9:30	01-Dec-18	13:00	Daily	For DO Signal testing	BDTCL	BDTCL	R
15	400	Bina-Shujalpur Ckt-I at Shujalpur.	1-Dec-18	10:00	1-Dec-18	11:00	Daily	For Final Testing of NGR Bypass Scheme (Bina-I Line Reactor to be Tested as Bus Reactor during this Period)	POWERGRID	WR-II	C
16	220	Kawas- vav 1 at Vav	1-Dec-18	10:00	1-Dec-18	13:00	Daily	CB SF6 leakage attending	POWERGRID	WR-II	R
17	400	400KV BAY -414 (TPGL-2 Tie Bay) at Pirana	1-Dec-18	10:00	1-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
18	765	765KV V'chal Pooling-Satna line#2 at Satna SS with dia to be kept open	1-Dec-18	10:00	1-Dec-18	18:00	Daily	For taking Yph Reactor taking in to service after attending leakage of Y-Ph unit.	POWERGRID	WR-II	R
19	220	220 KV Gwalior-Malanpur line # 2 at Gwalior	1-Dec-18	10:00	1-Dec-18	18:00	Daily	For replacement of CVT	POWERGRID	WR-II	R
20	400	Bina-Shujalpur Ckt-I Switchable Line Reactor at Shujalpur.	1-Dec-18	11:00	1-Dec-18	18:00	Daily	For Final Testing of NGR Bypass Scheme (Bina-I Line will remain in Service during this Period)	POWERGRID	WR-II	C
21	220	BOISAR II - PGCIL 1 in Non auto mode	01-Dec-18	08:00	01-Dec-18	18:00	Daily	PID work	MSETCL	MSETCL	shifting of auto reclose switch
22	765	BUS - 1 @ TIRODA	01-Dec-18	08:00	01-Dec-18	21:00	Daily	Testing & Maintenance of Bus Connected Isolator & CVT	APML	APML	
23	220	EKLAHARA-(OCR)-NAVASARI I	01-Dec-18	09:00	01-Dec-18	15:00	Daily	maint. work	MSETCL	MSETCL	-
24	400	400kV ISP-Indore Circuit 1 and 400kV ISP-	01-Dec-18	8:00	02-Dec-18	19:00	continuous	Overhead stringing work of765kV D/C Hexa Khandwa Dhule line	PGCIL/MPPTCL	KTL(Sterlite)	C
25	400	NAGOTHANE - DABHOL 2	01-Dec-18	08:00	02-Dec-18	18:00	Daily	Cold washing & string replacement of insulator strings	MSETCL	MSETCL	on Dabhol
26	500kV	Mundra-Mohindergarh Pole-2	01-Dec-18	7:00	04-Dec-18	19:00	Daily	Insulator replacement work from porceline to polymer in HVDC Transmission Line.	ATIL	ATIL	R
27	400	KHADKA - BABLESHWAR ON TBC @ BABHALESHWAR	01-Dec-18	09:00	05-Dec-18	17:00	Continuous	Quarterly Maintenance work & Reapir scissors of 400KV P.G Isolator and Servicing and allignment of isolators work	MSETCL	MSETCL	Babhaleshwar-Bhusawal Bay is Take on TBC for Rpearing of 29A & 29B P.G Isoaltor P.G Isoaltor
28	400	Padgha - Kalwa ckt - 2	01-Dec-18	8:00	10-Dec-18	17:00	Continuous	1) Dismentling of conductor at loc. No. 1103 to 1106 2) Tower erection at loc. No. 1104 to 1105 3) Dismentling of Tower exsting Loc.No.1104 4) Stringing of conductor at Loc.No. 1103 to 1106	MSETCL	MSETCL	
29	400	PADGHE - KALWA 1	01-Dec-18	09:00	10-Dec-18	18:00	Daily	PID Testing work of 400 KV Kalwa-Padgha Ckt-1 line Insulator strings at various locations. Auto-Reclose function to be out of service.	MSETCL	MSETCL	Line will remain in service
30	400	CHANDRAPUR-PARLI CKT-3	01-Dec-18	07:00	15-Dec-18	19:00	Daily	PID work	MSETCL	MSETCL	be in non auto
31	400	CHANDRAPUR 2-KUMBHARGAON(NANDED) CKT - 2	01-Dec-18	08:00	15-Dec-18	17:00	Daily	PID work	MSETCL	MSETCL	shifting of auto reclose switch
32	400	BABHALESHWAR - PADGHE 1	01-Dec-18	08:00	15-Dec-18	18:00	Daily	For Carrying PID Work	MSETCL	MSETCL	taken out of
33	220	PUSAD - WARDHA (PG)	01-Dec-18	07:00	19-Dec-18	17:00	Daily	PID work	MSETCL	MSETCL	shifting of auto reclose switch
34	400	400kV KORBA-MAHAN	01-Dec-18	8:30	20-Dec-18	18:00	Daily	A/R in Non-auto mode for PID works.	WRTS-I	WRTS-I	R
35	400	Bhinmal- Zerda	1-Dec-18	7:00	31-Dec-18	19:00	Daily	ONLINE OPGW WORK(LINE A/R DISABLEMENT REQUIRED)	POWERGRID	NR-1	C
36	400	MUNDRA-JETPUR # 1	1-Dec-18	8:00	31-Dec-18	18:00	Daily	ONLINE OPGW WORK(LINE A/R DISABLEMENT REQUIRED)	POWERGRID	WR-II	C
37	765	SATNA-ORAI	1-Dec-18	8:00	31-Dec-18	18:00	Daily	ONLINE OPGW WORK(LINE A/R DISABLEMENT REQUIRED)	POWERGRID	WR-II	C
38	220	BHUGAON - WARDHA (PG)	01-Dec-18	08:00	31-Dec-18	18:00	Daily	PID work from location no.33 (LILO Point) to PGCIL End	MSETCL	MSETCL	A/R for

39	400	PARLI-SOLAPUR (LAMBOTI)	01-Dec-18	10:00	31-Dec-18	18:00	Daily	PID testing work.	MSETCL	MSETCL	service.
40	500	Transmission Line(Bipole)	2-Dec-18	8:00	2-Dec-18	18:00	Cont.	LINE X-ING WORK OF 765kV BHUJ-BANASKANTHA T/L.	ADANI	WR-II	C
41	400	400KV Satna-Bina-1 line at Satna	2-Dec-18	9:00	2-Dec-18	14:00	Daily	Online replacement permission without line outage for PLCC retrofitting work	POWERGRID	WR-II	R
42	400	400KV Satna-Bina-1 line at Satna	2-Dec-18	15:00	2-Dec-18	18:00	Daily	Line outage for final end to end testing after retrofitting work of PLCC at both end .	POWERGRID	WR-II	R
43	220	BOISAR II - PGCIL 1	02-Dec-18	07:00	02-Dec-18	18:00	Daily	Routine Maintenance & Dignostic testing work	MSETCL	MSETCL	-
44	400	PADGHE - KALWA 2	02-Dec-18	08:00	02-Dec-18	18:00	Daily	Routine Maintenance & Dignostic testing work	MSETCL	MSETCL	-
45	400kV	400 KV BUS-2 HVDC Mundra Terminal S/s.	02-Dec-18	8:00	03-Dec-18	18:00	Daily	Annual Maintenance and Testing of BUS-2 Connected Equipement at HVDC Mundra Terminal .	ATIL	ATIL	R
46	400	1 at NSPCL	3-Dec-18	6:30	3-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
47	400	Choraniya - Hadala Line	03-Dec-18	8:00	03-Dec-18	18:00	Daily	Breaker DCRM and Bay Maintenance work	GETCO	GETCO	
48	220	Vapi -TAPS	03-Dec-18	8:00	03-Dec-18	18:00	Daily	Maintenance work	GETCO		
49	400	Kasor-Chorania line	03-Dec-18	8:00	03-Dec-18	18:00	Daily	Line Maintenance work	GETCO	GETCO	Chorania line no. 01 A/R will
50	220	ICT#1 Bay (Bay 202) at Bhachau	3-Dec-18	8:00	3-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
51	765	ICT1_765/400kv_SOLAPUR	03-Dec-18	8:00	03-Dec-18	21:00	Daily	For Installing B/U impedance relay and AMP works	WRTS-I	WRTS-I	R
52	400	Itarsi-Indore #2 Line at Itarsi	3-Dec-18	9:00	3-Dec-18	9:15	Daily	For taking Line Reactor out of service for Overhauling of Reactor at Itarsi end.	POWERGRID	WR-II	C
53	765	ICT1_765/400kv_WARORA_PWTL	03-Dec-18	9:00	03-Dec-18	12:00	Daily	To attend oil leakage from top header pipe.	WRTS-I	WRTS-I	R
54	220	220KV Mehgaon -Malanpur	03-Dec-18	9:00	03-Dec-18	17:00	Daily	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
55	400	400KV Kalwa Main bay (416) at Pune-Talegaon	03-Dec-18	9:00	03-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
56	400	315MVA ICT-1 at Vapi with dia to be kept open	3-Dec-18	9:00	3-Dec-18	17:00	Daily	Back up impedence relay installation work.	POWERGRID	WR-II	R
57	765	ICT3_765/400kv_CHAMPA	03-Dec-18	9:00	03-Dec-18	17:30	Daily	For CSD commissioning work	WRTS-I	WRTS-I	C
58	220	Bay No. 209 Main Bay of ICT-III at Boisar	3-Dec-18	9:00	3-Dec-18	17:30	Daily	For Bay AMP	POWERGRID	WR-II	R
59	765	Aurangabad	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
60	220	220 KV Bus-II at Bhatapara	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
61	765	DHARAMJAYGARH(KORBA) SS	03-Dec-18	9:00	03-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
62	765	765kV ICT1 & BR1 TIE BAY (722)_KOTRA PS	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
63	400	ICT1_400/220kv_MAPUSA	03-Dec-18	9:00	03-Dec-18	18:00	Daily	Installation and Testing of Impedance Relay and AMP Works	WRTS-I	WRTS-I	C
64	400	400KV Warora-2 & Pune-2 Tie Bay (405) at Parli	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
65	765	Wardha	03-Dec-18	9:00	03-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
66	765	765kV SEONI-BILASPUR II	03-Dec-18	9:00	03-Dec-18	18:00	Daily	Shut down nature defect (for attend spacer cum damper open	WRTS-I	WRTS-I	R
67	400	Tie Bay of Bus Reactor # 1 (402) at Dehgam	3-Dec-18	9:00	3-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
68	400	HVDC-1 & Future Tie bay (402) at Bhadrawat	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
69	400	400kV ICT #1 & Future Tie bay (402) at Durg PS	03-Dec-18	9:00	03-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
70	400	400 KV Bus - I at Jabalpur	3-Dec-18	9:00	3-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
71	400	406 ICT 2 Main Bay V-Chal PS	3-Dec-18	9:00	3-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
72	400	Bina-Bina-2 main bay at 400 kV MPPTCL Bina	3-Dec-18	9:15	3-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
73	400	405 Tie Bay of 400 kV Bhopal-Bhopal ckt-1 at	03-Dec-18	9:30	03-Dec-18	13:00	Daily	For DO Signal testing	BDTCL	BDTCL	R
74	400	400kV RAIPUR-WARDHA I	03-Dec-18	9:30	03-Dec-18	17:30	Daily	Replacement of BPL PLCC by ABB Panel in Channel-I & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
75	220	220kV side ICT#1 bay (201bay) at Damoh(During outage ICT#1 is in service through TBC)	3-Dec-18	9:30	3-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
76	400	Bina-Shujalpur Ckt-2 at Shujalpur.	3-Dec-18	10:00	3-Dec-18	11:00	Daily	For Final Testing of NGR Bypass Scheme (Bina-2Line Reactor to be Tested as Bus Reactor during this Period)	POWERGRID	WR-II	C
77	765	ICT1_765/400kv_PARLI _PPTL	03-Dec-18	10:00	03-Dec-18	18:00	Daily	CSD commissioning at Parli(New)	WRTS-I	WRTS-I	C
78	765	ICT4_765/400kv_TAMNAR PS	03-Dec-18	10:00	03-Dec-18	18:00	Daily	For commissioning of new Back up impedance relay of AT Bank # 04	WRTS-I	WRTS-I	R
79	400	ICT-1 at Pirana with dia to be kept open	3-Dec-18	10:15	3-Dec-18	14:00	Daily	Installation & commissioning of new B/U impdance relay	POWERGRID	WR-II	C
80	400	Bina-Shujalpur Ckt-2 Switchable Line Reactor at Shujalpur.	3-Dec-18	11:00	3-Dec-18	18:00	Daily	For Final Testing of NGR Bypass Scheme (Bina-2 Line will remain in Service during this Period)	POWERGRID	WR-II	C
81	220	BOISAR II - PGCIL 3 in Non auto mode	03-Dec-18	08:00	03-Dec-18	18:00	Daily	PID work	MSETCL	MSETCL	shifting of auto reclose switch
82	400	TBC @ PARLI	03-Dec-18	09:00	03-Dec-18	17:00	Daily	(1) CB DCRM and Timing test. (2) Bay maint.work.	MSETCL	MSETCL	-
83	220	DEOLI(PGCIL)-BADNERA	03-Dec-18	09:00	03-Dec-18	17:00	Daily	PID Work	MSETCL	MSETCL	shifting of Auto reclose switch
84	400	3	03-Dec-18	09:00	03-Dec-18	18:00	Daily	Annual Maintenance of Bay Equipment	MEGPTCL	MEGPTCL	
85	400	Tie bay (408) of Ektuni line 1 @ Taptitanda	03-Dec-18	11:00	03-Dec-18	17:00	Daily	CB diagnostic testing	MSETCL	MSETCL	tie bay CB diagnostic
86	400 KV	at VSTPS end	03-Dec-18	7:30	04-Dec-18	17:30	Continuous	ANNUAL BAY MAINTENANCE	WRTS-1	NTPC	
87	400 KV	ICT-1 Main Bay-15	03-Dec-18	7:30	04-Dec-18	17:30	Continuous	For PM (ICT -1 will remain charged through its Tie bay)	NTPC	NTPC	

88	400	SSP DHULE- 2	3-Dec-18	8:00	4-Dec-18	18:00	Continue	New relay ABB make REL 670 Retrofitting & relay testing work	SSP	GSECL	
89	765	Vadodara-Indore Line at Vadodara	3-Dec-18	8:00	4-Dec-18	18:00	Daily	For Insulator Cleaning & Earthwire repairing work	POWERGRID	WR-II	R
90	400	315 MVA ICT bank-I at 400 KV S/s Khedamara.	03-Dec-18	9:00	04-Dec-18	17:00	Continuous	Annual Maintenance Programme.	CSPTCL	CSPTCL	R
91	400	400 KV Line#1 Main Bay (Bay 3) at TRNEPL	03-Dec-18	9:00	04-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
92	765	LINE AND ICT II) AT INDORE PS	3-Dec-18	9:00	4-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
93	765	ICT1_765/400kv_PUNE(GIS)	03-Dec-18	9:00	04-Dec-18	18:00	Cont.	ICT AMP, 765kv and 400kv Bay AMP works	WRTS-I	WRTS-I	R
94	765	706 Bay, 765KV Sasan # 1 Main Bay at Satna	3-Dec-18	9:00	4-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
95	400	DHULE - SSNNL I & II on Non auto mode	03-Dec-18	08:00	04-Dec-18	17:00	Daily	Online PID testing of insulators	MSETCL	MSETCL	SSNNL Ckt-1&2 on Non
96	400 KV	Korba- Vindyachal-2 work planned at NTPC Korba switch yard	03-Dec-18	7:30	05-Dec-18	17:30	Continuous	LA replacement and Shunt reactor-2 PM (Line Shut down Required)	WRTS-1	NTPC	
97	400 KV	DGEN 400kV Bus B and Bus Coupler Bay 413	03-Dec-18	8:00	05-Dec-18	18:00	Daily	Off line washing job for Bus B Gantry insulators, 4B2 isolator and EMVT of Bus.	TPL - DGEN	TPL - DGEN	R
98	400	open	3-Dec-18	9:00	5-Dec-18	18:00	Daily	For Replacement of Bushing	POWERGRID	WR-II	R
99	400	MAIN BUS - 1 @ KORADI	03-Dec-18	08:00	05-Dec-18	18:00	Daily	Online PID testing work	MSETCL	MSETCL	proposed on 400KV Main Bus-1
100	400	Bay 419(Future Main bay) at Khandwa SS	3-Dec-18	10:00	6-Dec-18	18:00	Cont.	For ABB CB operating Mechanism Overhauling work & Bay AMP work.	POWERGRID	WR-II	R
101	400 KV	VSTPS -SATNA LINE# 2 Line Reactor (Stage-II, BAY No. 26) at VSTPS end	03-Dec-18	7:30	07-Dec-18	17:30	Continuous	ANNUAL MAINTENANCE & ATTENDING OIL LEAKAGE	NTPC	NTPC	
102	220	Kakrapar-Haldarwa I at Haldarwa	3-Dec-18	9:00	7-Dec-18	18:00	Cont.	03 nos CB Replacement work and at GETCO hadarwa End	POWERGRID	WR-II	C
103	400	KARAD - TALANDGE CKT 1 ON TBC @ KARAD	03-Dec-18	10:00	07-Dec-18	17:00	Continuous	Overhauling of CGL make SF6 CB Pole column	MSETCL	MSETCL	on 400KV Talandge-2 &
104	400	NAGOTHANE - DABHOL 1	03-Dec-18	08:00	13-Dec-18	18:00	Daily	LE scheme for insulator string replacement & Cold washing of insulators	MSETCL	MSETCL	on Dabhol-Nagothane-II
105	400	400KV Bina -Bhopal-1 (Main CB)	3-Dec-18	9:00	15-Dec-18	17:00	Continue	S/D is required only on Main CB For CB replacement work. Load will be managed by Tie CB.	MPPTCL	MPPTCL	R
106	400	400KV Bina 1 Main CB of 400KV S/s Bhopal	3-Dec-18	9:00	15-Dec-18	18:00	Continue	Replacement of 400 Kv CB and 3 No 400Kv CTs under PSDF Scheme. Line will remain charge through Tie CB	MPPTCL	MPPTCL	R
107	400	CHANDRAPUR 2- KUMBHARGAON (NANDED) CKT - 1	03-Dec-18	08:00	15-Dec-18	17:00	Daily	For PID work	MSETCL	MSETCL	shifting of Auto reclose switch
108	400	Itarsi-Indore #2 Line Reactor at Itarsi	3-Dec-18	9:00	16-Dec-18	18:00	Cont.	Overhauling of Line Reactor at Itarsi end.	POWERGRID	WR-II	C
109	400	at NSPCL	4-Dec-18	6:30	4-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
110	400	Bus-Coupler (Hadala SS)	04-Dec-18	8:00	04-Dec-18	18:00	Daily	Breaker DCRM and Bay Maintenance work	GETCO	GETCO	
111	400	Wanakbori - Soja line	04-Dec-18	8:00	04-Dec-18	18.00	Daily	Maintenance work	GETCO	GETCO	
112	220	220 KV PGCIL Ckt-I at 220 KV S/s Raigarh	04-Dec-18	8:00	04-Dec-18	17:00	Daily	For preventive maintenance	CSPTCL	CSPTCL	R
113	400KV	400KV SUGEN Bus-1	04-Dec-18	8:00	04-Dec-18	18:00	Daily	Maintenance of 400KV Bus Coupler Bay Bus -1 isolator and Sugen Unit 30 Bus-1 isolator..	TPL-SUGEN	TPL-SUGEN	R
114	400KV	400 KV Bus Coupler Bay	04-Dec-18	8:00	04-Dec-18	18:00	Daily	Maintenance of 400KV Bus Coupler Bay Bus -1 isolator and Sugen Unit 30 Bus-1 isolator..	TPL-SUGEN	TPL-SUGEN	R
115	220	Bhilad -TAPS	04-Dec-18	8:00	04-Dec-18	18:00	Daily	Maintenance work	GETCO	GETCO	
116	400	125 MVAr, 400 KV B/R at Betul with dia to be kept open	4-Dec-18	8:00	4-Dec-18	18:00	Daily	Faulty OTI replacement, Fire fighting painting work and scheduled AMP work.	POWERGRID	WR-II	R
117	220	Ostro-Bhachau#2 Line at Bhachau	4-Dec-18	8:00	4-Dec-18	18:00	Daily	Erection of Bus Duct structure for New bays	OSTRO	WR-II	R
118	765	ICT2_765/400kv_SOLAPUR	04-Dec-18	8:00	04-Dec-18	21:00	Daily	For Installing B/U impedance relay and Yph unit Coservator low oil level rectification works	WRTS-I	WRTS-I	R
119	400	Asoj - Kosamba	04-Dec-18	9:00	04-Dec-18	13:00	Daily	Bay equipment and line maintenance work	GETCO	GETCO	
120	220	220KV Gwalior(PGCIL)-Malanpur-I	04-Dec-18	9:00	04-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
121	400	400KV Bina-Bhopal-I	4-Dec-18	9:00	4-Dec-18	17:00	Daily	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
122	400	alegaon	04-Dec-18	9:00	04-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
123	220	Bay No.. 210 Future Bay at Boisar	4-Dec-18	9:00	4-Dec-18	17:30	Daily	For Bay AMP	POWERGRID	WR-II	R
124	220	220 KV Transfer Bus at Bhatapara	04-Dec-18	9:00	04-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
125	765	SWITCHABLE LR_765kV_DURG 2_KOTRA PS	04-Dec-18	9:00	04-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
126	400	ICT1_400/220kv_RAIGARH	04-Dec-18	9:00	04-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
127	400	765/400KV_ICT1_MAIN_BAY_410 at Seoni	04-Dec-18	9:00	04-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
128	765	765 KV Wardha-ICT-3 Tie bay 708 at Wardha	04-Dec-18	9:00	04-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
129	765	765kV WARORA(PWTL)-PARLI (PPTL)-I	04-Dec-18	9:00	04-Dec-18	18:00	Daily	For Isolator alignment work& Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
130	765	765kV D'JAIGARH-BILASPUR	04-Dec-18	9:00	04-Dec-18	18:00	Daily	Shut down nature defect (for attencd spacer cum damper open, copper bond missing, socket clavis nut missing)	WRTS-I	WRTS-I	R

131	765	ICT1_765/400kv_DURG PS	04-Dec-18	9:00	04-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
132	400	Bilaspur PS	04-Dec-18	9:00	04-Dec-18	18:00	Daily	AMP works (CT C Tan ë, CRM & DEW POINT)	WRTS-I	WRTS-I	R
133	400	400kV Nagda Dehgam Ckt I at Dehgam(A/R of Ckt # 2 & DIA open at both ends also required)	4-Dec-18	9:00	4-Dec-18	18:00	Daily	Attending Hotspot observed during Thermovision scanning and other shutdown nature defects in line.	POWERGRID	WR-II	R
134	400	500MVA ICT-2 at Itarsi SS (Dia shall be kept open)	4-Dec-18	9:00	4-Dec-18	18:00	Daily	Outage of ICT-2 for installation, testing and commissioning of Backup Impedance Relay at Itarsi SS.	POWERGRID	WR-II	R
135	400	400 KV Bus - II at Jabalpur	4-Dec-18	9:00	4-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
136	400	407 Bus Reactor Main Bay V-Chal PS	4-Dec-18	9:00	4-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
137	400	Bina-Satna-2 Line at Bina	4-Dec-18	9:15	4-Dec-18	14:30	Daily	online retrofitting of PLCC ch-1	POWERGRID	WR-II	R
138	400	Bina-Bina-2 Tie bay at 400 kV MPPTCL Bina	4-Dec-18	9:15	4-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
139	400	403 Main Bay of 400 kV Bus Reactor at BDTCL	04-Dec-18	9:30	04-Dec-18	13:00	Daily	For DO Signal testing	BDTCL	BDTCL	R
140	400	400 kV Bus 1 at Raipur SS	04-Dec-18	9:30	04-Dec-18	17:30	Daily	AMP and attending hot-spots	WRTS-I	WRTS-I	R
141	220	220kV side ICT#2 bay (205bay) at Damoh (During outage ICT#2 is in service through TBC)	4-Dec-18	9:30	4-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
142	400	Nagda-Dehgam Ckt-II at Nagda	4-Dec-18	9:45	4-Dec-18	10:00	Daily	For taking out 50MVAr Non-Switchable Line Reactor at Nagda end for AMP work	POWERGRID	WR-II	C
143	400	402 Tie Bay(SSP#1-Khargone) at Rajgarh	4-Dec-18	10:00	4-Dec-18	17:00	Daily	Annual Maintenance testing of CB and CT	POWERGRID	WR-II	R
144	400	KOLHAPUR	04-Dec-18	10:00	04-Dec-18	18:00	Daily	For Bay AMP works	WRTS-I	WRTS-I	R
145	765	PS	04-Dec-18	10:00	04-Dec-18	18:00	Daily	For AMP works of 702 Tie Bay	WRTS-I	WRTS-I	R
146	400	Dehgam-II at Nagda.	4-Dec-18	10:00	4-Dec-18	18:00	Daily	For AMP works	POWERGRID	WR-II	C
147	220	ICT-2 at Pirana with dia to be kept open	4-Dec-18	14:00	4-Dec-18	14:00	Daily	Installation & commissioning of new B/U impdance relay	POWERGRID	WR-II	C
148	400	404 Main Bay of ICT-2 at BDTCL Bhopal	04-Dec-18	14:00	04-Dec-18	17:30	Daily	For DO Signal testing	BDTCL	BDTCL	R
149	400	Bina-Satna-2 Line at Bina	4-Dec-18	15:00	4-Dec-18	17:00	Daily	Line outage will be required for end to end testing of PLCC after retrofitting.	POWERGRID	WR-II	R
150	400	Nagda-Dehgam Ckt-II at Nagda	4-Dec-18	18:00	4-Dec-18	18:15	Daily	For taking 50MVAr Non-Switchable Line Reactor into service at Nagda end after AMP work	POWERGRID	WR-II	C
151	400	MAIN BAY (420) OF WARDHA (PG) CKT @ WARORA	04-Dec-18	08:00	04-Dec-18	17:00	Daily	Routine maintainance and diagonastic testing such as CT tandelta,CRM,IR values,isolater maintainance work and DCRM	MSETCL	MSETCL	Line will be charged
152	400	CHANDRAPUR 2 - WARORA CKT-2	04-Dec-18	08:00	04-Dec-18	17:00	Daily	Tighening of earthwire & conductor	MSETCL	MSETCL	earthwire &
153	400	Main bay (409) of Tirora - Warora ckt-2 @ TIRORA	04-Dec-18	09:00	04-Dec-18	18:00	Daily	Testing and maintenance of Breaker	ATIL	ATIL	
154	400	MAIN BAY (409) of EKTUNI CKT-1 @ TAPTITANDA	04-Dec-18	11:00	04-Dec-18	17:00	Daily	(409) Ektuni-I CB diagnostic testing	MSETCL	MSETCL	testing work
155	220 KV	Kawas-vav line 1 (bay 15)	4-Dec-18	8:00	5-Dec-18	18:00	continous	For annual maintenance and testing of bay	PGCIL	NTPC	
156	400	400kV Khandwa-Rajgarh and 400kV Khargone -	04-Dec-18	8:00	05-Dec-18	18:00	continuous	Overhead stringing work of765kV D/C Hexa Khandwa Dhule line	PGCIL	KTL(Sterlite)	C
157	765	765kV D'JAIGARH-RANCHI II	04-Dec-18	9:00	05-Dec-18	18:00	Cont.	To facilitate Gantry & Equipment erection of under construction 765KV Bus Reactor bank#3 at Dharamjaigarh PS & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	C
158	765	765kV SEONI-BINA	04-Dec-18	9:00	05-Dec-18	18:00	Daily	AMP for liquidation of defects at 42 Nos of defetcs Spacer opened	WRTS-II-2	WRTS-I	R
159	765	ICT2_765/400kv_PARLI _PPTL	04-Dec-18	10:00	05-Dec-18	18:00	Conti..	CSD commissioning at Parli(New)	WRTS-I	WRTS-I	C
160	220	220 KV ICT II at 220KV S/s Sukha	04-Dec-18	9:00	05-Dec-18	17:00	Continue	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
161	400	Kasor - GPEC line	04-Dec-18	8:00	06-Dec-18	18:00	Continuous	Relay retrofitting at Kasor & Line Maintenance work	GETCO	GETCO	
162	400KV	Mouda-Wardha LINE-1 (bay 405 and 406)	4-Dec-18	9:00	6-Dec-18	18:00	Continuous	Annual Maintenance	PGCIL	NTPC	
163	400/220	ICT-1 WITH 220kV BAY-4 & 400kV BAY-10 &9 , 220kV TRANSFER BUS,400kV BUS-1 at NSPCL	5-Dec-18	6:30	5-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
164	400	Wanakbori - Soja line	05-Dec-18	8:00	05-Dec-18	18:00	Daily	Maintenance work.	GETCO	GETCO	
165	400	SSP - Rajgarh - 1	05-Dec-18	8:00	05-Dec-18	18:00	Daily	Maintenance work	NCA	GETCO	SSP- Rajgadh No. 1 will
166	220	Vapi -Vapi (PG)	05-Dec-18	8:00	05-Dec-18	18:00	Daily	Maintenance work	GETCO	GETCO	
167	220	220 KV PGCIL Ckt-II at 220 KV S/s Raigarh	05-Dec-18	8:00	05-Dec-18	17:00	Daily	For preventive maintenance	CSPTCL	CSPTCL	R
168	400KV	400KV SUGEN Bus-2	05-Dec-18	8:00	05-Dec-18	18:00	Daily	Maintenance of 400KV Bus Coupler Bay Bus -2 isolator and Sugen Unit 30 Bus-2 isolator..	TPL-SUGEN	TPL-SUGEN	R
169	400KV	400 KV Bus Coupler Bay	05-Dec-18	8:00	05-Dec-18	18:00	Daily	Maintenance of 400KV Bus Coupler Bay Bus -2 isolator and Sugen Unit 30 Bus-2 isolator..	TPL-SUGEN	TPL-SUGEN	R
170	400	Mundra#1 Main Bay (Bay 404) at Bhachau	5-Dec-18	8:00	5-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
171	400	400 KV Transfer Bus (Bay No. 6) at 400 KV Switchyard at HTPS, Korba West.	05-Dec-18	8:30	05-Dec-18	18:00	Daily	(1) Cleaning and tightness of clamps of bus and line isolator, CT's & CVT's and breaker.Cleaning of insulator of CT's & CVT's ,isolator and breaker.	CSPTCL	CSPTCL	R
172	400	Mundra-Jetpur Ckt#1	5-Dec-18	9:00	5-Dec-18	10:00	Daily	To take Line Reactor out for NIFPS system at Jetpur end	POWERGRID	WR-II	R
173	400	& ICT-I at Boisar	5-Dec-18	9:00	5-Dec-18	13:00	Daily	For AMP	POWERGRID	WR-II	R
174	765	kept open	5-Dec-18	9:00	5-Dec-18	14:00	Daily	For AMP works	POWERGRID	WR-II	R
175	220	220KV Gwalior(PGCIL)-Malanpur-II	05-Dec-18	9:00	05-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
176	400	400KV Bina-Bhopal-II	5-Dec-18	9:00	5-Dec-18	17:00	Daily	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
177	400	Talegaon.	05-Dec-18	9:00	05-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R

178	400	315MVA ICT-2 at Vapi with dia to be kept open	5-Dec-18	9:00	5-Dec-18	17:00	Daily	Back up impedence relay installation work.	POWERGRID	WR-II	R
179	765	ICT4_765/400kv_CHAMPA	05-Dec-18	9:00	05-Dec-18	17:30	Daily	For CSD commissioning work	WRTS-I	WRTS-I	C
180	400	400KV Seoni-Sarni	5-Dec-18	9:00	5-Dec-18	18:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
181	765	Aurangabad	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
182	400	400 KV Bus-I at Bhatapara	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
183	400	400KV Pune-2 Main Bay (406) at Parli	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
184	400	ICT2_400/220kv_RAIGARH	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
185	400	400KV_BHILAI_MAIN_BAY_415 at Seoni	05-Dec-18	9:00	05-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
186	400	ICT1_400/220kv_SOLAPUR	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For Installing B/U impedance relay.	WRTS-I	WRTS-I	R
187	765	765 KV Durg-4 Main Bay 715 at Wardha	05-Dec-18	9:00	05-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
188	765	765kV WARORA(PWTL)-PARLI (PPTL)-I	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For Isolator alignment work & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
189	765	765kV DURG PS- CHAMPA_1	05-Dec-18	9:00	05-Dec-18	18:00	Daily	Shut down nature defect (for attend grading ring missing ,attencd jumper open, insulator broken) Other ckt A/R to be kept in Non-Auto mode.	WRTS-I	WRTS-I	R
190	400	400kV Raipur-1 Main Bay (410) at Bhadrawati	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
191	400	400kV ICT #1 Main bay (403)at Durg PS	05-Dec-18	9:00	05-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
192	400	400kV Nagda Dehgam Ckt II at Dehgam(A/R of Ckt # 1 & DIA open at both ends also required)	5-Dec-18	9:00	5-Dec-18	18:00	Daily	Attending Hotspot observed during Thermovision scanning and other shutdown nature defects in line.	POWERGRID	WR-II	R
193	400	400 KV LANCO2__MAIN_BAY_422 at Bilaspur PS	05-Dec-18	9:00	05-Dec-18	18:00	Daily	AMP works (DCRM,)	WRTS-I	WRTS-I	R
194	400	Itarsi-Indore #2 Line at Itarsi	5-Dec-18	9:00	5-Dec-18	18:00	Daily	For Bushing torrent gasket replacement under over hauling works of Line Reactor	POWERGRID	WR-II	R
195	400	Bina-Bina-3 main bay at 400kV MPPTCL Bina	5-Dec-18	9:15	5-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
196	400	406 Main Bay of 400 kV Bhopal-Bhopal ckt-1 at	05-Dec-18	9:30	05-Dec-18	13:00	Daily	For DO Signal testing	BDTCL	BDTCL	R
197	400	400kV RAIPUR-WARDHA II	05-Dec-18	9:30	05-Dec-18	17:30	Daily	Replacement of BPL PLCC by ABB Panel in Channel-I & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
198	220	220kV side ICT#3 bay (209 bay) at Damoh (During outage ICT#3 is in service through TBC)	5-Dec-18	9:30	5-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
199	400	407 Main Bay(Nagda#1) at Rajgarh	5-Dec-18	10:00	5-Dec-18	17:00	Daily	Annual Maintenance testing of CB and CT	POWERGRID	WR-II	R
200	400	Champa-HVDC	05-Dec-18	10:00	05-Dec-18	17:30	Daily	For AMP Works	WRTS-I	WRTS-I	R
201	765	PS	05-Dec-18	10:00	05-Dec-18	18:00	Daily	For AMP works of 705 Tie Bay	WRTS-I	WRTS-I	R
202	220	Pirana	5-Dec-18	10:00	5-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
203	400	Shujalpur.	5-Dec-18	10:00	5-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
204	400	407 Main Bay of ICT-1 at BDTCL Bhopal	05-Dec-18	14:00	05-Dec-18	17:30	Daily	For DO Signal testing	BDTCL	BDTCL	R
205	400	CHANDRAPUR 2 - WARORA CKT-1	05-Dec-18	08:00	05-Dec-18	17:00	Daily	Tighening of conductor ,Earthwire hardware	MSETCL	MSETCL	conductor ,Earthwire
206	400	CHANDRAPUR-PARLI CKT-3	05-Dec-18	09:00	05-Dec-18	17:00	Daily	(1) Line maint. Work. (2) Bay maint.work.	MSETCL	MSETCL	-
207	400	AKOLA - AURANGABAD(PG) CKT - 1	05-Dec-18	09:00	05-Dec-18	17:00	Daily	Routine Maintenance & testing work	MSETCL	MSETCL	NA
208	400	KORADI 3	05-Dec-18	09:00	05-Dec-18	18:00	Daily	Annual Maintenance of Bay equipment	MEGPTCL	MEGPTCL	
209	400	Tie bay (411) of Ektuni line 2 @ Taptitanda	05-Dec-18	11:00	05-Dec-18	17:00	Daily	(411) Ektuni-II tie bay CB diagnostic testing	MSETCL	MSETCL	testing
210	400	SSP ASOJ	5-Dec-18	8:00	6-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
211	400kV	400 KV BUS-1 HVDC Mundra Terminal S/s.	05-Dec-18	8:00	06-Dec-18	18:00	Daily	Annual Maintenance and Testing of BUS-1 Connected Equipement at HVDC Mundra Terminal .	ATIL	ATIL	R
212	400	400 KV ST Main Bay (Bay 4) at TRNEPL	05-Dec-18	9:00	06-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
213	765	INDORE PS	5-Dec-18	9:00	6-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
214	765	ICT2_765/400kv_PUNE(GIS)	05-Dec-18	9:00	06-Dec-18	18:00	Cont.	ICT AMP, 765kv and 400kv Bay AMP works	WRTS-I	WRTS-I	R
215	765	704 Bay, 765KV ICT-2 Main Bay at Satna	5-Dec-18	9:00	6-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
216	400 KV	Sipat-Raipur-3 Line	05-Dec-18	7:30	07-Dec-18	17:30	Continuous	For PM	WRTS-1	NTPC	
217	400	Asoj-Indore#1 at Asoj	5-Dec-18	9:00	7-Dec-18	17:00	Daily	For Bus Isolator 89A of Asoj-Indore #1 at Asoj replacement work(Line can be taken on TBC)	POWERGRID	WR-II	C
218	400	Bus#1 at Asoj	5-Dec-18	9:00	7-Dec-18	17:00	Daily	For Bus Isolator 89A of Asoj-Indore #1 at Asoj replacement work	POWERGRID	WR-II	C
219	400	400/220KV 315 MVA ICT - 1 @ NEW KOYNA	05-Dec-18	08:00	07-Dec-18	18:00	Continuous	Overhauling of OLTC and OiL Filtration work(Agency- Ajaydeep Cor. Aurangabad)	MSETCL	MSETCL	managed on 315MVA
220	500kV	Mundra-Mohindergarh Pole-1	05-Dec-18	7:00	08-Dec-18	19:00	Daily	Insulator replacement work from porceline to polymer in HVDC Transmission Line.	ATIL	ATIL	R
221	400	63MVAR Mundra#1 LR at Jetpur	5-Dec-18	9:00	10-Dec-18	18:00	Cont.	Installation of NIFPS scheme in L/R at Jetpur end	POWERGRID	WR-II	R
222	400/220	ICT-2 WITH 220kV BAY-1 & 400kV BAY-8&9, 220kV TRANSFER BUS,400kV BUS-2 at NSPCL	6-Dec-18	6:30	6-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
223	400	SSP - Rajgarh - 2	06-Dec-18	8:00	06-Dec-18	18:00	Daily	Maintenance work	NCA	GETCO	SSP- Rajgadh No. 2 will
224	220	Bhilad - Vapi (PG) -1	06-Dec-18	8:00	06-Dec-18	18:00	Daily	Maintenance work	GETCO	GETCO	
225	220	220 KV Charadava Bhimasar Line 1	06-Dec-18	8:00	06-Dec-18	18:00	Daily	220 KV Busbar protection testing work at charadava end.	GETCO	GETCO	

226	400KV	400 KV Transfer Bus	06-Dec-18	8:00	06-Dec-18	18:00	Daily	Maintenance of Sugen Unit 30 Line isolator and Transfer Bus T isolator.	TPL-SUGEN	TPL-SUGEN	R
227	765	BUS REACTOR_765kV_240MVAR_SEONI	06-Dec-18	8:00	06-Dec-18	18:00	Daily	For Polymer Insulator string replacement in switchyard at Seoni end	WRTS-I	WRTS-I	R
228	400	ICT#2 Main Bay (Bay 406) at Bhachau	6-Dec-18	8:00	6-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
229	400	Bay No-409 Main Bay of 315 MVA ICT-1 at Boisar	6-Dec-18	9:00	6-Dec-18	13:00	Daily	For Bay AMP	POWERGRID	WR-II	R
230	220	220KV Bhanpura-Kota (Sakatpur)	06-Dec-18	9:00	06-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
231	400	Pune-Talegaon.	06-Dec-18	9:00	06-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
232	400	400KV Boisar-ITC-1 Tie Bay-408 at Vapi	6-Dec-18	9:00	6-Dec-18	17:00	Daily	Bay AMP work. CB &CT	POWERGRID	WR-II	R
233	400	400 KV Bus-II at Bhatapara	06-Dec-18	9:00	06-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
234	765	DHARAMJAYGARH(KORBA) SS	06-Dec-18	9:00	06-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
235	400	400 kV_BUS_1_KOTRA PS	06-Dec-18	9:00	06-Dec-18	18:00	Daily	Connection of new bays	WRTS-I	WRTS-I	C
236	400	ICT2_400/220kv_MAPUSA	06-Dec-18	9:00	06-Dec-18	18:00	Daily	Installation and Testing of Impedance Relay and AMP Works	WRTS-1	WRTS-I	C
237	220	220 KV ICT-1 MAIN BAY 201 AT RAIGARH SS	06-Dec-18	9:00	06-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
238	400	ICT2_400/220kv_SOLAPUR	06-Dec-18	9:00	06-Dec-18	18:00	Daily	For Installing B/U impedance relay at Solapur	WRTS-I	WRTS-I	R
239	765	765 KV Aurangabad-1 Main Bay-716 at Wardha	06-Dec-18	9:00	06-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
240	765	765 KV WARORA-GADARWARA-I	06-Dec-18	9:00	06-Dec-18	18:00	Daily	For Isolator alignment work & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
241	765	765kV DURG PS- CHAMPA_2	06-Dec-18	9:00	06-Dec-18	18:00	Daily	Shut down nature defect (for attend grading ring missing, insulator broken) Other ckt A/R to be kept in Non-Auto mode.	WRTS-I	WRTS-I	R
242	220	220kV Main Bay of ICT # 1 at Dehgam	6-Dec-18	9:00	6-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
243	400	400kV Vadodara - Pirana Ckt I at Dehgam (A/R of Ckt # 2 & DIA open at both ends also required)	6-Dec-18	9:00	6-Dec-18	18:00	Daily	Attending shutdown nature defects and changing wrong direction IGR in line.	POWERGRID	WR-II	R
244	400	No 410) at Jabalpur	6-Dec-18	9:00	6-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
245	400	408 Bus Reactor &ICT#3 Tie Bay V-Chal PS	6-Dec-18	9:00	6-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
246	765	400kV ICT-2 at Gwalior with dia to be kept open	6-Dec-18	9:00	6-Dec-18	18:00	Daily	Commisioning of backup impedance relay	POWERGRID	WR-II	R
247	400	Bina-Bina-3 tie bay at 400kV MPPTCL Bina	6-Dec-18	9:15	6-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
248	400	408 Tie Bay of 400 kV Bhopal-Bhopal ckt-2 at	06-Dec-18	9:30	06-Dec-18	13:00	Daily	For DO Signal testing	BDTCL	BDTCL	R
249	400	400 kV Bus-4 at Raipur SS	06-Dec-18	9:30	06-Dec-18	17:30	Daily	For AMP and attending hot-spots	WRTS-I	WRTS-I	R
250	220	already out)	6-Dec-18	9:30	6-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
251	765	765kV ICT-1 Main bay (701) at New Parli	06-Dec-18	10:00	06-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING BY NTAMC/RTAMC	WRTS-I	WRTS-I	C
252	400	408 Tie Bay (Nagda#1-ICT#1) at Rajgarh	6-Dec-18	10:00	6-Dec-18	17:00	Daily	Annual Maintenance testing of CB and CT	POWERGRID	WR-II	R
253	400	400 KV BUS-I at Tamnar PS	06-Dec-18	10:00	06-Dec-18	18:00	Daily	For AMP works of 400 kV Bus-I	WRTS-I	WRTS-I	R
254	765	BUS REACTOR_765kV_240MVAR_PADGHE(GIS)	06-Dec-18	10:00	06-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
255	400	Shujalpur.	6-Dec-18	10:00	6-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
256	220	400KV BAY TPGL-417 (TPGL-1 Tie bay) at Pirana	6-Dec-18	10:15	6-Dec-18	14:00	Daily	AMP WORK	POWERGRID	WR-II	R
257	400	409 Main Bay of 400 kV Bhopal-Bhopal ckt-2 at	06-Dec-18	14:00	06-Dec-18	17:30	Daily	For DO Signal testing	BDTCL	BDTCL	R
258	400	LONIKAND 1 - CHAKAN	06-Dec-18	09:00	06-Dec-18	17:00	Daily	Half yrly maintenance & testing activities	MSETCL	MSETCL	-
259	400	TIE BAY - 405 OF 765/400kV 1500MVA ICT & FUTURE BAY @ AKOLA 2	06-Dec-18	09:00	06-Dec-18	18:00	Daily	Testing and Maintenance of Bay Equipments	MEGPTCL	MEGPTCL	
260	400	TIE BAY (408) OF STN T/F-2 & KORADI 3 CKT-1 @ KORADI 2	06-Dec-18	10:00	06-Dec-18	17:00	Daily	DCRM,IR measurement of CB 408-Q52	MSETCL	MSETCL	transformer-II will remain service through Main
261	400	KOLHAPUR - KOLHAPUR (PG) CKT - 1	06-Dec-18	10:00	06-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	-
262	400	TAPTITANDA	06-Dec-18	11:00	06-Dec-18	17:00	Daily	(412) Ektuni II bay CB diagnostic testing	MSETCL	MSETCL	testing work
263	220 KV	Kawas-vav line 2 (bay 16)	6-Dec-18	8:00	7-Dec-18	18:00	continous	For annual maintenance and testing of bay	PGCIL	NTPC	
264	400 KV	DGEN 400kV Transfer bus	06-Dec-18	8:00	07-Dec-18	18:00	Continuous	Off line washing job for transfer bus gantry insulators	TPL - DGEN	TPL - DGEN	R
265	220	220 KV Marwa-Banari Feeder No. 1 (Bay No. 209) at 400 KV switchyard Marwa.	06-Dec-18	8:30	07-Dec-18	17:30	Continuous	1. Annual Testing of Relays, CT, Circuit Breaker and CVT. 2. Cleaning and Terminal tightness of CT JB, Breaker Mar. Box., and control & relay panel. 3. General Checking, Cleaning & lubrication of operating mechanism of Circuit Breaker & Isolators.	CSPTCL	CSPTCL	R
266	400	315 MVA ICT bank-III at 400 KV S/s Khedamara.	06-Dec-18	9:00	07-Dec-18	17:00	Continuous	Annual Maintenance Programme.	CSPTCL	CSPTCL	R
267	765	765 KV Wardha-Nizamabad-2	06-Dec-18	9:00	07-Dec-18	18:00	Cont.	A/R in Non -Auto Mode for OPGW Work.	WRTS-I	WRTS-I	R
268	400	Bus-1 at Itarsi SS	6-Dec-18	9:00	8-Dec-18	18:00	Cont.	Outage of 400kV Bus-1 at Itarsi S/S for installation, testing and commissioning of new numerical busbar protection system of ABB make in place of existing ABB make RADHA Busbar protection system.	POWERGRID	WR-II	R

269	400	MAIN BUS - 2 @ KORADI	06-Dec-18	08:00	08-Dec-18	18:00	Daily	Online PID testing work	MSETCL	MSETCL	will be availed as per PID unit.Online
270	400	BABHALESHWAR - PADGHE 1 ON TBC @ BABHALESHWAR	06-Dec-18	09:00	10-Dec-18	17:00	Continuous	Quarterly Maintenance work & Reapir scissors of 400KV P.G Isolator and Servicing and allignment of isolators work	MSETCL	MSETCL	Babhaleshwar-Padghe ckt-1 Bay is Take on TBC for Rpearing of 29A & 29B P.G Isoaltor P.G
271	400	Bus-1&2 Protection System at Itarsi	6-Dec-18	9:00	12-Dec-18	18:00	Cont.	For isoaltion of existing 400 Busbar-1 & 2 Protection for installation and commissioning of New Numerical Busbar Protection system of ABB make at Itarsi S/S.	POWERGRID	WR-II	R
272	220	220kV BUS -1 at NSPCL Bhilai	7-Dec-18	6:30	7-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
273	400	Mundra - Hadala Line	07-Dec-18	8:00	07-Dec-18	18:00	Daily	Breaker DCRM and Bay Maintenance work	GETCO	GETCO	
274	220	Bhilad-Vapi (PG) -2	07-Dec-18	8:00	07-Dec-18	18:00	Daily	Maintenance work	GETCO	GETCO	
275	400	construction)	07-Dec-18	8:00	07-Dec-18	18:00	Daily	Bay Maintenance.	GETCO	GETCO	
276	220	220 KV Charadava Bhimasar Line no-1	07-Dec-18	8:00	07-Dec-18	18:00	Daily	220 KV Busbar protection testing work at charadava end.	GETCO	GETCO	
277	400	Kasor-SSP line	07-Dec-18	8:00	07-Dec-18	18:00	Daily	Line maintenance work.	GETCO	GETCO	Chorania line no. 01 and 400KV Asoj-
278	220	220 KV PGCIL Ckt-III at 220 KV S/s Raigarh	07-Dec-18	8:00	07-Dec-18	17:00	Daily	For preventive maintenance	CSPTCL	CSPTCL	R
279	400	Ranchhodpura#1 Main Bay (Bay 407) at Bhachau	7-Dec-18	8:00	7-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
280	400	Bhadrawati	07-Dec-18	9:00	07-Dec-18	15:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
281	400	Circuit -2 Lanco - PGCIL Bharari (Line length - 75.3 Km)	07-Dec-18	9:00	07-Dec-18	17:00	Daily	Check Meter Installation and Bay No. - 422 Isolator Maintenance work at 765/400KV PGCIL Bilaspur Pooling Station, Bharari	PGCIL	LANCO	R
282	220	220KV Bhanpura-Modak	07-Dec-18	9:00	07-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
283	400	400KV Nagda-ISP	7-Dec-18	9:00	7-Dec-18	17:00	Daily	Tightening/removing of loose vibration damper & other line maintenance work	MPPTCL	MPPTCL	R
284	400	Talegaon	07-Dec-18	9:00	07-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
285	400	400KV Magarwada-Navsari#1 line	7-Dec-18	9:00	7-Dec-18	17:00	Daily	Line s/d for TLM maintenance work by Vapi	POWERGRID	WR-II	R
286	400	BUS REACTOR_400kV_80MVAR_CHAMPA	07-Dec-18	9:00	07-Dec-18	17:30	Daily	Relay Replacement Work	WRTS-I	WRTS-I	R
287	400	315 MVA ICT-II at Boisar (Dia will be kept open)	7-Dec-18	9:00	7-Dec-18	17:30	Daily	For ICT AMP	POWERGRID	WR-II	R
288	765	765/400kV ICT-2 Main bay-706 at Aurangabad	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
289	400	ICT1_400/220kv_BAHATAPARA	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
290	765	765KV BUS REACTOR 2 MAIN BAY(710) AT DHARAMJAYGARH(KORBA) SS	07-Dec-18	9:00	07-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
291	400	400 kV_BUS_1_KOTRA PS	07-Dec-18	9:00	07-Dec-18	18:00	Daily	Connection of new bays	WRTS-I	WRTS-I	C
292	400	400KV Bhadravati-1 Main Bay (407) at Parli	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
293	220	AT RAIGARH SS	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
294	400	ICT1_400/220kv_SOLAPUR	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For Installing B/U impedance relayat Solapur	WRTS-I	WRTS-I	R
295	400	400kV Vadodara - Pirana Ckt II at Dehgam (A/R of Ckt # 1 & DIA open at both ends also required)	7-Dec-18	9:00	7-Dec-18	18:00	Daily	Attending shutdown nature defects and changing wrong direction IGR in line.	POWERGRID	WR-II	R
296	400	400 KV Bus-2 at Wardha	07-Dec-18	9:00	07-Dec-18	18:00	Daily	Aligment of newly erected bus isolator	WRTS-I	WRTS-I	R
297	220	220kV Main Bay of ICT # 2 at Dehgam	7-Dec-18	9:00	7-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
298	765	ICT2_765/400kv_DURG PS	07-Dec-18	9:00	07-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
299	400	Bilaspur PS	07-Dec-18	9:00	07-Dec-18	18:00	Daily	AMP works (CT C Tan ë, CRM & DEW POINT)	WRTS-I	WRTS-I	R
300	765	705 Satna 1 & ICT 2 Tie Bay V-Chal PS	7-Dec-18	9:00	7-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
301	400	Bina-Shujalpur-2 Line reactor(Switachable reactor) at Bina	7-Dec-18	9:15	7-Dec-18	17:30	Daily	For AMP of Line reactor and RCB bay . Line will be remained in service without Reactor.	POWERGRID	WR-II	R
302	400	Bhilai-1 Main at Raipur SS	07-Dec-18	9:30	07-Dec-18	17:30	Daily	For AMP works	WRTS-I	WRTS-I	R
303	400	Damoh	7-Dec-18	9:30	7-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
304	400	403Switchable LR Bay(Rajgarh-Khargone Line Reactor bay) at Rajgarh	7-Dec-18	10:00	7-Dec-18	17:00	Daily	Annual Maintenance testing of Reactor and CB	POWERGRID	WR-II	R
305	400	Champa-HVDC	07-Dec-18	10:00	07-Dec-18	17:30	Daily	For AMP Works	WRTS-I	WRTS-I	R
306	400	400 KV BUS-I at Tamnar PS	07-Dec-18	10:00	07-Dec-18	18:00	Daily	For AMP works of 400 kV Bus-I	WRTS-I	WRTS-I	R
307	400	315MVA ICT-I Main Bay (403) at Shujalpur.	7-Dec-18	10:00	7-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
308	765	kept open	7-Dec-18	10:00	7-Dec-18	18:00	Daily	For AMP works	POWERGRID	WR-II	R
309	765	765kV ICT-1 & BR Tie bay (701) at New Parli	07-Dec-18	12:00	07-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING BY NTAMC/RTAMC	WRTS-I	WRTS-I	C
310	220	Pirana	7-Dec-18	14:00	7-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
311	220	BOISAR II - TARAPUR	07-Dec-18	08:00	07-Dec-18	17:00	Daily	Post monsoon maintenance of the line	MSETCL	MSETCL	-
312	400	Tie Bay (405) of ICT-2 & Line-3 @ Koradi 3	07-Dec-18	09:00	07-Dec-18	18:00	Daily	Annual Maintenance of Bay Equipement	MEGPTCL	MEGPTCL	

313	220	CHITEGAON- CHITEPIMPALGAON (PG) CKT-II	07-Dec-18	09:00	07-Dec-18	18:00	Daily	Routine Maintenance & Diagnostic testing work	MSETCL	MSETCL	NIL
314	400	MAIN BAY (409) OF KORADI 3 CKT- 1 @ KORADI 2	07-Dec-18	10:00	07-Dec-18	17:00	Daily	DCRM,IR measurement of CB 409-Q52	MSETCL	MSETCL	Koradi-III CKt-I will remein in
315	400	KOLHAPUR - KOLHAPUR (PG) CKT - 2	07-Dec-18	10:00	07-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	-
316	400	SSP KASOR	7-Dec-18	8:00	8-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
317	400	400kV twin D/C Khandwa-Indore	07-Dec-18	8:00	08-Dec-18	18:00	continuous	Overhead stringing work of765kV D/C Hexa Khandwa Dhule line	PGCIL	KTL(Sterlite)	C
318	400	400 KV ST Tie Bay (Bay 5) at TRNEPL	07-Dec-18	9:00	08-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
319	765	INDORE PS	7-Dec-18	9:00	8-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
320	765	Satna	7-Dec-18	9:00	8-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
321	400	Bay 420(Rajgarh#2-Future Tie bay) at Khandwa SS	7-Dec-18	10:00	10-Dec-18	18:00	Cont.	For ABB CB operating Mechanism Overhauling work & Bay AMP work.	POWERGRID	WR-II	R
322	400	BUS REACTOR_400kV_125MVAR_BHATAPARA	08-Dec-18	9:00	29-Nov-18	18:00	Daily	For AMP work	WRTS-I	WRTS-I	R
323	220	Bhilad-Vapi (PG) -3	08-Dec-18	8:00	08-Dec-18	18:00	Daily	Maintenance work	GETCO	GETCO	
324	400	ICT#1 Main Bay (Bay 409) at Bhachau	8-Dec-18	8:00	8-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
325	400	ckt-II Line at Boisar	8-Dec-18	9:00	8-Dec-18	13:00	Daily	For Bay AMP	POWERGRID	WR-II	R
326	400	Circuit -1 Lanco - PGCIL Bharari (Line length - 75.3 Km)	08-Dec-18	9:00	08-Dec-18	17:00	Daily	Check Meter Installation at 765/400KV PGCIL Bilaspur Pooling Station, Bharari	PGCIL	LANCO	R
327	400	Pune-Talegaon	08-Dec-18	9:00	08-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
328	765	765 KV_FUTURE & BINA_TIE_BAY_726 at Seoni	08-Dec-18	9:00	08-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
329	765	765KV BR 2 & BILASPUR TIE BAY(711) AT DHARAMJAYGARH(KORBA) SS	08-Dec-18	9:00	08-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
330	400	400 KV Bus-1 at Wardha	08-Dec-18	9:00	08-Dec-18	18:00	Daily	Aligment of newly erected bus isolator	WRTS-I	WRTS-I	R
331	400	Main Bay of Wanakbori (413) at Dehgam	8-Dec-18	9:00	8-Dec-18	18:00	Daily	For AMP work, Line will be in service through Tie Bay	POWERGRID	WR-II	R
332	400	Jabalpur	8-Dec-18	9:00	8-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
333	400	kept open	8-Dec-18	9:00	8-Dec-18	18:00	Daily	AMP works at Navsari GIS	POWERGRID	WR-II	R
334	400	Gwalior	8-Dec-18	10:00	8-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R
335	765	765kVBR Main bay (703) at New Parli	08-Dec-18	14:00	08-Dec-18	16:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
336	220	EKALAHARA(OCR)-NAVASARI II	08-Dec-18	09:00	08-Dec-18	14:00	Daily	maint. work	MSETCL	MSETCL	-
337	400	TIE BAY (408) OF WARORA CKT - 2 @ TIRORA	08-Dec-18	09:00	08-Dec-18	18:00	Daily	Testing and maintenance of Breaker	ATIL	ATIL	
338	220	220KV Damoh-Katni	08-Dec-18	10:00	08-Dec-18	17:00	Daily	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
339	400	PARLI - KUMBHARGAON(NANDED) CKT - 2	08-Dec-18	10:00	08-Dec-18	18:00	Daily	DCRM measurement	MSETCL	MSETCL	-
340	220	B BUS @ BOISAR II (NOC required for TBC operations from Tarapur & PGCIL)	08-Dec-18	07:00	09-Dec-18	19:00	Continuous	Annual Maintenance of 220kV B Bus Isolators and Bus hot spot attending works.	MSETCL	MSETCL	for TBC operations from Tarapur & PGCIL.
341	400	Asoj-Indore # 1 at Asoj	8-Dec-18	9:00	10-Dec-18	17:00	Daily	For Bus Isolator 89B of Asoj-Indore #1 at Asoj replacement work (Line can be taken on TBC)	POWERGRID	WR-II	C
342	400	Bus #2 at Asoj	8-Dec-18	9:00	10-Dec-18	17:00	Daily	For Bus Isolator 89B of Asoj-Indore #1 at Asoj replacement work	POWERGRID	WR-II	C
343	400	400/220KV 315 MVA ICT - 2 @ NEW KOYNA	08-Dec-18	08:00	10-Dec-18	18:00	Continuous	Overhauling of OLTC and OiL Filtration work (Agency-Ajaydeep Cor. Aurangabad)	MSETCL	MSETCL	managed on 315MVA
344	400	400KV Katni-Damoh	9-Dec-18	9:00	9-Dec-18	17:00	Daily	For post monsoon maintenance / Testing work	MPPTCL	MPPTCL	R
345	400	PADGHE - KALWA 2	09-Dec-18	08:00	09-Dec-18	18:00	Daily	Diagnostic Testing Work	MSETCL	MSETCL	Testing Work
346	400kV	ACF-1 BUS Main 10C 01C Bay & Tie Bay 10C01B HVDC Mundra	09-Dec-18	8:00	10-Dec-18	18:00	Daily	Annual Maintenance and Testing of AC FILTER BUS-1 Connected Equipement & RTV Si coating at HVDC Mundra Terminal .	ATIL	ATIL	R
347	400	400 KV GT#2 Main Bay (Bay 7) at TRNEPL	09-Dec-18	9:00	10-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
348	220	220 KV ICT I at 220KV S/s Sukha	09-Dec-18	9:00	10-Dec-18	17:00	Continue	For Isolator replacement work.	MPPTCL	MPPTCL	R
349	220	220kV BUS -2 at NSPCL Bhilai	10-Dec-18	6:30	10-Dec-18	17:00	Daily	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
350	400	Kasor-SSP line	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Line Maintenance work	GETCO	GETCO	Chorania line no. 01 and 400KV Asoj-
351	400	Chorania-Amreli Line	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Line maintenance work.	GETCO	GETCO	
352	400	Main Bus-2 Varsana	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Testing & Conditioning monitoring work	GETCO	GETCO	
353	400	Varsana-Hadala Line	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Testing & Conditioning monitoring work & 89B Fix contact L clamp replacement work.	GETCO	GETCO	
354	400KV	on Transfer Bus.	10-Dec-18	8:00	10-Dec-18	13:00	Daily	Maintenance of 400KV Sugen UnoSugen Line Bus-2 isolator. .	TPL-SUGEN	TPL-SUGEN	R
355	400 KV	for PM jobs	10-Dec-18	8:00	10-Dec-18	18:00	continuous	Annual Maintenance of bay equipment at NTPC solapur	NTPC	NTPC	
356	400 KV	DGEN 400kV Bus B	10-Dec-18	8:00	10-Dec-18	18:00	Daily	DGEN 400 KV BUS B isolation for Preventive maintenace of BAY 409 89B isolator (ICT-2) and BAY 410 89B (GT-53) isolator.	TPL - DGEN	TPL - DGEN	R
357	400 KV	DGEN 400kV Bay 409 (ICT-2)	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Preventive maintenace of BAY 409 89B isolator (ICT-2)	TPL - DGEN	TPL - DGEN	R
358	400 KV	DGEN 400kV Bay 410 (GT-53)	10-Dec-18	8:00	10-Dec-18	18:00	Daily	Preventive maintenace BAY 410 89B isolator (GT-53)	TPL - DGEN	TPL - DGEN	R

359	400	411) at Bhachau	10-Dec-18	8:00	10-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
360	765	ICT1_765/400kv_SEONI	10-Dec-18	8:00	10-Dec-18	21:00	Daily	Insatllation, Testing & Commissioning of Back-up Impedance Relay	WRTS-I	WRTS-I	R
361	400	315 MVA ICT-1 at Kala with dia to be kept open	10-Dec-18	8:30	10-Dec-18	17:00	Daily	For Installation of Back up impedence relays	POWERGRID	WR-II	R
362	765	ICT2_765/400kv_WARORA_PWTL	10-Dec-18	9:00	10-Dec-18	15:00	Daily	Tie bay CSD commissioning work	WRTS-I	WRTS-I	C
363	400	400KV Nagda-Rajgarh-I	10-Dec-18	9:00	10-Dec-18	17:00	Daily	Tightening/removing of loose vibration damper & other line maintenance work	MPPTCL	MPPTCL	R
364	400	Pune-Talegaon.	10-Dec-18	9:00	10-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
365	400	400KV Vapi-Boisar at Boisar	10-Dec-18	9:00	10-Dec-18	17:00	Daily	code for Online Main-I relay replacement(Line will be in service through M-2)	POWERGRID	WR-II	R
366	400	315MVA ICT-3 at Vapi with dia to be kept open	10-Dec-18	9:00	10-Dec-18	17:00	Daily	AMP work. Bushing Tan Delta, CT Tan Delta, relay testing. Tightness work of 89T Isolators	POWERGRID	WR-II	R
367	765	BUS REACTOR_765kV_240MVAR_CHAMPA	10-Dec-18	9:00	10-Dec-18	17:30	Daily	Spare Bus Reactor Changeover	WRTS-I	WRTS-I	C
368	400	400kV Bus Reactor Main bay-403 at Aurangabad	10-Dec-18	9:00	10-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
369	765	ICT1_765/400kv_D'JAIGARH	10-Dec-18	9:00	10-Dec-18	18:00	Daily	Testing & Commissiong of newly installed Backup Impedance Relay.	WRTS-I	WRTS-I	C
370	765	ICT1_765/400kv_KOTRA PS	10-Dec-18	9:00	10-Dec-18	18:00	Daily	Commissioning of B/U relay at Kotra	WRTS-I	WRTS-I	C
371	400	ICT3_400/220kv_MAPUSA	10-Dec-18	9:00	10-Dec-18	18:00	Daily	Installation and Testing of Impedance Relay and AMP Works	WRTS-1	WRTS-I	C
372	400	Parli	10-Dec-18	9:00	10-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
373	400	Mundra-Jetpur Ckt#1 with Non Auto mode of Ckt-2 & Dia opened at Both end	10-Dec-18	9:00	10-Dec-18	18:00	Daily	Testing & Commissioning of NIFPS Scheme in L/R at Jetpur end	POWERGRID	WR-II	R
374	765	765kV_ICT-2 Main Bay_706_AT SOLAPUR	10-Dec-18	9:00	10-Dec-18	18:00	Daily	For AMP Works.	WRTS-I	WRTS-I	R
375	765	765 KV Bus Reactor#1 Tie Bay(708) at Wardha	10-Dec-18	9:00	10-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
376	400	Main Bay of Ranchodpura # 2 (415) at Dehgam	10-Dec-18	9:00	10-Dec-18	18:00	Daily	For AMP work, Line will be in service through Tie Bay	POWERGRID	WR-II	R
377	400	No 427) at Jabalpur	10-Dec-18	9:00	10-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
378	765	765 KV Gwalior-Agra # 1 line at Gwalior with dia to be kept open alongwith 765kV Bus-1 at Gwalior	10-Dec-18	9:00	10-Dec-18	18:00	Daily	For erection of Line isolator post insulator in phase where wave trap is not available and replacement of suspension and tension string	POWERGRID	WR-II	C
379	765	Line at Bina(Line, Reactor & Dia will be out of service during outage period.)	10-Dec-18	9:15	10-Dec-18	17:30	Daily	For Reactor & terminal equipments AMP work.	POWERGRID	WR-II	R
380	220	220kv Raipur Bhilai	10-Dec-18	9:30	10-Dec-18	17:30	Daily	For AMP of line equipments	CGSPTL	WRTS-I	R
381	400	Damoh	10-Dec-18	9:30	10-Dec-18	18:00	Daily	AMP work	POWERGRID	WR-II	R
382	400	kept open	10-Dec-18	9:30	10-Dec-18	18:00	Daily	AMP works of ICT.	POWERGRID	WR-II	R
383	765	765kV ICT-4 Main bay (704) at New Parli	10-Dec-18	10:00	10-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
384	400	RAPP-Shujalpur Ckt-1	10-Dec-18	10:00	10-Dec-18	18:00	Daily	AMP of the line	RTCL	RTCL	R
385	400	400 KV BUS-II at Tamnar PS	10-Dec-18	10:00	10-Dec-18	18:00	Daily	For AMP works of 400 kV Bus-II	WRTS-I	WRTS-I	R
386	400	400kV GMR#2 Main bay (422) at Durg PS.	10-Dec-18	10:00	10-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
387	400	400KV Bay-402 (Nikol-ICT-1 tie bay) at Pirana	10-Dec-18	10:00	10-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
388	400	315MVA ICT-II Main Bay (404) at Shujalpur.	10-Dec-18	10:00	10-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
389	400KV	Transfer Bus.	10-Dec-18	13:00	10-Dec-18	18:00	Daily	Maintenance of 400KV Sugen Pirana Line Bus-2 isolator. .	TPL-SUGEN	TPL-SUGEN	R
390	400	Jabalpur #2 Tie Bay(405) at Itarsi SS	10-Dec-18	16:00	10-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
391	400	MAIN BAY (406) OF LINE- 3 @ KORADI 3	10-Dec-18	09:00	10-Dec-18	18:00	Daily	Annual Maintenance of Bay equipment	MEGPTCL	MEGPTCL	
392	400	KORADI 2 - KORADI 3 CKT-2	10-Dec-18	10:00	10-Dec-18	17:00	Daily	Tan delta measurement of Line CT at Bay 406 & CT at Bay 405	MSETCL	MSETCL	II-Koradi-III Ck-I will
393	400	SSP RAJGARH-2	10-Dec-18	8:00	11-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
394	400	400KV Kala-Kudus line ckt-1 with dia opened and non auto of Kala-Kudus ckt#2	10-Dec-18	8:00	11-Dec-18	19:00	Daily	For Insulator Replacement work	POWERGRID	WR-II	R
395	400	400kV MTPH(Singhaji)-Pithampur line	10-Dec-18	8:00	11-Dec-18	19:00	continuous	Overhead stringing work of765kV D/C Hexa Khandwa Dhule line	MPPTCL	KTL(Sterlite)	C
396	400	315 MVA ICT bank-II at 400 KV S/s Khedamara.	10-Dec-18	9:00	11-Dec-18	17:00	Continuous	Annual Maintenance Programme.	CSPTCL	CSPTCL	R
397	765	BHOPAL LINE) AT INDORE PS	10-Dec-18	9:00	11-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
398	765	at Satna	10-Dec-18	9:00	11-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
399	400	DHULE - SSNNL I & II on Non auto mode	10-Dec-18	08:00	11-Dec-18	17:00	Daily	PID testing of insulators	MSETCL	MSETCL	SSNNL Ckt-1&2 on Non
400	765 KV	BUS Sectionalizer 1&3 Bay-16	10-Dec-18	7:30	12-Dec-18	17:30	Continuous	For PM	NTPC	NTPC	
401	400	Bus-2 at Itarsi SS	10-Dec-18	9:00	12-Dec-18	18:00	Cont.	Outage of 400kV Bus-2 at Itarsi S/S for installation, testing and commissioning of new numerical busbar protection system of ABB make in place of existing ABB make RADHA Busbar protection system.	POWERGRID	WR-II	R
402	765	704 Satna 1 Main Bay V-Chal PS	10-Dec-18	9:00	12-Dec-18	18:00	Cont.	SF6 gas leakage rectification work in PIR 'R1' Phase CB	POWERGRID	WR-II	R
403	220	Kakrapar-Haldarwa II at Haldarwa	10-Dec-18	9:00	14-Dec-18	18:00	Cont.	03 nos CB Replacement work and at GETCO haldarwa End	POWERGRID	WR-II	R
404	220	DEOLI(PGCIL)-BADNERA	10-Dec-18	09:00	15-Dec-18	17:00	Daily	PID work	MSETCL	MSETCL	Shifting of auto reclose

