SPEED POST

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Government of India
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
पश्चिम क्षेत्रीय विद्युत समिति
Western Regional Power Committee
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सं :पक्षेविस /21वी पक्षेविस बैठक/ सहा सचिव/ 2012 11757 दिनांक : 13 दिसम्बर DEC 2012
No. WRPC/21st WRPC Mtg./AS/2012/ Date :

सेवा में, /To,

(संलग्न सूची के अनुसार)
(As per enclosed list)

विषय : पश्चिम क्षेत्रीय विद्युत समिति की इक्कीसवीं बैठक की कार्यवृत
Sub.: Minutes of the 21st meeting of Western Regional Power Committee

महोदय/Sir,

इस पत्र के साथ 9 नवम्बर 2012 (शुकवार) को रायपुर में आयोजित पश्चिम क्षेत्रीय विद्युत समिति की इक्कीसवी बैठक एवं इससे पहले 8 नवम्बर 2012 (गुरूवार) को आयोजित तकनिकी समन्वयन समिति की बैठक की कार्यवृत संलग्न है।

Please find enclosed herewith the Minutes of the 21st meeting of Western Regional Power Committee held on 9TH November 2012 (Friday) preceded by TCC meeting on 8th November 2012 (Thursday) at Raipur for your needful.

भवदीय/Yours faithfully,

संलग्न :उपरोक्तानुसार

Encl: As Above

(सु द टाकसान्डे/ S D Taksande)
सदस्य सचिव(प्र)/Member Secretary(I/c)

भारत सरकार

Government of India

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

पश्चिम क्षेत्रीय विद्युत समिति

WESTERN REGIONAL POWER COMMITTEE

प क्षे वि स की दिनांक 9 नवम्बर 2012 को रायपुर में आयोजित 21 वी बैठक की कार्यवृत

MINUTES OF 21st MEETING OF WRPC HELD ON 9TH NOVEMBER 2012 AT RAIPUR

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MUMBAI

C O N T E N T S

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MINUTES OF THE 21ST MEETING OF WESTERN REGIONAL POWER COMMITTEE HELD ON 9TH NOVEMBER 2012 AT RAIPUR

The 21st WRPC meeting was held on 9th November 2012 at Raipur preceded by the TCC meeting on 8th November 2012 . The WRPC and TCC meetings were hosted by CSPTCL. The list of participants is enclosed at Annex -I

Shri G S Kalsi, MD, CSPTCL welcomed the participants to the meeting. He informed that the portfolio of power in Chhattisgarh is being looked after by the Hon'ble Chief Minister of Chhattisgarh and emphasis on the power system planning and development takes place under the able leadership of the Dr. Raman Singh, Hon'ble Chief Minister of Chhattisgarh state. In spite of dense forests, about 97.5 % of populated villages is under electrification. MOU for capacity addition of about 48000 MW with IPPs have been signed. About 15000 MW of capacity is likely to be added by 2013-14 in addition to 4000 MW of state generation. The transmission capacity is being planned by state planners in consultation with CEA and CTU. The tariff for power in the Chhattishgarh state is one of the lowest in the country. He hoped that the deliberations of WRPC meeting would be fruitful and conductive.

For the information of the delegates attending the WRPC meeting, Shri G C Mukherjee CE(Comml), CSPDCL gave a brief presentation on the growth of power system in the state since the formation of Chhattisgarh state in November 2000. He informed that the PLF of thermal units has gone up from 65.7% to 80.8%, a noticable achievement considering the fact that thermal units are very old. By June 2013, three 500 MW units are expected to be commissioned. The number of 400,220 and 132 kV substations had gone up from 26 in Nov 2000 to 71 in March 2012. During this period the maximum demand has gone up by 149% from 1334 MW. The number of agricultural pumps has increased by 293%, the number of HT consumers increased from 530 to 1920 (262%) and BPL connection has increased to 112%. The per capita consumption of electricity has gone up from 300 kwh to 1547 kwh during the above period signifying tremendous growth of the state. He informed that under SAP-ERP modules, LT and HT billing, financial accounting and Controlling, material management and human resources and pay Roll are implemented. Further he informed that a number of IPPs projects are being executed and by end of the 13th

Five year Plan, the state would have capacity addition of around 27518 MW from 23 projects.

Member Secretary, WRPC informed that Shri Ajoy Mehta, MD MSEDCL & Chairman WRPC could not make himself available for today's meeting due to some important work at Mumbai and requested Shri U G Zalte, Director MSETCL & Chairman TCC to chair the 21st WRPC meeting. Shri U G Zalte kindly agreed for the same.

Shri U.G.Zalte, Director, MSETCL thanked the host for making excellent arrangements for the delegates attending the meeting. He expressed that in view of the grid disturbances that rocked the nation on 30th and 31st July 2012, has posed new challenges and many lessons are to be learnt. It is very much important to maintain grid discipline and also ensure that all defense mechanisms are in place. There is a need to use newer technology like WAMS in grid operation. Also system load dispatchers responsibilities as well as complexities of market are increasing. On the other hand a number of lines are kept open for controlling high voltages. Also generation is getting bottled up due to congestion which should be addressed so that system operates not only with safety but also optimally utilizing all the assets. He appreciated the tremendous improvement in the increase of PLF of Chhattishgarh generators and also taking very good care of both rural and urban consumers in the state.

Thereafter he requested Shri S.D.Taksande, Member Secretary I/c, WRPC to take up the agenda items of 21st WRPC meeting for discussion.

Shri S.D.Taksande, Member Secretary I/c, WRPC thanked the hosts for making excellent arrangements for the stay. He stated that this is first WRPC meeting after the recent grid disturbances of 30th & 31st July , 2012 and so number of important decisions are to be taken during the meeting. Agenda is basically focused on these issues.

Further Member Secretary I/c WRPC welcomed the following new TCC and WRPC members :

TCC Members:

1. **MP(SLDC):**
   Shri P A R Bhende, CE(SLDC), MP
2. **CHATTISHGARH GENCO**
   Shri A K Saxena, Executive Director (O&M Gen.),
3. **CHATTISHGARH Discom**
   Shri G C Mukhergi, C E (Comml),
4. **Maharashtra SLDC**
   Shri Sanjay T Shinde Chief Engineer (LD),
5. **CEA**
   Shri Dinesh Chandra, Chief Engineer (I/c)
6. **MSEDCL**
   Shri N K Deore, Director (Operation),MSEDCL.

WRPC Members:

1 **MAHAGENCO** - Shri Ashish Sharma IAS, CMD, Maharashtra State Electricity Generation Co.

2 **Member representing IPPs having installed capacity of 1000 MW and below:**
Shri Ramniwas, Executive Vice President (Gen.), Jindal Power Ltd Tamnar, Raigarh.

3 **MP(SLDC):**
Shri P A R Bhende, CE(SLDC), MP

4 **Maharashtra SLDC**
Shri Sanjay T Shinde Chief Engineer (LD),

Member Secretary I/c, WRPC also expressed his gratitude to following outgoing TCC and WRPC members for their immense contribution to TCC/WRPC forums during their tenure with.

TCC Members:

1. **CEA**
   Shri B K Jain, Chief Engineer (GM), CEA
2. **MP(SLDC):**
   Shri A.P.Bhairve, Director, MPGENCO
3. **CHATTISHGARH GENCO**
   Shri N.S.Rawat, Chief Engineer (O&M Gen.),
4. **CHATTISHGARH Discom**
   Shri S.D.Diwan, Executive Director (O&M),
5. **Maharashtra SLDC**
   Shri P.R.Deore Chief Engineer (LD),
6. **MSEDCL**
   Shri S.K.Dabhade, Director (Operation),MSEDCL.

WRPC Members:

1 **MAHAGENCO -** Shri Subrat Ratho IAS, MD, Maharashtra State Electricity Generation Co.

2 **MP(SLDC):**
Shri A.P.Bhairve, Director, MPGENCO

3 **Member representing of IPPs having installed capacity of 1000 MW and below for the Year 2012-13:**
Raigarh.Shri P.K.Chakraborty, Executive Director (Gen.), Jindal Power Ltd Tamnar

4 **Maharashtra SLDC**
Shri P.R.Deore Chief Engineer (LD),

ITEM No.1: CONFIRMATION OF THE MINUTES OF THE 20th MEETING OF WRP COMMITTEE

Minutes of 20th meeting of WRP Committee held on 18.05.2012 at Indore were forwarded to the members vide letter No. WRPC/20th WRPC Mtg./AS/2012/ 6041 dated 18.06.2012.

As regards to comment of PGCIL on C.O.D. of 400 kV Korba-Birsingpur line, MS intimated that minutes are in line with discussion of 20th WRPC meeting. However issue is states for discussion in the agenda and would be discussed as requested. PGCIL agreed to the same.

WRP Committee confirmed the minutes without any modifications.

Item No. 2 : Grid disturbance on 30/31.07.2012

During the TCC meeting, Member Secretary I/c informed that on 30th July, 2012, there was a grid disturbance in the NEW grid on 30th July 2012 at 02:33:11 hrs that led to the separation of the NR grid from the rest of the NEW grid (WR-ER-NER) and eventually NR system collapsed. WR, ER and NER systems survived. The following day on 31st July 2012 at about 1300 hrs, another grid disturbance took place in which ER, NER and NR systems separated from WR. Subsequently NR, ER and NER systems collapsed. WR system survived. Also due to power ramping on HVDC to SR and AUFLS operation SR, SR also survived.

He further stated that an Enquiry Committee headed by Shri A. S. Bakshi, Chairperson, CEA was appointed to look into the incident. The Committee submitted

its report to MOP on 16th August 2012. A number of recommendations were made by the above Committee. He requested members to look into the above reports for details of the incident. However before proceeding to the recommendations and its implementation in WR, which was the next agenda item, he requested Shri Satyanarayan. S, SE(O), WRPC to make a brief presentation on the above disturbances for the benefit of the members and understand background of recommendation so that proper discussion could be evolved.

SE(O), WRPC explained in brief the disturbances on both days. In both the incidents, the pre fault conditions were similar. A number of 400 kV lines of NR-WR corridor were out in the NEW grid. Upon loss of critical 400 kV Bina-Gwalior line on Zone 3 load encroachment, which was the only effective major link connecting the two systems the NR system experienced loss of synchronism with WR,ER and NER grids on the first day and separated and collapsed. On the second day also in addition to NR separation, ER, NER got separated from WR. Frequency in WR shot up to 51.45 Hz. In WR, there was reduction of generation from RGMO and some units tripped. Also power ramping to SR of around 300 MW took place which not only helped WR but also helped in to stabilize SR system. Adequate relief from defense mechanism in NR on the first day and from NR,ER and NER on the second day was not available.

The full report is available at MOP and CEA websites.

WRPC noted the same.

Item No. 3 : Recommendations of Enquiry Committee on grid disturbance on 30/31.07.2012

During the TCC meeting, Member Secretary I/c, WRPC stated that while all recommendations are important and are to be implemented, only those recommendations where the onus of implementation is identified with RPC, CTU and STU and requiring their necessary co-ordination are taken up for discussion here.

Protection Audit:

Member Secretary I/c, WRPC informed that as per information available, POWERGRID had carried out protection audit of about 40 stations in NR and one station (Bina) in WR. POWERGRID wanted to do the protection audit in WR but subsequently has taken up the matter with CERC for guidance regarding proceeding further. He asked if POWERGRID representatives could confirm whether they are taking up protection auditing in WR. However it could not be confirmed by the

POWERGRID representative during the meeting. Member Secretary I/c, WRPC, then with the permission of the Chair, took up for discussing other alternatives regarding protection audit for discussion.

(i) He informed that in Southern Region, a group of engineers comprising representatives from major utilities and RPC was formed, who would perform the protection audit. He suggested for forming similar group in WR.

(ii) The second Option was that protection auditing may be carried out by utilities on their own funds, involving experts like CPRI and PRDC which will be deemed as third party audit.

(iii) Utilities can carryout Protection Audit on their own and get it vetted by WRPC, to give a status of third party to begin with.

He requested the members to deliberate on this issue.

Shri Kelkar, ED, MSETCL informed that MSETCL is processing protection audit proposals from PRDC and CPRI and would finalise the same shortly. Since protection auditing for all stations in MSETCL is a huge task, this would be taken up on a pilot basis for a couple of stations first and then the protection audit for all stations can be conducted subsequently.

TCC recommended that Option 2 & 3 may be taken up. Member Secretary I/c, WRPC informed that the details of action plan for implementation of recommendations will be deliberated in the meeting to be held on 29th November 2012 and requested constituents to come with an Action Plan for the Protection Auditing for their System.

WRP Committee agreed to the above.

Other Recommendations:

Member Secretary I/c, WRPC informed that Action Plan for implementing recommendations of Review of Zone 3 philosophy and techniques to identify load encroachment vis-à-vis fault and use of WAMS technology for protection required detail discussion considering the complexity of issues involved. This issue along with other recommendations will be taken up for discussion in the meeting to be held on 29th November 2012.

TCC recommended the same.

WRP Committee agreed to the above.

Coordination of Line Outage Planning:

Member Secretary I/c, WRPC informed that planned line outages both inter state/intra-state and inter utility are coordinated in OCC forum of WRPC and inter regional outages are coordinated by RLDC/NLDC and RPC is also involved and as such this recommendation is deemed to have been implemented.

TCC/ WRPC noted the same.

As regards to other recommendation of enquiry committee, Member Secretary, WRPC informed that a special meeting would be conveyed on 29th, November to review action plan for implementation of all the relevant recommendations.

Item No. 4 : Recommendations of group on UF defense mechanism, Black start, RGMO/FGMO in WR

MS I/c WRPC, informed that after the disturbance on 30th/31st July 2012, a special meeting was held on 7th August 2012 under the Chairmanship of Shri Ajoy Mehta, Chairman, WRPC wherein Chairman WRPC, pointed out that on both the days Western Region survived but not due to any designed defense mechanism action but by chance. The participants deliberated various issues in detail. Chairman, WRPC formulated a group comprising of Shri U. G. Zalte, Director(Operations), MSETCL and Chairman, TCC, Shri S. D. Taksande, Member Secretary (I/c), WRPC and Shri P. Pentayya, GM, WRLDC, POSOCO to look into the following aspects :

(i) Review of AUFLS and its performance

(ii) Review of Generation control though governor mode of operation

(iii) Review of Black start facilities preparedness of stations

(iv) Review of communication facilities

Accordingly, the group discussed the above issues in a special session of the PCM forum of WRPC which was Chaired by Shri Arvind Singh, CMD, MSETCL at Pune on 7th Sep. 2012.

The report of the group is available on website of WRPC.

The **major recommendations** of the said Committee Report is given below :

<u>Review and implementations aspects Automatic Under Frequency Load Shedding (AUFLS) scheme and (df/dt) scheme</u>

4.1 The existing AUFLS scheme was revised by the Committee which now takes care of seasonal load variations on feeders, frequency/voltage dependence of load. At each stage of full operation of the AUFLS, 1 Hz rise in frequency is anticipated and WR share of AUFLS works out as follows:

Constituent	At 48.8 Hz (MW)	At 48.6 Hz (MW)	At 48.2 Hz (MW)	Total (MW)
Gujarat	380	384	389	1153
MP	224	226	229	679
Chhattisgarh	96	97	98	292
Maharashtra	572	579	585	1737
Goa	14	15	15	44
DD	9	9	9	27
DNH	20	20	20	60
WR	1315	1330	1345	3990

4.2 The df/dt scheme for load shedding which is existing was reviewed and the Committee recommended the scheme/settings are appropriate and no revision was envisaged. The same is given for reference below:

Stage	Settings Hz/Hz / sec	Recommended Load relief MW	Implemented Load Relief MW				
		WR	GETCO	MPPTCL	MSETCL	CSPTCL	TPC
Stage-I	49.9 Hz/ 0.1	2000	1006	361	546	27	60
Stage-II	49.9 Hz/ 0.2	2000	905	355	621	37	82
Stage-III	49.9 Hz/ 0.4)	2472	1001	392	686	120	273
	TOTAL	6472	2912	1108	1853	184	415

4.3 AULFS relay setting should be similar across all Regions and shall be periodically checked. It was understood that ER had different setting but now ER has also undertaken to revise its settings on par with other regions. Other recommendation of AULFS is given below:

- Feeders identified for planned/distress load shedding should be different than those identified for AULFS. Also, feeders identified for different stages of AULFS should be different.

- Feeder for emergency services viz. Airports, Railways, Hospitals, Important Buildings, Mines etc. should be separate from rural, agricultural, urban feeders so as to ensure availability of emergency services even under disturbance conditions.
- Load shedding actual relief obtained from other regions should also be discussed in the Monthly OCC meetings after sharing of load shedding data inter-RPCs.
- Existing df/dt scheme has proven to be working satisfactorily in past and hence no changes is required to be made in the scheme.

Generation control through Governor mode

4.4 Committee recommended bringing in complete eligible capacity under RGMO for effectively acting as the safety net in the event of system disturbances.

Review of Black Start/restoration facilities

4.5 Committee recommended that as per the clause no 4.2(f) of the IEGC all thermal generating units of 200 MW and above and all hydro units of 10 MW and above, which are synchronized with the grid, irrespective of their ownership, shall have their governors in operation at all times. Committee recommended carrying out the black start exercise in all units as per schedules finalised.

4.6 Committee felt that the islanding schemes which are presently non functional could be restored back. Also Islanding schemes for State capitals viz. Bhopal & Raipur and other important cities need to be developed expeditiously.

4.7 Committee recommended for identification of certain thermal units and captive power plant (more than 100 MW) for extension of start up power for restoration. Committee recommended for expeditious completion of Islanding schemes for important power stations including CPP's to be finalised by SLDC/RLDC/RPC.

4.8 The Committee recommended to provide synchronizing facilities at some identified stations in each State at 220 kV/132 kV black start paths where part systems can be integrated, speeding up the restoration process. Also, provision of numerical relays along black start path for enabling measurement of voltage magnitudes and angular separation at multiple locations needs need to be ascertained.

Review of Communication facilities

4.9 Committee appreciated the suggestion of WRLDC for issuance of messages under two additional categories namely ALERT and SOS from their control room under emergency conditions of the grid. It is suggested that nature of emergency may be specified as for as possible in Alert/SoS message for better understanding by SLDCs.

4.10 The Committee noted the following enhancements of speech and data communication:

a) Changing of overhead fiber from underground fiber at Jambuva-Asoj link in Gujarat.

b) Extension of optic fiber at Bhilai-Raipur city for SLDC operation shifting from Bhilai to Raipur.

c) Terminal equipment capacity enhancement at Jabalpur & Itarsi for more channels.

d) Leased circuit for

(i) Jabalpur SLDC-WRLDC

(ii) Gotri SLDC-WRLDC

(iii) Raipur SLDC-WRLDC(under commissioning)

e) Leased circuit from Kalwa SLDC-WRLDC (under process)

f) Protection path from Asoj to WRLDC through other circuit (under process)

4.11 Committee recommended expeditious placement of award and supply of Video Conferencing equipment at all Load Despatch Centres in the region.

4.12 Committee recommended that any further suggestions from the constituents could also be intimated for inclusion in the master communication plan.

4.13 Committee also recommended to use the internet based audio/video facilities viz. Skype, face book etc. which are free of cost and readily available to everybody for communicating during normal course and during disturbance.

4.14 Committee also recommended the operator conversation has be to clear and mutually understandable terminology.

4.15 The system visualization should be able to detect the system splitting/islanding etc.

TCC recommended the acceptance of Zalte Committee recommendations to WRPC.

WRPC accepted the report and suggested for early action as regard to implementation of recommendations.

Item No. 5 Other Recommendations (of Zalte Committee)

A. Defense Mechanism for high frequency

Member Secretary(I/c) informed that following units were identified for automatic tripping at high frequency (51.5 Hz) to help arresting the rise of frequency in case of islanding of WR from rest of NEW grid

1. KSTPS-7 (500 MW) 2.VSTPS-7 (500 MW) 3. CGPL-10 (830 MW)

It was enquired whether some study has been carried out for identification of these units.

WRLDC confirmed that identification of above units were done after the detailed study.

During the TCC meeting Member Secretary I/c WRPC, informed that in the PCM meeting held in 7th September 2012 in Pune, different utilities are adopting different high frequency trip settings with different time delays and there was not surety of tripping of these units of generators. He informed that the intention of the Zalte committee was to identify three units, checked by simulation studies, which would definitely trip at 51.5 Hz.

Shri P.Pentayya, GM, WRLDC informed that at present Governor Response is also not adequate. GM, WRLDC added that these machines were identified after doing extensive studies on post tripping load flows. On 31st WR was thrown out of the NEW grid and WR survived. By tripping three units, this is the best for WR to survive under such cases of isolation. Once governor response on RGMO / FGMO improves these high frequency tripping scheme of generators can be taken up for review.

Shri Sen, GM(OS), NTPC, Mumbai informed that NTPC have certain observation for selecting NTPC units and same were given to WRPC just recently(letter enclosed at **Annexure-5**). He explained the observation and requested for exclusion of these units for tripping at 51.5 Hz.

SE(O), WRPC informed that the runaway frequency to 51.5 Hz is a rare event that shall come only when WR isolates from the rest of the grid. Tripping of 1500 MW under such circumstance would ensure the survival of WR system.

Member Secretary I/c WRPC requested NTPC to adopt the above settings as it is to take care of rarest situation and also assured that the scheme would help WR to survive in case WR separates from NEW Grid and this would be reviewed when Governor response improves.

TCC recommended the above.

During the WRPC meeting, ED(Commercial),NTPC WR stated that the matter regarding tripping of NTPC units Korba-7 and VSTPS-7 was discussed by the NTPC Corporate and in the opinion of NTPC high frequency situation does not warrant a tripping of the unit. He informed that the machine will be fully unloaded by governor action and if further discussions are required the same can be discussed in the 29th November 2012 mmeting.

Member Secretary I/c WRPC stated that the matter was discussed in detail in TCC meeting and requested NTPC to adopt high frequency tripping as suggested.

GM, WRLDC queried when the frequency was 51.5 Hz the loading should be reduced by 60%, whether this took place. NTPC did not clarify the issue in the meeting.

Chairperson of WRPC meeting stated that NTPC has not done the study in consultation with WRLDC. He stated that the Committee had proposed the scheme to trip units as a plan to save WR grid and not leave it to chance. Otherwise the entire nation could have gone dark. He requested NTPC to agree to the recommendations regarding tripping of units as identified after studies. NTPC requested to present their technical points on the meeting to be held on 29th November 2012.