405	765	765kV AURANGABAD(PG)-PADGHE(GIS) I	10-Dec-18	10:00	16-Dec-18	18:00	Conti?	for attending SF6 gas leakage in chamber of R-PH line & Ckt-2 A/R in Non-auto mode required during this period.	WRTS-I	WRTS-I	R
406	400	400/220/33 KV 500 MVA ICT - 3 @ KOLHAPUR	10-Dec-18	09:00	20-Dec-18	24.00	Continuous	Replacement of ICT 3 B phase unit with repaired job	MSETCL	MSETCL	ICT loading
407	400KV	Transfer Bus.	11-Dec-18	8:00	10-Dec-18	13:00	Daily	Maintenance of 400KV Sugen Jhanor Line Bus-2 isolator..	TPL-SUGEN	TPL-SUGEN	R
408	400KV	400KV MAIN BUS-2 at Adani power Mundra	11-Dec-18	7:30	11-Dec-18	18:30	Daily	400KV Mian Bus-2 , Annual Routine Bus Maintenance work	APMuL	APMuL	R
409	400	PGCIL(Dehgam) - Soja line	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Maintenance work.	GETCO	GETCO	
410	400	Bus-B Mansar	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Bus-B Insulator Replacement work	GETCO	GETCO	
411	400	Bus Coupler Mansar	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Fly over insulator Replacement work	GETCO	GETCO	
412	400	Chornia - Mansar line	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Replacing fixed contact of B-phase tie road PG isolator of Bus-B	GETCO	GETCO	
413	400	Chorania-Kosamba-1 Line	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Line maintenance work.	GETCO	GETCO	Kosamba - Chorania line
414	400 KV	DGEN 400kV Bus A	11-Dec-18	8:00	11-Dec-18	18:00	Daily	DGEN 400 KV Bus A isolation for Preventive maintenace of 409 89A isolator (ICT-2) and 410 89A isolator (GT-53).	TPL - DGEN	TPL - DGEN	R
415	400 KV	DGEN 400kV Bay 409 (ICT-2)	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Preventive maintenace of BAY 409 89A isolator (ICT-2)	TPL - DGEN	TPL - DGEN	R
416	400 KV	DGEN 400kV Bay 410 (GT-53)	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Preventive maintenace BAY 410 89A isolator (GT-53)	TPL - DGEN	TPL - DGEN	R
417	400	BUS - B Vadavi	11-Dec-18	8:00	11-Dec-18	18:00	DAILY	Maintenance work	GETCO	GETCO	
418	400	construction)	11-Dec-18	8:00	11-Dec-18	18:00	Daily	Bay Maintenance.	GETCO	GETCO	
419	400	Bus Reactor#1 Main Bay (Bay 412) at Bhachau	11-Dec-18	8:00	11-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
420	765	ICT2_765/400kv_SEONI	11-Dec-18	8:00	11-Dec-18	21:00	Daily	Insatllation, Testing & Commissioning of Back-up Impedance Relay	WRTS-I	WRTS-I	R
421	400	400Kv PUNE(GIS)-PUNE(TALEGOAN)_2	11-Dec-18	9:00	11-Dec-18	11:00	Daily	CVT oil Top Up	WRTS-I	WRTS-I	R
422	400	400kV WARORA (PWTL)-PARLI-I_LILOPOINT	11-Dec-18	9:00	11-Dec-18	12:00	Daily	Attending hot spot in Wavetrap & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
423	400	Asoj - SSP	11-Dec-18	9:00	11-Dec-18	13:00	Daily	Line and bay equipment maintenance work	GETCO	GETCO	400 Kv Kasor-SSP line will
424	400	400KV Bhopal-Itarsi-I	11-Dec-18	9:00	11-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
425	220	220KV Gwalior(PGCIL)-Mahalgaon-I	11-Dec-18	9:00	11-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
426	400	400KV Bus-1 at Vapi	11-Dec-18	9:00	11-Dec-18	17:00	Daily	AMP work of 400KV Bus-1	POWERGRID	WR-II	R
427	400	Aurangabad	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
428	765	ICT2_765/400kv_D'JAIGARH	11-Dec-18	9:00	11-Dec-18	18:00	Daily	Testing & Commissiong of newly installed Backup Impedance Relay.	WRTS-I	WRTS-I	C
429	765	ICT2_765/400kv_KOTRA PS	11-Dec-18	9:00	11-Dec-18	18:00	Daily	Commissioning of B/U relay at Kotra	WRTS-I	WRTS-I	C
430	220	220KV Bus-I at Mapusa	11-Dec-18	9:00	11-Dec-18	18:00	Daily	Punch Point Rectification works of 220kV Tuem bay construction works	WRTS-1	WRTS-I	R
431	400	400KV WARORA-PARLI-I	11-Dec-18	9:00	11-Dec-18	18:00	Daily	AMP of Transmission line & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
432	400	400KV Warora-1 Main Bay (401) at Parli	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
433	220	AT RAIGARH SS	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
434	765	Solapur	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP Works.	WRTS-I	WRTS-I	R
435	765	765 KV Durg-3 Tie Bay 717 at Wardha	11-Dec-18	9:00	11-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
436	400	400 KV Akola-1 Line	11-Dec-18	9:00	11-Dec-18	18:00	Daily	Repacement of 2.5sq.mm cable Copper wire with 16sq.mm connected with CVT HF point	WRTS-I	WRTS-I	R
437	400	Main Bay of Ranchodpura # 1 (416) at Dehgam	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP work, Line will be in service through Tie Bay	POWERGRID	WR-II	R
438	400	BUS REACTOR_400kV_50MVAR_BHADRAWATI	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
439	400	Khandwa #1 Tie Bay(421) at Itarsi SS	11-Dec-18	9:00	11-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
440	400	No 426) at Jabalpur	11-Dec-18	9:00	11-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
441	400	400 KV ICT2_MAIN_BAY_404 at Bilaspur PS	11-Dec-18	9:00	11-Dec-18	18:00	Daily	AMP works (CT C Tan ë, CRM & DCRM)	WRTS-I	WRTS-I	R
442	220	Kawas -Haldarwa I	11-Dec-18	9:00	11-Dec-18	18:00	Daily	line AMP work.	POWERGRID	WR-II	R
443	765	765kV Bus-1 at Gwalior alongwith 765kV Bus-1 at Gwalior	11-Dec-18	9:00	11-Dec-18	18:00	Daily	Replacement of suspension and tension string	POWERGRID	WR-II	C
444	765	Bina-Indore Line at Bina (Line, Reactor & Dia will be out of service during outage period.)	11-Dec-18	9:15	11-Dec-18	17:30	Daily	For rectification of shut down nature defects in line.	POWERGRID	WR-II	R
445	220	220kv Raipur Doma-I Line	11-Dec-18	9:30	11-Dec-18	17:30	Daily	For AMP of line equipments	CGSPTL	WRTS-I	R
446	220	220kV Damoh-Damoh line#1 at Damoh	11-Dec-18	9:30	11-Dec-18	18:00	Daily	AMP work of terminal equipments	MPPTCL	WR-II	R
447	400	Reactor Bay) at Rajgarh	11-Dec-18	10:00	11-Dec-18	17:00	Daily	Annual Maintenance testing of Reactor and CB	POWERGRID	WR-II	R
448	400	400 kV KOLHAPUR MSETCL - SOLAPUR-II	11-Dec-18	10:00	11-Dec-18	18:00	Daily	For Bay AMP works, Line outage required for bays and Line side equipment AMP works at Kolhapur (MSETCL) end.	Reliance	WRTS-I	R
449	400	400 KV BUS-II at Tamnar PS	11-Dec-18	10:00	11-Dec-18	18:00	Daily	For AMP works of 400 kV Bus-II	WRTS-I	WRTS-I	R
450	220	400KV Bay-403 (ICT-1 Main bay) at Pirana	11-Dec-18	10:00	11-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
451	400	Shujalpur.	11-Dec-18	10:00	11-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R

452	765	Parli	11-Dec-18	12:00	11-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
453	400KV	Transfer Bus.	11-Dec-18	13:00	11-Dec-18	18:00	Daily	Maintenance of 400KV Sugen Vapi Line Bus-2 isolator..	TPL-SUGEN	TPL-SUGEN	R
454	400	Asoj - Chorania No. 2	11-Dec-18	14:00	11-Dec-18	18:00	Daily	Breaker timing, DCRM & Tan delta	GETCO	GETCO	
455	400	400KV Vapi-Boisar at Boisar	11-Dec-18	14:00	11-Dec-18	18:00	Daily	For tripping and A/R Trials of Main-I relay (Line will be in service through M-2)	POWERGRID	WR-II	R
456	400	CHANDRAPUR-PARLI CKT-3	11-Dec-18	07:00	11-Dec-18	19:00	Daily	Replacement of damaged earthwire cross arms	MSETCL	MSETCL	damaged earthwire cross
457	400	MAIN BAY (412) OF NANDED CKT-2 @ CHANDRAPUR - 2	11-Dec-18	08:00	11-Dec-18	17:00	Daily	replacement of damaged eartwire cross arm	MSETCL	MSETCL	damaged eartwire cross
458	400	BUS COUPLER @ DHULE	11-Dec-18	08:00	11-Dec-18	18:00	Daily	For routine testing & maint work	MSETCL	MSETCL	testing &
459	400	MAIN BUS - 1 @ WARORA	11-Dec-18	08:00	11-Dec-18	18:00	Daily	Routine maintainance and diagonastic testing such as CVT/ CT tan delta,and ,isolater maintainance work	MSETCL	MSETCL	BUS-2 WILL BE IN SERVICE
460	400	MAIN BAY (413) OF PARALI CKT - 1 @ LONIKAND 2	11-Dec-18	09:00	11-Dec-18	17:00	Daily	Testing work	MSETCL	MSETCL	service through Tie -
461	400	MAIN BAY - 406 OF FUTURE BAY @ AKOLA 2	11-Dec-18	09:00	11-Dec-18	18:00	Daily	Testing and Maintenance of Bay equipments	MEGPTCL	MEGPTCL	
462	220	220kV TRANSFER BUS at NSPCL Bhilai	11-Dec-18	6:30	12-Dec-18	17:00	Continuous	Switch Yard Equipment Painting Job	NSPCL	NSPCL	
463	400 KV	With Bus#2 (Bus #2 shutdown shall be for one day on 11.12.2018) at VSTPS end	11-Dec-18	7:30	12-Dec-18	17:30	Continuous	ANNUAL BAY MAINTENANCE AND RECTFICATION OF HOT SPOT	WRTS-1	NTPC	
464	400	125 MVR Bus Reactor (BHEL)at 400KV S/s	11-Dec-18	8:00	12-Dec-18	17:00	Daily	For general maintenance & jumper replacement work	MPPTCL	MPPTCL	R
465	220 KV	Kawas-ichhapore line 1 (Bay-1)	11-Dec-18	8:00	12-Dec-18	18:00	continous	For annual maintenance and testing of bay	GETCO	NTPC	
466	400kV	ACF-2 BUS Main 10C 01A Bay & Tie Bay 10C01B HVDC Mundra	11-Dec-18	8:00	12-Dec-18	18:00	Daily	Annual Maintenance and Testing of AC Filter BUS-2 Connected equipment's & RTV Si coating at HVDC Mundra Terminal .	ATIL	ATIL	R
467	400	Asoj-Indore # 1 at Asoj	11-Dec-18	9:00	12-Dec-18	17:00	Daily	For Line Isolator 89L of Asoj-Indore #1 at Asoj replacement work	POWERGRID	WR-II	C
468	400	400 KV GT#2 Tie Bay (Bay 8) at TRNEPL	11-Dec-18	9:00	12-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
469	765	765kV BILASPUR-SIPAT I	11-Dec-18	9:00	12-Dec-18	18:00	Daily	Cleat changing of suspensing tower	WRTS-I	WRTS-I	R
470	400	ICT#1 at Rewa with dia to be kept open	11-Dec-18	10:00	12-Dec-18	18:00	DAILY	Fine tuning of CSD	POWERGRID	WR-II	C
471	400	Bay 422(Seoni#1 Main bay) at Khandwa SS	11-Dec-18	10:00	14-Dec-18	18:00	Cont.	For ABB CB operating Mechanism Overhauling work & Bay AMP work.	POWERGRID	WR-II	R
472	400	BABHALESHWAR - PADGHE 2 ON TBC @ BABHALESHWAR	11-Dec-18	09:00	16-Dec-18	17:00	Continuous	Quarterly Maintenance work & Reapir scissors of 400KV P.G Isolator and Servicing and allignment of isolators work	MSETCL	MSETCL	Babhaleshwar-Padghe ckt-2 Bay is Take on TBC for Rpearing of 29A & 29B P.G Isoaltor P.G
473	400	PADGHE - KALWA 2	11-Dec-18	09:00	20-Dec-18	18:00	Daily	PID Testing work of 400 KV Kalwa-Padgha Ckt-2 line Insulator strings at various locations. Auto-Reclose function to be out of service.	MSETCL	MSETCL	Line will remain in serveice
474	400 KV	VSTPS- JABALPUR Line # 4 Line Reactor (Stage-II, BAY No. 5) at VSTPS end	11-Dec-18	7:30	21-Dec-18	17:30	Continuous	ANNUAL MAINTENANCE & ATTENDING OIL LEAKAGE	NTPC	NTPC	
475	400	PGCIL(Dehgam) - Soja line	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Maintenance work.	GETCO	GETCO	
476	400	SSNL-Dhule-1	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Maintenance work	NCA	GETCO	SSP- Dhule - 2 will remain out.
477	400	Main Bus No.1 & B/C bay at Kansari	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Bus & Bay Maint.	GETCO	GETCO	R
478	400	Bus-B Mansar	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Attending Hot clamp of 89-B PG Isolator of Mundra line	GETCO	GETCO	R
479	400	Bus Coupler Mansar	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Attending Hot clamp of 89-B PG Isolator of Mundra line	GETCO	GETCO	R
480	400	Bhachau - Mansar line	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Attending Hot clamp of 89-B PG Isolator of Mundra line	GETCO	GETCO	R
481	400	TBC Bus Mansar	12-Dec-18	8:00	12-Dec-18	18:00	Daily	TBC Bus susp Insu Replacement work	GETCO	GETCO	R
482	400	Chorania - Kosamba-2 Line	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Line maintenance work.	GETCO	GETCO	400 KV Chorania -
483	400KV	400KV SUGEN Bus-1 with ICT-3 on Transfer Bus.	12-Dec-18	8:00	12-Dec-18	13:00	Daily	Maintenance of ICT-3 400KV Bus -1 isolator	TPL-SUGEN	TPL-SUGEN	R
484	400 KV	DGEN 400kV Bus B	12-Dec-18	8:00	12-Dec-18	18:00	Daily	DGEN 400 KV BUS B isolation for Preventive maintenace of 407 89B isolator (GT-52) and 408 89B isolator (ICT-1).	TPL - DGEN	TPL - DGEN	R
485	400 KV	DGEN 400kV Bay 407 (GT-52)	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Preventive maintenace of 407 89B isolator (GT-52)	TPL - DGEN	TPL - DGEN	R
486	400 KV	DGEN 400kV Bay 408 (ICT-1)	12-Dec-18	8:00	12-Dec-18	18:00	Daily	Preventive maintenace of 408 89B isolator (ICT-1)	TPL - DGEN	TPL - DGEN	R
487	400	Varsana#2 Main Bay (Bay 413) at Bhachau	12-Dec-18	8:00	12-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
488	400	418 Main breaker of Bus Reactor	12-Dec-18	8:00	12-Dec-18	20:00	Daily	Breaker testing	CGPL	CGPL	R
489	765	ICT3_765/400kv_SEONI	12-Dec-18	8:00	12-Dec-18	21:00	Daily	Insatllation, Testing & Commissioning of Back-up Impedance Relay	WRTS-I	WRTS-I	R
490	400	315 MVA ICT-2 at Kala with dia to be kept open	12-Dec-18	8:30	12-Dec-18	17:00	Daily	For Installation of Back up impedence relays	POWERGRID	WR-II	R
491	400	Mundra-Jetpur Ckt#2 Line	12-Dec-18	9:00	12-Dec-18	10:00	Daily	To take Line Reactor out for NIFPS system at Jetpur end	POWERGRID	WR-II	R
492	400	400KV Bhopal-Itarsi-II	12-Dec-18	9:00	12-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R

493	220	220KV Gwalior(PGCIL)-Mahalgaon-II	12-Dec-18	9:00	12-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
494	400	400Kv PUNE(GIS)-PUNE(TALEGOAN)_4	12-Dec-18	9:00	12-Dec-18	17:00	Daily	For line Isolator Alignment & AMP of Line Equipments & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
495	400	400KV Bus-2 at Vapi	12-Dec-18	9:00	12-Dec-18	17:00	Daily	AMP work of 400KV Bus-2	POWERGRID	WR-II	R
496	765	ICT2_765/400kv_CHAMPA	12-Dec-18	9:00	12/12/2018	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
497	765	765KV JHARSUGUDA 2 MAIN BAY(730) AT DHARAMJAYGARH(KORBA) SS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
498	765	ICT3_765/400kv_KOTRA PS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	Commissioning of B/U relay at Kotra	WRTS-I	WRTS-I	C
499	220	220KV Bus-II at Mapusa	12-Dec-18	9:00	12-Dec-18	18:00	Daily	Punch Point Rectification works of 220kV Tuem bay construction works	WRTS-1	WRTS-I	R
500	400	400KV WARORA-PARLI-II	12-Dec-18	9:00	12-Dec-18	18:00	Daily	AMP of Transmission line & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
501	400	400KV Warora-2 Main Bay (404) at Parli	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
502	220	220 KV ICT-2 MAIN BAY 204 AT RAIGARH SS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
503	765	765KV Raichur-1_Main Bay_716 at Solpaur.	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP and CB time mismatch rectification Works.	WRTS-I	WRTS-I	R
504	765	765 KV Wardha-Durg-1 Non-SLR at Wardha	12-Dec-18	9:00	12-Dec-18	18:00	Daily	Changeover of newly Erected B phase reactor of Durg#1 WITH SPARE Reactor	WRTS-I	WRTS-I	R
505	765	765 KV Seoni-1 Tie Bay 726 at Wardha	12-Dec-18	9:00	12-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
506	400	Main Bay of Nagda # 1 (429) at Dehgam	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP work,Line will be in service through Tie Bay	POWERGRID	WR-II	R
507	400	BUS REACTOR_400kV_63MVAR_BHADRAWATI	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
508	765	SWITCHABLE LR_765kV_WARDHA 1_DURG PS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For releasing B phase & taking spare phase Reactor	WRTS-I	WRTS-I	R
509	400	Khandwa #2 Tie Bay(423) at Itarsi SS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
510	400	400kV BHADRAVATI-PARLI I	12-Dec-18	9:00	12-Dec-18	18:00	Daily	To attend shutdown nature defects at CC ring bolt loose: 480, 492 by Nanded-TLM & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
511	220	Kawas -Haldarwa II	12-Dec-18	9:00	12-Dec-18	18:00	Daily	line AMP work.	POWERGRID	WR-II	R
512	220	220kV KORBA(EAST)-BUDDHIPADAR III	12-Dec-18	9:00	12-Dec-18	18:00	Daily	For Broken insulator replacement at Loc.No. 523-02 (R-Ph), Installation of Missing Conductor VD at Loc. No. 447,555, & EVD at Loc. No. 516, 561, & CC Ring at Loc. No. 476	WRTS-1	WRTS-1	R
513	400	400 KV ICT3_MAIN_BAY_407 at Bilaspur PS	12-Dec-18	9:00	12-Dec-18	18:00	Daily	AMP works (CT C Tan ë, CRM & DCRM)	WRTS-I	WRTS-I	R
514	220	203,Transfer Bus main bay at Bina	12-Dec-18	9:15	12-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
515	400	400kV Raipur Tie Bay at Bhilai SS	12-Dec-18	9:30	12-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
516	220	220kV Damoh-Damoh line#2 at Damoh	12-Dec-18	9:30	12-Dec-18	18:00	Daily	AMP work of terminal equipments	MPPTCL	WR-II	R
517	400	Champa-HVDC	12-Dec-18	10:00	12-Dec-18	17:30	Daily	For AMP Works	WRTS-I	WRTS-I	R
518	400 KV	DGEN 410 bay 53BAT Generator transformer energization	12-Dec-18	10:00	12-Dec-18	18:00	Continuous	Unit 53 Generator transformer routine energisation during RSD for healthiness checking	TPL - DGEN	TPL - DGEN	R
519	765	765 KV BUS-I at Tamnar PS	12-Dec-18	10:00	12-Dec-18	18:00	Daily	For AMP works of 765 kV Bus-I	WRTS-I	WRTS-I	R
520	400	Shujalpur.	12-Dec-18	10:00	12-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
521	400 KV	DGEN 404 bay 51BAT Generator transformer de-energisation / discharging	12-Dec-18	11:00	12-Dec-18	18:00	Continuous	Unit 51 Generator transformer remains de-energized during RSD and shutdown for energy conservation	TPL - DGEN	TPL - DGEN	R
522	400KV	on Transfer Bus	12-Dec-18	13:00	12-Dec-18	18:00	Daily	Maintenance of 400KV Sugen UnoSugen Line Bus-1 isolator. .	TPL-SUGEN	TPL-SUGEN	R
523	765	765kV Solapur-1 Main bay (706) at New Parli	12-Dec-18	14:00	12-Dec-18	16:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
524	400	PARLI - LONIKAND 2 CKT 2	12-Dec-18	09:00	12-Dec-18	17:00	Daily	(1) Distance relay testing work. (2) Line maint. Work. (3) Bay maint.work.	MSETCL	MSETCL	-
525	400	TIE BAY (429) OF WARORA CKT-1 @ CHANDRAPUR 2	12-Dec-18	09:00	12-Dec-18	18:00	Daily	Routine Maintenance & Diagnostic testing Work	MSETCL	MSETCL	Maintenance & Diagnostic
526	400	MAIN BAY (401) OF ICT - 1 @ KORADI 3	12-Dec-18	09:00	12-Dec-18	18:00	Daily	Annual Maintenance of Bay equipment	MEGPTCL	MEGPTCL	
527	220	SOUTH SOLAPUR (KUMBHARI)-PGCIL 2	12-Dec-18	11:00	12-Dec-18	15:00	Daily	QM work	MSETCL	MSETCL	required for QM work &
528	400	SSP RAJGARH-1	12-Dec-18	8:00	13-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
529	400	400KV Kala-Kudus line ckt-2 with dia opened and non auto of Kala-Kudus ckt#1	12-Dec-18	8:00	13-Dec-18	19:00	Daily	For Insulator Replacement work	POWERGRID	WR-II	R
530	765	) AT INDORE PS	12-Dec-18	9:00	13-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
531	765	712 Bay, 765KV Orai Line main Bay at Satna	12-Dec-18	9:00	13-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
532	220	KALMESHWAR-PANDHURNA	12-Dec-18	08:00	13-Dec-18	18:00	Daily	Restringing of bottom ph conductor and Routine Maintenance & Diagnostic testing work	MSETCL	MSETCL	-
533	400KV	Mouda BUS-1	12-Dec-18	9:00	14-Dec-18	18:00	Continuous	Annual Maintenance	NTPC	NTPC	
534	765	kept open at both end alongwith 765kV Bus-2 at Gwalior	12-Dec-18	10:00	14-Dec-18	18:00	Daily	Replacement of suspension and tension string at Gwalior & Bina	POWERGRID	WR-II	C
535	400	63MVAR Mundra#2 LR at Jetpur	12-Dec-18	9:00	17-Dec-18	18:00	Cont.	Installation of NIFPS scheme in L/R at Jetpur end	POWERGRID	WR-II	R
536	400	Reactor Bay) at Rajgarh	13-Dec-18	10:00	12-Dec-18	17:00	Daily	Annual Maintenance testing of Reactor and CB	POWERGRID	WR-II	R
537	400	PGCIL(Dehgam) - Soja line	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Maintenance work.	GETCO	GETCO	

538	400	SSNL-Dhule-2	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Maintenance work	NCA	GETCO	SSP- Dhule No. 1 will
539	400	Varsana - Kansari Line	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Line Jumper checking	GETCO	GETCO	APL - Kansari line will
540	400	Bus-A Mansar	13-Dec-18	8:00	13-Dec-18	18:00	Daily	ICT-1 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
541	400	Bus Coupler Mansar	13-Dec-18	8:00	13-Dec-18	18:00	Daily	ICT-1 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
542	400	ICT-1 Mansar	13-Dec-18	8:00	13-Dec-18	18:00	Daily	ICT-1 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
543	400	TBC Bus Mansar	13-Dec-18	8:00	13-Dec-18	18:00	Daily	ICT-1 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
544	400	Chorania-Kosamba-2 Line	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Line maintenance work.	GETCO	GETCO	400 KV Chorania -
545	400KV	on Transfer Bus.	13-Dec-18	8:00	13-Dec-18	13:00	Daily	Maintenance of 400KV Sugen Jhanor Line Bus-1 isolator..	TPL-SUGEN	TPL-SUGEN	R
546	400KV	Bay 401 - Main bay of Sami-Mundra line-1 at	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
547	400 KV	DGEN 400kV Bus A	13-Dec-18	8:00	13-Dec-18	18:00	Daily	DGEN 400 KV BUS A isolation for Preventive maintenace of 407 89A isolator (GT-52) and 408 89A isolator (ICT-1).	TPL - DGEN	TPL - DGEN	R
548	400 KV	DGEN 400kV Bay 407 (GT-52)	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Preventive maintenace of 407 89A isolator (GT-52)	TPL - DGEN	TPL - DGEN	R
549	400 KV	DGEN 400kV Bay 408 (ICT-1)	13-Dec-18	8:00	13-Dec-18	18:00	Daily	Preventive maintenace of 408 89A isolator (ICT-1)	TPL - DGEN	TPL - DGEN	R
550	400	Essar#1-Varsana#2 Tie Bay (Bay 414) at Bhachau	13-Dec-18	8:00	13-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
551	400	423 Tie breaker of Jetpur-1 line	13-Dec-18	8:00	13-Dec-18	20:00	Daily	Breaker testing	CGPL	CGPL	R
552	400	ICT1_400/220kv_SEONI	13-Dec-18	8:00	13-Dec-18	21:00	Daily	Insatllation, Testing & Commissioning of Back-up Impedance Relay	WRTS-I	WRTS-I	R
553	220	220KV Vapi-Vapi line at Vapi	13-Dec-18	9:00	13-Dec-18	13:00	Daily	AMP work of termial equipments	GETCO	WR-II	R
554	400	400Kv Boisar-Padghe at Boisar	13-Dec-18	9:00	13-Dec-18	17:00	Daily	code for Online Main-I relay replacement(Line will be in service through M-2)	POWERGRID	WR-II	R
555	400	400KV Talegaon Lonikand Line at Pune-Talegaon	13-Dec-18	9:00	13-Dec-18	17:00	Daily	For line Isolator Alignment & AMP of Line Equipments	WRTS-I	WRTS-I	R
556	765	765KV Durg-1 Tie Bay (702) at Champa PS	13-Dec-18	9:00	13-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
557	400	Aurangabad	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
558	765	765KV RANCHI 1 & JHARSUGUDA 1 TIE BAY(732) AT DHARAMJAYGARH(KORBA) SS	13-Dec-18	9:00	13-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
559	765	ICT4_765/400kv_KOTRA PS	13-Dec-18	9:00	13-Dec-18	18:00	Daily	Commissioning of B/U relay at Kotra	WRTS-I	WRTS-I	C
560	220	220KV Amona Line	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
561	400	Main Bay of Nicol (426) at Dehgam	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP work,Line will be in service through Tie Bay	POWERGRID	WR-II	R
562	400	Satpura Main Bay(425) at Itarsi SS	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
563	220	RAIGARH SS	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
564	400	Jabalpur	13-Dec-18	9:00	13-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
565	765	765KV Raichur-2_Main Bay_713 at Solapur.	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For AMP Works.	WRTS-I	WRTS-I	R
566	400	400kV WARDHA-WARORA-2_LILOPOINT_PG	13-Dec-18	9:00	13-Dec-18	18:00	Daily	Replacement of B phase CVT	WRTS-I	WRTS-I	R
567	765	kept open	13-Dec-18	9:00	13-Dec-18	18:00	Daily	CSD commissioning (Make:-GE) in main bay of ICT-3	POWERGRID	WR-II	C
568	400	400kV DHARIWAL TPP-PARLI II	13-Dec-18	9:00	13-Dec-18	18:00	Daily	To attend shutdown nature defects Dislocated CVD in loc 492, 454, 458, 461,475, 476, 477, 479, 485, 531, 567, 506 by Nanded-TLM & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
569	765	765 KV Gwalior-Agra # 2 line at Gwalior with dia to be kept open alongwith 765kV Bus-1 at Gwalior	13-Dec-18	9:00	13-Dec-18	18:00	Daily	For erection of Line isolator post insulator in phase where wave trap is not available and replacement of suspension and tension string	POWERGRID	WR-II	C
570	220	205,Bus coupler main bay at Bina	13-Dec-18	9:15	13-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
571	400	400kV Wardha-1 Main Bay (434) at Raipur SS	13-Dec-18	9:30	13-Dec-18	17:30	Daily	AMP of bay equipments	WRTS-I	WRTS-I	R
572	220	220kV Damoh-Damoh line#3 at Damoh	13-Dec-18	9:30	13-Dec-18	18:00	Daily	AMP work of terminal equipments	MPPTCL	WR-II	R
573	765	New Parli	13-Dec-18	10:00	13-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
574	400	400KV Bay-404 (Dehgam Main bay) at Pirana	13-Dec-18	10:00	13-Dec-18	14:00	Daily	AMP WORK	POWERGRID	WR-II	R
575	765	765 KV BUS-I at Tamnar PS	13-Dec-18	10:00	13-Dec-18	18:00	Daily	For AMP works of 765 kV Bus-I	WRTS-I	WRTS-I	R
576	400	Shujalpur.	13-Dec-18	10:00	13-Dec-18	18:00	Daily	AMP work.	POWERGRID	WR-II	R
577	400KV	Transfer Bus.	13-Dec-18	13:00	13-Dec-18	18:00	Daily	Maintenance of 400KV Sugen Vapi Line Bus-1 isolator..	TPL-SUGEN	TPL-SUGEN	R
578	400	CHANDRAPUR 2 - WARORA CKT-2	13-Dec-18	08:00	13-Dec-18	18:00	Daily	Routine maintainance and diagonastic testing such as CT tandelta,CRM,IR values,isolater maintainance work and DCRM	MSETCL	MSETCL	managed on 400KV
579	400	MAIN BAY (406) OF WARORA CKT - 1 @ TIRORA	13-Dec-18	09:00	13-Dec-18	18:00	Daily	Testing and maintenance of breaker	ATIL	ATIL	
580	220 KV	Kawas-ichhapore line 2 (Bay 2)	13-Dec-18	8:00	14-Dec-18	18:00	continous	For annual maintenance and testing of bay	GETCO	NTPC	
581	400	400kV MTPH(Singhaji)-Jhulwaniya and 400kV Chegaon- Jhulwaniya line	13-Dec-18	8:00	14-Dec-18	18:00	continuous	Overhead stringing work of765kV D/C Hexa Khandwa Dhule line	MPPTCL	KTL(Sterlite)	C
582	220	220 KV Marwa-Banari Feeder No. 2 (Bay No. 208) at 400 KV switchyard Marwa.	13-Dec-18	8:30	14-Dec-18	17:30	Continuous	1. Annual Testing of Relays, CT, Circuit Breaker and CVT. 2. Cleaning and Terminal tightness of CT JB, Breaker Mar. Box., and control & relay panel. 3. General Checking, Cleaning & lubrication of operating mechanism of Circuit Breaker & Isolators.	CSPTCL	CSPTCL	R

583	400	400 KV Line#2 Main Bay (Bay 9) at TRNEPL	13-Dec-18	9:00	14-Dec-18	18:00	Continuous	For Bay Annual Maintenance	TRNEPL	TRNEPL	
584	765	765kV BILASPUR-SIPAT II	13-Dec-18	9:00	14-Dec-18	18:00	Daily	Cleat changing of suspensing tower & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
585	400 KV	DGEN Bay 409- ICT 2 - energization	13-Dec-18	10:00	14-Dec-18	18:00	Continuous	ICT 2 routine energisation testing during RSD and shutdown for energy conservation	TPL - DGEN	TPL - DGEN	R
586	400	ICT#2 at Rewa with dia to be kept open	13-Dec-18	10:00	14-Dec-18	18:00	DAILY	Fine tuning of CSD	POWERGRID	WR-II	C
587	765 KV	Bus reactor to ICT-2 Tie Bay-5	13-Dec-18	7:30	15-Dec-18	17:30	Continuous	For PM (ICT-2 and Bus reactor will remain charged through their main Bays)	NTPC	NTPC	
588	400KV	Jhanor-Sugen Line (Bay 408)	13-Dec-18	8:00	15-Dec-18	18:00	Continuos	Annual Bay Maintenance	PGCIL	NTPC	
589	400	400 KV Bus-II at 400 KV S/s Khedamara.	14-Dec-18	7:00	14-Dec-18	18:00	Daily	Conductor rewinding work in various 400 KV bays	CSPTCL	CSPTCL	R
590	400	Transfer Bus-Coupler (Hadala SS)	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Breaker DCRM and Bay Maint work	GETCO	GETCO	
591	400	Asoj - Wanakbori	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Breaker timing at Asoj end	GETCO	GETCO	
592	400	Varsana - Kansari Line	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Line Jumper checking	GETCO	GETCO	APL - Kansari line will
593	400	Bus-A Mansar	14-Dec-18	8:00	14-Dec-18	18:00	Daily	ICT-2 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
594	400	Bus Coupler Mansar	14-Dec-18	8:00	14-Dec-18	18:00	Daily	ICT-2 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
595	400	ICT-2 Mansar	14-Dec-18	8:00	14-Dec-18	18:00	Daily	ICT-2 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
596	400	TBC Bus Mansar	14-Dec-18	8:00	14-Dec-18	18:00	Daily	ICT-2 Flyover Suspension insulator string replacement work	GETCO	GETCO	R
597	400KV	Bay 402 - Tie bay of Mundra-Sami Line-1 & Sami- Dehgam line-1 at Sami Substation	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
598	400 KV	DGEN 400kV Bus B	14-Dec-18	8:00	14-Dec-18	18:00	Daily	DGEN 400KV Bus B isolation for Preventive maintenance of 403 89B (Vaghodiya line-1) and 405 89B isolator (Navsari line-2).	TPL - DGEN	TPL - DGEN	R
599	400 KV	DGEN 400kV Bay 403 (Vaghodiya line-1)	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Preventive maintenance of 403 89B isolator (Vaghodiya line-1)	TPL - DGEN	TPL - DGEN	R
600	400 KV	DGEN 400kV Bay 405 (Navsari line-2)	14-Dec-18	8:00	14-Dec-18	18:00	Daily	Preventive maintenance of 405 89B isolator (Navsari line-2).	TPL - DGEN	TPL - DGEN	R
601	400	Varsana#1 Main Bay (Bay 416) at Bhachau	14-Dec-18	8:00	14-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
602	400	426 Tie Breaker of Bhachau-2 line	14-Dec-18	8:00	14-Dec-18	20:00	Daily	Breaker testing	CGPL	CGPL	R
603	400	ICT2_400/220kv_SEONI	14-Dec-18	8:00	14-Dec-18	21:00	Daily	Insatllation, Testing & Commissioning of Back-up Impedance Relay	WRTS-I	WRTS-I	R
604	220	220KV Bus-1 at Vapi	14-Dec-18	9:00	14-Dec-18	17:00	Daily	AMP work. During Bus-1 s/d lines on Bus-1 taken on TBC for Bus-1 Isolator maintenance work one by one. If line not taken on TBC Bus-1 isolator one end remain potentially charge and maintenance can not be done on isolator so line will be taken on TBC	POWERGRID	WR-II	R
605	765	765KV ICT-2 Main Bay (709) at Champa PS	14-Dec-18	9:00	14-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
606	400	open	14-Dec-18	9:00	14-Dec-18	17:30	Daily	For ICT AMP	POWERGRID	WR-II	R
607	400	400kV KORBA-BIRSINGHPUR_1	14-Dec-18	9:00	14-Dec-18	18:00	Daily	Rectification of open bundle spacer at Loc. No. 26, Installation of missing EVD, AH at Loc. No. 193, 170, 173, & Rectification of dislocated conductor VD at Loc. No. 34. Other circuit in non auto mode for same duration. i.e. CKT-2	WRTS-1	WRTS-1	
608	220	220kV TBC bay-205 at Aurangabad	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
609	400	Main Bay of Pirana # 1 (427) at Dehgam	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP work,Line will be in service through Tie Bay	POWERGRID	WR-II	R
610	765	765 kV_MAIN_BUS_2_KOTRA PS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
611	765	BAY 708 (TIE BAY OF 765KV BUS REACTOR I AND ICT I) AT INDORE PS	14-Dec-18	9:00	14-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
612	220	220KV Thivim #1 Line	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
613	400	Indore #1 Main Bay (419) at Itarsi SS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
614	400	400kV ICT # II Tie Bay (Bay No 423) at Jabalpur	14-Dec-18	9:00	14-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
615	220	RAIGARH SS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
616	765	765KV Pune_Main Bay_712 at Solapur.	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP Works.	WRTS-I	WRTS-I	R
617	765	at V-Chal PS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For switchable reactor AMP work	POWERGRID	WR-II	R
618	765	765 KV Bus Reactor-2 Main Bay -712 at Wardha	14-Dec-18	9:00	14-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
619	765	JABALPUR-ORAI # 1	14-Dec-18	9:00	14-Dec-18	18:00	Daily	CSD COMMISSIONING WORK.	POWERGRID	WR-II	C
620	HVDC	HVDC CWD 30 Q50 at Bhadrawati	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
621	400	400kV ICT #2 & Future Tie bay (405)at Durg PS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
622	400	400kV WARORA-PARLI-I_LILOPOINT_PG	14-Dec-18	9:00	14-Dec-18	18:00	Daily	To attend shutdown nature defects jumper tightenning by Nanded-TLM & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
623	765	Bilaspur PS	14-Dec-18	9:00	14-Dec-18	18:00	Daily	AMP works (CT C Tan ë, Timings, Dew Point, CRM)	WRTS-I	WRTS-I	R

624	765	765 KV Gwalior-Bina # 1 line with dia to be kept open at both end alongwith 765kV Bus-2 at Gwalior	14-Dec-18	9:15	14-Dec-18	17:30	Daily	a) For rectification of shut down nature defects in line, b) For replacement of suspension/pilot string in Substation at Bina, c)For IR measurement of LA , erection of line isolator post insulator in phase where wave trap is not available and replacement of suspension and tension string	POWERGRID	WR-II	R
625	400	Raipur SS	14-Dec-18	9:30	14-Dec-18	17:30	Daily	AMP of bay equipments	WRTS-I	WRTS-I	R
626	220	220kV Damoh-Sagar line#2 at Damoh	14-Dec-18	9:30	14-Dec-18	18:00	Daily	AMP work of terminal equipments	MPPTCL	WR-II	R
627	400	Champa-HVDC	14-Dec-18	10:00	14-Dec-18	17:30	Daily	For AMP Works	WRTS-I	WRTS-I	R
628	400	KOLHAPUR'	14-Dec-18	10:00	14-Dec-18	18:00	Daily	For Bay AMP works	WRTS-I	WRTS-I	R
629	220	400KV Bay-405 (Dehgam-ICT-2 tie bay) at Pirana	14-Dec-18	10:00	14-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
630	765	765 KV BUS-II at Tamnar PS	14-Dec-18	10:00	14-Dec-18	18:00	Daily	For AMP works of 765 kV Bus-II	WRTS-I	WRTS-I	R
631	765	765kV Solapur-2 Main bay (709) at New Parli	14-Dec-18	12:00	14-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
632	400	MAIN BUS - 1 @ WALUJ	14-Dec-18	08:00	14-Dec-18	17:00	Daily	Routine Maintenance & Testing	MSETCL	MSETCL	Nil
633	400	AKOLA - WARDHA(PG) CKT - 2	14-Dec-18	09:00	14-Dec-18	17:00	Daily	Routine Maintenance & testing work	MSETCL	MSETCL	NA
634	400	MAIN BAY (413) OF KORADI 2 LINE @ WARDHA (PG)	14-Dec-18	09:00	14-Dec-18	17:00	Daily	Routine Maintenance & Dignostic testing work	MSETCL	MSETCL	KORADI-WARDHA Line
635	400	MAIN BUS - 2 @ KORADI-3	14-Dec-18	09:00	14-Dec-18	18:00	Daily	Testing & Maintenance of Bus connected Isolator & CVT	MEGPTCL	MEGPTCL	
636	400	SSP DHULE- 1	14-Dec-18	8:00	15-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
637	765	705 Bay, 765KV ICT-2 -Sasan 1 Tie Bay at Satna	14-Dec-18	9:00	15-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
638	400	400KV Bhilai-Seoni line	14-Dec-18	9:00	29-Dec-18	17:00	Continue	LILO work of 400KV Bhilai-Seoni line at 400/132KV S/s Kirnapur	MPPTCL	MPPTCL	R
639	400	Bus-A Mansar	15-Dec-18	8:00	15-Dec-18	18:00	Daily	BUS-A Suspension insulator replacement work	GETCO	GETCO	R
640	400	Bus Coupler Mansar	15-Dec-18	8:00	15-Dec-18	18:00	Daily	Bus coupler Flyover insulator replacement work	GETCO	GETCO	R
641	400KV	Bay 403 - Main bay of Sami-Dehgam line-1 at	15-Dec-18	8:00	15-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
642	400	Essar#2-Varsana#1 Tie Bay (Bay 417) at Bhachau	15-Dec-18	8:00	15-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
643	400	429 Tie breaker of Bhachau-1 line and GT#50	15-Dec-18	8:00	15-Dec-18	20:00	Daily	Breaker testing	CGPL	CGPL	R
644	400	Itarsi-Indore-2 at Itarsi SS	15-Dec-18	9:00	15-Dec-18	16:00	Daily	Online Retrofitting of CH-2 ETI-21 PLCC and NSD-60 Protection Coupler with ETL-41 PLCC and NSD-50 Protection Coupler of ABB make at both ends.	POWERGRID	WR-II	R
645	400	400KV Nagda-Rajgarh-II	15-Dec-18	9:00	15-Dec-18	17:00	Daily	Tightening/removing of loose vibration damper & other line maintenance work	MPPTCL	MPPTCL	R
646	220	Talegaon	15-Dec-18	9:00	15-Dec-18	17:00	Daily	AMP of Line Equipments	WRTS-I	WRTS-I	R
647	400	400 Kv Bhopal- Bina 1 Line at 400KV S/s Bhopal	15-Dec-18	9:00	15-Dec-18	18:00	Daily	Testing work after replacement of CB. Line will be under shutdown	MPPTCL	MPPTCL	R
648	400	Tie Bay of ICT # 1 & Gandhar # 2 (405) at Dehgam	15-Dec-18	9:00	15-Dec-18	18:00	Daily	For AMP work, ICT # 2 & Gandhar # 1 will be in service through resprctive Main Bay	POWERGRID	WR-II	R
649	765	LINE) AT INDORE PS	15-Dec-18	9:00	15-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
650	220	400/200kV ICT-1 Main Bay-201 at Aurangabad	15-Dec-18	9:00	15-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
651	400	Indore #2 Main Bay(420) at Itarsi SS	15-Dec-18	9:00	15-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
652	765	765 kV_MAIN_BUS_2_KOTRA PS	15-Dec-18	9:00	15-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
653	400	at Parli	15-Dec-18	9:00	15-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
654	765	JABALPUR-ORAI # 2	15-Dec-18	9:00	15-Dec-18	18:00	Daily	CSD COMMISSIONING WORK.	POWERGRID	WR-II	C
655	400	400KV_BUS REACTOR_MAIN_BAY_422 at Seoni	15-Dec-18	9:00	15-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
656	400	400kV KORBA-BIRSINGHPUR_2	15-Dec-18	9:00	15-Dec-18	18:00	Daily	Shut down nature defect (for attend puncture insulator) Other ckt A/R to be kept in Non-Auto mode.	WRTS-I	WRTS-I	R
657	400	400kV WARORA-PARLI-2_LILOPOINT_PG	15-Dec-18	9:00	15-Dec-18	18:00	Daily	To attend shutdown nature defects jumper tightenning by Nanded-TLM & Other ckt A/R in Non-auto mode required.	WRTS-I	WRTS-I	R
658	765	765KV/400KV ICT-2 at Bina(Dia will be out of service during outage period.)	15-Dec-18	9:15	15-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
659	765	765 KV Bus Reactor at Gwalior with dia to be kept open alongwith 765kV Bus-2 at Gwalior	15-Dec-18	10:00	15-Dec-18	18:00	Daily	Replacement of suspension and tension string	POWERGRID	WR-II	C
660	765	765 KV BUS-II at Tamnar PS	15-Dec-18	10:00	15-Dec-18	18:00	Daily	For AMP works of 765 kV Bus-II	WRTS-I	WRTS-I	R
661	400	400kV ICT1 Main bay _401 at New Parli	15-Dec-18	14:00	15-Dec-18	16:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
662	400	400Kv Boisar-Padghe at Boisar	15-Dec-18	14:00	15-Dec-18	18:00	Daily	For tripping and A/R Trials of Main-I relay(Line will be in service through M-2)	POWERGRID	WR-II	R
663	400	1 @ AKOLA 2	15-Dec-18	09:00	15-Dec-18	18:00	Daily	Testing & Maintenance of Bay equipments	MEGPTCL	MEGPTCL	
664	400	400kV KORBA-MAHAN	15-Dec-18	9:00	16-Dec-18	18:00	Cont.	Replacement of Broken / crack porcelain insulator string at Loc. No. 431, 441, 432 and rectification of other shut down nature defects	WRTS-1	WRTS-1	
665	400	Bay 423(Seoni#1-Betul#1Tie bay) at Khandwa SS	15-Dec-18	10:00	18-Dec-18	18:00	Cont.	For ABB CB operating Mechanism Overhauling work & Bay AMP work.	POWERGRID	WR-II	R
666	400	40kv Tarapur-Boisar-I at Boisar	16-Dec-18	9:00	16-Dec-18	13:00	Daily	code for Online Main-I relay replacement(Line will be in service through M-2)	POWERGRID	WR-II	R

667	400	Itarsi-Indore #2 Line	16-Dec-18	16:00	16-Dec-18	19:00	Daily	For taking Line Reactor into service after Overhauling of Reactor at Itarsi end. & Line outage for checking/testing end-to-end testing and code tranmission after retrofitting of CH-2 PLCC and Protection Coupler.	POWERGRID	WR-II	C
668	220	BOISAR II - PGCIL 2	16-Dec-18	08:00	16-Dec-18	17:00	Daily	Post monsoon maintenance of the line	MSETCL	MSETCL	-
669	400	KHARGHAR - TALEGAON (PG)	16-Dec-18	08:00	16-Dec-18	18:00	Daily	Routine Maintenance & Diagnostic testing work	MSETCL	MSETCL	nil
670	400	BABHALESHWAR - PADGHE 2	16-Dec-18	08:00	20-Dec-18	18:00	Daily	For Carrying PID Work	MSETCL	MSETCL	take out of
671	400	NEW KOYNA - DABHOL - II	16-Dec-18	08:00	25-Dec-18	18:00	Daily	LE scheme for insulator string replacement & cold washing of insulators	MSETCL	MSETCL	on Dabhol-New Koyna -I
672	765	765KV ICT3_MAIN_BAY_718 at Seoni	17-Dec-18	9:00	18-Oct-18	18:00	Cont.	FOR AMP WORK	WRTS-I	WRTS-I	R
673	400/220 KV	ATR - 1	17-Dec-18	8:00	17-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
674	400KV	Bay 404 - Main bay of Sami-Mundra line-2 at	17-Dec-18	8:00	17-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
675	400 KV	DGEN 400kV Bus B	17-Dec-18	8:00	17-Dec-18	18:00	Daily	DGEN 400 KV Bus B isolation for Preventive maintenance of 401 89B (DGEN 400 KV Bus Reactor) and 402 89B isolator (Vaghodiya line-2).	TPL - DGEN	TPL - DGEN	R
676	400 KV	DGEN 400kV Bay 401 (Bus Reactor)	17-Dec-18	8:00	17-Dec-18	18:00	Daily	Preventive maintenance of 401 89B isolator (DGEN 400 KV Bus Reactor).	TPL - DGEN	TPL - DGEN	R
677	400 KV	DGEN 400kV Bay 402 (Vaghodiya line-2)	17-Dec-18	8:00	17-Dec-18	18:00	Daily	Preventive maintenance of 402 89B isolator (Vaghodiya line-2).	TPL - DGEN	TPL - DGEN	R
678	400	Essar#2 Main Bay (Bay 418) at Bhachau	17-Dec-18	8:00	17-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
679	400	Bhachau-4 line reactor at CGPL end	17-Dec-18	8:00	17-Dec-18	20:00	Daily	Reactor PM and Reactor Breaker testing	CGPL	CGPL	R
680	400	Jabalpur-Itarsi-1 at Itarsi SS	17-Dec-18	9:00	17-Dec-18	16:00	Daily	Online Retrofitting of CH-2 ETI-21 PLCC and NSD-60 Protection Coupler with ETL-41 PLCC and NSD-50 Protection Coupler of ABB make at both ends.	POWERGRID	WR-II	R
681	400	400KV RANCHI-SIPAT I	17-Dec-18	9:00	17-Dec-18	16:00	Daily	Rectification of hanging CC ring at loc. No. 171, dislocated EVD 378. Other circuit in non auto mode for same duration. i.e. CKT-2	WRTS-1	WRTS-1	
682	400	ICT2_400/220kv_PUNE	17-Dec-18	9:00	17-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
683	220	220KV Bus-2 at Vapi	17-Dec-18	9:00	17-Dec-18	17:00	Daily	AMP work. During Bus-2 s/d lines on Bus-2 taken on TBC for Bus-2 Isolator maintenance work one by one. If line not taken on TBC Bus-2 isolator one end remain potentially charge and maintenance can not be done on isolator so line will be taken on TBC	POWERGRID	WR-II	R
684	400	Ckt-1	17-Dec-18	9:00	17-Dec-18	18:00	Daily	Testing & Commissioning of NIFPS Scheme in L/R at Jetpur end	POWERGRID	WR-II	R
685	220	400/200kV ICT-2 Main Bay-202 at Aurangabad	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
686	765	765 kV_MAIN_BUS_2_KOTRA PS	17-Dec-18	9:00	17-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
687	400	Main Bay of Nagda # 2 (410) at Dehgam	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP work,Line will be in service through Tie Bay	POWERGRID	WR-II	R
688	765	65kV BUS REACTOR_MAIN BAY (721)_KOTRA PS	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
689	765	opened at both end)	17-Dec-18	9:00	17-Dec-18	18:00	DAILY	for integration of spare reactor with vadodara line reactor	POWERGRID	WR-II	C
690	220	220KV Transfer Bay 201 Bay at Mapusa	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
691	400	400KV Bus Reactor-2 Main Bay (416) at Parli	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
692	400	400Kv PARLI-PUNE(GIS)_1	17-Dec-18	9:00	17-Dec-18	18:00	Daily	AMP of Bay and Line Reactor	WRTS-I	WRTS-I	R
693	400	416) at Jabalpur	17-Dec-18	9:00	17-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
694	765	765KV Bus Reactor_Main_Bay_718_ AT Solapur	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP Works.	WRTS-I	WRTS-I	R
695	400	open	17-Dec-18	9:00	17-Dec-18	18:00	Daily	Backup impedance relay installation at Navsari GIS	POWERGRID	WR-II	C
696	220	220 KV Pusad Bay 202 at Wardha	17-Dec-18	9:00	17-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
697	400	400kV RAIPUR-SIPAT I	17-Dec-18	9:00	17-Dec-18	18:00	Daily	Shut down nature defect (for attend arcing horn loose, conductor strain cut, cc ring bolt missing) Other ckt A/R to be kept in Non-Auto mode.	WRTS-I	WRTS-I	R
698	HVDC	HVDC CWD 30 Q51 at Bhadrawati	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
699	400	400kV ICT #2 Main bay (406) at Durg PS	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
700	765	kept open	17-Dec-18	9:00	17-Dec-18	18:00	Daily	For Calibrtion of WTI & OTI	POWERGRID	WR-II	R
701	400	400kV Wardha-2 Main Bay (430) at Raipur	17-Dec-18	9:30	17-Dec-18	17:30	Daily	AMP of bay equipments	WRTS-I	WRTS-I	R
702	400	400kV Damoh-Katni line#1 with LR at Damoh	17-Dec-18	9:30	17-Dec-18	18:00	Daily	AMP work of terminal equipments	MPPTCL	WR-II	R
703	400	400kV ICT1 & Parli-2Tie bay _402 at New Parli	17-Dec-18	10:00	17-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
704	220	400KV Bay-406 (ICT-2 main bay) at Pirana	17-Dec-18	10:00	17-Dec-18	18:00	Daily	AMP WORK	POWERGRID	WR-II	R
705	400	be kept open	17-Dec-18	10:00	17-Dec-18	18:00	Daily	AMP work. (Dia wiil be closed after putting equipment out)	POWERGRID	WR-II	R
706	765	dia to be kept open alongwith 765kV Bus-1 at Gwalior	17-Dec-18	10:00	17-Dec-18	18:00	Daily	Replacement of suspension and tension string	POWERGRID	WR-II	C
707	400	40kv Tarapur-Boisar-I at Boisar	17-Dec-18	14:00	17-Dec-18	18:00	Daily	For tripping and A/R Trials of Main-I relay(Line will be in service through M-2)	POWERGRID	WR-II	R
708	400	Jabalpur-Itarsi-1 Line at Itarsi SS	17-Dec-18	16:00	17-Dec-18	18:00	Daily	Line outage for checking end-to-end testing and code tranmission after retrofitting of CH-2 PLCC and Protection Coupler.	POWERGRID	WR-II	R

709	400	MAIN BAY - 406 OF 765/400kV ICT-2 @ EKTUNI	17-Dec-18	10:00	17-Dec-18	18:00	Daily	Routine Maintain & Diagnostic Testing	MSETCL	MSETCL	service through 400kV TIE-II (405)
710	400	MAIN BUS - 1 @ KORADI - 2	17-Dec-18	11:00	17-Dec-18	14:00	Daily	Tan delta measurement of Bus CVT	MSETCL	MSETCL	shifted to Main
711	765	BAY 714 (TIE BAY OF 765KV INDORE VADODARA LINE) AT INDORE PS	17-Dec-18	9:00	18-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
712	765	709 Bay, 765KV Bina -2 Main Bay at Satna	17-Dec-18	9:00	18-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
713	765	765 Bus -I at Dharamjaygarh	17-Dec-18	9:00	18-Dec-18	18:00	Cont.	For Equipment erection work under 765KV Bus for Bus-Sectionalizing work by M/s Techno at Dharamjaigarh PS.	WRTS-I	WRTS-I	C
714	765	765/400 kV ICT#2 at Vadodara with dia to be kept open	17-Dec-18	10:00	18-Dec-18	18:00	Daily	For Backup Imp Relays (in HV & IV Side) Installation & Commissioning for ICT Protection	POWERGRID	WR-II	R
715	400	DHULE- - BABLESHWAR - I & II on Non auto mode	17-Dec-18	08:00	18-Dec-18	17:00	Daily	PID testing of insulators	MSETCL	MSETCL	BBLR Ckt-1&2 on Non-Auto
716	765 KV	ICT-1 Transforner	17-Dec-18	7:30	19-Dec-18	17:30	Continuous	For PM	NTPC	NTPC	
717	400	400KV Bina -Bhopal-1 Feeder	17-Dec-18	9:00	19-Dec-18	17:00	Continue	For replacement of line CVTs	MPPTCL	MPPTCL	R
718	400	400kV SEONI-KHANDWA I	17-Dec-18	9:00	20-Dec-18	18:00	Daily	Replacement of porcelain insulators by polymer insulators at NH/Railway crossings at (5-6, 160-161, 162-163,199-200 & 200-201)	WRTS-II-2	WRTS-I	R
719	400	ICT #1 Main Bay (413) at Itarsi SS	17-Dec-18	9:00	21-Dec-18	18:00	Cont.	For Overhauling of Operating Mechanism of CGL Make Circuit Breaker..	POWERGRID	WR-II	C
720	400KV	Jhanor ICT-2 400/132 KV (bay 403)	17-Dec-18	8:00	22-Dec-18	18:00	Continuos	Annual Bay Maintenance	NTPC	NTPC	
721	400	MAIN BUS - 1 @ TALANDGE	17-Dec-18	09:00	22-Dec-18	23:55	Continuous	Replacement of Isolator of 400kV Karad 1 A Bus PG Isolator and 400kV Alkud line Bus Hanger	MSETCL	MSETCL	-
722	400	BABLESHWAR- AURANGABAD (WALUJ) ON TBC @ BABHALESHWAR	17-Dec-18	09:00	23-Dec-18	17:00	Continuous	Quarterly Maintenance work & Reapir scissors of 400KV P.G Isolator and Servicing and allignment of isolators work	MSETCL	MSETCL	Babhaleshwar-Aurangabad Bay is Take on TBC for Rpearing of 29A & 29B P.G Isoaltor P.G
723	765	701,Seoni main bay at Bina	17-Dec-18	9:15	25-Dec-18	17:30	Cont.	For replacement of Main CB MB.	POWERGRID	WR-II	R
724	400	CHANDRAPUR 2-KUMBHARGAON(NANDED) CKT - 2	17-Dec-18	08:00	31-Dec-18	17:00	Daily	For PID Work	MSETCL	MSETCL	shifting of auto reclose in non-auto mode. And Chardrapur-II-Nanded-II cke
725	400	400KV CHANDRAPUR 1-PARALI 3 (CHPR 1 1END))	17-Dec-18	08:00	31-Dec-18	17:00	Daily	PID work	MSETCL	MSETCL	shifting of auto reclose in non-auto mode. And Chardrapur-II-Nanded-II ckt
726	400KV	400KV MAIN BUS-1 at Adani power Mundra	18-Dec-18	7:30	18-Dec-18	18:30	Daily	400KV Bus -1 ,3-I , Annual Routine Bus Maintenance work	APMuL	APMuL	R
727	400	Amreli - Hadala Line	18-Dec-18	8:00	18-Dec-18	18:00	Daily	Breaker DCRM and Bay Maint work	GETCO	GETCO	R
728	400	Dehgam (PG) - Wanakbori line	18-Dec-18	8:00	18-Dec-18	18:00	Daily	Maintenance work.	GETCO	GETCO	R
729	400	Chorniya-Vadvai-2 line at GETCO Chorniya SS	18-Dec-18	8:00	18-Dec-18	8:15	Daily	AMP WORK OF LINE TERMINAL EQUIPMENTS PERTAINS TO PGCIL	GETCO	WR-II	R
730	400/220 KV	ATR - 2	18-Dec-18	8:00	18-Dec-18	18:00	Daily	relay testing work	SSP	GSECL	
731	400KV	Bay 405 - Tie bay of Mundra-Sami Line-2 & Sami- Dehgam line-2 at Sami Substation	18-Dec-18	8:00	18-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
732	400	Seoni - Khandwa Ckt #1 with N/A mode of Ckt # 2 & Dia opened at Both end	18-Dec-18	8:00	18-Dec-18	18:00	Daily	Attending shutdown nature defects	POWERGRID	WR-II	R
733	400	Bus Reactor#2 Main Bay (Bay 419) at Bhachau	18-Dec-18	8:00	18-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R
734	400 KV	DGEN 400kV Bus B	18-Dec-18	8:00	18-Dec-18	19:00	Daily	DGEN 400 KV Bus B isolation for Preventive maintenace of 411 89B isolator (ICT-3) and 413 89B isolator (Bus coupler).	TPL - DGEN	TPL - DGEN	R
735	400 KV	DGEN 400kV Bay 411(ICT-3)	18-Dec-18	8:00	18-Dec-18	19:00	Daily	Preventive maintenace of 411 89B isolator (ICT-3)	TPL - DGEN	TPL - DGEN	R
736	400 KV	DGEN 400kV Bay 413 (BUS COUPLER)	18-Dec-18	8:00	18-Dec-18	19:00	Daily	Preventive maintenace of 413 89B isolator (400KV BUS COUPLER)	TPL - DGEN	TPL - DGEN	R
737	400	Bhachau-3 line reactor CGPL end	18-Dec-18	8:00	18-Dec-18	20:00	Daily	Reactor PM and Reactor Breaker testing	CGPL	CGPL	R
738	400	Itarsi-Jabalpur #2 Line at Itarsi SS	18-Dec-18	9:00	18-Dec-18	9:15	Daily	For taking Line Reactor out of service for Overhauling of Reactor at Itarsi end.	POWERGRID	WR-II	C

739	400	40kv Tarapur-Boisar-II at Boisar	18-Dec-18	9:00	18-Dec-18	13:00	Daily	code for Online Main-I relay replacement(Line will be in service through M-2)	POWERGRID	WR-II	R
740	220	220KV Malanpur-Aouriya	18-Dec-18	9:00	18-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
741	400	Talegaon	18-Dec-18	9:00	18-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
742	220	220KV Vapi-Khadoli Main Bay-214 at Vapi	18-Dec-18	9:00	18-Dec-18	17:00	Daily	AMP work of CB and line will be remain in service through TBC	POWERGRID	WR-II	R
743	765	PS	18-Dec-18	9:00	18-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
744	400	Veloda Charanka-1	18-Dec-18	9:00	18-Dec-18	18:00	DAILY	BAY MAINTENANCE/CONDITIONING MONITORING	GETCO	GETCO	R
745	220	Aurangabad	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
746	765	765 kV_MAIN_BUS_2_KOTRA PS	18-Dec-18	9:00	18-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
747	765	65kV BUS REACTOR_MAIN BAY (721)_KOTRA PS	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
748	400	Tie Bay of Nagda # 1 & Pirana # 1(428) at Dehgam	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For AMP work, Both the Lines will be in service through resprctive Main Bay	POWERGRID	WR-II	R
749	400	400Kv PARLI-PUNE(GIS)_2	18-Dec-18	9:00	18-Dec-18	18:00	Daily	AMP of Bay and Line Reactor	WRTS-I	WRTS-I	R
750	220	220 KV BUS COUPLER BAY 209 AT RAIGARH SS	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
751	400	400KV BUS_1 at Solapur	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For Bus-1_CVT replacement works	WRTS-I	WRTS-I	R
752	400	400 KV Warora-2 Tie bay 408 at Wardha	18-Dec-18	9:00	18-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
753	400	400 kV Bus -I V-Chal PS	18-Dec-18	9:00	18-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
754	400	400KV RANCHI-SIPAT II	18-Dec-18	9:00	18-Dec-18	18:00	Daily	Clipping of pilot string with Jumper Conductor, Rectification of dislocated Conductor VD at Loc. no. 225, Installation of Missing Arcing horn at Loc. No. at Loc. No. 176. Other circuit in non auto mode for same duration. i.e. CKT-1	WRTS-1	WRTS-1	
755	765	765 kV Bina-Satna # 1 Line(Note: Line & Reactor alongwith diameter shall be out of service at both end during the outage period of Line.)	18-Dec-18	9:15	18-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
756	400	400kv Bhadrawati Main bay at Bhilai SS	18-Dec-18	9:30	18-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
757	400 KV	DGEN 407 bay 52BAT Generator transformer energisation	18-Dec-18	10:00	18-Dec-18	18:00	Continuous	Unit 52 Generator transformer routine energisation during RSD for healthiness checking	TPL - DGEN	TPL - DGEN	R
758	400	315MVA ICT-II at Shujalpur with dia to be kept open	18-Dec-18	10:00	18-Dec-18	18:00	Daily	Oil leakage attending work. (Dia wiil be closed after putting equipment out)	POWERGRID	WR-II	R
759	765	765 KV ICT-1 at Gwalior with dia to be kept open alongwith 765kV Bus-2 at Gwalior	18-Dec-18	10:00	18-Dec-18	18:00	Daily	Replacement of suspension and tension string	POWERGRID	WR-II	C
760	400 KV	DGEN 410 bay 53BAT Generator transformer de-energisation / discharging	18-Dec-18	11:00	18-Dec-18	18:00	Continuous	Unit 53 Generator transformer remains de-energized during RSD and shutdown for energy conservation	TPL - DGEN	TPL - DGEN	R
761	400	400kV Parli-2 Main bay _403 at New Parli	18-Dec-18	12:00	18-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
762	400	Bus coupler Asoj	18-Dec-18	14:00	18-Dec-18	18:00	Daily	Breaker timing & Tan delta	GETCO	GETCO	R
763	400	BUS COUPLER @ KHARGHAR	18-Dec-18	08:00	18-Dec-18	18:00	Daily	Routine Maintenance & Dignostic testing work	MSETCL	MSETCL	NIL
764	400	WARORA - Wardha(PG)	18-Dec-18	09:00	18-Dec-18	17:00	Daily	Routine Maintenance & Dignostic testing work , Nut Bolt of jumper Tightning work.	MSETCL	MSETCL	WARORA-IEPL Line is in ckt
765	132	DHARANI - NEPANAGAR	18-Dec-18	10:00	18-Dec-18	17:00	Daily	For jumper tightening work at loc. no.63&64 and line signature Analysis test	MSETCL	MSETCL	tightening work at loc.
766	765	TIE BAY - 712 OF 765/400kV ICT-2 AND BUS RECTOR @ EKTUNI	18-Dec-18	10:00	18-Dec-18	18:00	Daily	Routine Maintain & Diagnostic Testing	MSETCL	MSETCL	Reactor will be in service though MAIN
767	400	MAIN BUS - 2 @ KORADI 2	18-Dec-18	11:00	18-Dec-18	14:00	Daily	Tan delta measurement of Bus CVT	MSETCL	MSETCL	shifted to Main
768	220	0-51700-Line-1 (TAPS-3&4 - TAPS-1&2 tie line)	18-Dec-18	9:00	19-Dec-18	18:00	Continuous	CB, ES, DS, LA, CT, LA, WT, CVT Annual PM	NPCIL	NPCIL	
769	765	765 KV ICT3_MIAN_BAY_718 at Bilaspur PS	18-Dec-18	9:00	19-Dec-18	18:00	Continue	AMP works (CT C Tan ë, Timings, Dew Point, CRM, & DCRM)	WRTS-I	WRTS-I	R
770	400	ICT#3 at Rewa with dia to be kept open.	18-Dec-18	11:00	20-Dec-18	16:00	Cont.	Connection of Transformer bay 410 &411(Main and Tie bay for ICT #3) at Rewa for conductors and testing of transformer protection stability ,outage of main and tie bay is required simultaneously,DIA TO BE KEPT OPEN	POWERGRID	WR-II	C
771	220	Navsari- Navsari I at GETCO Navsari	18-Dec-18	10:00	22-Dec-18	18:00	Cont.	03 nos CB Replacement work and at GETCO Navsari End	POWERGRID	WR-II	C
772	400	400KV Bhopal 1 Main CB of PG Itarsi at 400KV S/s Bhopal	18-Dec-18	9:00	29-Dec-18	18:00	Continue	Replacement of 400 Kv CB and 3 No 400Kv CTs under PSDF Scheme. Line will remain charge through Tie CB	MPPTCL	MPPTCL	R
773	400	Itarsi-Jabalpur #2 Line Reactor at Itarsi SS	18-Dec-18	9:00	31-Dec-18	18:00	Cont.	Overhauling of Line Reactor at Itarsi end.	POWERGRID	WR-II	C
774	400	FSC#1 of Rajgarh-Kasor#1 Line at Rajgarh	19-Dec-18	10:00	13-Dec-18	17:00	Daily	Annual Maintenance testing of FSC equipments	POWERGRID	WR-II	R
775	400KV	Bay 406 - Main bay of Sami-Dehgam line-2 at	19-Dec-18	8:00	19-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
776	400 KV	DGEN 400kV Bay 414(400 KV TRANSFER BAY) & Bus B	19-Dec-18	8:00	19-Dec-18	18:00	Daily	Preventive maintenace of 414 89B isolator and 4B2 89 isolator. Bay 414 and Bus B outage required	TPL - DGEN	TPL - DGEN	R
777	400	Seoni - Khandwa Ckt #2 with N/A mode of Ckt # 1 & Dia opened at Both end	19-Dec-18	8:00	19-Dec-18	18:00	Daily	Attending shutdown nature defects	POWERGRID	WR-II	R
778	400	Bus Reactor#2 Tie Bay (Bay 420) at Bhachau	19-Dec-18	8:00	19-Dec-18	18:00	Daily	For Bay AMP	POWERGRID	WR-II	R

779	400	Jetpur-2 line reactor CGPL end	19-Dec-18	8:00	19-Dec-18	20:00	Daily	Reactor PM and Reactor Breaker testing	CGPL	CGPL	R
780	400	Vadavi-Kansari line at GETCO Vadavi SS	19-Dec-18	8:15	19-Dec-18	18:00	Cont.	AMP WORK OF LINE TERMINAL EQUIPMENTS PERTAINS TO PGCIL	GETCO	WR-II	R
781	220	220KV Mahegaon-Aouriya	19-Dec-18	9:00	19-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
782	400	Talegaon	19-Dec-18	9:00	19-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
783	220	220KV Vapi-Sayali Main Bay-215 at Vapi	19-Dec-18	9:00	19-Dec-18	17:00	Daily	AMP work of CB and line will be remain in service through TBC	POWERGRID	WR-II	R
784	765	765 kV_MAIN_BUS_1_KOTRA PS	19-Dec-18	9:00	19-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
785	765	65kV ICT4_MAIN BAY (708)_KOTRA PS	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
786	220	220KV ICT#1 Main Bay 208 at Mapusa	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
787	400	400KV Bus Reactor-1 Main Bay (413) at Parli	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
788	400	Main Bay of Sami # 1 (424) at Dehgam	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP work,Line will be in service through Tie Bay	ADANI	WR-II	R
789	220	RAIGARH SS	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
790	765	ICT1_765/400kv_WARDHA	19-Dec-18	9:00	19-Dec-18	18:00	Daily	Replacemnet of Faulty OTI meter & attending lekage from Radiator Header & installation of backup imedence relay	WRTS-I	WRTS-I	R
791	400	400kV BHATAPARA-KORBA	19-Dec-18	9:00	19-Dec-18	18:00	Daily	Shut down nature defect (for attend cc ring bolt missing, stain cut, puncture insulator replacement)	WRTS-I	WRTS-I	R
792	765	765 Kv Bus# 1 at Durg PS	19-Dec-18	9:00	19-Dec-18	18:00	Daily	Jharsuguda Bay Extn. Work	WRTS-I	WRTS-I	C
793	400	400 kV Bus -II V-Chal PS	19-Dec-18	9:00	19-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
794	765	alongwith diameter shall be out of service at both end during the outage period of Line.)	19-Dec-18	9:15	19-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
795	400	400kV Korba-II Main bay at Bhilai SS	19-Dec-18	9:30	19-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
796	400	Champa-HVDC	19-Dec-18	10:00	19-Dec-18	17:30	Daily	For AMP Works	WRTS-I	WRTS-I	R
797	400	Itarsi-Jabalpur #2 Line	19-Dec-18	10:00	19-Dec-18	18:00	Daily	For Bushing torrent gasket replacement under over hauling works	POWERGRID	WR-II	R
798	400	to be kept on NA) along with Dia to be kept open at Jabalpur/Itarsi	19-Dec-18	10:00	19-Dec-18	18:00	Daily	AMP of line & S/S	POWERGRID	WR-II	R
799	765	765kV ICT-2 at Gwalior with dia to be kept open alongwith 765kV Bus-2 at Gwalior	19-Dec-18	10:00	19-Dec-18	18:00	Daily	Replacement of suspension and tension string	POWERGRID	WR-II	C
800	400	400kV ICT2 Main bay _404 at New Parli	19-Dec-18	14:00	19-Dec-18	16:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
801	400	40kv Tarapur-Boisar-II at Boisar	19-Dec-18	14:00	19-Dec-18	18:00	Daily	For tripping and A/R Trials of Main-I relay(Line will be in service through M-2)	POWERGRID	WR-II	R
802	400	MAIN BUS - 2 @ LAMBOTI	19-Dec-18	01:00	19-Dec-18	03:00	Daily	Bus Bar Testing	MSETCL	MSETCL	managed on
803	400	TIE BAY (411) OF DHARIWAL CKT - 2 & NANDED CKT @ CHANDRAPUR - 2	19-Dec-18	09:00	19-Dec-18	18:00	Daily	Routine maintenance & daignostice testing work	MSETCL	MSETCL	maintenance & diagnostic
804	400	MAIN BUS - 1 @ LAMBOTI	19-Dec-18	10:00	19-Dec-18	12:00	Daily	Bus Bar Testing	MSETCL	MSETCL	managed on
805	765	Main bay 711 of 765 kv Bus Reactor @ Ektuni	19-Dec-18	10:00	19-Dec-18	18:00	Daily	Routine Maintain & Diagnostic Testing	MSETCL	MSETCL	Reactor will be in service though TIE
806	400	MAIN BAY (406) OF KORADI 3 CKT - 2 @ KORADI 2	19-Dec-18	10:00	19-Dec-18	18:00	Daily	1) DCRM,CRM & Timing IR of CB 406-Q52 2)Tan delta Maeasurement of Bus CT of Bay 406	MSETCL	MSETCL	Koradi-3 Ckt-II line will
807	400	MAIN BAY (414) OF TIRODA CKT - 2 @ WARORA	19-Dec-18	10:00	19-Dec-18	18:00	Daily	Testing and maintenance of Bay Equipment	ATIL	ATIL	
808	400 KV	VSTPS BUS COUPLER-3 (STAGE-III, BAY No.35)	19-Dec-18	7:30	20-Dec-18	17:30	Continuous	ANNUAL BAY MAINTENANCE	NTPC	NTPC	
809	765	BAY 715R (SWITCHABLE REACTOR BAY OF 765KV INDORE VADODARA LINE) AT INDORE PS	19-Dec-18	9:00	20-Dec-18	18:00	DAILY	BAY AMP WORKS (LINE WILL REMAIN CHARGED ONLY REACTOR WILL OUT FOR AMP WORKS)	POWERGRID	WR-II	R
810	765	711 Bay, 765KV Orai -BR-1 Tie Bay at Satna	19-Dec-18	9:00	20-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
811	765	765 Bus -II at Dharamjaygarh	19-Dec-18	9:00	20-Dec-18	18:00	Cont.	For Equipment erection work under 765KV Bus for Bus-Sectionalizing work by M/s Techno at Dharamjaigarh PS.	WRTS-I	WRTS-I	C
812	765	765KV WARDHA2_MAIN_BAY_724 at Seoni	19-Dec-18	9:00	20-Dec-18	18:00	Cont.	FOR AMP WORK	WRTS-I	WRTS-I	R
813	765	765/400 kV ICT#1 at Vadodarawith dia to be kept open	19-Dec-18	10:00	20-Dec-18	18:00	Daily	For Backup Imp Relays (in HV & IV Side) Installation & Commissioning for ICT Protection	POWERGRID	WR-II	R
814	400 KV	DGEN Bay 408 ICT 1 - energization	19-Dec-18	14:00	20-Dec-18	18:00	Continuous	ICT 1 routine energisation testing during RSD and shutdown for energy conservation	TPL - DGEN	TPL - DGEN	R
815	400	BUS COUPLER @ BABHALESHWAR	19-Dec-18	09:00	20-Dec-18	17:00	Continuous	Quarterly Maintenance work & Reapir scissors of 400KV P.G Isolator and Servicing and allignment of isolators work	MSETCL	MSETCL	Bus will be seperated (to work in Minimum time on 400KV Bus coupler Outage, outge taken on 400KV Aurganabad on TBC is

816	400KV	Bay 407 - Main bay of Bus Reactor at Sami	20-Dec-18	8:00	20-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
817	400 KV	DGEN 400kV Bay 414(400KV TRANSFER BAY) & Bus A	20-Dec-18	8:00	20-Dec-18	18:00	Daily	Preventive maintenace of 414 89A isolator and 4B1 89 isolator. Bay 414 and Bus A outage required	TPL - DGEN	TPL - DGEN	R
818	400	Varsana - Hadala Line	20-Dec-18	8:00	20-Dec-18	18:00	Daily	Breaker DCRM and Bay Maint work	GETCO	GETCO	R
819	400	VADAVI-CHORANIA LINE-2	20-Dec-18	8:00	20-Dec-18	18:00	DAILY	BAY MAINTENANCE	GETCO	GETCO	R
820	400	Mundra - Kansari Line	20-Dec-18	8:00	20-Dec-18	18:00	Daily	Line Jumper checking	GETCO	GETCO	400 KV Varsana -
821	400	Jetpur-1 line reactor CGPL end	20-Dec-18	8:00	20-Dec-18	20:00	Daily	Reactor PM and Reactor Breaker testing	CGPL	CGPL	R
822	400	Talegaon	20-Dec-18	9:00	20-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
823	400	400KV Boisar main Bay-407 at Vapi	20-Dec-18	9:00	20-Dec-18	17:00	Daily	Bay AMP work. CB &CT	POWERGRID	WR-II	R
824	765	PS	20-Dec-18	9:00	20-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
825	400	400KV Seoni-Bhilai	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
826	400	Veloda Charanka-2	20-Dec-18	9:00	20-Dec-18	18:00	DAILY	BAY MAINTENANCE/CONDITIONING MONITORING	GETCO	GETCO	R
827	220	220kV Shendra-1 Main Bay-208 at Aurangabad	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
828	765	765 kV_MAIN_BUS_1_KOTRA PS	20-Dec-18	9:00	20-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
829	765	65kV ICT4_MAIN BAY (708)_KOTRA PS	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
830	220	220KV ICT#3 Main Bay 209 at Mapusa	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
831	400	Main Bay of ICT # 2 (407) at Dehgam	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
832	400	at Jabalpur	20-Dec-18	9:00	20-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
833	765	765 kV Bus -II V-Chal PS	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For different bus Isolators alingnment rectification work.	POWERGRID	WR-II	R
834	400	BUS REACTOR_400kV_63MVAR_RAIGARH	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
835	220	220KV_Solapur-Kumbhari-1_Line_206 at Solpaur	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP Works.	MSETCL	WRTS-I	R
836	765	ICT2_765/400kv_WARDHA	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For attending Oil leakage from Blanking plate of ICT &installation of backup imedence relay	WRTS-I	WRTS-I	R
837	HVDC	HVDC CWD 30 Q52 at Bhadrawati	20-Dec-18	9:00	20-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
838	765	Reactor alongwith diameter shall be out of service at both end during the outage period of Line.)	20-Dec-18	9:15	20-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
839	400	400kV ICT2 & Parli-1Tie bay _405 at New Parli	20-Dec-18	10:00	20-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
840	765	765kV Gwalior-Jaipur#2 Line at Gwalior with dia to be kept open	20-Dec-18	10:00	20-Dec-18	20:00	Daily	For erection of Line Isolator post Insulator in phase where wave trap are not available	POWERGRID	WR-II	R
841	400	MAIN BUS - 1 @ DEEPNAGAR	20-Dec-18	08:00	20-Dec-18	18:00	Daily	Bus Bar relay Testing and Bus CVT diagnostic testing	MSETCL	MSETCL	Testing work
842	400	PARLI - KUMBHARGAON(NANDED) CKT - 2	20-Dec-18	09:00	20-Dec-18	17:00	Daily	(1) Distance relay testing work. (2) Bay manit. Work. (3) String replacement work at Loc. 878.	MSETCL	MSETCL	-
843	400	KORADI 2-WARDHA PGCIL	20-Dec-18	09:00	20-Dec-18	17:00	Daily	Routine Maintenance & Dignostic testing work , Nut Bolt of jumper Tightning work.	MSETCL	MSETCL	WARORA-IEPL Line is in ckt
844	220	PUSAD - WARDHA (PG)	20-Dec-18	09:00	20-Dec-18	17:00	Daily	For routine maintenance work	MSETCL	MSETCL	maintenance
845	400	LONIKAND2-LONIKAND1 (INTERCONNECTOR) @ LONIKAND 2 2)	20-Dec-18	09:00	20-Dec-18	18:00	Daily	Half yearly maintenance And diagnostic testing	MSETCL	MSETCL	managed by 400 kV Lonikand-II-
846	220	220 KV Transfer Bus Coupler (Bay No. 204) at 400 KV switchyard Marwa.	20-Dec-18	8:30	21-Dec-18	17:30	Continuous	1. Annual Testing of Relays, CT, Circuit Breaker and CVT. 2. Cleaning and Terminal tightness of CT JB, Breaker Mar. Box., and control & relay panel. 3. General Checking, Cleaning & lubrication of operating mechanism of Circuit Breaker & Isolators.	CSPTCL	CSPTCL	R
847	765	765KV D'JAIGARH- CHAMPA-I	20-Dec-18	9:00	21-Dec-18	18:00	Daily	Rectification of shut down nature defects on total 43 locations.	WRTS-1	WRTS-1	
848	765 KV	ICT-1 MAIN BAY-1	20-Dec-18	7:30	22-Dec-18	17:30	Continuous	For PM (ICT-1 Will remain charged through its Tie Bay)	NTPC	NTPC	
849	400	400kV RAIPUR-BHADRAVATI I	20-Dec-18	9:30	22-Dec-18	17:30	Cont.	Outage of Bhadrawati-I Line Reactor is required For Reactor NGR Oil leakage arresting and gasket replacement work. Line outage required only for taking reactor IN/OUT of service. Each operation shall take 10 minutes.	WRTS-I	WRTS-I	R
850	220	Ostro-Bhachau#2 Line at Bhachau	20-Dec-18	8:00	23-Dec-18	18:00	Daily	HV testing of new GIS Bays	OSTRO	WR-II	R
851	220	Ostro-Bhachau#1 Line at Bhachau	20-Dec-18	8:00	27-Dec-18	18:00	Daily	HV testing of new GIS Bays & Bus stability test(in view of GIS both lines 1 & 2 required at a time)	OSTRO	WR-II	R
852	400	FSC#2 of Rajgarh-Kasor#2 Line at Rajgarh	21-Dec-18	10:00	14-Dec-18	17:00	Daily	Annual Maintenance testing of FSC equipments	POWERGRID	WR-II	R
853	400	Kansari-Veluda line at GETCO Kansari SS	21-Dec-18	8:00	21-Dec-18	17:00	Daily	AMP WORK OF LINE TERMINAL EQUIPMENTS PERTAINS TO PGCIL	GETCO	WR-II	R
854	400KV	Bay 408 - Tie bay of Bus Reactor at Sami	21-Dec-18	8:00	21-Dec-18	18:00	Daily	Annual Maintenance of bay equipments	ATIL	ATIL	R
855	400 KV	DGEN 400kV Bus B	21-Dec-18	8:00	21-Dec-18	18:00	Daily	DGEN 400 KV Bus B isolation for Preventive maintenace of 404 89B isolator (GT-51) and 406 89B isolator (Navsari-1).	TPL - DGEN	TPL - DGEN	R
856	400 KV	DGEN 400kV Bay 404 (GT-51)	21-Dec-18	8:00	21-Dec-18	18:00	Daily	Preventive maintenace of 404 89B isolator (GT-51)	TPL - DGEN	TPL - DGEN	R
857	400 KV	DGEN 400kV Bay 406 (Navsari Line-1)	21-Dec-18	8:00	21-Dec-18	18:00	Daily	Preventive maintenace of 406 89B isolator (Navsari Line-1)	TPL - DGEN	TPL - DGEN	R

858	400	Mundra - Kansari Line	21-Dec-18	8:00	21-Dec-18	18:00	Daily	Line Jumper checking	GETCO	GETCO	400 KV Varsana -
859	400	Bus Reactor at CGPL end	21-Dec-18	8:00	21-Dec-18	20:00	Daily	Reactor PM	CGPL	CGPL	R
860	220	220KV Malanpur-Adani	21-Dec-18	9:00	21-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
861	400	400KV Sugen Main Bay- 410 at Vapi	21-Dec-18	9:00	21-Dec-18	17:00	Daily	Bay AMP work. CB &CT	POWERGRID	WR-II	R
862	400	Substation	21-Dec-18	9:00	21-Dec-18	17:00	Daily	AMP of Line Equipments	WRTS-I	WRTS-I	R
863	220	315 MVA ICT-I at Boisar (Dia will be kept open)	21-Dec-18	9:00	21-Dec-18	17:30	Daily	For ICT AMP	POWERGRID	WR-II	R
864	765	Champa PS	21-Dec-18	9:00	21-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
865	220	220KV Pandhurna-Kamleshwar	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
866	400	Tie Bay of ICT # 2 (408) at Dehgam	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
867	220	220kV Shendra-2 Main Bay-209 at Aurangabad	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
868	765	765 kV_MAIN_BUS_1_KOTRA PS	21-Dec-18	9:00	21-Dec-18	18:00	Daily	Erection of equipments	WRTS-I	WRTS-I	C
869	765	65kV ICT1_MAIN BAY (723)_KOTRA PS	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP works.	WRTS-I	WRTS-I	R
870	400	400KV Pune-1 Main Bay (403) at Parli	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP works at Parli	WRTS-I	WRTS-I	R
871	765	765 kV V-Chal-Sasan 2 Line at V-Chal PS	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For Isolator alingnment rectification work(71389L)	ADANI	WR-II	R
872	400	BUS REACTOR_400kV_125MVAR_RAIGARH	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
873	220	220KV_Solapur-Kumbhari-2_Line_207 at Solpaur	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP Works.	MSETCL	WRTS-I	R
874	765	ICT3_765/400kv_WARDHA	21-Dec-18	9:00	21-Dec-18	18:00	Daily	installation of backup imedence relay	WRTS-I	WRTS-I	R
875	765	765kV ICT # 1 & Future Tie bay (702) at Durg PS	21-Dec-18	9:00	21-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
876	765	765 KV SEONI1_MAIN_BAY_704 at Bilaspur PS	21-Dec-18	9:00	21-Dec-18	18:00	Daily	AMP works (Timings, Dew Point, CRM, & DCRM)	WRTS-I	WRTS-I	R
877	765	765KV/400KV ICT-1 at Bina(Dia will be out of service during outage period.)	21-Dec-18	9:15	21-Dec-18	17:30	Daily	For AMP work.	POWERGRID	WR-II	R
878	400	315MVA ICT-I at Shujalpur with dia to be kept open	21-Dec-18	10:00	21-Dec-18	18:00	Daily	Oil leakage attending work. (Dia will be closed after putting equipment out)	POWERGRID	WR-II	R
879	400	400/220 kV ICT#1 at Vadodara with dia to be kept open	21-Dec-18	10:00	21-Dec-18	18:00	Daily	For Backup Imp Relay (In HV Side) Installation & Commissioning for ICT Protection	POWERGRID	WR-II	R
880	400	400kV Parli-1 Main bay _406 at New Parli	21-Dec-18	12:00	21-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
881	220	NALASOPARA - BOISAR PG	21-Dec-18	08:00	21-Dec-18	17:00	Daily	Post monsoon maintenance of the line	MSETCL	MSETCL	required on PGCIL-
882	400	BABHALESHWAR - PADGHE 1	21-Dec-18	08:00	21-Dec-18	18:00	Daily	Diagnostic Testing Work	MSETCL	MSETCL	Testing Work
883	765	BAY 715 (MAIN BAY OF 765KV INDORE VADODARA LINE) AT INDORE PS	21-Dec-18	9:00	22-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
884	765	717 Bay, 765KV V-Chal-2 - BR-2 Tie Bay at Satna	21-Dec-18	9:00	22-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
885	765	765KV BINA_MAIN_BAY_727 at Seoni	21-Dec-18	9:00	22-Dec-18	18:00	Cont.	FOR AMP WORK	WRTS-I	WRTS-I	R
886	400	400kV SEONI-KHANDWA II	21-Dec-18	9:00	24-Dec-18	18:00	Daily	Replacement of porcelain insulators by polymer insulators at NH/Railway crossings at (5-6, 160-161, 162-163,199-200 & 200-201) & Other ckt A/R in Non-auto mode required.	WRTS-II-2	WRTS-I	R
887	400	220kV KORBA(EAST)-BUDDHIPADAR III	21-Dec-18	8:30	30-Dec-18	18:00	Daily	A/R in Non-auto mode for PID works.	WRTS-I	WRTS-I	R
888	220	PUSAD - WARDHA (PG)	21-Dec-18	09:00	31-Dec-18	17:00	Daily	PID Work	MSETCL	MSETCL	shifting of auto reclose switch
889	400	KHARGHAR - TALEGAON (PG) & KALWA - TALEGAON (PGCIL)	21-Dec-18	09:00	31-Dec-18	18:00	Daily	PID Testing work of 400 KV Kalwa-Talegaon & 400KV Kharghar-Talegaon (D/C) line Insulator strings at various locations. Auto-Reclose function to be out of service.	MSETCL	MSETCL	Line will remain in service
890	400	Kansari-Vadavi line at GETCO Kansari SS	22-Dec-18	8:00	22-Dec-18	8:15	Daily	AMP WORK OF LINE TERMINAL EQUIPMENTS PERTAINS TO PGCIL	GETCO	WR-II	R
891	220	220kV Bus-1 at Aurangabad	22-Dec-18	8:00	22-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
892	220	220KV Mahgaon-Adani	22-Dec-18	9:00	22-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
893	220	220KV Bus Coupler Bay (206) at Pune-Talegaon	22-Dec-18	9:00	22-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
894	400	at Boisar	22-Dec-18	9:00	22-Dec-18	17:30	Daily	For Bay AMP	POWERGRID	WR-II	R
895	400	Dia to be kept open	22-Dec-18	9:00	22-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
896	765	765 kV_MAIN_BUS_1_KOTRA PS	22-Dec-18	9:00	22-Dec-18	18:00	Daily	Erection of equipments of Bus sectionalized bay at Kotra.	WRTS-I	WRTS-I	C
897	765	65kV ICT1_MAIN BAY (723)_KOTRA PS	22-Dec-18	9:00	22-Dec-18	18:00	Daily	AMP 2018 - 19	WRTS-I	WRTS-I	R
898	400	ICT1_400/220kv_WARDHA	22-Dec-18	9:00	22-Dec-18	18:00	Daily	AMP work at Wardha end & installation of backup imedence relay	WRTS-I	WRTS-I	R
899	765	Reactor alongwith diameter shall be out of service during the outage period of Bus Reactor-I & II.)	22-Dec-18	9:15	22-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
900	400	400/220 kV ICT#2 at Vadodara with dia to be kept open	22-Dec-18	10:00	22-Dec-18	18:00	Daily	For Backup Imp Relay (In HV Side) Installation & Commissioning for ICT Protection	POWERGRID	WR-II	R
901	765	765kV Warora-1 Main_707 at New Parli	22-Dec-18	14:00	22-Dec-18	16:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
902	220	BORIVALI - TARAPUR	22-Dec-18	08:00	22-Dec-18	17:00	Daily	post monsoon maintenance of the line	MSETCL	MSETCL	-
903	400	RAIGARH SS	22-Dec-18	9:00	26-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
904	400	Jabalpur #4 Tie Bay (408) at Itarsi SS	22-Dec-18	9:00	27-Dec-18	18:00	Cont.	For Overhauling of Operating Mechanism of Circuit Breaker..	POWERGRID	WR-II	C
905	400	413 (400 KV ICT # 3 main bay) at Gwalior	23-Dec-18	10:00	23-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R

906	400	PADGHE - KALWA 1	23-Dec-18	08:00	23-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	-
907	400	MAIN BUS - 1 @ TIRORA	23-Dec-18	08:00	23-Dec-18	21:00	Daily	Testing & Maintenance of Bus Connected Isolator & CVT	APML	APML	
908	400 KV	DGEN 400kV bus A	24-Dec-18	8:00	24-Dec-18	18:00	Daily	DGEN 400 KV Bus A isolation for Preventive maintenace of 404 89A isolator (GT-51) and 406 89A isolator (Navsari-1).	TPL - DGEN	TPL - DGEN	R
909	400 KV	DGEN 400kV Bay 404 (GT-51)	24-Dec-18	8:00	24-Dec-18	18:00	Daily	Preventive maintenace of 404 89A isolator (GT-51)	TPL - DGEN	TPL - DGEN	R
910	400 KV	DGEN 400kV Bay 406 (Navsari Line-1)	24-Dec-18	8:00	24-Dec-18	18:00	Daily	Preventive maintenace of 406 89A isolator (Navsari Line-1)	TPL - DGEN	TPL - DGEN	R
911	220	220kV Bus-2 at Aurangabad	24-Dec-18	8:00	24-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
912	400KV	FSC-1 at Sami Substation	24-Dec-18	8:00	24-Dec-18	20:00	Daily	Annual Maintenance of FSC -1 & its associated equipments	ATIL	ATIL	R
913	400	400kV ICT # 1 Main bay (406) at Pune-Talegaon	24-Dec-18	9:00	24-Dec-18	17:00	Daily	For AMP works	WRTS-I	WRTS-I	R
914	400	Bay No-414 Tie Bay of 400kv Tarapur-Boisar-I Line & ICT-II at Boisar	24-Dec-18	9:00	24-Dec-18	17:30	Daily	For Bay AMP	POWERGRID	WR-II	R
915	220	Navsari-Dastan line no.1	24-Dec-18	9:00	24-Dec-18	18:00	Daily	General bay maint.	PGCIL	GETCO	Requested by
916	400	Main Bay of Sami # 2 (423) at Dehgam	24-Dec-18	9:00	24-Dec-18	18:00	Daily	For AMP work	ADANI	WR-II	R
917	400	BAY 401 (MAIN BAY OF 400KV INDORE PITHAMPUR 1 LINE) AT INDORE PS	24-Dec-18	9:00	24-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
918	400	at Satna	24-Dec-18	9:00	24-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
919	400	kept open	24-Dec-18	9:00	24-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
920	765	DHARAMJAYGARH(KORBA) SS	24-Dec-18	9:00	24-Dec-18	18:00	Daily	AMP WORKS OF BAY	WRTS-I	WRTS-I	R
921	400	400 kV_MAIN_BUS_2_KOTRA PS	24-Dec-18	9:00	24-Dec-18	18:00	Daily	Connection of new bays	WRTS-I	WRTS-I	C
922	765	765KV BILASPUR2_MAIN_BAY_716 at Seoni	24-Dec-18	9:00	24-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
923	400	400KV KOLHAPUR Line Reactor At Solapur.	24-Dec-18	9:00	24-Dec-18	18:00	Daily	AMP WORKS	WRTS-I	WRTS-I	R
924	400	400 KV Aurangabad-1 Main Bay 404 atWardha	24-Dec-18	9:00	24-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
925	400	400 KV Akola-2 Line	24-Dec-18	9:00	24-Dec-18	18:00	Daily	Repacement of 2.5sq.mm cable Copper wire with 16sq.mm connected with CVT HF point	WRTS-I	WRTS-I	R
926	765	765kV ICT # 2 Main bay (706)at Durg PS	24-Dec-18	9:00	24-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
927	765	765 kV Bus - I at Bina	24-Dec-18	9:15	24-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
928	400	400kV Korba-I Main bay at Bhilai SS	24-Dec-18	9:30	24-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
929	765	765kV Warora-2 Main_710 at New Parli	24-Dec-18	10:00	24-Dec-18	12:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
930	765	Bus Reactor at Vadodara with dia to be kept open	24-Dec-18	10:00	24-Dec-18	18:00	Daily	For AMP of Bus Reactor	POWERGRID	WR-II	R
931	220	220 KV Gwalior-Mahalgaon Line # 1 at Gwalior	24-Dec-18	10:00	24-Dec-18	18:00	Daily	For AMP works	POWERGRID	WR-II	R
932	220	TALANDAGE - CHIKODI	24-Dec-18	08:00	24-Dec-18	17:00	Daily	Routine Maintenance & Diagnostic testing work	MSETCL	MSETCL	-
933	400	DHULE- - BABLESHWAR - I & II	24-Dec-18	08:00	24-Dec-18	17:00	Daily	PID testing of insulators	MSETCL	MSETCL	BBLR Ckt-1&2 on Non-Auto
934	400	BABHALESHWAR - PADGHE 1	24-Dec-18	09:00	24-Dec-18	17:00	Daily	Quarterly Maintenance work & Servicing and allignment of PG isolators work	MSETCL	MSETCL	Babhaleshwar-Padghe-Ckt-2
935	765	712 LR (AKOLA CKT - 2) REACTOR @ KORADI 3	24-Dec-18	09:00	24-Dec-18	18:00	Daily	Annual Maintenance of Reactor & related equipments	MEGPTCL	MEGPTCL	
936	220	Bus#1 at Bhachau	24-Dec-18	8:00	25-Dec-18	18:00	Daily	For Linking of existing GIS bus with new GIS Bus & bus bar Stability testing	POWERGRID	WR-II	R
937	400	RAIGARH SS	24-Dec-18	9:00	27-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
938	400 KV	DGEN 400kV bus A	25-Dec-18	8:00	25-Dec-18	18:00	Daily	DGEN 400 KV Bus A isolation for Preventive maintenace of 411 89A isolator (ICT-3) and 413 89A isolator (Bus coupler).	TPL - DGEN	TPL - DGEN	R
939	400 KV	DGEN 400kV Bay 411(ICT-3)	25-Dec-18	8:00	25-Dec-18	18:00	Daily	Preventive maintenace of 411 89A isolator (ICT-3)	TPL - DGEN	TPL - DGEN	R
940	400 KV	DGEN 400kV Bay 413 (BUS COUPLER)	25-Dec-18	8:00	25-Dec-18	18:00	Daily	Preventive maintenace of 413 89A isolator (400KV BUS COUPLER)	TPL - DGEN	TPL - DGEN	R
941	400	Chorania-Bhachau Line	25-Dec-18	8:00	25-Dec-18	18:00	Daily	Conditioning monitoring work at 400KV Chorania S/s.	GETCO	Powergrid	R
942	220	Navsari-Dastan line no.2	25-Dec-18	9:00	25-Dec-18	18:00	Daily	General bay maint.	PGCIL	GETCO	Requested by
943	400 kV	400 kv D/C Parli - Pune (GIS)	25-Dec-18	6:00	26-Dec-18	20:00	Daily	Power line crossing of 400 kV D/C Parli - Pune at tower loc. no. 658 & 659 by 765 KV D/C LILO Aurangabad - Padghe Line	WRTMPL	CWRTL	C
944	400 KV	DGEN 400kV bus A	26-Dec-18	8:00	26-Dec-18	18:00	Daily	DGEN 400KV Bus A isolation for Preventive maintenance of 403 89A (Vaghodiya line-1) and 405 89A isolator (Navsari line-2).	TPL - DGEN	TPL - DGEN	R
945	400 KV	DGEN 400kV Bay 403 (Vaghodiya line-1)	26-Dec-18	8:00	26-Dec-18	18:00	Daily	Preventive maintenance of 403 89A isolator (Vaghodiya line-1)	TPL - DGEN	TPL - DGEN	R
946	400 KV	DGEN 400kV Bay 405 (Navsari line-2)	26-Dec-18	8:00	26-Dec-18	18:00	Daily	Preventive maintenance of 405 89A isolator (Navsari line-2).	TPL - DGEN	TPL - DGEN	R
947	400	Kansari Kankroli	26-Dec-18	8:00	26-Dec-18	18:00	Daily	Bay maint	GETCO	GETCO	
948	400KV	FSC-2 at Sami Substation	26-Dec-18	8:00	26-Dec-18	20:00	Daily	Annual Maintenance of FSC -2 & its associated equipments	ATIL	ATIL	R
949	400	400kV Aurangabad-Boisar # 1 at Boisar	26-Dec-18	9:00	26-Dec-18	9:30	Daily	To take out L/R for AMP work at Boisar	POWERGRID	WR-II	R

950	400	400KV ICT-5 Main Bay (429) at Champa PS	26-Dec-18	9:00	26-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
951	400	Veloda Vadavi	26-Dec-18	9:00	26-Dec-18	18:00	Daily	Bay maintenance & CM work	GETCO	GETCO	R
952	220	Navsari-Nashik line no.1	26-Dec-18	9:00	26-Dec-18	18:00	Daily	General bay maint.	GETCO	GETCO	Requested by
953	400	400kV BUS # 1	26-Dec-18	9:00	26-Dec-18	18:00	Daily	For Isolator retrofitting work(40689A)	POWERGRID	WR-II	C
954	400	BAY 414 (TIE BAY OF 400KV BR - II AND 765KV ICT II) AT INDORE PS	26-Dec-18	9:00	26-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
955	400	413) at Jabalpur	26-Dec-18	9:00	26-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
956	765	400 kV_MAIN_BUS_2_KOTRA PS	26-Dec-18	9:00	26-Dec-18	18:00	Daily	Connection of new bays	WRTS-I	WRTS-I	C
957	400	423 Vchal 2 Tie Bay V-Chal PS	26-Dec-18	9:00	26-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
958	220	220KV Line #5 (GED) Main Bay 210 at Mapusa	26-Dec-18	9:00	26-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
959	220	220KV Bus-2 at Solapur	26-Dec-18	9:00	26-Dec-18	18:00	Daily	AMP WORKS	WRTS-I	WRTS-I	R
960	400	400kV BHILAI-KORADI	26-Dec-18	9:00	26-Dec-18	18:00	Daily	along with Bays for AMP work at Koradi end	WRTS-I	WRTS-I	R
961	765	765kV Kotra #1 Main bay (710) at Durg PS	26-Dec-18	9:00	26-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
962	765	765 kV Bus - II at Bina	26-Dec-18	9:15	26-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation.	POWERGRID	WR-II	C
963	400	Boisar-I at Boisar	26-Dec-18	9:30	26-Dec-18	17:00	Daily	AMP of L/R at Boisar	POWERGRID	WR-II	R
964	400	400kV Raipur Main bay at Bhilai SS	26-Dec-18	9:30	26-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
965	220	220KV Annupur-Kotmikala-I	26-Dec-18	10:00	26-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
966	400	Gandhar- Navsari 2	26-Dec-18	10:00	26-Dec-18	18:00	Daily	CB Drive testing and Bay AMP works at Navsari GIS, Attending S/D Nature Defects on 400kV Gandhar-Nav#2, required simultaneously S/D of 400kV Nav-Magarwada#2 to facilitate work on Take Off Tower Location No 04	POWERGRID	WR-II	R
967	400	Navsari Magarwada 2	26-Dec-18	10:00	26-Dec-18	18:00	Daily		POWERGRID	WR-II	R
968	400	Vadodara-Asoj#2(A/R of Vadodara-Asoj#1 shall be in Non-auto mode)	26-Dec-18	10:00	26-Dec-18	18:00	Daily	All AMP Activities of terminal equipments & shutdown related TL O&M works.	POWERGRID	WR-II	R
969	400	414 (Tie bay of 400 KV ICT # 3) at Gwalior	26-Dec-18	10:00	26-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R
970	765	Parli	26-Dec-18	12:00	26-Dec-18	14:00	Daily	NTAMC/REMOTE OPERATION SIGNAL TESTING	WRTS-I	WRTS-I	C
971	400	400kV Aurangabad-Boisar # 1	26-Dec-18	17:00	26-Dec-18	17:30	Daily	To charge Line without L/R at Boisar end.	POWERGRID	WR-II	R
972	400	CKT - 1	26-Dec-18	08:00	26-Dec-18	17:00	Daily	Polymer Insulator string Replacement	MSETCL	MSETCL	Insulator
973	400	BABHALESHWAR - PADGHE 2	26-Dec-18	09:00	26-Dec-18	17:00	Daily	Quarterly Maintenance work & Servicing and allignment of PG isolators work	MSETCL	MSETCL	Babhaleshwar-Padghe-Ckt-1
974	400	BUS - 1 @ AKOLA 2	26-Dec-18	09:00	26-Dec-18	18:00	Daily	Bus Bar Equipments Maintenance Activity	MEGPTCL	MEGPTCL	
975	220	JEUR - SOLAPUR PG	26-Dec-18	10:00	26-Dec-18	16:00	Daily	Quarterly maintenance work & diagnostic testing work	MSETCL	MSETCL	required for QM work &
976	400	MAIN BAY (406) OF PGCIL @ LAMBOTI	26-Dec-18	10:00	26-Dec-18	18:00	Continuous	Diagnostic Testing Work	MSETCL	MSETCL	managed on 400KV
977	400 KV	VSTPS end	26-Dec-18	7:30	27-Dec-18	17:30	Continuous	ANNUAL BAY MAINTENANCE AND RECTFICATION OF HOT SPOT	WRTS-1	NTPC	
978	220	Bus#2 at Bhachau	26-Dec-18	8:00	27-Dec-18	18:00	Daily	For Linking of existing GIS bus with new GIS Bus & bus bar Stability testing	POWERGRID	WR-II	R
979	765	707 Bay, 765KV Sasan -2 main Bay at Satna	26-Dec-18	9:00	27-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
980	400	400kV AKOLA-2 LR at Aurangabad	26-Dec-18	9:00	27-Dec-18	18:00	Daily	For Neutral Bushing replacement works, Line outage required for 15 min for Take out/take in non switchable line reactor at A'bad end.	WRTS-I	WRTS-I	R
981	400KV	Jhanor-Hazira Line (bay 410)	26-Dec-18	8:00	28-Dec-18	18:00	Continuos	Annual Bay Maintenance	PGCIL	NTPC	
982	220	Navsari- Navsari II at GETCO Navsari	26-Dec-18	10:00	30-Dec-18	18:00	Cont.	03 nos CB Replacement work and at GETCO Navsari End	POWERGRID	WR-II	C
983	400 KV	No. 19) at VSTPS end	26-Dec-18	7:30	31-Dec-18	17:30	Continuous	ANNUAL MAINTENANCE & ATTENDING OIL LEAKAGE	NTPC	NTPC	
984	400 KV	DGEN 400kV Bus A	27-Dec-18	8:00	27-Dec-18	18:00	Daily	DGEN 400 KV Bus A isolation for Preventive maintenance of 401 89A (DGEN 400 KV Bus Reactor) and 402 89A isolator (Vaghodiya line-2).	TPL - DGEN	TPL - DGEN	R
985	400 KV	DGEN 400kV Bay 401 (Bus Reactor)	27-Dec-18	8:00	27-Dec-18	18:00	Daily	Preventive maintenance of 401 89A (DGEN 400 KV Bus Reactor) isolator.	TPL - DGEN	TPL - DGEN	R
986	400 KV	DGEN 400kV Bay 402 (Vaghodiya line-2)	27-Dec-18	8:00	27-Dec-18	18:00	Daily	Preventive maintenance of 402 89A isolator (Vaghodiya line-2).	TPL - DGEN	TPL - DGEN	R
987	400	Kansari Bhinmal	27-Dec-18	8:00	27-Dec-18	18:00	Daily	Bay maint	GETCO	GETCO	R
988	220	Bhachau-Morbi Line at Bhachau	27-Dec-18	8:00	27-Dec-18	18:00	Daily	Installation of SEM meter	OSTRO	WR-II	R
989	400	400kV Aurangabad-Boisar # 2	27-Dec-18	9:00	27-Dec-18	9:30	Daily	To take out L/R for AMP work at Boisar	POWERGRID	WR-II	R
990	400	Bus Reactor #1 Main Bay (416) at Itarsi SS	27-Dec-18	9:00	27-Dec-18	16:00	Daily	For AMP Works	POWERGRID	WR-II	R
991	400	400KV ICT-6 Main Bay (430) at Champa PS	27-Dec-18	9:00	27-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
992	220	Navsari-Nashik line no.2	27-Dec-18	9:00	27-Dec-18	18:00	Daily	General bay maint.	GETCO	GETCO	Requested by
993	400	INDORE PS	27-Dec-18	9:00	27-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
994	220	220KV Line #6 (GED) Main Bay 211 at Mapusa	27-Dec-18	9:00	27-Dec-18	18:00	Daily	For AMP works	WRTS-1	WRTS-I	R
995	765	2_SOLAPUR	27-Dec-18	9:00	27-Dec-18	18:00	Daily	AMP WORKS	WRTS-I	WRTS-I	R

996	400	412) at Jabalpur	27-Dec-18	9:00	27-Dec-18	18:00	Daily	AMP	POWERGRID	WR-II	R
997	400	400kV KORADI-SATPURA	27-Dec-18	9:00	27-Dec-18	18:00	Daily	Replacement of B Phase Wave trap at koradi end	WRTS-I	WRTS-I	R
998	400	425 Vchal 4 Main Bay V-Chal PS	27-Dec-18	9:00	27-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
999	765	alongwith diameter shall be out of service during the outage period of ICT-I.)	27-Dec-18	9:15	27-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina..	POWERGRID	WR-II	C
1000	400	Boisar-II at Boisar	27-Dec-18	9:30	27-Dec-18	17:00	Daily	AMP of L/R at Boisar	POWERGRID	WR-II	R
1001	400	400kV Bhatapara main bay at Bhilai SS	27-Dec-18	9:30	27-Dec-18	17:30	Daily	New isolator motorised operation checking and limit switch setting	WRTS-I	WRTS-I	R
1002	400	Gandhar-Kosamba	27-Dec-18	10:00	27-Dec-18	17:00	Daily	line AMP work.	POWERGRID	WR-II	R
1003	765	Line) at Gwalior	27-Dec-18	10:00	27-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R
1004	400	400kV Aurangabad-Boisar # 2	27-Dec-18	17:00	27-Dec-18	17:30	Daily	To charge Line without L/R at Boisar end.	POWERGRID	WR-II	R
1005	400	CHANDRAPUR 2- KUMBHARGAON (NANDED) CKT - 1	27-Dec-18	08:00	27-Dec-18	17:00	Daily	For Polymer Insulator string replacement	MSETCL	MSETCL	Insulator string
1006	765	765/400kV 1500MVA ICT-1 @ KORADI 3	27-Dec-18	08:00	27-Dec-18	18:00	Daily	Annual Maintenance of ICT and related equipments	MEGPTCL	MEGPTCL	
1007	400	B BUS @ NAGOTHANE	27-Dec-18	08:00	27-Dec-18	18:00	Daily	various bay pg isolator overhauling	MSETCL	MSETCL	NIL
1008	400	MAIN BUS - 2 @ DEEPNAGAR	27-Dec-18	08:00	27-Dec-18	18:00	Daily	Bus Bar relay Testing and Bus CVT diagnostic testing	MSETCL	MSETCL	Testing work
1009	400	TBC @ CHAKAN	27-Dec-18	09:00	27-Dec-18	18:00	Daily	Half yrly maintenance & testing activities	MSETCL	MSETCL	-
1010	400	@ TIRORA	27-Dec-18	09:00	27-Dec-18	18:00	Daily	Testing and maintenance of breaker	ATIL	ATIL	
1011	400	1 @ LONIKAND 1	27-Dec-18	10:00	27-Dec-18	17:00	Daily	Line Maintenance & Routine Dignostic testing work	MSETCL	MSETCL	-
1012	400	KOLHAPUR - SOLAPUR (PG) CKT - 2	27-Dec-18	10:00	27-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	-
1013	765 KV	BUS Sectionalizer 2&4 Bay-17	27-Dec-18	7:30	29-Dec-18	17:30	Continuous	For PM	NTPC	NTPC	
1014	400	Varsana - Hadala	28-Dec-18	8:00	28-Dec-18	18:00	Daily	Replacement of L-Clamps of Fix contact of 89A	GETCO	GETCO	R
1015	400	Varsana Kansari	28-Dec-18	8:00	28-Dec-18	18:00	Daily	Replacement of L-Clamps of Fix contact of 89A	GETCO	GETCO	R
1016	400	Veloda Kansari-1	28-Dec-18	8:00	28-Dec-18	18:00	Daily	BAY MAINTENANCE/CONDITIONING MONITORING	GETCO	GETCO	R
1017	400	Transfer Bus Kansari	28-Dec-18	8:00	28-Dec-18	18:00	Daily	Bay maint	GETCO	GETCO	R
1018	400	Main BUS-1 Varsana	28-Dec-18	8:00	28-Dec-18	18:00	Daily	Testing & Conditioning monitoring work	GETCO	GETCO	R
1019	220	Bhachau-lalpar Line at Bhachau	28-Dec-18	8:00	28-Dec-18	18:00	Daily	Installation of SEM meter	OSTRO	WR-II	R
1020	400	TRANSFORMER	28-Dec-18	8:00	28-Dec-18	21:00	Daily	For Bus Reactor controlling through STATCOM.	WRTS-I	WRTS-I	C
1021	400	BUS REACTOR_400kV_63MVAR_SOLAPUR	28-Dec-18	8:00	28-Dec-18	21:00	Daily	For Bus Reactor controlling through STATCOM.	WRTS-I	WRTS-I	C
1022	400	400KV Rajgarh-SSP-I	28-Dec-18	9:00	28-Dec-18	17:00	Daily	Tightening/removing of loose vibration damper & other line maintenance work	MPPTCL	MPPTCL	R
1023	765	765KV Bus -1B at Champa PS	28-Dec-18	9:00	28-Dec-18	17:30	Daily	For Bus extension work for commissioning 765kV Bus Reactor-2	WRTS-I	WRTS-I	C
1024	400	BUS REACTOR_400kV_125MVAR_SEONI	28-Dec-18	9:00	28-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
1025	400	INDORE LINE 1) AT INDORE PS	28-Dec-18	9:00	28-Dec-18	18:00	DAILY	BAY AMP WORKS	POWERGRID	WR-II	R
1026	400	BUS REACTOR_400kV_50MVAR_WARDHA	28-Dec-18	9:00	28-Dec-18	18:00	Daily	AMP work at Wardha end	WRTS-I	WRTS-I	R
1027	765	765kV Kotra-1 & BR Tie bay (711) at Durg PS	28-Dec-18	9:00	28-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
1028	400	426 V-chal 4 Tie Bay at V-Chal PS	28-Dec-18	9:00	28-Dec-18	18:00	Daily	For AMP work	POWERGRID	WR-II	R
1029	765	alongwith diameter shall be out of service at both end during the outage period of Line.)	28-Dec-18	9:15	28-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
1030	400	Ukai- Navsari	28-Dec-18	10:00	28-Dec-18	17:00	Daily	Bay AMP works at Navsari GIS, Attending S/D Nature Defects on 400kV Ukai Kosamba, required simultaneously S/D of 400kV Nav-Magarwada#2 to facilitate work on Take Off Tower Location No 02	POWERGRID	WR-II	R
1031	400	Navsari Magarwada 2	28-Dec-18	10:00	28-Dec-18	17:00	Daily		POWERGRID	WR-II	R
1032	765	BUS REACTOR_765kV_330MVAR_PARLI _PPTL	28-Dec-18	10:00	28-Dec-18	18:00	Daily	CSD commissioning at Parli(New)	WRTS-I	WRTS-I	C
1033	220	BUS - I at Vadodara	28-Dec-18	10:00	28-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
1034	220	220 KV Gwalior-Mahalgaon Line # 2 at Gwalior	28-Dec-18	10:00	28-Dec-18	18:00	Daily	For AMP works	POWERGRID	WR-II	R
1035	400	Bus Reactor #1 Tie bay(415) at Itarsi SS	28-Dec-18	16:00	28-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
1036	400	DHULE - SSNNL I alongwith A/R switch of SSNNL-2 to be kept on non-auto mode	28-Dec-18	08:00	28-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	
1037	400	BUS - 2 @ AKOLA 2	28-Dec-18	09:00	28-Dec-18	18:00	Daily	Bus Bar Equipments Maintenance Activity	MEGPTCL	MEGPTCL	
1038	400	CKT - 2	28-Dec-18	10:00	28-Dec-18	18:00	Daily	DCRM measurement	MSETCL	MSETCL	-
1039	765	710 Bay, 765KV BR-1 main Bay at Satna	28-Dec-18	9:00	29-Dec-18	18:00	Daily	AMP Work	POWERGRID	WR-II	R
1040	400 KV	DGEN Bay 411 ICT 3 - energization	28-Dec-18	10:00	29-Dec-18	18:00	Continuous	ICT 3 routine energisation testing during rsd and shutdown for energy conservation	TPL - DGEN	TPL - DGEN	R
1041	400 KV	DGEN 400kV Bay 402 Waghodiya -2	28-Dec-18	8:00	31-Dec-18	18:00	Continuous	Preventive maintenace of isolator 402 89C, 89D and breaker. Bay 402 outage required	TPL - DGEN	TPL - DGEN	R
1042	220	Bhachau-Charvada#2 Line at Bhachau	29-Dec-18	8:00	29-Dec-18	18:00	Daily	Installation of SEM meter	OSTRO	WR-II	R
1043	400	Jabalpur #1 Tie Bay(402) at Itarsi SS	29-Dec-18	9:00	29-Dec-18	16:00	Daily	For AMP Works	POWERGRID	WR-II	R

1044	400	400KV Rajgarh-SSP-II	29-Dec-18	9:00	29-Dec-18	17:00	Daily	Tightening/removing of loose vibration damper & other line maintenance work	MPPTCL	MPPTCL	R
1045	765	765KV Bus -2B at Champa PS	29-Dec-18	9:00	29-Dec-18	17:30	Daily	For Bus extension work for commissioning 765kV Bus Reactor-2	WRTS-I	WRTS-I	C
1046	400	400KV Bhopal 1 Tie CB of PG Itarsi at 400KV	29-Dec-18	9:00	29-Dec-18	18:00	Daily	Testing work after replacement of CB. Line will be under shutdown	MPPTCL	MPPTCL	R
1047	400	Seoni	29-Dec-18	9:00	29-Dec-18	18:00	Daily	FOR AMP WORK	WRTS-I	WRTS-I	R
1048	765	765KV Bus-2 at Solapur	29-Dec-18	9:00	29-Dec-18	18:00	Daily	AMP WORKS	WRTS-I	WRTS-I	R
1049	765	BUS REACTOR_765kV_330MVAR_WARDHA	29-Dec-18	9:00	29-Dec-18	18:00	Daily	For connection of newly 765 KV Auxilliary bus and 145v kv neutral bus of spare bus reactor to existing 765 kv auxilliary end 145 kv neutral bus	WRTS-I	WRTS-I	R
1050	400	400 KV INDORE-ASOJ # 1 LINE at Indore MPPTCL	29-Dec-18	9:00	29-Dec-18	18:00	DAILY	ONLINE CODE FOR RETROFITTNG OF OLD ANALOG PLCC PANEL WITH DIGITAL PLCC PANEL	POWERGRID	WR-II	C
1051	765	alongwith diameter shall be out of service during the outage period of ICT-2.)	29-Dec-18	9:15	29-Dec-18	17:30	Daily	For replacement of suspension/pilot string in Substation at Bina.	POWERGRID	WR-II	C
1052	400 kV	400 kV Talegaon - Chakan	29-Dec-18	10:00	29-Dec-18	12:00	Daily	Major maintenance activities in transmission line	WTPL	WTPL	R
1053	220	BUS - II at Vadodara	29-Dec-18	10:00	29-Dec-18	18:00	Daily	For AMP Works	POWERGRID	WR-II	R
1054	765	712 (765 KV Bina # 1 main bay) at Gwalior	29-Dec-18	10:00	29-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R
1055	400 kV	400 kV Talegaon - Kharghar	29-Dec-18	14:00	29-Dec-18	16:00	Daily	Major maintenance activities in transmission line	WTPL	WTPL	R
1056	400	DHULE - SSNNL II alongwith A/R switch of SSNNL-1 to be kept on non-auto mode	29-Dec-18	08:00	29-Dec-18	18:00	Daily	Routine Maintenance work	MSETCL	MSETCL	
1057	400	EKTUNI - BABLESHWAR CKT 2	29-Dec-18	09:00	29-Dec-18	17:00	Daily	Quarterly Maintenance work & Servicing and allignment of PG isolators work	MSETCL	MSETCL	Auragabad ,Bhusawal
1058	400	400KV ICT-6 Tie Bay (431) at Champa PS	30-Dec-18	9:00	30-Dec-18	17:30	Daily	For AMP/Warranty Tests	WRTS-I	WRTS-I	R
1059	400	400 KV ITARSI-INDORE # 2 LINE at Indore MPPTCL	30-Dec-18	9:00	30-Dec-18	18:00	DAILY	ONLINE CODE FOR RETROFITTNG OF OLD ANALOG PLCC PANEL WITH DIGITAL PLCC PANEL	POWERGRID	WR-II	C
1060	400 kV	400 kV Talegaon - Kalwa	30-Dec-18	10:00	30-Dec-18	12:00	Daily	Major maintenance activities in transmission line	WTPL	WTPL	R
1061	400 kV	400KV Talegaon - Lonikand	30-Dec-18	10:00	30-Dec-18	12:00	Daily	Major maintenance activities in transmission line	WTPL	WTPL	R
1062	220	BOISAR II - PGCIL 3	30-Dec-18	08:00	30-Dec-18	17:00	Daily	Post monsoon maintenance of the line	MSETCL	MSETCL	-
1063	400	KALWA - TALEGAON (PGCIL)	30-Dec-18	08:00	30-Dec-18	18:00	Daily	Routine Maintenance & Dignostic testing work	MSETCL	MSETCL	-
1064	220	Bhachau-Charvada#1 Line at Bhachau	31-Dec-18	8:00	31-Dec-18	18:00	Daily	Installation of SEM meter	OSTRO	WR-II	R
1065	400KV	400 KV Sami - Mundra Line 2	31-Dec-18	8:00	31-Dec-18	20:00	Daily	Annual Maintenance of Line bay equipments, Isolator Contact Tips & Protection Relay Testing	ATIL	ATIL	R
1066	765	765kV BR Main bay (712) at Durg PS	31-Dec-18	9:00	31-Dec-18	18:00	Daily	For AMP works	WRTS-I	WRTS-I	R
1067	220	220KV Annupur-Kotmikala-II	31-Dec-18	10:00	31-Dec-18	17:00	Daily	For line maintenance work	MPPTCL	MPPTCL	R
1068	765	715 (765 KV Bina # 2 main bay) at Gwalior	31-Dec-18	10:00	31-Dec-18	18:00	Daily	AMP WORKS	POWERGRID	WR-II	R
1069	400	Itarsi-Jabalpur #2 Line at Itarsi SS	31-Dec-18	18:00	31-Dec-18	18:15	Daily	For taking Line Reactor into service after Overhauling of Reactor at Itarsi end.	POWERGRID	WR-II	C
1070	400	A BUS @ NAGOTHANE	31-Dec-18	08:00	31-Dec-18	18:00	Daily	various bay pg isolator overhauling	MSETCL	MSETCL	NIL

अनुलग्नक 3.3

नवम्बर 2018 और दिसम्बर 2018 माह के लिये अपेक्षित मांग एवं ऊर्जा की आवश्यकता

Anticipated demand and energy for the month of NOVEMBER 2018 AND DECEMBER 2018

राज्य	State	मांग DEMAND मेगावाट (MW)		ऊर्जा की आवश्यकता ENERGY REQUIREMENT मिलियन युनिटस	
		नवम्बर 2018 NOVEMBER 2018	दिसम्बर 2018 DECEMBER 2018	नवम्बर 2018 NOVEMBER 2018	दिसम्बर 2018 DECEMBER 2018
1 गुजरात	**GUJARAT**				
सीमित	RESTRICTED	17500	16000	11640	10790
असीमित	UNRESTRICTED	17525	16525	11650	10800
2 मध्य प्रदेश	**MADHYA PRADESH**				
सीमित	RESTRICTED	11500	12000	7285	7900
असीमित	UNRESTRICTED	11500	12000	7285	7900
3 छत्तीसगढ़	**CHHATISGARH**				
सीमित	RESTRICTED	4550	3619	2591	1862
असीमित	UNRESTRICTED	4550	3619	2591	1862
4 महाराष्ट्र	**MAHARASHTRA**				
सीमित	RESTRICTED	24900	23950	15450	14550
असीमित	UNRESTRICTED	24950	24000	15500	14600
5 गोवा	**GOA**				
सीमित	RESTRICTED	520	525	330	335
असीमित	UNRESTRICTED	530	525	342	335
6 दमन दीव	**DD**				
सीमित	RESTRICTED	345	340	210	215
असीमित	UNRESTRICTED	345	340	219	215
7 डी एन एच	**DNH**				
सीमित	RESTRICTED	820	815	536	540
असीमित	UNRESTRICTED	820	815	540	545
8 पश्चिम क्षेत्र	**WESTERN REGION**				
सीमित	RESTRICTED	52800	53500	32759	34500
असीमित	UNRESTRICTED	59000	53800	33000	34600

अनुलग्नक 4.1

Unit -wise Actual generation for the month of OCTOBER 2018 अक्टोबर 2018

कमांक Sr. No.	स्टेशन का नाम Station Name	Actual वास्तविक ऊर्जा Energy (MUs)	चरम Peak (Mw)	Auxillary Consumption (MUs)
	UKAI(H) - 1	21.06	75	
	UKAI(H) - 2	0.00	0	
	UKAI(H) - 3	13.92	75	
	UKAI(H) - 4	0.00	0	0.00
	UKAI(TOTAL)	**34.98**	**150**	**0.2998**
	UKAI LBCH - 1	0.86	2	
	UKAI LBCH - 2	0.80	2	0.00
	UKAI LBCH (TOTAL)	**1.65**	**4**	**0.03**
	KADANA - 1	16.83	60	
	KADANA - 2	8.09	60	
	KADANA - 3	0.37	57	
	KADANA - 4	3.85	61	0.00
	KADANA (TOTAL)	**29.15**	**238**	**0.05**
	PANAM	0.30	1	0.01
	Madhuban Dam (Hy.)-1	1.02	2	
	Madhuban Dam (Hy.)-2	0.64	1	
	Madhuban Dam (Hy.)-3	0.00	0	0.01
	AREVA HY(KARJAN)	2.31	3	0.00
	Ajanta hy (DOLATPURA)-1	0.88	4	
	Ajanta hy (DOLATPURA)-2	1.76	4	
	Ajanta hy (DOLATPURA)-3	1.55	4	0.01
	SMALL HYDRO	**8.48**	**20**	**0.03**
	SSP RBPH-1	0.00	0	0.00
	SSP RBPH-2	0.00	0	0.00
	SSP RBPH-3	0.00	0	0.00
	SSP RBPH-4	0.00	0	0.00
	SSP RBPH-5	0.00	0	0.00
	SSP RBPH-6	0.00	0	0.00
	SSP-CHPH-1	19.91	49	0.30
	SSP-CHPH-2	22.11	50	0.33
	SSP-CHPH-3	16.32	49	0.24
	SSP-CHPH-4	19.66	51	0.29
	SSP-CHPH-5	21.71	50	0.33
	SSP (TOTAL) *	**99.71**	**249**	**1.50**
	SSP GUVNL Share	**15.95**	**40**	**0.24**
	GUJARAT TOTAL (HYDRO)	**90.21**	**452**	**414.81**
	THERMAL(GUJARAT)			
	Torrent Power Ltd.- D	83.24	123	7.09
	Torrent Power Ltd.- E	89.33	123	7.05
	Torrent Power Ltd.- F	89.60	123	7.40
	TOTAL TP AHMEDABAD	**262.17**	**369**	**21.54**
	DGB - GT1	0.00	0	
	DGB - STG1	0.00	0	0.38
	DGB - GT2	25.07	89	
	DGB - STG2	11.06	0	2.11

	DGB - GT3	45.49	0	
	DGB - STG3	25.21	0	2.83
	TOTAL DHUVARAN	**106.82**	**89**	**5.33**
	UKAI-3	69.18	202	7.72
	UKAI-4	110.82	204	10.34
	UKAI-5	142.76	212	13.26
	UKAI-6	370.47	508	21.74
	TOTAL UKAI	**693.24**	**1126**	**53.06**
	GANDHINAGAR -3	123.96	216	12.10
	GANDHINAGAR -4	151.30	217	15.29
	GANDHINAGAR -5	156.21	217	14.17
	TOTAL GANDHINAGAR	**431.47**	**650**	**41.56**
	WANAKBORI -1	44.11	213	
	WANAKBORI -2	146.69	215	
	WANAKBORI -3	146.73	217	
	WANAKBORI -4	144.50	214	
	WANAKBORI -5	152.65	214	
	WANAKBORI -6	147.06	216	
	WANAKBORI -7	154.25	216	
	TOTAL WANAKBORI	**935.99**	**1505**	**77.46**
	UGPP GT-4	88.54	235	
	UGPP STG-2	57.14	143	3.44
	TOTAL UTRAN	**145.67**	**378**	3.44
	SIKKA - 3	158.22	253	14.10
	SIKKA - 4	163.62	253	14.37
	TOTAL SIKKA	**321.84**	**505**	28.47
	Akrimota Linite-1	55.73	104	10.15
	Akrimota Linite-2	41.12	99	7.73
	TOTAL Akrimota Lignite	**96.86**	**203**	17.88
	Kutch Lig.-1	27.29	63	4.33
	Kutch Lig.-2	33.86	72	5.13
	Kutch Lig.-3	27.79	77	3.32
	Kutch Lig.-4	32.26	59	6.94
	TOTAL Kutch Lig	**121.20**	**271**	19.72
	GIPCL - GT 1	10.92	32	
	GIPCL - GT 2	12.05	31	
	GIPCL - GT 3	9.13	27	
	GIPCL - ST 1	19.05	33	
	GIPCL - GT 4	0.00	0	
	GIPCL - ST 2	0.00	0	
	TOTAL GIPCL	**51.15**	**123**	1.49
	SURAT - LIG1	89.40	127	8.30
	SURAT - LIG 2	80.71	128	8.46
	SURAT - LIG 3	61.09	128	6.49
	SURAT - LIG 4	90.96	129	9.47
	Total SURAT -LIG	**322.16**	**512**	32.72
	EPGL1	0.00	0	0.79
	EPGL 2	0.00	0	0.10
	TOTAL ESSAR	**0.00**	**0**	0.89
	CLPIPL GT1	4.88	140	0.61
	CLPIPL GT2	18.63	146	0.18

	CLPIPL GT3	26.54	150	0.56
	CLPIPL STG	17.31	220	0.00
	TOTAL CLPIPL	**67.36**	**657**	1.35
	GSEG 1	7.45	48	
	GSEG 2	2.24	44	
	GSEG STG	5.12	48	0.68
	GSEG -II GT 1	78.30	234	0.00
	GSEG -II STG	46.53	126	3.95
	TOTAL GSEG	**139.65**	**500**	4.62
	Sugen (GT 1)	194.18	384	
	Sugen (GT 2)	195.96	388	
	Sugen (GT 3)	193.07	365	12.10
	Uno Sugen	0.00	0	0.47
	TOTAL SUGEN	**583.22**	**1137**	17.19
	APL 1	239.66	341	0.00
	APL 2	235.57	357	0.00
	APL 3	244.01	349	0.00
	APL 4	245.03	345	0.00
	APL 5	32.05	668	0.00
	APL 6	0.00	0	0.00
	APL 7	393.06	649	0.00
	APL 8	465.43	683	0.00
	APL 9	455.77	667	0.00
	TOTAL APMuL	**2310.59**	**4059**	169.81
	OPGS GT1	104.31	153	9.36
	OPGS GT2	110.68	154	9.15
	TOTAL OPGS	**214.98**	**307**	18.51
	BECL 1	10.88	133	4.09
	BECL 2	19.72	94	8.31
	TOTAL BECL	**30.60**	**226**	12.40
	GPPC GT1	58.86	237	
	GPPC STG1	36.54	127	3.46
	GPPC GT2	39.31	237	
	GPPC STG2	23.12	128	2.57
	TOTAL GPPC	**62.43**	**364**	2.57
	OTHER CPP	**10.84**	**15**	0.00
	TOTAL CPP	**73.27**	**379**	2.57
	GUJARAT TOTAL (Th.)	**6970.66**	**13359**	532.56
				0.00
	GUVNL TOTAL (H+T)	**7060.87**	**13811**	532.98
	WIND ENERGY	302.68	420	6.05
	SOLAR ENERGY	204.49	284	4.09
	BIO -MASS ENERGY	7.41	10	0.15
	GUJARAT TOTAL RES	**514.58**	**715**	**10.29**
	GUVNL TOTAL (H+T+RES)	**7575.45**	**14526**	**532.99**
	MADHYA PRADESH			
	H Y D R O			
	G.' SAGAR	0.00	0	0.09
	R.P.SAGAR	27.00	0	0.03

	J.' SAGAR	19.48	66	0.02
	TOTAL CHAMBAL(100%)	**46.48**	**66**	**0.14**
	MP CHAMBAL SHARE (50%)	**23.24**	**33**	**0.07**
	PENCH	49.65	157	0.07
	MP PENCH SHARE(2/3)	33.10	105	0.05
	BARGI	32.00	92	0.08
	BARGI (LEFT BANK (NVDA)	0.00	0	0.00
	Bansagar TONS	26.46	315	0.15
	Bansagar Devlondh	38.26	63	0.03
	Bansagar Silpara	2.82	20	0.03
	Bansagar Jinaha	5.08	22	0.03
	Madikheda	4.38	69	0.09
	BIR'PUR	0.46	21	0.01
	TAWA	0.00	0	0.00
	TOTAL	109.46	602	0.42
	RAJGHAT	6.29	42	0.04
	MP SHARE RAJGHAT(50%)	3.15	21	0.02
	Omkareshwar			
	Unit-1	6.94	65	
	Unit-2	16.17	65	
	Unit-3	19.98	65	
	Unit-4	13.05	65	
	Unit-5	7.93	65	
	Unit-6	1.59	65	
	Unit-7	10.99	65	
	Unit-8	8.50	64	
	TOTAL Omkareshwar	**85.15**	**460**	**0.43**
	Indira Sagar - 1	12.72	134	
	Indira Sagar - 2	26.42	134	
	Indira Sagar - 3	11.43	135	
	Indira Sagar - 4	20.04	135	
	Indira Sagar - 5	34.25	134	
	Indira Sagar - 6	26.23	132	
	Indira Sagar - 7	29.02	133	
	Indira Sagar - 8	25.20	129	
	TOTAL INDIRA SAGAR (100%)	**185.31**	**555**	**0.77**
	MP SSP SHARE	56.84	142	0.85
	MP TOTAL (H)	**496.24**	**1918**	**2.60**
	MADHYA PRADESH (THERMAL)			
	AMARKANTAK (III UNIT-5)	143.59	220	12.53
	TOTAL AMARKANKTAK-II	**143.59**	**220**	**12.53**
	SATPURA-II UNIT - 6	0.00	0	
	SATPURA-II UNIT - 7	16.38	175	
	SATPURA-II (UNITS 6 - 7)	**16.38**	**175**	**2.47**
	SATPURA-III UNIT - 8	126.99	188	
	SATPURA-III UNIT - 9	122.17	195	
	SATPURA-III (UNITS 8-9)	**249.16**	**383**	**22.37**
	SATPURA-IVUNIT - 10	185.90	265	
	SATPURA-IV UNIT - 11	184.31	259	