WRPC recommended for tripping of these units at 51.5 Hz. However NTPC desired further discussion on 29th November meeting.

B. SPS for Agra -Gwalior

Committee recommended following Units in WR were to be considered for backing down to the tune of 500 MW in the event of tripping of Agra-Gwalior lines and Bina-Gwalior lines :

i) Korba, Sipat, Vindhyachal STPS to control power flow towards ER
ii) CGPL & SSP* to control power flow in Zerda-Bhinmal-Kankroli lines
iii) JP Bina to control power flow in Bina-Mehgaon-Gwalior lines &
iv) ISP* to control power flow in Badod-Kota-Modak lines

**Since SSP and ISP are hydro units and may not be always available, Committee recommended backing down at Korba, Sipat, Vindhyachal, CGPL and JP Bina.*

GM, WRLDC clarified that 500 MW is total backing down required from five units.
GM, NTPC stated that NTPC units are participating in RGMO. He stated that CERC norms require generation backing down from short term, then medium term and long term units. These units are not transacting with any utility in NR. Hence backing down of generation on SPS is not required.
Member Secretary I/c WRPC stated that in case of 400 kV Agra-Gwalior tripping, a SPS is under implementation under which NR system trips loads and WR system has to back down generation. Hence this backing down is required and also the total quantum is only 500 MW which is small as compared to grid size. Since this is a protection scheme, the same may be agreed to in the interest of grid security.
Chairperson, TCC stated that this SPS is required when there is an extreme emergency and not normal Scheduling and withdrawal of units. He stated that if NTPC wishes to go through the simulation study they are welcomed to coordinate with WRLDC. But since WRLDC has done the study and identified the units accordingly, for the WR system interest NTPC need to accept the same.
TCC recommended as above

WRP Committee agreed to the Zalte Committee recommendations.

However NTPC continued their reservation and requested for further deliberation in a meeting on 29th November.

Item.No.6: Review of Black start facility in WR

Member Secretary I/c WRPC, informed that thirty generating stations in Western Region are having black start facility. However only eight could successfully black start in the earlier disturbances in the last ten years. Seven stations have under gone black start mock exercise in the last two years. He informed that a number of

units in ER and NR even though tested through mock drills, failed to black start on 30th &31st July 2012. All the black start units should be prepared through periodic mock drills so that when time for black starting comes they should be available. In this regard, WRLDC has given a schedule for mock drill which is given in **Annexure-6.**

During the TCC meeting, Shri S.T.Shinde, CE(SLDC), MSETCL informed that black start exercise has been successfully carried out in Koyna, Uran and Ghatghar stations. He also informed that a two day Capacity Building workshop at Mahabaleshwar was successfully conducted in October 2012 involving about 70 participants from various power utilities in Maharashtra and WRLDC and WRPC.

Shri P.R.Bende CE(SLDC), MPPTCL informed that successful black start exercise at Pench, Bargi and Indira Sagar was carried out successfully . In December 2012 black start for Tons is planned and shortly remaining five stations will be taken for black start mock drill in Madhya Pradesh. He also informed that a two day Capacity Building Workshop is planned in December 2012 at Jabalpur and about 80 participants from various power utilities in Madhya Pradesh and WRLDC/WRPC will be participating in the workshop.

Member Secretary I/c WRPC, informed that all constituents to please come with plan of review of black start facilities in 29th November 2012 meeting.

TCC/WRPC noted the above

Item.No.7: Start-up Power facility in WR

Member Secretary I/c WRPC informed that in the 115th Protection sub-committee meeting held on 7th Sept'12 the following points were discussed.

a) Identification of Thermal units for extension of start-up power:

Thermal units in WR system may be identified wherever start-up power cannot be extended from a nearby power supply source (black-started unit or island that survived) within *one hour*. Those thermal units that can be supplied start-up power from a nearby source in one hour can be hot started (and separate islanding schemes may be devised for them).

Member Secretary I/c WRPC informed that STU's and generating companies may accordingly perform the above identification and discuss the matter in OCC forum subsequently.

TCC/ WRPC noted the same

b) Details of Captive Power Plants(CPPs) having Islanding schemes in respective state control area

Member Secretary I/c WRPC informed that in the 115th Protection sub-committee meeting held on 7th Sept'12 while discussing the important issue of Identification of Black start facilities for Western Region WRLDC highlighted the identification of Captive power plants having islanding schemes. Many Captive Power Plants (CPPs) have islanding schemes to isolate from the grid during disturbances. These islanded CPPs are potential sources of startup power during restoration process of the grid. SLDCs were therefore requested to send the details of the CPPs of capacity above 100MW in their State having islanding schemes to WRLDC for incorporating in the Recovery Procedure. It is also prudent to formulate modalities for availing of startup power from CPPs well in advance so that start up power can be extended to the nearest power station during a grid separation. SLDCs should also indicate whether any commercial and technical constraints exist in availing start up power from the CPPs.

Member Secretary I/c WRPC also informed that Member(GO&D), CEA has taken the matter with CERC so that commercial mechanisms do not come in the way if technically or safety wise there are no problems. Pending such directives from CERC, he requested states to identify the CPPs from where they intend to take up start up power and enter into necessary agreement with them for availing power under such situation.

TCC/ WRPC noted the same.

c) Details of synchronizing facilities in the respective substations of state control area

This was also discussed in the special meeting held on 7th Sept'12. It is very important to confirm the availability of synchronizing facilities in the different sub stations and generating stations in the black start path. Locations for synchronization (i.e. sub-stations / generating stations having synchronization facility) after formation of sub-systems may be identified and details of synchronizing

facilities available at these locations be compiled by SLDC and intimated to WRLDC for incorporating in the Recovery Procedure.

TCC/ WRPC noted the same

d) Provision for Numerical Relays along black start path:

This was also discussed in the special meeting held on 7th Sept'12. Provisions for numerical relays along the black-start path may be made for measurement of phase angle and frequency differential to facilitate telemetry and availability of data at SCADA systems of SLDCs & RLDC so that remote transfer of instruction for check-synchronization during system restoration can be issued by SLDCs/RLDC.

TCC/ WRPC noted the same

Item.No.8 : High Voltage in WR and requirement of reactors

Member Secretary I/c, WRPC informed that in the 33rd standing committee held on 21st Oct 2011, for containing high voltages during off peak conditions in Western Region the following reactors were approved as given in table below:

Sl. No.	Location of the Bus Reactor	Utility	Rating
1.	Jabalpur	PGCIL	125 MVAR
2.	Khandwa	PGCIL	125 MVAR
3.	Shujalpur	PGCIL	125 MVAR
4.	Bhatapara	PGCIL	125 MVAR
5.	Raigarh	PGCIL	125 MVAR
6.	Aurangabad	PGCIL	125 MVAR
7.	Ranchodpura	GETCO	125 MVAR
8.	Varsana	GETCO	125 MVAR
9.	Rajkot	GETCO	125 MVAR
10.	Amreli	GETCO	125 MVAR

Further, 17 nos. of additional bus reactors were approved in the 34th Standing Committee Meeting held on 9th May 2012.

S.No.	Location of the Bus reactor	Utility	Rating
1	Nanded	MSETCL	125 MVAR
2	Sholapur	MSETCL	125 MVAR
3	Kolhapur	MSETCL	125 MVAR
4	Akola	MSETCL	125 MVAR
5	Jetpur	GETCO	63 MVAR
6	Zerda	GETCO	125 MVAR
7	Limbdi (Chornia)	GETCO	125 MVAR
8	Nagda	MPPTCL	125 MVAR
9	Bhopal	MPPTCL	80 MVAR
10	Damoh	PGCIL	125 MVAR
11	Bachau	PGCIL	125 MVAR
12	Pirana	PGCIL	125 MVAR
13	Itarsi	PGCIL	2X125 MVAR
14	Seoni	PGCIL	125 MVAR
15	Parli	PGCIL	125 MVAR
16	Raipur	PGCIL	125 MVAR
17	Gwalior	PGCIL	125 MVAR

WRLDC have requested to expedite the commissioning of following reactors on priority:

1. All the reactors to be installed in Gujarat have to be expedited as high voltages are observed in many of the 400 kV nodes in Gujarat and lines are opened to control high voltage.
2. Reactor at Damoh and Bhopal
   Korba – Birsinghpur- Damoh – Bhopal section cannot be fully operationalised due to lack of reactive compensation at Damoh and Bhopal.
3. On 08.10.2012 while charging 765 kV Seoni-Wardha-II, multiple tripping of 400 kV lines occurred at Wardha S/S. The 125MVAR bus reactor at 400kV Seoni approved in 34th SCM may be expedited to control high voltage at Seoni.
4. On 09.10.12 due to tripping of 400 kV lines in Maharashtra connected to Goa on high voltage, Goa got islanded from Western Region. Reactors are required near to Mapusa and installation of 125 MVAR bus reactor at Kolhapur may be expedited.

During TCC meeting , PGCIL representative informed that out of ten in the first part, seven were to be procured by PGCIL and orders for the same are already placed and would be available in about 18 months. The second part would be ready for award in February 2012. Since Damoh was requested by WRLDC, PGCIL is processing the same by March 2013.

GM, WRLDC requested expediting the procurement of reactors in Gujarat and by PGCIL in view of very high voltages observed in grid.

Member Secretary I/c WRPC requested utilities to furnish the status of the commissioning of reactors.

TCC/WRPC noted the same.

Item No. 9 : Installation of voltage collapse detection relay

Member Secretary I/c, WRPC informed that one of the recommendations of the Enquiry Committee on Grid disturbances occurred on 30th & 31st July 2012(9.10.2) was of voltage collapse prediction relays by sensing global power system conditions derived from local measurements. WRLDC has already taken up a Pilot project with

M/s.E-berle and installed of voltage collapse detection relay at 400 kV Boisar (PG) s/s and output is under observation. In view of the seriousness of the requirement after the grid disturbances, the proposal can be extended to other important sub-stations. Few substations of NTPC/POWERGRID/states would be identified for installation of these through own funding by the respective agencies. WRLDC would also propose to file a petition with Hon'ble CERC for approving funding of the scheme from Addl. UI/CAP fund. In case non approval be Hon'ble CERC, the funding would be by respective agencies in whose substation the relays are to be installed.

The exact locations and experiences of the pilot project would be discussed in the ensuring Protection Committee meeting and recommendations would be put up to the 22nd WRPC meeting.

Member Secretary I/c WRPC informed that the above relays were earlier agreed to be procured under PSDF. However due to uncertainty on the PSDF issue and in view of the recommendation of Enquiry Committee the same is suggested to be procured by individual utilities as indicated by WRLDC.

TCC recommended the same.

WRPC agreed to the same.

Item No.10: Damping controllers in HVDC

Member Secretary I/c WRPC informed that in the 20th WRPC meeting held on 18th May 2012, the matter of availability of damping controllers at HVDC Bhadrawati and HVDC Chandrapur-Padghe and tuning of TCSC at Raipur was taken up by WRLDC. This was necessary for damping out oscillations which were observed at Bhadrawati and Raipur through PMU data analysed by WRLDC. In view of the two grid disturbance on 30th & 31st July 2012, it is once again emphasized the importance of keeping the damping controllers in service in all HVDCs.

During TCC meeting, GM WRLDC informed that they are maintaining record of the oscillations observed in the grid under various situation. He stated that a meeting would called by WRLDC once they are ready with the oscillations data.

ED, MSETCL stated that damping controllers at HVDC Chandrapur-Padghe are working correctly and they have the record of the same which they can share with WRLDC during the above proposed meeting.

It was informed that TCSC at Raipur was recently taken back in service.

TCC/WRPC noted the same.

ITEM No.11: PERFORMANCE OF WR GRID DURING MAY 2012 TO SEPTEMBER 2012

Shri V.A.Murthy. DGM , WRLDC gave a presentation on the system performance during May 2012 to September 2012.

11.1 SYSTEM PERFORMANCE

Frequency:

During months of May, June, July, August & September 2012, the grid operated in the IEGC frequency range of 49.5 Hz to 50.2 Hz for 93.68 %, 77.90 %, 73.59 %, 89.72 % and 87.00 % of time respectively. The frequencies below 49.5 Hz were from 2.38% to 24.37 % of time during May to September 2012. In higher frequency regime, system frequency remained above 50.20 Hz for 3.94 %, 1.43 %, 2.04 %, 8.71 % and 12.69 % of time respectively in May, June, July, August & September 2012. The monthly average frequency was 49.90 Hz in May 2012, 49.70 Hz in June 2012, 49.68 Hz in July 2012, 49.95 Hz in August 2012 and 50.02 Hz in September 2012.

The instantaneous frequency touched 48.8 Hz, 57, 7 & 3 times during June, July & August 2012. The detail of frequency profile for the months of May to September 2012 is placed at **Annexure-11.1(a).**

Advisory Messages:

Advisory messages type A, B and C was issued by WRLDC to WR constituents for curtailing over drawal as below :

Message type /Constituent	A	B	C	Total
GETCO				
May -2012	1	0	0	1
June -2012	4	2	0	6
July -2012	1	0	0	1
August -2012	14	0	0	14
September -2012	3	0	0	3
Message type /Constituent	A	B	C	Total
MPPTCL				
May -2012	0	0	0	0
June -2012	5	0	0	5
July -2012	0	0	0	0
August -2012	7	1	0	8
September -2012	0	0	0	0
CSPTCL				
May -2012	4	0	0	4
June -2012	5	2	0	7
July -2012	4	0	0	4
August -2012	14	1	0	15
September -2012	5	1	0	6
MSETCL				
May -2012	5	0	0	5
June -2012	7	2	0	9
July -2012	0	0	0	0
August -2012	15	0	0	15
September -2012	3	2	0	5
DD				
May -2012				
June -2012	1	0	0	1
July -2012				
August -2012				
September -2012				
DNH				
May -2012				
June -2012				
July -2012				
August -2012				
September -2012				

GOA				
May -2012	1	0	0	1
June -2012	1	0	0	1
July -2012	0	0	0	0
August -2012	5	0	0	5
September -2012	0	0	0	0

No regulatory measures were required to be taken.

Energy Exchanges: There were net inter-regional export of 1581.58 MUs, 2139.05 MUs, 2650.78 MUs, 1821.00 MUs and 1631.045 MUs by WR against net export schedule of 357.61 MUs, 669.857 MUs, 983.964 MUs, 1060.00 MUs and 1578.141 MUs respectively in May, June, July, August & September 2012. The instances of overdrawal and TTC violation by neighbouring regions were taken up by WRLDC in real time. The messages issued by WRLDC for curtailment of overdrawl/ TTC violation to other regions

LINK	**NR**	**ER**	**TOTAL**
No of O/D Messages			
May -2012	62	57	119
June -2012	66	74	140
July -2012	77	86	163
August -2012	5	4	9
September -2012	0	2	2

No of TTC Messages			
May -2012	6	3	9
June -2012	21	19	40
July -2012	37	40	77
August -2012	5	2	7
September -2012	2	0	2

TTC MESSAGES issued to Regional Entities of WR during May, June, July, August & September 2012 :-

CONSTITUENT	GETCO	MPPTCL	MSETCL	CSPTCL	Goa	DNH	TOTAL
NO.OF TTC MSGS							
May -2012	1	0	1	0	0	0	2
June -2012	1	0	1	1	0	0	3
July -2012	3	3	2	0	0	0	8
August -2012	2	2	2	1	0	0	7
September -2012	3	4	2	3	0	0	12

Demand :

The maximum unrestricted demand of Western Region was 39144 MW, 38383 MW, 36111 MW , 35659 MW, and 37545 MW in May, June, July, August & September 2012 respectively, as compared to 40223 MW, 39106 MW, 38769 MW, 35515 MW and 41185 MW during the same months last year respectively. The region faced capacity shortage in the range of 245 MW to 2425 MW (peak deficit of 0.65 to 6.71%) respectively during these months. The per day energy requirement during May, June, July, August & September 2012 was 852.71 MUs, 838.97 MUs, 749.00 MUs, 756.54 MUs and 809.84 MUs respectively. The details of unrestricted peak demand, demand met and energy requirement and availability are as furnished at **Annexure-11.1(b)**.

11.2 Voltage Profile

11.2.1 Overall voltage profile had been satisfactory during the period under review. However, instances of low and high voltages beyond the IEGC specified operating range were observed at some of the EHV sub-stations in the region. Higher voltages in the range of 421 kV to 438 kV were noted at Indore, Itarsi, Karad, Dhule, Kasor, Bhilai, Jetpur, Bina, Gwalior, Nagda and Khandwa substations. Also the 765 kV Seoni Substation touched to 807 kV on 15th June, 2012. To contain high voltages WRLDC resorted to opening of lightly loaded EHV lines on certain days. The detail of voltages at important 400 kV and 765 kV sub-stations for the months May 2012 to September 2012 is placed at **Annexure-11.2.** In order to control incidences of high voltages during low load periods, installation of reactors at following locations as planned by various utilities is in the process as per following schedule:

S. No.	400 kV Sub/stn.	Size (MVAR)	Implementing agency	Expected commissioning date
1.	**Kasor**	**1x125**	**GETCO**	**Commissioned on 3rd May 2011**
2.	**Soja**	**1x80**	**GETCO**	**Commissioned on 30th April 2011**
3.	**Rajgarh**	**1x125**	**PGCIL**	**Commissioned on 25th May 2012**
4.	**Nagda**	**1x50** **1x50**	**MPPTCL** **MPPTCL**	**Commissioned on 28th September 2011** **Commissioned on 14th November 2011**
5	**Tamnar Raigarh**	**1x125**	**JPL**	**By November End**

11.3 AUFLS Performance.

The month-wise details relating to performance of AUFLS scheme in Western Region during the period May 2012 to September 2012 in terms of quantum of load relief obtained and number of occasions the UFR operated is at **Annexure-11.3**.

TCC /WRPC noted above

11.4 Discussion on messages issued by WRLDC:

CE, SLDC, MPPTCL pointed out that after September 2012, nowadays messages are received without mentioning the specific reasons. Requests for cutting loads at high frequency above 50.2 Hz and bringing in generation just because the schedule was not equal to drawl. Further they are opening lines in MP system and in one incident almost caused a blackout in Western MP. This is not in line with IEGC. In a special OCC meeting that discussed the issue WRLDC had agreed to specify nature of emergency when Alert or SoS messages are given. A reasonable time also should be given for taking any control action by SLDC's.

CE, SLDC, MSETCL agreed to the above observations of MP. There appears to be over cautious attitude by WRLDC. In case of MSETCL also Boisar – Vapi line was opened, endangering security of Mumbai.

CE, SLDC, CSPTCL pointed that some times these instructions shall also have a law and order issue and also legal issues.

CE, SLDC, GETCO also pointed out that WRLDC reading of schedule and actual itself is wrong and many times they are asked to take action when they are not defaulting.

GM, WRLDC clarified that Vapi-Boisar was opened due to loading problems in Sugen-Vapi.

Member Secretary I/c, WRPC stated the matter was discussed in detail in the special OCC and WRLDC was asked to specify nature of emergency in ALERT and SoS messages.

TCC, Chairperson stated that in an emergent condition one can understand an action. However even under normal cases WRLDC is resorting to opening of lines, asking to pick of generation at Koyna to reduce Sugen-Vapi loading etc.

GETCO pointed out even CGPL generation is also backed down to reduce Vapi-Sugen.

Member Secretary I/c summed up the discussions that as decided in special OCC meeting of 15th October 2012, WRLDC should specify the reasons for messages other than A,B,C types. Unilateral opening of lines may itself lead to another disturbance. SCADA errors may also be corrected and updated accordingly.

TCC, Chairperson stated that after the grid disturbance there is a too much of sensitivity and almost panicking actions which should be avoided by WRLDC in the interest of grid operation and overdrawl at frequency below 50 Hz by other regions should be curtailed.

TCC recommended as above.
WRPC agreed to same.

ITEM No.12: ANTICIPATED POWER SUPPLY POSITION IN WESTERN REGION FOR THE PERIOD FROM NOVEMBER 2012 TO JANUARY 2013

Member Secretary I/c, WRPC informed that the anticipated power supply position in the region for the period from November 2012 to January 2013 is at **Annexure-12.** The period under consideration is winter season. The demand form 2nd week of November will start decreasing till December, however it is Rabi season, the agriculture load shall be considerable. Taking the above factor into consideration the anticipation has been made. The anticipated regional demand is likely to vary between 43000 MW to 44000 MW and the capacity shortage will be 4.00 to 6.00 %. In terms of energy, the unrestricted requirement is expected to range from 27200 MUs to 28000 MUs with regional energy deficit of the order of 2.50 % to 6.95 %. The anticipated Peak demand shortage of 250 to 500 MW in Gujarat, 60 to 100 MW in Chhattisgarh, 1800 to 2100 MW in Maharashtra, 560 to 900 MW in Madhya Pradesh, 50 to 60 MW in Goa, 55 to 65 MW in DD & 5 MW to 15 MW in DNH is likely to prevail.

TCC/ WRPC noted the same

ITEM No.13: Implementation of CERC(IEGC) (First amendment) Regulations 2012 and CERC (UI charges and related matters)(Second Amendment) Regulations 2012 w.e.f 00:00hrs of 17th Sep. 2012.

MS WRPC informed that, CERC vide notification dated 05th March 2012 have issued second amendment to Central Electricity Regulatory Commission

(Unscheduled Interchange Charges and Related Matters) Regulations, 2009 and now referred to as Central Electricity Regulatory Commission (Unscheduled Interchange Charges and Related Matters) (Second Amendment) Regulations, 2012.