	SATPURA-III (UNITS 10-11)	**370.21**	**524**	**31.61**
	TOTAL SATPURA	**635.75**	**1082**	**56.45**
	S.GANDHI TPS-1	122.68	204	
	S.GANDHI TPS-2	121.39	202	
	SGTPS PHASE-I	**244.07**	**406**	**22.92**
	S.GANDHI TPS-3	77.57	209	
	S.GANDHI TPS-4	122.63	213	
	SGTPS PHASE-II	**200.20**	**422**	**19.54**
	S.GANDHI TPS-5	368.37	509	
	SGTPS PHASE-III	**368.37**	**509**	**20.54**
	TOTAL S.GANDHI TPS	**812.64**	**1337**	**63.00**
	SRI SINGHAJI(SSTPS)-I	287.04	605	
	SRI SINGHAJI(SSTPS)-II	313.56	599	
	SSTPS PHASE-I	**600.60**	**1204**	**37.31**
	SRI SINGHAJI(SSTPS)-III	290.01	527	
	SRI SINGHAJI(SSTPS)-IV	0.00	0	
	SSTPS PHASE-II	290.01	527	
	TOTAL SSTPS	**890.61**	**1731**	**63.92**
	BLA POWER	0.00	0	0.00
	JP BINA+CPP	239.14	332	13.54
	MP IPP INJECTION	**239.14**	**332**	**13.54**
	MP TOTAL (Th.)	**2874.53**	**4702**	**209.44**
	MP TOTAL (H+T)	**3370.77**	**6620**	**212.04**
	WIND ENERGY	167.81	233	8.39
	SOLAR ENERGY	237.03	329	11.85
	BIO -MASS ENERGY	3.51	5	0.18
	TOTAL MP RES	**408.36**	**567**	**20.42**
	MP TOTAL (H+T+RES)	**3931.92**	**7187**	**232.46**
	CHHATTISGARH			
	HYDRO			
	H. BANGO	63.69	120	0.10
	Gangrel	2.43	10	0.03
	Mini Micro KWB	1.28	7	0.01
	CHHATTISHGARH TOTAL (H)	**67.40**	**137**	**0.14**
	CHHATTISHGARH (THERMAL)			
	KORBA (E-II) -1	0.00	0	
	KORBA (E-II) -2	0.00	0	
	KORBA (E-II) -3	0.00	41	
	KORBA (E-II) -4	0.00	36	
	TOTAL KORBA (E) 1-4	**0.00**	**77**	**0.00**
	KORBA (E) -5	67.15	97	
	KORBA (E) -6	50.62	78	
	TOTAL KORBA (E) 5-6	**117.77**	**182**	**13.97**
	TOTAL KORBA (E)	**117.77**	**259**	**13.97**
	KORBA(W) - 1	138.84	206	
	KORBA(W) - 2	120.70	174	
	TOTAL KORBA (W) 1-2	**259.54**	**380**	**23.45**
	KORBA(W) - 3	93.19	190	
	KORBA(W) - 4	132.79	193	

	TOTAL KORBA (W) 3-4	**225.97**	**383**	**21.80**
	KWB EXTN -5	362.59	495	17.65
	TOTAL KORBA (W)	**1333.62**	**2021**	**62.90**
	KORBA(EB) Extn - 1 (DSPM 1)	184.34	255	
	KORBA(EB) Extn - 2 (DSPM 2	182.78	255	
	TOTAL KORBA (E) DSPM	**367.12**	**510**	**28.35**
	MARWA-1	306.65	456	
	MARWA-2	319.53	513	
	TOTAL MARWA	**626.18**	**969**	**30.18**
	TOTAL CHHATTISHGARH (THERMAL)	**2444.69**	**3759**	**135.40**
	CHHATTISGARH (TH+HY)	**2512.09**	**3896**	**135.54**
	MAHARASHTRA			
	H Y D R O			
	Koyana I & II	85.94	0	1.04
	Koyana IV	40.20	0	0.74
	Koyana III	93.29	0	0.22
	K.D.P.H.	17.54	0	0.02
	Total KGSC	**236.97**	**0**	**2.02**
	Panshet	4.21	0	0.01
	V'sgaon	1.26	0	0.00
	Pawna	2.22	0	0.01
	M'kdoh	0.04	0	0.01
	Dimbhe	1.15	0	0.00
	Bhatghar	2.71	0	0.01
	Kanher	0.92	0	0.01
	Dhom	0.83	0	0.00
	Ujjani	0.93	0	0.01
	Warna	2.69	0	0.01
	Tillari	5.98	0	0.03
	D'ganga	0.00	0	0.02
	T'medhe	0.05	0	0.00
	R'nagari	0.00	0	0.00
	Bhira	9.28	0	0.01
	Total HPC Pune	**32.27**	**0**	**0.14**
	Vaitarna	5.30	0	0.07
	Vaitarna D.T.	0.36	0	0.00
	Bhatsa	8.61	0	0.02
	Surya	0.00	0	0.01
	Yeldari	0.00	0	0.01
	Paithan	2.39	0	0.02
	Ghatghar U-I	4.15	0	0.14
	Ghatghar U-II	0.00	0	0.00
	Total HPC Nasik	**20.81**	**0**	**0.27**
	TATA HYDRO			
	KHOPOLI	28.22	75	
	BHIVPURI	13.73	72	
	BHIRA	35.11	150	
	BHIRA PS	51.16	165	
	TOTAL TATA HYDRO	**128.21**	**0**	**2.13**
	TOTAL MAHARASHTRA (Hydro)	**406.91**	**0**	**4.25**

	THERMAL			
	NASIK - 3	96.32	180	
	NASIK - 4	109.57	190	
	NASIK - 5	21.29	178	
	TOTAL NASIK	**227.18**	**548**	
	TROMBAY - 5	319.61	485	
	TROMBAY - 6	0.00	0	
	TROMBAY -8	168.12	242	
	TROMBAY - 7 A	84.40	119	
	TROMBAY - 7 B	48.98	68	
	TOTAL TROMBAY	**621.11**	**914**	
	KORADI - 6	6.35	178	
	KORADI - 7	0.00	0	
	KORADI - 8	151.20	494	
	KORADI - 9	288.26	660	
	KORADI - 10	182.07	457	
	TOTAL KORADI	**627.88**	**1789**	
	BHUSAWAL - 3	0.00	0	
	BHUSAWAL - 4	273.10	505	
	BHUSAWAL - 5	200.24	500	
	TOTAL BHUSAWAL	**473.34**	**1005**	
	#REF!	#REF!	#REF!	
	PARLI - 4	0.00	0	
	PARLI - 5	0.00	0	
	PARLI - 6	141.01	250	
	PARLI - 7	77.02	248	
	PARLI - 8	59.74	249	
	TOTAL PARLI	**277.77**	**747**	
	K'KHEDA - II - 1	0.00	0	
	K'KHEDA - II - 2	93.55	185	
	K'KHEDA - II - 3	112.48	206	
	K'KHEDA - II - 4	109.91	195	
	K'KHEDA - II - 5	320.57	500	
	TOTAL K'KHEDA	**636.51**	**1086**	
	PGPL-1	0.00	0	
	PGPL-2	0.00	0	
	TOTAL PGPL	**0.00**	**0**	
	URAN (G) - 5	0.00	0	
	URAN (G) - 6	0.00	0	
	URAN (G) - 7	0.00	0	
	URAN (G) - 8	178.80	424	
	ALL URAN (G)	**208.90**	**317**	
	URAN - WHR -I	0.00	0	
	URAN - WHR -II	0.00	0	
	TOTAL URAN - WHR	**0.00**	**0**	
	CHANDRAPUR -3	1.50	179	
	CHANDRAPUR -4	124.84	191	
	CHANDRAPUR -5	202.32	440	
	CHANDRAPUR -6	286.04	455	
	CHANDRAPUR -7	284.36	450	
	CHANDRAPUR -8	275.18	460	

	CHANDRAPUR -9	310.89	468	
	TOTAL CHANDRAPUR	**1485.13**	**2643**	
	PARAS -3	0.00	0	
	PARAS - 4	169.50	255	
	TOTAL PARAS	**169.50**	**255**	
	REL DAHANU - I	177.12	250	
	REL DAHANU - I I	177.29	250	
	TOTAL DAHANU	**354.41**	**500**	
	APML(All Units)	2118.81	0	
	JSWEL(All Units)	853.13	0	
	VIPL(All Units)	221.10	0	
	RPL AMT(All Units)	198.27	0	
	WPCL(All Units)	153.62	0	
	Other CPPS/IPPS	244.14	0	
	TOTAL MAHARASHTRA CPPS/IPPS	**3789.07**	**5263**	
	MAHARASHTRA TOTAL (Th.)(INCL TATA,ADANI)	**8870.80**	**15067**	**384.46**
	MAHARASHTRA TOTAL (H+T)	**9277.71**	**15067**	**388.71**
	Wind injection (W)	268.64	373	5.37
	Solar injection (S)	178.80	248	3.58
	TOTAL MAHARASHTRA RES	**447.44**	**621**	**8.95**
	TOTAL MAHARASHTRA (TH+H+RES)	**9725.15**	**15688**	**397.66**
	GOA			
	IPP GOA	18.73	26	0.37
	CENTRAL SECTOR			
	N P C I L			
	TAPS - I	96.04	160	0.00
	TAPS - II	13.93	160	0.00
	TOTAL TAPS 1-2	**109.97**	**320**	**9.61**
	TAPS - III	303.03	549	0.00
	TAPS - IV	401.12	546	0.00
	TOTAL TAPS 3-4	**704.15**	**1095**	**65.63**
	KAKRAPAR - I	0.00	0	0.00
	KAKARAPAR - II	162.14	222	0.00
	TOTAL KAPS 1-2	**162.14**	**222**	**15.01**
	TOTAL NPCIL GENERATION	**814.12**	**1415**	**90.25**
	N T P C			
	K S T P S - 1	138.84	215	0.00
	K S T P S - 2	138.76	214	0.00
	K S T P S - 3	82.06	213	0.00
	K S T P S - 4	327.22	513	0.00
	K S T P S - 5	341.01	514	0.00
	K S T P S - 6	336.94	515	0.00
	K S T P S - 7	322.79	513	0.00
	TOTAL K S T P S	**1687.60**	**2697**	**98.46**
	V S T P S - 1	159.73	215	0.00
	V S T P S - 2	137.18	212	0.00
	V S T P S - 3	149.32	211	0.00
	V S T P S - 4	151.72	213	0.00
	V S T P S - 5	136.48	214	0.00

	V S T P S - 6	154.26	215	0.00
	V S T P S -7	366.59	513	0.00
	V S T P S -8	259.05	515	0.00
	V S T P S -9	366.10	514	0.00
	V S T P S -10	370.79	513	0.00
	V S T P S -11	371.61	513	0.00
	V S T P S -12	350.80	514	0.00
	V S T P S -13	345.38	515	0.00
	TOTAL V S T P S	**3318.99**	**4877**	**212.03**
	SIPAT STPS-1	486.30	660	0.00
	SIPAT STPS-2	492.36	660	0.00
	SIPAT STPS-3	491.66	670	0.00
	SIPAT STPS-4	361.01	520	0.00
	SIPAT STPS-5	361.19	520	0.00
	TOTAL SIPAT	**2192.52**	**3030**	**1870.31**
	KAWAS-GT-1A	56.02	105	0.00
	KAWAS-GT-1B	47.24	106	0.00
	KAWAS- ST-1	60.86	116	0.00
	KAWAS-GT-2A	57.17	106	0.00
	KAWAS-GT- 2 B	48.09	106	0.00
	KAWAS-ST-2	62.43	116	0.00
	TOTAL KAWAS	**331.81**	**655**	**9.60**
	GANDHAR - GT1	49.63	144	0.00
	GANDHAR - GT2	43.23	144	0.00
	GANDHAR - GT3	13.06	144	0.00
	GANDHAR - ST3	0.00	0	0.00
	TOTAL GANDHAR	**105.92**	**432**	**1.42**
	MAUDA-1	318.45	510	0.00
	MAUDA-2	311.82	510	0.00
	MAUDA-3	253.24	660	0.00
	MAUDA-4	137.73	500	0.00
	TOTAL MAUDA	**1021.24**	**2180**	**69.37**
	SOLAPUR-1	376.05	680	0.00
	SOLAPUR-2	0.00	0	0.00
	TOTAL SOLAPUR	**376.05**	**660**	**23.81**
	LARA-1	0.00	0	0.00
	LARA-2	0.00	0	0.00
	TOTAL LARA	**0.00**	**660**	**0.00**
	GADARWADA-1	0.00	0	0.00
	GADARWADA-2	0.00	0	0.00
	TOTAL GADARWADA	**0.00**	**660**	**0.00**
	KHARGAONE-1	0.00	0	0.00
	KHARGAONE-2	0.00	0	0.00
	TOTAL KHARGAONE	**0.00**	**660**	**0.00**
	TOTAL NTPC GENERATION	**9034.14**	**16511**	**2285.00**
	RGPPL			
	RGPPL (Dabhol) Phase I	0.00	0	0.00
	RGPPL (Dabhol) Phase II	351.02	560	0.00
	RGPPL (Dabhol) Phase III	38.72	265	0.00
	RGPPL TOTAL	**389.75**	**560**	**9.74**

राज्य	State	वास्तविक Actual (MW)					दिनांक Date	समय Time	आवृत्ति Frequency
		आपूर्ति Catered	UNSCH LS	FC	SCH LS	कुल Total			
गुजरात	***GUJARAT***								
पंजीकृत	Registered	**17889**	**-**	**-**	**-**	**17889**	**08.10.2018**	**15:00**	**49.97**
सीमित	Restricted								
असीमित	Unrestricted	**17889**	**0**	**18.78345**	**0**	**17907.8**	**08.10.2018**	**15:00**	**49.97**
न्यूनतम पंजीकृत मांग	Min. Registered Demand	**13220**				**13220**	**31.10.2018**	**0:00**	**50.01**
मध्य प्रदेश	***MADHYA PRADESH***								
पंजीकृत	Registered	**12539**	**-**	**-**	**-**	**12539**	**31.10.2018**	**8:45**	**49.91**
सीमित	Restricted								
असीमित	Unrestricted	**12538**	**0**	**39**	**0**	**12572**	**31.10.2018**	**8:45**	**49.91**
न्यूनतम पंजीकृत मांग	Min. Registered Demand	**7880**				**7880**	**01.10.2018**	**12:00**	
छत्तीसगढ़	***CHHATTISGARH***								
पंजीकृत	Registered	**4504**	**-**	**-**	**-**	**4504**	**08.10.2018**	**21:00**	**50.01**
सीमित	Restricted								
असीमित	Unrestricted	**4492**	**146**	**0**	**0**	**4649**	**08.10.2018**	**19:00**	**49.93**
न्यूनतम पंजीकृत मांग	Min. Registered Demand	**2972**				**2972**	**31.10.2018**	**13:30**	**49.92**
महाराष्ट्र	***MAHARASHTRA***								
पंजीकृत	Registered	**24146**	**-**	**-**	**-**	**24146**	**10.10.2018**	**12:00**	**49.97**
सीमित	Restricted								
असीमित	Unrestricted	**24146**	**680**	**25**	**0**	**24851**	**10.10.2018**	**12:00**	**49.97**
न्यूनतम पंजीकृत मांग	Min. Registered Demand	**16168**				**16168**	**18-Oct-18**	**23:00**	**49.97**
गोवा	****GOA***								
पंजीकृत	Registered	**536**	**-**	**-**	**-**	**536**	**05.10.2018**	**15:00**	**49.99**
असीमित	Unrestricted	**536**	**0**	**0**	**0**	**536**	**05.10.2018**	**15:00**	**49.99**
न्यूनतम पंजीकृत मांग	Min. Registered Demand								
एस्सार	***ESSAR(ESIL)***								
पंजीकृत	Registered	**875**	**-**	**-**	**-**	**875**	**27.10.2018**	**20:00**	**50.00**
असीमित	Unrestricted	**875**	**0**	**0**	**0**	**875**	**27.10.2018**	**20:00**	**50.00**
न्यूनतम पंजीकृत मांग	Min. Registered Demand								
दमन एवं दीव	***DD***								
पंजीकृत	Registered	**341**	**-**	**-**	**-**	**341**	**21.10.2018**	**15:00**	**49.95**
असीमित	Unrestricted	**341**	**0**	**1**	**0**	**342**	**21.10.2018**	**15:00**	**49.95**
न्यूनतम पंजीकृत मांग	Min. Registered Demand								
दादरा व न हवेली	***DNH***								
पंजीकृत	Registered	**780**	**-**	**-**	**-**	**780**	**11.10.2018**	**19:00**	**49.85**
असीमित	Unrestricted	**780**	**0**	**4**	**0**	**784**	**11.10.2018**	**19:00**	**49.85**
न्यूनतम पंजीकृत मांग	Min. Registered Demand								
पश्चिम क्षेत्र	***WESTERN REGION***								
पंजीकृत	Registered	**57518**	**-**	**-**	**-**	**57518**	**16.10.2018**	**15:00**	**49.97**
सीमित	Restricted								
असीमित	Unrestricted	**57518**	**793**	**60**	**0**	**58371**	**16.10.2018**	**15:00**	**49.97**
न्यूनतम पंजीकृत मांग	Min. Registered Demand	**46045**				**46045**	**18.10.2018**	**22:00**	

	□□□ अक्तूबर 2018 Oct. 2018		ANNEXURE 4.3
List of Inter-state/Inter-Regional Lines- Parallel/ Radial Operation			
अनु.क्र.	□□□□/वृतीय प्रचालन	**PARALLEL / RADIAL OPERATION**	**Total Operating Hours(HH:MM:SS)**
HVDC Lines			
1	एचवीडीसी बॅक टु बॅक लिंक विंध्याचल पोल 1	HVDC back-to back link Vindhyachal-Pole 1	744:00:00
2	एचवीडीसी बॅक टु बॅक लिंक विंध्याचल पोल 2	HVDC back-to back link Vindhyachal-Pole 2	744:00:00
3	□□□□□□□ □□□ □□□□□□□□ □□□1	HVDC Mundra-Mahendergarh Pole 1	744:00:00
4	□□□□□□□ □□□ □□□□□□□□ □□□2	HVDC Mundra-Mahendergarh Pole 2	744:00:00
5	एचवीडीसी चांपा टु कुरुक्षेत्र पोल 1	HVDC Champa-Kurukshetra Pole-1	744:00:00
6	एचवीडीसी चांपा टु कुरुक्षेत्र पोल 2	HVDC Champa-Kurukshetra Pole-2	744:00:00
7	एचवीडीसी बॅक टु बॅक लिंक भद्रावती पोल 1	HVDC back-to back link Bhadrawti Pole-1	742:19:00
8	एचवीडीसी बॅक टु बॅक लिंक भद्रावती पोल 2	HVDC back-to back link Bhadrawti Pole-2	744:00:00
Inter-Regional Lines			
1	765 □□□ □□□□□ □□□□□□ -I	765kV solapur to Raichur I	744:00:00
2	765 □□□ □□□□□ □□□□□□ -II	765kV solapur to Raichur II	744:00:00
3	765 केवी वर्धा से निजामाबाद-I	765kV Wardha to Nizamabad I	733:11:00
4	765 केवी वर्धा से निजामाबाद-II	765kV Wardha to Nizamabad II	744:00:00
5	765 केवी ग्वालियर से फागी-I	765kV Gwalior to Phagi I	744:00:00
6	765 केवी ग्वालियर से फागी-II	765kV Gwalior to Phagi II	744:00:00
7	765 केवी ग्वालियर से आगरा-I	765kV Gwalior to Agra I	695:30:00
8	765 केवी ग्वालियर से आगरा-II	765kV Gwalior to Agra II	708:14:00
9	765 केवी धरमजयगड से न्यू रांची -I	765kV D'garh to New Ranchi I	744:00:00
10	765 केवी धरमजयगड से न्यू रांची -II	765kV D'garh to New Ranchi II	744:00:00
11	765 □□□ □□□□□□□ □□□□□□□□ -I	765kV D'garh to Jharsuguda I	608:37:00
12	765 □□□ □□□□□□□ □□□□□□□□ -II	765kV D'garh to Jharsuguda II	609:12:00
13	400 केवी कोल्हापुर से नरेंद्र I	400kV Kolhapur-Narendra I	744:00:00
14	400 केवी कोल्हापुर से नरेंद्र II	400kV Kolhapur-Narendra II	744:00:00
15	400 केवी कंसारी से भिनमल	400kV Kansari- Bhinmal	727:00:00
16	400 केवी कंसारी से कंक्रोली	400kV Kansari- Kankroli	705:32:00
17	400 □□□ □□ □□□□□□□ -I	400 kV RAPP-Sujalur I	744:00:00
18	400 □□□ □□ □□□□□□□ -II	400kV RAPP-Sujalur II	744:00:00
19	400 केवी सिपत से रांची I	400kV Sipat-Ranchi I	744:00:00
20	400 केवी सिपत से रांची II	400kV Sipat-Ranchi II	744:00:00
21	400 □□□ □□□□ □□□□□□□ I	400kV Raigarh to Jharsuguda I	744:00:00
22	400 □□□ □□□□ □□□□□□□ II	400kV Raigarh to Jharsuguda II	744:00:00
23	400 □□□ □□□□ □□□□□□□ III	400kV Raigarh to Jharsuguda III	681:05:00
24	400 □□□ □□□□ □□□□□□□ IV	400kV Raigarh to Jharsuguda IV	744:00:00
25	400 केवी रायगढ़ से बुद्धिपदर	220kV Raigarh-Budhipadar	744:00:00
26	220 केवी कोरबा पूर्व से बुद्धिपादर-II	220kV K(E) to Budhipadar-II	744:00:00
27	220 केवी कोरबा पूर्व से बुद्धिपादर-III	220kV K(E) to Budhipadar-III	739:23:00
28	220 □□□ □□□□ □□□□□□□	220kV Badod to Sakatpur	744:00:00
29	220 □□□ □□□□ □□□□□	220kV Bhanpur to Modak	739:26:00
30	220 □□□ □□□□ □ □ □□□ □□	220kV Mehgaon to Auraiya	744:00:00

31	220 □□□ □□□□□ □□□ □□	220kV Malanpur to Auraiya	735:00:00
	Inter-State Lines		
1	765 केवी सिवनी से वर्धा-I	765kV Seoni to Wardha-I	735:29:00
2	765 केवी सिवनी से वर्धा-II	765kV Seoni to Wardha-II	744:00:00
3	765 केवी दुर्ग से वर्धा -I	765kV Durg to Wardha I	694:35:00
4	765 केवी दुर्ग से वर्धा -II	765kV Durg to Wardha II	744:00:00
5	765 केवी दुर्ग से वर्धा -III	765kV Durg to Wardha III	744:00:00
6	765 केवी दुर्ग से वर्धा -IV	765kV Durg to Wardha IV	489:42:00
7	765 □□□ □□□□□□□□-I	765kV Dhule to Vadodara I	744:00:00
8	765 □□□ □□□ □□□□□□-I	765kV Indore(PG) to Vadodara I	744:00:00
9	765 □□□ □□□□□□ □□□□□□-I	765kV D'garh to Jabalpur I	570:36:00
10	765 □□□ □□□□□□ □□□□□□-II	765kV D'garh to Jabalpur II	740:14:00
11	765 □□□ □□□□□□ □□□□□□-III	765kV D'garh to Jabalpur III	729:19:00
12	765 □□□ □□□□□□ □□□□□□-IV	765kV D'garh to Jabalpur IV	744:00:00
13	765 केवी सिवनी से बिलासपुर-I	765kV Seoni to Bilaspur-I	732:44:00
14	765 केवी सिवनी से बिलासपुर-II	765kV Seoni to Bilaspur-II	744:00:00
15	400 केवी भिलाई से कोराडी	400kV Bhilai to Koradi	744:00:00
16	400 केवी भिलाई से भद्रावती	400kV Bhilai to Bhadravati	744:00:00
17	400 केवी भिलाई से सियोनि	400kV Bhilai to Seoni	744:00:00
18	400 केवी रायपुर से भद्रावती -I	400kV Raipur to Bhadravati-I	744:00:00
19	400 केवी रायपुर से भद्रावती -II	400kV Raipur to Bhadravati-II	744:00:00
20	400 केवी रायपुर से भद्रावती -III	400kV Raipur to Bhadravati-III	744:00:00
21	400 केवी रायपुर से वर्धा-I	400kV Raipur to Wardha-I	744:00:00
22	400 केवी रायपुर से वर्धा-II	400kV Raipur to Wardha-II	744:00:00
23	400 □□□ □□□□□ □□□□□□□	400kV Satpura to Koradi	744:00:00
24	400 केवी कोल्हापुर(GIS) □□□□□□-I	400kV Kolhapur(GIS)-Mapusa-I	670:57:00
25	400 केवी कोल्हापुर(GIS) □□□□□□-II	400kV Kolhapur(GIS)-Mapusa-II	658:53:00
26	400 □□□ □□□□ □□□□-I	400kV Khandwa-Dhule-I	744:00:00
27	400 □□□ □□□□ □□□□-II	400kV Khandwa-Dhule-II	744:00:00
28	400 □□□ □□□□□□ □□□□-I	400kV SSP-Dhule-I	744:00:00
29	400 □□□ □□□□□□ □□□□-II	400kV SSP-Dhule-II	744:00:00
30	400 □□□ □□□□ □□□□□□□	400kV Vapi-Boisar	744:00:00
31	400 □□□ □□□□□□ □□□□□□□-I	400kV SSP- Rajgarh -I	695:11:00
32	400 □□□ □□□□□□ □□□□□□□-II	400kV SSP- Rajgarh -II	622:22:00
33	400 □□□ □□□□□ □□□□□□□-I	400kV Kasor- Rajgarh -I	744:00:00
34	400 □□□ □□□□□ □□□□□□□-II	400kV Kasore- Rajgarh -II	744:00:00
35	400 □□□ □□□□ □□□□□□-I	400kV Indore to Asoj-I	742:35:00
36	400 □□□ □□□□ □□□□□□-II	400kV Indore to Asoj-II	730:23:00
37	400 केवी कोरबा से बीरसिंगपुर I	400kV Korba-Birsigpur I	744:00:00
38	400 केवी कोरबा से बीरसिंगपुर II	400kV Korba-Birsigpur II	744:00:00
39	400 केवी कोरबा से एस्सार महान	400kV Korba-Essar Mahan	742:32:00
40	400 केवी कोरबा से विंध्याचल	400kV Korba-Vindhyachal	744:00:00
41	400 □□□ □□□□ □□□□□□□-I	400kV Nagda to Dehgam I	730:07:00
42	400 □□□ □□□□ □□□□□□□-II	400kV Nagda to Dehgam II	744:00:00

अनुलग्नक 4 . 7

Annex-4.7

अक्टोबर 2018 के अंत में पश्चिम क्षेत्र के मुख्य जलाशयों के स्तर

LEVEL OF MAJOR RESERVOIRS IN WESTERN REGION AT THE END OF MONTH OF OCTOBER 2018

विवरण Particulars	गु उ वि नि लि GUVNL	मप्रविउकं लि MPPGCL	एन एच डी सी NHDC	मराविउकं लि MSEGCL
	उकाई Ukai	गांधीसागर Gandhisagar	इंदिरा सागर Indira Sagar	कोयना Koyna
Levels in Mtrs. स्तर मीटर में				
माह के अंत में At the end of the month	95.82	392.66	261.84	655.66
पिछले वर्ष इस माह के अनुरूप आंकड़ें Corresponding Figure of the month Last Year	98.74	396.39	253.96	659.16

ANNEXURE 5

Western Region-Event Report for October 2018

S.No	Region	Name of Elements	Owner/ Agency	Outage		Revival		Outage Duration	Event	Generation Loss (MW)	Load Loss (MW)	Category as per CEA standards	Energy Unserved (MU)
				Date	Time	Date	Time	Time					
1	WR	Tripping of 1.220 kV Khedamara-Bemetra 2.220 kV Suhela-Bemetra D/C 3.132 kV feeders at Bemetra s/s	CSPTCL	03/10/2018	22:58	03/10/2018	23:32	0:34	Tripping of 220KV Khedamara – Bemetra resulted in overloading of 220KV Suhela - Bemetra D/C, which eventually got tripped. This has caused the total interruption at 220/132 KV S/s Bemetra and downstream 220/132/33KV & 132/33KV S/s. CSPTL has reported load loss of around 450MW.	Nil	450	GD-1	0.255
2	WR	Tripping of 1.400/220 kV 315 MVA Mansar ICT 1 2.400 kV Mansar Bus coupler 3.400 kV Mansar-Bhachau 4.400 kV Mansar-Chorania 5.400/220 kV 315 MVA Mansar ICT 2	GETCO	16/10/2018	7:01	16/10/2018	12:26	5:25	400 kV Mansar Bus 1 and associated elements tripped on Bus bar protection operation at 07:01 Hrs on Y phase fault insulator flashover. 400 kV Mansar Bus 2 and associated elements tripped on Bus bar protection operation at 07:50 Hrs on Y phase fault insulator falshover.	Nil	Nil	GI-2	Nil
3	WR	Tripping of 1.400/220 kV 315 MVA Mansar ICT 1 2.400 kV Mansar Bus coupler 3.400 kV Mansar-Bachau 4.400 kV 80 MVAR Mansar Bus reactor 5.400 kV Mansar-Chorania 6.400/220 kV 315 MVA Mansar ICT 2	GETCO	18/10/2018	6:31	18/10/2018	19:40	13:09	400 kV Mansar Bus 1 and associated elements tripped on Bus bar protection operation at 06:31 Hrs on Y phase fault insulator falshover 400 kV Mansar Bus 2 and associated elements tripped on Bus bar protection operation at 07:15 Hrs on Y phase fault insulator falshover.	Nil	Nil	GI-2	Nil
4	WR	Tripping of 1.250 MW Sikka Unit 3 2.220 MW Sikka Unit 4 3.220 kV Sikka Main bus 2	GSECL	26/10/2018	13:10	26/10/2018	14:34	1:24	At 220kV Sikka S/s, Main bus 2 tripped due to LBB protection maloperation. 250 MW Sikka units 3&4 connected to that bus tripped.	340	Nil	GI-1	Nil
5	WR	Tripping of 1.400/132 kV Pirana ICT 1 2.400/132 kV Pirana ICT 3 3.132 kV Pirana Bus 1 and associated elements	TPL	26/10/2018	15:31	26/10/2018	15:41	0:10	At Pirana S/s, metallic yarn fell on 132 kV bus 1 and resulted in tripping of associated elements on Bus bar protection operation.	Nil	54	GI-1	0.009

6	WR	Tripping of 1.220/66 kV 160 MVA Khadoli ICT 1 2.220/66 kV 160 MVA Khadoli ICT 2 3.66 kV fedders at Khadoli s/s	DNH	27/10/2018	17:00	27/10/2018	17:30	0:30	At 220 kV Khadoli S/s, during primary injection testing at CT of 66 kV Khadoli -Khadoli -3, 66 kV side elements tripped on LBB operation.	Nil	209	GI-1	0.1045
7	WR	Tripping of 1.CGPL 800 MW Unit 30 2.CGPL 800 MW Unit 40 3.CGPL 800 MW Unit 50	CGPL	30/10/2018	19:22	31/10/2018	3:10	7:48	At 400kV CGPL S/s, Bus 1 shut down was availed by PGCIL WR2 for 400 kV Bhuj PS D/C bay extension works and so the generators were connected to 400 kV Bus 2 through tie bays. Generator Class A 2 protection operated at Unit 30, 40&50 and the generators tripped.	2247	Nil	GI-2	Nil

Disclaimer : The Above details are based on the preliminary/flash report of the event and may change after finalisation of the detailed report.The qunatum of load/generation loss is based on details given by SLDC and utility and may vary later with updated details.

Annexure-6

Status of healthiness of SERs/DRs

S.l. No.	Name of Constituent	Date Receipt
1	PGCIL,WRTS-I	05.10.2018
2	PGCIL,WRTS-II	05.10.2018
3	MPPTCL	17.08.2018
4	NTPC	02.10.2018
5	CSPTCL	05.10.2018
6	GETCO	05.10.2018
7	MSETCL	05.10.2018
8	DD/DNH	17.08.2018
9	GOA	02.10.2018
10	NPCIL	05.08.2018
11	NCA/SSP	05.08.2018
12	NHDC	04.10.2018
13	Jindal PL	17.08.2018
14	CGPL	08.10.2018
15	DB POWER	07.08.2018
16	KWPCL	05.10.2018
17	ACBIL/TRN ENERGY	04.10.2018
18	KSK	02.10.2018
19	GMR CHHATTISHGARH	21.08.2018
20	JNSTPS	05.10.2018
21	MB POWER	09.08.2018
22	SASAN UMPP	21.08.2018
23	NSPCL	21.08.2018
24	RGPPL	06.10.2018
25	SUGEN/DGEN	02.10.2018
26	RKM POWER	05.10.2018
27	ESSAR POWER	09.08.2018
28	BDTCL/JTCL/RTCL	08.10.2018
29	RELIANCE TRANSMISSION	02.10.2018
30	ADANI POWER	02.10.2018
31	JHABUA POWER	04.10.2018
32	EPTCL	05.10.2018
33	TPGL	02.10.2018

*****

Annexure-7.1

Status of Reactors

Sl. No.	400 kV Sub/Stn.	Size (MVAr)	Implementing agency	Expected date of commissioning
1	Nanded	125	MSETCL	March – 2019
2	Kolhapur	125	MSETCL	March – 2019
3	Akola	125	MSETCL	March – 2019
4	ISP	125	NHDC	Commissioned on 21.09.2018
5	Satpura-ISP Line Rx(at Satpura end)	50	MPPGCL	Dec-2018
6	Bus Reactor at New Parli(PG)	330	PGCIL	Commissioned on 24.04.2018
7	Bus Reactor at Dhariwal	80	DIL	Commissioned on 23.05.2018
8	Warora(PS)	80	PWTL/Maharashtra	Commissioned on 09-05-2018
9	Warora(PS)	80	PWTL/Maharashtra	Commissioned on 09-05-2018
10	Warora(PS)	330	PWTL/Maharashtra	Commissioned on 18-05-2018
11	Warora(PS)	330	PWTL/Maharashtra	Commissioned on 18-05-2018
12	New Parli	330	PPTL/Maharashtra	Commissioned on 21-05-2018
13	New Parli	330	PPTL/Maharashtra	Commissioned on 21-05-2018
14	Warora(PS)	330	PWTL/Maharashtra	Commissioned on 10-05-2018
15	KAPS 3&4	125	NPCIL/Gujarat	Commissioned on 14-05-2018
16	EPTCL/ Chhattisgarh	50	EPTCL	Commissioned on 21.07.2018
17	EPTCL / Chhattisgarh	50	EPTCL	Commissioned on 27.07.2018

****

Annexure 7.2

Status of Transmission schemes: 765/400 kV and above

The updated status on various ongoing transmission schemes for the year 2018-19 as per the current information available is as follows: -

Sl. No.	Name of the Line	Ckt km	Target Completion Date	Remarks
Powergrid				
1	LILO of Lonikhand-Kalwa at Navi Mumbai GIS-JSL/LS Cable	16	Dec 18	
2	Parli(PG)-New Parli(PG) ckt I & II	18		Commissioned on 21.04.2018
3	765kV Vindhyachal - Jabalpur D/C	749	Nov 2018	
4	765kV D/C Gadarwara STPP - Warora	453.6	Nov 2018	
5	800 kV Raigarh-Pugalur HVDC Bipole	3676	March-19	Work under progress
6	400kV D/C Banaskantha - Sankheri (GETCO)	43.4	Oct 18	Completed
7	765kV D/C Banaskantha - Chittorgarh	293.3	Oct 18	Completed
8	400kV D/C Banaskantha (Radhanesda) - Banaskantha (PG)	132	March 2019	
9	765kV Bhuj-Banaskamta DC	583	Nov 18	
10	400 kV Mundra UMPP – Bhuj DC	190	Dec 18	
11	400 kV D/c Wardha-Aurangabad(Upgradable to 1200 kV)	347	February 19	Work is in progress
12	765 kV D/C Jharsuguda-Dharamjaigarh line 2	149	Oct 18	Work is in progress
14	LILo of 400Kv D/C Wardha – Parli at Warora	196		Commissioned on 16.05.2018
15	765Kv D/C Warora - Parli	698		Commissioned

				on 04.06.2018
16	765Kv D/C Parli - Solapur	236		Commissioned on 27.04.2018
17	400Kv D/C Parli - Parli	37		Commissioned on 27.04.2018
Chhattishgarh				
1	LILO of 400kV Raita-Jagdalpur at Dhamtari	2	August 19	Oder placed on 21.02.18
2	LILO of 220 kV Raigarh-Budipadar at 400 kV PGCIL S/s Raigarh. Idle charged on 11.8.2015 for anti theft reason		Oct -18	
3	220 kV Barsoor-Jagdalpur	175	March 2019	
4	2nd circuiting of 220 KV Korba-Bishrampur line(DCSS)	155		Commissioned on 04.09.2018
5	220 kV Korba-Churi-II			Commissioned on 10.10.2018
Gujarat				
1	400 kV D/C Vadinar-Amreli line	116.85	Aug 19	
2	400kV APL-Hadala LILO to Halvad	89.40	Dec 18	
3	400 kV D/C Amreli-Kasor line	470.55	March 19	
4	400kV D/C Vadavi - Halvad Line	291	March 19	
5	400 kV Varsana-Halvad	237	March 19	
6	400 kV Wanakbori-Soja DC	213.17	March 19	
7	400 kV Soja-Zerda DC	268.92	Nov 18	
8	400 kV Hadala-Shapar D/c	124.34	Mar 19	
9	400 kV Bhogat- Kalawad D/C	260.57	Mar 20	
10	400 kV Bhachuunda-Varsana D/c	276.16	June 20	
11	LILO of both ckt. of 400kV D/C Mundra - Zerda line at 400kV Charanka S/s	25.76	March 19	
Madhya Pradesh				

1	400 KV DCDS (Quad moose) line from Shri Singa Ji TPS (Stage-II) to Pithampur	282	Dec 2018	
2	400 KV DCDS (Quad moose) line from Pithampur to Badnawar	140	Nov 2019	
3	LILO of both circuit of 400KV Nagda-Rajgarh line at 400KV Substation Badnawar	16.3	December 2018	
Maharashtra (STU)				
1	400 kV Bableshwar-Kudus D/C (Quad)	150	December -18	Forest clearance awaited, severe ROW problem
2	New Parli(PG)-Solapur ckt-I & II	118		Commissioned on 24.04.2018
3	400 KV D/C Jejuri-Hinjewadi Line(Jejuri-Wainjhar) Package-I.	101	December -18	
4	400 KV D/C Jejuri-Hinjewadi Line (Wainjhar- Hinjewadi) Package-II.	92.67	March -19	
5	400 KV DCQ BBLR-Kudus line (upto Naneghat)	306.46	December -18	
Other ISTS lines				
1	Raigarh (Kotra) - Champa (Pool) 765 KV S/C	96		Commissioned on 31.08.2018
2	Champa (Pool) - Dharamjaygarh 765 KV S/C	51		Commissioned on 21.07.2018
3	LILO of one ckt of Aurangabad - Padghe 765 KV D/C line at Pune	130	Dec 18	
4	Rajnandgaon - Warora 765 KV D/C	532	Nov 18	
5	Sipat STPS - Bilaspur 765 KV S/C	23	Oct 18	Commissioned

				on 06.08.2018
6	400kV D/C Mahan Sipat transmission line	674	Oct 2018	
7	Jharsuguda – Raipur 765 kV D/C (hexa) line (Sterlite)	610	Oct 2018	Ready to charge
8	765KV D/C Khandwa Pool (KTL)-Indore (PGCIL) Line(Sterlite)	180	Dec 2018	
9	765KV D/C Khandwa Pool (KTL)-Dhule (BDTCL) Line(Sterlite)	379	Dec 2018	
10	LILO of one CKT of 400KV D/C Khandwa-Rajgarh at NTPC, Khargone (Sterlite)	14		Commissioned on 06.07.2018
11	400KV D/C Khargone TPP Switchyard (NTPC)-Khandwa Pool (KTL) Line(Sterlite)	49	July 2019	
12	400 kV Gwalior(PG)-Morena -I	48	CWRTL, Adani/MP	03-05-2018
13	400 kV Gwalior(PG)-Morena -II	48	CWRTL, Adani/MP	03-05-2018
14	400 kV Wardha-Warora-I	98	PWTL/Maharashtra	09-05-2018
15	400 kV Warora(PS)-Parli(PG)-I	98	PWTL/Maharashtra	13-05-2018
16	400 kV Wardha-Warora-II	98	PWTL/Maharashtra	09-05-2018
17	400 kV Warora(PS)-Parli(PG)-II	98	PWTL/Maharashtra	14-05-2018

The WR utilities may intimate the current status on above.

****

Annexure 7.3

Status of Generating Units in WR

The status regarding Generating units, commissioned /expected to be commissioned during the current year 2018-19 is as below:

Name of the Power Projects	**Unit No.**	**Capacity (MW)**	**Date of Commissioning /Schedule Date**
Gujarat			
NIL			
Chhattisgarh			
NIL			
Maharashtra			
NIL			
Madhya Pradesh			
Essar Power MP Ltd(Mahan)	2	600	Synchronized on 03.08.2017
SHINGAJI	3	660	Synchronized on 27.04.2018 CoD expected in Oct 2018.
SHINGAJI	4	660	CoD expected in Jan 2019.
Central sector/IPP			
RKM	UNIT 4	300	Dec-18
NTPC LARA	UNIT 1	800	Nov -18
NTPC GADARWADA	UNIT 1	800	Nov-18
NTPC SHOLAPUR	UNIT 2	660	Mar-19
KSK	UNIT 5	600	Dec-18
Essar Mahar	Unit 2	600	CoD on 07.10.2018

****

ANNEXURE-8.1

REPORT ON MOCK DRILL FOR CRISIS MANAGEMENT PLAN IN POWER SECTOR

for the quarter ending ……..

1. **Name of Power Utility / Generating Station :**

2. **Date / Time of Mock-drill :**

3. **Location site of Mock-drill :**

4. **Observers :**
   (Indicate names of Team designated Leader / Members to handle crisis situation)

5. **Scenario of mock emergent situation :**

6. **Objective :**

7. **Chronological order of events logged :**

Time	Events	Response Time

8. **Observations on effectiveness of Mock Drill :**

9. **Recommendations / Suggestions on the observations (S. No. 8) :**

Signature of Designated
(Safety / Security Officer)

Dated……

Signature of
(Head O & M of Plant)

Dated……

Annexure -8.2 B

Reporting Format to the PSDF Project Monitoring Group

1. Name of the Scheme	
1.1 Name of the substation and its Location	
1.2 Executing Agency	
1.3 State/Region	
2. Date of Sanction order	
2.1 Date of Agreement of Entity with State Govt./NLDC	
2.2 Total Approved Cost of the Scheme	
2.3 Approved Grant by Monitoring Committee (Rs. In Lakhs)	
2.4 Date of Requisition by the Entity	
2.4.a) date and Reference of LOA	
2.4.b) Amount of LOA	
2.5 Date of Disbursement and amount	
2.5.1 : Ist Installment	
2.5.2: IInd installment	
2.5.3: IIIrd installment	
2.6 Date of Scheduled completion of Work	
2.7 Date of handing over of Site to entity (in case of turnkey projects)	

Report for the Month of ____MM / YY_____

No.	Supply Description	Qty. AS PER LOA	Quantity Received during Month	CUMMULATIVE PROGRESS Till date		BALANCE	Remarks
				Sch.	Act.		
1	item Details						
1.1							
1.2							
….							

	Erection Description	works as per LOA	Progress During Month	CUMMULATIVE PROGRESS Till date		Balance	
2	work details						
2.1							
2.2							
….							
3	Others						

Signature with seal of the Nodal Officer

POWER SYSTEM DEVELOPMENT FUND

Status of Implementation of Scheme (Progress report on 08.01.18)

1	Name of Entity	State Load Despatch Centre, GETCO, Gujarat		
2	Name of scheme	ADMS	Load forecasting scheme	Wind generation forecasting project
3	Project Cost (Rs crore)			
	Cost estimate proposed by entity (Rs Crores)	1.72	3.70	1.62
	Cost estimate sanctioned for grant from PSDF (Rs Crores)	1.67	3.70	1.62
4	Grant Approved (Rs Crores)	1.50	3.70	1.62 for three years
5	Sanction order issued be MoP (number & date)	10/1/2014-OM Dated: 11.05.15	10/1/2014-OM Dated: 04.08.15	10/1/2014-OM Dated: 17.03.16
6	Completion schedule in months as per DPR		December - 18 (Hiring services for three years)	October - 18 (Hiring services for three years)
7	Date of signing of agreement	23.08.15	Agreement signed.	Agreement sigend.
8	Requirement of funds (In Rs Lakhs)			
	c. Q4 - 2017-18 (Jan -Mar)	15 Lakhs (final instalment not released yet)		
	c. Q1 - 2018-19 (Apr -June)		30% of grant	24 Lakhs
	d. Q2 - 2018-19 (July - Sept)			24 Lakhs
	e. Q3 - 2018-19 (Oct - Dec)			20 Lakhs
9	Contract awarded in Rs	1671500	Yet to be awarded	Rs. 8161559 (Inclusive ST 14.5 %) for two years.
10	Funds drawn as on and its utilization	Total grant of Rs 1.35 Crore has been released and utilized by SLDC.		First instalment of Rs. 3245184 (Thirty two lakhs fourty five thousand one hundred eighty four) has received on 27.06.17. (Total 2281178 Rs is utilized)
11	Remark:	1. SLDC has applied for final instalment on 27.02.17. 2. The genital reminder to PSDF was submitted on 24.05.17. 3. The No interest accrued certificate was submitted on 01.06.17	The tender for hiring service of LF is under the approval of Competent Authority	1. The service of wind forecasting from FSP has been commenced from May'16.

Chief Engineer (SLDC)
GETCO, VADODARA

ANNEXURE 8.2C2. Annexure- 6.8 B

REPORTING FORMAT TO THE PSDF PROJECT MONITORING GROUP

1	**Name of the scheme**	**Renovation and Upgradation of protection system of substations of MPPTCL, Madhya Pradesh**
1.1	Name of the Substation and its Location	400kV and 220kV EHV Substations of MPPTCL within the MP State
1.2	Executing Agency	M.P.Power Transmission Co. Ltd. (MPPTCL)
1.3	State / Region	Madhya Pradesh / Western Region Load Despatch Centre
2	**Date of sanction Order**	**17/03/2016**
2.1	Date of Agreement of Entity with State Govt. / NLDC	22/06/2016
2.2	Total Approved cost of Scheme	10300 Lac
2.3	Grant approved by Monitoring Committee	9270 Lac
2.4	Date of Requisition by the Entity	MPPTCL has made requisition for disbursement of 10% PSDF grant towards signing of aggrement
2.4 (a)	Date and Reference of LOA	MPPTCL Reference letter no. 04-02/PSP-385/3564 dated 17.12.2016
2.4 (b)	Amount of LOA	Rs 65.34 Crore
2.5	Date of Disbursement and Amount	
2.5.1	1st Installment	Date of Disbursement-31.03.2017 and Amount - Rs 9.27 Crore (@10% of approved grant)
2.5.2	2nd Installment	Date of Disbursement-14.07.2017 and Amount - Rs 11.76 Crore (@20% of approved grant)
2.5.3	3rd Installment	Date of Disbursement-28.06.2018 and Amount - Rs 31.90 Crore (@60% of approved grant)
2.6	Date of scheduled completion of work	March-2019
2.7	Date of Handling over of site to entity (In case of Turn Key Contract)	Not Applicable

Report for the Month of August-2018							
Sl No.	**Supply Discription**	**Qty. As per LOA**	**Qty. Received during Month**	**Cummulative Progress till date**		**Balance**	**Remark**
				Schedule	**Actual**		
1	**Item Details**						
1.1	198kV Lightning Arresters	15	-	15	15	-	-
1.2	120kV Lightning Arresters	12	-	12	12	-	-
1.3	400kV Current Transformers	121	-	121	121	-	-
1.4	220kV Current Transformers	312	-	312	312	-	-
1.5	132kV Current Transformers	446	-	446	374	72	-
1.6	220kV Potential Transformers	62	-	62	62	-	-
1.7	132kV Potential Transformers	61	-	61	61	-	-
1.8	33kV Potential Transformers	3	-	3	3	-	-
1.9	400kV Isolators 3 Ph(Horizontal Break)	44	-	44	44	-	-
1.10	400kV Isolators 3 Ph(Pantograph)	21	-	21	21	-	-
1.11	220kV Isolators	435	-	435	365	70	-
1.12	132kV Isolators	493	-	493	493	-	-
1.13	Numerical Distance Protection Relays (For 220KV Feeders)	284	-	284	284	-	-
1.14	400kV Circuit Breaker 3 PH with PIR	17	-	17	17	-	-
1.15	400kV Circuit Breaker 3 PH without PIR	11	-	11	11	-	-
1.16	220kV Circuit Breaker 3 PH	69	-	69	69	-	-
1.17	132kV Circuit Breaker	51	-	51	51	-	-
1.18	400kV Capacitor Voltage Transformers	49	-	49	49	-	-
1.19	220kV Capacitor Voltage Transformers	123	-	123	123	-	-
1.20	132kV Capacitor Voltage Transformers	9	-	9	9	-	-

Report for the Month of August-2018						
Sl No.	**Erection Discription**	**Work As per LOA**	**Progress during Month (Qty Received)**	**Cummulative Progress till date**	**Balance**	
2	**Work Details**					
2.1	198kV Lightning Arresters	15	15	15	0	-
2.2	120kV Lightning Arresters	12	12	12	0	-
2.3	400kV Current Transformers	121	121	95	26	-
2.4	220kV Current Transformers	312	312	248	64	-
2.5	132kV Current Transformers	446	353	303	50	-
2.6	220kV Potential Transformers	62	62	42	20	-
2.7	132kV Potential Transformers	61	61	58	3	-
2.8	33kV Potential Transformers	3	3	3	0	-
2.9	400kV Isolators 3 Ph(Horizontal Break)	44	44	10	34	-
2.10	400kV Isolators 3 Ph(Pantograph)	21	21	7	14	-
2.11	220kV Isolators	435	366	259	107	-
2.12	132kV Isolators	493	493	422	71	-
2.13	Numerical Distance Protection Relays (For 220KV Feeders)	284	284	269	15	-
2.14	400kV Circuit Breaker 3 PH with PIR	17	17	9	8	-
2.15	400kV Circuit Breaker 3 PH without PIR	11	11	9	2	-
2.16	220kV Circuit Breaker 3 PH	69	69	54	15	-
2.17	132kV Circuit Breaker	51	51	41	10	-
2.18	400kV Capacitor Voltage Transformers	49	48	41	7	-
2.19	220kV Capacitor Voltage Transformers	123	123	120	3	-
2.20	132kV Capacitor Voltage Transformers	9	9	9	0	-
3	**Others**					

Maharastra

Status of PSDF Schemes (As on 08-12-2017)

Scheme Sr. No. as per Annexure-1	Scheme Name	Estimated Cost in Rs. (In Cr)	Project Cost Accepted in Rs. (In Cr)	Grant Approved in Rs. (In Cr)	Balance Amount in Rs. (In Cr.)	Value of contract awarded so far	Value of contract under Process of award	Quantum of grant likely to be utilised out of total approved grant (In Cr.)		Remark
								FY-2017-18	FY-2018-19	
71	Supply, Installation, Testing and Commissioning of 75 Remote Terminal Units at 132 kV Substations for data acquisition and integration in SCADA systems at SLDC Kalwa and ALDC Ambazari	32.03	25.65	7.7	24.33	Nil	Nil	0	0	Approval for 30 % funding received from PSDF. As many projects of Real Time visibility are under taken by MSETCL, a letter to hold funding till March 2019 is submitted to Convener PSDF, NLDC New Delhi.
72	Supply, Installation, Testing and Commissioning (SITC) of 30 Nos. Data Concentrators (DCs) for data acquisition from RE pooling stations in MSETCL network with communication links for real time data transmission to Renewable Energy Management Centre(REMC)	13.12	10.41	9.37	3.75	Nil	Nil	2.81	6.56	Tripartite agreement between MSETCL, Govt. of Maharashtra and Nodal agency for PSDF (i.e. NLDC) duly signed by Maharashta Authorities has been submitted to the PSDF.
80	Implementation Of Automatic Demand Management Scheme (ADMS) On 33/11 KV HV Feeders In Maharashtra With Automatic Triggering Mechanism At State Load Despatch Centre, Airoli, Navi Mumbai	43.73	32.58	29.32	14.41	Nil	Nil	8.79	20.53	1) Maharashtra Electricity Regulatory Commission (MERC) has accorded their "In Principle Approval" for implementation of Automatic Demand Management Scheme (ADMS) on 33/11 KV HV feeders in Maharashtra at total estimated cost of Rs.44.73 Crores including IDC & applicable taxes. 2) Tripartite agreement between MSETCL, Govt. of Maharashtra and Nodal agency for PSDF (i.e. NLDC) duly signed by Maharashta Authorities has been submitted to the PSDF.

CSPTCL
छत्तीसगढ़ राज्य पॉवर ट्रांसमिशन कंपनी लिमिटेड

CHHATTISGARH STATE POWER TRANSMISSION COMPANY LIMITED
छत्तीसगढ़ राज्य विद्युत पारेषण कम्पनी मर्यादित
(C.G. Govt. Undertaking) (छत्तीसगढ़ शासन का एक उपक्रम)
CIN - U40108CT2003SGC015820 CHHATTISGARH STATE LOAD DESPATCH CENTRE: RAIPUR
छत्तीसगढ़ राज्य भार प्रेषण केन्द्र, रायपुर
दूरभाष PHONE: 0771– 2574172, फैक्स FAX NO. 0771-2574174.
Web Site: www.sldccg.com email-csebsldc@sldccg.com

Ref: 03-02/SLDC/ 2381 Raipur Dated: 15 FEB 2018

To,

The Superintending Engineer (Operation),
Western Regional Power Committee,
F-3, MIDC Area, Andheri (East),
Mumbai- 400 093.
Fax No. 022-28370193.

Sub: Monitoring of schemes funded from PSDF.

Please find enclosed the status of schemes funded by PSDF for the State of Chhattisgarh for incorporating the same in 504th OCCM to be held on 21.02.2018 at Mumbai.

Encl: As above.

Executive Director
SLDC, CSPTCL, Raipur

c/c AS 15/2/18

CHHATTISGARH STATE POWER TRANSMISSION COMPANY LIMITED
छत्तीसगढ़ राज्य विद्युत पारेषण कम्पनी मर्यादित
(C.G. Govt. Undertaking) (छत्तीसगढ़ शासन का एक उपक्रम)
CIN - U40108CT2003SGC015820 STATE LOAD DESPATCH CENTRE: RAIPUR
छत्तीसगढ़ राज्य भार प्रेषण केन्द्र, रायपुर
दूरभाष PHONE: 0771– 2574172, फैक्स FAX NO. 0771-2574174.
Web Site: sldcecg.com email-csebsldc@sldcecg.com, ra.csldc@sldcecg.com

Ref: 03-02/SLDC/RA/ADMS/PDSF/MC/2018/ 2286 **Raipur Dated:** 02 FEB 2018

To/ प्रति,

अपर महाप्रबंधक
राष्ट्रीय भार प्रेषण केंद्र,
संयोजक - निगरानी समिति, पी.एस.डी.ऍफ़
बी-9, प्रथम तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय,
नई दिल्ली 110016

विषय : सातवीं पी.एस.डी.ऍफ़ निगरानी समिति कि बैठक बावत|
संदर्भ : आपका पत्र NLDC-PSDF/Monitoring Group/WR/2016-17/1097 दिनांक 29.01.2018.

दिनांक 09.02.2018 को प्रस्तावित सातवीं पी.एस.डी.ऍफ़ निगरानी समिति कि बैठक हेतु छत्तीसगढ़ की योजना **"आटोमेटिक डिमांड मैनेजमेंट सिस्टम के क्रियान्वयन की योजना"** के स्वीकृति आदेश क्रमांक 10/1/2014-OM दिनांक 16 मई 2017 के सन्दर्भ में वर्तमान - वस्तुस्थिति-(Status) निम्न है :-

1. पी.एस.डी.ऍफ़. परियोजना प्रस्ताव स. :**पी.एस.डी.ऍफ़./ सी.एस.पी.टी.सी.एल.-02/ अगस्त-16/112;**
2. विद्युत् मंत्रालय द्वारा स्वीकृति आदेश क्रमांक **10/1/2014-OM दिनांक 16 मई 2017;**
3. आदेश सम्प्रेषण का सन्दर्भ : **NLDC-PSDF/ CSPTCL/ 2015-16/ 1088 दिनांक 29.01.2018;**
4. पी.एस.डी.ऍफ़. परियोजना का नाम : **आटोमेटिक डिमांड मैनेजमेंट सिस्टम के क्रियान्वयन की योजना;**
5. क्षेत्रीय विद्युत् समिति : **पश्चिम क्षेत्रीय विद्युत् समिति** (WRPC);
6. राज्य : **छत्तीसगढ़;**
7. परियोजना प्रस्ताव राशि : **रु 568 लाख;**
8. परियोजना स्वीकृत राशि : **रु 503 लाख;**
9. पी.एस.डी.ऍफ़. अनुदान राशि : **रु 453 लाख;**
10. पी.एस.डी.ऍफ़. अनुदान स्वीकृति तारीख: **16/मई/2017;**
11. परियोजना पूर्ण करने कि समयावधि: **अनुदान आहरण से 24 माह;**
12. परियोजना क्रियान्वयन कि स्थिति : **परियोजना निविदा आमंत्रित करने के अनुक्रम में;**

... क्रमशः

13. त्रिपक्षीय अनुबंध (Tripartite Agreement) कि स्थिति : **स्वीकृति आदेश संख्या के अनुच्छेद 3 के धारा vii के अनुसार एवं संवितरण प्रक्रियाओं के दिशा निर्देश के अनुसार छत्तीसगढ़ राज्य विद्युत् पारेषण कंपनी मर्या (सी.एस.पी.टी.सी.एल), छत्तीसगढ़ सरकार एवं नोडल अभिकरण (एन.एल.डी.सी) एक त्रिपक्षीय अनुबंध (Tripartite Agreement) पर प्रारूप सी-3 के अनुसार हस्ताक्षर हेतु अनुबंध प्रबंधन के सम्मुख दिनांक 30.01.2018 को प्रस्तुत;**

14. अनुदान से आहरित राशी (LOA) : **आज दिनांक तक निरंक;**

15. आहरण कि राशि का प्रतिशत : **आज दिनांक तक निरंक;**

16. मांग कि गयी राशि का विवरण : **आज दिनांक तक निरंक;**

17. अन्य : **निरंक।**

कार्यपालक निदेशक

(छत्तीसगढ़ राज्य भार प्रेषण केंद्र) छ.रा.वि.पा.कं.मर्या.

प्रतिलिपि:

1. कार्यपालक निदेशक (वाणिज्य एंव परियोजना) छ.रा.वि.पा.कं.मर्या., डंगनिया, रायपुर- 492 013।
2. अधीक्षण अभियंता, कार्यालय प्रबंध निदेशक, छत्तीसगढ़ राज्य विद्युत पारेषण कंपनी मर्यादित, डंगनिया, रायपुर- 492 013।

CIN-U40108CT2003SGC015820
CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
(A Government of Chhattisgarh Undertaking)
OFFICE OF THE EXECUTIVE DIRECTOR (C&P)
State Load-Dispatch Building, Dangania, Raipur-492013, Website-www.cspc.co.in
Ph. No. 0771-2574831 E-mail cecnp.csptcl@cspc.co.in Fax No. 0771-2574698

No. 02-12 / SE(PL)/PSDF /2043 Raipur/ Dtd. 13 FEB 2018

STATE LOAD DESPATCH CENTRE R.No. 4405 Date 13-2-18 RAIPUR 492013

To,

The Chief Engineer (LD),
CSPTCL, Raipur.

Sub:- Monitoring of Scheme funded from PSDF.
Ref:- Your letter No. 1412 dtd.09.10.2017.

******

In the subject matter, with reference to your above referred letter, please find enclosed herewith the desired information in duly filled Annexure-8.2 A and Annexure-8.2 B for your kind information and necessary action at your end.

Encl.- As above.

Executive Director (C&P)
CSPTCL, Raipur

SLDC
Addi.C.E
SE(MO)...
SE(SO)...
EE(O).....
EE(OA)....
EE(RA)....
EE(U/I)...
EE(E&M)
EE(MEA)
EE(OPN)
M(F&A)

For OCCM meeting, therefore give the papers to EE (RA)

13/2

Annexure-8.2 B

Reporting Format to the PSDF Project Monitoring Group	
1. Name of the Scheme	Replacement/Renovation/ Up gradation of protection system and switchyard equipment of EHV Substations in CSPTCL, Chhattisgarh.
1.1 Name of the substation and its Location	(i) 400 KV Substation Bhilai (Khedamara) (ii) 220 KV Substation Thelkadih. (iii) 220 KV Substation Bemetara. (iv) 220 KV Substation Bhilai. (v) 220 KV Substation Gurur. (vi) 220 KV Substation Banari. (vii) 220 KV Substation Mopka. (viii) 220 KV Substation Kotmikala. (ix) 220 KV Substation Raigarh. (x) 220 KV Substation Bishrampur. (xi) 220 KV Substation Urla. (xii) 220 KV Substation Bhatapara. (xiii) 220 KV Substation Siltara. (xiv) 220 KV Substation Suhela. (xv) 220 KV Substation Doma. (xvi) 220 KV Substation Paraswani. (xvii) 220 KV Substation Saraipali. (xviii) 220 KV Substation Barsoor.
1.2 Executing Agency	Actual project execution at site not started so for.
1.3 State/Region	Chhattisgarh
2. Date of Sanction order	05.09.2016
2.1 Date of Agreement of Entity with State Govt./NLDC	Executing of tripartite agreement is under process.
2.2 Total Approved Cost of the Scheme	Rs. 6852 Lakhs.
2.3 Approved Grant by Monitoring Committee (Rs. In Lakhs)	Rs. 6167 Lakhs.
2.4 Date of Requisition by the Entity	Executing of tripartite agreement is under process.
2.4 a) Date and Reference of LOA	
2.4 b) Amount of LOA	

2.5 Date of Disbursement and amount 2.5.1: Ist Installment 2.5.2: IInd Installment 2.5.3: IIIrd Installment	Executing of tripartite agreement is under process.
2.6 Date of Scheduled completion of Work	12 Months from the date of release of first installment.
2.7 Date of handing over of Site to entity (in case of turnkey projects)	

Report for the Month of 02/2018

No.	Supply Description	Qty. as per LOA	Quantity Received during Month	Cumulative Progress Till date		Balance	Remarks
				Sch.	Act.		
1	Item Details						Executing of tripartite agreement is under process.
1.1							
1.2							
.....							
	Erection Description	**Works as per LOA**	**Progress During Month**	**Cumulative Progress Till Date**		**Balance**	
2	Work details						Executing of tripartite agreement is under process.
2.1							
2.2							
...							
3	Others						

Signature with seal of the Nodal Officer

Annexure-8.2 A

Sr. No.	State/UT	No. Schemes	Scope of Work (scheme)	(Amount in Rs. Crores)				% of fund Disbursed	Status
				Approved Cost	Grant sanctioned	Date of Sanction	Fund Released		
1	Chhattisgarh	2	Scheme for Replacement/Renovation/ Up gradation of protection system and switchyard equipment of EHV Substations in CSPTCL, Chhattisgarh.	68.52	**61.67**	05.09.2017	0.00	0.00%	Executing of tripartite agreement is under process.
2			Implementation of Automatic Demand Management Scheme (ADMS) by CSPTCL	5.03	**4.53**	16.05.2017	0.00	0.00%	

ANNEXURE **8.2C-2**

Reporting Format to the PSDF Project Monitoring Group

1. Name of the Scheme	Implementation of Integrated System for ABT,OA and MIS for MPSLDC
1.1 Name of the substation and its Location	MPSLDC
1.2 Executing Agency	M/s Kalki Communication Tech Pvt. Ltd., Bangalore.
1.3 State/Region	MADHYA PRADESH/WESTERN REGION
2. Date of Sanction Order	17.03.2016
2.1 Date of Agreement of Entity with State Govt. / NLDC	22.06.2016
2.2 Total Approved Cost of Scheme	Rs.400 Lakhs
2.3 Approved Grant by Monitoring Committee (Rs. In Lakhs)	Rs.360 LAKHS
2.4 Date of Requisition by the Entity	
2.4 a) Date and Reference of LOA	06.08.2016, Letter No. 07-05/174-A/1723
2.4 b) Amount of LOA	Rs.301.62 LAKHS
2.5 Date of Disbursement and amount	
2.5.1 Ist Installment	RECEIVED (Rs. 36 Lakhs)
2.5.2 IInd Installment	RECEIVED (Rs. 54.29 Lakhs)
2.5.3 IIIrd Installment	Received (Rs.154.00 Lakhs)
2.6 Date of Scheduled completion of work	Expected to be completed by 31 AUGUST 2018
2.7 Date of Handling over of Site to entity (In case of Turn key project)	-

Report for the Month of JULY 2018

No.	Supply Discription	Qty. AS PER LOA	Quantity Received during Month	CUMMULATIVE PROGRESS till date		Balance	Remark
				Sch.	Act.		
1	Item Details						
1.1	Supply of hardware & Sofwtare modules	Lot	Nil	Full quantity of hardware & Operating softwares were received.Hardware & Software physicaly verified by NLDC on 10.2.2018.			
1.2	Deployment of software modules	Lot	Nil	Site accepatance Test is in progress.			

	Erection Discription	works as per LOA	Progress During Month	CUMMULATIVE PROGRESS till date		Balance	
2	Development / customization of software modules in progress	Lot	Commissioning is in final stage.				
2.1							
2.2							
3	Others						

Signature With Seal of The Nodal Officer

Annexure- 8.2C2

REPORTING FORMAT TO THE PSDF PROJECT MONITORING GROUP

1	**Name of the scheme**	**Renovation and Upgradation of protection system of substations of MPPTCL, Madhya Pradesh**
1.1	Name of the Substation and its Location	400kV and 220kV EHV Substations of MPPTCL within the MP State
1.2	Executing Agency	M.P.Power Transmission Co. Ltd. (MPPTCL)
1.3	State / Region	Madhya Pradesh / Western Region Load Despatch Centre
2	**Date of sanction Order**	**17/03/2016**
2.1	Date of Agreement of Entity with State Govt. / NLDC	22/06/2016
2.2	Total Approved cost of Scheme	10300 Lac
2.3	Grant approved by Monitoring Committee	9270 Lac
2.4	Date of Requisition by the Entity	MPPTCL has made requisition for disbursement of 10% PSDF grant towards signing of aggrement
2.4 (a)	Date and Reference of LOA	MPPTCL Reference letter no. 04-02/PSP-385/3564 dated 17.12.2016
2.4 (b)	Amount of LOA	Rs 65.34 Crore
2.5	Date of Disbursement and Amount	
2.5.1	1st Installment	Date of Disbursement-31.03.2017 and Amount - Rs 9.27 Crore (@10% of approved grant)
2.5.2	2nd Installment	Date of Disbursement-14.07.2017 and Amount - Rs 11.76 Crore (@20% of approved grant)
2.5.3	3rd Installment	Date of Disbursement-28.06.2018 and Amount - Rs 31.90 Crore (@60% of approved grant)
2.6	Date of scheduled completion of work	March-2019
2.7	Date of Handling over of site to entity (In case of Turn Key Contract)	Not Applicable

Report for the Month of July-2018							
Sl No.	**Supply Discription**	**Qty. As per LOA**	**Qty. Received during Month**	**Cummulative Progress till date**		**Balance**	**Remark**
				Schedule	**Actual**		
1	**Item Details**						
1.1	198kV Lightning Arresters	15	-	15	15	-	-
1.2	120kV Lightning Arresters	12	-	12	12	-	-
1.3	400kV Current Transformers	121	-	121	121	-	-
1.4	220kV Current Transformers	312	-	312	308	4	-
1.5	132kV Current Transformers	446	43	446	374	72	-
1.6	220kV Potential Transformers	62	-	62	62	-	-
1.7	132kV Potential Transformers	61	4	61	57	4	-
1.8	33kV Potential Transformers	3	-	3	3	-	-
1.9	400kV Isolators 3 Ph(Horizontal Break)	44	-	44	44	-	-
1.10	400kV Isolators 3 Ph(Pantograph)	21	-	21	21	-	-
1.11	220kV Isolators	435	-	435	365	70	-
1.12	132kV Isolators	493	-	493	493	-	-
1.13	Numerical Distance Protection Relays (For 220KV Feeders)	284	-	284	284	-	-
1.14	400kV Circuit Breaker 3 PH with PIR	17	-	17	17	-	-
1.15	400kV Circuit Breaker 3 PH without PIR	11	-	11	11	-	-
1.16	220kV Circuit Breaker 3 PH	69	-	69	69	-	-
1.17	132kV Circuit Breaker	51	-	51	51	-	-
1.18	400kV Capacitor Voltage Transformers	49	-	49	49	-	-
1.19	220kV Capacitor Voltage Transformers	123	8	123	115	-	-
1.20	132kV Capacitor Voltage Transformers	9	-	9	9	-	-

Report for the Month of July-2018						
Sl No.	**Erection Discription**	**Work As per LOA**	**Progress during Month (Qty Received)**	**Cummulative Progress till date**	**Balance**	
2	**Work Details**					
2.1	198kV Lightning Arresters	15	15	15	0	-
2.2	120kV Lightning Arresters	12	12	12	0	-
2.3	400kV Current Transformers	121	121	75	46	-
2.4	220kV Current Transformers	312	312	233	79	-
2.5	132kV Current Transformers	446	350	280	70	-
2.6	220kV Potential Transformers	62	62	35	27	-
2.7	132kV Potential Transformers	61	61	54	7	-
2.8	33kV Potential Transformers	3	3	3	0	-
2.9	400kV Isolators 3 Ph(Horizontal Break)	44	44	8	36	-
2.10	400kV Isolators 3 Ph(Pantograph)	21	21	11	10	-
2.11	220kV Isolators	435	366	252	114	-
2.12	132kV Isolators	493	493	409	84	-
2.13	Numerical Distance Protection Relays (For 220KV Feeders)	284	284	245	39	-
2.14	400kV Circuit Breaker 3 PH with PIR	17	17	6	11	-
2.15	400kV Circuit Breaker 3 PH without PIR	11	11	9	2	-
2.16	220kV Circuit Breaker 3 PH	69	69	54	15	-
2.17	132kV Circuit Breaker	51	51	38	13	-
2.18	400kV Capacitor Voltage Transformers	49	48	25	23	-
2.19	220kV Capacitor Voltage Transformers	123	123	116	7	-
2.20	132kV Capacitor Voltage Transformers	9	9	2	7	-
3	**Others**					

Annx-8.2C23

Reporting Format to the PSDF Project Monitoring Group

S.No	Particulars	Remarks
1.0	Name of the Scheme	Renovation and Up-Gradation of 400 and 220 kV switch Yards of MPPGCL.
1.1	Name of the substation and its Location	1. Amarkantak Thermal Power Station/ Chachai Distt Anuppur MP. 2. Sanjay Gandhi Thermal Power Station/ Birsinghpur Distt Umaria, MP 3. Satpura Thermal Power Station/ Sarni Distt Betul, MP. 4. Tons Hydel Power Station - I / Sirmour Distt Rewa, MP.
1.2	Executing Agency	Madhya Pradesh Power Generating Company
1.3	State/Region	Madhya Pradesh /Western Region
2.0	Date of Sanction Order	05.09.2016
2.1	Date of Agreement of Entity with State Govt. / NLDC	04.10.2016
2.2	Total Approved Cost of Scheme	Rs 5234.00 Lakh
2.3	Approved Grant by Monitoring Committee (Rs. In Lakhs)	Rs 4711.00 Lakh
2.4	Date of Requisition by the Entity	16.10.2016
2.4 a)	Date and Reference of LOA	As per Appendix 'A'.
2.4 b)	Amount of LOA	Rs 3547 Lakh
2.5.0	Date of Disbursement and amount	
2.5.1	Ist Installment	Rs 471 Lakh (10% advance out of 30%) on 31.03.2017. Rs 430 Lakh (20% advance out of 30%) on 22.06.18.
2.5.2	II nd Installment	-
2.5.3	III rd Installment	-
2.6	Date of Scheduled completion of work	18 months from date of order of each item.
2.7	Date of Handling over of Site to entity. (In case of Turn key project)	Not Applicable

(H.S.Namdeo)
Chief Engineer(R&M)
Nodal Officer PSDF

Report for the Month of July' 2018		
No	Supply Discription	Remark
1	Supply of 400 KV and 220 KV Lightening Arresters	Order for supply has been placed vide No 07-09 /PSDF/ T-212/Ord/689 dtd 27.05.2017.Schedule period for supply and installation is 18 months. Material has been received at site.
2	Supply of 400 KV Isolators	Order for Supply of 400 kV Isolators has been placed vide No 07-09/PSDF/ T-213/Ord/698 dtd 30.05.2017. Schedule period for supply and installation is 18 months. Some drawings have been vetted by STPS Sarni, some has been forwarded to firm for revision. Firm has submitted revised drawings and same are under examination at Engg Cell and respective Site.
3	Supply of 400 KV Circuit Breakers	Detailed order has been issued vide No 07-09 /PSDF/ T-207/Ord/1463 dtd 17.10.2017. Schedule period for supply and installation is 18 months. All Breakers has been received at respective site.
4	Supply of 220 KV Circuit Breakers	Detailed order has been issued vide No 07-09 /PSDF/ T-208/Ord/1480 dtd 24.10.2017. Schedule period for supply and installation is 18 months. All material has been received at site.
5	Supply of 400KV and 220 KV Capacitive Voltage Transformers.	Detailed order has been placed on successful bidder on 28.12.17. Schedule period for supply and installation is 18 months. Dispatch Clerance has been issued to firm on 20.07.18. Firm has dispatched material to all three sites.
6	Supply of 20 MVA 220/33 KV Transformers and 2.5 MVA 33/0.4 KV Transformer.	Detailed order has been placed on successful bidder on 18.01.18. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
7	Supply of 220 KV Isolators.	Detailed order has been placed on M/s GR Power on 14/04/18. Schedule period for supply and installation is 18 months. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
8	Supply of 400 KV and 220 KV Current Transformers	Detailed order has been placed on M/s BHEL on 24.04.18. Schedule period for supply and installation is 18 months. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
9	Supply of 220V, 600 Ah battery along with Charger, 48V 300 Ah battery along with Charge and 220 H 1200 &1500 Ah Battery Chargers	Technical offer has been evaluated, Price Bids are to be opened shortly.
10	Various Carrier Communication Equipments.	Detailed order has been placed on M/s PUN COM, Mohali vide order No 964 dtd 05,07.18. Schedule period for supply and installation is 18 months
11	Various Electrical Testing Equipments.	Price Bids has been opened on 10.07.18. Case is being sent to Tender Evaluation Committee for concurrance for placing order on sucessful bidder.
12	Supply of 220 kV Wave Trap	Order has been placed on M/s GE T&D, Mumbai vide Order No 746 dtd 21.05.18, Schedule period for supply and installation is 18 months.
13	Various Numerical Relays.	NIT issued and uploaded on web portal on 09.11.17 with due date of opening 22.12.17. The TnC offer of qualified firms were opened on 15.05.18 and same is under evaluation.
14	String and Solid Core insulators	Due to non qualifing techanical parameters, the tender has been dropped. Issuing of NIT for fresh tender with same PQR and techanical specification is under way.
15	Thermovision Camera.	Due to non qualifying of PQ Requirement by all three bidders, the tender has been dropped and for issuing fresh NIT with revised PQR is under process.

(H.S.Namdeo)
Chief Engineer(R&M)
Nodal Officer PSDF

Report for the Month of July' 2018		
No	Erection Discription	Remark
1	Supply of 400 KV and 220 KV Lightening Arresters	24 Nos 220 kV LAs had been installesd at THPS MPPGCL Sirmour. 12 Nos 400 kV LAs has been installed at STPS MPPGCL Sarni. 84 % of supplied LAs has been commissioned.
2	Supply of 400 KV Isolators	Order for Supply, ET&C of 400 kV Isolators has been placed vide No 07-09/PSDF/ T-213/Ord/698 dtd 30.05.2017. Schedule period for supply and installation is 18 months. Firm has submitted revised drawings and same are under evaluation at Engg Cell.
3	Supply of 400 KV Circuit Breakers	Detailed order has been issued vide No 07-09 /PSDF/ T-207/Ord/1463 dtd 17.10.2017. ET&C of 2 Nos CBs is under progress at STPS. All efforts are being made to commission remaining CBs at SGTPS site.
4	Supply of 220 KV Circuit Breakers	Detailed order has been issued vide No 07-09 /PSDF/ T-208/Ord/1480 dtd 24.10.2017. Schedule period for supply and installation is 18 months. All material has been received at site. 2 Nos CBs has been commissioned at STPS, 6 Nos CBs has been commissioned at THPS .
5	Supply of 400KV and 220 KV Capacitive Voltage Transformers.	Detailed order has been placed on successful bidder on 28.12.17. ET&C shall be carriedout after receiving material at site.
6	Supply of 20 MVA 220/33 KV Transformers and 2.5 MVA 33/0.4 KV Transformer.	Detailed order has been placed on successful bidder on 18.01.18. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
7	Supply of 220 KV Isolators.	Detailed order has been placed on M/s GR Power on 14/04/18. Schedule period for supply and installation is 18 months. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
8	Supply of 400 KV and 220 KV Current Transformers	Detailed order has been placed on M/s BHEL on 24.04.18. Schedule period for supply and installation is 18 months. Firm has submitted Drawings for approval and same are under examination at Engg Cell and respective site.
9	Supply of 220V, 600 Ah battery along with Charger, 48V 300 Ah battery along with Charge and 220 H 1200 &1500 Ah Battery Chargers	Technical offer has been evaluated. Price Bids shall be opened shortly.
10	Various Carrier Communication Equipments.	Detailed order has been placed on M/s PUN COM, Mohali on 5.7.18. Schedule period for supply and installation is 18 months.
11	Various Electrical Testing Equipments.	Price Bids has been opened on 10.07.18. Case is being sent to TEC for concurrence for placing order.
12	Supply of 220 kV Wave Trap	Order has been placed on M/s GE T&D, Mumbai on 21.05.18. Schedule period for supply and installation is 18 months
13	Various Numerical Relays.	NIT issued and uploaded on web portal on 09.11.17 with due date of opening 22.12.17. The TnC offer of qualified firms were opened on 15.05.18 and same is under evaluation.
14	String and Solid Core insulators	Due to non qualifing techanical parameters, the tender has been dropped. Issuing of NIT for fresh tender with same PQR and techanical specification is under way.
15	Thermovision Camera.	Due to non qualifying of PQ Requirement by all three bidders, the tender has been dropped and for issuing fresh NIT with revised PQR is under process.

(H.S.Namdeo)
Chief Engineer(R&M)
Nodal Officer PSDF

Reporting Format to the PSDF Project Monitoring Group		
S.No	Particulars	Remarks
1.0	Name of the Scheme	Installation of 125 MVAR Bus Reactor at SSTPP Khandwa Stage - I
1.1	Name of the substation and its Location	Shree Singaji Thermal Power Project/ Dongalia Distt Khandwa, MP.
1.2	Executing Agency	Madhya Pradesh Power Generating Company
1.3	State/Region	Madhya Pradesh /Western Region
2.0	Date of Sanction Order	05.09.2016
2.1	Date of Agreement of Entity with State Govt. / NLDC	04.10.2016.
2.2	Total Approved Cost of Scheme	Rs 621.00
2.3	Approved Grant by Monitoring Committee (Rs. In Lakhs)	Rs 559.00
2.4	Date of Requisition by the Entity	23.03.2017
2.4 a)	Date and Reference of LOA	07-09/R&M/PSDF/T-216/e-5905/LoI/763 dtd 23.05.18.
2.4 b)	Amount of LOA	Rs 1034 Lakhs
2.5.0	Date of Disbursement and amount	01.06.2017 Rs 55.90 Lakhs
2.5.1	Ist Installment	Rs 55.90 Lakhs (10% of approved grant)
2.5.2	II nd Installment	-
	III rd Installment	-
2.6	Date of Scheduled completion of work	
2.7	Date of Handling over of Site to entity. (In case of Turn key project)	Not Applicable
Report for the Month of July' 2018		
No	Supply Discription	Remark
1	Supply of 125 MVAR Bus Reactor alongwith all associted accessories for SSTPP Khandwa.	Detailed order has been placed on.M/s TBEA, Vadodara on 13.06.18. Schedule period for supply, E T&C is 18 months. Firm has submitted drawings for approval, same are under scruitny at Engg Cell and SSTPP Site.

No	Erection Discription	Remark
1	Erection of 125 MVAR Bus Reactor alongwith all associted accessories for SSTPP Khandwa.	Detailed order has been placed on.M/s TBEA, Vadodara on 13.06.18. Schedule period for supply, E T&C is 18 months. Firm has submitted drawings for approval, same are under scruitny at Engg Cell and SSTPP Site. Erection will be started after receiving material at site,

(H.S.Namdeo)
Chief Engineer(R&M)
Nodal Officer PSDF

Reporting Format to the PSDF Project Monitoring Group		
S.No	Particulars	Remarks
1.0	Name of the Scheme	Installation of 50 MVAR Line Reactor at Sarni - ISP feeder at Sarni end
1.1	Name of the substation and its Location	Satpura Thermal Power Station Distt Betul, MP.
1.2	Executing Agency	Madhya Pradesh Power Generating Company
1.3	State/Region	Madhya Pradesh /Western Region
2.0	Date of Sanction Order	22.05.17
2.1	Date of Agreement of Entity with State Govt. / NLDC	19.01.18
2.2	Total Approved Cost of Scheme	Rs 745.00
2.3	Approved Grant by Monitoring Committee (Rs. In Lakhs)	Rs 671.00
2.4	Date of Requisition by the Entity	19.01.18
2.4 a)	Date and Reference of LOA	Nil
2.4 b)	Amount of LOA	Nil
2.5.0	Date of Disbursement and amount	23.03.18
2.5.1	Ist Installment	67.1 Lakhs (10% of approved grant)
2.5.2	II nd Installment	-
	III rd Installment	-
2.6	Date of Scheduled completion of work	
2.7	Date of Handling over of Site to entity. (In case of Turn key project)	Not Applicable

Report for the Month of May' 2018		
No	Supply Discription	Remark
1	Supply of 50 MVAR Line Reactor alongwith all associted accessories for Sarni- ISP Feeder.	NIT issued and uploaded on web portal on 30.11.17 with due date of opening 09.01.18. No offer received up to due date, hence due date extended up to 29.01.18, 07.03.18 & 03.04.18. The only single offer received was opened on 03.04.18. While scrutiny of the PQR documents, it was observed that firm has not submitted proper documents, hence firm was requested to furnish the desired documents and due date was extended up to 23,04,18, as per guidelines issued in procurement mannual of MPPGCL. Till this extended due date no fresh offer was received. M/s TBEA has submitted the PQR document. After evaluation of PQR documents, TnC offer was opened on 04.05.18 and same is under evaluation.

No	Erection Discription	Remark
1	Supply of 50 MVAR Line Reactor alongwith all associted accessories for Sarni- ISP Feeder.	Erection will be started after placing order and receiving material at site,

(H.S.Namdeo)
Chief Engineer(R&M)
Nodal Officer PSDF

Annexure-8.5

Progress of Capacitor Installation for the month of----------

State	Constituent	Installed as on 01.04.2017	Installed as on 31.10.2017	Installed During the current month	Installed Capacity at the end of the month	Capacitors installed from April 17 to Current Month	Remarks
		MVAR	MVAR	MVAR	MVAR	MVAR	
Gujarat							
	GETCO - 11 kV & above						
	Electricity Dept. Daman						
	Torrent Power - 11 kV & above						
Madhya Pradesh							
	MPPTCL - All voltage levels						
	MP Discom Poorva 11-33 kV						
	MP Discom Madhya 11-33 kV						
	MP Discom Paschim 11-33 kV						
Maharastra							
	MSETCL - 132 kV & above						
	Mah Discom(1) -11 - 33 kV						
	TATA Power - 11 kV and above						
	RIL - 11 kV and above						
	BEST - 11 kV - 33 kV						
Chattisgarh							
	CSPTCL- 132 kV and above						
	CS Discoms(1) - 11-33 kV						
Goa	GED - 11kV and above						
WR	WR-11 kV and above						

ANNEXURE -8.4

adani™

Ref: STL/WRPC/15102018 **Date: 15.10.2018**

The Member Secretary,
WRPC
Mumbai

Subject: First time submission of availability details of transmission elements of **Sipat Transmission Limited (STL)**

Ref: COD certificate no. WRLDC/STL/01R1 dated 09.10.2018 issued by WRLDC.

Dear Sir,

This is with reference to the transmission scheme **Sipat Transmission Limited (STL)** being implemented by Adani Transmission Ltd., it is hereby informed that the trial operation of transmission elements of STL have been successfully completed, details of same are as below.

Sr. No	Element Name	Start of Trial Run
1	765 kV Sipat- Bilaspur line 3 with bay 707 at Sipat end & bay 701 at Bilaspur end	06.08.2018 at 18:56 HRS

Further, WRLDC has issued the certificate in accordance with Regulation 6.3A (5) of CERC (Indian Electricity Grid Code) Regulations to certify successful trial operation of the transmission elements. (Copy Enclosed).

This is to let you know that, we shall now be submitting availability details of STL every month for issuance of availability certificate and would request for your kind support in this regard.

Thanking You

For Sipat Transmission Limited (STL)

Authorized Signatory

Sipat Transmission Ltd.

Sipat Transmission Ltd
Sambhaav House
Judges Bungalow Road, Bodakdev
Ahmedabad 380 015
Gujarat, India
CIN : U40300DL2014GOI274541

Tel +91 79 2555 6900
Fax +91 79 2555 7155
info@adani.com
www.adani.com

Registered Office: C-105, Adani House, Anand Niketan, New Delhi 110 021, Delhi, India

adani™

Ref: STL/MSEDCL/12102018 **Date: Oct 12, 2018**

The Chief Engineer (P.P)
Maharashtra State Electricity Distribution Co. Ltd
Prakashgad, 4th Floor
Bandra (E), Mumbai

Subject: Intimation of commercial operation date (COD) for transmission system elements for the project being implemented by **Sipat Transmission Limited (STL)**
1. Sipat – Bilaspur pooling station 3rd 765 kV S/C

Ref: 1. Transmission Service Agreement (TSA) dated 24th June'2015

Dear Sir,

This is with reference to the transmission scheme **Sipat Transmission Limited (STL)** being implemented by Adani Transmission Ltd., it is hereby informed that the transmission element **"Sipat – Bilaspur pooling station 3rd 765 kV S/C along with 1 no. 765 kV line bay at Sipat STPP of NTPC"**, (Schedule 3 - Sr. no 1 of TSA) has achieved COD from 00:00 hrs of August 10th, 2018. As per the TSA clause 6.2.1, the transmission element **"Sipat – Bilaspur pooling station 3rd 765 kV S/C along with 1 no. 765 kV line bay at Sipat STPP of NTPC"**, (Schedule 3 - Sr. no 1 of TSA) has completed 72 hrs. on August 9th, 2018 at 18:56 hrs. The relevant extract of TSA is reproduced as under:

"An Element of the Project shall be declared to have achieved COD seventy two (72) hours following the connection of the Element with the interconnection Facilities...."

Further, WRLDC has issued the certificate in accordance with Regulation 6.3A (5) of CERC (Indian Electricity Grid Code) Regulations to certify trial operation of both the transmission element on 09th Oct, 2018 (Copy Enclosed).

As regards Govt. policy for incentivizing early commissioning of transmission assets, CERC in its order dated 28.01.2016 (para 29) in petition no. 284/ADP/2015 has held that the developer can be benefitted by the policy by mutually deciding the COD of transmission assets matching with the COD of the upstream or downstream assets.

In light of the above facts, we declare the Commercial Operation Date (COD) of the

Sipat Transmission Ltd
Adani House
Nr Mithakhali Circle, Navrangpura
Ahmedabad 380 009
Gujarat, India
CIN : U40300GJ2014GOI094190

Tel +91 79 2656 5555
Fax +91 79 2555 5500
info@adani.com
www.adani.com

transmission element **"Sipat – Bilaspur pooling station 3rd 765 kV S/C along with 1 no. 765 kV line bay at Sipat STPP of NTPC"**, from 00:00 hrs of August 10th , 2018.

Thanks & Regards

For Sipat Transmission Limited

Authorized Signatory

Encl.: As referred above.

Sipat Transmission Ltd.

CC to:

1. The ED (Commercial), PGCIL, Plot No 2, Sector 29, Gurgaon 122001
2. The Secretary, CERC, 3rd & 4th Floor, Chanderlok Building, 36, Janpath, New Delhi- 110001
3. The GM (SO), NLDC, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi, Delhi 110016
4. The Chief General Manager (Commercial), MP Power Management Company Limited
5. The Electrical Engineer, Goa Electricity Department, Govt. of Goa
6. The Chief Finance Manager (Trading). Gujarat Urja Vikas Nigam Limited
7. The Executive Engineer, Electricity Department, Daman & Diu
8. The Additional Chief Engineer (Commercial).Chhattisgarh State Power Distribution Co. Ltd.
9. DNH Power Distribution Corp. Ltd. Administration of Dadra Nagar Haveli
10. The General Manager. WRLDC, Mumbai

Sipat Transmission Ltd
Adani House
Nr Mithakhali Circle, Navrangpura
Ahmedabad 380 009
Gujarat, India
CIN : U40300GJ2014GOI094190

Tel +91 79 2656 5555
Fax +91 79 2555 5500
info@adani.com
www.adani.com

CENTRAL ELECTRICITY REGULATORY COMMISSION
3rd & 4th Floor Chanderlok, Building, 36 Janpath, New Delhi 110 001
(Tele No.23353503 FAX No.23753923)

Reference No. 289/TL/2015 **27/04/2016**

To

The Secretary
Ministry of Power
Govt. of India
Sharam Shakti Bhavan
Rafi Marg, New Delhi.

The Secretary
Central Electricity Authority
Sewa Bhavan, R.K. Puram
New Delhi

Subject: Grant of transmission licence to SIPAT TRANSMISSION LIMITED.

Sir,

In exercise of powers conferred under Section 14 of the Electricity Act, 2003 (36 of 2003), the Commission has granted the licence to SIPAT TRANSMISSION LIMITED.

2. I am directed to send herewith a copy of the above licence No. 39/Transmission/2016/CERC, dated 7th March, 2016 for your information.

Yours faithfully,

27/4/16
(T.D. Pant)
Deputy Chief (Legal)

Encl: as stated.

Copy to:

1. The Chairman,
   Power Grid Corporation of India Limited,
   Plot No.2, Sector-29,
   Gurgaon-122 001 (Haryana)

2. MR. Jignesh Langalia (Authorized Representative),
   Sipat Transmission Limited,
   C – 105, Anand Niketan,
   New Delhi - 110021

27/4/16
(T.D. Pant)
Deputy Chief (Legal)

सत्यमेव जयते

केन्द्रीय विद्युत विनियामक आयोग
CENTRAL ELECTRICITY REGULATORY COMMISSION

के वि वि आयोग
CERC

तीसरा एवं चौथा तल, चंद्रलोक बिल्डिंग, 36 जनपथ, नई दिल्ली–110001
3rd & 4th Floor, Chanderlok Building, 36 Janpath, New Delhi-110001

TRANSMISSION LICENCE

The Central Electricity Regulatory Commission (hereinafter referred to as "Commission"), in exercise of the powers conferred under Section 14 of the Electricity Act, 2003 (hereinafter referred to as "Act"), hereby grants the transmission licence to Sipat Transmission Limited, having its registered office at Achalraj, opp. Mayor Bungalow, Law Garden, Ahmedabad - 380006 (hereinafter referred to as "licensee") to establish Transmission System for "Additional System Strengthening for Sipat STPS" on Build, Own, Operate and Maintain (BOOM) basis, more specifically described in the schedule attached to this licence, which shall be read as a part and parcel of this licence, subject to the Act, the rules and conditions specified under the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2009 which shall be read as part and parcel of this licence.

2. The conditions such as but not limited to, completion schedule, transfer value, liquidated damages, Project Implementation Guarantee Deposit, escalation due to domestic inflation, which are specified in bid documents and provisions in the Agreements, shall be treated as part of this licence, unless these provisions are contrary to the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2009.
3. This licence is not transferable, except as provided in the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2009.
4. The grant of licence to the licensee shall not in any way or manner restrict the right of the Commission to grant a licence to any other person within the same area for the transmission system other than the project described in the schedule attached to this licence. The licensee shall not claim any exclusivity.
5. The licence shall, unless revoked earlier, continue to be in force for a period of 25 (twenty five) years from the date of issue.

(Shubha Sarma)
Secretary

Copy of the licence endorsed to :-

(1) Ministry of Power, Government of India
(2) Central Electricity Authority
(3) Power Grid Corporation of India Ltd. (CTU)

Place: New Delhi
Date : 7th March, 2016

(Shubha Sarma)
Secretary

SCHEDULE

Project Related Details:

The project comprises of the following elements of the inter-State Transmission System:

S.No.	Name of the Transmission Element	Conductor per Phase	Completion Target
1.	Sipat-Bilaspur Pooling Station 3rd 765 kV S/C - 1 no. 765 kV line bay at Sipat STPP of NTPC	Quad Bersimis ACSR conductor or equivalent AAAC. The transmission lines to be designed for a maximum operating conductor temperature of 85°C for both ACSR as well as AAAC.	36 months
2.	Bilaspur Pooling Station - Rajnandgaon 765 kV D/C	Hexa Zebra ACSR conductor or equivalent AAAC. The transmission lines to be designed for a maximum operating conductor temperature of 85°C for both ACSR as well as AAAC.	40 months

Licence No. 39/ Transmission /2016/CERC
Authority: Order of the Commission dated 25.1.2016 and 7.3.2016 in Petition No. 289/TL/2015.

(Shubha Sarma)
Secretary

सत्यमेव जयते

केन्द्रीय विद्युत विनियामक आयोग
CENTRAL ELECTRICITY REGULATORY COMMISSION

के वि वि आयोग
CERC

तीसरा एवं चौथा तल, चंद्रलोक बिल्डिंग, 36 जनपथ, नई दिल्ली–110001
3rd & 4th Floor, Chanderlok Building, 36 Janpath, New Delhi-110001

पारेषण अनुज्ञप्ति

केन्द्रीय विद्युत विनियामक आयोग (जिसे इसके पश्चात् 'आयोग' कहा गया है), विद्युत अधिनियम, 2003 (जिसे इसके पश्चात् 'अधिनियम' कहा गया है) की धारा 14 के अधीन प्रदत्त शक्तियों का प्रयोग करते हुए, इस अनुज्ञप्ति से संलग्न अनुसूची में विशेष रूप से वर्णित, निर्माण, स्वामित्व, प्रचालन एंव अनुरक्षण (बूम) के आधार पर "सिपत एसटीपीएस के लिए अतिरिक्त प्रणाली सुदृढ़ीकरण " पारेषण प्रणाली को स्थापित करने के लिए जो इस अनुज्ञप्ति के भाग रुप माने जाएंगे, सिपत ट्रांसमिशन लिमिटेड, जिसका रजिस्ट्रीकृत कार्यालय अचलराज, मेयर बंगला, ला गार्डन, अहमदाबाद – 380006 में है (जिसे इसके पश्चात् 'अनुज्ञप्तिधारी' कहा गया है), अधिनियम तथा नियमों तथा केन्द्रीय विद्युत विनियामक आयोग (पारेषण अनुज्ञप्ति प्रदान करने तथा अन्य सहबद्ध विषयों के लिए प्रक्रिया, निबंधन एवं शर्तें) विनियम, 2009 के अधीन विर्निदिष्ट निबंधन तथा शर्तों, जो इस अनुज्ञप्ति के भाग रूप माने जाएंगे, के अधीन रहते हुए, पारेषण अनुज्ञप्ति प्रदान करता है।

2. ऐसी शर्तें, जो समापन अनुसूची, अंतरण मूल्य, परिनिर्धारित नुकसानी, परियोजना कार्यान्वयन गारंटीकृत निक्षेप, स्वदेशी मुद्रास्फीति के कारण वृद्धि, जो बोली दस्तावेजों में विर्निदिष्ट हैं तथा करार के उपबंध हैं, जो सीमित नहीं हैं, इस अनुज्ञप्ति का भाग रूप तब तक समझे जाएंगे, जब तक कि ये उपबंध केन्द्रीय विद्युत विनियामक आयोग (पारेषण अनुज्ञप्ति प्रदान करने तथा अन्य सहबद्ध विषयों के लिए प्रक्रिया, निबंधन तथा शर्तें) विनियम, 2009 के प्रतिकूल न हों।

3. केन्द्रीय विद्युत विनियामक आयोग (पारेषण अनुज्ञप्ति प्रदान करने तथा अन्य सहबद्ध विषयों के लिए प्रक्रिया, निबंधन तथा शर्तें) विनियम, 2009 में अन्यथा उपबंधित के सिवाय, यह अनुज्ञप्ति अंतरणीय नहीं है।

4. अनुज्ञप्तिधारी को अनुज्ञप्ति प्रदान किए जाने से किसी अन्य ऐसे व्यक्ति का इस अनुज्ञप्ति से संलग्न अनुसूची में वर्णित परियोजना से भिन्न पारेषण प्रणाली के लिए उसी क्षेत्र में अनुज्ञप्ति प्रदान करने के लिए आयोग का अधिकार किसी रूप या रीति से निर्बंधित नहीं होगा। अनुज्ञप्तिधारी अनन्य रूप से कोई भी दावा नहीं करेगा।

5. अनुज्ञप्ति जब तक पहले प्रतिसंहृत नहीं कर ली जाए, इसके जारी होने की तारीख से 25 वर्षों की अवधि के लिए प्रवृत्त रहेगी।

शुभा शर्मा

(शुभा शर्मा)
सचिव

अनुज्ञप्ति की प्रति निम्नलिखित को :
(1) विद्युत मंत्रालय, भारत सरकार
(2) केन्द्रीय विद्युत प्रधिकरण
(3) पावर ग्रिड कारपोरेशन ऑफ इंडिया लि. (सीटीयू)

शुभा शर्मा

(शुभा शर्मा)
सचिव

स्थान : नई दिल्ली
तारीख : 7 मार्च, 2016

अनुसूची

परियोजना से संबंधित ब्यौरेः

परियोजना में अंतर–राज्यिक पारेषण प्रणाली के निम्नलिखित तत्व सम्मिलित हैंः

क्र.सं.	पारेषण घटक	कंडक्टर्स प्रति फेस	पूरा करने का लक्ष्य
1.	सिपत–बिलासपुर पूलिंग स्टेशन थर्ड 765 केवी एस/सी–1 नं. एनटीपीसी के सिपत एसटीपीपी में 765 केवी लाइन बेज	क्वेद बरसिमिस एसीएसआर कंडक्टर या समतुल्य एएएसी। पारेषण लाइन को एसीएसआर तथा एएएसी दोनों के लिए 85° सी. के अधिकतम आपरेटिंग कंडक्टर तापमान के लिए डिजाइन किया जाए।	30 माह
2.	बिलासपुर पूलिंग स्टेशन – राजनंदगांव 765 केवी डी/सी लाइन	हेक्सा जेब्रा एसीएसआर कंडक्टर या समतुल्य एएएसी। पारेषण लाइन को एसीएसआर तथा एएएसी दोनों के लिए 85° सी. के अधिकतम आपरेटिंग कंडक्टर तापमान के लिए डिजाइन किया जाए।	40 माह

अनुज्ञप्ति सं॰ 39/पारेषण/2016/केविविआ
प्राधिकार : आयोग की याचिका सं॰ 289/टीएल/2015 में तारीख 25.1.2016 तथा 7.3.2016 के आदेश।

शुभा शर्मा

(शुभा शर्मा)
सचिव

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

पश्चिमी क्षेत्रीय भार प्रेषण केन्द्र
एफ-3, सेन्ट्रल रोड, एम्.आई.डी.सी. एरिया, मरोल, अन्धेरी (पूर्व), मुंबई - 400 093.
दुरभाष : 022-28202690 • फैक्स : 022-28235434, 28202630 • ई-मेल : wrldc@posoco.in
WESTERN REGIONAL LOAD DESPATCH CENTRE
F-3, Central Road, MIDC Area, Marol, Andheri (East), Mumbai – 400 093.
Phone : 022-28202690 • Telefax : 28235434, 28202630 • E-mail : wrldc@posoco.in
CIN : U40105DL2009GOI188682

संदर्भ संख्या / Ref. No.

Certificate Number: WRLDC/ STL / 01R1 **Date: 09/10/2018**

Certificate of Completion of Trial Operation of Transmission Element(s)/bay(s)

Reference:

i. STL / WRTS-1 communication (email) dated 18.07.18 (Format-I and IA)
ii. WRLDC communication to STL / WRTS-1 dated 19.07.18 (Format-II-Acknowledgement)
iii. STL / WRTS-1 communication (email) dated 01.08.18 & 03.08.18 (Formats-III,IIIA,IIIB,IIIC,IIID)
iv. WRLDC communication (email) to STL / WRTS-1dated 03.08.18 (Provisional Approval)
v. STL / WRTS-1 request for charging & trial operation dated 06.08.18
vi. Codes from WRLDC to STL / WRTS-1on 06.08.18 for charging & trial operation
vii. Communication (email) dated 14.08.18, 27.09.18 from STL/WRTS-1/Sipat [C1-C4 & related documents]
viii. WRLDC Certificate No WRLDC/STL/01 dated 27.09.2018
ix. STL communication (email) dated 04.10.18 for revision (bay no.707 with post charging information)

Based on the above documents under reference, it is hereby certified that the following Transmission elements/bays have successfully completed trial operation:

Name of the Transmission Asset:	1. 765 kV Sipat - Bilaspur line-3 with bay 707 at Sipat end & bay 701 at Bilaspur end
Owner of Transmission Asset:	SIPAT TRANSMISSION LTD
Period of Trial Operation (From Date/Time to Date/Time)	1. 06.08.2018 18:56 hrs to 07.08.18 18:56 hours

This certificate is being issued in accordance with Regulation 6.3A (5) of CERC (Indian Electricity Grid Code) Regulations to certify trial operation of transmission element. Usage of this certificate for any other purpose is prohibited. This certificate will supersede the earlier certificate issued by WRLDC to STL [i.e. Certificate No. WRLDC/STL/01 dated 27.09.18]. Accordingly, the earlier Certificate No. WRLDC/STL/01 dated 27.09.18 stands withdrawn.

V K Shrivastava
Executive Director
वी. के. श्रीवास्तव / V. K. Shrivastava
कार्यपालक निदेशक / Executive Director
पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
POWER SYSTEM OPERATION CORPORATION LIMITED
प.क्षे.भा.प्रे.के.मुंबई. / W.R.L.D.C., MUMBAI.

To: M/s. Sipat Transmission Limited.

Copy to: 1. Member Secretary, WRPC | 2. ED, NLDC

Generation Projection (Jan 2019 - Mar 2019)

				Generation declared Commercial from 1st Apr'18 to 30th Sep'18					Generation declared/expected to be declared Commercial from 1st Oct'18 to 31st Dec'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	MP	WR	4870											4870	As per data given by M.P.	6707	6707
2	Maharashtra	WR	17359											17359			17359
3	Chattisgarh	WR	2471											2471			2471
4	Gujarat	WR	9100											9100			9100
5	Goa	WR	0											0			0
6	D&D	WR	0											0			0
7	DNH	WR	0											0			0
8	Vindhyachal	WR	4611											4611			4611
9	Ratnagiri Dabhol	WR	591											591			591
10	TAPS (1,2,3,4)	WR	1156											1156			1156
11	Jindal	WR	605											605	As per data givrn by Jindal Power	560	560
12	LANCO	WR	582											582			582
13	NSPCL Bhilai	WR	490											490			490
14	Korba	WR	2491											2491			2491
15	SIPAT	WR	2933											2933			2933
16	CGPL	WR	3837											3837			3837
17	Mauda	WR	1973											1973			1973
18	Gandhar	WR	380											380			380
19	Kawas	WR	411											411			411
20	SSP	WR	323											323			323
21	KAPS	WR	69											69			69
22	Essar Mahan	WR	538	Essar Mahan	2	600	393	393						930			930
23	BALCO	WR	569											569	As per last quarter	300	300
24	KSK Mahanadi	WR	1081											1081			1081
25	Sasan UMPP	WR	3856											3856			3856
26	JPL Stg-2	WR	967											967	As per data givrn by Jindal Power	1140	1140

Generation Projection (Jan 2019 - Mar 2019)

				Generation declared Commercial from 1st Apr'18 to 30th Sep'18					Generation declared/expected to be declared Commercial from 1st Oct'18 to 31st Dec'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
27	DGEN	WR	0											0			0
28	DB Power Ltd.	WR	1173											1173			1173
29	Korba West	WR	289											289			289
30	Dhariwal	WR	285											285			285
31	Raikheda TPP (GMR)	WR	499											499			499
32	JP Nigrie	WR	1110											1110	As per data givrn by JP Nigrie	1240	1240
33	GMR Warora	WR	564											564			564
34	ACBIL+Spectrum+ MCCPL	WR	653											653			653
35	MB Power (Anuppur)	WR	1158											1158			1158
36	RKM Power	WR	286	RKM Power	2	360	232	232						518			518
37	Jhabua Power	WR	499											499			499
38	TRN Energy	WR	550											550	As per data givrn by TRN Energy	540	540
39	Sholapur STPP	WR	622											622			622
40	Lara STPP	WR							Lara STPP	1	800	528	528	528			528
41	SKS Power	WR		SKS Power	1	300	198	198	SKS Power	2	300	198	198	396			396
	TOTAL		68953					822					726	70501			72316

DEMAND FORECAST USING PAST 3 YEARS DATA (Jan 2019 - Mar 2019)															
										1	2	3	4		
	2015-16			2016-17			2017-18								
	Jan-16	Feb-16	Mar-16	Jan-17	Feb-17	Mar-17	Jan-18	Feb-18	Mar-18	2015-16 Average	2016-17Average	2017-18 Average	Projected Demand for (Jan 2019 - Mar 2019) before normalization	Data given by DICs	Comments
Chattisgarh	3,377	3,564	3,593	3,110	3,389	3,642	3,223	3,387	3,706	3,511	3,380	3,439	3,371		
Gujarat	12,882	12,735	13,283	13,143	13,354	14,719	14,021	14,246	14,782	12,967	13,739	14,350	15,068		
Madhya Pradesh	10,796	10,124	9,056	11,353	10,904	9,831	12,165	11,444	9,765	9,992	10,696	11,125	11,737	11,577	As per data given by M.P.
Maharashtra	18,156	18,994	19,184	20,300	21,204	22,207	21,065	21,164	22,422	18,778	21,237	21,550	23,294		
Daman & Diu	301	304	304	312	281	334	339	353	350	303	309	347	364		
Dadra Nagar Haveli	729	726	726	743	671	753	766	766	766	727	722	766	777		
Goa	427	428	445	432	515	530	522	486	521	433	492	510	555		
ESIL	672	551	702	717	644	630	612	710	744	665	664	689	697	700	As per data given by Essar Steel

Annexure 8.6

CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Dated: 9 June, 2014

NOTIFICATION

No. L-1/148 /2014/CERC In exercise of the powers conferred by Sections 178 (1) and 178 (2) (ze) of the Electricity Act, 2003 (36 of 2003) and all other powers enabling it in this behalf and after previous publication, the Central Electricity Regulatory Commission hereby makes the following regulations, namely:-

1. Short title and commencement:

(1) These regulations may be called the Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2014.

(2) These regulations shall come into force from the date of their publication in the Official Gazette.

2. Definitions:

(1) In these regulations, unless the context otherwise requires:

(a) "Act" means the Electricity Act, 2003 (36 of 2003), including amendments thereto;

(b) "Appraisal Committee" shall mean the Committee constituted by Government of India, Ministry of Power for the purpose of scrutiny (techno-economic appraisal) and prioritization of various project proposals for funding from PSDF and such other functions relating to PSDF as may be assigned;

(c) "Appropriate Commission" means the Central Commission or the State Commission or the Joint Commission as defined in the Act;

(d) "Congestion Relief Regulations" means Central Electricity Regulatory Commission (Measures to relieve congestion in real time operation) Regulations, 2009 as amended from time to time and any subsequent enactment thereof;

(e) "Power Market Regulations" means Central Electricity Regulatory Commission (Power Market) Regulations, 2010 as amended from time to time and any subsequent enactment thereof;

(f) "Congestion Amount" has the same meaning as assigned to it in Regulation 33 of the Power Market Regulations;

(g) "Congestion Charge" has the same meaning as assigned to it under Congestion Relief Regulations;

(h) "Detailed Procedure" means the procedure prepared by the Nodal Agency, with the approval of the Monitoring Committee, for implementation and administration of PSDF in accordance with these regulations and as per the scheme for operationalization of PSDF notified by Ministry of Power, Govt. of India.

(i) "Deviation Settlement Charges" has the same meaning as assigned to it in the Deviation Settlement Mechanism Regulations;

(j) "Deviation Settlement Mechanism Regulations" means the Central Electricity Regulatory Commission (Deviation Settlement and related matters) Regulations 2014 as amended from time to time and subsequent enactment thereof;

(k) "Grid Code" means the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations 2010, as amended from time to time and any subsequent enactment thereof;

(l) "Monitoring Committee" shall mean the committee constituted by Government of India, Ministry of Power for the purpose of sanctioning of projects, release of funds from PSDF and overall supervision and monitoring of the implementation of projects and such other functions as may be assigned;

(m) "Nodal Agency" means the agency as designated under clause (a) of regulation 5 of these regulations;

(n) "PSDF" means the Power System Development Fund constituted under Regulation 3 of these regulations;

(o)"Reactive Energy Charges" has the same meaning as assigned to it in the Grid Code;

(2) Save as aforesaid and unless repugnant to the context or the subject-matter otherwise requires, words and expressions used in these regulations and not defined, but defined in the Act, or the regulations made thereunder by the Commission, shall have the meanings assigned to them respectively in the Act or the regulations.

(3) The provisions of the General Clauses Act, 1897 (10 of 1897) as amended from time to time shall apply for the interpretation of these regulations as they apply for the interpretation of an Act of Parliament.

3. Constitution of the Fund:

(1) There shall be constituted a fund to be called the “Power System Development Fund” or "PSDF" and there shall be credited thereto.-

(a) Congestion charges standing to the credit of the “Congestion Charge Account” after release of amounts payable to Regional Entities entitled to receive congestion charges along with interest, if any, in accordance with the Congestion Relief Regulations;

(b) Congestion amount arising from the difference in the market prices of different regions as a consequence of market splitting in power exchanges in accordance with Power Market Regulations;

(c) Deviation Settlement Charges standing to the credit of the "Regional Deviation Pool Account Fund" after final settlement of claims in accordance with Deviation Settlement Mechanism Regulations;

(d) RLDC reactive energy charges standing to the credit of Reactive Energy Charges Account in accordance with the Grid Code;

(e) Additional Transmission Charges arising out of the explicit auction process in STOA Advance Bilateral transactions in accordance with the CERC (Open Access in interstate transmission) Regulations, 2008 and amendments thereof;

(f) Such other charges as may be notified by the Central Commission from time to time:

(2) The agencies which are authorized to collect Congestion charges, Congestion amount, Deviation Settlement charges, Reactive energy charges under the respective regulations and such other charges as may be notified by the Commission from time to time, shall transfer to the credit of the Fund the balance amounts in the charges under sub-clauses (a) to (f) of clause (1) of this regulation on monthly basis or on such periodicity as may be provided in the Detailed Procedure.

(3) The PSDF shall be maintained and operated through the Public Account of India. All the amounts that would accrue into the fund as per clause (1) of Regulation 3 and also the amounts lying accumulated in the fund and not transferred to public account till the issue of this regulation, shall be transferred to the Public Account of India.

4. Utilization of the PSDF:

(1) PSDF shall be utilized for the following purposes:

(a) Transmission systems of strategic importance based on operational feedback by Load Despatch Centers for relieving congestion in inter-State transmission system (ISTS) and intra-State Transmission Systems which are incidental to the ISTS.

(b) Installation of shunt capacitors, series compensators and other reactive energy generates including reactive energy absorption and dynamic reactive support like static VaR compensator (SVC) and static synchronous compensator (STATCOM) for improvement voltage profile in the Grid.

(c) Installation of special protection schemes, pilot and demonstrative projects, standard protection schemes and for setting right the discrepancies identified in the protection audits on regional basis.

(d) Renovation and Modernization (R&M) of transmission system for relieving congestion.

(e) Any other scheme/ project in furtherance of the above objectives such as technical studies, capacity building, installation of Phasor Measurement Unit (PMU) etc.

(2) PSDF shall also be utilized for the projects proposed by distribution utilities in the above areas which are incidental to inter-state transmission system and have a bearing on grid safety and security, provided that these projects are not covered under any other scheme of the Government of India, such as Restructured Accelerated Power Development & Reforms Programme (RAPDRP), Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) / National Electricity Fund (NEF) etc.

(3) The private sector projects shall not be eligible for assistance from PSDF.

(4) Prioritization shall be done mainly on the criteria of the schemes (i) addressing grid security concerns; (ii) being of national importance; (iii) being in the order of National/Multi utility/Regional/State importance; (iv) being inter-state in nature.

5. Nodal Agency and its functions

(a) National Load Despatch Centre (NLDC) shall be the Nodal Agency for the implementation of the scheme under these regulations.

(b) The Nodal Agency shall perform the following functions:-

(i) Act as Secretariat to the Monitoring Committee and the Appraisal Committee.

(ii) Prepare a Detailed Procedure for release and disbursement from PSDF consistent with the Procedure approved by the Monitoring Committee from time to time.

(iii) Keep the Record of Business transacted at each meeting of the Appraisal Committee and the Monitoring Committee.

(iv) Prepare detailed procedure for preparation of Budget, Accounting of receipts/ disbursals from PSDF Public Account and Audit with the approval of the Monitoring Committee.

(v) Prepare Annual Report of the PSDF.

(vi) Perform such other functions as may be assigned by the Monitoring Committee and the Appraisal Committee.

6. Appraisal Committee

There shall be an Appraisal Committee headed by the Chairperson, Central Electricity Authority (CEA), to be constituted by the Government of India (Ministry of Power) for scrutiny (techno-economic appraisal) and prioritization of the various projects proposals for funding from PSDF in line with Clause (4) of Regulation (4) of these Regulations and such other functions as may be assigned by the Monitoring Committee.

7. Monitoring Committee

Government of India (Ministry of Power) shall constitute an Inter-Ministerial Monitoring Committee under the Chairmanship of Secretary (Power) Government of India to be known as Monitoring Committee and shall also consist of representatives from the Ministry of Power, Ministry of New and Renewable Energy, Department of Expenditure (Ministry of Finance), Central Electricity Authority (CEA) and Planning Commission as Members. The Chief Executive Officer, Power System Operation Corporation Limited (POSOCO) shall be the Member-Secretary of the Committee. The Monitoring Committee will consider such projects (or their revised costs) for sanction based on the recommendation of the Appraisal Committee and communication of the Central Commission that such projects are in line with the principles defined in these regulations and have been prioritised in accordance with the principles envisaged in these regulations. Based on the sanctions by the Monitoring Committee, the funds will be released to the project entities from the Budget of Ministry of Power. This Committee will also supervise and monitor the implementation of various projects sanctioned by it. Release of funds from PSDF will be regulated as per the extant instructions of the Ministry of Finance in this regard. The release of funds to Nodal Agency from the Public Account for further disbursement to project entities will be made after exercising requisite expenditure control, provided that the scheme has adequate funds provisioned for in the Demand for

Grants of Ministry of Power.

8. Procedure for Application, Screening, Appraisal, Monitoring, Sanction etc of PSDF

(a) The Regional Power Committees, Generating Companies, Transmission Licensees, Distribution Licensees, Load Despatch Centers, Power Exchange as the case may be, shall furnish necessary details of the projects, schemes or activities to the Nodal Agency.

(b) The Nodal Agency shall place these projects or scheme or activities for techno-economic scrutiny by the Appraisal Committee.

(c) After scrutinizing the proposals, the Appraisal Committee shall submit its Appraisal Report and recommendations in writing to the Central Commission, and to the project entity who has submitted the proposal.

(d) The Nodal Agency will approach the Central Commission, along with the recommendations of the Appraisal Committee, for ascertaining that the projects / scheme(s) / activities are covered within the scope of these Regulations.

(e) The Central Commission, on receipt of such reference, will look into the following aspects viz.:-

(i) Whether the proposed projects / schemes / activities are in line with the purposes defined in these regulations;

(ii) Whether the proposed scheme(s) have been prioritized in accordance with the principles envisaged in these regulations.

(f) If the conditions specified in clause (e) of this regulation are satisfied, the Central Commission shall communicate to the Nodal Agency that the proposed projects are in line with the principles defined in these regulations and have been prioritised in accordance with the principles envisaged in these regulations.

(g) The Central Commission, at this stage shall not go into the details of the project cost, which will be examined by the Appropriate Commission only at the time of filing of tariff petition by the project entity to ensure inter alia that the tariff in respect of such project / scheme is not claimed for the portion of grant from the PSDF.

(h) Based on the communication received in this regard from the Central Commission, the Nodal Agency shall approach the Monitoring Committee for sanction of the fund from the PSDF.

9. Assistance Pattern

The funding will be made as a grant, subject to availability of funds. The quantum of grant shall depend on the strategic importance and the size of the project and shall be considered for release as per these regulations. Detailed guidelines in this regard shall be prepared by the Monitoring Committee.

10. Execution, Operation & Maintenance of the Assets

The project entity shall be responsible for the execution as well as Operation & Maintenance of the projects during its useful life. Operation and Maintenance of the Project / scheme shall be governed in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, as amended from time to time or any subsequent enactment thereof.

11. Preparation of Budget, Accounts and other records

Preparation of Budget, Accounting of Receipts/ disbursals from PSDF Public Account, Utilization Certificates, and Audit etc shall be governed in accordance with the provisions made in the Detailed Procedure in this regard.

12. Implementation, Monitoring and Control of Projects/ Schemes

(a) The Regional Power Committees, Transmission Licensees, Distribution Licensees, Load Despatch Centers, Power Exchanges, Central Transmission Utility (CTU), State Transmission Utility (STU) for intra-State systems which are incidental to the ISTS will be the Implementing Agencies.

(b) The Appraisal Committee in consultation with Ministry of Power will evolve a mechanism to evaluate the implementation of projects by laying down objective quantifiable financial and technical outcome parameters for each category of projects funded under the project / scheme.

(c) The Monitoring Committee will supervise and monitor the implementation of projects on the basis of mechanism evolved but not limited to (b) above.

13. Annual Report

An Annual Report of the fund including the projects undertaken during the year, together with the Balance Sheet and Audited Accounts shall be submitted to the Central Government and for information to the Central Commission. The Annual Report shall also be laid on the table of both Houses of Parliament though the Ministry of Power.

14. Power to remove difficulties

If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act and the regulations made thereunder as may appear to be necessary for removing the difficulty in order to achieve the objectives of these regulations.

15. Repeal and Savings

(a) Save as otherwise provided in these regulations, Central Electricity Regulatory Commission (Power System Development Fund) Regulations 2010 are hereby repealed.

(b) Notwithstanding such repeal, anything done or any action taken or purported to have been done or taken including any procedure, minutes, annual reports, confirmation or declaration or any instrument executed under the repealed regulations shall be deemed to have been done or taken under the relevant provisions of these regulations.

(Shubha Sarma)
Secretary

No. 10/1/2014-OM
Government of India
Ministry of Power

Shram Shaki Bhawan, Rafi Marg,
New Delhi, the dated 18th September, 2014

To

Chairperson,
Central Electricity Authority,
Sewa Bhawan, R.K. Puram,
New Delhi

Chief Executive Officer,
POSOCO,
Katwaria Sarai,
New Delhi

Madam,

Approved Guidelines / procedures for Disbursement of fund from Power System Development Fund is enclosed for further necessary action.

Yours faithfully,

18/9/14.

(Ghanshyam Prasad)
Director
Tel. / Fax No. 23716674
E-mail : ghanshyam_prasad@yahoo.com

Encl: As above

Table of Contents

Guidelines / Procedure for Disbursement of Fund from Power System Development Fund

1. Background

1.1. These Guidelines/Procedure are issued in accordance with Ministry of Power Letter No.29/9/2010-R&R (Vol-II) dated 10th January, 2014, wherein the approval of the Cabinet was conveyed regarding scheme for operationalization of the Power System Development Fund (PSDF), hereinafter referred as "MoP Communication" and Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2014 dated 9th June 2014, and as amended from time to time and hereinafter referred as "Fund Regulations".

1.2. The procedure for disbursement of funds from the PSDF is envisaged to be consistent with the provisions of MoP Communication and the Fund Regulations for utilization of funds. However, in case of any inconsistency due to literal interpretation of the Guidelines/Procedure, the provisions contained in MOP Communication and Fund Regulations shall prevail.

2. Constitution of the Fund

2.1. As per Fund Regulations, PSDF has been constituted for crediting balance amounts received under pool accounts maintained by the National Load Despatch Centre (NLDC) / Regional Load Despatch Centres (RLDCs) under various regulations of the CERC.

2.2. According to the Fund Regulations, the authorized agencies for maintaining and operating the pool accounts with respect to Congestion Charges in real time, Deviation Settlement Charges, Reactive Energy Charges and Congestion Charges due to the explicit auction in transmission corridors are RLDCs, whereas the authorized agency for collecting the Congestion Amount through Power Exchanges is NLDC.

3. Transfer of Payments to the Fund

3.1. NLDC/RLDCs collect Congestion Charges, Congestion Amount, Deviation Settlement Charges, Reactive Energy Charges and such other Charges as may be notified by the Commission under the respective regulations and process the same in line with such regulations. The balance amounts in the respective account of these charges will be regularly transferred to the credit of the PSDF on monthly basis, by 7th of the subsequent month. Adjustment, if any, which could not be given effect to at the time of transfer of balance to PSDF in the previous month will be carried out in the subsequent month. In case of Reactive Pool Accounts, which are settled at the end of financial year, the transfer of the small residual amounts to the Fund shall take place at that point of time.

A separate account shall be maintained by NLDC for receipt of money from the various Regulatory Pool Accounts maintained by the RLDCs and NLDC for subsequent transfer to PSDF.

4. Scope

4.1. NLDC has been designated as the Nodal Agency for implementation of schemes under this procedure.

4.2. The Regional Power Committees, Generating Companies, Transmission Licensees, Distribution Licensees, Load Despatch Centers as the case may be, shall furnish necessary details of the projects, schemes or activities to the Nodal Agency for funding of the schemes from PSDF. For the purpose of this Procedure the above agencies shall be called the "project entities" and shall come within the scope of this procedure. The proposals received by the Nodal Agency which are complete in all respects as per the Guidelines/Procedure shall be forwarded to the Appraisal Committee.

4.3. An Appraisal Committee headed by Chairperson, CEA has been constituted in accordance with the Fund Regulations and MoP Communication and shall carry out the scrutiny (techno-economic appraisal) and prioritization of the various project proposals to be funded from PSDF.

In accordance with para 5.2 of the MoP Communication, the Appraisal Committee will undertake techno-economic appraisal of the projects with the assistance of CEA and prioritize them.

In accordance with the para 9.1 of the MoP Communication, the Appraisal Committee in consultation with Ministry of Power will evolve a mechanism to evaluate the implementation of the projects by laying down objective quantifiable financial and technical outcome parameters for each category of projects funded under the scheme.

In accordance with para 9.2 of the MoP communication, the Appraisal Committee shall constitute a group of officers from CEA and CTU to monitor the implementation of the projects/schemes and recommend action to be taken in case of default and delay in implementation.

To achieve the above objectives, a group shall be constituted headed by Member (GO&D), CEA. The officers from CEA, CTU and the Nodal Agency shall provide the necessary assistance.

4.4. After scrutinizing of the proposals by the Appraisal Committee, the Nodal Agency will approach the Central Commission, along with the recommendations of the Appraisal Committee, for ascertaining that the projects / scheme(s) / activities are covered within the scope of Fund Regulations. The Nodal Agency shall also inform the project entity who has submitted the proposal, about the recommendation of the Appraisal Committee.

4.5. Central Commission shall look into the various aspects of the proposal with respect to relevant clauses specified in the Fund Regulations and communicate to the Nodal Agency whether the proposed projects are in line with the principles defined in PSDF regulations, 2014 and have been prioritized in accordance with the principles envisaged in these regulations.

4.6. The Central Commission, at this stage shall not go into the details of the project cost, which will be examined by the Appropriate Commission only at the time of filing of tariff petition by the project entity to ensure inter alia that the tariff in respect of such project / scheme is not claimed for the portion of grant from the PSDF.

4.7. Based on the communication received in this regard from the Central Commission, the Nodal Agency shall approach the Monitoring Committee for sanction of the fund from the PSDF.

4.8. An Inter-Ministerial Monitoring Committee under the Chairmanship of Secretary (Power), Government of India, as per MoP Communication and the Fund Regulations, will consider the projects of entities for sanction of the cost estimates based on the recommendations of the Appraisal Committee and communication of the Central Commission.

This Committee will also supervise and monitor the implementation of various projects sanctioned by it. Based on sanctioned amount by the Monitoring Committee, the funds will be released to the project entities from the Budget of Ministry of Power in accordance with the extant rules/instructions for administrative sanction/approval and release of funds. The release of funds from PSDF will be regulated as per the extant instructions of the Ministry of Finance.

5. Utilization of the Fund

5.1. In accordance with the Fund Regulations as amended from time to time and MoP Communication, the following categories of projects will be eligible for funding from PSDF:

(a) Creating necessary transmission systems' of strategic importance based on operational feedback by Load Despatch Centers for relieving congestion in Inter-State Transmission Systems (ISTS) and intra-state system which are incidental to the ISTS.

(b) Installation of shunt capacitors, series compensators and other reactive energy generators including reactive energy absorption, dynamic reactive support etc. for improvement of voltage profile in the Grid.

(c) Installation of standard and special protection schemes, pilot and demonstrative projects, projects for setting right the discrepancies identified in the protection audits on regional basis, any communication/measurement/ monitoring scheme including installation of Phasor Measurement Units (PMUs) etc.

(d) Renovation and Modernization (R&M) of transmission and distribution systems for relieving congestion.

(e) Any other scheme/project in furtherance of the above objectives, such as, conducting technical studies and capacity building, etc.

5.2. PSDF shall also be utilized for the projects proposed by distribution utilities in the above areas which are incidental to inter-state transmission system and have a bearing on grid

safety and security, provided that these projects are not covered under any other scheme of the Government of India, such as Restructured Accelerated Power Development & Reforms Programme (RAPDRP), Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) / National Electricity Fund (NEF) etc (as per para 4(2) of the Fund Regulations).

5.3. Other schemes benefiting large number of utilities collectively and having a significant impact towards the power system development and grid operation shall also be considered for funding from PSDF, on case to case basis.

5.4. Private sector projects are not eligible for assistance from the fund.

6. Funding Pattern

6.1. Funding towards projects/schemes shall be in the form of grant only and such assistance in the form of Grant in Aid will be subject to all the applicable terms and conditions prescribed under the General Financial Rules of Government of India and extant instructions issued by Ministry of Finance from time to time relating to Grant in Aid Assistance. Assistance through interest subsidy or grant of financial assistance at concessional rate of interest shall not be considered.

6.2. The minimum threshold levels of project outlays for schemes to be considered for funding from PSDF shall be Rs. 5 Lacs.

6.3. Subject to availability of Funds and admissibility, the quantum of grant towards the Project Cost Estimate as accepted by Appraisal Committee shall depend on the type of project/scheme as deliberated above under para 5.1(a) to 5.1(e) and shall be as follows:

(i) Upto 75% grant for schemes mentioned in para 5.1(a) & 5.1(d) above
(ii) Upto 90% grant for schemes mentioned in para 5.1(b) & 5.1(c) above
(iii) Upto 100% grant for schemes mentioned in para 5.1(e) above.
(iv) Schemes from the States of North-Eastern region and other hilly States viz J&K, Sikkim, Himachal Pradesh and Uttarakhand shall be eligible for grant upto 100%, not withstanding the percentage limits specified in 6.3 (i) and 6.3 (ii) above.

6.4. The Appraisal Committee shall recommend the amount of grant to the various schemes based on the funding pattern as stated above and subject to availability of the funds in PSDF.

6.5. Grants will be sanctioned by the Monitoring Committee on the basis of the type of project/scheme as stated above. Escalation, if any, in the cost of the schemes shall be borne by the project entity.

6.6. The budget provision towards grant for the schemes pertaining to North-Eastern Region shall be made separately.

7. Submission, Scrutiny and Prioritization of schemes

7.1. The entities while submitting the schemes for funding from PSDF shall furnish necessary details of the projects/ schemes including DPR to Nodal Agency to facilitate

identification, prioritization and appraisal of the schemes by the Appraisal Committee. Five (5) hard copies (including one original) and one soft copy of the required documents of the scheme shall be submitted to the Nodal Agency.

7.2. The proposal of schemes submitted for funding from PSDF shall have the following details in the formats enclosed at format A1 to A6:

a) Summary of proposal
b) Scheme details including detailed project report (DPR)
c) Financial implication of the scheme and BOQ
d) Project appraisal by CTU/ STU/RPC
e) Basis of Cost estimates and other parameters
f) Project Implementation plan including Time frame for implementation
g) An undertaking stating that:

- 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.
- If for the scheme under the proposal, the grant from any other agency is being taken / proposed to be taken.
- The amount of grant shall be refunded back to PSDF in case of non-utilisation of the grant within one year of release of installment.

7.3. The DPR should include Background, Project Objectives, Beneficiaries, On-going initiatives, Technology, Management arrangements, Cost Estimates, BOQ, Time Frame PERT chart, Success criteria and Sustainability. Any other specific requirement may be sought at any time by the Appraisal Committee.

7.4. The DPR should also include Single Line Diagram and other schematics clearly highlighting the proposed scheme equipment getting replaced / renovated.

7.5. Prioritization

7.5.1. While prioritizing the schemes, the intent would be to include those schemes which are planned with the objective to render special help towards power system development and not forming a part of business as usual.

7.5.2. Prioritization shall be done mainly on the criteria of the schemes (i) addressing grid safety and security concerns; (ii) being of national importance; (iii) being in the order of National/Multi utility/Regional/State importance; (iv) being inter-state in nature.:

7.5.3. Large number of schemes shall be considered rather than large size schemes.

8. Monitoring

8.1. Monitoring and implementation of projects/schemes shall be carried out by a Group of Officers appointed by the Appraisal Committee in accordance with para 9.2. of the MoP Communication. This group shall submit the Monitoring Reports along with the Action Taken Reports to the Appraisal Committee and to the Ministry of Power on a quarterly basis. This group shall also recommend action to be taken in case of default and delay in implementation of the schemes.

8.2. The Inter-Ministerial Monitoring Committee will also monitor implementation of the scheme in addition to issuing/amending Guidelines/Procedure from time to time. The committee will also be empowered to review and revise the benchmark cost norms. Utmost care and due diligence will be done to rule out any duplicity with any other existing scheme.

9. Disbursement

9.1. Nodal Agency shall open a separate Bank Account for receiving the funds from Public Account and onward disbursement to project entities.

9.2. Application for release of funds from the PSDF shall be accompanied by the documents and details as mentioned at Annex - I, depending on the stage of execution of the project.

9.3. The disbursement of the funds shall be carried out in a phased manner for schemes in all categories which are approved for funding from PSDF. As a normal practice, the release of the funds shall be made in three installments as per the details given below:

(i) First Stage: 30% of the grant after issuance of Letter of Award
(ii) Second / Intermediate Stage(s): 60% of the grant after utilisaion of the grant disbursed in first installment and consumption of self contribution of the entity
(iii) Final Stage: Balance 10% of the grant shall be released on completion of the scheme

However, if any other specific funding pattern different from the pattern mentioned above, is desired by the project entity, then entity shall mention the same at the time of submission of the proposal to the Nodal Agency. The Monitoring Committee may consider the same at the time of sanction of funds for the scheme submitted by entity.

9.4. Specific physical milestones which would be required to be achieved for the project for release of various instalments will be indicated in the project sanction order.

9.5. A separate Bank Account will be maintained by the entity for the component of grant from PSDF and this grant will be deposited in that designated bank account. Any interest earned on the grant in the bank account maintained by the entity or any unspent amount of the grant portion of PSDF shall be reduced while making demand for final installment. Any residual amount including interest if any, after completion of the project shall be returned to PSDF.

9.6. The fund flow will be tracked under the Public Financial management System (PFMS) platform right from the stage of disbursement by MoP to the Nodal Agency to the stage of disbursement of funds to the implementing agencies.

10. Ineligible Expenditures

Any expenditure which is not directly related and exclusively spent towards the implementation of the scheme shall not be counted as eligible expenditure. The ineligible expenditure shall include:

i) Cost of Land
ii) Interest during construction
iii) Administrative Expenditure including salary
iv) Contingent liabilities
v) Costs resulting from the deferral of payments to creditors

11. Execution, Operation & Maintenance of the Assets

The project entity shall be responsible for the execution as well as Operation & Maintenance of the projects during its useful life. Operation and Maintenance of the Project / scheme shall be governed in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 or tariff regulations of the Appropriate Commission as the case may be, as amended from time to time or any subsequent enactment thereof.

12. Annual Report, Review and Modification

An Annual Report of the fund including the projects undertaken during the year, together with the Balance Sheet and Audited Accounts shall be submitted to the Central Government and for information to the Central Commission. The Annual Report shall also be laid on the table of both Houses of Parliament through the Ministry of Power.

Monitoring Committee may review these Guidelines / Procedure from time to time.

Annex – I

List of Documents

	List of documents	First Stage	Second/ Intermediate Stage(s)	Final Stage
a)	PSDF Sanction Order by administrative division of MoP	√		
b)	Agreement duly signed by the entity	√		
c)	Authorized representative and Bank details to which the funds are to be transferred	√		
d)	Letter of award, Invoices	√		
e)	Likely Statement of Expenditures (SOE) for the works to be taken up/ Statement of Expenditure in respect of the completed work	√	√	√
f)	Inspection reports and certificates for completed portion of the scheme		√	√
g)	Project Status reports including the details of the physical and financial timelines		√	√
h)	Utilization Certificate for the utilized portion of the Funds		√	√
i)	Proof of expenditure/Auditor's certificate for expenditure incurred corresponding to the scheme.		√	√
j)	Completion and commissioning certificates / Taking over Certificate (wherever applicable).			√

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 :	
2. Short Summary of Project / Scheme / Activity	
a. Name and location of the Project / Scheme / Activity :	
b. Objective of the Project / Scheme / Activity :	_____
c. Authorized Person For this Project / Scheme / Activity	Name : _____ E-mail ID : _____ Land line No : _____ Mobile No. : _____ Fax No : _____
d. Nature of the Project / Scheme / Activity: Inter – State / Intra – State (Please Specify)	
e. Identified Beneficiaries	_____
f. Merits of the scheme	_____
g. Limitations, if any	_____
h. Time frame for Implementation	
i. Estimated Cost of Project / Scheme / Activity	
j. Category under which the project is classified (Please refer Para 5.1 of the Guidelines/Procedure)	

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

DETAILED PROPOSAL (DP)

1. Details of the Requesting Organization / Project Entity

1.1 Details of Organization / Entity

Name of Organization / Entity	
Acronym or Abbreviation (if applicable)	

1.2 Details of Head of the Organization

Name (Mr / Ms / Mrs)	
Designation	
E-mail Address	
Landline No.	
Fax No.	
Address	
City	
Postal Code	

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)	
Designation	
E-mail Address	
Landline No.	
Mobile No.	
Fax No.	
Address	
City	
Postal Code	

Any Change in above mentioned details may be notified to the Nodal Agency of PSDF immediately.

2. Justification of the Proposal

This justification of proposal shall be the basis of procedure for scrutinization and sanction of the proposal to be funded through PSDF. Please fill the details from 2.1 to 2.6.

2.1 Analysis of the Objective

Please provide the concise technical analysis in such a way that it will give clear understanding of depth and intensity of the objective of the project. This may include:

- The problem / constraint to be addressed
- Objective of the project / scheme / activity
- How the problem / constraint would be addressed through the project / scheme / activity
- Required physical additions / equipment in the power system
- Financing and other commercial details
- Merits and limitations (if any) in the implementation of the project/ scheme/ activity.