He further stated that the salient features and deviations from the regulations in force are as follows;

1) The major changes in this amendment w.r.t. regulation 2009 as tabulated below were discussed in the CCM of WRPC held on 8.10.12 :

Sr. No.	Particulars	Earlier	Amendment
A. Caping for deviation from schedules			
1.	Caping rate for Generators(coal/lignite /APM gas)	403 P/Kwh for OI and UI subject to capping of 155 P/Kwh for OI of more than 105% of DC in a block or 101% of Avg. D.C. over a day.	421.50 P/Kwh for OI subject to capping of 165 P/Kwh for OI of more than 105% of DC in a block or 101% of Avg. D.C. over a day.
2.	Capping rate for seller	403 P/Kwh for OI when Inj > 120 % of schedule subject to capping of 155 P/Kwh for OI of more than 105% of IC in a block or 101% of Avg. IC over a day.	450 P/Kwh for OI when Inj> 120 % of schedule, subject to capping of 165 P/Kwh for OI of more than 105% of IC in a block or 101% of Avg. IC over a day.
3.	Capping rate for buyer and beneficiary	403 P/Kwh for OD when Drl > 110 % of schedule or by 250 MW	450 P/Kwh for OD when Drl > 110 % of schedule or by 250 MW whichever is less.
4.	Capping for infirm injection	403 P/Kwh for actual Inj	---
C. Capping of infirm injection			
4a	Infirm power by generators(coal/lignite /Hydro)	---	165 P/Kwh for actual inj
4b	Infirm power by generators(APM gas)	---	260 P/Kwh for actual inj
4c	Infirm power by generators(Imported coal/RLNG)	---	330 P/Kwh for actual inj
4d	Infirm power by generators(Liquid fuel)	---	900 P/Kwh for actual inj

C. Additional UI for overdrawal and under injection			
6	Generators(coal/lignite /APM gas)	20 % of 403 P/Kwh when freq 49.5-49.2, 40 % of 403 P/Kwh when freq <49.2	10 % of 421.5 P/Kwh when freq 49.7-49.5, 20 % of 421.5 P/Kwh when freq <49.5 40 % of 421.5 P/Kwh when freq <49.5
7	Other generator/ Seller	**20 % of 873 P/Kwh when freq 49.5-49.2, 40 % of 873 P/Kwh when freq <49.2**	**10 % of 900 P/Kwh when freq 49.7-49.5, 20 % of 900 P/Kwh when freq 49.5-49.2 40 % of 900 P/Kwh when freq <49.2**
8	Buyer/beneficiary	40 % of 873 P/Kwh when freq 49.5-49.2, 100 % of 873 P/Kwh when freq <49.2	20 % of 900 P/Kwh when freq 49.7-49.5, 40 % of 900 P/Kwh when freq 49.5-49.2 100 % of 900 P/Kwh when freq <49.2

Abbreviations: OD-Overdrawal; UD-Underdrawl; OI-Over Injection; UI-Under Injection; DC-Declaired Capacity; IC-Installed Capacity.

2) As per the new regulations there is a change in the treatment of the infirm power injected into the grid by a generating unit during testing and prior to COD of the unit where the main fuel used for such generation (as specified in the Schedule "A" of the Regulation) is required to be furnished by WRLDC from the date of effect of these regulations. The matter was discussed in the 61st CCM where WRLDC agreed to provide the above data.

3) A writ petition no. 8509 & 8510/2012 dated 31.03.2012 was filed by TANGEDCO in the High court of Jurisdiction of Madras challenging the CERC (Unscheduled Interchange Charges and Related Matters) (Second Amendment) Regulations, 2012 and on (First Amendment) of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2012. The Hon'ble High Court of Madras ordered a stay on the Unscheduled Interchange Charges and Related Matters (Second Amendment) Regulations, 2012 and on (First Amendment) of Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.

4) NLDC, POSOCO vide notice dated 14th September 2012 have informed that, Writ petition no. 8509 & 8510/2012 dated 31.03.2012 filed by TANGEDCO has been dismissed by the Honorable High Court of Madras vide judgment

dated 14th Sep 2012. Therefore, CERC (Indian Electricity Grid Code)(First Amendment) Regulations 2012 and CERC (Unscheduled Interchange Charges and related matters (Second Amendment) Regulations 2012 would be effective from 00:00hrs of 17th September 2012.

5) IEGC frequency range has been modified from 49.5-50.2 Hz to 49.7-50.2 Hz as per first amendment to IEGC.

WR Power Committee noted the changes incorporated in the amended UI & IEGC regulation.

ITEM No.14: Grid disturbance on 30.07.2012 & 31.07.2012 and the implications on the schedules of WR constituents.

MS WRPC informed that following representations were received as regards to revision of schedules during the grid disturbances of 30/31.07.2012:

1) CSPTCL vide letter No. 03-02/SLDC/RA/UI/WRPC/1187 dated 06.08.2012 (copy enclosed at **Annexure-14.1**) have intimated that during the Grid Incidences in WR-NR-ER-NER on 30.07.2012 & 31.07.2012, it has been observed that both the DSPM units of CSPGCL tripped simultaneously. The throw OFF of 450MW resulted in the change of the drawal status of CG State.

   SLDC, CSPTCL have requested to call off the implication of the UI charges during the disturbance period as declared by NLDC.

2) CGPL Mundra vide letter CGPL-UMPP/O&M/WRLDC/0193 dated 30th July 2012 (copy enclosed at **Annexure-14.2**), have informed that there were instances of grid disturbances on 30.07.2012 resulting in disturbances in 400kV system, due to which Unit #20 got tripped at 06:15hrs and Unit#10 tripped at 06:58hrs on 30.07.12. due to the above trippings , CGPL, Mundra could not able to inject the power as scheduled. Therefore CGPL desired that under these circumstances, any under injection during such grid failure is not attributable to CGPL and no UI penalty is payable during the same period.

   CGPL Mundra vide letter CGPL-UMPP/O&M/WRLDC/0194 dated 31st July 2012 (copy enclosed at **Annexure-14.3**), have informed that there were instances of grid disturbances on 31.07.2012 resulting in disturbances in 400kV system, due to which Unit #20 got tripped at

05:08hrs on 31.07.12. due to the above trippings , CGPL, Mundra could not able to inject the power as scheduled. Therefore CGPL desired that under these circumstances, any under injection during such grid failure is not attributable to CGPL and no UI penalty is payable during the same period.

3) SLDC MSETCL vide letter No.MSLDC/TECH/SO/1815 dated 22.08.12 (copy enclosed at **Annexure-14.4**) addressed to WRLDC POSOCO have intimated that during the two major disturbances occurred on 30.07.12 & 31.07.12, no instruction of curtailment was received on 30.07.12 & 31.07.12 for interstate bi-lateral transaction. Also there was no revision of schedules on WRLDC website on the same day. The only instruction of curtailment was received for 31.07.12 for power exchange transactions (collective transaction) from 13:00 to 24:00hrs. The JAW-PSCL and AMNEPL-West Bengal Power approved OA transactions were reduced to zero for the above period as seen from the implemented schedules posted on the WRLDC web site and the above transactions were revised suo-motu on the next day in WRLDC schedules. As there was no instruction from RLDC about the revision of power in real time, power was injected in the grid by the above entities, hence affecting the Intra state settlement of Energy account, as buyers duration of purchase is revised post dated, causing imbalance. SLDC therefore have sought decision on curtailment in approved OA transactions of JAW-PSCL and AMNEPL-West Bengal Power.

He further stated that the matter was discussed in the 62nd CCM and the outcome of CCM is as below :

1. Since the Protection sub-Committee was of the view that tripping of DSPM units of CSPGCL were esirable from protection point of view and could not be attributed to grid disturbances of 30.07.2012 & 31.07.2012.
2. WRLDC clarified that, CGPL was not able to maintain the schedules due to tripping of associated transmission lines for evacuation of CGPL generation thereby islanding the CGPL units on 30.07.2012 and therefore qualifies for revision/suspension of schedules, though

islanding of CGPL units and thereafter tripping of the same was not attributed to the grid disturbance. As regards to the tripping of CGPL units on 31.07.2012 the tripping data may be forwarded by CGPL to WRLDC. WRLDC would examine the same and would take decision.

3. NTPC representative intimated that the tripping of VSTPS units scussed in the Protection sub-Committee meeting of WRPC held on 06/07.09.2012, and the Protection sub-Committee expressed that Vindhyachal units tripped while providing start up power under the circumstances of grid disturbance. It was decided that the schedules of VSTPS may be revised by WRLDC to actual generation during the tripping at VSTPS on 30.07.2012 and the same would be furnished by WRLDC to WRPC for revision of UIs and REAs.

GM WRLDC in regards to tripping of CGPL units on 31.07.2012, stated that, the data received from CGPL was examined by them and the trippings on 31.07.2012 also qualifies for revision/suspension of schedules.

WRP Committee approved the above recommendations on revision/suspension of schedules taken in 62nd CCM and revision/suspension of schedules of CGPL units on 31.07.2012 also. As regards to the issue raised by SLDC MSETCL at Sl. No.3 above, Committee expressed that WRLDC may look into it and arrive at amicable solution.

Item No. 15 : Operationalisation of "W3" Bid Area.

MS WRPC informed that, a meeting to discuss the issues involved with the formation and Operationalisation of W3 bid area by NLDC was held at Mumbai on 19th October 2012. To address the concerns/grievances of the Constituents/IPPs of WR on formation of the "W3" bid area, following issues were raised in the meeting :

1) What was the necessity of W3 bid area?
2) Carving of new "W3" bid area out of two areas in WR and ER.
3) Whether NLDC has the necessary mandate to create such a bid area?
4) How the bid area is configured?
5) Whether it has solved the problem or it has generated new problem?
6) Why consensus was not evolved?

7) Why Sterlite generation is taken in W3 overstepping Regional boundary?

He stated that during the meeting Shri V.K.Agrawal, GM, NLDC explained the following:-

1) **Creation of New Bid Areas :**

Bid Area S2 was created out of SR and was operationalised since January 2010. The bid area S1 comprised of AP + Karnataka control areas and S2 comprised of TN + Kerala + Puducherry. Bid Area N3 was created and operationalised in August 2011 out of N2 bid area in NR. Bid Area N3 comprised of Punjab. Bid Area W3 was created in August 2011 along with N3 and comprised of Chhatisgarh from WR.

In future more bid areas could be created in line with the discussions held in CAC Meeting to handle congestion. He further summarized that each Control Area may become a bid area.

2) **Operationalization of Bid Area W3**

Two Meetings were held between CERC, NLDC and Power Exchanges on 03rd Sep 2012 & 12th Sep 2012. The declaration of Margins for W3, by declaration of the TTC/ATC for W3 was done by NLDC since 7th Sep 2012 and this bid area was operationalised since 18th Sep. 2012

3) **Inclusion of Sterlite generation in W3**

Electrical flow between two nodes is determined by KCL and KVL and does not depend on the geographical locations of the nodes. Availability of margins on the links connecting these two nodes does not have any bearing on the geographical location of these nodes and therefore does not recognize the administrative margins of State/Region Though, Sterlite (1800 MW) is geographically located in Odisha, it is interconnected with the grid between the nodes, one of which is in Chhattisgarh and the other one in Odisha. Two circuits of Raigarh-Rourkela inter-regional links are LILOed at Sterlite for connectivity as an interim arrangement. Generation of Sterlite (Units 1, 3 and 4 having total capacity of 1800MW) has the same impact on the network/line flows as the other generating stations in the Chhattisgarh area. In real time direction of power flow from this station can be in either direction i.e. towards Chhattisgarh or Odisha depending on the load generation balance and network availability in the two states.

4) Generation in W3 Area:

Sr. No.	Power Station	Installed Capacity MW	Sent out MW	Effective LTA/MTOA MW	Effective Scheduling under LTA/MTOA MW
1	Korba-St 1,2	2100	1949	1949	1949
2	Korba-St 3	500	468	468	468
3	Sipat-St 1	1980	1851	1851	1851
4	Sipat-St 2	1000	935	935	935
5	NSPCL**	500	460	460	460
6	BALCO	135	123	100	100
7	ACBIL	270	248	200	200
8	JPL	1000	920	500	0
9	JSPL	270	248	0	0
10	Lanco	600	550	300	0
10	Sterlite	1800	1670	0	0
11	CSPDCL	_	_	150	150
Total :		10155	9422	6913	6113

From above table it is seen that generation of around **9422MW** is required to be evacuated through the available network.

5) Export Transfer Capability of W3 Zone :

Corridor	Date	TTC	RM	ATC	LTA/ MTOA	Margin for STOA	Comments
W3 zone export TTC#	1st Oct2012 to 31st Oct2012	**7000 MW**	**200 MW**	**6800 MW**	**6100 MW**	**700 MW**	**6100 MW corresponds to maximum effective LTA from W3. Export Margin from W3 would vary as per the maintenance schedule of generators in the zone.**

The Limiting Constraints felt through studies were high loading of 400 kV Raipur-Bhadrawati T/C, Bhilai-Bhadrawati S/C, Bhilai-Koradi and Bhilai-Seoni.

There has been significant addition of generation due to commissioning of following new generating units in Chhattisgarh in the recent past;

- KORBA-III: 500 MW in March 2011
- SIPAT UNIT-1: 660 MW in October 2011
- SIPAT UNIT-2: 660 MW in May 2012

•SIPAT UNIT-3: 660 MW in August 2012

Due to commissioning of these generating units, upcoming generation through the route of IPPs and change in the generation demand scenario in ER and WR , the flow on ER-WR corridor has changed from that envisaged during the planning of the corridor.

MS WRPC stated that following views were expressed by constituents/utilities of WR in a meeting held on 19th October.

a) Chhattisgarh representative stated that the power system of the country has been divided into five regions by Government of India. The powers for region-wise demarcation and modification therein have been vested with the Central Government under the Act 25 of Electricity Act, 2003. Regional Load Despatch Centres have also been established under this provision. The Article-6.4 of the IEGC defines the Demarcation of responsibilities of regional entities. The generators and other Utilities situated in the State of Gujarat, Maharashtra, Madhya Pradesh, Chhattisgarh, Goa and Union Territories of Daman & Diu and Dadar Nagar Haveli are falling under the Western Region for the operational convenience of the power transactions on Power Exchanges, generally each Region has been sub-divided. In their opinion this newly created zone, power generator situated in other Region (Sterlite) has also been included, thus region-wise demarcation has been over-stepped by NLDC. Therefore creation of W3 zone in Western Region may be re looked by NLDC as it is in contravention of Act 25 of the IE Act 2003.

   He further expressed that creation of new bid area W3 has made adverse effect on the economics of power export from Chhattisgarh State as a whole. Under these conditions power generation in the Chhattisgarh State is adversely affected.

b) Lanco Amarkantak and Jindal representative stated that due to inclusion of Sterlite in this newly created bid area the margins have shrunk. Therefore Sterlite may be excluded from the W3 bid area.

c) MSEDCL representative stated that due to formation of W3 bid area the margins for STOA have reduced significantly because of which they are unable to procure power from the generation surplus area of Chhattisgarh.

d) GUVNL representative stated that connectivity has been granted to large number of IPPs without being charged to share the transmission charges (though as per the provisions of regulations in force), thereby creating congestion. The Long term customers of the transmission system have been sharing the transmission charges. Therefore unless the issue of granting connectivity without sharing the transmission charges is addressed the congestion can not be avoided.

e) WRPC secretariat is of the view that due to reduction in margins for STOA, the available generation in Chhattisgarh area is bottled up and even though the generation deficit area want to avail power from this area they are unable to tie up with the generators of Chhattisgarh in short term. The extension of W3 bid area beyond the control area of WR boundary by including Sterlite generators in this area does not follow the transmission planning by Standing Committee on Regional basis and therefore it needs to be reviewed.

MS WRPC further stated that, after discussions NLDC was requested to review the creation of the W3 bid area in line with the concerns expressed by constituents. He informed that JPL have already filed a petition before the Hon'ble CERC, praying for a stay on the change in methodology in regard to the transfer of power under the STOA.

CSPTCL and GUVNL representatives stated that the matter have been aggravated mainly due to grant of connectivity to large number of IPPs in WR without LTA by CTU, though as per the CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009.

CSPTCL and MPPTCL representatives intimated that the calculation of margin for scheduling short term open access transactions be done by taking into account the considerations as pointed out by WRPC vide their letter dated 01.11.2012.

GM WRLDC stated that the change in DC have impact on the computation of margins for STOA and the concerns raised on computation of margins for STOA by WRPC have been replied. He further informed that with commissioning of Korba-Birsingpur line the TTC of the W3 bid area would increase significantly.

MS WRPC stated that the clarification of WRLDC does not address the issues raised by WRPC and NLDC may look into it so that additional margin of about 1000MW

could be available for scheduling STOA from W3 bid area due to wrong calculation alone, notwithstanding other issues such as methodology of calculation of TTC, formation of new bid area etc which are now subjudice.

WRP Committee discussed the matter and opined that since petition has already been filed by M/s JPL on the above issue therefore it would be inappropriate to make any comment on the above issue, however NLDC may review its stand in calculation of margins for STOA as per WRPC request.

Item No.16 : MOU for CPPs in WR in case of Black Start Recovery after a Grid Disturbance.

MS WRPC informed that a meeting to discuss the issues involved regarding signing of MOU by managements of utilities/CPP's for extending start-up power during grid disturbance was held at Mumbai on 19th October 2012.

He informed that the matter regarding settlement of commercial issues involving start up power by any generator has been taken up by Secretary CEA with Secretary CERC. He further stated that issue of any directions from CERC would take some amount of time and meanwhile some arrangement between Utilities and CPP's should be in place. In this context he suggested that the MOU may be signed by management of all utilities / CPP's in Western Region and would be kept in all the Control Rooms of WR. Such arrangement is felt absolutely necessary till any final directives from the Hon'ble CERC is in place.

He briefly explained the discussions that took place in the meeting of 19th October 2012:

1) GM, WRLDC stated that during the last Grid Disturbances the generators which got islanded were hesitant to extend start up power since the commercial mechanism for compensation is not in place, pending final regulation from Hon'ble CERC, MOU may be signed without attaching any commercial tag. Any such support by any utility to any other utility as the case may be would be settled and disbursement is completed within 3 months from the date of grid disturbance.
2) GUVNL representative stated that this is a very delicate issue and needs to be properly addressed. He enquired who will pay to the CPP's and how it will be adjusted. Further who will bear the loss to the CPP, if any, due to loss of

generation of CPP's(due to tripping of the generators at CPP) during extending the power.

3) GM WRLDC stated that the generators for whom the start up power has been availed from the CPP would pay to the CPP.
4) GUVNL representative stated that the payments made by generators towards above will subsequently be billed to beneficiaries and it is beyond understanding that why beneficiaries be made to pay.

CPP representative made following points:

1) Nalco representative intimated that the load with which the generators get isolated from grid is approximately equal to the ex-bus generation capacity at Nalco, therefore there would not be any spare capacity available for extending start up power.
2) Reliance representative intimated that captive power plants are installed by industries to cater their continuous processes and any interruption(tripping of generator) of supply to these continuous processes during extension of supply for start up, would put them to a great loss. If such loss to industry occurs who will compensate it. Also assurance on the grid quality under grid disturbance needs to be given to the CPP's, since under such disturbances the grid quality is always suspected to be vulnerable.
3) SAIL(Bhilai) representative stated that loss of supply to a continuous process industry shall not only be viewed as a financial loss, but also be viewed from the point of view of threat to life, since this may lead to interruption of processes which involve handling of hazardous gasses. This may lead to disasters of large scale as experienced in the past.

MS WRPC informed that after discussing the concerns of the CPPs, it was opined that the CPP's and management of utilities shall ascertain the threats & opportunities and accordingly decide on whether to sign MOU with particular CPP or not.

WRP Committee noted the above.

ITEM No.17: Declaration of generating units into commercial operation.

MS WRPC informed that;

17.1: CGPL Mundra (UMPP) vide letter CGPL-UMPP/O&M/Unit#20/COD/WRLDC/0192 Dtd. 29.07.2012**(Enclosed at Annexure-17.1)** have intimated that Unit No. 20 have successfully completed the 72hrs commissioning test. The second unit (Unit No. 20) will achieve its Commercial Operation (COD) 30th July 2012.

17.2 :NTPC vide letter 01:CD:227 dated 31.07.2012 **(enclosed at Annexure-17.2)** have intimated that Unit No#3 of 660MW of Sipat Super Thermal Power Station Stage – I is declared for Commercial operation w.e.f. 00:00Hrs of 01.08.2012.

WRP Committee noted as above.

ITEM No.18: Declaration of transmission elements into commercial operation by PGCIL.

MS WRPC stated that, PGCIL vide their earlier letter No. WRTS-I:COMML:NGP:1120 dated 01.03.2012 declared the commercial operation of part of 400kV Korba-Birsingpur TL from Location No. 176/0 to Birsingpur (MPPTCL) as follows;

a) Balance part of Korba/Balco-Birsingpur TL (first circuit) from Location No.176/0 to Birsingpur (MPPTCL) has been commissioned successfully and is in operation from 29.02.2012.

b) Balance part of Korba-Birsingpur TL(second circuit) from Location No.176/0 to Birsingpur (MPPTCL) has been commissioned successfully on 31st March 2012 along with line reactor at Birsingpur and is in operation.

He further informed that PGCIL vide letter WRTS-I: COMML: NGP: 75 dated 11.09.2012 (copy enclosed at **Annexure-18**) has revised commercial operation of elements as follows;

a) Korba-Balco to Birsingpur (first circuit) date of commercial operation 01.03.2012

b) Korba to Birsingpur (second circuit) date of commercial operation 01.04.2012.

D/c portion from Korba gantry till Loc 176/0 had been put in commercial operation as already intimated vide letters dated 03.10.2011 & 01.12.2011.

MPPTCL vide letter No. 07-05/SG-8A/571 Dtd.15.03.2012 (in response to PGCIL letter No. WRTS-I:COMML:NGP:1120 dated 01.03.2012), have intimated that 400kV Balco-Birsingpur line was charged and synchronized on 29.02.2012 at 16:14hrs, whereas 400 kV Korba-Birsingpur line was idle charged from Korba end on 29.02.2012 only. The line was not synchronized at Birsingpur end as line reactor at Birsinghpur end has not been commissioned by the PGCIL so far. Hence this line cannot be treated as commissioned successfully and is in operation. Since only 400kV Balco-Birsingpur line is operationalised w.e.f. 29.02.2012 and asking for monthly transmission charges of entire Korba-Birsingpur transmission line from 1st March 2012 by concerned DICs does not seem to be justified, and hence 400kV Birsingpur-Korba line may be excluded for computing monthly transmission charges.

In the 61st CCM, the Commercial sub-Committee opined that PGCIL may declare the line into commercial operation w.e.f. the date of synchronization by putting all set of elements associated with it in service when line is commercially available for wheeling the power.

PGCIL informed that the line without reactor was ready by 1st of March 2012 and the line was ready along with reactor by 1st of April 2012. It was informed by WRLDC/PGCIL that 400 kV Korba-Birsinghpur line along with the reactor was first time synchronised from both the end and carried a load of around 30-40MW on 03.04.2012.

In the 20th WRPC meeting the above comments of MPPTCL and recommendation of the 61st CCM were discussed and it was **decided that the line can be treated as fully commissioned on 03.04.2012, and the COD shall be taken from 1st of May, 2012 as per the regulation (i.e. from the 1st day of the next month).**

POWERGRID representative intimated that they have filed a petition in CERC for revision of the COD as intimated vide their letter WRTS-I: COMML: NGP: 75 dated 11.09.2012.

TCC recommended COD of concerned line as decided in the 20th WRPC meeting and further, WRP Committee discussed the matter and expressed that the COD shall be treated as per the decision recorded in the 20th WRPC & 21st TCC and revision of COD by POWERGRID shall not be allowed.

MS WRPC stated that following transmission elements were declared into commercial operation by POWERGRID were discussed in the 62nd CCM;

18.1: PGCIL vide letter No. WRTS-I:COMML:NGP/1192 dated 04.06.2012 have intimated that up gradation of Seoni-Wardha Ckt-I from 400kV to 765kV along with bays at Seoni & Wardha under Mundra TS have been successfully commissioned & declared under commercial operation w.e.f. 1st June 2012. Accordingly, the monthly transmission charges for above assets of Mundra Transmission System will be payable from 01st June 2012 by concerned DICs as per CERC (sharing of inter state transmission charges and losses) Regulation 2010.

18.2: PGCIL vide letter No. WRTS-I:COMML:NGP/1191 dated 04.06.2012 have intimated that circuit-2 of 400kV Mouda-Wardha D/c line along with bay at Wardha under Mouda TS have been successfully commissioned & declaired under commercial operation w.e.f. 01st June 2012. Accordingly, the monthly transmission charges for above assests of Mouda Transmission System will be payable from 01st June 2012 by concerned DICs as per CERC (sharing of inter state transmission charges and losses) Regulation 2010.

18.3 : PGCIL vide letter No. WRTS-I:COMML:NGP/1210 dated 29.06.2012 have intimated that 400/220kV 315MVA Autotransformer at Pune (Maharashtra) and 400/220kV 315MVA Autotransformer at Raipur (Chattisgarh) have been received and are available for intended use from 29.06.2012, in line with agreement reached in 15th WRPC meeting on procurement of spare transformers and reactors in WR. Accordingly, the monthly transmission charges for above spare transformers will be payable from 01st July 2012 by concerned DICs as per CERC (sharing of interstate transmission charges and losses) Regulation 2010.

PGCIL vide letter No. WRTS-I:COMML:NGP:21 dated 30.07.2012 have intimated that 400kV 80MVAR Shunt reactor at Wardha (Maharashtra) have been received and are available for intended use from 30.07.2012, in line with agreement reached in 15th WRPC meeting on procurement of spare transformers and reactors in WR. Accordingly, the monthly transmission charges for above spare reactor will be payable from 01st August 2012 by

concerned DICs as per CERC (sharing of interstate transmission charges and losses) Regulation 2010.

MPPMCL vide letter No. 05-01/GG/1566 dated 14.08.2012 have intimated that the matter was first put up in the TCC meeting held on 18th August 2010, in which in-principle approval was accorded for procurement of 4 nos. of spare ICTs and 2 nos reactor. TCC recommended that these assets may be procured through PSDF. It was also proposed that in case the expenditure does not materialize through PSDF then the cost will be pooled in the ratio applicable for sharing of regional transmission charges till the time it is used by some state. The date for which any State started using the transformer and reactor, than the concerned State utility would bear the charges for the same. The matter was later put up and discussed in 14th and 15th WRPC meeting also. Further M/s POWERGRID has not informed anything about financing of spare transformer and reactor through PSDF or otherwise. POWERGRID has also not submitted any petition for determination of transmission tariff by the Central Commission. Under such circumstances it may not be feasible for our company as a beneficiary State to share the transmission charges, which have not yet been decided, along with the PoC charges payable under CERC (sharing of Inter State Transmission Charges and Losses) Regulation 2010.

It was intimated that the matter was discussed in the 15th WRPC meeting wherein it was decided that the expenditure of procurement of spare transformers and reactors be met from PSDF or through normal process, and therefore the monthly transmission charges for above spare transformer and reactor will be payable by all DICs from the respective dates declared by POWERGRID.

18.4 : PGCIL vide letter No. WR-II/VDR/COML/4363 dated 02/04.07.2012 have intimated that 765kV, 3X80MVAR Bus reactor along with associated bays at 765/400kV Satna Substation under ATS of SASAN UMPP has been charged successfully. Same has been put into regular/commercial operation in Western Region w.e.f. 01.07.2012. Accordingly, the monthly transmission

charges for above transmission element will be payable by all concerned from 01st July 2012.

18.5 : PGCIL vide letter No. WR-II/VDR/COML/4364 dated 02/04.07.2012 have intimated that 765kV S/C Seoni-Bina Transmission Line along with associated bays and 3X80MVAR reactors at both ends under ATS for SASAN UMPP has been charged and synchronised successfully. Same has been put into regular/commercial operation in Western Region w.e.f. 01.07.2012. Accordingly, the monthly transmission charges for above transmission element will be payable by all concerned from 01st July 2012.

18.6 : PGCIL vide letter No. WR-II/VDR/COML/4361 dated 02/04.07.2012 have intimated that 765kV, 3X333MVA ICT I along with associated bays at 765/400kV Satna Substation under SASAN UMPP has been charged and synchronised successfully. Same has been put into regular/commercial operation in Western Region w.e.f. 01.07.2012. Accordingly, the monthly transmission charges for above transmission element will be payable by all concerned from 01st July 2012.

18.7 : PGCIL vide letter No. WR-II/VDR/COML/4362 dated 02/04.07.2012 have intimated that 765kV S/C Satna-Bina Ckt-II Transmission line along with associated bays and 3X80 MVAR reactors at both ends under SASAN UMPP has been charged and synchronised successfully. Same has been put into regular/commercial operation in Western Region w.e.f. 01.07.2012. Accordingly, the monthly transmission charges for above transmission element will be payable by all concerned from 01st July 2012.

18.8 : PGCIL vide letter No. WRTS-I: COMML:NGP:23 dated 31.07.2012 have intimated that 765/400kV, 1500MVA ICT-III at Bilaspur Pooling (Near Sipat) S/S along with associated bays under WRSS-XI has been put into regular operation in WR and the same will be under commercial operation w.e.f. 01.08.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable from 01st August 2012 by all concerned DICs as per CERC (sharing of inter-state transmission charges & losses) Regulation 2010.

18.9 : PGCIL vide letter No. WR-II/VDR/COML/5210 dated 09/16.08.2012 have intimated that 400/220kV GIS Navsari S/S along with 63 MVAR Bus Reactor at Navsari, Ckt-II of 400kV D/C Gandhar-Navsari T/L with associated bays at

Gandhar and Navsari end, 1x315 MVA 400/220kV ICT-II along with associated 400kV and 220kV bays at Navsari, LILO of both circuits of 220kV D/C Kawas-Navsari T/L at 400/220kV GIS substation at Navsari under MUNDRA UMPP Regional Transmission System have been commissioned and put into commercial operation w.e.f. 01.08.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable by all concerned from 01st August 2012.

18.10 : PGCIL vide letter No. WR-II/VDR/COML/5595 dated 06/08.09.2012 have intimated that 400kV D/C Surajbari-Jetpur part of 400kV D/C Mundra-Jetpur transmission line along with associated bays at Jetpur (GETCO) S/S have been put into regular operation in WR w.e.f.01.09.2012 as per CEA approval vide letter Ref. No.: 26/10/2012/SP&PA/865.866 dated 13.08.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable by all concerned from 01st September 2012.

18.11 : PGCIL vide letter No. WR-II/VDR/COML/5596 dated 05/08.09.2012 have intimated that two nos of 400/220kV, 315MVA spare transformer have been procured at 400kV Jabalpur S/S and 400kV Dehgam S/S under "Provision for spare ICTs & Reactors for Eastern, Northern, Southern and Western Region" and the same have been put into commercial operation in WR w.e.f.01.09.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable by all concerned from 01st September 2012.

18.12 : PGCIL vide letter No. WR-II/VDR/COML/5592 dated 05/08.09.2012 have intimated that the 3x333MVA, 765/400kV transformer-1 along with associated bays at 765/400kV Bina S/S has been charged and synchronised successfully. The same has been put into regular/commercial operation in WR w.e.f.01.09.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable by all concerned from 01st September 2012.

18.13 : PGCIL vide letter No. WR-II/VDR/COML/5593 dated 05/08.09.2012 have intimated that the 3x333MVA, 765/400kV transformer-II along with associated bays at 765/400kV Satna S/S has been charged and synchronised successfully. The same has been put into regular/commercial operation in WR w.e.f.01.09.2012. Accordingly, the monthly transmission

charges for above transmission systems will be payable by all concerned from 01st September 2012.

18.14 : PGCIL vide letter No. WR-II/VDR/COML/5594 dated 05/08.09.2012 have intimated that the 1x315MVA, 400/220kV ICT-I along with associated 400kV and 220kV bays at Navsari under Mundra Regional Transmission System have been commissioned and have been put into regular/commercial operation in WR w.e.f.01.09.2012. Accordingly, the monthly transmission charges for above transmission systems will be payable by all concerned from 01st September 2012.

WRP Committee noted as above.

Item No.19: Requirement of SEMs for Western region up to 2014

MS WRPC stated that, WRLDC has tentatively arrived the requirement of Special Energy Meters for Western Region, as per the commissioning status available from CTU, POWERGRID for the calendar year 2013 & 2014. The detailed location wise details are given at **Annexure-19**. The summary of requirement of SEMs and DCS are as follows:

Items	No. of Main meters	No. of stand-by/Check meters	Total No of SEMs/DCDs
Total No. of SEMs required	**268**	**71**	**308**
Spares @20%			**62**
Net Total			**370**
Total No. of DCDs required			**26**
Spares @20%			**5**
Net Total			**31**
TYPE OF METER			**Model-A**

The requirement of SEMs and DCDs were discussed and finalized during 62nd CCM.

WRP Committee approved the above requirement of SEMs and DCDs.

ITEM No. 20: Reconciliation of UI and REC accounts.

MS WRPC stated that, WRLDC vide its letter dated 11th July 2012 has requested all UI pool members of Western Region to reconcile the UI& REC account maintained by WRLDC for the period from Apr'12-June'12, as per the details of payments/receipts during Apr'12 to June'12 uploaded on WRLDC website (www.wrldc.com/commercial/Pool Reconciliation) by 30th July 2012. Some of the utilities like M/s ACBIL, M/s BALCO have done reconciliation. Since considerable time has been given for reconciliation and others have not responded, the statements for Apr12-June12 uploaded in WRLDC web site stands reconciled.
GM WRLDC requested pool members for reconciliation of UI and REC accounts for the quarter July to September 2012 by 31st October 2012.

Commercial sub-Committee during 62nd meeting felt that the UI and REC accounts be deemed to have been reconciled.

WRP Committee noted as above.

ITEM No.21: Status of LC opening toward UI payments.

MS WRPC stated that WRLDC have intimated that, the Hon'ble CERC in its order dated 22nd Aug'12 in petition.No.172/Suo-Motu/2012, shown their displeasure for not complying the provisions of UI regulation w.r.t to opening of LCs towards UI payments as per clause 10(4) of Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulation 2009, as amended from time to time. The LC to be opened by WR entities for the FY 2012-13 is given below :

Sl No.	WR Entity who have to open LC	No. of times UI payment was delayed (From 01-Apr-11 to 31-Mar-12)	No of weeks in which UI payable	Average payable weekly UI (Rs in lakhs)	LC Amount (Rs in lakhs)	Remarks
1	CSPDCL	2	36	1037	1141	
2	**MP Power Management Co. Ltd**	20	23	1259	1385	**LC opened**
3	GOA	5	25	103	113	

4	DNH	14	20	238	262	**LC opened**
5	D&D	18	18	130	143	**LC opened**
6	JINDAL POWER	12	33	183	201	**LC opened**
7	LANCO	2	6	193	212	
8	***Jaypee Bina Thermal Power Plant**	6	7	0.85	0.94	
9	****Essar MAHAN Thermal Power Plant**	8	16	13	14.3	

* Control area of Jaypee Bina TPS shifted to SLDC, MP wef 3rd Sept'2012
** Essar MAHAN TPP Defaulted in current FY 2012-13 in 9th week (21-27.05.12).
Commercial Committee during 62nd meeting requested MPPMCL, GOA, LANCO and Essar Mahan representatives for early opening of LCs.

MP Power Management Co.Ltd., stated that they have opened the LC and the status may please be revised.

WRP Committee noted the above and requested that WR entities who have not opened the LC so far may expedite.

ITEM No.22: Status of UI and REC charges payable/receivable to UI pool account.

22.1: Status of UI charge payable/Receivable to UI Pool account as on 10th Sept'2012

(+) Payable / (-) Receivable from Pool

Amount in Rs.

	Total dues	***Payments overdue***
	Principal	***Principal***
CSPDCL	-57,467,009	
MP Power Management Co. ltd.	-458,701,305	
GETCO	-1,260,030,403	
MSEDCL	-230,448,932	
Goa	**366,257**	
D&D	-18,782,733	
DNH	-191,352,487	
NTPC	-1,155,106,948	
NR Exchange	**5,216,298,720**	**5,216,298,720**
SR Exchange	-6,885,491	
ER Exchange	**3,985,361,144**	**3,973,694,739**

JINDAL POWER	-54,590,251	
HVDC V'chal	-1,038,838	
HVDC B'vati	-3,898,383	
Lanco Power Ltd	-362,598,489	
NSPCL	-28,467,823	
ACB India Ltd.	**2,146,479**	**750,840**
RGPPL	-3,172,773	
BALCO	-20,460,352	
CGPL UMPP MUNDRA	-424,310,541	
DCPP JSPL	-6,530,858	
JAYPEE BINA TPP	-51,598,619	
Essar (MAHAN) TPP	**141,802**	
SASAN Power limited	**50,950**	
Differential amount from capping due to injn. >105%	-403,892,898	
Amount araised from additional UI	-587,377,944	
Amount araised from capping on Over Injn.and under drawal	-3,941,925,016	
Net Total in capping&Addl. UI A/c	-64,272,741	

Note : This includes :

1. REC Accounts issued up to 22nd week of 2012-13 ie.,20.08.2012 to 26.08.2012
2. REC Payments distributed up to 11.09.12

22.2 Status of Reactive Energy Charges Payable to REC Pool Account

Last updated on 08/10/12 (+) Payable / (-) Receivable from Pool

Amount in Rs.

	Total dues
	Principal
CSPDCL	-54,005,712
MPPTCL	**10,988,865**
GETCO	-15,653,698
MSEDCL	**21,633,969**
Goa	-1,331,713
DD	**11,749,575**
DNH	**36,535,652**
TOTAL	**9,916,938**

***When Receivables are more than payable, total of all receivables made equal to payable.**
***When all are receivable, all receivables made zero .**

Note : This includes :

1. **REC Accounts issued upto 26th week of 2012-13 ie.,17.09.2012 to 23.09.2012**
1. **REC Payments distributed upto 17.09.12**

The payments from MPPTCL,D&D and DNH may please be expedited as these funds can be disbursed to the receiving constituents and the balance funds can be uploaded for system improvement schemes to be approved by WRPC.

WRP Committee noted as above.

ITEM No. 23: WIDE AREA MEASUREMENT SYSTEM (WAMS) IN WR

MS WRPC stated that during 20th WRPC meeting WR Power Committee approved for implementing the WAMS Project in the region by WRLDC through WRLDC CAPEX fund in lines with above decision of the Committee. Thereafter, A Joint Meeting of all the five Regional Standing Committees on Power System Planning was held on 5.03.2012 at Power Grid Corp. of India Ltd., Gurgaon, for firming up the 'Unified Real Time Dynamic State Measurement (URTDSM) scheme as part of Smart Transmission Grid development. On query from Member Secretary (I/C), WRPC during the said meeting, PGCIL representative informed that the WR WAMS project will be integrated effectively in URTDSM project on all India basis.

He further informed that GETCO have dropped the proposed points for discussion in WRPC meeting since the matter has been resolved amicably between GETCO and PGCIL.

Chairman TCC stated that MSECTCL have initiated WAMS project in their system and 15 PMUs have already been installed in the MSETCL system. If the WAMS system implemented by PGCIL is compatible with the PMUs installed in MSETCL, the PMUs installed in MSETCL system may also be used in the regional project. Also duplication of PMUs can also be avoided.

PGCIL representative requested MSETCL to give the list of locations where PMUs have already been installed by MSETCL.

Chairman TCC assured that the list would be sent to PGCIL within fortnight.

WRP committee noted as above.

ITEM No. 24: REVIEW OF CRISIS MANAGEMENT PLAN (CMP) OF MINISTRY OF POWER

Member Secretary, WRPC informed that Chief Engineer (DMLF), CEA vide letter dated 27.04.2012 have intimated that need for regular monitoring of the contingency plan to ensure the readiness of various utilities in handling the crisis situation was emphasized by MOP and conducting mock drills by various utilities was discussed. CEA have advised to conduct at least one mock drill during a quarter by creating emergent situations to which the plant/installations are vulnerable and furnish the report to CEA.

Also, CEA is revising the document of CMP of power sector to be submitted to MOP and therefore requested utilities (including private sector) to forward their views/suggestions to CEA for incorporating in the revised document.

CE(DMLF), CEA made a presentation and emphasized following facts to the committee. Mock drills are required to be conducted by creating emergent situation to which their plants/installations are vulnerable. A quarterly report indicating the type of crisis situation, response of team members, effectiveness in handling the situation and suggestions for further improvement, etc. needs to be prepared by all utilities. It is seen that only few utilities have been submitting the reports in this regard to CEA. It is also requested that revised document of on Crisis and Disaster Management Plan of the utilities may be prepared and periodically updated. In addition to other details the following information/details may also be incorporated in the CMP/website by utilities:-

The telephone numbers of Central and State Control Room which are functional 24x7 along with the contact details of nodal officers of the Ministry be displayed on the website and incorporated in the CMP.

1. The telephone numbers of utilities like the fire brigade, ambulance services etc. be also added in the CMP and on the website.
2. The list of Nodal officers needs to be updated on monthly basis and displayed on the website.
3. “Dos” and “Donts” to be followed by general public be displayed on the website.
4. The non-secret parts of the CMP may be uploaded on the website.

Regional Power Committees (RPCs) were requested to advise the utilities in their respective regions to take necessary action in this regard.

WRP committee noted as above.

ITEM No. 25: STATUS OF TRANSMISSION LINES PROGRESS

MS WRPC stated that the present updated status of lines identified for completion on priority is as below:-

S.No.	Line	Implementing Agency	Anticipated target
1	400 kV Vapi(PG)-Navi Mumbai D/C	PGCIL	Dec-13
2	400 kV D/C Mundra-Jetpur	PGCIL	October -12
3	400 kV D/C Navsari- Mumbai line(Boisar)	PGCIL	May-13
4	LILO of 400 kV Kalwa - Lonikhand 2nd Ckt (MSEB) at Pune (PG)	Reliance (IPTC route)	November-12
5	400 kV D/C Rajgarh(PG) – Karamsad (GEB)	Reliance (IPTC route)	January-13
6	400kV D/C Vindhyachal-IV - Vindhyachal Pooling Station line (Q)	PGCIL	June-13*
7	765kV S/C Vindhyachal Pooling Station - Satna line (Ckt-I)	PGCIL	June-13*
8	765kV S/C Vindhyachal Pooling Station - Satna line (234km+12km D/C Portion)Ckt-II	PGCIL	June-13*
	*Line would be available on completion of Vindhyachal Pooling Station which is expected in 18 month form now.		
9	400 kV D/C Raipur(PG)-Wardha(PG) line	PGCIL	December-12
10	Vindhyachal Pooling station	PGCIL	2014
11	Vindhyachal-IV-Sasan-Satna	PGCIL	2014
12	765 kV D/C Rihand –III- Vindhyachal Pooling station	PGCIL	June 13

Important EHV lines commissioned during the year 2011-12-13:

S.No.	Line	Charged on
1	400 kV D/C Vadinar-Hadala	25.04.11
2	400 kV D/C Korba STPS-Raipur	21.06.11
3	400 kV D/C Rourkela – Raigarh	29.06.11
4	LILO of 400 kV D/C Bina-Nagda line at Sujalpur	29.05.11
5	400 kV D/C Limbdi(Chorania)(GEB)-Ranchodpura(Vadavi)(GEB)	16.05.11

6	LILO of one circuit of 220KV Bina-Shivpuri at 765KV S/s PGCIL, Bina	18.04.11
7	220kV D/C Bhat-Pirana line with AL-59 Cond.	11.05.11
8	220 kV LILO at Mota S/S from 2nd Ckt.of Ukai(T)-Vav line	14.04.11
9	220KV Ukai-Vav	09.04.11
10	400 kV D/C Korba- Raipur	21-06-11
11	400 kV D/C Mundra-Bachchau	29-09-11
12	400 kV D/C Bachchau- Ranchodpura	29-09-11
	400 kV D/C Vadavi)GEB) -Kansari(GEB)	16.11.11
13	400 kV D/C Wardha (PG)-Parli (PG)(Quad.)	31.07.11
14	400 kV D/C Parli(MSEB)-Parli(PG) line	01.07.11
15	220kV D/C Kosamba-Zagadia line	09.07.11
16	400 kV D/C line from New Bhusawal II to Aurangabad (Loc. No. 1 to 270)	23.12.11
17	765 kV 2nd S/C Seoni - Wardha line	01.03.12
18	400 kV D/C Korba (NTPC) – Birsingpur (MPGENCO)	29.02.12
19	LILO of 765 kV S/C Sipat-Seoni line at WR Pooling station near Sipat	24.03.12
20	LILO of 765 kV S/C 2nd Sipat-Seoni line at WR Pooling station near Sipat at Bilaspur (Pooling Stn.)	30.03.12
21	400 kV D/C Gandhar-Navsari	31.03.12
22	LILO of 400 kV Korba (West)-Bhilai at Raita DCDS	03.08.12
23	765 kV S/C Satna-Bina line-II	28.06.12
24	400kV D/C Mauda STPS - Wardha line (Quad)- Ckt-I	30.03.12
25	400kV D/C Mauda STPS - Wardha line (Quad)- Ckt-II	31.05.12

Important EHV lines, which are expected to be commissioned during the current year 2012-13:

S.No.	Line	Implementing Agency	Anticipated target
1	400 kV D/C Mundra-Jetpur	PGCIL	October -12
2	LILO of 400 kV Kalwa - Lonikhand 2nd Ckt (MSEB) at Pune (PG)	Reliance (IPTC route)	November-12
3	400 kV D/C Rajgarh(PG) – Karamsad (GEB)	Reliance (IPTC route)	January-13
4	400 kV D/C Raipur(PG)-Wardha(PG) line	PGCIL	December-12

WRP Committee noted as above.