The description should be specific & precisely elaborate on each issue.

Identify the specific beneficiaries of this project/ scheme/ activity. Explain specifically how they benefit from the project/ scheme/ activity implementation.

Signature: _____

Name: _____

Date: _____

(Authorized Representative)

2.3 Identified Source of Funding

Wherever the project is to be funded partly through self-contribution and partly through grant from PSDF as per categorization of the project, both internal and external sources of funding may be specified alongwith respective quantum of funding.

2.4 Details of Activities for Project / Scheme / Activity

Describe the activities that need to be undertaken in order to produce the desired results. The activities may include technical and feasibility studies, research etc., wherever they are applicable.

2.5 Executing Agency

Give the details of the executing agency including their performance record, justification behind the recommendation of the particular executing agency for implementing this project/ scheme/ activity.

2.6 Time line for Implementation of Project / Scheme / Activity

Describe the time line for implementing this project/ scheme/ activity including the target list of activities that need to be undertaken for the defined durations between timeline

Timeline of the Project / Scheme / Activity	
Duration of Project (in Months)	
Likely Start Date	
Likely Completion Date	

Timeline of Activities

S.No.	Description	Year	2014 – 15													
		Month	M1	M2	M3	M4	M5	M6	M7	M8	M9	M8	M9	M10	M11	M12
1.	Project Approval															
2.	Bid Preparation															
3.	Bidding Period															
4.	Evaluation, Contract Award and Mobilization															
5.	1st Disbursement															
6.	Project Status Report															
7.	2nd Disbursement															
8.	Project Status Report															
9.	3rd Disbursement															
10.	Project Status Report															
11.	4th Disbursement															
12.	Project Status Report															

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Summary of Detailed Project Report (DPR)

A Detailed Project Report (DPR) may be given which should include Background, Project Objectives, Beneficiaries, On-going initiatives, Technology, Management arrangements, Cost Estimates, Time Frame, Success criteria and sustainability.

A brief summary of DPR alongwith the Single Line Diagram (SLD) may also be provided

Summary of DPR given - Yes / No. **Copy of the DPR attached. – Yes / No.**

Sample Format for DPR Summary of Sub-station R & M is as below.
Similar formats have to be devised for any other scheme / project/ activity

Cost break-up of Sub-station equipment

Name of the Substation :

Sr.No.	Description of the equipment to be replaced(rating, type)	Unit (Nos./Sets)	Quantity	rate including taxes	total	spares	erection/civil works	tot
400 kV								
220 kV								

Note : One table for each substation

	Abstract cost estimate Sub-station (Rs. In Lacs)						
Sr. No.	Description of equipment	Sub-station Name-1	Sub-station Name-2	Sub-station Name-3	.	.	Total
400 kV							
220 kV							

details of existing equipment

Name of the Substation :

Sl. No.	Name of Feeder	Equipment Name	year of Manufacturing and make	date of Commissioning	voltage	no. of cores available (in case of CT/PT)	type of insulation /operation	tagged for replacement (yes/no)	rea n f rep em t
400 kV									
220 kV									

Note : One table for each substation

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

	Abstract Quantity estimate Sub-station						
Sr. No.	Description of equipment	Sub-station Name-1	Sub-station Name-2	Sub-station Name-3	.	.	Total
400 kV							
220 kV							

Implementation schedule / milestones

target for physical milestones

Particular	Total	Quarter-1	Quarter-2	Quarter-3	Quarter-4	-	-	-	Last Quarter
No. of CB									
No of isolators									
no. CVT									
no of relays									
no. of CTs									
-									

target for financial milestones

	description of amount required	Total	Quarter-1	Quarter-2	Quarter-3	Quarter-4	-	-	-	Last Quarter

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	
2.	Funding Proposed from PSDF	
3.	Contribution from Internal Sources	
4.	External Borrowings	

2. Details

2.1 Cost Estimate

Give the detailed cost estimate for implementing the project/ scheme/ activity and attach the management / government approval of the cost estimate and funding.

Basis for Cost estimates and Other parameters: The basis of calculations of the cost estimates on which the management / government approval has been given has to be detailed in this section. The supporting documents of the reliability of the cost estimate and BOQ may be attached as Annexure

Any ineligible expenditures as per Guidelines/Procedure should be excluded from the Project Cost Estimate.

3. Funding

3.1 Funding Proposed from PSDF as grant

Give the details of amounts proposed from PSDF as grant

3.2 Contribution from Internal Sources

Give the details of contribution of your organization in implementation of this project/ scheme/ activity, if any

3.3 External Borrowings

Give the details of sources and amounts tied up through external borrowings, if any

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** ☐ **STU** ☐ **RPC** ☐	
Date of Submission to CTU / STU / RPC for approval		
Name of the Scheme		
Details of the Appraisal Report by CTU / STU / RPC (Attached at Annexure)	**Reference. No :** _____ **Date:** _____	
Summary of observations from CTU/ STU/RPC Appraisal Report	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)

UNDERTAKING

(On a Non-judicial Stamp paper of Rs. 50 only duly notarized and attested)

I, Dr./ Mr./ Ms.....son/daughter/wife of.....
resident of.....
.....(full address) and presently working as ..... in
the.....
hereby undertake to comply with the following terms and conditions with regard to funding of the .....(name of the scheme) 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 installment.**

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Recommendations of the Techno-Economic Sub-Group

(to be filled by Nodal Agency)	
Project Proposal Number:	
Name of the Proposed Scheme:	
Project Cost Estimate as given by the executing entity (Rs.)	
Proposed grant requested by the executing entity from PSDF (Rs.)	
Self-Contribution proposed by the executing entity (Rs.)	
(a) Internal Source of Funding	
(b) External Source of Funding	

(to be filled by Techno-Economic Sub-Group)		
S. No	**Item**	**Observations / Remarks of the Sub-Group**
1.	**Whether Techno – Economic Sub-Group has recommended the grant from PSDF? (Yes / No)**	
2.	**Details of Techno-Economic Report (Report to be attached as Annexure)**	Reference No.- Date -
3.	**Summary details about the Recommendation of the Techno – Economic Sub-Group** a) Technical Feasibility b) Performance Parameters c) Reliability of Proposed Cost Estimate d) Proposed Sources of Funding	
4.	**a) Project cost estimate as recommended by the Techno-Economic Sub-Group.**	
	b) Category under which the scheme is recommended by the Techno-Economic Sub-Group in line with para 5.1 of the Guidelines/Procedure	
	c) Grant to the entity recommended by the Techno-Economic Sub-Group from PSDF (Rs.)	

Signature of the Techno – Economic Sub-Group Members

Signature	***Signature***	***Signature***	***Signature***	.....
Name:	***Name:***	***Name:***	***Name:***	.....
(Member 1)	***(Member 2)***	***(Member 3)***	***(Member 4)***	.....

Recommendations of the Appraisal Committee

(to be filled by Nodal Agency)	
Project Proposal Number:	
Name of the Proposed Scheme:	
Date of Receipt of Project Proposal	
Project Cost Estimate as given by the executing entity (Rs.)	
Proposed grant requested by the executing entity from PSDF (Rs.)	
Self-Contribution by the executing entity (Rs.)	
(a) Internal Source of Funding	
(b) External Source of Funding	

(to be filled by Appraisal Committee)		
Sr. No.	**Item**	**Observations / Remarks of the Appraisal Committee**
1.	**CTU / STU / RPC Appraisal available (Yes/No)**	
2.	**Techno – Economic Sub-Group Report available (Yes/No)**	
3.	**Whether Appraisal Committee recommends the grant from PSDF to this project(Yes / No)**	
4.	**Total Project Cost Estimate accepted by the Appraisal Committee (Rs.)**	
5.	**Category and Quantum of Funding (in line with Para 5.1 & 6.3 of Guidelines/Procedure)**	
6.	**Total Grant recommended by the Appraisal Committee from PSDF (Rs.)**	

Signature
Name:
(Member Secretary)

Signature
Name:
(Chairman)

Request for Release of Instalment

Project Proposal Number .....

Sanction Order No..... for sanction of grant from PSDF

Sl.No. of Instalment (First / Second / Third)

(Tick whichever is applicable)

Date of Submission:.....

To

PSDF Secretariat
National Load Despatch Centre
New Delhi – 110 016

1. **On the basis of the above sanction from PSDF, it is requested to release instalment of grant with details as indicated below:**

a) Total Accepted Project Cost Estimate is Rs.....

b) The total amount of grant sanctioned from PSDF is Rs.....

c) The total amount already claimed under sanctioned grant from earlier instalments is Rs.....which forms .....(%) of the sanctioned grant.

d) The total amount already invested as self-contribution in the project / scheme / activity is Rs..... which forms .....(%) of the Project Cost Estimate.

e) The amount requested as grant from PSDF against this instalment is Rs.....which forms (%)..... of the sanctioned grant.

2. **We hereby certify and agree as follows:**

a) The information given as above is correct as per records maintained for the purpose.

b) No claims have been submitted to PSDF Secretariat for payment earlier in respect of the invoices being submitted against above instalment.

c) The work to be carried out under the above project is as per the sanctioned scheme and is in line with Technical Standards / Guidelines issued by CEA or any other such Authority.

d) All claims for expenditure incurred are from the date of sanction of projects by Monitoring Committee

e) A separate Bank Account will be maintained by the entity for the component of grant from PSDF and this grant will be deposited in that designated bank account. Any interest earned on the grant in the bank account maintained by the entity or any unspent amount of the grant portion of PSDF shall be reduced while making demand for final installment. Any residual amount including interest if any, after completion of the project shall be returned to PSDF.

Date .....

Signature: .....

Name: .....

Seal: .....

(Authorized Representative)

Utilization Certificate

Project Proposal Number .....

Sanction Order No..... **for sanction of grant from PSDF**

Sl.No. of Instalment (First / Second / Third)

(Tick whichever is applicable)

Date of Submission:.....

It is certified that:

A. In respect of the project / scheme / activity, the accepted Project Cost Estimate is Rs.....

B. The total amount of grant sanctioned is Rs.....

C. The amount already released from the sanctioned grant under earlier instalments is Rs.....

D. The amount already utilized from the released instalments is Rs.....which forms (%).....of the already earlier disbursed grant.

E. The total estimated self-contribution in the approved scheme / project / activity is Rs.....out of which Rs.....has already been invested which forms (%).....of the Approved Project Cost Estimate.

F. I have satisfied myself that the conditions on which the grant was sanctioned during the financial year have been duly fulfilled and that I have exercised the checks as are found necessary to ensure that the money was actually utilized for the purpose for which it was sanctioned as per data furnished above.

Date .....

Signature: .....

Name: .....

Seal: .....

(Authorized Representative)

Countersigned by the Head of the Organization / Utility
Date .....

Name & Seal .....

Agreement

(On Stamp paper)

AGREEMENT

AMONGST

NODAL AGENCY OF PSDF,

GOVERNMENT OF .....[1]

AND

.....[2]

THIS AGREEMENT entered into this.....day of..... Two Thousand.....AMONGST

National Load Despatch Centre (NLDC) operated by Power System Operation Corporation Ltd. (POSOCO), a company incorporated under the Companies Act, 1956 having its registered office at B – 9, Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016 (herein after referred to as "Nodal Agency") as party of the First part.

AND

STATE OF .....[1] , through SECRETARY, DEPARTMENT OF POWER, Government of .....[1] (herein after referred to as "Government of .....[1]" which expression shall include his successors in office") having its office at .....as party of the Second part.

AND

.....[2], a body constituted under Electricity Act, 2003 duly owned by Government of .....[1], having its Head Office at .....,..... (hereinafter referred to as "ENTITY") which expression shall unless repugnant to the context or meaning thereof include its successors and assignee) as party of the Third part.

OR

.....[2], a company incorporated under the Companies Act 1956 having its registered office at ..... (hereinafter referred to as "ENTITY" which expression shall unless

---

[1] Name of State
[2] Name of Project Entity

Note: A tripartite agreement shall be signed in case the project entity is a state utility. However, in case the project entity is a company or any other corporate body under Central Government, a bipartite agreement would be signed between the Nodal Agenc and the project entity.

repugnant to the context or meaning thereof include its successors and assignee) as party of the Third part.

Nodal Agency, Government of .....[1], and .....[2] collectively referred to as "Parties" and singularly as a "Party".

A. AND WHEREAS GOVERNEMNT OF .....[1] AND ENTITY intend to implement project(s) for .....(objective of the Project to be filled) in the State (s) of .....[1] and whereas it has been agreed to finance such project(s) from PSDF on the terms and conditions as may be stipulated in the Sanction Letter(s) issued by Ministry of Power.

B. AND WHEREAS the parties have agreed that the project(s), as posed by ENTITY and sanctioned by Monitoring Committee , under the PSDF Scheme commencing from the Financial Year ..... shall be deemed to have been covered under this agreement. The terms and conditions of sanction for a particular project, as contained in the Sanction Letter issued by Ministry of Power, shall also form part and parcel of the present agreement. The sanction letter shall include supplementals and modifications issued by Ministry of Power, if any, to sanction letter.

C. AND WHEREAS the responsibility for formulation, development and implementation of the aforesaid project(s) rests with the ENTITY.

D. AND WHEREAS Funding from PSDF shall be considered for the projects proposed by ENTITY that have a bearing on grid safety and security, provided these are not covered under any other scheme of the Government of India, such as RAPDRP/RGGVY/NEF, etc.

E. AND WHEREAS, Monitoring Committee of the PSDF has sanctioned the aforesaid project(s) for release of funds to meet the expenditure to be incurred on implementation of the project(s) covered under the programme, directly to ENTITY through the Nodal Agency.

F. AND WHEREAS, project-wise, separate accounts for development and implementation of such PSDF funded projects shall be maintained by ENTITY

G. AND WHEREAS GOVERNEMNT OF .....[1] and ENTITY commit that they shall ensure that the ENTITY shall file a tariff petition with the Appropriate Commission in respect of the scheme for funding from PSDF and also ensure that no tariff is claimed in the petition for the portion of the scheme funded from PSDF.

H. AND WHEREAS ENTITY shall be the owner of the assets created on implementation of the individual project(s), as sanctioned by PSDF.

NOW, therefore, in consideration of the premises and mutual agreements, covenants and conditions set-forth herein which shall form an integral part of this Agreement, it is hereby agreed by and amongst the parties as follows:

1. PROJECT FINANCING BY PSDF

1.1. **(a)** The ENTITY shall establish a dedicated organization within the utility and nominate a nodal officer of suitable rank, for speedy execution of the project(s) and shall be responsible for compliance of the provisions as stipulated. The nodal officer will also arrange to get the relevant clearance/orders from .....[1] and ENTITY expeditiously. The ENTITY will assign utmost priority to the works to be executed and also, help in the speedy execution of the project(s) by issuing necessary orders to avoid delay.

(b) Expenditure details will also be submitted by ENTITY to Nodal Agency for release of funds against progressive reimbursement claims in the manner prescribed herein under and the detailed Procedure, for release of funds in accordance with the structured formats as may be prescribed by Nodal Agency.

(c) The ENTITY responsible for execution of the scheme shall ensure timely submission of Project Status reports to NLDC along with the request for disbursal of funds from PSDF in accordance with the Detailed Procedure.

(d) Periodic review and monitoring of the Physical and Financial progress of the project(s) shall also be taken up by the Monitoring Committee of PSDF.

(e) Any expenditure which is not directly related and exclusively spent towards the implementation of the scheme shall not be counted as eligible expenditure.

1.2. Mode of Release of Funds

The release of funds from PSDF will be regulated as per the extant instructions of the Ministry of Finance. The funds for implementation of the project(s) shall be released by Ministry of Power, Government of India to ENTITY through the Nodal Agency and in the manner as indicated below:-

a) **First Stage** – 30 % of sanctioned grant within 15 days from date of signing of the Agreement and fulfillment of all requirements, including requisite legal formalities by the Government of .....[1] and ENTITY as per sanction letter of the project. The release of 1st installment would after the Letter of Award has been issued by the entity and agreement has been signed with the contractor.

b) **Second / Intermediate Stage(s)** – 60 % of sanctioned grant within 15 days from date of submitting the expenditure details to Nodal Agency by ENTITY, after utilizing the fund received in 1st installment and consumption of self-contribution of the ENTITY.

c) **Final Stage** – Balance 10 % of sanctioned grant within 30 days from date of submitting the expenditure details and completion certificate to Nodal Agency by ENTITY.

d) Final completed cost shall be submitted by ENTITY to Nodal Agency based on the audited account.

1.3. TAXES AND DUTIES

All statutory taxes/levies, duties, cess, entry tax or any kind of imposition(s) whatsoever imposed/charged by any Government (Central / State) and/or any other local bodies/authorities on ENTITY and/ or its contractors in respect of execution of the project(s) covered under this Agreement and Service Tax on service charge (including any variation thereof), not covered in the estimated cost of the project shall be paid by the ENTITY.

2. UTILIZATION CERTIFICATE

ENTITY shall provide utilization certificate(s) for the funds released by Ministry of Power for implementation of project(s) in the manner prescribed by the Nodal Agency.

3. CONSTRUCTION / IMPLEMENTATION

3.1. ENTITY shall make all possible efforts to complete the project(s) within the approved time frame starting from the date of release of the First Installment of funds by Ministry of Power, Government of India to ENTITY.

3.2. ENTITY and the Government of .....[1] shall specify quarterly milestones, and progress shall be reviewed with reference to these milestones by the Monitoring Committee.

3.3. The best cost and quality control measures shall be enforced by ENTITY during implementation through appropriate management and control systems.

3.4. A separate Bank Account will be maintained by the ENTITY for the component of grant from PSDF and this grant will be deposited in that designated bank account. Any interest earned on the grant in the bank account maintained by the ENTITY or any unspent amount of the grant portion of PSDF shall be reduced while making demand for final installment. Any residual amount including interest if any, after completion of the project shall be returned to PSDF.

4. TAKING-OVER OF THE PROJECT

ENTITY shall ensure taking over the completed project(s) after commissioning (in part or full, as the case may be). ENTITY shall be responsible for operation & maintenance of the project(s) thereafter (in part or full, as the case may be) at their own expenses.

5. ARBITRATION

Any difference or dispute between the parties arising out of or in connection with this project shall be discussed and settled amicably amongst the parties. In the event of non-settlement of the difference or dispute within sixty (60) days, the same shall be referred to the Secretary to the Government of India in the Ministry of Power, for arbitration and whose decision shall be final and binding on the parties to this Agreement.

6. FORCE MAJEURE

The parties shall ensure due compliance with the terms of this Agreement. However, no party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of the Agreement to the extent that such a failure is due to force majeure events such as fire, rebellion, mutiny, civil commotion, riot, strike, lock-out, forces of nature, accident, act of God and any other reason beyond the control of concerned party. But, any party claiming the benefit of this clause shall satisfy the other party of the existence of such as event and give written notice of 15 days to the other party to this effect. The services covered under the agreement shall be started as soon as practicable by the parties concerned after such eventuality as come to an end or ceased to exist.

7. IMPLEMENTATION OF THE AGREEMENT

All discretions to be exercised and directions, approvals, consents and notices to be given and actions to be taken under these presents, unless otherwise expressly provided herein, shall be exercised and given by the signatories to this Agreement or by the Authorized representative(s) that each party may nominate in this behalf and notify in writing to the other party. Any other nomination of Authorized representative(s) and/or changes in designation shall be informed likewise in writing to/by ENTITY and Nodal Agency within on month of signing of the Agreement. Any changes in designations / registered office address shall be intimated in writing to all concerned parties.

8. NOTICE

All notices required or referred to under this Agreement, shall be in writing and signed by the respective authorized signatories of the parties mentioned herein above, unless otherwise notified. Each such notice shall be deemed to have been duly given if delivered or served by registered mail, speed post of Department of Posts or by Courier service with an acknowledgement due to the other parties.

9. TERMINATION

This agreement shall remain valid unless terminated with consent of all the Parties.

10. The competent Courts of Delhi shall have exclusive jurisdiction in all matters relating to or arising out under these presents.

IN WITNESS WHEREOF the parties have executed these presents through their Authorized Representatives at New Delhi.

For and on behalf of Nodal Agency	**For and on behalf of Secretary, Department of Power, Government of .....[1]**	**For and on behalf of .....[2]**
Witness 1.....	**Witness 1.....**	**Witness 1.....**
Witness 2.....	**Witness 1.....**	**Witness 1.....**

Checklist of Documents to be Submitted for Release of Funds

(First Stage / Second (Intermediate) Stage(s) / Final Stage)

(Tick whichever is applicable)

Application for release of funds from the PSDF shall be accompanied by the documents and details as mentioned below, depending on the stage of execution of the project.

S. No.	Document	Submitted (Y/N)
Documents required to be submitted at the time of request for First Stage only		
1	PSDF Sanction Order	
2	Agreement duly signed by the entity (Format – C3)	
3	Letter of award	
Documents required to be submitted at the time of request for all Instalments		
4	Request Letter for release of instalment (Format – C1)	
5	Invoices	
6	Likely Statement of Expenditures (SOE) / Statement of Expenditure in respect of the completed work	
7	Inspection reports and certificates for completed portion of the scheme	
8	Utilization Certificate for the utilized portion of the already disbursed grant (Format – C2)	
9	Proof of expenditure/Auditor's certificate for expenditure incurred corresponding to the scheme.	
10	Completion and commissioning certificates / Taking over Certificate (wherever applicable).	

Date .....

Signature: .....

Name: .....

(Authorized Representative)

ANNEXURE - 8.6A

Ratnagiri Gas & Power Pvt. Ltd.

Name of the office	:	General Manager, RGPPL
Office Address	:	PO-Anjanwel, Guhagar, Ratnagiri, Maharashtra. Pin Code-415634
Contact No.-	:	Phone- 02359-241073, Fax- 02359-241071
Email Id:-	:	dpaul@site.rgppl.com, cs.thomas@site.rgppl.com

Ref No: RGPPL/O&M/FGMO

Date: 27.07.2018

To,
The Member Secretary
WRLDC,
F-3 MIDC Area, Andheri
Mumbai-400093.

प. क्ष. वि. स. मुंबई /WRPC
आवक संख्या /Inward No. 1809
दिनांक /Date: 21/09/18

Sub: - Submission of proposal for funding of Implementation of Free Governor Mode of Operation (FGMO) in four Gas Turbines at RGPPL, Ratnagiri from Power System Development fund (PSDF).

Ref: - Central Electricity Regulatory Commission (Power System Development fund) Regulation, 2014.

Dear Sir,

Ratnagiri Gas and Power Pvt. Ltd. (RGPPL) promoted by NTPC Ltd. and GAIL is a 1967 MW combined cycle power plant. The plant earlier known as Dabhol Power was handed over by GOI to NTPC and GAIL in 2005 and renamed as Ratnagiri Gas and Power Pvt. Ltd. (RGPPL).

RGPPL has 3 Power blocks, - Block-I of 640 MW & Block-II & III of 663.5 MW capacity (approx.) each. Each block consists of 2GT and 1ST. Presently Block-II & Block-III are operational and supplying around 500 MW of electricity to Indian Railways only & Block-1 is under dry preservation since 2013.

A meeting was held on 24.04.2018 at WRPC, Mumbai in the matter of compliance to IEGC Regulation 5.2 (f), (g), (h) & (i) by Gas Power Stations in Western Region. In meeting it was shared that "IEGC 5th amendment dated 12th Apr 17 mandates that the Gas Turbines with capacity 50 MW and above shall also provide primary response w.e.f 01st October 2017 ". WRLDC informed that all Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of capacity more than 50 MW and above, which are synchronized with the grid, irrespective of their ownership, shall have their governors in operation at all times.

After deliberations there was consensus on following action points:
a. All open cycle/combined gas turbine shall implement Free Governor Mode of operation which is nothing but "Speed control with droop". Generating unit will automatically vary its output as per its droop characteristics to oppose frequency change of more than the ripple factor/dead band (0.03 Hz). This implies that even when the frequency is above 50 Hz, the unit generation should increase for dip in frequency more than Ripple filter/Dead band and

PSDF file.
SE(Opn)
18/9/2018
EE(Opn)
23/09

vice versa. Likewise, even if frequency is below 50 Hz, the unit output should decrease for sudden increase in frequency more than Ripple filter/Dead band and vice versa.
b. The primary response shall be delivered within 30 seconds of event.
(Letter Ref No.- WRLDC/SO-I/2018/30 dated 01/05/18 is attached)

As this functionality is not available in the existing control system of units in operation at RGPPL, technical and commercial offer was sought from OEM M/s GE. M/s GE has submitted the cost estimate of USD 682,927 for implementation of Free Governor Mode of Operation (FGMO) in four Gas Turbines.**Budgetary offer ofM/s GE is attached.**
Presently in view of current power generation scenario, we are planning for implementation of FGMO software in Block-II & III Gas Turbines only (not in Block-I units).

At present, RGPPL is having 5 yrs. PPA with Railways on single part fixed Tariff on fixed amount per Kwh of power supply basis. Our long term customer, Maharashtra state, is not scheduling because of which RGPPL is not able to recover any capital addition from customer.

As per IEGC 5th amendment dated 12th Apr 17 mandate, it is mandatory for Gas Turbines with capacity 50 MW and above to provide primary frequency response in order to support the Grid.

In view of above, it is requested to forward the proposal to the appraisal Committee for approval of funding through PSDF so that further activities for the implementation of Free Governor Mode of Operation (FGMO) can be taken up.

Thanking you.

(D. Paul)
General Manager
RGPPL

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: Date of Submission to CTU / STU / RPC for approval	**CTU** [ ] **STU** [ ] **RPC** [✓] **20/07/18**	
Name of the Scheme	**Implementation of Free Governor Mode of Operation (FGMO) in four Gas Turbines at RGPPL, Ratnagiri from Power System Development fund (PSDF)**	
Details of the Appraisal Report by CTU / STU / RPC (Attached at Annx)	**Reference. No : WRLDC/SO-I/2018/30** **Date:01/05/18**	
Summary of observations from CTU/ STU/RPC Appraisal Report	Summary of Proposal Appraised	A meeting was held on 24.04.2018 at WRPC, Mumbai in the matter of compliance to IEGC Regulation 5.2 (f), (g), (h) & (i) by Gas Power Stations in Western Region. In meeting it was decided that All open cycle/combined gas turbine shall implement Free Governor Mode of operation which is nothing but "Speed control with droop".
	Technical Observations	As per IEGC 5th amendment dated 12th Apr 17 mandate, it is mandatory for Gas Turbines with capacity 50 MW and above to provide primary response in order to support the Grid. Primary frequency control is automatic and it aims to arrest the grid frequency variations by automatically varying generator output as per its droop characteristics. Implementation of FGMO scheme will enable RGPPL Gas Turbines to provide primary response in case of frequency variations thus helping in Grid stability.
	Financial Observations	Total implementation cost USD 682,927.
	Compliance of Grid Standards / Codes by the Applicant	IEGC Regulation 5.2 (f), (g), (h) & (i)
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	
	Recommendations of CTU/STU/RPC	

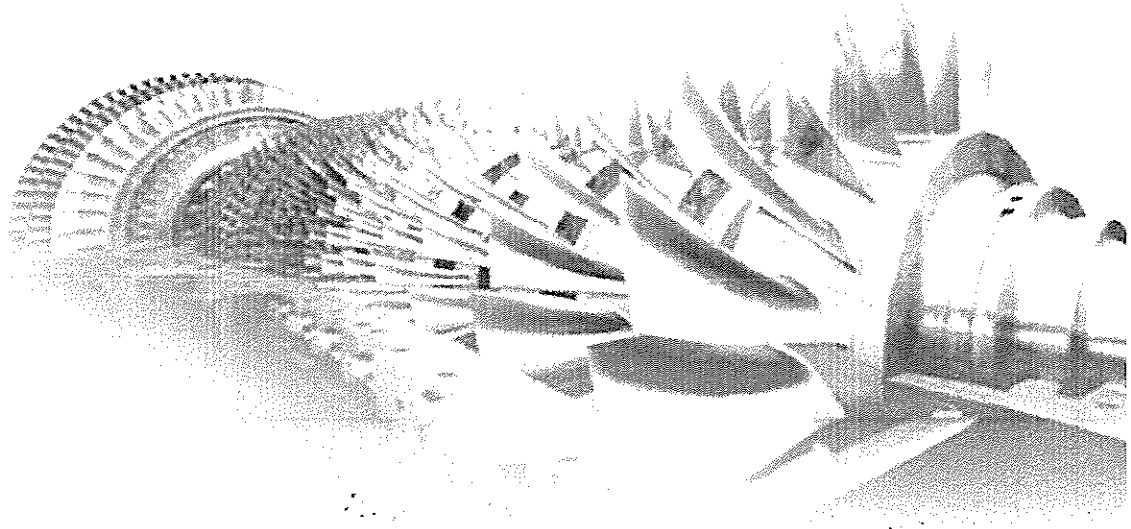
Date: _____

Signature: _____

Name: _____

General Electric International, Inc.

Customer	**RATNAGIRI GAS AND POWER PRIVATE LIMITED**
Customer Site	RATNAGIRI
Unit Serial #	297287, 297288, 297289, 297290
For	**Free Governor Mode of Response (FGMO)**



General Electric International, Inc. - United States
Proposal: 1203444-139912

Proposal Date: 1st -July-2018

Table of Contents

Section I: Scope

Customer Request and Offer Summary

General Electric International, Inc. has received a request from RATNAGIRI GAS AND POWER PRIVATE LIMITED to provide the Free Governor mode of operation to be applied to unit 297287, 297288, 297289, 297290which is 9FA gas turbine operating at RATNAGIRI, India, with a Mark VIe TMR control panel.

In response to RGPPL request to provide the software modifications to Free Governor mode of operation along with the Limit of technical minimum at 55 % of MCR and Overfiring of 2.5% incase unit running at Baseload., GE analyzed the Grid requirement document to provide the above-mentioned requirement following are the software features proposed in this proposal.

Note: the 9FA frame has over firning limitation of 2.5% GT output above during under frequency event.

The scope of this offering is to modify the existing turbine control system software with Grid code packages for units to comply the Indian Grid Regulations.

FGMO package includes:

1. Primary frequency regulation
2. Base Load Frequency Sensitive Mode
3. Reserve margin control – Overfiring option
4. Non- Linear Grid Frequency Filter(LFSM)
5. Fuel Transient Limiter (GFF)
6. Adjustable Speed Deadband
7. Speed Governor testing
8. Grid Code Test - Demonstrate Free Governor Mode of Operation (FGMO)

An expanded description of the software features here offered is listed in Appendix IV of this offering.

This offering accounts for this specific software modifications and are part of the scope of supply. These offering accounts for the Gas turbine functionality only; if it is required to review other systems please notify to a GE representative.

Benefits

The Software modifications herein proposed will sustain gas turbine primary frequency response upon the occurrence of sudden grid frequency fluctuations by controlling the gas turbine governor to act in a fast response to such sudden grid frequency fluctuations. This SW modification will allow the unit to comply with the Grid Regulations.

Control System

To design and implement the required software changes a copy of the "As-Operating" software, including all Operator Interface screens is to be provided from the site. This software will be modified and returned to the site to be installed and commissioned by a qualified Controls Field Engineer.

This offering assumes standard screens and documentation in English language are to be provided.

Performance Effect

There is no performance effect associated with this modification.

Maintenance Effect

Information concerning maintenance, including hours based and starts-based inspection intervals, may be found in GE publication GER-3620L.

https://powergen.gepower.com/content/dam/gepower-powergen/global/en_US/documents/technical/3620M_0215.pdf

Non-GE Scope

GE limits its responsibility to the turbine base and GE provided skids. Because of possible interferences, GE does not assume responsibility for interconnecting wiring/cabling/conduit or interconnecting piping or foundation work, unless specifically offered.

Customer Responsibilities

During installation of upgraded software and Update current installed HMI Displays, Customer responsibilities shall include, but are not limited to the following:

Responsibilities	GE	Customer
Take all necessary precautions, at all times, for the safety of Seller personnel at site, including, but not limited to, the indoctrination of Customer 's site safety practices, energizing / de-energizing of all power systems (electrical, mechanical and hydraulic) using a lockout tag-out procedure	☐	☒
Provide safe access to equipment locations including scaffolding where required.	☐	☒
Consult the GE Personnel in advance with respect to the scheduling of required on-site activities.	☐	☒
Provide all necessary tools, equipment facilities and devices required for the safe handling and storage of the equipment.	☐	☒
Provide climate-controlled and secure office and storage space adjacent to the work area at the Site during the installation of the equipment	☐	☒
Provide, as required, operating personnel, compressed air, fuel, electric power, lubricant oil and supplies for starting, operation, and testing.	☐	☒
Provide required safety equipment including confined space air quality measurement devices and safety belts.	☐	☒
Provide current process limitations and also equipment limitations in plant.	☐	☒

Provide to GE a copy of the current Gas Turbine software for entire unit, including HMI screens.	☐	☒
Resolve existing diagnostics and process alarms.	☐	☒

It is customer's responsibility to lock the Gas turbine software during the time that the as operating software of the units is provided to GE until the software is installed, since the modifications done directly to the software on site during this period GE engineering will not be able to capture them unless this is properly notified to GE.

Role of RGPPL for Site testing and Demonstrate of FGMO

1) Make the units available for testing and operate as required.
2) Secure proper clearance/approval from the transmission system operator/ owner/administrator.
3) Ensure that appropriate GE Controls Technical Advisor support is available to support the Grid Code Test team.
4) Notify the GE Project Manager of test date at least one month prior to such dates.
5) Confirmation of test date will be communicated by the GE Project Manager two weeks prior to start of Grid Code test.
6) Provide all necessary tools, equipment facilities (including a suitable office area with electricity, trailer, shelter or section of the construction housing area where drawings, special tools, and other Seller equipment can be kept and referred to or worked upon) and devices required for the secure and safe handling, storage and installation of the test equipment.
7) Buyer will take all necessary precautions, at all times, for the safety of Sellers' personnel at site. This includes, but is not limited to, indoctrination of Buyer's safety practices, energization/de-energization of all power systems (electrical, mechanical and hydraulic) using a lockout tag-out procedure.
8) Provide climate-controlled and secure office and storage space adjacent to the work area at the Site. Buyer will supply phone lines, T-1 Line or equivalent for High Speed Data Communication, phone and fax service as required, in the office space.
9) Provide radio/telephone communication between the test location and the control room.
10) Provide sufficient lighting at the test locations.

Site Information

To design and implement the required software changes a copy of the following documents must be supplied with the order are:

- As-operating Controls system software
- As-operating Controls Specification Settings

- HMI Cimproj Directory folder
- As-running control specification
- Relevant Site Data -- Elevation, Min Ambient, Design Ambient, Max Ambient, Inlet Pressure Drop, Exhaust Pressure drop.(Can be derived from Global Explorer)
- Site Fuel Gas Pressure and composition
- Effective nozzle area and Valve sizes

Scope of supply

The scope of this offering provides following:

- Mark VIe software modifications
- HMI alarms and screens update (as required)
- Controls Specification update*

*Controls Specification will include descriptions and all control constant changes.

GE Publications

Use the following relevant GE documents located online for your use at
http://www.ge-energy.com/prod_serv/products/tech_docs/en/all_gers.htm
GER-3620K – Heavy-Duty Gas Turbine Operating and Maintenance Considerations
https://powergen.gepower.com/content/dam/gepower-powergen/global/en_US/documents/technical/3620M_0215.pdf

Section II: Items Proposed

Schedule

The following list of milestone dates may be used as a reference for this scope of work. These dates are subject to change:

1) The Grid Code Testing services at the site shall commence on the date agreed upon by customer and GE.

2) The quoted price includes the Grid Code support services for:
   - One meeting of up to 1 day with customer and grid authority.
   - Refining/finalization of the test procedures to be executed.
   - Up to, and no more than 8 days at site, including testing and working one 12-hour shift(s) per day for consecutive days including weekends and holidays until the testing is completed. Note: it is anticipated that test at site will be completed with one site visits.
   - Following the data collection at site, GE staff at the GE offices will perform the data analyses needed for report preparation. The results of the grid code compliance testing work will be delivered to the customer in the form of a test report that will be issued within 60 days from the completion of the tests.

3) In the event the Buyer interrupts, delays or extends the work, as to require Grid Code testing service at times other than provided in Item 2 above, the Seller reserves the right to render additional billing as follows:
   - If the GE Grid Code Test Team is released from the site by the Buyer or demobilized from site due to site delays, while the testing is in progress but not complete, the same Grid Code test personnel may not be available to return but will be replaced with qualified Grid Code test personnel.

Proposal Basis

- This is a Gas Turbine software related Engineering Services and Field Services proposal.
- A GE Technical Advisor must be present during the outage in which the upgraded parts are installed or the controls modified. This proposal does not include any shop work for modifying existing hardware.

- This proposal is based on the assumptions of the turbine configuration as documented by the application engineer in the appendix. If the applications engineer's assumptions are incorrect, then this proposal is invalid.

Proposal Groups:

Group #	Group Name	Group Description	Total Cycle ARO (in weeks)
1.	BOM 1	Free Governor Mode of Response (FGMO) –for first unit	26.0
2.	BOM 2	Free Governor Mode of Response (FGMO) –for follow on unit	26.0
3	BOM 3	Grid Code Test - Demonstrate Free Governor Mode of Operation (FGMO) for First Unit	26.0
4	BOM 4	Grid Code Test - Demonstrate Free Governor Mode of Operation (FGMO) for Follow on Unit	26.0

BOM Group:

BOM #	BOM Description
BOM 1	Free Governor Mode of Response (FGMO) –for first unit
BOM 2	Free Governor Mode of Response (FGMO) –for follow on unit
BOM 3	Grid Code Test - Demonstrate Free Governor Mode of Operation (FGMO) for First Unit
BOM 4	Grid Code Test - Demonstrate Free Governor Mode of Operation (FGMO) for Follow on Unit

The Total Cycle stated is the typical cycle for software modifications and is dependent on availability of site information, complexity of the modification, and availability of appropriate expert resources to design and implement the modifications. Once the order has been released an assessment of the above will be made to determine if a shorter delivery cycle can be provided.

Section III: Proposal basis

General Assumptions and Clarifications

This Proposal is based on, and is only valid for, the last known turbine configuration as documented below by the application engineer. Based on research of the unit records and recent Field Design Memo's (FDM's), the following configuration tables are provided for documentation of the basis of this proposal. If any part of the information provided below is incorrect, please notify your GE representative. Application Engineering will evaluate the new information and the proposal will be validated or revised as required.

Original Manufacturing Information

Serial Number	297287, 297288, 297289, 297290
Design Memo	GR0462
Material List	'9A1PFA24-1, '9A1PFA24-2, '9A1PΓA24-3, '9A1PΓA24-4
Manufacturer	GE Greenville
Ship Date	jan-27-2000
COD Date	jun-07-2001

Site Information

Market Segment Power Generation, Industrial, etc	Electric Utility/IPP/NUG
Operation Cycle Simple, Combined, or Cogeneration	Combined Cycle
Operation Schedule Base load, Peaker, Cyclic	Continuous - Greater than 6000 hrs/yr

Performance Basis	
Altitude	328 ft
Minimum Ambient Temperature	50 °F
Design Ambient Temperature	81 °F
Maximum Ambient Temperature	95 °F
Relative Humidity	60 %

Present Configuration

Inlet/Exhaust	
Inlet Pressure Drop	3.8 in H2O
Inlet Conditioning None, Evap Cooler, Chiller, etc.	Refer to MLI 0471 for Chiller Y/N
IBH System	Y

Exhaust Pressure Drop	14.41 in H2O
Exhaust Equipment HRSG, Economizer, SCR, CO Catalyst etc.	

Combustor	
System DLN 2.x, IGCC, MNQC, etc.	Dry Low Nox 2.0+
Fuel(s)	Natural Gas /
Diluent Injection / Purpose None, Water, Steam / NOx abatement, Power Augmentation	Water / None

Control	
Generation	Mark Vle TMR

Previous Requisitions

TSN 297287

FDM	Title
F6061G2	<I> to HMI Upgrade
F6061G6	Replacement Relay
F6061G7	Replacement False Start Drain Valves
F6061G8	9FA+e Inlet Filter AIR PROCESSING UNIT for filter purging (CID=MINOR)
F6211G1	9FA+e SRV and Aux Stop Valve upgrade
F6211G11	9FA TIL 1582 Lift Oil Hose replacement
F6211G13	9FA SPARE HGP PARTS BLK-1,2,3 RGPPL SPARE PARTS
F6211G13	9FA SPARE HGP PARTS BLK-1,2,3 RGPPL SPARE PARTS
F6211G14	9FA HGP SPARE PARTS BLK-1,2,3 RGPPL for 2011
F6211G14	9FA HGP SPARE PARTS BLK-1,2,3 RGPPL for 2011
F6211G2	BLANK
F6211G2	9FA+e unflared - C/R rebuild, full Stator Kit, most HGP replacement
F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612(TIL-1435, 152, 1555, 1612, 1619, 1320 added 4JUN10)(TIL-1603, 170
F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612
F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612(TIL-1435, 152, 1555, 1612, 1619, 1320 added 4JUN10)

F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612(TIL-1435, 152, 1555, 1612, 1619, 1320 added 4JUN10)(TIL-1603, 170
F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612(TIL-1435, 152, 1555, 1612, 1619, 1320 added 4JUN10)
F6211G20	9FA TIL-1132-2R1, 1409, 1554, 1612(TIL-1435, 152, 1555, 1612, 1619, 1320 added 4JUN10)(TIL-1603, 170
F6211G24	9FA TIL-1566 HAZ GAS PROTECTION w/ CFD ANALYSIS
F6211G8	9FA TIL-1323 OLWW Isolation, TIL-1416 OPT-2
F6211G8	9FA TIL-1323 OLWW Isolation, TIL-1416 OPT-2
F6327G10	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G12	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G20	9FA.03 - Spare unflared mid cmprsr casing (MCC)
F6327G3	9FA+e IGV Part-Speed Control Logic Modification
F6327G6	9FA+e Cmprsr Blade Health Monitoring, R0-R2, DOC ONLY
F6730G1	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G2	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G2	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G7	9FA.02/.03 - Chromatograph I/O Aux Panel Workflow Request # 98713970

TSN 297288

FDM	Title
F5949G1	9FA+e Stator Kit and U/R installation
F5949G1	9FA+e Stator Kit Unit Rotor replacementNew S1B, S1
F5949G3	9FA+e Compressor Rotor re-build and re-marry to Turb Rotor
F5949G3	9FA+e Compressor Rotor re-build and re-marry to Turb Rotor
F6061G2	<I> to HMI Upgrade
F6061G9	9FA+e Inlet Filter AIR PROCESSING UNIT for filter purging (CID=MINOR)
F6211G1	9FA+e SRV and Aux Stop Valve upgrade
F6211G21	9FA TIL upgrade - TIL 1132, 1416 OPT-2, 1418, 1435, 1554, 1555, 1582, 1603, 1619
F6211G23	9FA TIL-1566 HAZ GAS PROTECTION w/ CFD ANALYSIS
F6211G25	91FA+e - TIL 1320-R2 IBH Pipe Guide Retrofit, TIL 1619 Turbine Compartment Temperature Monitoring(CI
F6211G26	9FA+e TILs 1416 OPT-2, 1435, 1555, 1603, 1619, 1320, 1461, 1619 upgrade (CID=MINOR)
F6211G26	9FA+e TILs 1416 OPT-2, 1435, 1555, 1603, 1619, 1320, 1461, 1619 upgrade (CID=MINOR)

F6211G28	9FA TIL 1577- Precautions for Air Inlet Filter House Ladder Hatches (Braden Vendor) (CID=MINOR)
F6211G9	9FA TIL 1522 FP SYS UPGRADE
F6327G10	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G14	9FA+e UNFLARED Enh Cmpsr S14-S16 upgrade (CID=MINOR)
F6327G15	9FA+e unflared CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES (CID=MINOR)
F6327G3	9FA+e IGV Part-Speed Control Logic Modification
F6327G4	9FA+e Cmprsr Blade Health Monitoring, R0-R2, DOC ONLY
F6730G1	LS2100-LCI, Mark Vie Upgrade/Retrofit
F6730G2	LS2100-LCI, Mark Vie Upgrade/Retrofit
F6730G2	LS2100-LCI, Mark Vie Upgrade/Retrofit
F6730G7	9FA.02/.03 - Chromatograph I/O Aux Panel Workflow Request # 98713970

TSN 297289

FDM	Title
F6061G1	<I> to HMI Upgrade
F6061G9	9FA+e Inlet Filter AIR PROCESSING UNIT for filter purging (CID=MINOR)
F6211G1	9FA+e SRV and Aux Stop Valve upgrade
F6211G10	9FA upgrades TIL-1244-2 FD, TIL-1416 OPT-2, TIL-1522 FP
F6211G10	9FA upgrades TIL-1244-2 FD, TIL-1416 OPT-2, TIL-1522 FP
F6211G10	9FA upgrades TIL-1244-2 FD, TIL-1416 OPT-2, TIL-1522 FP
F6211G11	9FA TIL 1582 Lift Oil Hose replacement
F6211G15	9FA Upgrade to apply TIL-1132, 1326, 1345, 1409, 1418, 1554, 1603, 1619, 1622
F6211G15	9FA Upgrade to apply TIL-1132, 1326, 1345, 1409, 1418, 1554, 1603, 1619, 1622
F6211G16	91FA+e - TIL 1566- Hazardous Gas Protection System
F6211G3	9FA CMPRS ROTOR REBUILD - F/O
F6211G31	9FA+e TIL Implementation TIL-1435, 1453, 1508, 1555, 1577, 1622 (CID=MINOR)
F6211G4	9FA Full Cmprsr Stator reblade and HGP replacement
F6327G10	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G12	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G3	9FA+e IGV Part-Speed Control Logic Modification
F6327G6	9FA+e Cmprsr Blade Health Monitoring, R0-R2, DOC ONLY
F6730G1	LS2100-LCI, Mark Vie Upgrade/Retrofit
F6730G3	LS2100-LCI, Mark Vie Upgrade/Retrofit
F6730G3	LS2100-LCI, Mark Vie Upgrade/Retrofit

F6730G7	9FA.02/.03 - Chromatograph I/O Aux Panel Workflow Request # 98713970

TSN 297290

FDM	Title
F5949G2	9FA+e Turbine Rotor Rebuild
F6061G1	<I> to HMI Upgrade
F6061G9	9FA+e Inlet Filter AIR PROCESSING UNIT for filter purging (CID=MINOR)
F6211G1	9FA+e SRV and Aux Stop Valve upgrade
F6211G1	9FA+e SRV and Aux Stop Valve upgrade
F6211G22	9FA TIL upgradews- TIL 1416-OPT2, 1435 FS DR, 1582 Lift Oil Hoses, 1619 Encl Temp
F6211G32	9FA+e TIL Implementation TIL-1326, 1451, 1508, 1522, 1554, 1566, 1577, 1603, 1622 (CID=MINOR)
F6211G32	9FA+e TIL Implementation TIL-1326, 1451, 1508, 1522, 1554, 1566, 1577, 1603, 1622 (CID=MINOR)
F6211G6	9FA CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES
F6211G6	9FA CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES
F6211G6	9FA CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES
F6211G6	9FA CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES
F6211G6	9FA CMPRS ROTOR REBUILD w/ undercut and airfoil peened R0-R5 BLADES
F6327G10	9FA Blade Health Monitoring R3 thru R5 (special)
F6327G3	9FA+e IGV Part-Speed Control Logic Modification
F6327G4	9FA+e Cmprsr Blade Health Monitoring, R0-R2, DOC ONLY
F6327G8	44 Count S0 Compressor Stator Vanes
F6327G8	91FA+e - 44 Count S0 Compressor Stator Vanes
F6730G1	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G3	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G3	LS2100-LCI, Mark VIe Upgrade/Retrofit
F6730G7	9FA.02/.03 - Chromatograph I/O Aux Panel Workflow Request # 98713970

Appendix IV – Detailed Technical Descriptions

Free Governor mode of operation

Primary Frequency Regulation

Currently all GE gas turbines have droop control that is responsive to grid frequency fluctuations when operating in:

1. Part load control
2. Megawatt set-point control (pre-selected load set point)

Part load control responds completely to frequency fluctuations but does not keep the gas turbine operating at a specific megawatt target. This is highly desirable from a grid stability perspective. Megawatt control has a megawatt target that the turbine maintains by issuing load raise and lower commands. Megawatt control initially responds to frequency fluctuations similar to part load control but load raise and lower commands will always bring the gas turbine back to the target megawatt. When grid events are long (i.e. a decaying frequency over several minutes) megawatt control is contrary to supporting the grid frequency. This is highly undesirable from a grid stability perspective.

PFR combines the droop response of part load control with the load set point maintainability of megawatt control by adding a megawatt speed bias to the megawatt target. This bias in effect allows the load response to grid frequency fluctuations to behave like part load droop response.

Load selection will be displayed on HMI screen (part load control or megawatt set-point control) for operator indication only.

Gas turbines Governor tuning: Sometimes the gas turbines exhibit over and under MW response with respect to system frequency deviations. Therefore, the Gas Turbine Governor tuning may be required using related Grid Frequency Filter settings

Base load frequency sensitivity mode

The purpose of this function is to provide the same response on a frequency deviation than the PFR control when the gas turbine is operating at base load. Base load being a boundary limit, no primary response is expected in case of frequency decrease. BLFSM covers only the case of frequency increase. This function has no operator command. Always enabled as soon as the unit is on line and operating at base load. Without BLFSM the control will tend to keep the unit at base load regardless of frequency variation. To obtain a sustained primary response, the maximum load limitation of the load control (LK90MAX) is clamped to current base load MW value minus frequency megawatt bias given by the PFR function. This will prevent from any load raise order from the load control. After grid event the gas turbine will return to base load operation.

Regulation Margin Control (RMC)

RMC is a pre-selected automatic load control option that is a selectable command-state function like Base load, External load control, or Pre-Selected load control. This version of pre-selected load control has a setpoint expressed as "Percent below Base Load Megawatts" instead of just "Megawatts". For this function to work correctly the operator must first operate the gas turbine at base load output for a short period of time to establish the current base load megawatt value. An offset is then determined between a predicted base load megawatt vs. base load megawatts in an automatic RMC calibration function. The predicted base load megawatt value is from a lookup table of megawatts vs. ambient temperature and is corrected by the offset determined during calibration so that the RMC software will continuously compute the actual megawatt setpoint for automatic load control as the ambient temperature changes. Another corrective term for this megawatt setpoint is used to correct for site ambient pressure changes that occur since the last RMC calibration.

As part of the code update to latest GE design standards the RMC calibration will be extended to 250 hours. A warning of non-accuracy will be set after 250 hours if the unit is running at part load; however, the calibration will remain active as long as the unit is not shutdown. Nevertheless, the calibration should be done at next startup.

To be compliant with grid codes in certain countries RMC must provide a certain reserve output capability regardless of the RMC setpoint. RMC can have two versions

- Overfiring
- Non Overfiring

This unit has a Overfiring version of RMC, that means unit has an additional margin above the base load level to stay compliant even when running at a rated output level; this is accomplished through Exhaust Temperature Control Curve biasing. The bias is sliding and represents a certain amount of increased allowable exhaust temp when running to the RMC set-point load level. Fired-hour over-firing and frequency deviation accumulators have been added to support maintenance factor calculations when RMC is configured to over-fire the turbine.

In Non Overfiring version unit has to stay certain % below the estimated baseload to be compliant with regulation. The maximum output of the units is still the Baseload limit.

Units running to RMC set-point of 0.0 cause a trimming feature of the software to attempt to keep the unit running to what is essentially the unbiased base temp control reference while operating on speed control.

More over a customized version of RMC Ceiling that limits the Preselect load command to go above certain margin below Base as decided by RMC setpoint is also available on customer request. It allows the unit to be compliance to GRID regulation even when they are at Preselected or External setpoint load control.

Note: the 9FA frame has overfirning limitation of 2.5% GT output above baseload during under frequency event.

Fuel Transient Limiter

This software feature is not listed or mandatory in the local grid code requirements but it is necessary to robust the Gas turbine DLN operation during grid frequency excursions; this is a GE standard feature for PFR software.

Fuel Transient Limiter software is used to limit the effects of speed control. Fuel Transient Limit software is designed to allow the unit to respond to a step change type of disturbance on the grid while avoiding unfavorable combustor characteristics.

This software will limit the speed error that is sent to the fuel control (droop) governor. This will in turn limit the rapid response characteristic of the fuel governor when the magnitude of the system frequency disturbance exceeds a set level as defined by the combustor requirements. The limited error signal will also be used in the coordinated air-fuel control (for units equipped with constant settable droop) - which affects the control of the Inlet guide Vanes (IGV). This control change will have no effect on the governor response to small disturbances, but will slow the response during larger disturbances.

Non-Linear Grid Frequency Filter

The non-linear grid frequency filter (NLGFF) control algorithm represents a method of limiting the effects of response of the speed control portion of the droop speed/load control (constant settable or standard droop) without affecting the rest of its functions. This method of filtering is applied to units which are operating on grids that have a high degree of variation in system frequency and operating with a drop of greater than 7% for stability. This method of filtering is also applied to units that are required or for customers who have requested to have a zone of no fuel governor action based on system frequency variation.

The non-linear grid frequency filter module generates a new speed reference based on the actual speed of turbine. The actual turbine speed (TNH) is processed by a linear interpolation block that filters it to a new value for turbine speed (TNHFREF).

Basically, the non-linear grid frequency filter control algorithm features an internal linear interpolation function and an outer or external transition function. The inner or internal linear interpolation function filters or translates the actual speed of the turbine into an interpreted speed used by the constant settable droop speed/load control. The outer transition function works to provide seamless enabling and disabling of the non-linear grid frequency filter when the generator breaker is closed. When the generator breaker is open, the actual turbine speed bypasses the filter and is passed directly to the droop speed/load control governor.

The non-linear grid frequency filter module has an operator selection for on and off, which can be utilized when the generator breaker is open. The function, when selected, becomes active after the generator breaker is closed and after a short time delay. If this function is not selected, the actual speed of the unit, the same as the grid frequency when the breaker is closed, bypasses all control blocks of the NLGFF and is input directly into the speed control algorithm to allow typical speed droop control.

Grid Load Limiter

Since traditional Droop control will attempt to adjust the fuel stroke to counter frequency excursions, this load limiter is designed to limit the turbine output to a certain percentage as the grid frequency drops. Using the pre-selected load option to limit load would not effectively keep the output constant because it operates by adjusting the speed governor. With this option, the operator selects the Load Limit (or Declared Active Power), and a separate FSR command, is sent to the fuel stroke reference selection. Then as long as the speed governor and temperature control limit are set above this level, the turbine is controlled to this load limit.

As the grid frequency falls, the speed droop error increases, which increases the FSRN command and would normally increase the turbine output to drive the speed error to zero (with constant settable

droop). By injecting a Load limit FSR reference that is a function of the load error, the load increase is limited through the frequency excursion.

For the grid frequency falls, the expected unit response is 5% increase of the unit generation.

Speed Governor Response Testing

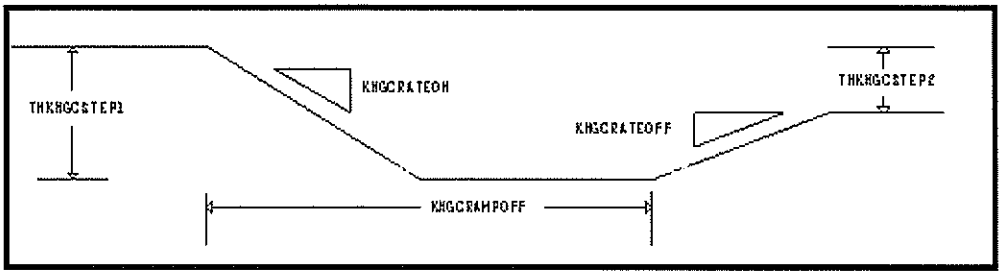
Step response software is included for demonstration of PFR capability.

The Step response test software for governor response testing allows the injection of a predefined function into the control logic that influences the speed governor to simulate a grid frequency change. This function can be used for demonstrating control reaction to a change in grid frequency. This function can also be used for compliance testing to the grid authority and for checking droop response of the gas turbine. Since the nature of this type of on-line simulation contains inherent risk, it is not recommended that this be done without extensive forward planning and understanding.

The software is protected with a permissive which must be forced in order to enable this function. Once the permissive is forced to activate the function, the predefined step or ramp will be sent to the speed governor after a software push button is activated. An optional hardware push button can be configured to allow the start signal to be sent to various separate governors on a multiple unit site. It is essential to ensure that each unit's electrical system is electrically isolated from the other system when sending the same signal to more than one control system. Whenever the test button has been selected and the permissive is true, an alarm will be generated indicating that the test is active.

At the time of the test, the control TA must set-up the control constants for the intended test of the governor. This must be done for each test point.

The shape and duration of the injection is defined as shown in figure 1 shown below.



Demonstrate Free Governor Mode of Operation (FGMO)

The objective of this test procedure is to demonstrate the compliance of gas turbine generator (GTG) to Free Governor Mode Of Operation (FGMO) requirement.

1 Test Procedure

In this section test procedure is briefly defined to demonstrate the compliance of gas turbine generators to clause 5.2f\ii\a, 5.2f\ii\b, 5.2f\ii\c, 5.2 (g), 5.2 (h) of IEGC. The tests procedure described here will be performed using the Mark VIe control system of the gas turbine unit and test data will be recorded using inbuilt recording capability of Mark VIe control system. Test data will be provided in*.csv format if requested by customer.

2.1. Demonstration of compliance to clause 5.2f\ii\a, 5.2 (g), 5.2 (h) of IEGC

1. As the system frequency cannot be easily controlled to the levels required to provide a true test of the units Operating Reserve, this test is performed by the injection of a test signal to the unit's governor to simulate an frequency event that would result in an increase/decrease in the MW Output of the unit.
2. The test signal will be applied at various loads to ensure that the Operating Reserve is validated across a range of unit operation.
    - 100% of Maximum Continuous Rating (MCR - base load output at the time of test)
    - 90% of MCR

3. Load the unit to the 100% of MCR and allow the unit to stabilize for a minimum of 30 minutes
4. Select the Preselected Load control mode which is similar to turbine supervisory control mentioned in clause 5.2 (g) of IEGC.
5. With the unit at 100% of MCR perform the Test #1 to Test #12 as listed in Table 3.1.1. Figure 3.1.1 shows the test form injected during Test #1 to Test #12 using inbuilt functionality of MKVIe turbine control system
6. After time "Thold2" manually initiate ramp down of gas turbine at ramp rate of 1% of MCR/min.
7. With the unit at 90% of MCR repeat steps 2 to step 6 described above.
8. With the test signal removed allow the unit to stabilize for 10 minutes and the test will be deemed complete at this point.
9. All parties confirm that the test has been executed correctly

Table 3.1.1: Frequency injection - Conditions and Amplitudes

Test #	Test Form	Step1	Step2	Ta	Thold1	Tb	Thold2	Remarks
		Hz	Hz	Sec.	Sec.	Sec.	Sec.	
1	1	-0.1	+0.1	0.0	120.0	30.0	120.0	At the end of Thold2 time, manually initiate the ramp down of turbine generator at ramp rate of 1% of MCR/minute.
2	1	-0.2	+0.2	0.0	120.0	30.0	120.0	
3	1	-0.3	+0.3	0.0	120.0	30.0	120.0	
4	2	+0.1	-0.1	0.0	120.0	30.0	-	
5	2	+0.2	-0.2	0.0	120.0	30.0	-	
6	2	+0.3	-0.3	0.0	120.0	30.0	-	
7	3	-0.3	-0.1	10	20	30	-	a) Hold at Step2 frequency until conditions stabilize.
8	4	+0.3	+0.1	10	20	30	-	b) 10 sec ramp to force Step2 = 0 to end the test

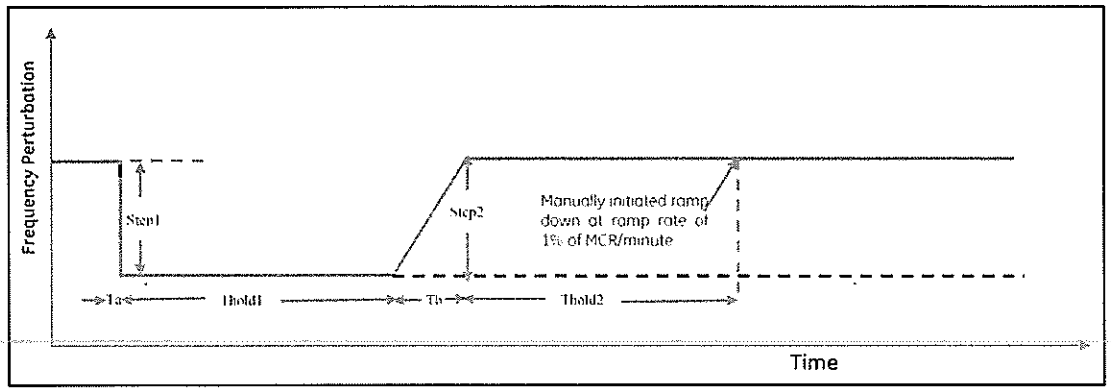


Figure 3.1.1a: Test Injection Signal Form 1

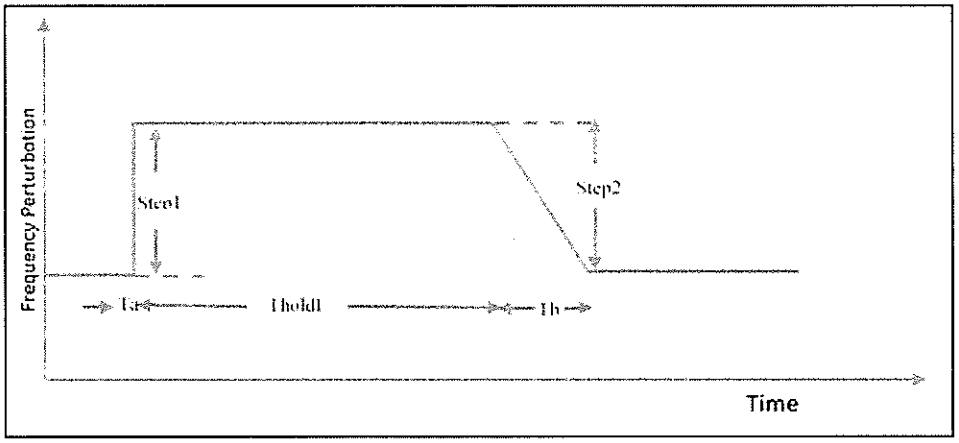


Figure 3.1.1b: Test Injection Signal Form 2

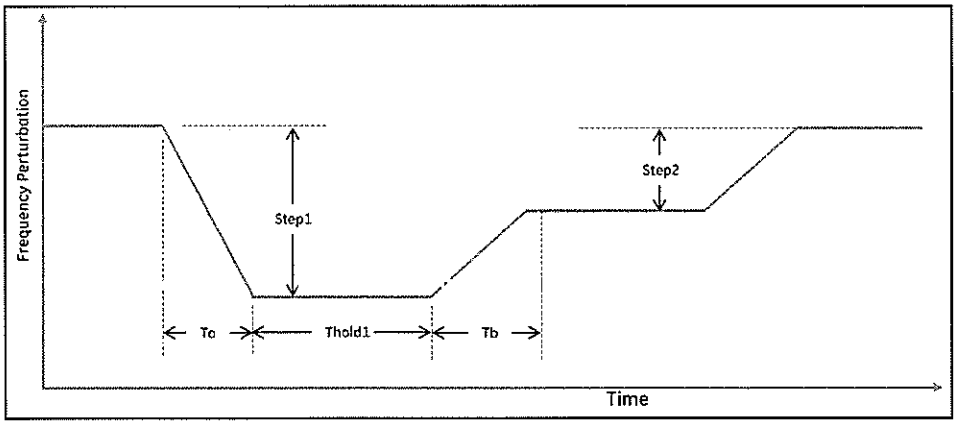


Figure 3.1.1c: Test Injection Signal Form 3

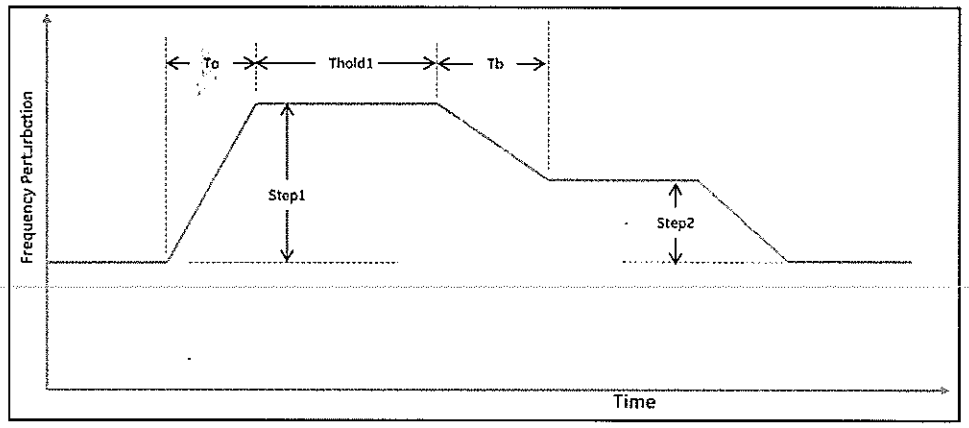


Figure 3.1.1d: Test Injection Signal Form 4

2.2. Demonstration of compliance to clause 5.2f\ii\b of IEGC

1. Load the Unit to the 100% of MCR and allow the unit to stabilize for a minimum of 30 minutes.

2. With the Unit at 100% of MCR perform the Test #9 to Test #12 as listed in Table 3.2.1. Figure 3.2.1 shows the test form injected during Test #9 to Test #12 using inbuilt functionality of MKVIe turbine control system.

3. With the test signal removed allow the unit to stabilize for 10 minutes and the test will be deemed complete at this point.

4. All parties confirm that the test has been executed correctly.

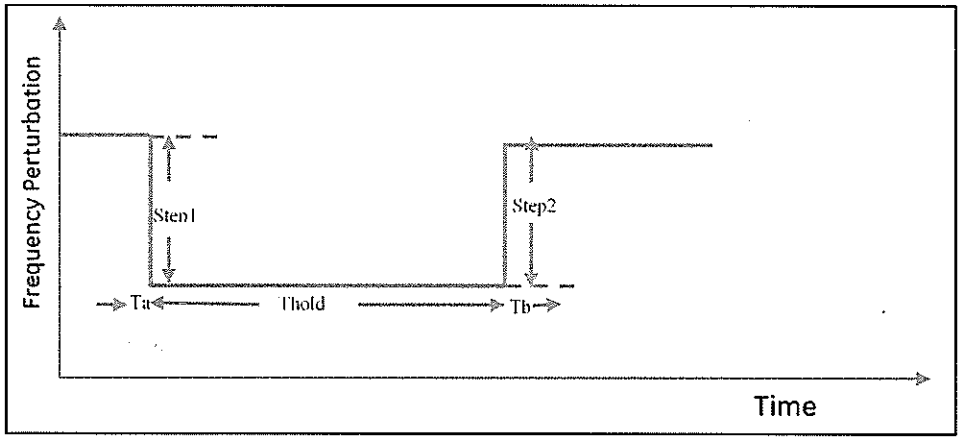


Figure 3.2.1a: Test Injection Signal Form 1

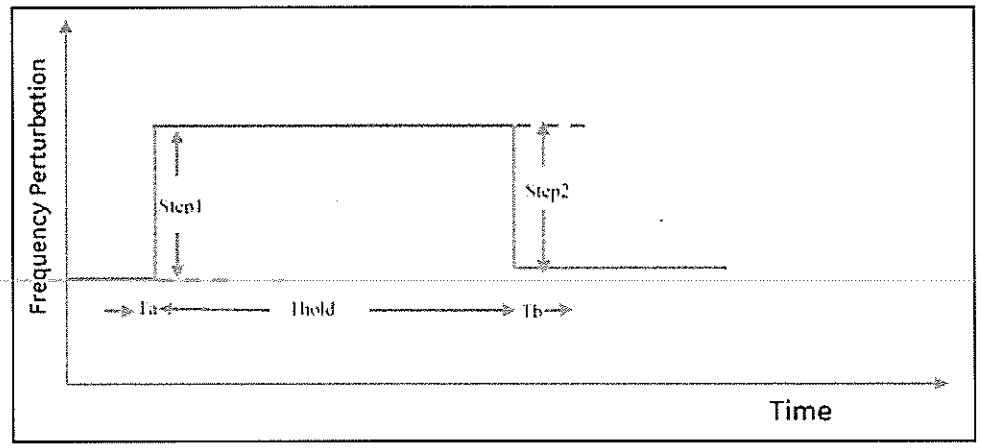


Figure 3.2.1b: Test Injection Signal Form 2

Table 3.2.1: Frequency Injection - Conditions and Amplitude

Test #	Test Form	Step1	Step2	Ta	Thold1	Tb
		Hz	Hz	Sec.	Sec.	Sec.
9	5	-0.035	+0.035	0.0	120.0	0.0
10	6	+0.035	-0.035	0.0	120.0	0.0
11	5	-0.025	+0.025	0.0	120.0	0.0
12	6	+0.025	-0.025	0.0	120.0	0.0

2.3. Demonstration of compliance to clause 5.2f\ii\c of IEGC

1. As the system frequency cannot be easily controlled to the levels required to provide a test of the unit's governor droop, this test is performed by the operating the unit at various loads and monitoring the response of the governor gontrol system to both the system frequency and the unit output.
2. The unit's governor shall be in "Droop" mode for this test.
3. The accuracy of this test is best when the grid frequency is at its most stable
4. The test will commence with the unit at Minimum Load and the Steam Turbine VWO (Valves Wide Open).