ITEM No. 26: ITEMs FROM 34th STANDING COMMITTEE MEETING

26.1 Overloading of Kawas – Ichchhapore 220 kV S/C line.

MS WRPC stated that the evacuation system of Kawas CGPP of NTPC with installed capacity of 656 MW (4X106 +2X116) comprised of three number of 220 kV D/C lines; one each to Navsari, Haldarva and Vav. Subsequently, one circuit of Kawas - Vav 220 kV D/C line was looped in looped out at Ichhapore.

During 34th SCM, Director (SP&PA), CEA said that NTPC has informed that Kawas-Ichhapore 220 kV line loading is exceeding 200 MW and on few occasions power flow on this line has reached to the tune of 300-350 MW. This has resulted in damage to the insulators and other bay equipments and even tripping of Kawas generating station. The issue of overloading of Kawas- Ichchhapore 220 kV line has been deliberated in various OCC meetings of WRPC. To mitigate the problem, three options as given below, has been studied at WRPC forum and WRPC has recommended option-III for immediate implementation and depending upon the availability of space at Ichchhapore for accommodating two more bays, option III-A could be taken up in future.

OPTION I : Replacement of the 220 kV Kawas- Ichchhapore portion of conductor with high ampacity conductor

OPTION II: LILO of the second Kawas-Vav line at Ichchhapore and keeping the Vav-Ichchhapore portion open at Ichchhapore end and charged from Vav end

OPTION III : Restore the Kawas-Vav 220 kV D/C line, as per original scheme and add a new 220 kV D/C line between Kawas –Ichchhapore

OPTION III-A : Option III + LILO of one circuit of Kawas – Vav at Ichchhapore. The LILO to be established through 220 kV cable.

M/s NTPC / GETCO in the 34th SCM informed that option-III is presently under implementation and is likely to be completed by the end of May 2012.

Managing Director, GETCO in the 34th SCM stated that the problem of overloading of Kawas- Ichchhapore line has arisen because of increased drawl by M/s ESSAR and low generation at their generating plant. He said that they would like to implement the OPTION III-A in future, which involves LILO of one ckt of Kawas-Vav

220 kV D/C line at Ichchhapore through cable and confirmed the availability of space for 2 no. line bays at Ichchhapore. He added that issues relating to implementing agency and bearing of cost of this LILO arrangement needs to be sorted out with M/s ESSAR.

After further deliberations in the 34th SCM, members endorsed the implementation of OPTION III to overcome the overloading of Kawas – Ichchhapore 220 kV S/C line. Regarding OPTION III-A, on the request of GETCO, it was decided that further deliberation would be held between GETCO, ESSAR and CEA.
GETCO representative stated that the option-III has been implemented and option-III-A is under implementation and would be implemented shortly.

WRP Committee noted as above.

26.2 MSETCL proposal of connectivity of Ghorbandar with Boisar.

MS WRPC stated that in the 33rd Standing Committee on Power System Planning in WR, it was decided that POWERGRID and MSETCL would carry out a joint survey to assess the availability of space at 400 kV Boisar sub-station for termination of 400 kV D/C line from Ghorbandar. Subsequently, MSETCL has intimated that joint survey was carried out by PGCIL, MSETCL and R-Infra officials on 28th October 2011 and in the space available at Boisar 400 kV substation only four nos. of AIS bays could be accommodated, which has already been reserved by POWERGRID for termination of 400 kV D/C lines from Aurangabad and Navsari. Therefore, MSETCL has suggested that to create space for terminating Ghorbandar – Boisar 400 kV D/C line, POWERGRID may implement two AIS bays as GIS bays at Boisar.

During 34th SCM, POWERGRID informed that two nos. of AIS bays for terminating Navsari – Boisar 400 kV D/C line was already under implementation and two nos. AIS bays for Aurangabad – Boisar 400 kV D/c line was ready for award.

During 34th SCM,POWERGRID stated that they have to take approval of their management for the converting two no. AIS bays into GIS bays.

During 34th SCM, after further deliberation, POWERGRID was requested to implement the two no. of AIS bays at Boisar for terminating Aurangabad – Boisar 400 kV D/c line as GIS bays, to accommodate the termination of Ghorbandar – Boisar 400 kV D/C line at Boisar.

WRP Committee noted as above.

26.3 CSPTCL proposal of LILO of 400 kV S/c line between Raipur (PG) and Khedamera (Bhilai) at Raipur (Raita) 400kV substation and provision of 125 MVAR bus reactor at Raipur (Raita).

MS WRPC stated that in the 33rd SCPSPWR, the CSPTCL proposal of LILO of 400kV S/c line between Raipur (PG) and Khedamera (Bhilai) S/c at their proposed Raipur (Raita) 400kV substation was agreed along provision of 125 MVAR bus reactor at Raita and switchable line reactors in both circuits of Raita – Jagdalpur 400 kV D/C line at Jagdalpur end. Subsequently, CSPTCL has intimated that they have planned installation of 50 MVAR line reactors and 80 MVAR switchable line reactors at Raipur (Raita) end and Jagdalpur end of the Raipur(Raita) – Jagdalpur 400 kV D/C line respectively. In view of the planned line reactors, CSPTCL were not providing any bus reactor at Raipur (Raita) 400 kV Substation. Accordingly, CSPTCL has requested to review the decision of provision of 125 MVAR bus reactor at Raipur (Raita) 400 kV substation taken in the last standing committee meeting.

During 34th SCM, CSPTCL representative stated that three nos. of 400 kV D/C lines has been planned with Raita 400 kV substation along with a 50 MVAR line reactor on each line (provision of 300 MVAR reactors) at Raita end. In view of this, CSPTCL has requested to review the decision of provision of 125 MVAR bus reactor at Raipur (Raita) 400 kV substation.

In view of high voltage prevailing around Raipur area during off-peak conditions, CSPTCL was requested to implement the line reactors associated with Raita-Jagdalpur 400 kV D/C line at Raita end as switchable line reactors, instead of the agreed 125 MVAR bus reactor, during 34th SCM,. The line reactor needs to be implemented in the matching time frame of implementation of the LILO of 400kV S/c line between Raipur (PG) and Khedamera (Bhilai) S/c at Raipur (Raita) 400 kV substation. After deliberation, CSPTCL agreed for provision of 2x50 MVAR switchable line reactors at Raita end instead of 125 MVAR bus reactor at Raita.

WRP Committee noted as above.

26.4 GETCO proposal for LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad (GETCO) substation, as an interim arrangement.

MS WRPC stated that in the 33rd SCM, GETCO's proposal of LILO of one circuit of 400kV D/C Mundra UMPP–Chorania line at 400 kV Halvad substation has been studied considering the following 400 kV lines planned by GETCO along with Halvad 400 kV substation:

(i) Varsana – Halvad 400 kV D/C (quad) line.
(ii) Halvad – Vadavi 400 kV D/C line.
(iii) LILO of Adani – Hadala 400 kV line at Halvad.

The preliminary study carried out in CEA, shows no change in the power flow pattern on the lines connected with Halvad 400 kV substation after considering the LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad and the same was also discussed with GETCO. Subsequently, GETCO had requested to make LILO of one circuit of 400kV D/C Mundra UMPP –Chorania line at 400kV Halvad substation as an interim arrangement for operation flexibility, till the availability of planned network (400kV
D/C Varsana-Halvad and 400kV D/C Halvad-Vadavi line). They have also intimated that Mundra UMPP – Chorania 400 kV D/C line was passing in close proximity to their proposed Halvad substation.

During 34th SCM, Managing Director, GETCO intimated that the NIT for Varsana-Halvad and Halvad- Vadavi 400kV D/C lines would be issued within a month and their commissioning is expected by December 2014. The Halvad 400 kV substation along with LILO of Adani–Hadala 400 kV line at Halvad and the interim arrangement proposed would be completed by March 2013.

During 34th SCM, after deliberations, members agreed with the GETCO proposal of LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad (GETCO) substation, as an interim arrangement. With the commissioning of the planned network, GETCO would restore the line to its original configuration.

WRP Committee noted as above.

26.5 Conversion of fixed line reactors to switchable line reactors associated with Aurangabad-Pune and Pune-Parli 400 kV D/C lines at Pune 400 kV substation.

MS WRPC stated that in 32nd Standing Committee Meeting on Power System Planning in Western Region held on 13 May 2011, because of RoW problem faced by POWERGRID in implementing Pune (PG) – Pune 765/400 kV (GIS) 400 kV D/C (quad) line, it was decided to LILO both circuits of Aurangabad (MSETCL)– Pune (PG) 400 kV D/C line and Pune (PG)-Parli (PG) 400 kV D/C line at Pune GIS thus forming:

a) Pune (PG) – Pune 765/400 kV (GIS) 400 kV 2XD/C line
b) Aurangabad (MSETCL) – Pune 765/400 kV (GIS) 400 kV D/C line
c) Pune 765/400 kV (GIS) – Parli (PG) 400 kV D/C line

Considering the length of 400 kV lines of Aurangabad-Pune (GIS) and Parli- Pune (GIS), 50 MVAR line reactors were provided by POWERGRID on each circuit at Pune (GIS) end (4x50 MVAR) and the same was agreed by CEA.

During 34th SCM, Director (SP&PA), CEA further stated that the Aurangabad-Pune D/C 400kV line and 400kV Pune-Parli D/C line is being implemented through IPTC. The 400 kV substation at Pune along with the four nos. of 50 MVAR line reactors at Pune end (for earlier Pune-Aurangabad 400 kV D/C and Pune-Parli 400 kV D/C lines) was under the scope of POWERGRID. With revised interconnection, there would be four nos. of 50 MVAR line reactors at Pune end for the Pune (PG) – Pune 765/400 kV (GIS) 400 kV 2XD/C line. This being short line, POWERGRID has now proposed to convert the 50 MVAR line reactors at Pune end into switchable line reactors.

During 34th SCM, Members agreed with the proposal of POWERGRID to convert the 50 MVAR line reactors (four nos.) in each circuit of Pune (PG) – Pune 765/400 kV (GIS) 400 kV 2XD/C line at Pune end into switchable line reactors.

WRP Committee noted as above.

26.6 Interconnection of Navsari 400 kV (GIS) and Vapi 400 kV substation as an interim arrangement.

MS WRPC stated that Gandhar–Navsari-Boisar 400 kV D/C line along with establishment of 400/220, 2X 315 MVA substation at Navsari was being implemented by POWERGRID as a part transmission system associated with

Mundra UMPP. The Vapi – Navi Mumbai 400 kV D/c line was also being implemented by POWERGRID under Western Region System Strengthening Scheme-V. Due to ROW constraints, Navsari–Boisar 400 kV D/c line and Vapi–Navi Mumbai 400 kV D/c line has been planned to be implemented on multi circuit towers in certain stretches of these lines. POWERGRID has informed that Navsari 400/220 kV S/s along with Gandhar – Navsari 400kV D/c line was in advanced stage of completion. However, the multi circuit portion of Vapi–Navi Mumbai and Navsari – Boisar D/c line was scheduled for commissioning at a later date due to ROW problems. In order to transfer power from Mundra UMPP till completion of these lines, POWERGRID has proposed that completed portion of 400 kV D/c Navsari–Boisar line and 400 kV Vapi – Navi Mumbai line may be inter connected with each other at the point where multi circuit portion was starting. This would result in interconnection of Navsari with Vapi through Navsari – Vapi 400 kV D/c line.

During 34th SCM, Director (SP&PA), CEA further stated that Navsari – Vapi 400 kV D/C line (as an interim arrangement) would enable power transfer from Navsari to Vapi and would provide 2nd feed to 400/220 kV Vapi S/s which was supplying power to load centers in Gujarat, UT of DNH, UT of DD and Maharashtra.

In view of the delay in implementation of the multi circuit portion of the Navsari–Boisar and Vapi-Navi Mumbai 400 kV D/C lines, members agreed to the proposal of POWERGRID to interconnect these two lines at a point where multi circuit portion was starting as an interim arrangement.

WRP Committee noted as above.

26.7 Laying of 765kV D/C towers instead of S/c towers in RoW constraints stretches of 765kV 2xS/C Vindhyachal pooling station –Satna – Gwalior line.

MS WRPC stated that Vindhyachal pooling station – Satna 765 kV 2XS/c line (265 km) and Satna – Gwalior 765 kV 2X S/c line (392 km) have been agreed as part of common transmission system for WR and NR associated with evacuation of power from Rihand-III and Vindhyachal-IV generation projects of NTPC. POWERGRID has informed that ROW constraints are being faced on these lines (for about 115 km route length) due to involvement of forest stretches and development of coal block

mines which have been recently identified and allocated to coal mining companies. Therefore, POWERGRID has proposed to implement these lines as D/c lines in the portions where ROW constraints are being faced.

During 34th SCM, Managing Director, GETCO stated that to avoid ROW constraints we should plan 765kV 1XD/C configuration instead of 2XS/C configuration in future and in ROW constraint areas, 400 kV lines on multi circuit towers in place of 400 kV D/C lines needs to be implemented.

During 34th SCM, POWERGRID stated that in the initial stages of development of 800 kV system, 765 kV S/C transmission lines were planned but after the development of 765 kV D/C tower, 765 kV D/C lines are being planned wherever required. DGM POWERGRID stated that RoW constraints are also being faced in some cases when the line approaches a sub-station having many interconnections and in these cases few spans of transmission lines near the substation needs to be planned on multi circuit towers.

During 34th SCM, Member (Power System), CEA stated that grid security aspects in case of 765 kV D/C tower outage also needs to be studied while planning for 765 kV D/C lines.

During 34th SCM, NTPC representative stated that Sasan-Satna 765 kV lines were struck up due to Forest Clearance issues. The forest related issues in the Vindhyachal pooling station–Satna–Gwalior 765 kV lines was of major concern. Implementation of Vindhyachal pooling station–Satna–Gwalior 765 kV lines needs to be expedited to avoid constraints in evacuation of power from Vindhyachal –IV and Rihand-III.

During 34th SCM, after further deliberations, members agreed with the POWERGRID proposal of laying of 765kV D/C tower instead of S/c towers in RoW constraint stretches of 765kV 2xS/C Vindhyachal pooling station –Satna – Gwalior line. It was also agreed that in general, in forest stretches and Row constraint areas including approach section near sub-station, 400 kV multi circuit tower may be used instead of 400 kV D/C towers and 765 kV D/C tower may be used instead of 765 kV S/C towers.

WRP Committee noted as above.

26.8 Provision of 63 MVAR line reactor for one circuit of Raipur – Bhadrawati 400 kV line at Raipur end.

MS WRPC stated that splitting of bus along with reconfiguration/shifting of terminating lines at Raipur 400kV substation has been agreed in the 28th meeting of Standing Committee in Western Region held on 06.12.2008 at Aurangabad.

As per the agreed scheme, the following reconfiguration/shifting of lines has to be carried out:

(i) Bypassing of Korba-Bhatapara-Raipur-Bhilai 400 kV line at Raipur. Thus resulting in Korba-Bhatapara-Bhilai 400 kV line and releasing of two line bays in Raipur section A.
(ii) Shifting of Bhadrawati circuit II & III from Raipur section B to Raipur section A in the two line bays made available by the above bypassing.

The reactive compensation existing at Raipur end for Raipur–Bhadrawati 400kV D/c line and Bhatapara – Raipur 400kV S/c line are:

(i) 1x63MVAR line reactor at Raipur end for each circuit of Raipur –Bhadrawati 400kV D/c line.
(ii) 1x50MVAR line reactor at Raipur end for Bhatapara – Raipur 400kV S/c line.

POWERGRID has proposed shifting of Bhadrawati circuit –II and III from Raipur section B to section A without shifting of associated line reactors, in view of the complicacy involved in swapping of the transmission lines including shifting of line reactors. With this only 1x50MVAR line reactor (of earlier Bhatapara –Raipur 400kV S/c line) shall be available for one circuit and there shall be no line reactor for other circuit. Since, Raipur–Bhadrawati line is 345 km long, POWERGRID has proposed a new 1x63MVAR line reactor at Raipur end for the other circuit.

After deliberations, members agreed to the provision of a new 63 MVAR line reactor for one of circuit of Raipur –Bhadrawati 400 kV D/C line at Raipur end.

WRP Committee noted as above.

26.9 Commissioning of 400/220kV ICT-III with bays at Wardha by POWERGRID.

MS WRPC stated that progress of following elements were intimated during the 34th SCM;

26.9.1 During 34th SCM MSETCL intimated that 400/220kV ICT-III at Wardha has been commissioned along with bays by POWERGRID. In view of many generation projects coming up around Wardha area, they would not be able to draw additional

power from Wardha at 220 kV level. Therefore the ICT-III along with associated bays at Wardha will remain unutilized and payment of transmission charges for the same will be undue burden on Maharashtra.

ED (Commercial), POWERGRID stated that ICT at Wardha is commissioned hence monthly charges will be payable from 1st March, 2012.

The issue was further deliberated and it was decided that POWERGRID would shift the 400/220kV ICT-III at Wardha to Bhadrawati HVDC back-to back station / some other location. It was also agreed by the members that the applicable transmission charges would continue to be paid to POWERGRID during the shifting period of the ICT and further, the additional expenditure to be incurred by POWERGRID towards dismantling, shifting of the said ICT may be capitalized as Additional Capitalisaton under the said assets.

26.9.2 Deletion of associated 220 kV bays from the 1X315 MVA ICT at Bhadrawati for to HVDC station:

During 34th SCM MSETCL representative informed that provision of 1X315 MVA ICT along with associated 220 kV bays at Bhadrawati for reliable auxiliary power supply to HVDC station has been agreed. There are many generation projects coming up in vicinity of Bhadrawati, therefore utilization of 220 kV bays for drawl of power from Bhadrawati cannot be ensured. Therefore, it is suggested that POWERGRID may avail the auxiliary power supply at EHV level from MSETCL. And in case, POWERGRID was going ahead with the implementation of 315 MVA ICT, provision of 220 kV bays should be deleted from the scope to avoid bay charges.

POWERGRID stated that the provision of 1X315 MVA ICT along with 220 kV bays at Bhadrawati for reliable auxiliary power supply to HVDC station has been discussed and agreed in the last SCM and also in WRPC meeting. In view of the high utilization factor of this inter-regional link, for reliable auxiliary supply to the HVDC back-to-back station at Bhadrawati, 1X315 MVA ICT was essential. This kind of arrangement also exists at other HVDC stations.

After deliberations, it was decided that the 220 kV bays associated with the 400/220kV ICT at Bhadrawati HVDC station would be taken up for implementation by POWERGRID as and when requested by MSETCL.

WRP Committee noted as above.

ITEM No. 27: RENOVATION AND MODERNISATION OF WRPC OFFICE BUILDING

27.1 Contributions for renovation & modernization of WRPC office building.

Member Secretary, WRPC informed that earlier cost estimate for the R&M work was Rs 7,75,29,481/-. It was decided that 50% of this amount to be contributed by Members as first installment and remaining 50% of this amount as second installment. Against this Rs. 3,24,78,504/- and Rs 3,03,06,333/- has been received as first and second installment respectively. Thus total Rs 6,27,84,837/- have been received from the members so far.

Contribution of Rs 23,68,225/- from UT of DD and GIPCL each and Rs 3,38,318/- from JSW and NVVNL (NTPC) each is still awaited against first installment while contribution of Rs 23,31,641/-each from UT of DD, POWERGRID, Tata(Trader) and Tata (Distribution) is still awaited against second installment.

He further added that during 20th WRP Committee meeting on recommendation of R & M Committee Western Regional Power Committee gave its approval for:-

- Further fund requirement on account of increase in cost etc. may be called in third installment.
- Contribution from new members may also be collected.

GM(O&M), PGCIL, Nagpur during R&M sub-Committee meeting held on 8.11.2012 intimated that they have made the payment of first and second installment on 5th November 2012. It was decided to send the reminder for payment for first installment and second installment to the concerned. Also, demand letter for third installment may also be sent for additional works as discussed in para 25.2 below.

27.2 Sharing of the total cost

Member Secretary, I/C, WRPC stated that Western Regional Power Committee on recommendation of R & M Committee in its 20th meeting gave its approval for:-

- revised total cost of Rs 8,52,49,715/- against earlier approved cost of Rs 7,75,29,481/- and its sharing by members.
- PGCIL may take up the renovation work at WRPC.

He further stated that PGCIL have taken up the works of seepage treatment which started from 11/06/2012. The zero date as per BLOA is 11/06/2012. The renovation work of WRPC Building is in progress.

Further, PGCIL vide WRTS-1/MUMLIA/WRPC/12/1699 dated 20.09.2012 has intimated that while carrying out repairing work of the slab & beam portion in sixth floor(Top floor), it has been observed that the reinforcement of slabs are mostly corroded and not having strength to bond the concrete. The slabs are found hollow with weak concrete patches. In view of the deteriorated condition of slabs & roof, PGCIL requested to communicate consent for following items of work at the earliest so that work can move on uninterrupted –

1. Carrying out the structural examination through structural consultant.
2. Modification in BOQ items for structural repairing and Terrace treatment based on remedial measures as suggested by consultant.

It was further intimated by PGCIL that the anticipated additional expenditure will be around Rs. 6.00 lakhs for structural examination through structural consultant and about Rs. 15-20 lakhs for anticipated modification in BOQ items for structural repairing.

The issue was taken up with chairman of the Sub-committee vide WRPC/Services /R & M/12/1449 dated 25th September 2012. For formal approval for taking up structural examination pending approval from WRPC. On receipt of communication from Chairman R & M committee, POWERGRID was advised to go ahead for structural examination through structural consultant and remedial measure required for the same.

R&M Sub-Committee discussed the matter on 8.11.2012 and wherein recommendations were given on carrying out the structural examination through structural consultant and Corrective treatment of withered slabs. Estimated cost of Rs. 30,30,775/- were recommended by R&M Committee for approval of Western Regional Power Committee for structural work and corrective action. Also, it was pointed out by PGCIL that Air conditioning of office building is not fully covered therefore expenditure towards Air conditioning works at WRPC were recommended by the R&M Committee. Expenditure of Rs. 34,97,048/- towards providing A.C. system has been recommended by Committee.

It was decided to call for funds from constituents of WRPC and sharing to be done as per the present method including new members who have joined WRPC in the year 2012-13 and rotational members to share their contribution among their group.

Accordingly, following have been recommended by the R&M Committee for third installment :

1. Cost towards structural examination and repair work	**: 30,30,775/-**
2. Cost towards Air conditioning works	**: 34,97,048/-**
3. Difference between original approved cost and revised approved cost (8,52,49,715 - 7,75,29,481)	: **77,20,234/-**
Total	**: 1,42,48,057/-**

R&M Committee recommended for rounding up above amount to 1,50,00,000/- for including any small works to be carried out in future plus variation in expected versus actual expenditure. It was recommended to send demand letter to all the constituents for sharing the above cost after approval of WRPC in 21st meeting.

WRP Committee approved the recommendations of R&M Committee.

27.4 Members of the Sub - Committee.

Member Secretary I/C, WRPC intimated that during 13th WRP Committee meeting, WRP committee constituted a Sub Committee look into the estimates, R & M works etc. in respect of WRPC Office Building. During 17th WRP Committee meeting in view of transfers/postings the name of the designated nomination of members of the sub-committee were made as under:-

1) Shri S.B. Khyalia, ED (Finance), GUVNL, Vadodara Chairman
2) A P Bhairve, Chief Engineer (LD), MPPTCL, Jabalpur, Member
3) Shri S.G. Kelkar, CE (STU) , MSETCL, Mumbai, Member
4) Shri Vijay Singh, CE (Trans.), CSPTCL, Raipur , Member
5) Shri D.K. Valecha, Exe.Dir. (WR-I), PGCIL, Nagpur, Member
6) Shri S Satyanarayan, Suptdg Engineer (O&SS), WRPC Member
7) Shri O.P.Singh, Suptdg Engineer (Comml. & Ser.), WRPC Member and Convener

In view of further transfers/postings, the designated nominations of members of the sub-committee was discussed and R&M Committee recommended following configurations for approval of WRPC as under :-

1) Shri S. G. Kelkar, ED(Opn.), MSETCL Chairman
2) Shri K. P. Jangid, GM(Finance), GUVNL Member
3) Shri P A R Bende, Chief Engineer (LD), MPPTCL, Jabalpur, Member
4) Shri S.T. Shinde, CE(LD) , MSETCL, Mumbai, Member
5) Shri Vijay Singh, ED (Trans.), CSPTCL, Raipur , Member
6) Shri V. K. Khare, GM(O&M), PGCIL, Nagpur, Member
7) Shri S Satyanarayan, Suptdg Engineer (O&SS), WRPC Member
8) Shri M M Dhakate, Suptdg Engineer(Ser.),WRPC Member and Convener

WRP Committee accorded its approval to above recommendations of R&M Committee.

ITEM No.28: Pollution mapping for Western Region

Member Secretary I/C, WRPC stated that PGCIL vide letter dated 31.10.12 have intimated that in order to facilitate cost effective selection of insulators for transmission lines and minimizing the trippings of transmission lines due to insulator flash over, it is essential to have knowledge of the pollution severities. Inquiry Committee on Grid Disturbance in Northern Region on 2nd Jan' 2010, recommended POWERGRID to complete pollution mapping in association with CPRI. Transmission corridors of region are adversely affected due to heavy pollutants emitted by Industries / Costal Pollutants in the region.

PGCIL representative stated that proper pollution mapping is necessary to develop a pollution profile of the region. Pollution mapping of the region is proposed to be executed in association with CPRI using approach similar to the one adopted in Northern region and the proposal is as below :

- CPRI & POWERGRID shall provide training (including hands on training) to the associated engineers of POWERGRID & constituents (State Utilities) at suitable locations in the region and suggest the Guidelines/Procedures.
- Dummy insulator to be arranged & installed by POWERGRID and STUs on their transmission lines. Measurements shall be carried out three (03) times representing three seasons per year and shall repeat the same for next year also. (i.e. total 6 samples for two years)
- Initial samples shall be installed & measurement of Equivalent Salt Deposited Density (ESDD) & Non Soluble Deposited Density (NSDD) to be done under the supervision of CPRI. Subsequent measurements shall be carried out by officials of constituents.
- Chemical Analysis of selected samples shall be carried out by CPRI. The CPRI shall analyze the measurements / results of test carried out at site & laboratory and determine the pollution levels. Pollution map shall be produced on geographical map of region.

- Expenditure on pollution mapping is to be reimbursed to POWERGRID directly from the beneficiaries as one time reimbursement. **Expected expenditure for the program is INR 3 Crores.**

TCC members discussed the matter and recommended that as done by NR suo-moto action can also be carried out in WR in selected pollution sensitive areas such as Ratnagiri, coastal Gujarat, Tarapur etc. areas by concerned States/Utilities themselves.

WRPC agreed with the above recommendations of TCC and suggested for early action.

ITEM No.29: Recommendations of SCADA O&M Committee

29.1 **Proposal for additional requirement of OPGW under Master Communication Plan in WR**

Member Secretary I/c intimated following proposals received from PGCIL :

(i) The Master Communication Plan in WR which involved implementation of 6710 Kms of Fiber Optics was approved in 14th WRPC meeting held on 19th August, 2010. Accordingly, Communication System consisting of 6652Kms for Central Sector and 239Kms for MPPTCL is under implementation. LOA for this requirement has already been placed and survey work is in progress.

However, some of the stations such as Gwalior 765kV, Indore765kV, Jabalpur Pooling, Damoh, Birsinghpur & Dharamjaygarh could not be planned with physical redundancy as appropriate route was not available and Sipat, Bilaspur, Kawas, Kakrapar Betul & Mauda were not included in the network. Considering the subsequent development in power system network and communication related problems faced during the recent grid disturbance, connectivity with physical path redundancy has been planned for balance stations which shall require installation of 2672Kms of OPGW.

This requirement was discussed in the SCADA committee meeting held on 12th September 2012 at WRLDC Mumbai. During the discussions in the SCADA committee meeting, WRLDC & other constituents opined that Fiber connectivity to SLDCs (Planned) of DD & DNH, existing SLDC at Goa & Kalwa, Kawas,

RGPPL and Bina (JAYPEE) power plants may also be provided in order to establish wide band connectivity for these sub-stations and control centers. To meet this requirement, in addition to 2672Kms of OPGW mentioned above, the following links are required:

a) SLDC (DNH) – Bhilad S/S – Vapi
b) SLDC (Varkoond) – Magarwada – Vapi
c) SLDC (Panjim) – Ponda – Mapusa
d) Navsari GIS – Navsari (GETCO) - Kawas
e) Kawas – Vav
f) RGPPL – New Koyna
g) Bina(JAYPEE) – Bina(PG)
h) CGPL Mundra – Jetpur

(ii) MPPTCL vide their letter dated 31.7.12, has requested for inclusion of approximately 14kms of OFC along with wideband communication equipment of adequate capacity for setting up of back-up SLDC at Govindpura, Bhopal in the Master Communication Plan of WR under central sector portion, adopting the guidelines of ULDC project and guidelines adopted for sharing of wideband communication cost for shifting of SLDC CSPTCL from Bhilai to Raipur. This was discussed and agreed during SCADA committee meeting held on 12th September 2012 at WRLDC Mumbai.

(iii) GETCO vide their letter ref. SLDC/Mastercommunication/1895 dated 11.10.2012 have requested for connectivity of Sub-LDC Gandhinagar and Sub-LDC Jetpur to SLDC Vadodara (Gotri) on OFC with suitable end equipments.

In the SCADA committee meeting, it was also observed that physical path redundancy to Gwalior S/S can be provided with Gwalior-Agra inter-regional link (140kms) instead of Gwalior-Satna link (330kms) proposed in the agenda for SCADA committee meeting which will reduce the overall requirement by 190kms. Considering all the above requirements, approximately 3666kms of additional fibre optic cable along with communication equipment are proposed to be implemented under Master Communication Plan for WR. The revised network diagram with all additional requirements is attached herewith at Annexure-SA2.

29.2 Proposal for replacement of existing Communication equipment

The communication equipments installed under Master Communication Plan are under AMC which is valid for around two more years. In the recent SCADA committee meeting it was opined that after AMC period it may be difficult to maintain the existing equipment as the spares for the same may not be available. Therefore, the replacement of these equipments should be planned. It is proposed that these existing equipments (SDH 37nos. & PDH 72nos.) may be replaced under Master Communication Plan; the initial estimated cost for these equipments is Rs 3.89Cr.

29.3 Proposal for implementation of state of art PABX system

During the recent grid disturbance, the operators at control center faced many problems in connecting the speech to other control centers and important stations due to non-availability of fast dialing, easy directory sorting and inter-regional voice connectivity etc. which consequently affected the grid restoration process. Considering this, POWERGRID has proposed to install the PABX system at all SLDCs, RLDCs and NLDC of the country with features such as computerized touch screen dialing, directory sorting, voice recording system etc. The proposal for implementation of sate of art PABX system with features of computerized touch screen dialing and voice recording features for RLDCs & SLDCs of all regions in the Master Communication Plan in WR was deliberated and agreed by the recent SCADA O&M committee during the meeting. The NIT for this requirement has already been floated. It is proposed to include this requirement of PABX system for WR portion in the Master Communication Plan for WR (estimated cost is Rs. 30 laces for each Control Center).

The above proposal for installation of approximately 3666kms OPGW, replacement of communication equipment installed under ULDC Project & installation of PABX System at SLDCs of Western Regions, WRLDC and NLDC under Master Communication Plan may please be approved. On approval this requirement shall become part of the commercial agreement signed between POWERGRID and Constituent of Western Region under Master Communication Plan.

TCC agreed and recommended for approval of WRPC for the above items cover under 29.1 to 29.3. WRP Committee agreed with the recommendations of TCC.

ITEM No.30: Connectivity/Long term Access/Medium Term Open Access in WR

A. Applications for Grant of Connectivity

(1) South East Central Railways

(i)	Project Details	100 MW –Bulk Consumer
(ii)	Commissioning schedule	-
(iii)	Connectivity granted	100 MW from Apr'13
(iv)	Step up Voltage	220kV
(v)	Connectivity transmission system	➢ Bhilai (SEC Railways) –Raipur (PG) 220kV D/c line
(vi)	Development of Connectivity System	Connectivity system shall be developed by SEC Railways (including 2 nos. 220kV bays at Raipur(PG))

(2) BALCO Limited

(i)	Project Details	1335MW (4X300+ 2X67.5 MW) Distt.- Korba, Chhattisgarh
(ii)	Commissioning schedule	2X67.5 MW- existing
(iii)	Connectivity granted	135MW(2X67.5) from May'12 Subject to a) complete physical segregation of these 2X67.5MW units incl. busbar, auxiliary supply etc. from other 2X67.5 units connected to STU b) clearance from CSPTCL
(iv)	Step up Voltage	400kV
(v)	Connectivity transmission system	➢ 220kV interconnection along with bays at both ends for interconnection of these units with 4x300MW TPS busbar
(vi)	Development of Connectivity System	Connectivity system shall be developed by BALCO.

(3) Jinbhuvish Power Generation Pvt. Ltd.

(i)	Project Details	600MW Distt: Yavatmal, Maharashtra
(ii)	Commissioning schedule	Unit 1: Dec'14 Unit 2: Mar'15
(iii)	Connectivity granted	600 MW from Sep'14
(iv)	Step up Voltage	400kV
(v)	Connectivity transmission system	➢ LILO of one ckt of 400kV Wardha - Parli D/c (Quad) line at JPGPL TPS ➢ Bus reactor 1 x 80MVAR at generation switchyard ➢ 1x80 MVAR switchable line reactor for JPGPL – Parli section at generation switchyard
(vi)	Development of Connectivity System	By the generation developer

B. Applications for Grant of Connectivity & LTA

1) NTPC Vindhyachal -V

(i)	Generation Project Details	500 MW(1x500MW) Distt.- Singrauli, State-MP
(ii)	Commissioning schedule	U-1: May'15
(iii)	Connectivity granted	500 MW from 2014-15
(iv)	LTA granted	495.78 MW from Mar'15 (25 years) or availability of transmission system at (viii) whichever is later.
(v)	Step up Voltage	400kV
(vi)	Target Beneficiaries	495.78 MW- WR: 495.78MW(MP Tradeco:129.04MW, CSPDCL:32.94MW,GUVNL:110MW,MSEDCL:138.29MW,GOA :5.47MW, UT-DNH:3.24MW,UT-DD:2.09MW)
(vii)	Connectivity transmission system	➢ Generation Step up at 400kV level & interconnection at 400kV Bus of Vindhyachal TPS –IV Switchyard (to be implemented by generation developer). ➢ 1x125 MVAR bus reactor at Gen. switchyard (to be implemented by generation developer).
(viii)	LTA transmission system	• Vindhyachal Pooling station –Jabalpur Pooling station 765 kV D/c (implementation of the line through tariff based competitive bidding and terminal bays and reactors by POWERGRID) • 1X1500MVA, 765/400kV ICT at Vindhayachal Pooling station (implementation by POWERGRID)

NTPC representative queried whether the associated transmission system will be ready by the time unit is synchronized. To this, PGCIL representative replied that the transmission system will come up per scheduled time.

C. Applications for Grant of Long Term Access (LTA)

1) Jhabua Power Limited

(i)	Generation Project Details	1200MW (2X600MW)
(ii)	Commissioning schedule	U-1: Feb'13 onwards
(iii)	LTA granted	210 MW from Apr'14 (for 25 years) or availability of transmission system at (vii) whichever is later.
(iv)	Step up Voltage	400kV
(v)	Target Beneficiaries	WR: 210MW (M.P)
(vi)	LTA transmission system	➢ **Transmission system strengthening** • Jabalpur Pooling station – Bina 765kV S/c(3rd)-with 1st unit • Jabalpur Pooling station –Bhopal – Indore 765kV S/c. with 2nd unit Above Transmission lines are under implementation through tariff based competitive bidding.

2) Jaypee Sidhi Cement Plant (2X60 +35MW)

(i)	Generation Project Details	155MW (2 x 60 +35MW) Dist- Sidhi , M.P
(ii)	Commissioning schedule	U-1 (35MW) : Operational U-2 (60MW) : Jun'12 U-3 (60MW) : Aug'12
(iii)	LTA granted	140 MW from Jan'15 (12 years)
(iv)	Step up Voltage	132kV
(v)	Target Beneficiaries	NR: 49MW, ER: 14 MW, WR: 63 MW , SR: 14MW
(vi)	Connectivity already granted by MPPTCL	➢ Jaypee Sidhi Cement Plant -220/132kV Silpara (Rewa) S/s of MPPTCL which is connected to 220kV Satna S/s of MPPTCL.
(vii)	LTA transmission system	➢ **Transmission system strengthening in WR** • Satna (MPPTCL) – Satna (PG) 220kV D/c line. Above line shall be implemented and owned by STU.

D. Applications for Grant of MTOA

MTOA has been granted to Electricity Department UT DNH for 64 MW and Electricity Department, Daman UT DD for 22MW for the period 1.08.12 to 31.03.13. This was noted by the members.

E. Interim transmission arrangement for IPPs in WR

M/s Jaiprakash Power Venture Ltd., (JPVL), Madhya Pradesh who have already been granted Long-term open access through Nigrie STPP-Satna 400kV D/c (high capacity) line has been provided following Interim transmission arrangement:

- LILO of one ckt of 400kV Vindhyachal –Satna line at Nigrie TPS

Implementation of above LILO and restoration of 400kV Vindhyachal –Satna line at Nigrie TPS by removing LILO after availability of connectivity line shall be done by Generator developer. Till the availability of planned network, in case of any transmission constraint, the above generator would have to be backed down. Special protection schemes to bring down the generation level in case of transmission constraints has to be put into place by the IPP along with the implementation of LILO arrangement.

F. Modification in LTA quantum/commencement of LTA

S.No.	LTA Applicant	LTOA earlier granted for	Modifications agreed in the LTOA
1.	Torrent Energy Ltd.	• TPL (Ahmadebad and others) – 400MW for 12 yrs and one month.	• TPL (Ahmadebad and others) – 400MW for 25yrs.
2.	Torrent Power Ltd. (SUGEN)	• Transfer of 500 MW from their generating station at SUGEN	• Transfer of 300MW from their generating station at SUGEN
3.	M/s ACB (India) Limited	• Transfer of 270 MW from their generating station (2X135 MW) in Korba, Chhattisgarh.	• Transfer of 243 MW (**GUVNL-208 MW, CSPTCL-12MW and WR-23 MW**) from generating station (2X135MW) in Korba, Chattishgarh.

WRP Committee noted as above.

ITEM No.31: Transfer of load of UT of DD & DNH catered at 66 kV level

CE(SLDC), Gujarat stated that 220/66 kV ICT loading at both 220 kV Vapi and Bhilad s/s have already reached to critical level and Gujarat is not able to release upcoming demand to their consumers in Gujarat State and already written to DD & DNH for shifting of loads from 66 kV Kachigam, Dabhel, Dadra, Silvassa and Khadoli s/s from GETCO system to their own system. He further stated that action such as opening of 66 kV lines might have to be taken by them to control loading on ICTs which may cause severe problem in DD and DNH and requested to Member Secretary I/C to intervene in the matter.

Member Secretary I/c, WRPC stated that he would take up with Administrator of DD/DNH regarding shifting of loads.

ITEM No. 32: DATE AND VENUE OF NEXT WRPC MEETING

The 22nd WRPC meeting will be hosted by GETCO in first fortnight of February-2013. The exact date & venue will be intimated separately.

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Annexure - I

पक्षेविसमिति की 21 वीं तक.सम.समिति की दिनांक 08.11.2012 को रायपुर में आयोजित बैठक में भाग लेने वाले अधिकारियों की सूची

क. तकनीकी समन्वय समिति

सदस्य

1. श्री यू.जी. झाल्टे, निदेशक (प्रचा.), महाराविपारेकंलिमि.एवं अध्यक्ष, तकसमसमिति
2. श्री संजय टी. शिंदे, मुख्य अभियंता (एसटीयू), महाराविपारेकंलिमि.
3. श्री जी.एस. कलसी, प्रबंध निदेशक, छत्तीराविपारेकंलिमि.
4. श्री ए.के. सक्सेना, कार्यकारी निदेशक (ओ एंड एम), छत्तीराविउत्पाकंलिमि.
5. श्री जी.सी. मुखर्जी, मुख्य अभियंता (वाणिज्य), छत्तीराविवितकंलिमि.
6. श्री के.एस. मनोथिया, मुख्य अभियंता (भा.प्रे.), छत्तीराविपारेकंलिमि.
7. श्री डी.सी. परमार, मुख्य अभियंता (प्रचा.), उगुजविकंलिमि.
8. श्री पी.ए. पटेल, मुख्य अभियंता, गेटको
9. श्री उमेश राऊतजी, प्रबंध निदेशक, मप्रविपारेकंलिमि.
10. श्री पी.ए.आर. बेंडे, मुख्य अभियंता, मप्रविपारेकंलिमि.
11. श्री पी. पैंटैय्या, महा प्रबंधक, पक्षेभाप्रेकेन्द्र
12. श्री आर.के. ओक, एनपीसीआईएल
13. श्री रूपक जैन, महाप्रबंधक, एनएचडीसी
14. श्री आर.सी.गुप्ता, मु.वि.नियं., जिंदल पावर
15. श्री प्रशांत पांडा, ए.वी.पी., जीएमआर इनर्जी ट्रेडिंग
16. श्री एस.डी. टाकसांडे, सदस्य सचिव (प्र.), पक्षेविसमिति

ख. अन्य

I **महाराष्ट्र**

1. श्री एस.जी. केलकर, कार्यकारी निदेशक (प्रचा.), महाराविपारेकंलिमि.
2. श्री ए. आर कुलकर्णी, सहायक अभियंता, महाराविपारेकंलिमि.

II **छत्तीसगढ़**

1. श्री जनार्दन कर, प्रबंध निदेशक, छत्तीराविउत्पाकंलिमि.
2. श्री डब्ल्यू.आर. वानखेडे, मुख्य अभियंता (ईएचटी), छत्तीराविपारेकंलिमि.
3. श्री आर.के. मेहता, मुख्य अभियंता (सी एंड पी), छत्तीराविपारेकंलिमि.
4. श्री पी. चौधरी, अति. मुख्य अभियंता, छत्तीराविपारेकंलिमि.
5. श्री आर.सी. चौबे, अति. मुख्य अभियंता, छत्तीराविपारेकंलिमि.
6. सुश्री तृप्ति सिन्हा, अति. मुख्य अभियंता, छत्तीराविपारेकंलिमि.
7. श्री एस.के. मेहता, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
8. श्री विजय मिश्रा, डी.जी.एम., छत्तीराविहोकंलिमि.

9. श्री आर. ए. पाठक, अधीक्षण अभियंता, छत्तीराविवितकंलिमि.
10. श्री एच.के. पांडे, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
11. श्री संदीप गुप्ता, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
12. श्री बी.आर.सोनी, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
13. श्री वाय.सी. नायक, ओ.ए.ग्रेड-I, छत्तीराविपारेकंलिमि.
14. श्री एस.एन.व्यास, कार्यपालक अभियंता, छत्तीराविपारेकंलिमि.
15. श्री गिरीश गुप्ता, कार्यपालक अभियंता, छत्तीराविपारेकंलिमि.
16. श्री प्रशांत सोनी, सहायक अभियंता, छत्तीराविपारेकंलिमि.
17. श्री जी.पी. सिंह, सहायक अभियंता, छत्तीराविपारेकंलिमि.

III **गुजरात**

1. श्री के.पी. जांगिड, महाप्रबंधक (वाणि.), गुजऊविनिलिमि.
2. श्री यू.सी. पटेल, अतिरिक्त मुख्य अभियंता, गेटको
3. श्री पी.जे. जानी, कार्यपालक अभियंता, गुजऊविनिलिमि.

IV **मध्य प्रदेश**

1. श्री के.के. अग्रवाल, मुख्य महाप्रबंधक, मप्रविप्रबंकंलिमि.
2. श्री के.सी. बडकुल, कार्यकारी निदेशक, मप्रविप्रबंकंलिमि.
3. श्री एस.के. नागेश, निदेशक (तक.), मप्रविपारेकंलिमि.
4. श्री वी. मेहतो, सलाहकार, मप्रविपारेकंलिमि.
5. श्री हर्ष वर्धन व्यास, अति.मुख्य अभियंता, मप्रविउत्पाकंलिमि.