5. The unit will be loaded in MW steps of 10% of MCR from Minimum Load to MCR
6. The unit will be unloaded in steps of 10% of MCR to Minimum Load
7. The test will be deemed complete at this point
8. All parties confirm that the test has been executed correctly

2 Test Criterion

a) Test criteria to demonstrate the compliance to clause 5.2f\ii\a, 5.2 (g), 5.2 (h)

1. Turbine generator should increase the output as per generator droop setting upto a maximum of 5% of MCR.
2. There should not be any reduction in generation in case of improvement in grid frequency to a level below 50.00 Hz.
3. Sustained MW response is provided with unit in preselect load control mode
4. After manual initiation turbine generator is ramp down at ramp rate of 1% of MCR/minute.

b) Test criteria to demonstrate the compliance to clause 5.2f\ii\b

Successful completion of this test is determined by the ability of the unit to demonstrate that governor dead band is not more than ±0.03Hz.

c) Test criteria to demonstrate the compliance to clause 5.2f\ii\c

Successful completion of this test is determined by the ability of the unit to provide a governor droop between 3 and 6%.

3.1. Timing

This Test shall be carried out under the direction of the Plant Manager at a time, which is mutually agreed upon by the CUSTOMER and the Plant Manager.

3 TESTING PREREQUISITES

4.1. Pre-Test Conditions

1. All parties will nominate their respective Test Directors (or their Designees).
2. The Test Directors will sign on to the Test Execution Plan provided as Section 4 of this procedure.
3. Test Directors agree to follow the steps as detailed in the Test Execution Plan and will sign-off on each step as required.
4. The Test Execution Plan describes the test activities.
5. The control system data files and trends are to be configured to capture the necessary data as detailed in Attachment A of this procedure and should be immediately available upon request for reviewing test data.
6. A test run of the data collection files as detailed in Section 7.0 will be performed before the test commences and confirmed by all parties as regards format and content for test data collection.
7. Data files and any required hardware for copying same are to be prepared to allow immediate handover to GRID witnesses at the completion of the test.

4 TEST EXECUTION PLAN

Detailed test execution plan will be submitted one month before the actual testing at site.

5 List of signals to be measured

List of minimum signals to be measured is given below. Additional signals to be measured will be added based on discussion with customer if feasible.

Signals to be Measured:

- Gas turbine signals:
- Turbine shaft speed
- Generator MW
- Governor Fuel valve command
- Individual fuel control valve positions
- Speed-ratio valve position
- Fuel gas pressure
- Turbine exhaust gas temperature
- Turbine pressure ratio
- Turbine guide vane position

Steam turbine signals:

- Turbine shaft speed
- Generator MW
- Governor control valve command
- HP inlet pressure
- IP inlet pressure

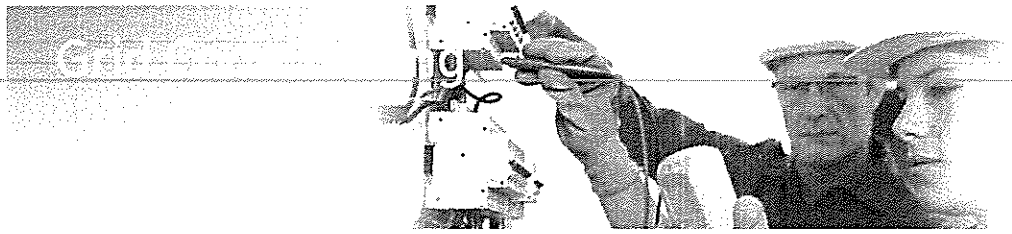
Plant Load Controller signals:

- Plant load reference
- Load command to each gas turbine
- Frequency
- Plant output

All gas turbine signals will be recorded in a high-speed trend file within the Mark VI(e) controllers. Sampling rate must be at least 8 samples per second.

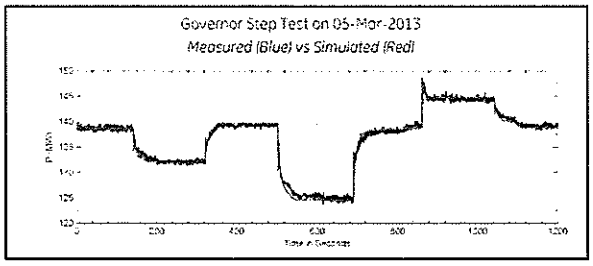
The steam turbine and plant load controller signals will be recorded as trend files in the plant control computer with sampling at a rate of at least 1 sample per second.

6 Experience



For more than 20 years, GE Energy Consulting has performed grid code-related tests on more than 1,500 units from all major generator manufacturers. The accumulated expertise from this experience allows the Energy Consulting team to perform the testing with the highest degree of efficiency and safety.

This accumulated experience has led to the development of test procedures for a wide range of generators, voltage regulators, power system stabilizers, and governors from of manufacturers. These procedures are designed with the goal order safely testing the unit with the minimum impact to unit dispatch in to minimize the total cost of executing the tests.



Efficient execution of these tests and subsequent analyses by GE Energy Consulting staff helps our power generation clients ensure that they secure expedient interconnection approval (and remain connected) to their local grid.

The following table lists some of the grid code test projects performed by Energy Consulting

Grid Code Test Experience: Partial List of Plants Tested			
Plant Name	**Owner**	**Country**	**Year**
Abqaiq Cogen	Saudi Aramco	Saudi Arabia	2017
Az Zour North IWPP	Kuwait Government	Kuwait	2016
Hawiyah Cogen	Saudi Aramco	Saudi Arabia	2016
Shatura	E-On	Russia	2015
Shedgum	Tihama	Saudi Arabia	2015
Uthmaniyah	Tihama	Saudi Arabia	2015
Kimanis	Kimanis	Malaysia	2014
PPCL Bawana	Pragati Power	India	2014
Connah's Quay	E-On	United Kingdom	2013
SSE Medway	Scottish and Southern Energy	United Kingdom	2013
Abqaiq	Saudi Aramco	Saudi Arabia	2013
Oresundsverket	E-On	Sweden	2013
Samsun	OMV	Turkey	2013
Koudiet Draouch	SKKE	Algeria	2013
Coolkeeragh	Coolkeeragh ESB Ltd	N. Ireland	2013
EMAL	EMAL	UAE	2013
West Burton	EdF	United Kingdom	2013
PP-11	Saudi Electricity Company	Saudi Arabia	2013
Tynagh	Tynagh Energy Ltd	Ireland	2013
Little Barford	RWE	United Kingdom	2013
Novara	Novel SPA	Italy	2012
Haywards Synchronous Condenser	TransPower	New Zealand	2012
Whitegate	Bord Gais Eireann	Ireland	2012
SSE Keadby	Scottish and Southern Energy	United Kingdom	2012
Brazi	PETROM	Romania	2012
Spalding	Intergen	UK	2011
Surgut	E-On	Russia	2011
Agios	Protertia SA	Greece	2011
Immingham II	Phillips 66 Ltd	United Kingdom	2011
Sutton Bridge	Sutton Bridge Power Generation	United Kingdom	2011
Sabiyah	Kuwait MEW	Kuwait	2011

Section V: Commercial

Table 1 : Engineering work Estimates (Lumpsum basis)

Sr. No.	Engineering work (Lumpsum basis)	Price (In US $)
1	Free Governing Mode of Operation for U#1	$197,133.00
2	Free Governing.Mode of Operation for U#2	$68,331.00
3	Free Governing Mode of Operation for U#3	$68,331.00
4	Free Governing Mode of Operation for U#4	$68,331.00
Total US$ Four Hundred Two Thousand One Hundred and Twenty-Seven Only		**$402,127.00**

Note1 : Same price of $68,331 for other following units at same site for Engineering work scope

Table 2 : Installation & Testing Estimates

Sr. No.	Group Name	Price (In US $)
1	Installation Services for Free Governing Mode of Operation for U#1	$90,720.00
2	Installation Services Free Governing Mode of Operation for U#2	$63,360.00
3	Installation Services Free Governing Mode of Operation for U#3	$63,360.00
4	Installation Services Free Governing Mode of Operation for U#4	$63,360.00
Total US$ Two Hundred and Eighty Thousand Eight Hundred Only		**$280,800.00**

Note 2 : Same price of $63,360 for installation and testing in other following units.

Total Table 1 + Table 2 (US$ Six Hundred Eighty Two Thousand Nine Hundred and Twenty Seven Only	**682,927.00**

The Prices does not include any service tax, GST which, if applicable Buyer shall be responsible for paying such taxes to Authorities and providing a proof of tax payment acknowledgement reference to GEII within first month of following quarter. In case Buyer deducts withholding tax from invoiced amount, then Buyer shall provide Tax Deduction at Source (TDS) certificate with acknowledgement reference to GEII within first month of following quarter. Also above price does not include custom duty of importing of GEII equipment (i.e. any special measuring tool / instrument etc.), which shall be borne by Buyer.

All prices quoted herein are exclusive of service tax ,GST and any duties and / or taxes payable and are solely for the account of and to be borne and payable by the Buyer. Buyer shall furnish TDS certificate and proof of Service Tax deposit.

- Above prices are end customer price and includes Engineering work at GE Facility(Table1) and Installation services & Testing at site (Table 2) .
- Any additional scope not quoted in this Proposal shall be charged at extra cost.
- Unless specifically mentioned in the proposal and associated BOM's, this Proposal does not contain any costs or price associated with testing for thermal performance, emissions, acoustics, etc.
- The proposal scope is limited to the requirement specified in CERC Regulation, FGMO. Any further change not limited to clarification, procedure to the referred notification is not covered in the current offer scope.
- If any failure of Services to meet the delivery scope is discovered during the project execution, Contractor shall thereupon correct the defect by re-performing the defective Service scope of the contract. If despite Contractor's reasonable efforts, a defective Service cannot be re-performed, Contractor will issue a credit against Payment in the amount of the price that Owner paid to Contractor for such non-conforming Service that is not re-performed. In case the price is not available, same shall be determined based on the effective T&M Rates where no such Payment becomes due or the amount thereof does not exceed such credit.
- Above price for Installation and Testing Services (Table 2) is based on the following:

a. **For 1st Unit: One (1) STFA, 6 days per unit basis on 8 hours' work per day, and 2 STFA's for 3 Days per unit basis for testing on 8 Hrs. work per day.**
b. **For 2nd Unit Onwards: One (1) STFA, 2 days per unit basis on 8 hours' work per day, and 2 STFA's for 2 Days per unit basis for testing on 8 Hrs. work per day.**
c. **Three Mob- Demob for 3 STFA's per unit.**
d. Local accommodation, Boarding and Lodging, local conveyance, travel & living required to support the services defined in the Work Schedule. The same shall be arranged & provided by Buyer to the befitting standard acceptable to Seller. In case the above has to be arranged by Seller, same shall be charged to Buyer at actuals + 20%.
e. Proposal provides for a minimum cycle-time from receipt of PO to mobilization of Team or equipment of 4 weeks.
f. Mobilization time of 4 weeks shall start from the date of receipt of advance payment via LC.
g. **Services Price Adjustment for Site Activities (Table 2):**

The above price is applicable for work performed prior to 31st Sept'2018. If the performance of the service is delayed beyond this date or in case the Service duration exceeds total of 6 days, services shall be billed on a time & material basis at the Commercial Rates for Power Generation Services Outage Services Published Rates for India region for the corresponding year effective at the time that the service is performed. The 2018 Outage Commercial Rate for TA is as below:
2018 Outage Commercial Rate:

S. No.	Type of Service	Hourly Standard USD	OT 1 Rates USD	OT (2) Rates USD
1	Special TFA	US$ 570/ Hr	US$ 855/ Hr	US$ 1144 / Hr

Hourly Rate is applicable for working for 8 hrs. on weekdays (Monday to Friday) including journey time.
Overtime Rate 1 shall be applicable for working beyond 8 hrs on weekdays, upto maximum 12 hours per day and working on Saturdays.
Overtime Rate 2 shall be applicable for working on Sundays and public Holidays.
Additional per Mob -Demob (Lumpsum) for One STFA: $12,000

Terms of Payment

30% advance along with PO via Wire Transfer and 70% Payment shall be released within 21 days of submission of invoice after completion of installation of software modification. Payment shall be made through Letter of Credit for one hundred percent (100%) of the Order amount.

Services P.O.:
General Electric International, Inc.
3135 Easton Turnpike,
Fairfield, Connecticut (CT) 06828
USA

And forward a copy to the entity as under for forwarding it to the Contractor
GE India Industrial Pvt. Ltd
Building No. 7A, 6th Floor, DLF Cyber City,
DLF Phase III, Sector 25A
Gurgaon 122 002 (Haryana)

Validity

The proposal shall remain valid until 60 Days for issuance Offer Date.

Terms and Conditions

The products set forth in this Proposal are provided to RGPPL by GEII, pursuant to the terms & condition of the existing "Comprehensive Service Agreement" - Agreement no. RGPPL/Dabhol/CSA/1-24HY0X/Onshore (the "Agreement") between the Buyer and Supplier. Accordingly, except as expressly set forth herein, this Proposal is subject to the terms and conditions of the Agreement and such terms and conditions shall apply without limitation, as if fully set forth herein. Unless otherwise defined herein, all capitalized terms used in this Proposal shall have the same meaning given to them in the Agreement.

Any additional or different terms and conditions set forth in any proposal or communication by or from RGPPL are expressly objected to and will not be binding upon GEII unless specifically agreed in writing by an authorized agent of Supplier.

Health and Safety Matters; Hazardous Materials

The Owner will take all necessary precautions, at all times, for the safety of the Contractor's personnel at Site. This includes, but is not limited to, instruction of the Owner's safety practices, proper and safe handling of hazardous substances and protection of the Contractor's personnel from exposure thereto, energization/de-energization of all power systems (electrical, mechanical and hydraulic) using a safe and effective lock-out tag procedure, and conducting periodic safety meetings during construction and start-up.

Security for Contractor's personnel is to be provided by Owner to Contractor's satisfaction.

If, in the Contractor's opinion, the safe execution of Services at the Site is, or is apt to be, imperiled by local conditions, the Contractor may remove some or all of its personnel from the Site and/or supervise performances of all or any part of its Services and/or evacuate its personnel and the Owner shall assist in said evacuation.

In general, the Contractor's personnel will have at least one day of rest in any seven (7) consecutive days. However, with the Contractor's consent and where the nature of the assignment requires, the Contractor's personnel shall work seven (7) days a week for a maximum of thirty (30) days. Unless prior agreement is obtained from the Contractor, the Contractor's personnel shall not work more than one hundred and forty (140) hours in any two (2) consecutive weeks or sixteen (16) hours in any one day.

The operation of equipment at the Site is the responsibility of the Owner. If the Owner requires the Contractor's personnel to operate equipment at the Site, the Owner shall indemnify and save the Contractor, its employees and agents, harmless from expense and liability (including reasonable attorneys' fees) incurred by or imposed upon the Contractor, its employees and agents, based upon injury to persons (including death) or damage to property resulting from operation of equipment at the Site by the Contractor's personnel.

To ensure adequate performance of the Services and that the Contractor's personnel are not extended beyond their capability, the Contractor's personnel will not be required to work on other projects or equipment during the term of the Proposal.

If, at the Site, the Contractor encounters toxic substances, hazardous substances or hazardous wastes (as such terms may be defined in any statute or ordinance or regulations promulgated by any federal, state or local governmental authority of the United States or the country of the Site) (collectively, the "Hazardous Materials") which require special handling and/or disposal, the Owner shall immediately take whatever precautions are required to legally eliminate such hazardous conditions so that the work under the Proposal may safely proceed. If any such Hazardous Materials cause an increase in the Contractor's cost of or the time required for performance of any part of the work, an equitable adjustment shall be made in the price and schedule. The Owner agrees to properly dispose of all Hazardous Materials produced or generated in the course of the Contractor's work at the Site. The Owner shall indemnify the Contractor for any and all claims, damages, losses, causes of action, demands, judgments and expenses arising out of or relating to (i) the presence of any Hazardous Materials which are present on the Site prior to the commencement of Contractor's work or (ii) improperly handled or disposed of by the Owner or (iii) brought on to the Site or produced thereon by parties other than the Contractor.

Annexure 1

GE Power Services

India

Effective
March 28, 2018

Engineering & Service Center Technicians Published Rates

Hourly Rates U S Dollar

Service Description	Standard
Technical Field Advisors	
Mechanical TFA/Field Engineer	$450
Specialty TFA/Field Engineer	$570
Startup Specialist	$615
Onsite Project Manager	$635
Offsite Project Scheduler	$385
Service Center Technicians	
Generator Winder	$440
Work Leader	$435
Automated Machining	$390
Steam Shop Repair Specialist	$350
Steam Onsite Repair Specialist	$415
Gas Shop Repair Specialist	$415
Gas Onsite Repair Specialist	$500

Technical Field Advisor Service

Technical Advisory Service is defined as technical advice and counsel from field personnel based on engineering and operational practices as applicable to the equipment. TFA Services do not include supervision or management of customer's employees, agents or other contractors.

Onsite Project Manager

This service includes all outage manager responsibilities, including planning, organizing, integrating and monitoring of resources such as labor, supervisors, tools and technical assistants.

Offsite Project Scheduler

Personnel utilized to support schedule-related activities.

Service Center Technician

Generator Winder: Specialists experienced in the inspection, test and repair of rotating electrical equipment including synchronous power generators, exciters & excitation equipment and related auxiliaries.

Work Leader: specialists experienced in directing the work activities of Generator Winders, Steam Technicians or Machining Technicians, excluding technical advice and counsel.

Automated Machining: Specialists utilizing computer-based repair including robotic welding, CNC machining and other similar services.

Shop Repair Specialist - Specialists utilizing GE facilities to perform work on gas and steam turbines.

Onsite Repair Specialist - Onsite Specialist maintaining and repairing gas and steam turbines.

Power Engineering Requests (ER)

The Power Engineering Request ("ER") will provide technical support for customer questions. The customer will be charged for ER responses to one question on one topic (such as historical records, fleet data, and unit specific data). For each follow-up question, responses and/or telephone call, GE will charge the customer at the hourly rate listed above. GE will determine at its discretion whether any question warrants a funded engineering study. Any such engineering study will be quoted based on the customer's specifications.

ER pricing	$4,280/case

Rate Terms

1. The normal workday and normal workweek are defined as eight (8) consecutive hours and five (5) consecutive normal workdays, respectively, excluding any holidays or weekends.

Normal	1 00 x Standard rate
Overtime 1	1 50 x Standard rate
Overtime 2	2 00 x Standard rate
Peak	1 20 x Applicable rate
<48 hour notice	1 30 x Applicable rate

2. The Overtime 1 rate above applies to billable hours on Saturday and normal workday hours greater than 8 but less than 12 consecutive hours.
3. The Overtime 2 rate above applies to billable hours on Sundays, holidays and normal workday hours greater than 12 consecutive hours.
4. Travel time will be charged at the applicable hourly rate (i.e., standard rate times applicable multiplier(s) as set forth in 1 above) on a round trip basis with point of departure based on the location of the GE representative's office/service center.
5. Travel & Living expenses will be billed at a cost plus 20% Markup, or consult with your local GE Power representative for a local per diem rate
6. Purchased labor and materials will be billed at cost plus 30% Markup.
7. Consult with your local GE Power Services representative to determine any applicable charges for special tooling and/or test equipment or any taxes, fees or VAT that may be in addition to the above rates
8. Minimum billing of 8 hours for all services provided, including standby time Minimum standby time is 8 hours at the standard rate (weekdays and weekends).
9. All rates are based on GE's standard terms and conditions of sale (PSTC) or (Form ES 104)

Startup Specialist

Directs the start-up and troubleshooting of turbine control and excitation systems and interfacing circuits, breakers, and power systems beyond the control system. Performs vibration measurement, balancing of units and is versed in all GE controls systems (analog through digital models).

Specialty Technical Field Advisor Service

Generator	Technical advice and counsel for the inspection, test and repair of generator equipment
Controls TFA/FE	Start-up support and troubleshooting of turbine controls systems. Performs device calibrations and DLN tuning (gas units)
Excitation TFA/FE	Start-up and troubleshooting of excitation systems, including static start, load commutating inverter (LCI) equipment
Gas/Steam Path Audit	Inspecting and determining the thermodynamic losses of the turbine steam/gas path
Gas Turbine DLN	Tuning Dry Low NOx (DLN) systems to optimize reductions in gas turbine emissions and extend expected life of combustion system components
Vibration	Vibration data acquisition and analysis, perform a diagnostic balance program, make recommendations and install balance weights
Laser Alignment	Use GE proprietary digital laser alignment equipment, technology and fleet data to optimize internal component alignment
Consulting Analyst	Technical assistance of personnel not normally classified as field personnel for the solutions requiring highly specialized knowledge
Diagnostics	Performance of diagnostics tests and diagnostic data analysis, such as plant evaluations & general consulting
Professional Witness	Technical direction and coordination of performance tests not conducted by GE

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

पश्चिम क्षेत्रीय भार प्रेषण केन्द्र
एफ-3, सेन्ट्रल रोड, एम्.आई.डी.सी. एरिया, मरोल, अन्धेरी (पूर्व), मुंबई - 400 093.
दुरभाष : 022-28202690 • फैक्स : 022-28235434, 28202630 • ई-मेल : wrldc@posoco.in
WESTERN REGIONAL LOAD DESPATCH CENTRE
F-3, Central Road, MIDC Area, Marol, Andheri (East), Mumbai – 400 093.
Phone : 022-28202690 • Telefax : 28235434, 28202630 • E-mail : wrldc@posoco.in
CIN : U40105DL2009GOI188682

संदर्भ संख्या/Ref: WRLDC/SO-I/2018/30 Dated: 1st May 2018

To

As per Distribution List

Sub: **Discussion summary of meeting on 24.04.2018 at WRLDC**

Sir,

The discussion summary of the meeting held in WRLDC on 24.04.2018 in the matter of compliance to IEGC Regulations 5.2 (f), (g), (h) & (i) by Gas Power Stations in Western Region is enclosed for kind perusal,

Thanking you,

Yours faithfully,

(Vivek Pandey) 01/05/2018
Chief Manager

Copy for kind information:

1. **Member Secretary, WRPC, Mumbai**
2. **General Manager, WRLDC, Mumbai**
3. **Executive Director, WRLDC, Mumbai**

Distribution List

General Manager(Power) Ratnagiri Gas & Power Pvt. Ltd., Post. RGPPL Anjanvel , Taluk-Guhagar, Dist.Ratnagiri, Maharashtra-415634	General Manager NTPC Gandhar Gas Power Plant P.O. Urja Nagar, Dist. Bharuch, Gujarat – 392 215
General Manager NTPC Kawas Gas Power Plant P.O. Aditya Nagar, Dist. Surat, Gujarat-394 516	Plant Head DGEN Mega Power Project Plot No Z-9, Dahej SEZ Area (Eastern side), At Dahej, Taluka-Vagra, Dist: Bharuch, Gujarat - 392130
Chief Engineer (LD) Kalwa SLDC, Thane-Belapur Rd. P.O. Airoli, Navi Mumbai, Maharashtra 400708. To Plant Heads (Through SLDC) 1. Uran Gas Based CPP (4x108 MW) 2. Uran-DPH Gas Based CPP (2x120 MW) 3. Pioneer Gas Pvt Ltd (1x126+1x262 MW)	Chief Engineer (LD) Gotri SLDC, 132 kV Gotri Substation compound, Vadodara-390021. To Plant Heads (Through SLDC) 1. Dhuvaran Gas Based CPP (1x218.62 MW) 2. Utran Gas Based CPP (1x229+1x146 MW) 3. GPEC Gas Based CPP (3x138+1x241 MW) 4. UNO Sugen Gas Based CPP (1x382.5 MW) 5. Sugen Gas Based CPP (3x382.5 MW)

Discussion summary of the meeting regarding compliance of IEGC Regulations 5.2 (f), (g), (h) & (i) by Gas Power Stations in Western Region

1. A meeting to review the frequency response of gas generating stations was held at WRLDC, Mumbai on 24th Apr 18. Representatives from NTPC Kawas, NTPC Gandhar, RGPPL and intrastate Gas Stations - Uran, Trombay, Dhuvaran, Utran, GSEG Hazira, Torrent Power, CLP India attended the meeting. List of participants enclosed as Annexure-I.

2. ED, WRLDC welcomed all the delegates. He said that vide its order dated 31st July 2017 and 5th amendment of IEGC, Hon'ble CERC reiterated the mandate for providing primary frequency response. He added that status of compliance to IEGC 5.2 (f), (g), (h) and (i) were being submitted to the Hon'ble CERC by WRPC and WRLDC. He highlighted that non-compliance of IEGC provision regarding primary response would be liable for penal actions by CERC under Section 142 and reduction of 1% Return on Equity. He urged all stations to work collaboratively to resolve technical issues and ensure compliance to the regulations.

3. Chief Manager, WRLDC stated as under:
    a. Primary response of generating stations during grid events where change in frequency os more than 0.1 Hz or change in load is more than 1000 MW are being discussed regularly in WR Operation Coordination Committee meetings.
    b. Subsequent to the CERC order dated 31st July 2017 in petition no. 84/MP/2015, four meetings/workshops were organised by WRLDC on the subject (26th Dec 17, 6th Feb 18, 9th Feb 18 and 22th Feb 18)
    c. IEGC 5th amendment dated 12th Apr 17 mandates that the Gas Turbines with capacity 50 MW and above shall also provide primary response w.e.f 01st October 2017
    d. IEGC 5th amendments dated 12th Apr 17 mandates that "*periodic checkups by third party should be conducted at regular interval once in two years through independent agencies selected by RLDCs or SLDCs as the case may be. The cost of such tests shall be recovered by the RLDCs or SLDCs from the Generators. If deemed necessary by RLDCs/SLDCs, the test may be conducted more than once in two years.*"
    e. A pilot project for testing frequency response of thermal, hydro and gas units was under taken in 2014 by CERC order in petition no 191/SM/2011 where in it was found that gas turbines were capable of providing primary frequency response in Free Governor Mode.

4. The response of 216 MW Bawana gas turbine under the pilot project was discussed. The participants noted that for step response of 0.1 Hz the unit output changed by 11.9 MW implying a FRC of 119 MW/Hz at 70% of load. At 90% of load for step response of 0.1 Hz the unit output changed by 12.2 MW implying a FRC of 122 MW/Hz (Enclosed as Annexure-II).

5. WRLDC informed that all Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of capacity more than 50 MW and above, which are synchronized with the grid, irrespective of their ownership, shall have their governors in operation at all times. It was noted that all the following Gas Stations in WR were mandated to provide frequency response.

WR Gas Power Stations mandated to comply with IEGC 5.2 (f), (g), (h), (i)			
Station	**GT Capacity (MW)**	**ST Capacity (MW)**	**Installed Capacity (MW)**
NTPC Kawas	4x106	2x116.1	656.2
NTPC Gandhar	3x144.3	1x224.49	657.39
RGPPL-Stage-I RGPPL-Stage-II RGPPL Stage-III	2x205 2x213 2x213	1x230 1x237.54 1x237.55	1967.08
Uran	4x108	2x120	672
Trombay	1x120	1x60	180
Dhuvaran-I & II	1x67.8+1x72.51	1x38.76+1x39.94	219.01
Utran	1x229	1x146	375
GSEG Hazira Ext	1x222.43	1x128.7	351
Torrent Power (Sugen)	3x270	3x112.5	1147.5
Torrent Power (UnoSugen)	1x270	1x112.5	382.5
Torrent Power (DGEN)	3x400	-	1200
CLP India	3x138	1x241	655
Pioneer Gas	1x262	1x126	388
Essar	3x110	1x185	330
GIPCL	1x111	1x49	160
GPEC	3x138	1x241	655
GSEG Hazira	3x52	-	156
Pipavav	2x351.43	-	702.86
Total			10,854.54

6. The observed primary response of Kawas, Gandhar and RGPPL for nine events was reviewed.

   The observations were as under

   a. Kawas: For the event on 25th Oct 17, the response was 43% of ideal response. For the other events the response was found to be inadequate. In some cases the response was seen but was not sustained.
   b. Gandhar: Except for the event 9th Dec 17, 17:25 Hrs the response for rest of the events response was inadequate.
   c. RGPPL: The telemetry of GT and ST was not reliable. The CB status was also incorrect, hence the on bar capacity could not be computed for different events. RGPPL agreed to address the telemetry issues.

7. DGM, WRLDC requested the stations to share the actions being taken to ensure implementation of FGMO/RGMO. Representatives from all gas stations stated that they were facing challenges in implementation of RGMO logic. They opined that implementation of FGMO would be much simpler. Comments from individual stations are as under:

S.No	Station	Information provided
1	RGPPL	Currently machines are working in speed droop control mode. The vendor GE was facing issues in implementation of RGMO logic. Matter had been taken up with GE to run machines in 100% FGMO mode as per 50 Hz expert group committee recommendation.
2	NTPC Gandhar	Machines are GE make. As RGMO is being phased out in near future as per 50 Hz expert group committee recommendation, matter was discussed with vendor GE for implementation of FGMO. FGMO functionality is available in the machines. Operation of FGMO during technical minimum and temperature control mode is being studied by GE.
3	NTPC Kawas	Machines are GE make. As RGMO is being phased out in near future as per 50 Hz expert group committee recommendation, matter was discussed with GE for implementation of FGMO. Implementation of FGMO using PFR (Primary Frequency Response) software by GE is under process.
4	Uran	1984 Siemens Vintage units. All machines are usually operated at full load in temperature control mode. Frequency influence control is set at 50.8 Hz.
5	TATA	Informed that FGMO is not mandated as per MERC regulations. The steam turbines are normally operated with Valve Wide Open condition for maximum efficiency.
6	Dhuvaran	Offer letter from GE for implementation of RGMO has been received. Administrative approval is awaited.
7	Utran	Alstom make turbines. FGMO feature is available. Matter to be discussed with GE to enable FGMO feature.
8	Hazira	U#1 is Alstom make and U#2 is GE & BHEL make. In U#2 FGMO feature is enabled and response is observed. Discussions are going on with GE for implementation of FGMO in U#1.
9	Torrent (Sugen)	Machines are Seimens make. From Mar'18 FGMO is kept in service. For event on 23rd Apr 18, response was observed.
10	Torrent (DGEN)	PFI (Primary Frequency Influence) testing is done. Currently units are under reserve shutdown. Units will respond to frequency changes if taken into service.
11	CLP India	RGMO is kept in service. Units are responding to frequency changes. RGMO is kept off when the despatch schedule by SLDC is at technical minimum level. The variable rate of CLP units are higher than DSM rates therefore there are commercial implications for positive deviation from schedule caused by primary response.

8. During the meeting, the generating stations raised the following queries:
    a. What is the objective of primary response?
    b. What is the rate of change in frequency for which the units should provide primary response?
    c. What should be the speed and duration of primary response?
    d. What should be quantum of response? Whether the unit should continuously increase or decrease its generation till frequency reaches the nominal 50 Hz or the quantum of response at any instant should be limited to 5% of current loading?

e. If the frequency is above 50 Hz and rising, whether unit output should increase for sudden dip in frequency?
f. If frequency is below 50 Hz and falling, whether unit output should decrease for sudden increase in frequency?
g. How much margins should be kept for primary response?
h. Whether frequency influence is to be kept off during technical minimum schedule to prevent over injection?
i. What should be the resolution of data logging?
j. What is the procedure for assessment of primary response?

9. The queries raised by the generating stations were clarified by WRLDC as under:
   a. Primary frequency control is automatic and it aims to arrest the grid frequency variations by automatically varying generator output as per its droop characteristics. Restoration of frequency to the nominal i.e. 50 Hz in case of India is achieved through secondary and tertiary controls ranging from few minutes to hours.
   b. Time frame for primary governor control action is of the order of a few seconds i.e. 5-30 seconds. It should last for at least 3-4 minutes to enable secondary control to take over and restore the primary reserves. (**Ref: 17.2 of Report of the Committee on Free Governor Mode Operation of Generating Units, Ref: Chapter 4, Page 34 of Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency**).
   c. IEGC permits a ripple filter/dead band of 0.03 Hz. This implies that primary response shall be provided by the unit whenever the change in frequency is more than 0.03 Hz. The time between two frequency measurements shall be suitably tuned to provide primary response within 5-30 seconds of the grid event causing the change in frequency.
   d. IEGC mandates that some margin must be maintained to provide primary frequency control.

      "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." (**Ref: IEGC 5.2(h)**)

      "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. " (**Ref: IEGC 5.2(h)**)

      Thus even at base load (exhaust temperature control mode), some margins should be kept aside for primary response. The GT shall not be inhibited from picking up additional load (if margins are available) to arrest dip in grid frequency. Even when GT is operating at technical minimum, it shall not be inhibited from picking up additional load. GT shall not be inhibited from reducing its load to arrest rise in grid frequency. The station may provide lower and upper load limiter to prevent the unit instability however the frequency influence shall always be kept enabled in the governor control.

e. As per IEGC 5th amendment, RLDC shall not schedule beyond installed capacity minus normative auxiliary consumption. This provision has been given to keep margins for primary response. Similar practice may be adopted by SLDCs for intra state generators.

f. After the automatic primary response the unit may be brought back to its scheduled load at the rate of 1% per minute though local supplementary control. **(Ref: IEGC 5.2(i))**

g. The data of MW, frequency shall be archived at a resolution of at least 1 second.

h. The methodology used for computing the Frequency Response Characteristics shall be as per the procedure approved by Hon'ble CERC vide order dated 3rd May 2013. **(Ref: CERC order in Petition No. 47/MP/2012)**

Frequency Response Characteristic of Control Area (Generating Station)			
Date			Control Area
Event			Region
Area Frequency Response Calculation		**Values**	**Dimension**
1	Actual Net Interchange Immediately Before Distrubance (P_A)		MW
2	Actual Net Interchange Immediately After Distrubance (P_B)		MW
3	Change in Net Interchange (P_B-P_A)		MW
4	Generation Loss (+) / Load Throw off (-) within the control area during the event (P_L)		MW
5	Control Area Response ($\Delta P = P_B - P_A - P_L$)		MW
6	Frequency Before the Event (f_A)		Hz
7	Frequency After the Event (f_B)		Hz
8	Change in frequency ($\Delta f = f_B - f_A$)		Hz
9	Frequency Response Characteristic ($FRC = \Delta P/\Delta f$)		MW/Hz
10	Net System Demand met of the Control Area before the Event (P_{DEM})		MW
11	Internal Generation before the Event ($P_{gen} = P_{DEM} - P_A$)		MW
12	Ideal Load Response assuming 4% per Hz ($P_{Ideal\ Load} = 0.04 * P_{DEM}$)		MW/Hz
13	Ideal Generator Response assuming 5% droop ($P_{Ideal\ gen} = 0.4 * (P_{DEM} - P_A)$)		MW/Hz
14	Composite ideal Response ($P_{composite} = P_{ideal\ Load} + P_{ideal\ gen}$)		MW/Hz
15	Percentage of ideal Response = $((\Delta P/\Delta f) * 100/P_{composite})$		%

Note

Net Interchange to be indicated as negative (-) for power export from control area

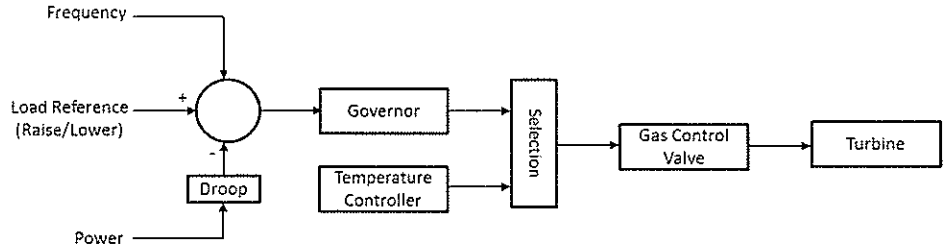
Net Interchange to be indicated as posotive (+) for power import into the control area

10. The characteristics of Gas Turbine/Steam Turbine was discussed and the following key points pertaining to primary response emerged:
    a. There are three modes of operation in a Gas turbine
        i. Isochronous speed control mode
        ii. Speed control with droop
        iii. Exhaust temperature control mode

    The exhaust temperature control mode is also known as base load. If the GT is operating at 100% of its MCR in this mode, rise in turbine output is not possible for any fall in frequency. When unit is at partial load, it operates on Speed control with droop mode. In this mode, turbine output changes to oppose change in frequency. During islanded operation unit operates in isochronous speed control mode. Mode of operation at Base load, part load and no load is illustrated below.

    Base Load = Exhaust Temperature Control
    |
    |
    Part Load = Speed Control with droop
    |
    |
    Zero Load |---------- (Full Speed No Load)

    b. The fundamental gas turbine control system block diagram is shown below



    c. Fast response is obtained from gas turbine in part load / speed control with droop
    d. Response from Steam turbine is delayed by few minutes due to time constant of Heat recovery boiler

11. After deliberations there was consensus on following action points
    a. All open cycle/combined gas turbine shall implement Free Governor Mode of operation which is nothing but "Speed control with droop". Generating unit will automatically vary its output as per its droop characteristics to oppose frequency change of more than the ripple factor/dead band (0.03 Hz). This implies that even when the frequency is above 50 Hz, the unit generation should increase for dip in frequency more than Ripple filter/Dead band and vice versa. Likewise even if frequency is below 50 Hz, the unit output should decrease for sudden increase in frequency more than Ripple filter/Dead band and vice versa.
    b. The primary response shall be delivered within 30 seconds of event.
    c. Local supplementary control if required shall be done after 3-4 minutes of event as per IEGC 5.2 (i).
    d. The quantum of response shall be at least 40% of ideal response as calculated below.

Station	GT Capacity (MW)	Frequency Dip (Hz)	Droop setting	Ideal MW Increase
Torrent	270	0.1	4%	14
Utran	229	0.1	4%	11
RGPPL	213	0.1	4%	11
Gandhar	144.3	0.1	5%	6
TATA Power	120	0.1	5%	5
Dhuvaran	69	0.1	4%	3
CLP	138	0.1	5%	6
Uran	108	0.1	5%	4
Kawas	106	0.1	4%	5
Hazira	222.43	0.1	4%	11

Station	GT Capacity (MW)	Frequency rise (Hz)	Droop setting	Ideal MW decrease
Torrent	270	0.1	4%	14
Utran	229	0.1	4%	11
RGPPL	213	0.1	4%	11
Gandhar	144.3	0.1	5%	6
TATA Power	120	0.1	5%	5
Dhuvaran	69	0.1	4%	3
CLP	138	0.1	5%	6
Uran	108	0.1	5%	4
Kawas	106	0.1	4%	5
Hazira	222.43	0.1	4%	11

e. WRLDC shall post the grid event involving 1000 MW generation/load loss or 0.1 Hz change in frequency.

f. Respective stations shall post the response in excel file having generation MW and frequency.

12. WRLDC thanked all the participants for their contribution during the meeting.

Annex-I

LIST OF PARTICIPANTS

Sr. No.	NAME	ORGNIZATION	DESINGNATION	EMAIL ID	PHONE NO
1	V. K. Shrivastava	WRLDC	Executive Director	vks@posoco.in	9869450221
2	T.R. Ganesh	WRLDC	Dy. General Manager	trganesh@posoco.in	9449599164
3	Vivek Pandey	WRLDC	Chief Manager	vivek.pandey@posoco.in	9869404673
4	Srinivas Chitturi	WRLDC	Sr.Engineer	srinivasch@posoco.in	9869416078
5	Chillimunta Jagadeesh	WRLDC	Sr.Engineer	cjagadeesh@posoco.in	9869469376
6	Hemant Singh	RGPPL	DGM	hemant.singh@site.rgppl.com	9427110744
7	Rakesh Sharma	Gandhar	Sr. Mgr (C&I-Mtc)	rakeshsharma05@ntpc.com	9408708350
8	Nirav Dhruv	Kawas	Manager (C&I-O&M)	niravdhruv@ntpc.com	9429842361
9	Sudhir Shinde	Uran	Addl. Executive Engineer	sudhir.shinde@mahagenco.co.in	9869055400
10	Vaibhav Patil	Uran	Assistant Engineer	vaibhav.patil@mahgenco.co.in	9004351839
11	Anil K Kaul	Tata Power	Head (I&C)	akkaul@tatapower.com	9223589994
12	Kiran Desai	Tata Power	Head -PP & ABT	desalelev@tatapower.com	9223553342
13	Sanjiv B Patel	Dhuvaran	Executive Engineer	dtpseff.gseci@gebmail.com	9925208992
14	Jitendra C Patel	Utran	Executive Engineer	imd2utran.gsecl@gebmail.com	9925213203
15	Saurav K Paul	Uran	Sr.Manager	saurav.p@gspc.in	7799770896
16	Vinod J Patel	GSEG Hazira	Di. Manager	vj.patel@steag.in	9099035130
17	Jardip Chudasama	Torrent Power	AGM	jardipchudasama@torrentpower .com	9227410136
18	Hemang Joshi	CPL India	Manager (C&I)	hemang.joshi@clpindia.in	9723455072
19	Nirav Joshi	CPL India	Sr.Manager	niravjoshi@clpindia.in	9723707475

Annex-II

Extracts from NLDC petition in the matter of endangering secured grid operation of All India Electricity Grid through inadequate/non-performance of FGMO

Test results of 216 MW Bawana gas turbine Primary Response

Step response in FGMO, generated load 70%, droop 4%

Table 2 Frequency steps in FGMO, generated load 70 %, droop 4%, Part 1

Simulated frequency (Hz)	Initial generated load (MW)	Post step generated load (MW)	Gen. load change , ΔP (MW)	MW contribution (MW/Hz)	Time constant T_{67} (s)
50→49.90	149.3	161.2	+11.9	119	9
49.90→50	161.2	149.6	-11.6	116	3

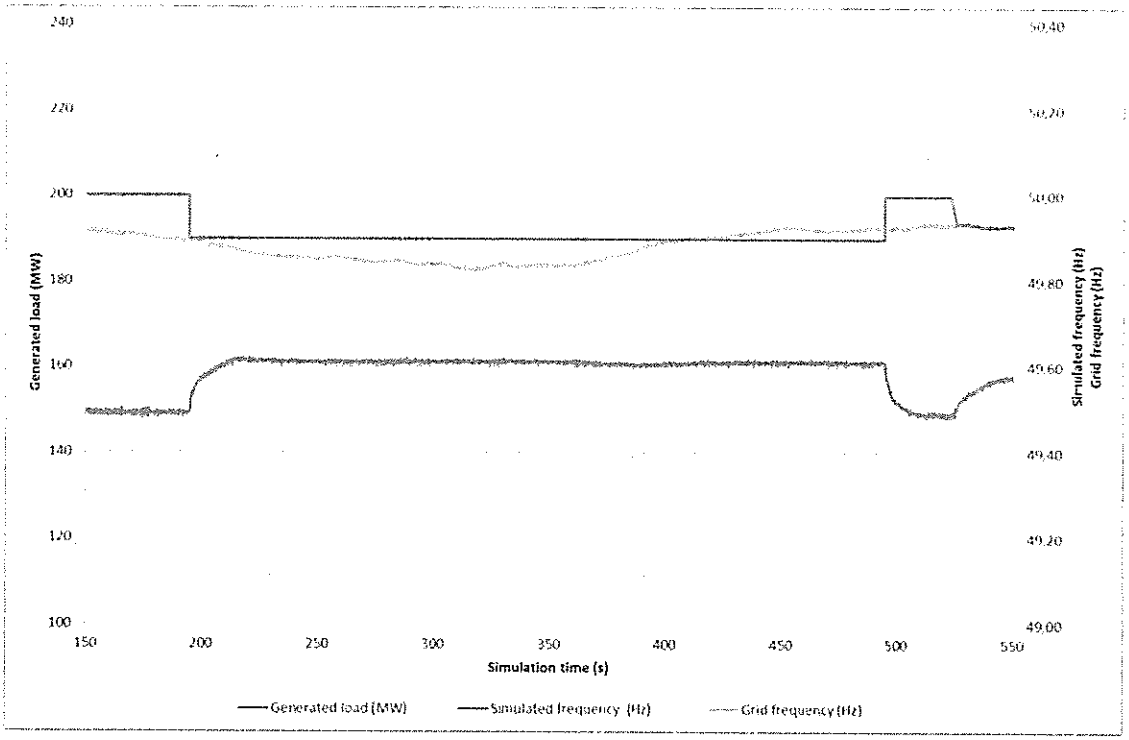


Figure 4: Frequency steps in FGMO, generated load 70%, droop 4%, Part 1

Table 3 **Frequency steps in FGMO, generated load 70%, droop 4%, Part 2**

Simulated frequency (Hz)	Initial generated load (MW)	Post step generated load (MW)	Gen. load change , ΔP (MW)	MW contribution (MW/Hz)	Time constant T_{67} (s)
50→50.1	149.4	137.3	-12.1	121	5
50.1→50	137.1	149.6	+12.5	125	6

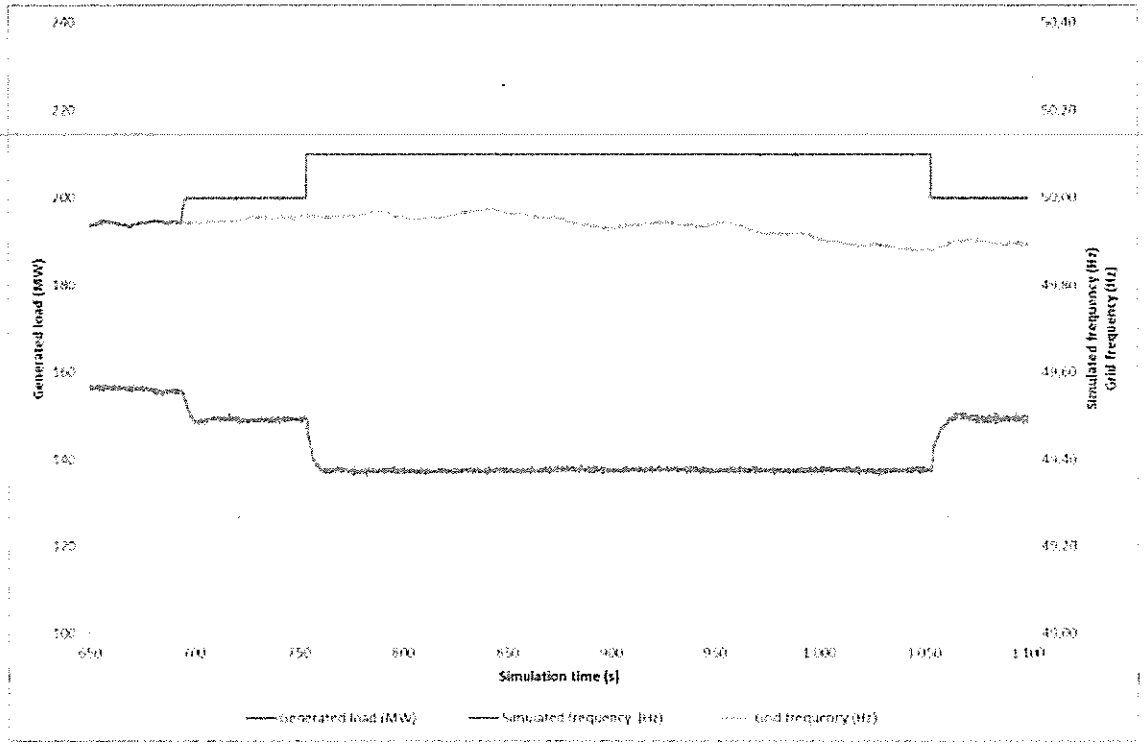


Figure 5: **Frequency steps in FGMO, generated load 70%, droop 4%, Part 2**

Step response in FGMO, generated load 90%, droop 4%

Table 4 Frequency steps in FGMO, generated load 90 %, droop 4%, Part 1

Simulated frequency (Hz)	Initial generated load (MW)	Post step generated load (MW)	Gen. load change , ΔP (MW)	MW contribution (MW/Hz)	Time constant, T_{67} (s)
50→49.90	194.3	206.5	+12.2	122	6
49.90→50	206	193.7	-12.3	123	4

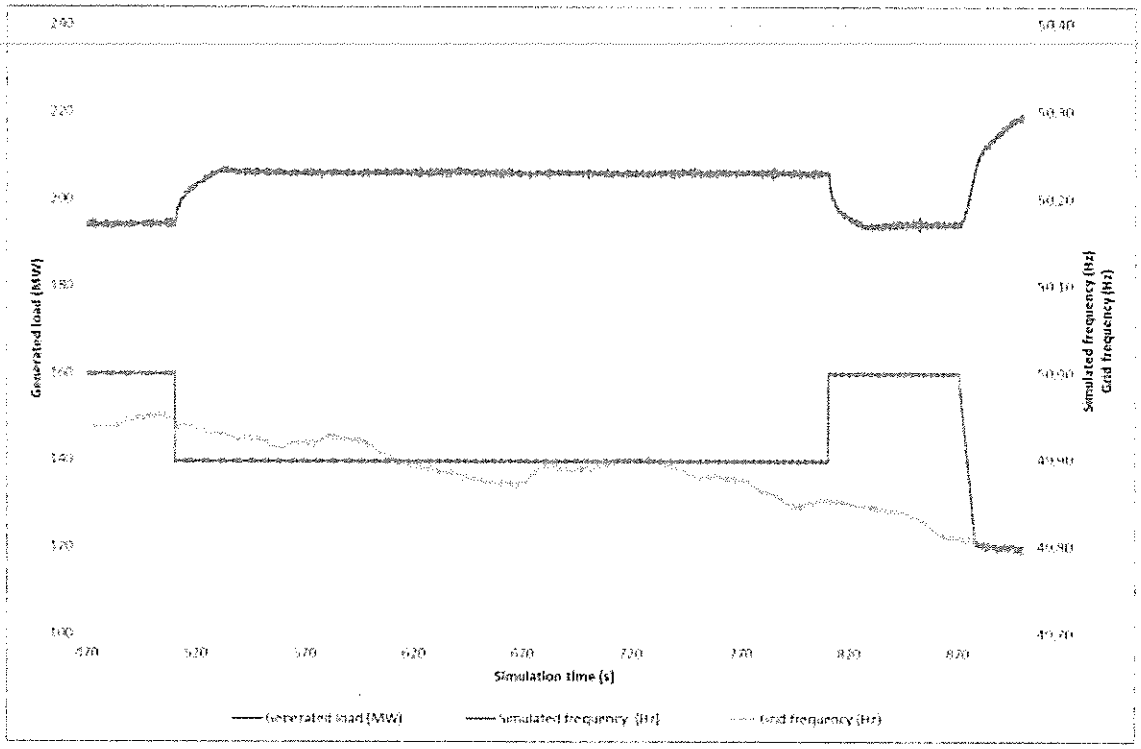


Figure 6: Frequency steps in FGMO, generated load 90 %, droop 4%, Part 1

Table 5 Frequency steps in FGMO, generated load 90 %, droop 4%, Part 2

Simulated frequency (Hz)	Initial generated load (MW)	Post step generated load (MW)	Gen. load change , ΔP (MW)	MW contribution (MW/Hz)	Time constant, T_{67} (s)
50 →50.1	194.2	182.6	-11.6	116	3
50.1→50	182	194.8	+12.8	128	5

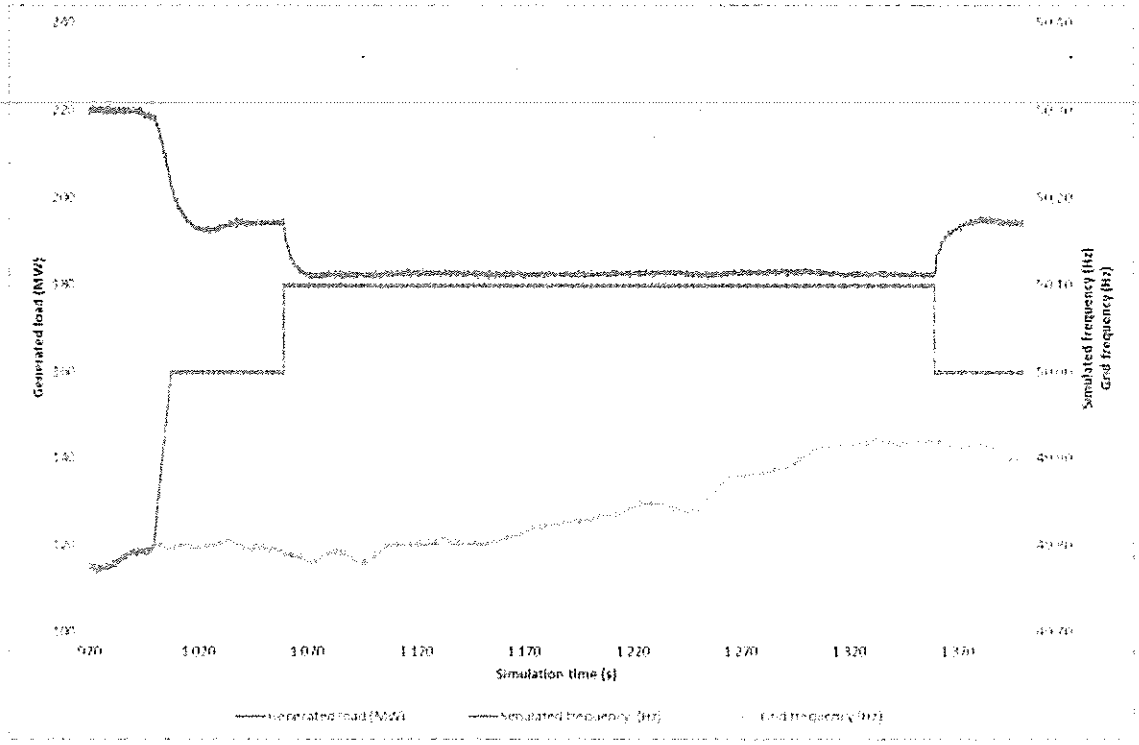


Figure 7: Frequency steps in FGMO, generated load 90 %, droop 4%, Part 2

Ratnagiri Gas & Power Pvt. Ltd.

Name of the office	:	General Manager, RGPPL
Office Address	:	P.O. Anjanwel, Guhagar, Ratnagiri, Maharashtra.- Pin Code-415634
Contact No.-	:	Phone-02359-241073. Fax-02359-241071
Email Id:-	:	y.srinivas@site.rgppl.com, cs.thomas@site.rgppl.com

Ref No: RGPPL/O&M/EM/02 Date: 07.02.2018

To,
The Member Secretary
WRPC,
F-3 MIDC Area, Andheri
Mumbai-400093.

प. क्ष. वि. स. मुंबई /WRPC
आवक संख्या /Inward No. 1808
दिनांक /Date: 21/09/18

Sub: - Submission of proposal for 100% funding to the Scheme of -PSS Tuning study of Six Generators (Two steam turbine & four gas turbine) at RGPPL, Ratnagiri from Power System Development fund (PSDF).

Ref:- Central Electricity Regulatory Commission (Power System Development fund) Regulation, 2014.

Dear Sir,

Ratnagiri Gas and Power Pvt. Ltd. (RGPPL) promoted by NTPC Ltd. and GAIL is a 1967 MW combined cycle power plant and 5 MMPTA LNG Terminal.

Power plant consists of three Blocks - Block-I of 640 MW capacity (approx.) & Block-II & III of 663.5 MW capacity each (approx.) Each block has two GT's and one ST. Presently the plant is generating about 500 MW which is being supplied to Indian Railways as per PPA.

A meeting was held on 03.01.2017 at WRPC, Mumbai on PSS tuning with Excitation Engineers of various entities in WR to discuss the status of PSS covered in WR PSS Tuning Project, Status of PSS for all other remaining Generators in WR and tuning of all the generating units whose capacity is greater than 50MW as per IEGC. As per the meeting minutes, it was agreed that all the State owned Generating Companies would prepare a DPR for getting the PSS tuned by the OEM of their generating units. This DPR would be put up to the appraisal Committee for funding through PSDF with the recommendation of WRPC. (letter Ref No.- WRPC/PROTECTION/2016/910 DATED-24.01.2017 is attached)

Presently in view of current power generation scenario, we are planning PSS Tuning work in phase-wise manner- & six generators of Block-II & Block-III are planned for PSS Tuning .

Subsequently, OEM M/s GE has submitted the cost estimate for PSS Tuning study & Testing of Six Generators (Two steam turbine & four gas turbine) USD-409276/- excluding taxes. Budgetary offer of M/s GE is attached.

PSDF issue
SE(OPN)
19/9/2018
EE(OPN)
23/09

We hereby attach appraisal form A-5 duly filled up for approving the same & issuing APPRAISAL REPORT so that **complete application for 100% funding of work of PSS Tuning of Generators at RGPPL be taken up with NODAL AGENCY from PSDF.**

Enclosure:-Duly filled form A-05

Thanking you.

Y. SRINIVASU
07/03/2018

General Manager(RGPPL)

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 [ ] STU [ ] RPC [√]	
Date of Submission to CTU / STU / RPC for approval	**07.02.2018**	
Name of the Scheme	PSS Tuning study of Six Generators (Two steam turbine & four gas turbine) at RGPPL, Ratnagiri from Power System Development fund (PSDF).	
Details of the Appraisal Report by CTU / STU / RPC (Attached at Annexure)	**WRPC/PROTECTION/2016/910 DATED-24.01.2017.**	
Summary of observations from CTU/ STU/RPC Appraisal Report	Summary of Proposal Appraised	As Per the above ref. letter:- 1. WRPC emphasized the need for PSS in generators for reliability and stability of grid. 2. The adverse affects of grid collapses happened in 1995 & 2012 were quoted in this regard. 3. After those incidences WRPC in association with IIT-B collected data of all stations in the region and simulated. 4. The oscillations in output of a generator occurs transiently due to faults and trips in the system, which in some cases go out of sync and leads to cascading

		effect. 5. The PSS detects the changes in power and generates an error signal which is fed to AVR of excitation to damp the oscillations produced in power output. 6. Initially PSSs were installed in 12 stations and 23 in total till date in WR and NTPC korba, Reliance Dahanu, SGTPS, MP etc.are some of them.
		7. As per latest IEGC , says SE, WRPC, all the generating stations should have these PSS in their excitation systems. 8. It was proposed to taken up the exercise of PSS tuning in WR, by WRPC for generating unit capacity more than 50 MW. By WR task force Reccommendation held on 03.01.2017. **9. Tuning of PSS is recommended to enhance stability. Further since PSS tuning helps in enhancing Grid stability expenditure can be taken under PSDF.** **10. After discussion following was agreed;-All the State owned Generating Companies would prepare a DPR for getting the PSS tuned by the OEM of their generating units. This DPR would be put up to the appraisal Committee for funding through PSDF with the recommendation of WRPC**
	Technical Observations	Presently in view of current power generation scenario, we are planning PSS Tuning work in phase-wise manner- & six generators of Block-II & Block-III are planned for PSS Tuning

		It is requested to forward the proposal to the appraisal Committee for approval of funding through PSDF so that further activities for the implementation of scheme can be taken up.
	Financial Observations	Total Project Cost- USD 409276/- 100% cost is proposed to be funded from PSDF.
	Compliance of Grid Standards / Codes by the Applicant	IEGC 2010, PART-5, CLAUSE 5.2(K)
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	**NIL**
	Recommendations of CTU/STU/RPC	Recommended

Date:

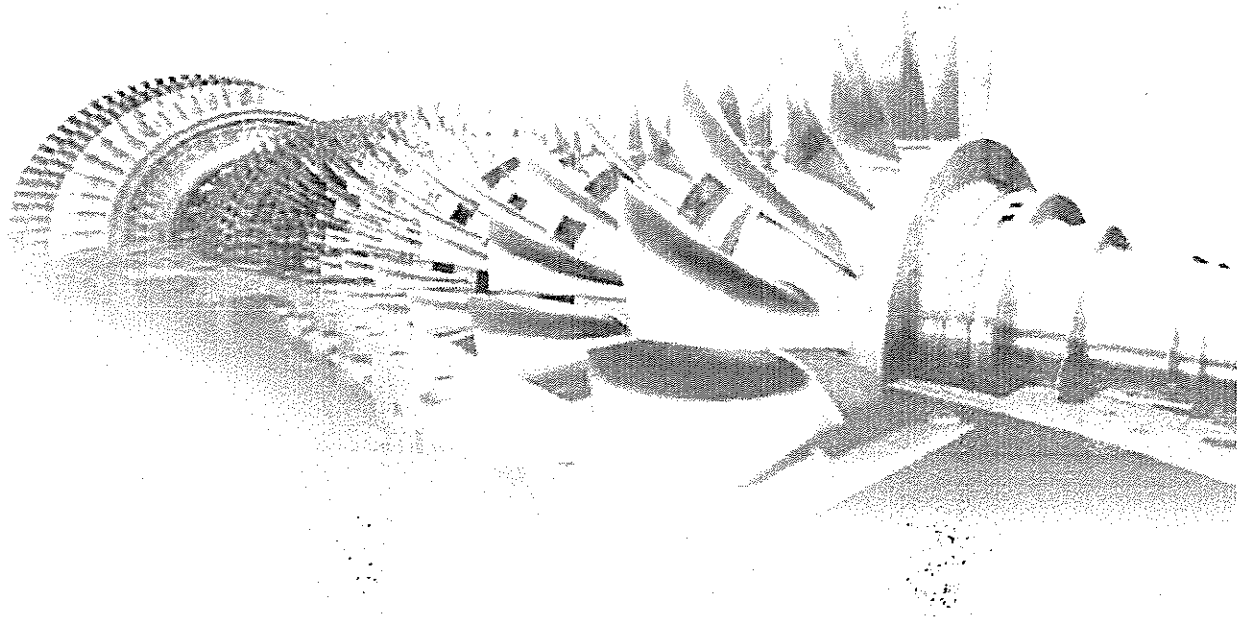
Signature: _____

Name:

General Electric International, Inc.

Customer **Ratnagiri Gas & Power Private Limited.**
Customer Site Dabhol

For **PSS tuning study and Testing**



Proposal Type: Services Proposal
Proposal: 1270766- S Rev0
Proposal Date: 27th Dec 2017

Executive Summary

GE Electric International Inc.. "GEII" a business unit of General Electric, hereafter referred to as GE, is pleased to submit this budgetary Services proposal to Ratnagiri Gas & Power Private Limited - Dabhol., hereafter referred to as RGPPL, and "Buyer" required to perform Services for PSS tuning study and Testing.

GEII is confident that this scope, as prepared and commented on by our technical staff is complete and contains all the elements necessary to ensure a quality job, conducted in a timely manner, and at a reasonable cost. While reviewing our budgetary proposal, please consider the value that GE provides.

1.0 Scope of Work

Implementation of PSS in 6 Generators including PSS Tuning Study and Testing

- 4 x 9FA GT generators
- 2 x D11 ST generators

Deliverables

- PSS tuning study report
- PSS test report after PSS testing at site

Pls refer to Annexure 1 for PSS Services – Technical Description

1.2 Contractor's Responsibilities

The Contractor shall Implement PSS Tuning and conduct Testing and also will provide Technical Advisory Services during PSS Tuning and Testing.

1.3 Owner's Responsibilities / Supplemental Site Requirements

Owner will render assistance to Contractor's personnel at the Site, including the following matters (as and where applicable) at Owner's cost (except as may be provided in the Contract or otherwise agreed in writing):

- Arrange suitable environmentally controlled and dust free clean area (Clean Room) as per Owner's recommendation and requirement, in custom bound area near to site and placement of all equipment on surrogate foundation.
- The Owner shall be responsible to place the Equipment on surrogate foundation and hard floor suitable for placing of pedestal/ pads beneath Equipment to support mechanical jacks, cranes for inspection and repair. The surrogate foundation shall

pass all foundation strength and alignment checks and must have all necessary foundation plates as required.

- To arrange for taking pictures by Contractor's representatives at port before and during inspection, repair of the Equipment.
- Compressed air and all Site utilities in the amounts, pressures, and voltages required to perform the work scope, including adequate lighting for nightshift work. This includes electric power and Instrument air needed for testing and powering the test equipment at Site (as required).
- All required parts and miscellaneous material (e.g., bolts, nuts, gaskets, steel plates, consumables, lube oil, hydraulic oil, etc.) shall be made available at Site.
- Heavy lift equipment including crane(s), scaffoldings, hand and power tools and instruments, oxy-acetylene welding machines. Includes overhead crane in Turbine hall in good working order and certified. At Owner's request, Contractor may make available certain special test or installation instruments/equipment under Contractor's established rental provisions.
- Equipment operators that may be required in connection with the services.
- Assistance in the procurement of all necessary visas and travel documents for Contractor's personnel, including sponsorship of all Contractors' personnel to obtain entry as required.
- Access to lay down space next to the equipment upon which the services will be performed.
- Repackaging of Equipment (if required) suitable for long time storage in accordance with OEM recommendation.
- Climate-controlled and secure office and storage space adjacent to the work area at the Site.
- Owner will provide secure suitable climate controlled accommodation, conveyance, Boarding and Lodging, travel & living required to support the services defined in the work scope. The same shall be arranged & provided by Owner to the Contractor's reasonable satisfaction.
- Customs clearance and custom duties for test equipment and material brought by Contractor, if any.
- Instrument calibrated by Owner appointed maintenance agent. Contractor will verify the calibration results.
- Provide consultation with Contractor's TA in advance with respect to the scheduling of all inspection & repair work associated with Contractor's services.
- Adequate firefighting equipment and services and port & site security, meaning the act of safeguarding the job site against sabotage, theft, arson, or any other dishonest or criminal act by physical means, such as guards, fencing, and lighting. This includes the safeguarding of all Contractor tools, consumables, equipment and parts when provided.

- Owner shall provide cranes, certified slings, operator, tools including special tools like rotor lifting beam, rotor stands and rigging plus scaffolding if required.
- Owner will take all necessary precautions, at all times, for the safety of Contractor - personnel at Site and other work locations. This includes, but is not limited to, indoctrination of Owner's safety practices, energization/de-energization of all power systems (electrical, mechanical and hydraulic) using a lock-out tag procedure, and conducting periodic safety meetings during construction and start-up. The Lockout Tagout (LOTO) for the equipment being worked on shall be to the reasonable satisfaction of Contractor personnel.
- An On-site medical center and first aid facilities capable of acting efficiently in case of emergency.
- An Emergency Evacuation Plan to Contractor's personnel acceptable to Contractor.
- Comprehensive orientation to customs and laws of land will be provided by Owner.
- Testing for, abatement, and disposal of any hazardous or regulated material.
- Electricians or instrument technicians are not included in this proposal. All electrician or instrument technicians to support disconnect or hookup of temporary equipment facilities, field devices or electrical disconnects on the machine, or calibration of devices will be provided by Owner.
- All Special tooling required for the job except for those mentioned in proposal being provided specifically by the Contractor.
- Consumables / materials required for performing services shall be provided by Owner.

  Craft labor shall be provided by Owner or Purchaser, as the Services are provided at Site.

1.4 Coordination

Owner will make all arrangements for arranging unrestricted access for Contractor's Personnel for Inspection of Equipment. All necessary support for additional equipment and Compressed Air, Power Connections and additional support as required for Inspection shall be provided by the Owner.
Owner will provide designated representative(s) to coordinate activities between the Contractor and the Owner's other contractors at Site and to resolve procedures for certain activities where questions might occur.