V **दादरा नगर हवेली**

1. श्री एच.एम. पटेल, कार्यपालक अभियंता

VI **एनटीपीसी लिमि.**

1. श्री एस.एस. सेन, महा प्रबंधक (प्रचा.अ.), पक्षे-I
2. श्री ए.के. जुनेजा, महा प्रबंधक (वा.), पक्षे-I
3. श्री एस.के. शर्मा, अति.महा प्रबंधक (वा.), पक्षे-II
4. श्री वी.एम.राजन, अति.महा प्रबंधक (ओ एस), पक्षे-II
5. श्री डी. राय चौधरी, अति.महा प्रबंधक
6. श्री एच. हरचंदानी, अति.महा प्रबंधक

VII **पावरग्रिड कार्पोरेशन ऑफ इंडिया लिमि.**

1. श्री ए.एस. कुशवाहा, अति.महा प्रबंधक
2. श्री सी.एम. वर्गीस, अति. महा प्रबंधक
3. श्री पी.आर. वानखेड़े, उप महा प्रबंधक
4. सुश्री मंजु गुप्ता, उप महा प्रबंधक
5. श्री अभिनव वर्मा, मुख्य प्रबंधक

VIII **पावर सिस्टम ऑपरेशन कार्पोरेशन**

1. श्री वी.ए. मूर्ति, उप महा प्रबंधक - पक्षेभाप्रेकेन्द्र
2. श्री अभिमन्यु गर्तिया, उप महा प्रबंधक - पक्षेभाप्रेकेन्द्र
3. श्री सी.एस. बोबड़े, मुख्य प्रबंधक - पक्षेभाप्रेकेन्द्र
4. सुश्री एस. ऊषा, मुख्य प्रबंधक - पक्षेभाप्रेकेन्द्र

IX **टाटा पावर कं.**

1. श्री वी.आर. श्रीखंडे, हेड- पीएससीसी

X **आरजीपीपीएल**

1. श्री प्रवीण सक्सेना, अति. महा प्रबंधक

XI **जीएमआर इनर्जी ट्रेडिंग**

1. श्री सुनील अग्रवाल, निदेशक

XII **जेएसडब्ल्यू इनर्जी लिमि.**

1. श्री सतीश जिंदल, डायरेक्टर एवं सीओओ

XIII **नर्मदा नियंत्रण प्राधिकरण**

1. श्री एम.ए.के.पी. सिंह, सदस्य (विद्युत)

XIV **टोरैंट पावर**

1. श्री एम.एच. क्षत्रीय, महा प्रबंधक
2. श्री पी.के. पारिख, उपाध्यक्ष

XV **एनएलडीसी**

1. श्री एस.आर. नरसिम्हन्, उप, महा प्रबंधक

XVI **केन्द्रीय विद्युत प्राधिकरण**

1. श्री मेजर सिंह, मुख्य अभियंता

XVII **पक्षेविसमिति, मुंबई**

1. श्री सत्यनारायण एस. अधीक्षण अभियंता (प्रचा.)
2. श्री एम.एम. धकाते, अधीक्षण अभियंता (र.)
3. श्री एल.के. एस राठौर, सहायक सचिव
4. श्री पी.डी. लोने, कार्यपालक अभियंता

दिनांक 09.11.2012 को रायपुर में आयोजित
प.क्षे.वि.समिति की 21 वीं बैठक में भाग लेने वाले अधिकारियों की सूची

क. पश्चिम क्षेत्रीय विद्युत समिति

सदस्य

1. श्री संजय टी. शिंदे, मुख्य अभियंता (एसटीयू), महाराविपारेकंलिमि.
2. श्री जी.एस. कलसी, प्रबंध निदेशक, छत्तीराविपारेकंलिमि.
3. श्री जनार्दन कर, प्रबंध निदेशक, छत्तीराविउत्पाकंलिमि.
4. श्री के.एस. मनोथिया, मुख्य अभियंता (भा.प्रे.), छत्तीराविपारेकंलिमि.
5. श्री पी.ए. पटेल, मुख्य अभियंता, गेटको
6. श्री उमेश राऊतजी, प्रबंध निदेशक, मप्रविपारेकंलिमि.
7. श्री पी.ए.आर. बेंडे, मुख्य अभियंता, मप्रविपारेकंलिमि.
8. श्री पी. पैंटैय्या, महा प्रबंधक, पक्षेभाप्रेकेन्द्र
9. श्री जागृत व्यास, कार्यकारी निदेशक, टोरेंट पावर
10. श्री सतीश जिंदल, निदेशक एवं सीओओ, जेएसडब्ल्यूईएल
11. श्री राम निवास, उपाध्यक्ष, जिंदल पावर
12. श्री सुनील अग्रवाल, निदेशक, जीएमआर पावर ट्रेडिंग
13. श्री सुरेश द. टाकसांडे, सदस्य सचिव(प्र.), पक्षेविसमिति

ख. अन्य

I महाराष्ट्र

1. श्री यू.जी.झाल्टे, निदेशक (प्रचा.), महाराविपारेकंलिमि.
2. श्री सुभाष जी. केलकर, कार्यकारी निदेशक(प्रचा.), महाराविपारेकंलिमि.
3. श्री ए. आर. कुलकर्णी, सहायक अभियंता, महाराविपारेकंलिमि.

II छत्तीसगढ़

1. श्री ए.के. सक्सेना, कार्यकारी निदेशक (ओ एंड एम), छत्तीराविउत्पाकंलिमि.
2. श्री आर.के. मेहता, मुख्य अभियंता (सी एंड पी), छत्तीराविपारेकंलिमि.
3. श्री जी.सी. मुखर्जी, मुख्य अभियंता (वाणि.), छत्तीराविवितकंलिमि.
4. सुश्री तृप्ति सिन्हा, अति. मुख्य अभियंता, छत्तीराविपारेकंलिमि.
5. श्री एस.के. मेहता, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
6. श्री आर. ए. पाठक, अधीक्षण अभियंता, छत्तीराविवितकंलिमि.
7. श्री एच.के. पांडे, अधीक्षण अभियंता, छत्तीराविपारेकंलिमि.
8. श्री वी.के. विश्वकर्मा, कार्यपालक अभियंता, छत्तीराविपारेकंलिमि.
9. श्री संजय चौधरी, कार्यपालक अभियंता, छत्तीराविपारेकंलिमि.
10. श्री गिरीश गुप्ता, कार्यपालक अभियंता, छत्तीराविपारेकंलिमि.
11. श्री प्रशांत सोनी, सहायक अभियंता, छत्तीराविपारेकंलिमि.

12. श्री आर.सी.चौबे, सहायक अभियंता, छत्तीराविपारेकंलिमि.
13. श्री जी.पी. सिंह, सहायक अभियंता, छत्तीराविपारेकंलिमि.

III **गुजरात**

4. श्री के.पी. जांगिड, महाप्रबंधक (वाणि.), गुजऊविनिलिमि.
5. श्री डी.सी. परमार, मुख्य अभियंता (प्रचा.), गुऊविनिलिमि.
6. श्री यू.सी. पटेल, अतिरिक्त मुख्य अभियंता, गेटको
7. श्री पी.जे. जानी, कार्यपालक अभियंता, गुजऊविनिलिमि.

IV **मध्य प्रदेश**

1. श्री के.के. अग्रवाल, मुख्य महाप्रबंधक, मप्रविप्रबंकंलिमि.
2. श्री एस.के. नागेश, निदेशक (तक.), मप्रविपारेकंलिमि.
3. श्री वी. मेहतो, सलाहकार, मप्रविपारेकंलिमि.
4. श्री हर्ष वर्धन व्यास, अति.मुख्य अभियंता, मप्रविउत्पाकंलिमि.

V **दादरा नगर हवेली**

1. श्री एच.एम. पटेल, कार्यपालक अभियंता

VI **एनटीपीसी लिमि.**

1. श्री एम.के.वी. रामाराव, कार्यकारी निदेशक
2. श्री एस.सी. पांडे, क्षेत्रीय कार्यकारी निदेशक, पक्षे-I
3. श्री एस.एस. सेन, महा प्रबंधक (प्रचा.अ.), पक्षे-I
4. श्री ए.के. जुनेजा, महा प्रबंधक (वा.), पक्षे-I
5 श्री आर. सैम्युअल, महा प्रबंधक (वा.),
6 श्री वी.एम.राजन, अति.महा प्रबंधक (ओ एस), एनटीपीसी रायपुर
7 श्री डी. राय चौधरी, अति.महा प्रबंधक, एनटीपीसी रायपुर
8 श्री एस.के. शर्मा, अति.महा प्रबंधक, एनटीपीसी, नई दिल्ली
9. श्री एच. हरचंदानी, अति.महा प्रबंधक, एनटीपीसी रायपुर

VII **पावरग्रिड कार्पोरेशन ऑफ इंडिया लिमि.**

6. श्री ए.एस. कुशवाहा, अति.महा प्रबंधक
7. श्री सी.एम. वर्गीस, अति. महा प्रबंधक
8. श्री पी.आर. वानखेड़े, उप महा प्रबंधक
9. सुश्री मंजु गुप्ता, उप महा प्रबंधक
10. श्री अभिनव वर्मा, मुख्य प्रबंधक

VIII **पावर सिस्टम ऑपरेशन कार्पोरेशन**

1. श्री वी.ए. मूर्ति, उप महा प्रबंधक - पक्षेभाप्रेकेन्द्र
2. श्री अभिमन्यु गर्तिया, उप महा प्रबंधक - पक्षेभाप्रेकेन्द्र
3. श्री सी.एस. बोबड़े, मुख्य प्रबंधक - पक्षेभाप्रेकेन्द्र
4. सुश्री एस. ऊषा, मुख्य प्रबंधक - पक्षेभाप्रेकेन्द्र

IX **टाटा पावर कं.**

1. श्री वी.आर. श्रीखंडे, मुख्य (पीएससीसी)

X **आरजीपीपीएल**

2. श्री प्रवीण सक्सेना, अति. महा प्रबंधक

XI **नर्मदा नियंत्रण प्राधिकरण**

1. श्री एम.ए.के.पी. सिंह, सदस्य (विद्युत)

XII **टोरैंट पावर**

3. श्री एम.एच. क्षत्रीय, महा प्रबंधक

XIII **एनएलडीसी**

1. श्री एस.आर. नरसिम्हन, उप महा प्रबंधक

XIV **एनपीसीआईएल**

1. श्री आर.के. ओक, मुख्य अभियंता

XV **एनएचडीसी**

1. श्री रूपक जैन, महा प्रबंधक

XVI **जीएमआर**

1. श्री प्रशांत पांडा, ए.व्ही.पी. (अति. उपाध्यक्ष)

XVII **जिंदल पावर लिमि.**

1. श्री आर.सी. गुप्ता, मुख्य विद्युत नियंत्रक

XVII **केन्द्रीय विद्युत प्राधिकरण**

2. श्री मेजर सिंह, मुख्य अभियंता

XVIII **पक्षेविसमिति, मुंबई**

5. श्री सत्यनारायण एस. अधीक्षण अभियंता (प्रचा.)
6. श्री एम.एम. धकाते, अधीक्षण अभियंता (र.)
7. श्री एल.के. एस राठौर, सहायक सचिव
8. श्री पी.डी. लोने, कार्यपालक अभियंता

ANNEXURES

Annexure - I

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

पावरग्रिड

आई.एस.ओ. 9001:2000 प्रमाणित • ISO 9001:2000 Certified

सम्प्रीति नगर, नारी रिंग रोड, डाकघर : उप्पलवाडी, नागपुर - 440 026.
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e-mail : pgcil@nagpur.dot.net.in

पश्चिम क्षेत्र पारेषण प्रणाली -I, क्षेत्रीय मुख्यालय / Western Region Transmission System-I, Regional Hqrs.

Ref: WRTS:COMML:NGP:1100/ 9

DATE: 10.07.2012

प. क्षे. वि. स, मुंबई /WRPC
आवक संख्या /Inward No. 4272
दिनांक /Date: 17/7/12

To,
Member Secretary,
Western Regional Power Committee,
F-3, MIDC Area, Marol,
Andheri (East),
MUMBAI-400 093

Sub: Minutes of WRPC Meeting held on 18.05.2012.

Dear Sir,

Refer Item No.15.1 regarding Declarations of Commercial Operation of Korba-Birsingpur 400kV line w.e.f. 01.03.2012.

Our comments/observations are enclosed herewith, with a request to modify the minutes appropriately.

Regards,

Yours faithfully,

(D K Valecha)
Executive Director (WR-I)

SE(C)
805
1617

Encl: As stated.

Item no. 15.1: Declaration of Transmission elements into Commercial Operation by PGCIL.

During the meeting POWERGRID reiterated the following fact before the members:-

On 29.02.2012, 400kV Korba-Birsingpur line was charged form Korba end vide WRLDC code 2/1910. However, the line was not synchronized by MPPTCL at Birsingpur end.

On 31.03.2012 at 11.35 Hrs 400kV Korba-Birsingpur was again charged from Korba end with line reactor at Birsingpur end vide WRLDC Code 3/2109. However, while synchronizing the line from Birsingpur end, the line tripped. The line was again charged at 15:18 Hrs. vide WRLDC code 3/2126 from Korba end but the line was not synchronized by MPPTCL at Birsingpur end when voltage at Korba end was 411kV and Birsingpur end line voltage was 414.8kV and Birsingpur Bus Voltage was 415kV. The line was finally synchronized on 4.4.2012 vide WRLDC Code 4/191 establishing power flow of 270 MW. From these it is evident that delay in synchronization of the line from Birsingpur end (MPPTCL) to put the transmission element into use for reasons not attributable to POWERRID.

As per extract of the minutes of meeting of 20th WRPC meeting held on 18th May'12.

Quote

In the 61st CCM it was opined that charging of the line from one end only cannot be treated as line synchronization for COD of a line. A line is required to be charged and synchronized with established power flow for treating the line as commissioned and only thereafter it can (be) declared under commercial operation. Further all the set of elements associated with it be put in service and the line is made available for wheeling the power commercially.

Unquote

As per CERC regulation 2009, applicable for the period 2009-14 transmission licensees can declare any element under commercial operation from 0000 Hrs. of which **an element** of the transmission system is in regular service after successful charging. Provided that the date shall be the first day of the Calendar month and transmission charge for the element shall be payable and its availability shall be accounted for, from that date.

Further in Regulation 2009 it is also mentioned that in case an element of the transmission system is ready for regular service but is prevented from providing such service for reason not attributable to the transmission licensee, its suppliers or contractors, the commission may approve the date of commercial operation prior to the element coming into regular service.

As mentioned above, both ends of the transmission line belongs to other utilities and for charging POWERGRID has to depend on other utilities, any delay by them is beyond POWERGRID's control. Infact the line was charged and ready for regular use w.e.f. 29.02.2012 (without line reactor at Birsingpur) and w.e.f. 31.03.2012 (with line reactor at Birsingpur).

Accordingly, POWERGRID is eligible for claiming of the transmission charges from 1st of March 2012 (without line reactor) and w.e.f April'12(with line reactor).

.....X.....

Chapter- 9

RECOMMENDATIONS

9.1 Review of Protection Systems

9.1.1 There is a need to review protection schemes. This Committee concurs with recommendation of previous enquiry committees that a thorough third party protection audit need to be carried out in time bound manner. This exercise should be repeated periodically and monitored by RPCs.

Action: RPCs, CTU, STUs
Time Frame: 1 year

9.1.2 Till protection audit is taken up, there is need to take immediate review of zone-3 philosophy in particular. Techniques are available to modify characteristics of the relay so that it can distinguish between load encroachment and faults. These techniques and other alternatives should be explored immediately.

Action: RPCs, CTU, STUs
Time Frame: Immediate

9.1.3 The application of synchrophasor measurements from PMUs should be explored for protection systems. There is also an urgent need to deploy Special Protection System (SPS) in critical transmission elements. Also there is need to make already approved SPS operational.

Action: RPCs, CTU
Time Frame: 1 year

9.1.4 A complete independent audit of time synchronization of DRs, ELs and PMUs should be carried out.

Action: Generators, CTU, STUs
Time Frame: 1 month

9.2 Frequency Control through Generation reserves/Ancillary services

9.2.1 Frequency band needs to be further tightened and brought close to 50 Hz. POSOCO may file an urgency application in Supreme Court for early resolution of the issue in view of the recent grid disturbances.

Action: POSOCO
Time Frame: 1 month

9.2.2 A review of UI mechanism should be carried out in view of its impact on recent grid disturbances. Frequency control through UI may be phased out in a time bound manner and Generation reserves/Ancillary services may be used for frequency control. Appropriate regulatory mechanism needs to be put in place for this purpose. POSOCO should take up the matter with CERC.

Action: POSOCO
Time Frame: 3 months

9.3 Ensuring proper functioning of defense mechanism

All STUs should immediately enable under frequency and df/dt based load shedding schemes. Central Commission should explore ways and means for implementation of various regulations issued under the Electricity Act, 2003. Any violation of these regulations can prove to be costly as has been the case this time. RPCs need to take up the matter for compliance. In case non-compliance persists, POSOCO should approach Central Commission.

Action: STUs, RPCs, POSOCO
Time Frame: Immediate

9.4 Ensuring primary frequency response from generators

All out efforts should be made to implement provisions of IEGC with regard to governor action. Central Commission needs to look into ways and means to hasten implementation of provisions of IEGC including that on governor action. POSOCO need to take up the matter with Central Commission.

Action: POSOCO
Time Frame: 3 months

9.5 Revising Total Transfer Capability (TTC) based on change in system conditions

9.5.1 POSOCO should take up with Central Commission the issue of inconsistency between Congestion regulation and the detailed procedure framed there under so that congestion due to forced outages and Unscheduled Interchange (UI) can be handled effectively.

Action: POSOCO
Time Frame: 1 month

9.5.2 NLDC and each RLDC should have one real-time security desk in all the shifts to be manned by engineer capable of carrying out TTC calculations. To facilitate this, manpower at NLDC and RLDCs need to be enhanced with regulatory support to take care of financial aspects. Till this arrangement can be firmed up, various scenarios of outages could be built, which then can be used by despatcher in real time. Faster algorithm for calculation of TTC may be adopted by the load despatchers to update it in real time under outage conditions.

Action: POSOCO
Time Frame: 6 months

9.6 Coordinated outage planning of transmission elements

Outage planning of inter-State and inter-regional transmission elements should be carried out in a coordinated manner at RPC fora (say Operation Co-ordination sub-committee of RPCs) in accordance with regulation 5 of Central Electricity Authority (Grid Standards) Regulation, 2010 and Section 5.7.1 of Indian Electricity Grid Code. In case need for emergency maintenance arises in between two meeting of Operation Co-ordination sub-committee, NLDC and RLDCs should allow such maintenance after carefully looking at prevailing system conditions under intimation to RPC Secretariat.

Action: RPCs
Time Frame: Immediate

9.7 Reactive power planning

In order to avoid frequent outages/opening of lines under over voltages and also providing voltage support under steady state and dynamic conditions, installation of adequate static and dynamic reactive power compensators should be planned.

Action: CEA, CTU, STUs
Time Frame: 6 months

9.8 Review of penal provisions of the Electricity Act, 2003

The powers of Load Despatch Centres and Regulatory Commissions related to non-compliance of statutory/regulatory provisions including that for non-compliance of directions and non-payment of UI charges, need review. Appropriate amendments need to be carried out in the Electricity Act, 2003 after such review.

Action: Ministry of Power, Govt. of India
Time Frame: 6 months

9.9 Optimum utilization of available assets

9.9.1 The regulatory provisions regarding absorption of reactive power by generating units needs to be implemented.

Action: POSOCO
Time Frame: Immediate

9.9.2 An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.

Action: CTU, STUs, Generators
Time Frame: 6 months

9.9.3 Functioning of existing PMUs and availability of their output to RLDCs and accuracy of time synchronization should be monitored on daily basis and, if required, corrective actions should be taken on priority basis.

Action: CTU, POSOCO
Time Frame: Immediate

9.10 Deployments of WAMS

9.10.1 The synchrophasor based WAMS employing PMUs offer a wide applications for real time monitoring and control of the system, specially under the dynamic conditions. Adequate number of PMUs should be installed to improve the visibility and real time monitoring of the system. Further the applications related to the synchrophasor based wide area monitoring, protection and control should be embedded in the system.

Action: CTU
Time Frame: 1 year

9.10.2 Possibility of voltage collapse prediction, sensing global power system conditions derived from local measurements may be explored.

Action: RPCs
Time Frame: 1 year

9.11 Need of Dynamic Security Assessment and review of State Estimation

In order to assess the system security in real time and assess the vulnerability condition of the system, dynamic security assessment need to be periodically carried out at the control centers. A proper review and upgradation of the state estimation procedure is required to improve the visibility and situational awareness of the system.

Action: POSOCO
Time Frame: 6 months

9.12 Implementation of islanding schemes

Efforts should be made to design islanding scheme based on frequency sensing relays so that in case of imminent grid failure, electrical islands can be formed. These electrical islands can not only help in maintaining supply to essential services but would also help in faster restoration of grid.

Action: CEA, RPCs, POWERGRID, STUs, SLDCs and Generators
Time Frame: 6 months

9.13 Autonomy to Load Despatch Centres

9.13.1 As National Grid is on the horizon, homogenization of system operation philosophy is need of the hour. The present organizational set up of Load Despatch Centres need to be reviewed. System operation needs to be entrusted to Independent System Operator (ISO). In addition, SLDCs should be reinforced and ring fenced for ensuring functional autonomy.

Action: Govt. of India, State Govts.
Time Frame: 1 year

9.13.2 Training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

Action: Govt. of India, State Govts.
Time Frame: 3 months

9.14 Development of Intra-State transmission system

Intra-State transmission system needs to be planned and strengthened in a better way to avoid problems of frequent congestion.

Action: STUs
Time Frame: 2 years

9.15 Network visualization

9.15.1 Appropriate amendments should be carried out in Grid Connectivity Standards to restrain connectivity of a generating station or a transmission element without required communication and telemetry facilities.

Action: CEA,
Time Frame: 6 months

9.15.2 The Communication network should be strengthened by putting fibre optic communication system. Further, the Communication network should be maintained properly to ensure reliability of data at Load Despatch Cenres.