Such coordination shall include

- Consultation with the Contractor's representatives prior to arrival at Site to determine the mobilization timing for the TA.
- Subsequently, after initial mobilization, such coordination shall include a daily agreement of hours worked and mutually agreed as billable under the contract.

- The agreement will record hours for which work could not be performed for reasons not attributable to Contractor.

2.0 Health and Safety Matters; Hazardous Materials

The Owner will take all necessary precautions, at all times, for the safety of the Contractor's personnel at Site. This includes, but is not limited to, instruction of the Owner's safety practices, proper and safe handling of hazardous substances and protection of the Contractor's personnel from exposure thereto, energization/de-energization of all power systems (electrical, mechanical and hydraulic) using a safe and effective lock-out tag procedure, and conducting periodic safety meetings during construction and start-up.

Security for Contractor's personnel is to be provided by Owner to Contractor's satisfaction.

If, in the Contractor's opinion, the safe execution of Services at the Site is, or is apt to be, imperiled by local conditions, the Contractor may remove some or all of its personnel from the Site and/or supervise performances of all or any part of its Services and/or evacuate its personnel and the Owner shall assist in said evacuation.

In general, the Contractor's personnel will have at least one day of rest in any seven (7) consecutive days. However, with the Contractor's consent and where the nature of the assignment requires, the Contractor's personnel shall work seven (7) days a week for a maximum of thirty (30) days. Unless prior agreement is obtained from the Contractor, the Contractor's personnel shall not work more than one hundred and forty (140) hours in any two (2) consecutive weeks or sixteen (16) hours in any one day.

The operation of equipment at the Site is the responsibility of the Owner. If the Owner requires the Contractor's personnel to operate equipment at the Site, the Owner shall indemnify and save the Contractor, its employees and agents, harmless from expense and liability (including reasonable attorneys' fees) incurred by or imposed upon the Contractor, its employees and agents, based upon injury to persons (including death) or damage to property resulting from operation of equipment at the Site by the Contractor's personnel.

To ensure adequate performance of the Services and that the Contractor's personnel are not extended beyond their capability, the Contractor's personnel will not be required to work on other projects or equipment during the term of the Proposal.

If, at the Site, the Contractor encounters toxic substances, hazardous substances or hazardous wastes (as such terms may be defined in any statute or ordinance or regulations promulgated by any federal, state or local governmental authority of the United States or the country of the Site) (collectively, the "Hazardous Materials") which require special handling and/or disposal, the Owner shall immediately take whatever precautions are required to legally eliminate such hazardous conditions so that the work under the Proposal may safely proceed. If any such Hazardous Materials cause an increase in the Contractor's cost of or the time required for performance of any part of the work, an equitable adjustment shall be made in the price and schedule. The Owner agrees to properly dispose of all Hazardous Materials produced or generated in the course of the Contractor's work at the Site. The Owner shall indemnify the Contractor for any and all claims, damages, losses, causes of

action, demands, judgments and expenses arising out of or relating to (i) the presence of any Hazardous Materials which are present on the Site prior to the commencement of Contractor's work or (ii) improperly handled or disposed of by the Owner or (iii) brought on to the Site or produced thereon by parties other than the Contractor.

3.0 Miscellaneous

- Any information, suggestions or ideas transmitted by the Owner to the Contractor in connection with performance hereunder are not to be regarded as secret or submitted in confidence except as may be otherwise provided in writing signed by the Contractor's duly authorized representative.
- Contractor shall not be responsible for the acts and workmanship of the employees, contractors, subcontractors or agents of Owner.
- Owner shall be responsible for the importation, and subsequent exportation, of any necessary test equipment required performing the work, including all associated duties and taxes.
- Owner shall obtain, in a timely manner, from the governmental authorities, any authorizations necessary to permit the Contractor to perform under the contract. Where required, such authorizations shall include, but not be limited to, those applying to importation, transportation, labor or services, temporary residence, entry and exit of personnel or tools, performance of services, construction, operation, United States dollar or other currency allocations, assurances of currency exchange availability, and U.S. export control rules now or hereafter in effect. Contractor shall not be responsible if any authorization is delayed, revoked, restricted or not renewed, and any such event shall not relieve Owner of the obligation to pay for Services. Owner will comply with applicable U.S. export control rules now or hereinafter in effect.

Section II - Commercial Section

PSS Tuning and Testing Price (Lumpsum) (A)					
PSS Tuning	No of Units	First Unit Price(USD)	Similar/ Units Price(USD)	Similar Units Total Price (USD)	Total Price (USD)
4 9FA GT generators	4	65,000	32,500	97,500	162,500
2 D11 ST generators	2	65,000	32,500	32,500	97,500
Total					**260,000**

STFA Services (B)								
	No of Units	ST rate/Hr (USD)	OT Rate/Hr(USD)	Days/Unit (8 Hrs ST, 2 Hrs OT)	Total ST Price (USD)	Total OT Price (USD)	Total List Price (USD)	Discounted Price (17%) (USD)
STFA Service	6	545	818	5	130,800	49,050	179,850	**149,276**

Total (A)+(B)	**USD 409,276.00**

USD Four Hundred and Nite Thousand, Two Hundred and Seventy-Six Only

Note:

The above price is applicable for work performed prior to Mar 31,2018 and for schedule of Six weeks. If the performance of the service is delayed beyond this date or in case the Service duration of schedule, services shall be billed on a time & material basis at the Commercial Rates for Power Generation Services Outage Services Published Rates for India region for the corresponding year effective at the time that the service is performed. The 2017 Outage Commercial Rate for TA is as below:

- Local accommodation, Boarding and Lodging, local conveyance, travel & living required to support the services defined in the Work Schedule. The same shall be arranged & provided by Buyer to the befitting standard acceptable to Seller. In case the above has to be arranged by Seller, same shall be charged to Buyer at actuals + 20%.
- In case the schedule at site exceeds 6 Weeks, additional hours shall be billed in accordance with GE Power Generation Services existing rate sheets.

1. Terms and Conditions

a) The Parts supplies set forth in this budgetary proposal are provided to the customer by GE Energy Parts Inc (GEII) (Contractor) in line with the terms & condition of the existing terms & condition of the "Comprehensive Service Agreement" NO. RGPPL/Dabhol/CSA/1-24 HYOX/ONSHORE dated 20th June,2009 Ratnagiri Gas and Power Pvt. Limited and pt as expressly set forth herein, this Proposal is subject to the terms and conditions of the Agreement and such terms and conditions shall apply without limitation, as if fully set forth herein. Unless otherwise defined herein, all capitalized terms used in this Proposal shall have the same meaning given to them in the Agreement.

b) Any additional or different terms and conditions set forth in any proposal or communication by or from Buyer are expressly objected to and will not be binding upon Supplier unless specifically agreed in writing by an authorized agent of Supplier.

c) Following clauses of MMP contract "4.2.4. Early Termination" and "4.2.3 Termination for Economic Unviability" shall not be applicable to this proposal.

2. Proposal Validity

Prices quoted herein are firm for 45 days from date of proposal and subject to completion within 31st March 2018. GEII reserves the right to modify prices herein for work ordered after that date or in case the execution is delayed beyond 31th March 2018.

This proposal is subject to change upon notice prior to executable order.

3. Payment Terms

10% Advance with Purchase Order.
90% Payment shall be released within 7 days of submission of invoice after completion of work. Payment shall be made through Letter of Credit for one hundred percent (100%) of the Order amount.

4. Purchase order

Buyer's Purchase order shall provide the following deliverables:

- Purchase Order conforming to this proposal.

  Note: Deviations from the proposal in Scope, Price, payment schedule, Terms and Conditions, may cause delays or non acceptance of Purchase Order.

The execution period of this contract starts from Sellers Order Acknowledgement date. Upon the Buyer's decision to submit a purchase order, please address the Purchase order for services to:

General Electric International, Inc.
3135, Easton Turnpike,
Fairfield,
CT 06828, USA

5. Taxes & Duties

The Price does not include any Value-Added Taxes, service tax, GST which, if applicable Buyer shall be responsible for paying such taxes to Authorities and providing a proof of tax payment acknowledgement reference to GEII within first month of following quarter. In case Buyer deducts withholding tax from invoiced amount, then Buyer shall provide Tax Deduction at Source (TDS) certificate with acknowledgement reference to GEII within first month of following quarter. Also above price does not include custom duty of importing of GEII equipment (i.e. any special measuring tool / instrument etc.), which shall be borne by Buyer.

All prices quoted herein are exclusive of VAT, service tax and any duties and / or taxes payable and are solely for the account of and to be borne and payable by the Buyer. Buyer shall furnish TDS certificate and proof of Service Tax deposit.

6. Mobilization Time

Contractor requires minimum of 6 (Six) weeks after notice for Mobilization, of requested resources following:

- Acceptance of the Work Order by the Contractor
- Acceptable Letter of Credit established.

7. Schedule

The timelines for the study are as below:
PSS Tuning study: 6 weeks from receipt of all the data
PSS test report: 4 weeks after receipt of test data from site.

Annexure 1 – PSS Services – Technical Description

Power System Stabilizer Studies and Testing

Background - Power System Stabilizer Application

Excitation systems with high gain and fast response times greatly aid transient stability (synchronizing torque), but at the same time tend to reduce small signal stability (damping torque). The objective of the power system stabilizer (PSS) control is to provide a positive contribution to damping of the generator rotor angle swings, which are in a broad range of frequencies in the power system. These range from low frequency intertie modes (typically 0.1 - 1.0 Hz), local modes (typically 1 - 2Hz), and intra-plant modes (about 2 -3 Hz). The low frequency modes, commonly called intertie or interarea modes, are due to coherent groups of generators swinging against other groups in the interconnected system. These modes are present in all interconnected systems and the damping is a function of tie line strength and unit loading factors. Weak ties due to line outages and heavy system loads can lead to poorly damped intertie modes. The PSS control can provide significant improvements in intertie mode damping, with application of stabilizers to most units, which participate in these power swing modes. The classic example of intertie mode oscillation is the 0.3Hz mode in Western U.S (WECC – Western Electricity Coordinating Council), between Southern California region and Pacific Northwest region. The instability of this mode under certain conditions mandated the use of PSS control.

The PSS performance is often evaluated from the damping of what is called the local mode, the generator swinging against the rest of the power system. This mode is usually at frequencies between 1 and 2 Hertz. Stronger system ties and lighter loading tend to give higher local mode frequencies, and weaker ties and heavier loading tend to give lower local mode frequencies. The PSS performance must be designed to give acceptable performance over a wide range of system conditions, which may result from different operating conditions (such as lines out-of-service, varying load levels).

Proper application of the PSS requires a tuning study to insure the best practical performance over a wide operating range. In addition, commissioning tests, to ensure the results of the tuning study are accurately implemented, and that the settings as designed are yielding adequate performance, should be conducted. Each of these aspects is described below.

Tuning Studies

When properly designed and implemented, the PSS acts through the normal automatic voltage regulator (AVR) control to provide a modulation of field voltage to dampen oscillations in power. The PSS tuning study is used to determine the settings for the PSS, based on the particular generator, AVR settings required, and the system characteristics.

The principle focus of the study is to determine how to adjust the PSS phase compensation. This should be done by using small signal linearized models to compute a transfer function from speed to integral of accelerating power, which is the input signal to the PSS. This is combined with the transfer function from the AVR input to electrical torque. The combined transfer function is referred to as the uncompensated PSS loop transfer function. The phase lag in this transfer function at the frequencies of interest is what is to be compensated by the PSS control.

These characteristics should be computed for a range of system reactance and operating conditions in order to allow for a design that provides the best overall phase compensation. The goal should be to choose lead and lag time constants to bring the compensated phase curve to near zero degrees over as wide a range of system frequencies as possible, thus providing as much damping as possible, in the range between 0.1 and 3.0Hz where intertie and local mode frequencies occur in interconnected power grids. Finally, preliminary gains should be chosen based on having adequate gain margins under all conditions.

Testing of the AVR/PSS Controls

The basic types of tests that should be performed are given in the following list.

1. Step test in AVR reference (base load – *without PSS*)
2. Gain margin test to determine the PSS gain to be used
3. Step test in AVR reference (base load – *with PSS*)
4. AVR Uncompensated transfer function.
5. PSS transfer function.

Testing of the PSS should be done during plant commissioning, either right before or after the performance testing. The test condition for this testing should be at or near base load output of the plant. During testing, the test staff will coordinate with the excitation system commissioning engineer to collect the required data.

The testing of excitation systems should be facilitated by the use of internal data recording and test signals. This could involve the use of on-board triggered event recorder and trend function plotting programs to record the data and provide plots. There should be internal test oscillators for applying steps into various points in the control loop. Also, there should be a pseudo-random binary (or similar) noise source which can be used together with software on a PC to provide transfer function measurements.

Information/Data Required for PSS Tuning Study

1) Generator data - this includes the following information:

X_d, X'_d, X''_d, T'_{do}, T''_{do}
X_q, X'_q, X''_q, T'_{qo}, T''_{qo}
Xl, leakage reactance
MVA rating, kV rating, speed, power factor
armature resistance - r_a, field resistance - r_{fd}

The above data is usually given in per unit values on generator rating, except for field resistance which is in ohms (temperature of field at which resistance is given plus normal operating temperature should be specified)

Open Circuit Saturation Curve (or Table) - Terminal Voltage (kV or pu) versus Field Current (Amps)

Combined turbine-generator inertia constant in actual units (WR^2 in lb-ft^2) or GD^2 in MKS units, or per unit inertia constant H in kw-sec/kva (or M=2H)

*2) Excitation system data - this would include exciter type, computer block diagram models, parameters (settings).

3) Plant one line diagram to identify the connection scheme and step-up transformer rating and impedance values. The base values on which the transformer impedance's are given should be clearly indicated. Other information from the one-line would be special local loads, significant extra bus/line/cable between the unit and the transformer, or the transformer and the system. Also the connection of the units through generator bus connection or split winding transformers. Any units in the plant which are already existing which may or may not have PSS controls already should be described with the computer models for their generator and excitation system.

4) Short circuit – SC MVA (or short circuit current) on the HV bus (from the utility grid) to which the step-up transformer is connected. This number should be given for network contribution only, not including unit contribution. If it includes the unit contribution it should be indicated. If possible we would like a range of SC values, maybe nominal with all lines in service, and lower limit with some lines out of service (contingency case). The net system impedance will be calculated from the SC duty, and added to the step-up transformer impedance to determine the net equivalent impedance seen from the generator looking into the power system. If the SC or transformer data from previous item is not available, GE will use a wide range of possible impedance's from small to large to insure good performance at any operating condition. Having the site specific data will allow calculation of the expected response to be measured during commissioning (start-up) of the unit.

भारत सरकार
Government of India
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पश्चिम क्षेत्रीय विद्युत समिति
Western Regional Power Committee
एफ -3, एमआयडीसी क्षेत्र, अंधेरी (पूर्व), मुंबई - 400 093
F-3, MIDC Area, Andheri (East), Mumbai - 400 093
दूरभाष Phone: 022- 28221681; 28250004; 28200195; फैक्स Fax : 022 – 28370193
Website : www.wrpc.gov.in E-mail:prc-wrpc@nic.in , protectionwrpc@gmail.com

आई एस ओ ः 9001-2008

ISO: 9001-2008

No. : WRPC/Protection/2016/ **Date:** 24 JAN 2017

To

As per list,

Sub: Minutes of Meeting on PSS Tuning activity to be carried out in WR as per Task Force Recommendations held on 03.01.2017 at WRPC, Mumbai - reg.

Sir,

Please find enclosed herewith Minutes of Meeting on PSS Tuning activity to be carried out in WR as per Task Force Recommendations held on 03.01.2017 at WRPC, Mumbai.

This is for your information and necessary action.

The same is uploaded at www.wrpc.nic.in (in news and PCM minutes)

Yours' faithfully,

Encl.: As above

SE (Protection & Commercial)

Mailing list:

1 Chief Engineer (LD), MSETCL, Kalwa. Fax-022-27601769/65
2 CE (W), MSEGCL, 3rd floor, Prakash gad, Mumbai.
3 CE, SLDC, GETCO, Gotri, Vadodara, Fax.No. 0265-2352019/2356469.
4 Chief Engineer (Gen), GSECL, H.O. Baroda. Fax-0265-5512129/2344537
5 Chief Engineer (LD), MPPTCL, Jabalpur, Fax - 0761- 2664343 / 2970119.
6 ED (Engg.) MPPGCL, Jabalpur Fax- 0761-2660063
7 Chief Engineer (LD), CSPTCL, Raipur. Fax-0771 - 2574174
8 EE (T), CSPGCL- Fax.No. 07789-226227
9 D.G.M. (O.S.), N.T.P.C., Mumbai, Fax- 28216692
10 DGM, NTPC WR – II, Raipur, Fax: 0771 - 2544550
11 D.G.M. (EM), KSTPS, NTPC, Korba Fax 07759-233088 (Tele fax: 232440) /237462
12 DGM (EMD), VSTPS, NTPC, Vindhyachal Fax-07805-247713 /247711
13 DGM (EM-I), NTPC, SIPAT Fax-07752-246506 (Tele fax: 246691)
14 AGM (O&M), KGPP, Adityanagar, Surat Fax 0261-2861428/2861433
15 Sr. Supdt. (EM), Gandhar, N1PC Fax-02642-87402 / 87450
16 DGM (O.S.), WRLDC, Mumbai Fax-28235434
17 DGM, WRTS-I, PGCIL, Nagpur, Fax- 0712- 2631051 / 641366
18 AGM, WRTS-II, PGCIL, Baroda Fax-0265-2480952 (Tele fax. 2487542)
19 AGM, O&M, WRTS – III, PGCIL, Raipur. Fax: 0771 - 2970450
20 SME (E), TAPS-3&4.Tarapur Fax 02525-282001/282073
21 Maintenance Superintendant, TAPS –1 & 2, Tarapur.Fax- 02525-282121
22 SME(E), NPCIL , Kakrapara Fax 02626-234266
23 GM (Maint.), TORRENT Power., Ahmedabad.Fax-079-27506679
24 AGM (QAIT), TPC, Trombay. Fax –022-66687088
25 Asst. VP, Dahanu TPS Fax- 952528-222576 / 222039
26 GM (O & M), Reliance Infrastructure Limited, Mumbai Fax-30094488
27 GM (Electrical), JPL, Raigarh, Fax. No. 7767-281995, 281993.
28 AGM (OS), NSPCL, New Delhi . Fax.No.011 26717381/26717363/26717366
29 Vice President, APL, Ahmedabad 079-25557176
30 GM, RGPPL, Anjanwel, Guhagar, Ratnagiri, Fax.No. 02359 241071
31 GM, JSW Energy Ltd., Jindal Mansion, Mumbai- Fax.No.022 23526400
32 GM, CGPL, Mundra Fax.No. 02838 661188

Copy to

1. MD, CSPGCL, Danganiya, Raipur, Fax.No. 0771-2262741.
2. MD, GSECL, race course, Vadodara, Fax.No. 0265-2344734.
3. MD, MPPGCL, Rampur, Jabalpur, Fax.No. 0761-2665661.
4. CMD, MSPGCL, Bandra(E), Mumbai, Fax.No. 022-26471060/26581400.
5. Director(HR), NTPC Ltd., NTPC Bhawan, New Delhi, Fax.No. 011-24368417.
6. Director(Finanace), NPCIL, Urja Bhawan, Mumbai, Fax.No. 022-25993332.
7. GM, POSOCO, WRLDC, Andheri(E), Mumbai, Fax.No. 022-28202630.
8. COO&ED, Tata Power Company Ltd., Mumbai, Fax.No. 022-66657966.
9. MD, Rantnagiri Gas &power Pvt Ltd., Noida, Fax.No.0120-4148911/13/14.
10. CED, NHDC Ltd., Shyamala Hills, Bhopal, Fax.No. 0755-4030003.

11. ED, Torrent power Generation Ltd., Surat, Fax.No.02621-661151.
12. COO, Adani Power Ltd., Ahmedabad, Gujarat, Fax.No. 079-25557176.
13. MD, Dhariwal Infrastructure Ltd., Kolkata, Fax.No. 033-22256003.
14. Director & CEO, JSW Energy Ltd., New Delhi, Fax.No. 011-48178740.
15. CEO, Jindal Power Ltd., Gurgaon, Haryana, Fax.No. 0124-26739151.
16. ED & CEO, Costal Gujarat Power Ltd., Gujarat, Fax.No. 02838-661181.
17. Sr.vice President(o), Rattan India Power Ltd., Gurgaon, Haryana, Fax.No. 0124-6695868.

Minutes for the meeting of PSS Tuning

A meeting was held on 03.01.2017 at WRPC, Mumbai on PSS tuning with Excitation Engineers of various entities in WR to discuss the status of PSS covered in WR PSS Tuning Project, Status of PSS for all other remaining Generators in WR and tuning of all the generating units whose capacity is greater than 50MW as per IEGC. The list of participants is enclosed at Annexure – I.

SE (Protection & Studies), WRPC welcomed Dr. A. M. Kulkarni from IIT-B and all the participants of meeting and briefed the members about the PSS tuning. A brief video was presented on the PSS tuning activity carried out in WR wherein PSS tuning of 23 units was taken up for which IIT-B was consultant. WRPC having a successful background in many aspects of PSS tuning further exercise can be taken up for tuning PSS in remaining generating units. Thereafter agenda items were taken up for discussion.

Item No 1: Status of PSS covered in WR PSS Tuning Project

As decided by WREB/WRPC in 114th WREB meeting, field tuning of PSS on generators was done by a group comprising IIT-B as consultant, BHEL and utility excitation groups. In all 23 units PSS were tuned. The status of these projects as of now was discussed and updated as follows.

Sl. No	Name of the Generating Station	Details of Generating Units	Capacity of each Unit in MW	Type of Excitation System	Present STATUS
1.	NTPC- Korba	Units 2 & 3	210	Adaptive DVR	Changed to DVR & PSS is Active
2.	Wanakbori	Units 4 & 5	210	Static AVR	Changed to DVR & PSS is Active
3.	Nasik	Units 3 & 5	210	Static AVR	Changed to DVR & PSS is Active
4.	Dahanu, RPL	2 units	250	Brushless AVR	Changed to DVR & PSS is Active
5.	Korba West	Units 1, 3 & 4	210	Static AVR	Changed to DVR & PSS Not Enabled
6.	Satpura	Units 8&9	210	Static AVR	Changed to DVR & PSS is Active
7.	NTPC- Korba	Units 4,5 & 6	500	Brushless AVR	Changed to DVR & PSS is Active
8.	Parli, MSEB	3 units	210	Static AVR	Changed to DVR & PSS is Active
9.	SGTPS, MP	4 units	210	Static AVR	Units 1 &2 Changed to DVR & PSS is Active. Units 3 & 4 are with AVR & PSS is Disabled.

Total: 23 Units

Item No 2: Status of PSS for all other remaining Generators in WR:

It was proposed to taken up the exercise of PSS tuning in WR, for which following information was sought from ISGS, State Generating Companies, IPP's connected to CTU, and IPP's connected to State having generating unit capacity more than 50 MW.

Unit No, Rated Capacity, Type of Excitation System, whether PSS provided or not, whether PSS tuned or not, and manufacturer of excitation system. The data furnish by the entities is enclosed at Annexure-2.

Item No 3: Proposal for Tuning:

SE (Protection & Studies), WRPC informed that,

i. **As per IEGC Generators have to tune PSS. CTU/RPC can check the settings.**

ii. **Tuning of PSS is recommended to enhance stability. WR can utilize the earlier experience and take up PSS tuning activity once again. However as compared to earlier phase, knowledge of frequency response and theoretical aspects must be spread to generators so that they can also participate in the exercise. Training is also necessary. Further since PSS tuning helps in enhancing Grid stability expenditure can be taken under PSDF.**

After discussion following was agreed;

1) **All the State owned Generating Companies would prepare a DPR for getting the PSS tuned by the OEM of their generating units. This DPR would be put up to the appraisal Committee for funding through PSDF with the recommendation of WRPC.**
2) **The private generating companies shall get the PSS tuned from the manufacturer at their own cost.**
3) **A detailed guideline on the adoption of the PSS settings and testing the PSS would be prepared by WRPC in consultation with IIT-B and the same may be referred by the generating companies during adopting PSS settings.**
4) **A training program on the PSS tanning activity shall be organized by IIT-B for all the stake holders. The fees of the training program shall be borne by the individual organization.**
5) **Software for checking the performance of PSS, analytically, would be**

developed by IIT-B after discussing the requirements with WRPC. The copies of the software then could be shared with the generating companies.

6) **Simulation software for exciter/PSS control system simulation shall be developed by IIT-B, which shall be made available to all the generating companies of WR for checking/simulating the frequency response of the PSS tuned system, so that they can select the settings.**
7) **After carrying out the tuning of PSS, the parameters/constants set by the generating companies shall be communicated to WRPC for its verification. This would be verified by WRPC through the software developed by IIT-B at 5) above.**
8) **The cost of the software's at 5 & 6 be funded through WRPC fund.**

Annexure 8.6B

MADHYA PRADESH POWER TRANSMISSION CO. LTD.

(A wholly owned Govt. of Madhya Pradesh Undertaking)
CIN: U40109MP2001SGC014880
Block No.2, Shakti Bhawan, Rampur, Jabalpur (MP) 482008, Tel.:(0761) 270-2132, 2242
Fax No.: (0761) 2660908, e-mail: ceps321@yahoo.com/ce.pnd@mptransco.nic.in

No. 04-02/PSP-385-A/ 2405 Jabalpur, Date: 03.11.18

To,

Member Secretary,
Western Region Power Committee (WRPC),
F-3, MIDC Area, Andheri (East),
Mumbai-40093

प. क्ष. वि. स. मुंबई /WRPC
आवक संख्या /Inward No. 2050
दिनांक /Date: 13/11/2018

Sub: Regarding installation of ABT compliant meter having facility of 5 minute integration on existing interface points of MPPTCL.

Ref : This office letter no. 04-02/PSP-385/2067 dated-15.09.2018

On the subject matter and vide letter cited under reference, a DPR for "Installation of ABT compliant meter having facility of 5 minute integration on existing interface points of MPPTCL" has been submitted to NLDC for consideration and approval under PSDF scheme. The DPR envisages installation of 755 Nos. ABT compliant meter having facility of 5 minute integration and total financial of Rs. 6.68 Crore and the PSDF component as per the clause 5.1(C) of the guideline shall be Rs. 6.012 Crore i.e. 90% of the total project cost. The proposal for installation of ABT compliant meter having facility of 5 minute integration are proposed to be taken up during FY 2019-20 to FY 2020-21 and the proposed works shall be completed in a period of two years. A copy of the aforesaid DPR submitted to NLDC is enclosed herewith for your reference.

As per the directives of NLDC, it is requested that the Detailed Project Report for installation of ABT compliant meter having facility of 5 minute integration on existing interface points of MPPTCL, submitted to NLDC may kindly be examined and approval may kindly be forwarded to this office for onward submission to NLDC for consideration and approval under PSDF scheme.

Encl: As Above

Chief Engineer (Plg. & Design)
MPPTCL: Jabalpur

Copy to:

1. Shri. S.R. Narasimhan, Executive Director, National Load Despatch Centre (NLDC), B-9, 1st floor, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016. (Fax No.: 011-26524525, 26536901)
2. Staff Officer O/o MD, MPPTCL, Jabalpur

SE(Opn) Sarna 12/11/2018

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

Item	Details to be filled by Applicant Utility	
Appraisal By:	CTU [ ] STU [✓] RPC [ ]	
Date of Submission to CTU / STU / RPC for approval	**Not Submitted to CTU/RPC for approval**	
Name of the Scheme	**Detailed Project Report for installation of ABT compliant meter having facility of 5 minute integration on existing interface points of MPPTCL through PSDF.**	
Details of the Appraisal Report by CTU / STU / RPC (Attached at Annexure)	**Reference. No : Not Applicable** **Date:_____-----_____**	
Summary of observations from CTU/ STU/RPC Appraisal Report	Summary of Proposal Appraised	---
	Technical Observations	---
	Financial Observations	---
	Compliance of Grid Standards / Codes by the Applicant	**YES**
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	---
	Recommendations of CTU/STU/RPC	---

MADHYA PRADESH POWER TRANSMISSION CO. LTD.

(A wholly owned Govt. of Madhya Pradesh Undertaking)
CIN: U40109MP2001SGC014880
Block No.2, Shakti Bhawan, Rampur, Jabalpur (MP) 482008, Tel.:(0761) 270-2132, 2242
Fax No.: (0761) 2660908, e-mail: ceps321@yahoo.com/ce.pnd@mptransco.nic.in

No. 04-02/PSP-385-B/ 2406 Jabalpur, Date: 03.11.18

To,

Member Secretary,
Western Region Power Committee (WRPC),
F-3, MIDC Area, Andheri (East),
Mumbai-40093

प. क्षे. वि. स. मुंबई /WRPC
आवक संख्या /Inward No. 2051
दिनांक /Date: 13/11/2018

Sub: Regarding installation of Phasor Measurement Units (PMUs) at strategic locations in Madhya Pradesh and integration of the same with Phasor Data Concentrator (PDC) installed under URTDSM project.

Ref : This office letter no. 04-02/PSP-385/2066 dated-15.09.2018

On the subject matter and vide letter cited under reference, a DPR for "Installation of Phasor Measurement Units (PMUs) at strategic locations in Madhya Pradesh and integration of the same with Phasor Data Concentrator (PDC) installed under URTDSM project" has been submitted to NLDC for consideration and approval under PSDF scheme. The DPR envisages installation of 98 Nos. Phasor Measurement Units (PMUs) and 2 Nos. Remote Console of URTDSM system and total financial outlay of project is Rs. 17.80 Crore and the PSDF component as per the clause 5.1(C) of the guideline shall be Rs. 16.02 Crore i.e. 90% of the total project cost. The proposal for installation of PMUs are proposed to be taken up during FY 2019-20 to FY 2020-21 and the proposed works shall be completed in a period of two years. The list of EHV Substations and Power Stations where installation of PMUs is required is attached as Annexure-I and a copy of the DPR submitted to NLDC is also enclosed for your reference.

As per the directives of NLDC, it is requested that the requirement of Phasor Measurement Units (PMUs) as detailed in Annexure-I and Detailed Project Report for the captioned scheme submitted to NLDC may kindly be examined and approval may kindly be forwarded to this office for onward submission to NLDC for consideration and approval under PSDF scheme.

Encl: As Above

Chief Engineer (Plg. & Design)
MPPTCL: Jabalpur

Copy to:

1. Shri. S.R. Narasimhan, Executive Director, National Load Despatch Centre (NLDC), B-9, 1st floor, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016. (Fax No.: 011-26524525, 26536901)
2. Staff Officer O/o MD, MPPTCL, Jabalpur

SE(Opn) for n.a. 12/11/2018

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

Item	Details to be filled by Applicant Utility	
Appraisal By:	CTU [ ] STU [✓] RPC [ ]	
Date of Submission to CTU / STU / RPC for approval	**Not Submitted to CTU/RPC for approval**	
Name of the Scheme	**Detailed Project Report for installation of Phasor Measurement Units (PMUs) at strategic locations in Madhya Pradesh and integration of the same with Phasor Data Concentrator (PDC) installed under URTDSM project.**	
Details of the Appraisal Report by CTU / STU / RPC (Attached at Annexure)	Reference. No : Not Applicable Date:_____-----_____	
Summary of observations from CTU/ STU/RPC Appraisal Report	Summary of Proposal Appraised	---
	Technical Observations	---
	Financial Observations	---
	Compliance of Grid Standards / Codes by the Applicant	**YES**
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	---
	Recommendations of CTU/STU/RPC	---

ANNEXURE - 8.7

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
सूचना प्रौद्योगिकी प्रभाग
Information Technology Division

विषय: क्षेत्रीय विद्युत समितियों में साइबर सुरक्षा संबंधी कार्यों की स्थिति ।

महोदय,

Secretary (Power) is going to review the cyber security related works /activities being carried out in Power Sector shortly. In this regard, it is requested to provide the State wise status on following action points of RPC agenda pertaining to cyber security at the earliest:

1. Appointment of organization-wise Chief Information Security Officers and its status
2. Identification of organization-wise Critical Infrastructure and its status
3. Preparation of organization-wise Crisis Management Plan and its status
4. Status of Cyber Security Mock Drill activity in coordination with CERT-In
5. Status of Training / Workshops on Cyber Security organized / participated by power sector entities
6. Status of action taken on CERT-In / NCIIPC advisories

भवदीय,

Signature Not Verified
Digitally signed by VIJAY MENGHANI
Date: 2018.08.31 16:05:45 IST

(विजय मेंघाणी)
मुख्य अभियंता (सू.प्रौ.प्रभाग)

सेवा में,

1. सदस्य सचिव, उत्तरी क्षेत्रीय विद्युत समिति, 18-ए, कुतुब इंस्टिट्यूशनल एरिया, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली-110016 (फैक्स: 011-26865206)
2. सदस्य सचिव, पूर्वी क्षेत्रीय विद्युत समिति, 14, गोल्फ क्लब रोड टॉलीगंज, कोलकाता-700033 (फैक्स: 033-24239653)
3. सदस्य सचिव, पश्चिमी क्षेत्रीय विद्युत समिति, एफ -3, एमआईडीसी क्षेत्र, मरोल, सीईईपीजेड के सामने, सेंट्रल रोड, अंधेरी (पूर्व), मुंबई - 400093 (फैक्स: 022-28370193)
4. सदस्य सचिव, दक्षिण क्षेत्रीय विद्युत समिति, नंबर 29, रेस कोर्स क्रॉस रोड, बेंगलूरू - 560009
5. सदस्य सचिव, उत्तर पूर्वी क्षेत्रीय विद्युत समिति, एन.ई.आर.पी.सी. कॉम्प्लेक्स, तीसरी मंजिल, दोंग परमा, लापलांग, शिलांग - 793006 (फैक्स: 0364-2534040)

for info SE(Opn) 6/9/2018

प्रा. नि. स. मुंबई /WRPC
आ. संख्या /Inward No. 708
दिनांक /Date: 07/09/2018

FORMAT

S.No.	Attribute	Status
1	Developer	
2	Name of Project	
3	Sector	
4	State	
5	Region	
6	Unit No	
7	Total Capacity	
8	DT-of COMMISSIONING (MM/DD/YYYY)	
9	Age in years	
10	Whether FGD Installed	
11	Whether FGD space available (Y/N)	
12	Whether FGD planned (Y/N)	
13	Feasibility Study Started (Y/N)	
14	Feasibility Study Completed (Y/N)	
15	Tender Specifications Made (Y/N)	
16	NIT Issued (Y/N)	
17	Bids Awarded (Y/N)	
18	Regulator Petition Cleared (Y/N)	
19	% Progress of FGD Installation	
20	FGD Commissioned (Y/N)	
21	FGD working satisfactorily (Y/N)	
22	FGD Phasing Plan for Implementation (DD/MM/YYYY)	
23	Current Status & remarks	

Timelines for implementation of new emission norms for Thermal Power Plants (notified on 07.12.2015) as per direction issued on 11.12.2017 and 06.04.2018 u/s 5 of EP Act, 1986

Sl. No.	Name of Thermal Power Plant	State	FGD/ ESP	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8	Unit-9	Unit-10	Unit-11	Unit-12	Unit-13
1	Vizag TPP, HNPCL	Andhra Pradesh	FGD	Jun-20	Sep-19											
			ESP													
2	Damodaram Sanjeeviah TPS, APPDCL	Andhra Pradesh	FGD	Dec-20	Dec-19											
			ESP	Dec-20	Dec-19											
3	Rayalseema TPS, APGENCO	Andhra Pradesh	FGD	Dec-21	Sep-21	Sep-20	Jun-21	Jun-20								
			ESP	Dec-21	Sep-21	Sep-20	Jun-21	Jun-20								
4	Dr. N. Tata Rao TPS	Andhra Pradesh	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Dec-20						
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Dec-20						
5	Sembcorp Gayatri Pvt Ltd	Andhra Pradesh	FGD	Dec-21	Sep-21											
			ESP													
6	Painampuram TPS, APGENCO	Andhra Pradesh	FGD	Dec-21	Sep-21											
			ESP													
7	Simhadri NTPC	Andhra Pradesh	FGD	Mar-22	Jun-22	Sep-22	Dec-22									
			ESP			Sep-22	Dec-22									

8	Thamminapatnam TPS, Meenakshi Energy Ltd.	Andhra Pradesh	FGD	Complying	Complying											
			ESP													
9	Simhapuri TPS, SEPL	Andhra Pradesh	FGD	Complying	Complying	Complying	Complying									
			ESP													
10	Bongaigaon NTPC	Assam	FGD	Complying	Complying											
			ESP													
11	Barh NTPC	Bihar	FGD				Sep-21	Mar-22								
			ESP													
12	Nabi Nagar TPS, NTPC	Bihar	FGD	Dec-21	Dec-22											
			ESP		Dec-22											
13	Kahalgaon TPS, NTPC	Bihar	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22						
			ESP	Dec-22	Dec-22	Dec-22	Dec-22									
14	Muzaffarpur TPS, NTPC-BSEB	Bihar	FGD	***Dec-20***	***Dec-20***	Dec-22	Dec-22									
			ESP	***Dec-20***	***Dec-20***	Dec-22	Dec-22									
15	Barauni TPS, BSEB	Bihar	FGD						***Dec-20***	***Dec-20***						
			ESP						***Dec-20***	***Dec-20***						
16	Bandakhar TPP, Maruti CCPL	Chhattisgarh	FGD	Mar-20												
			ESP													
17	Raikheda TPP, GMR	Chhattisgarh	FGD	Jun-20	Sep-20											
			ESP													

18	Baradarha TPS, DB Power	Chhattisgarh	FGD	Jun-21	Sep-20											
			ESP													
19	Binjkote TPP, SKS Power	Chhattisgarh	FGD	Sep-20												
			ESP	Sep-20												
20	Nawapara TPP, TRN Energy	Chhattisgarh	FGD	Complying	Sep-20											
			ESP		Sep-20											
21	Marwa TPS, CSEB	Chhattisgarh	FGD	Jun-21	Mar-21											
			ESP													
22	Lanco Amarkantak TPP	Chhattisgarh	FGD	Mar-21	Mar-21											
			ESP													
23	Tamnar TPP, Jindal	Chhattisgarh	FGD	Mar-21	Dec-21	Mar-22	Jun-22									
			ESP													
24	BALCO TPS	Chhattisgarh	FGD	Sep-21	Jun-21											
			ESP	Sep-21	Jun-21											
25	Dr. Shyama PMTPS, CSPGCL	Chhattisgarh	FGD	Jun-21	Sep-21											
			ESP													
26	Korba West Extn TPS	Chhattisgarh	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Sep-21								
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									

27	Sipat NTPC	Chhattisgarh	FGD	Dec-22	Dec-22	Dec-21	Dec-21	Dec-21								
			ESP													
28	Uchpinda TPP, RKM Power	Chhattisgarh	FGD	Mar-22		Dec-21										
			ESP													
29	Avantha Bhandar, KWPCL	Chhattisgarh	FGD	Mar-22												
			ESP													
30	Akaltara TPS, KSK Mahanadi	Chhattisgarh	FGD	Jun-22	Mar-22											
			ESP													
31	OP Jindal TPS	Chhattisgarh	FGD	Mar-22	Mar-22	Jun-22	Jun-22									
			ESP													
32	Korba STPS, NTPC	Chhattisgarh	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22						
			ESP	Dec-22	Dec-22		Dec-22	Dec-22								
33	Bhilai TPS, NTPC & SAIL	Chhattisgarh	FGD	Dec-22	Dec-22											
			ESP													
34	Chakabura TPP, ACBIL	Chhattisgarh	FGD		Complying											
			ESP													
35	Kasaipalli TPP, ACBIL	Chhattisgarh	FGD	Complying	Complying											
			ESP													

36	Swastik Korba TPP, ACBIL	Chhattisgarh	FGD	Complying												
			ESP													
37	SVPL TPP, S V Power Ltd	Chhattisgarh	FGD	Complying												
			ESP													
38	Ratiza TPS, SCPL	Chhattisgarh	FGD	Complying	Complying											
			ESP													
39	Katghora TPP, Vandana Vidyut	Chhattisgarh	FGD	Complying												
			ESP													
40	Korba II TPS, CSPGCL	Chhattisgarh	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
41	Korba III TPS, CSPGCL	Chhattisgarh	FGD	***Dec-20***	***Dec-20***											
			ESP	***Dec-20***	***Dec-20***											
42	Rajghat TPS	Delhi	FGD	***Retired***	***Retired***											
			ESP	***Retired***	***Retired***											
43	Badarpur TPS, NTPC Ltd	Delhi	FGD	***Jul-18***	***Jul-18***	***Jul-18***	***Jul-18***	***Jul-18***								
			ESP	***Jul-18***	***Jul-18***	***Jul-18***	***Jul-18***	***Jul-18***								
44	Mundra UMTPP, Tata Power (CGPL)	Gujarat	FGD	Jun-20	Mar-21	Jun-21	Mar-22	Mar-22								
			ESP													
45	Salaya TPP, Essar	Gujarat	FGD	Jun-21	Mar-21											

			ESP													
46	Gandhi Nagar TPS	Gujarat	FGD	***Retired***	***Retired***	Dec-21	Dec-21	Dec-21								
			ESP	***Retired***	***Retired***											
47	Kutchh Lignite TPS	Gujarat	FGD	Dec-21	Dec-21	Dec-21	Complying									
			ESP	Dec-21	Dec-21	Dec-21	Dec-20									
48	Ukai TPS	Gujarat	FGD	***Retired***	***Retired***	Dec-21	Dec-21	Dec-21	Mar-22							
			ESP	***Retired***	***Retired***	Dec-21	Dec-21	Dec-21	Mar-22							
49	Wanakbori TPS	Gujarat	FGD	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21						
			ESP	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21	Dec-21						
50	Sikka TPS, GSEL	Gujarat	FGD	***Retired***	***Retired***	Jan-22	Jan-22									
			ESP	***Retired***	***Retired***											
51	Mundra TPS, Adani Power	Gujarat	FGD	Dec-22	Dec-22	Sep-22	Sep-22	Jun-22	Mar-22	Complying	Complying	Complying				
			ESP													
52	Sabarmati, Torrent Power	Gujarat	FGD	Dec-22	Dec-22	Dec-22										
			ESP													
53	Surat Lignite TPS, GIPCL	Gujarat	FGD	Complying	Complying	Complying	Complying									
			ESP			Sep-20	Dec-20									
54	Akrimota Lignite TPS	Gujarat	FGD	Complying	Complying											
			ESP	Sep-20	Dec-20											
55	Bhavnagar Lignite TPP	Gujarat	FGD	Complying	Complying											
			ESP													

56	Sabarmati C - TPS, Torrent Power	Gujarat	FGD	***Apr-18***	***Apr-18***											
			ESP	***Apr-18***	***Apr-18***											
57	Mahatma Gandhi TPS, CLP	Haryana	FGD	Dec-19	Dec-19											
			ESP													
58	Indira Gandhi STPP, NTPC	Haryana	FGD	Dec-19	Dec-19	Dec-19										
			ESP	Dec-19	Dec-19	Dec-19										
59	Panipat TPS	Haryana	FGD					***Dec-19***	Dec-19	Dec-19	Dec-19					
			ESP					***Dec-19***		Dec-19	Dec-19					
60	Yamuna Nagar TPS	Haryana	FGD	Dec-19	Dec-19											
			ESP	Dec-19	Dec-19											
61	Rajiv Gandhi TPS	Haryana	FGD	Dec-19	Dec-19											
			ESP	Dec-19	Dec-19											
62	Tenughat TPS	Jharkhand	FGD	Dec-20	Dec-20											
			ESP	Dec-20												
63	Maithon TPP, Tata Power	Jharkhand	FGD	Sep-21	Jun-22											
			ESP													
64	Kodarma TPP, DVC	Jharkhand	FGD	Dec-21	Dec-21											
			ESP													
65	Mahadev Prasad, Adhunik	Jharkhand	FGD	Jun-22	Jun-22											
			ESP													
66	Bokaro A TPS, DVC	Jharkhand	FGD	Jun-22												

			ESP	Jun-22												
67	Chandrapura DVC	Jharkhand	FGD	***Retired***	***Retired***	***Dec-18***				Dec-22	Dec-22					
			ESP	***Retired***	***Retired***	***Dec-18***										
68	Bokaro B TPS, DVC	Jharkhand	FGD	***Retired***	***Retired***	***Dec-20***										
			ESP	***Retired***	***Retired***	***Dec-20***										
69	Patratu TPS	Jharkhand	FGD	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***			
			ESP	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***			
70	Jojobera TPS, Tata Power Co.	Jharkhand	FGD		***Dec-20***	***Dec-20***										
			ESP		***Dec-20***	***Dec-20***										
71	Bellary TPS	Karnataka	FGD	Dec-20	Jun-21	Dec-21										
			ESP													
72	Raichur TPS	Karnataka	FGD	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22					
			ESP	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22					
73	Yermarus TPP, KPCL	Karnataka	FGD	Dec-21	Dec-22											
			ESP		Dec-22											
74	Udupi TPP, Adani Power	Karnataka	FGD	Mar-22	Jun-22											
			ESP													
75	Torangallu TPS Extn, Jindal	Karnataka	FGD	Jun-22	Sep-22											
			ESP	Jun-22	Sep-22											
76	Torangallu TPS, Jindal	Karnataka	FGD	Complying	Complying											
			ESP													
77	Kudgi NTPC	Karnataka	FGD	Jun-22	Sep-22	Dec-22										

			ESP		Sep-22	Dec-22										
78	Seoni TPP, Jhabua	Madhya Pradesh	FGD	Mar-20												
			ESP													
79	Nigri TPP, J.P.V.L	Madhya Pradesh	FGD	Jun-20	Sep-20											
			ESP													
80	Mahan TPP, Essar Power	Madhya Pradesh	FGD	Dec-20												
			ESP													
81	Amarkantak TPS, MPPGCL	Madhya Pradesh	FGD					Mar-21								
			ESP					Mar-21								
82	Sanjay Gandhi TPS	Madhya Pradesh	FGD	Mar-21	Mar-21	Jun-21	Jun-21	Mar-21								
			ESP	Mar-21	Mar-21	Jun-21	Jun-21	Mar-21								
83	Satpura TPS	Madhya Pradesh	FGD						***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Mar-21	Mar-21		
			ESP						***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Mar-21	Mar-21		
84	Shri Singhaji TPP	Madhya Pradesh	FGD	Mar-21	Mar-21											
			ESP													
85	Vindhyachal NTPC	Madhya Pradesh	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Jun-21	Jun-21	Sep-21	Sep-21	Dec-21	Dec-21	Complying
			ESP	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22			Sep-21	Sep-21			
86	Sasan UMTPP, RPL	Madhya Pradesh	FGD	Sep-21	Jun-21	Mar-22	Mar-22	Dec-21	Sep-21							

			ESP													
87	Annupur TPS, MB Power	Madhya Pradesh	FGD	Mar-22	Jun-22											
			ESP													
88	Niwari TPP, BLA Pvt. Ltd.	Madhya Pradesh	FGD	Complying												
			ESP													
89	Bina TPS, BPSCL	Madhya Pradesh	FGD	Complying	Complying											
			ESP													
90	Tata Power Tombay TPS	Maharashtra	FGD					Mar-18			Complying					
			ESP					Mar-18								
91	Chandrapur STPS, Mahagenco	Maharashtra	FGD	***Retired***	***Retired***	Mar-21	Mar-21	Mar-21	Mar-21	Mar-21	Mar-21	Mar-20				
			ESP	***Retired***	***Retired***						Mar-21					
92	Koradi TPS	Maharashtra	FGD					***Retired***	Mar-21	Mar-21	Mar-21	Mar-21	Dec-20			
			ESP					***Retired***		Mar-21			Dec-20			
93	Mouda NTPC	Maharashtra	FGD	Dec-22	Dec-22	Dec-22	Dec-20									
			ESP		Dec-22	Dec-22	Dec-20									
94	Solapur NTPC	Maharashtra	FGD	Dec-20												
			ESP	Dec-20												
95	Tirora TPS, Adani Power	Maharashtra	FGD	Mar-22	Dec-21	Sep-21	Jun-21	Mar-21								

			ESP													
96	Bhusawal TPS	Maharashtra	FGD		***Retired***	Mar-21	Mar-21	Mar-21								
			ESP		***Retired***		Mar-21	Mar-21								
97	Khaperkheda TPS	Maharashtra	FGD	Mar-21	Mar-21	Mar-21	Mar-21	Mar-21								
			ESP	Mar-21	Mar-21	Mar-21										
98	Nasik TPS, Mahagenco	Maharashtra	FGD			Mar-21	Mar-21	Mar-21								
			ESP				Mar-21	Mar-21								
99	Parli TPS, Mahagenco	Maharashtra	FGD			***Retired***	Mar-21	Mar-21	Mar-21	Mar-21	Mar-21					
			ESP			***Retired***	Mar-21		Mar-21	Mar-21	Mar-21					
100	Nashik Rattan India TPS	Maharashtra	FGD	Mar-21	Mar-21	Dec-22	Dec-22	Dec-22								
			ESP	Mar-21	Mar-21	Dec-22	Dec-22	Dec-22								
101	Butibori TPS, Vidarbha IL	Maharashtra	FGD	Jun-21	Mar-21											
			ESP													
102	Wardha Warora TPP, WPCPL	Maharashtra	FGD	Sep-21	Sep-21	Dec-21	Dec-21									
			ESP													
103	Dhariwal TPP	Maharashtra	FGD	Mar-22	Mar-22											
			ESP													
104	EMCO Warora TPS, GMR EEL	Maharashtra	FGD	Mar-22	Mar-22											
			ESP													

105	Dahanu TPS, BSES Ltd.	Maharashtra	FGD	Complying	Complying											
			ESP													
106	JSW Ratnagiri TPP, JSW Energy	Maharashtra	FGD	Complying	Complying	Complying	Complying									
			ESP													
107	Paras TPS	Maharashtra	FGD			Complying	Complying									
			ESP			Mar-21	Mar-21									
108	Mihan TPS, Abhijeet MADC Nagpur Energy Pvt. Ltd.	Maharashtra	FGD	Complying												
			ESP													
109	Bela TPS, Ideal Energy PL	Maharashtra	FGD	Complying												
			ESP													
110	Amravati TPS, Ratan Power	Maharashtra	FGD	Complying	Complying	Complying	Complying	Complying								
			ESP													
111	Gupta Energy P Ltd. Phase-I	Maharashtra	FGD	***Dec-20***	***Dec-20***											
			ESP	***Dec-20***	***Dec-20***											
112	Derang TPP, Jindal IPL	Odisha	FGD	Mar-21	Mar-21											
			ESP													
113	Kamalanga TPS, GMR	Odisha	FGD	Dec-21	Dec-21	Sep-21										
			ESP													

114	IB Valley TPS, OPGCL	Odisha	FGD	Sep-21	Sep-21											
			ESP	Sep-21	Sep-21											
115	IND Barath TPP	Odisha	FGD	Mar-22												
			ESP	Mar-22												
116	Sterlite TPP, Sterlite Energy	Odisha	FGD		Mar-22											
			ESP													
117	Talcher STPS, NTPC	Odisha	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22							
			ESP					Dec-22	Dec-22							
118	Talcher (Old) TPS, NTPC	Odisha	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***							
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***							
119	Goindwal Sahib, GVK Power	Punjab	FGD	Apr-20	Feb-20											
			ESP													
120	Talwandi Sabo TPP	Punjab	FGD	Dec-19	Dec-19	Dec-19										
			ESP													
121	Nabha Power, Rajpura TPP	Punjab	FGD	Dec-19	Dec-19											
			ESP													
122	Guru Hargobind TPS, Lehra Mohabbat	Punjab	FGD	Dec-19	Dec-19	Dec-19	Dec-19									
			ESP	Dec-19	Dec-19	Dec-19	Dec-19									
123	Guru Nanak Dev TPS, Bhatinda	Punjab	FGD	***Retired***	***Retired***	***Retired***	***Retired***									
			ESP	***Retired***	***Retired***	***Retired***	***Retired***									

124	Guru Gobind Singh TPS, Ropar	Punjab	FGD	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***							
			ESP	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***							
125	Chhabra TPP, RRVUNL	Rajasthan	FGD	Dec-21	Oct-21	Aug-21	Aug-21	Apr-20								
			ESP	Dec-21	Oct-21	Aug-21	Aug-21	Apr-20								
126	Kawai TPS, Adani Power	Rajasthan	FGD	Aug-20	Jun-20											
			ESP													
127	Kalisindh TPS	Rajasthan	FGD	Jun-21	Apr-21											
			ESP													
128	Suratgarh TPS	Rajasthan	FGD	Dec-22	Oct-22	Aug-22	Jun-22	Apr-22	Feb-22							
			ESP						Feb-22							
129	Kota TPS	Rajasthan	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Dec-22	Dec-22	Oct-22						
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	Dec-22	Dec-22							
130	Jalipa Kapurdi, JSW Rajwest Power Ltd	Rajasthan	FGD	Complying	Complying	Complying	Complying	Complying	Complying	Complying	Complying					
			ESP	Dec-22	Dec-22	Aug-22	Aug-22	Apr-22	Apr-22	Dec-21	Dec-21					
131	Barsingsar Lignite, NLC	Rajasthan	FGD	Complying	Complying											
			ESP	Aug-20	Apr-20											
132	Giral Lignite TPS, RRVUNL	Rajasthan	FGD	Complying	Complying											
			ESP													
133	North Chennai Expn. TPS	Tamilnadu	FGD	Dec-19	Sep-20											
			ESP													
134	Tuticorin (JV) TPP	Tamilnadu	FGD	Dec-21	Jun-20											

			ESP	Dec-21	Jun-20											
135	TAQA Neyveli TPS	Tamilnadu	FGD		Jun-20											
			ESP													
136	Mettur TPS Extn	Tamilnadu	FGD	Dec-20												
			ESP													
137	Neyveli TPS - I, NLC	Tamilnadu	FGD	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***				
			ESP	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***	***Sep-19***				
138	Neyveli Extn TPS, NLC	Tamilnadu	FGD	Jun-21	Dec-21											
			ESP													
139	Neyveli TPS-2, NLC	Tamilnadu	FGD	Dec-21	Sep-21	Jun-21	Mar-22	Jun-22	Sep-22	Dec-22						
			ESP													
140	Neyveli TPS-2 Expn, NLC	Tamilnadu	FGD	Complying	Complying											
			ESP													
141	North Chennai TPS	Tamilnadu	FGD	Dec-22	Jun-22	Mar-22										
			ESP	Dec-22	Jun-22	Mar-22										
142	Vallur TPP, NTEC	Tamilnadu	FGD	Jun-22	Sep-22	Dec-22										
			ESP													
143	Muthiara TPP, Coastal Energen	Tamilnadu	FGD	Sep-22	Dec-22											
			ESP													
144	M/s IL & FS Tamil Nadu Power Company Ltd.	Tamilnadu	FGD	Complying	Complying											
			ESP													

145	Mettur TPS	Tamilnadu	FGD	Complying	Complying	Complying	Complying									
			ESP	Mar-21	Jun-21	Sep-21	Dec-21									
146	Ennore TPS, Tangedco	Tamilnadu	FGD	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***								
			ESP	***Retired***	***Retired***	***Retired***	***Retired***	***Retired***								
147	Tuticorin TPS, Tangedco	Tamilnadu	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***								
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***								
148	Tuticorin (P) TPS, IND Barath	Tamilnadu	FGD	***Dec-20***	***Dec-20***											
			ESP	***Dec-20***	***Dec-20***											
149	Singareni TPP, SCCL	Telangana	FGD	Dec-19	Sep-19											
			ESP													
150	Kothagudem TPS	Telangana	FGD	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-20***	***Dec-20***	Sep-19		
			ESP	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-19***	***Dec-20***	***Dec-20***	Sep-19		
151	Kakatiya TPS, TSGENCO	Telangana	FGD	Mar-20	Jun-20											
			ESP	Mar-20												
152	Ramagundam STPS, NTPC	Telangana	FGD	Mar-22	Mar-22	Jun-22	Jun-22	Sep-22	Sep-22	Dec-22						
			ESP		Mar-22		Jun-22	Sep-22	Sep-22	Dec-22						
153	Ramagundem-B TPS, TSGENCO	Telangana	FGD	***Dec-19***												
			ESP	***Dec-19***												
154	Dadri NCTPP, NTPC	Uttar Pradesh	FGD	Dec-19	Dec-19	Dec-19	Dec-19	Dec-19	Dec-19							

			ESP													
155	Prayagraj TPP, PPGCL	Uttar Pradesh	FGD	Apr-20	Jun-20	Feb-20										
			ESP			Feb-20										
156	Unchahar TPS, NTPC	Uttar Pradesh	FGD	Dec-22	Dec-22	Oct-22	Oct-22	Apr-22	Aug-20							
			ESP	Dec-22	Dec-22	Oct-22	Oct-22	Apr-22	Aug-20							
157	Lalitpur TPS, LPGC	Uttar Pradesh	FGD	Dec-20	Feb-21	Oct-21										
			ESP													
158	Rihand NTPC	Uttar Pradesh	FGD	Feb-22	Dec-21	Oct-21	Apr-21	Feb-21	Dec-20							
			ESP	Feb-22	Dec-21	Oct-21	Apr-21									
159	Singarauli NTPC	Uttar Pradesh	FGD	Dec-21	Dec-21	Aug-21	Aug-21	Apr-21	Feb-21	Dec-20						
			ESP	Dec-21	Dec-21	Aug-21	Aug-21	Apr-21	Feb-21	Dec-20						
160	Anpara TPS, UPRVUNL	Uttar Pradesh	FGD	Oct-22	Aug-22	Jun-22	Apr-22	Feb-22	Jun-21	Apr-21						
			ESP	Oct-22	Aug-22	Jun-22	Apr-22	Feb-22		Apr-21						
161	Rosa TPP Ph-1	Uttar Pradesh	FGD	Dec-21	Dec-21	Oct-21	Oct-21									
			ESP	Dec-21	Dec-21											
162	Harduaganj TPS	Uttar Pradesh	FGD					***Retired***		***Dec-19***	Dec-19	Dec-19				
			ESP					***Retired***		***Dec-19***						
163	Parichha TPS	Uttar Pradesh	FGD	***Dec-20***	***Dec-20***	Apr-22	Apr-22	Feb-22	Dec-21							

			ESP	***Dec-20***	***Dec-20***	Apr-22	Apr-22	Feb-22	Dec-21							
164	Obra TPS	Uttar Pradesh	FGD	***Retired***	***Retired***					***Dec-20***	***Dec-20***	Aug-22	Oct-22	Dec-22	Jun-22	Apr-22
			ESP	***Retired***	***Retired***					***Dec-20***	***Dec-20***		Oct-22	Dec-22	Jun-22	Apr-22
165	Anpara C TPS, Lanco Power	Uttar Pradesh	FGD	Aug-22	Jun-22											
			ESP													
166	Panki TPS, UPRVUNL	Uttar Pradesh	FGD			***Dec-18***	***Dec-18***									
			ESP			***Dec-18***	***Dec-18***									
167	Barkhera TPS, Bajaj Power Co.	Uttar Pradesh	FGD	Complying	Complying											
			ESP	Sep-21	Mar-21											
168	Khambarkheda TPS, Bajaj Power Co.	Uttar Pradesh	FGD	Complying	Complying											
			ESP	Sep-21	Sep-21											
169	Kundarki TPS, Bajaj Power Co.	Uttar Pradesh	FGD	Complying	Complying											
			ESP	Sep-21	Mar-21											
170	Maqsoodpur TPS, Bajaj Power Co.	Uttar Pradesh	FGD	Complying	Complying											
			ESP	Sep-21	Mar-21											
171	Utraula TPS, Bajaj Power Co.	Uttar Pradesh	FGD	Complying	Complying											
			ESP	Sep-21	Mar-21											

172	Tanda TPS, NTPC	Uttar Pradesh	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
173	Sagardighi TPS, WBPDC	West Bengal	FGD	Dec-20	Mar-21	Mar-22	Mar-20									
			ESP	Dec-20	Mar-21											
174	Kolaghat TPS	West Bengal	FGD	Jun-22	Mar-21	Sep-21	Mar-22	Jun-21	Dec-21							
			ESP	Jun-22	Mar-21	Sep-21	Mar-22	Jun-21	Dec-21							
175	Durgapur Steel TPS, DVC	West Bengal	FGD	Jun-21	Jun-21											
			ESP													
176	Mejia TPS, DVC	West Bengal	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Sep-21	Sep-21					
			ESP	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Sep-21	Sep-21					
177	Southern REPL TPS, CESC	West Bengal	FGD	Mar-22	Dec-21											
			ESP													
178	Santaldihi TPS	West Bengal	FGD	***Retired***	***Retired***	***Retired***	***Retired***	Mar-21	Dec-21							
			ESP	***Retired***	***Retired***	***Retired***	***Retired***	Mar-21	Dec-21							
179	D.P.L TPS	West Bengal	FGD			***Retired***	***Retired***	***Retired***	Mar-22	Jun-22						
			ESP			***Retired***	***Retired***	***Retired***	Mar-22	Jun-22						
180	D.P.L Exn. TPS	West Bengal	FGD								Mar-22					
			ESP								Mar-22					

181	Raghunathpur TPP, DVC	West Bengal	FGD	Mar-22	Mar-22											
			ESP													
182	Budge-Budge TPS, CSEC	West Bengal	FGD	Dec-22	Dec-22	Dec-22										
			ESP													
183	Titagarh TPS, CSEC	West Bengal	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***									
184	Haldia TPP, Haldia Energy Ltd	West Bengal	FGD	Dec-22	Dec-22											
			ESP													
185	Farakka STPS, NTPC	West Bengal	FGD	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22	Dec-22							
			ESP	Dec-22			Dec-22	Dec-22	Dec-22							
186	Bakreshwar TPS, WBPDCL	West Bengal	FGD	Complying	Complying	Complying	Complying	Complying								
			ESP													
187	Durgapur TPS, DVC	West Bengal	FGD			***Retired***	***Dec-20***									
			ESP			***Retired***	***Dec-20***									
188	Bandel TPS, WBPDCL	West Bengal	FGD	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***								
			ESP	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***	***Dec-20***								
189	India Power TPP, Bishagarh Power Co.	West Bengal	FGD	***Dec-20***												
			ESP	***Dec-20***												

Note:

1. TPPs with Timeline mentioned in normal character were issued directions on 11.12.2017.

2. TPPs with Timeline/ Retirement status mentioned with BOLD & ITTALIC character were issued directions on 06.04.2018.

3. Directions u/s 5 of EPA have been issued to all the units notified as Retired to remain closed.

4. Compliance status of TPPs/Units mentioned as Complying is claimed by TPPs/Units, which is subject to verification.

Annexure 8.11

File No. 293/8/2017-Wind
Government of India/ भारत सरकार
Ministry of New and Renewable Energy/ नवीन और नवीकरणीय ऊर्जा मंत्रालय
(Wind Power Division)
****

Block No.14, CGO Complex,
Lodhi Road, New Delhi – 110 003
Dated: 01.03.2018

OFFICE MEMORANDUM

Subject: Compliance of WTG models to applicable CEA Technical standards for Connectivity to the Grid (as amended from time to time) as stipulated in the MNRE Guidelines/ procedure for Revised List of Models and Manufacturers (RLMM)- Reg.

The issues and difficulties faced by WTG manufacturers to obtain Statement of Compliance (SoC)/ Conformity Statement (CS) for demonstrating the compliance of applicable CEA Technical standards for Connectivity to the Grid (as amended from time to time) for their WTG models within the stipulated time were examined by this Ministry and the following course of action would be adopted for WTG models which were unable to get LVRT compliance certificate from accredited testing agencies:

1. Self-Certification for compliance of CEA technical Standard will be accepted for the inclusion of WTG manufacturers/ models in the RLMM list until 31.03.2019 for all the wind turbine models irrespective of the capacity subject to the following conditions:

   a. Concerned WTG manufacturers may apply for LVRT testing to any internationally accredited testing body or National Institute of Wind Energy (NIWE) by 15th March 2018, which should include the following:
      i. An affidavit that the manufacturer would comply with CEA Technical standards for Connectivity to the Grid by 31.03.2019
      ii. A bank guarantee of Rs. 1 Crore per model, which would be returned on producing the Compliance Certificate for LVRT and other technical standards as stipulated by CEA.

      A copy of the above mentioned application may also be sent to MNRE.

   b. WTG models for which the manufacturers had provided the self-certification must obtain a certificate from NIWE, Chennai for demonstrating the compliance of applicable CEA Technical standards for Connectivity to the Grid (as amended from time to time); NIWE will carry out the lab simulation for each of the WTG model testing their capabilities of complying to applicable standards and issue a certificate to that effect.
   c. During the self-certification period, RLMM list will have two tables; one for wind turbines having valid SoC/CS as per CEA technical standards as stipulated in MNRE guidelines and another table for the wind turbines for which self-

certification along with NIWE's simulation results confirming compliance of CEA technical standards.

d. Based on report of MNRE/ NIWE/ any authorised agency of MNRE for monitoring of compliance to LVRT and related standards, if it is noted that the OEM has submitted the wrong declaration of self-certification then,
   i. The wind turbines connected to wind farm will be disconnected
   ii. The OEM will be barred from installing turbines in India for the period of five years
   iii. Penalty to an extent of Rs. 2 Crores will be imposed.

2. The Stall regulated wind turbines and the wind turbines with capacity of less than 500 kW which are connected at voltage level at 22 kV/ 11 kV and below, in the distribution generation (part of mixed feeder) are exempted from submitting SoC/ CS for demonstrating their compliance to CEA Technical standards for Connectivity to the Grid (as amended from time to time) as stipulated in the MNRE guidelines/ procedure including LVRT requirements.

3. This issues with the approval of Competent Authority.

13/2018

(B.K. Panda)
Director (Wind)

To,

All the Concerned

Copy for information to:

1. PS to Hon'ble Minister
2. Sr.PPS to Secretary
3. PPS to Additional Secretary
4. JS &FA/ JS (BPY)
5. DG, NIWE
6. Director (GU)/ Director (BKP)/ Director (NIC) to upload in MNRE website
7. Scientist 'C'(AHB)/ Scientist 'C'(PKD)

Annexure 8.14

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)

पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : Ist Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in,Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ.सं.: POSOCO/NLDC/Primary Response/ 282

दिनांक: 12th Oct 2018

सेवा में,

प. क्षे. वि. स. मुंबई /WRPC
आवक संख्या /Inward No. 1965
दिनांक /Date: 23/10/18

सचिव,
केन्द्रीय विद्युत विनियामक आयोग,
तीसरा तथा चौथा तल,
चंद्रलोक भवन, 36 जनपथ,
नई दिल्ली-110001

विषय: Regarding: ***Testing of primary frequency response of generators as per IEGC clause 5.2(g)***

संदर्भ: Indian Electricity Grid Code (Fifth Amendment) Regulations, 2017 dated 12th April 2017

Dear Sir,

The Hon'ble Commission, vide notification dated 12th April 2017, had notified Indian Electricity Grid Code (Fifth Amendment) Regulations, 2017. As per this notification "The following proviso shall be added at the end of Regulation 5.2 (g) of Part 5 of the Principal Regulations:
"*Provided that periodic checkups by third party should be conducted at regular interval once in two years through independent agencies selected by RLDCs or SLDCs as the case may be. The cost of such tests shall be recovered by the RLDCs or SLDCs from the Generators. If deemed necessary by RLDCs/SLDCs, the test may be conducted more than once in two years.*"

In compliance to the regulation mentioned above, National Load Despatch Centre (NLDC) on behalf of RLDCs has formulated a procedure for carrying out the primary frequency response tests. The notice inviting Expression of Interest (EOI) from interested agencies was released in leading daily newspapers of 1st October 2018 and 3rd October 2018 edition of Indian Trade Journal (ITJ). The modus operandi for carrying out tests is enclosed at Annexure. As this is the first of its kind exercise in the country, it has taken some time. This is for kind information for the Hon'ble Commission and further directions, if any, in the matter.

सधन्यवाद

भवदीय

एस आर नरसिम्हन

(एस आर नरसिम्हन)
कार्यपालक निदेशक(रा.भा.प्रे.के.)

संलग्न: उपरोक्त अनुसार

प्रतिलिपि सूचनार्थ:

For briefing pl.
SE(Opn)
22/10/2018

1. सदस्य-सचिव, उ./द./प./पू./उ.पू. क्षे.विद्युत समीति
2. कार्यपालक निदेशक, उ./द./प./पू./उ.पू. भा.प्रे.कें.
3. मुख्य अभियंता (स्म.पी.सी.)