Action: CTU and STUs
Time Frame: One years

9.15.3 RTUs and communication equipments should have uninterrupted power supply with proper battery backup so that in case of total power failure, supervisory control and data acquisition channels do not fail.

Action: CTU and STUs
Time Frame: 3 months

9.15.4 In case of existing generating stations or transmission elements without telemetry facility, the same should be put in place at the earliest. If prolonged operation without telemetry continues, POSOCO should approach Central Commission.

Action: RPCs, POSOCO
Time Frame: 6 months

9.16 Reduction in Start-up time for Generators:

Large variations are observed in time taken for initiation of unit start up (Boiler light up) by the stations after availability of start-up power and also for start ups/light up of subsequent units. While subsequent start-ups were very fast (10-20 minutes) in some of the units, in other cases they took considerably longer time – several hours. Reasons for the delays in attempting first start-up and subsequent start-ups may be examined by the utilities in consultation with CEA. A standard procedure for preparatory activities and sequence of start up may be put in place by the stations to restore units as early as possible particularly in contingencies.

Action: CEA, Generating Utilities and RLDCs
Time Frame:one year

9.17 Review of Transmission Planning Criteria

At inter-State level, the entire landscape has changed over past few years. With de-licensing of generation and provision of open access in Electricity Act, 2003 and development of organized electricity markets, lot of generation is coming in the form of merchant generation. Four out of the five regions have been integrated and formation of National Grid is on the horizon. Under such scenario, there is need review the Transmission Planning criteria.

Action: CEA
Time Frame: 3 months

9.18 Strengthening of system study groups in various power sector organizations:

There is need to reinforce system study groups in power sector organisations to analyse the system behaviour under different network status/ tripping of lines/outage of generators. Where these do not exist, these should be created.

Action: CEA, CTU and STU
Time Span: one year

9.19 Formation of a task force to study the grid security issues:

It was felt that a separate task force may be formed, involving experts from academics, power utilities and system operators, to carry out a detailed analysis of the present grid conditions and anticipated scenarios which might lead to any such disturbances in future. The committee may identify medium and long term corrective measures as well as technological solutions to improve the health of the grid.

Action: MOP, CEA
Time Frame: 1 month

9.20 Improved telecom infrastructure for cyber security

For smooth operation of grid systems, it is absolutely important that all the power generating and distributing stations are connected on a very reliable telecom network.

(i) A proper network may be built up preferably using MPLS(Multi Protocol Label Switching) which is simple, cost effective and reliable. In remote place where connectivity is a problem, the stations can use dedicated fibre cable from the nearest node

(ii) Since POWERGRID has its own fibre optic cables, practically covering all major nodes and power stations, a proper communication/IT network may be built using dedicated fibres to avoid any cyber attack on the power system.

Action: CTU, STUs
Time Frame: 1 year

Srivastava 16.8.2012
(S.C. Srivastava)
Member

A. Velayutham 16/08/2012
(A. Velayutham)
Member

(K.K. Agrawal)
Member Secretary

16/8/12
(A.S. Bakshi)
Chairman

Annexure - 5

एनटीपीसी
NTPC

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

केन्द्रीय कार्यालय/Corporate Centre

Ref: 01: CD: 708C

Dated: 4th December'2012

To
Sh. S. D. Taksande
Member Secretary (I/c)
Western Regional Power Committee,
F-3, MIDC Area, Marol,
Opp. SEEPZ, Central Road,
Andheri (East),
Mumbai - 400093

WRPC
Inward No. 5304
दिनांक /Date: 7/12/12

Sub: Meeting to formulate an Action Plan to implement recommendations of Grid disturbance enquiry committee on 29.11.2012

Sir

This has reference to the Meeting held by WRPC on 29.11.2012 regarding formulation of the action Plan to implement recommendations of Grid disturbance enquiry committee.

Please find herein below the NTPC views expressed during the meeting for your perusal and incorporation in minutes please.

NTPC stated during the above meeting that NTPC has already forwarded its views on the WRPC report (letter dated 26.09.2012) vide NTPC letters dated 7.11.2012 and 17.11.2012. NTPC has expressed its views on the two issues pertaining to NTPC WR Stations viz high frequency tripping and SPS for Agra-Gwalior during WRPC meeting held on 8th November 2012. During the referred WRPC meeting it was decided that the issue shall be discussed elaborately during the forthcoming meeting on action plan to implement recommendations of enquiry committee report.

NTPC submitted following on 29.11.2012 on the referred issues:

1. **Control of High Frequency during Grid separation events; tripping of generating units at 51.5Hz**
   The Recommendation of the WRPC committee to control Frequency rise during a Grid separation event included tripping of a few large Generating Units if frequency rises above 51.5Hz. NTPC Korba # 7 and Vindhyachal # 7 has been identified for the purpose by the committee.

NTPC did examine the said recommendation and finds the following:

- Rise in frequency is not a situation which warrants drastic action to trip units to reduce generation, as it cannot cause a collapse of the power system, unlike the situation of low frequency. High frequency can be easily controlled by controlling the generation.
- At some frequency varying from 51.0 – 51.5Hz, all the thermal machines in the system (except the older mechanically governed machines), including CCGT units will start unloading as per the droop characteristic. Assuming a governor droop of 5%, this would result in reduction of 20% of the generation capacity in service, for a frequency rise of 0.5Hz, above this threshold. This unloading feature can neither be offset beyond 51.5Hz nor can it be prevented, being a safety feature.
- CCGT units at Jhanor start unloading at 51.2Hz and are wired to trip at 51.7Hz. Kawas CCGT units start unloading at 51.2Hz as per its governor droop.
- In the event of such a frequency rise it is likely that some generators trip during the re-adjustment of their process, inadvertently. During the said disturbance also such tripping had taken place. If the total Generation available after such intended and inadvertent unit outages fall short of the load, the system will be facing a far more disastrous frequency decline situation.

Considering the above, NTPC is of the opinion that the proposed tripping of Generating units at 51.5Hz may not be appropriate and hence need not be adopted.

2. **Special Protection System (SPS) for the outage of Bina – Gwalior – Agra lines:**

The resultant events which followed the tripping of Bina – Gwalior line during the event was of severe power swings in the process of power flow readjustment in the remaining interconnection. The other interconnection which comprises of sizeable number of lines between ER and NR (all of which had tripped on Zone-1, 3 phase, on Power Swing) cannot be prevented from the situation by the proposed SPS action. The following are our views on the said SPS logic:

- Generation reduction is a slow process, except through governor action in response to machine speed, and will take time to achieve.
- Automating generation reduction by a tele command is not as easy or simple as load shedding. It will require complex Control intervention to reduce the load set point. Doing it in many units will be so much more complex.
- The said SPS is not likely to be of any use in the situation like the one seen on 30/31.07.2012

We firmly believe that to save situations like what happened, there is no alternative to restricting the power transfer to such levels where the line outage can be tolerated and then rescheduling generation to match the constrained system capability.

NTPC stated none of the NTPC Stations named in the SPS action list have any transaction to NR (full capacity is allocated to Western Region beneficiaries) and hence consumption within Western region only. Hence if an SPS is being planned for the said lines, the same should not involve the NTPC's mentioned Stations. The stations with inter-regional transactions on the said line may be considered under the SPS action list. In identification of the generating units to control flow to ER, a cue may be taken from CERC Long term, Medium term Open Access Regulations, 2009 which provide at Regulation 25 that When for the reason of transmission constraint or in the interest of grid security, it becomes necessary to curtail power flow on a transmission corridor, curtailment may be done by RLDC with short term customer to be curtailed first followed by medium term customer followed by long term customers. Likewise to control flow towards ER the generating stations availing inter-regional links to export power beyond WR should identified and put under SPS.

3. **Consensus emerged on two major issues related to the causative features in the Protection System during the said discussion which are summarized below:**
    - The house discussed the issue of Zone-3 distance protection (Main-2) operating on Load Encroachment and it was felt that with the restricted Zone-3 reach prescribed in India (CBIP Manual 274/1999) the conditions on the event could not have resulted in Load Encroachment. It was pointed out that operation of Zone-3 of the Main-2 protection (Main-1 with identical settings did not operate) needs to be checked by current and voltage injection. The mis-operation could have been a case of incorrect reach setting, CT ratio chosen or even an undesirable logic enabled inadvertently.
    - With reference to the present practice of not blocking Zone-1 trip in distance relays by PSB logic came up for discussion and it was agreed that PSB logic should block all zones for 2 seconds, thus preventing tripping in any zone on stable power swings. To guard against a possibility of inter area "Loss of Synchronism", suitable Out of Step relaying must be employed, in the preselected corridor. This can be realized in the numerical distance protection relays itself where needed.

Thanking you

Yours faithfully

(M. K. V. Rama Rao)
ED (Commercial)

Annexure-6

LIST OF GENERATING STATIONS WITH BLACKSTART FACILITIES IN WESTERN REGION

Power Station	Installed Cap. (MW)	Unit Type	Black Start Source	Capacity
GUJARAT				
Ukai (H)	4 x 75	Hydro	Diesel	500 kVA
Mini Hydro	2 x 2.5	Hydro	Diesel	50 KW
Kadana	4 x 60	Hydro	Diesel	500 KVA
Dhuvaran	1 x 107 (68+39) + 1 x 112 (72+40)	Gas	Details to be furnished by Gujarat	Details to be furnished by Gujarat.
GIPCL-I	3 x 32 + 1 x49	Gas / Steam	All units	141 KW
GIPCL-II	1x104+1x56	Gas / Steam	Diesel	500 kVA
A.E.Co. Stn. C Stn.- D,E,F,CCPP	StnC:2x30 StnD:120 Stn.E,F(110MW each)CCPP:100MW	*Thermal* (Units-C,D,E,F)/ *Gas*(CCPP)	Stn-C islands Diesel	Stn.C:15kVA; Stn.D,E ,F and CCPP(500 kVA each)
Power Station	**Installed Cap. (MW)**	**Unit Type**	**Black Start Source**	**Capacity**
GPEC	3x138+1x241	Thermal	Natural Gas	3000 kVA
Sugen	3x382.5 MW	Gas	Diesel	2x6MVA
Madhya Pradesh				
Gandhisagar	5 x 23	Hydro	DG set	100 kVA
Birsinghpur	1 x 20	Hydro	Battery	220 Volt Battery
Pench	2 x 80	Hydro	DG set	250 kVA
Bargi	2 x 45	Hydro	DG set	250 kVA
Bansagar Stage-I	3 x 105	Hydro	DG set	250 kVA
Indira Sagar	8x125	Hydro	DG set	2x1000 KVA
Chhatisgarh				
Hasdeo Bango	3 x 40	Hydro	DG Set	250 kVA
Korba(E)-phse-I	Power plant retired but Black start DG set available and on- load trial is reported to be carried out regularly		DG Set	1500 kW(3.3kV)

Maharashtra				
Power Station	**Installed Cap. (MW)**	**Unit Type**	**Black Start Source**	**Capacity**
Koyna I & II	4 x 65 4 x 75	Hydro	House generator	2 MVA
KDPH	2 x20	Hydro	DG set	310 KW
Eldari	3 x 7.5	Hydro	DG set	6 KW
Uran (Gas)	4 x 60 (GT) + 4x108 (GT) + 2x120 WHR	Gas	DG set	4 MW PH1:412kVA PH2:450kVA WH:520kVA
RGPPL	Block 1: 640MW+Block 2: 663.54MW+Block 3: 663.54MW	Gas	Gas Turbine	35 MW (Under testing): Details to be provided by RGPPL.
Power Station	**Installed Cap. (MW)**	**Unit Type**	**Black Start Source**	**Capacity**
Ghatghar	2x125	Hydro	DG set	1x1250 kVA
Khopoli	3x24+2x12	Hydro	DC Governor & bearing oil pumps	DC power (self start)
Bhivpuri	3 x 24 + 2 x 1.5 +2x12	Hydro	DC Governor & bearing	-do-
Bhira	6 x 25	Hydro	1 No.of 500 KVA house generator with water turbine	500 kVA
Bhira PSS	1 x 150	Hydro	DG set	500 kVA
Trombay	1 x 120 1 x 60	Gas Turbine Steam Turbine	DG Set	2.5 MW
NTPC				
Kawas	4 x 106 2 x 116	Gas	Diesel	2850 KW
Gandhar	3 x 144 + 1x225	Gas	Diesel	2975 KW
NCA				
SSP(RBPH & CHPH)	6x200+5*50	Hydro	Diesel	2x1000kVA

ANNEX-III

Annex - 6 (1/3)

Annex-III

1. Tentative Schedule for Mock- Drill of Units with Black Start Facility in Western Region

Capacity	Power Station	Installed Cap. (MW)	Unit Type	Black Start Source		Date
		GUJARAT				
1	Ukai (H)	4 x 75	Hydro	Diesel	500 kVA	2nd week, Nov'12
2	Mini Hydro	2 x 2.5	Hydro	Diesel	50 KW	2nd week, Nov'12
3	Kadana	4 x 60	Hydro	Diesel	500 KVA	3rd week ,Oct'12
4	Dhuvaran	1 x 107 (68+39) + 1 x 112 (72+40)	Gas	Details to be furnished by Gujarat	Details to be furnished by Gujarat.	3rd Week , Oct'12
5	GIPCL-I	3 x 32 + 1 x49	Gas / Steam	Diesel	141 KW	4th week, Oct'12
6	GIPCL-II	1x104+1x56	Gas / Steam	Diesel	500 kVA	4th week, Oct'12
7	A.E.Co. Stn. C Stn.- D,E,F,CCPP	StnC:2x30 StnD:120 Stn.E,F(110MW each)CCPP:100MW	*Thermal* (Units-C,D,E,F)/ *Gas*(CCPP)	Stn-C islands Diesel	Stn.C:15kVA; Stn.D,E ,F and CCPP(500 kVA each)	1st Week, Nov'12
8	GPEC	3x138+1x241	Thermal	Natural Gas	3000 kVA	2nd Week , Nov'12
9	Sugen	3x382.5 MW	Gas	Diesel	2x6MVA	1st week, Nov'12
		Madhya Pradesh				
10	Gandhisagar	5 x 23	Hydro	DG set	100 kVA	4th Week, Sept'12
11	Birsinghpur	1 x 20	Hydro	Battery	220 Volt Battery	4th Week, Sept'12
12	Pench	2 x 80	Hydro	DG set	250 kVA	3rd Week, Sept'12
13	Bargi	2 x 45	Hydro	DG set	250 kVA	**Completed**
14	Bansagar Stage-I	3 x 105	Hydro	DG set	250 kVA	3rd Week, Sept'12
15	Indira Sagar	8x125	Hydro	DG set	2x1000 KVA	**Completed**
		Chhatisgarh				
16	Hasdeo Bango	3 x 40	Hydro	DG Set	250 kVA	**Completed**
17	Korba(E)-phse-I	Power plant retired but Black start DG set available and on- load trial is reported to be carried out regularly		DG Set	1500 kW(3.3kV)	4th Week, Dec'12

Sl. No.	Power Station	Installed Cap. (MW)	Unit Type	Black Start Source	Capacity	Date
	Maharashtra					
18	Koyna I & II	4 x 65 4 x 75	Hydro	House generator	2 MVA	3rd Week, Nov'12
19	KDPH	2 x20	Hydro	DG set	310 KW	3rd Week , Dec'12
20	Eldari	3 x 7.5	Hydro	DG set	6 KW	3rd week, Dec'12
21	Uran (Gas)	4 x 60 (GT) + 4x108 (GT)+ 2x120 WHR	Gas	DG set	4 MW PH1:412kVA PH2:450kVA WH:520kVA	3rd Week Nov'12
22	RGPPL	Block 1: 640MW+Block 2: 663.54MW+Block 3: 663.54MW	Gas	Gas Turbine (Frame-6)	35 MW (Under testing): Details to be provided by RGPPL.	1st Week, Oct'12
23	Ghatghar	2x125	Hydro	DG set	1x1250 kVA	1st Week, Oct'12
24	Khopoli	3x24+2x12	Hydro	DC Governor & bearing oil pumps	DC power (self start)	1st week , Dec'12
25	Bhivpuri	3 x 24 + 2 x 1.5 +2x12	Hydro	DC Governor & bearing	-do-	4th Week, Nov'12
26	Bhira	6 x 25	Hydro	1 No.of 500 KVA house generator with water turbine	500 kVA	1st Week, Dec'12
27	Bhira PSS	1 x 150	Hydro	DG set	500 kVA	2nd Week, Dec'12
28	Trombay	1 x 120 1 x 60	Gas Turbine Steam Turbine	DG Set	2.5 MW	4th Week, Nov'12
	NTPC					
29	Kawas	4 x 106 2 x 116	Gas	Diesel	2850 KW	2nd Week, Oct'12

30	Gandhar	3 x 144 + 1x225	Gas	Diesel	2975 KW	2nd week, Oct'12
	NCA					
31	SSP(RBPH & CHPH)	6x200+5*50	Hydro	Diesel	2x1000kVA	**Completed**

Annexure-11.1(a)

FREQUENCY PARTICULARS OF WESTERN REGION FOR THE PERIOD MAY 2012 AND SEPTEMBER 2012

Sr.No.	PARTICULARS	May-12	Jun-12	Jul-12	Aug-12	Sep-12
1	**MAXIMUM FREQUENCY (Hz)**					
1.1	Integrated over an hour	50.35	50.50	50.37	50.37	50.65
1.2	Instantaneous	50.66	50.68	51.21	50.65	50.41
2	**MINIMUM FREQUENCY (Hz)**					
2.1	Integrated over an hour	49.50	49.97	48.96	49.48	48.96
2.2	Instantaneous	49.08	49.75	48.79	48.82	49.22
3	**AVERAGE FREQUENCY (Hz)**	49.90	49.70	49.68	49.95	50.02
4	**NUMBER OF TIMES FREQUENCY TOUCHED**					
4.1	48.6 Hz	0	0	0	0	0
4.2	48.8 Hz	0	57	7	3	0
4.3	51.0 Hz	0	0	0	0	0
5	**PERCENTAGE TIME WHEN FREQUENCY WAS**					
5.1	Above 50.2 Hz	3.94	1.43	2.04	8.71	12.69
5.2	Above 50.3 Hz	1.09	0.43	1.01	2.71	0.00
5.3	***Between 50.2 Hz & 49.5 Hz***	93.68	77.90	73.59	89.72	87.00
5.4	Between 50.2 Hz & 49.2 Hz	95.96	94.57	93.53	91.19	87.30
5.5	Below 49.2 Hz	0.10	4.00	5.43	0.10	0.01
5.6	Below 49.5 Hz	2.38	20.67	24.37	1.57	0.30
5.7	Between 50.3 Hz & 48.5 Hz	98.91	99.57	98.99	97.29	100.00

Annexure -11.1(b)(1/2)

POWER SUPPLY POSITION IN WR FOR PERIOD FROM MAY 2012 AND SEPTEMBER 2012 (IN MW)

Details	Chhatisgarh					Gujarat					Madhya Pradesh					Maharashtra				
	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
Availability (MW)	3125	2886	2866	2935	3044	11510	11406	11758	11794	11122	6788	6714	5508	5861	6799	17173	17182	14982	15158	16108
Unrestricted demand (MW)	3243	3087	3030	3199	3064	11639	11586	12025	11897	11169	7522	7484	6249	5916	6801	18240	18282	15776	16317	16496
Deficit(-)/Surplus(+) in MW	-118	-201	-164	-264	-20	-129	-180	-267	-103	-47	-734	-770	-741	-55	-2	-1067	-1100	-794	-1159	-388
Deficit(-)/Surplus(+) in %	-3.64	-6.51	-5.41	-8.25	-0.65	-1.11	-1.55	-2.22	-0.87	-0.42	-9.76	-10.29	-11.86	-0.93	-0.03	-5.85	-6.02	-5.03	-7.10	-2.35

POWER SUPPLY POSITION IN WR FOR PERIOD FROM MAY 2011 AND SEPTEMBER 2011 (IN MW)

Details	Chhatisgarh					Gujarat					Madhya Pradesh					Maharashtra				
	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
Availability (MW)	2814	2706	2925	2907	2635	10459	10776	10724	9090	10223	6233	5961	5334	5514	6133	16560	16566	15541	15352	15334
Unrestricted demand (MW)	2891	2961	3173	2979	2908	10580	10846	11071	9160	10374	7326	6842	5869	5858	6708	20574	19292	18634	18565	20571
Deficit(-)/Surplus(+) in MW	-77	-255	-248	-72	-273	-121	-70	-347	-70	-151	-1093	-881	-535	-344	-575	-4014	-2726	-3093	-3213	-5237
Deficit(-)/Surplus(+) in %	-2.66	-8.61	-7.82	-2.42	-9.39	-1.14	-0.65	-3.13	-0.76	-1.46	-14.92	-12.88	-9.12	-5.87	-8.57	-19.51	-14.13	-16.60	-17.31	-25.46

Details	Goa					Daman & Diu					Dadra & Nagar Haveli					Western Region				
	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
Availability (MW)	432	432	452	426	398	272	264	278	269	267	608	595	622	621	629	37363	37060	33689	34383	37300
Unrestricted demand (MW)	450	465	482	458	445	300	293	307	295	292	620	610	630	644	639	39144	38383	36111	35659	37545
Deficit(-)/Surplus(+) in MW	-18	-33	-30	-32	-47	-28	-29	-29	-26	-25	-12	-15	-8	-23	-10	-1781	-1323	-2422	-1276	-245
Deficit(-)/Surplus(+) in %	-4.00	-7.10	-6.22	-6.99	-10.56	-9.33	-9.90	-9.45	-8.81	-8.56	-1.94	-2.46	-1.27	-3.57	-1.56	-4.55	-3.45	-6.71	-3.58	-0.65

Details	Goa					Daman & Diu					Dadra & Nagar Haveli					Western Region				
	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
Availability (MW)	471	452	422	426	428	269	253	254	295	261	501	541	562	605	574	35066	34436	33520	31616	34731
Unrestricted demand (MW)	514	508	425	431	454	297	278	282	322	288	544	566	572	615	584	40223	39106	38769	35515	41185
Deficit(-)/Surplus(+) in MW	-43	-56	-3	-5	-26	-28	-25	-28	-27	-27	-43	-25	-10	-10	-10	-5157	-4670	-5249	-3899	-6454
Deficit(-)/Surplus(+) in %	-8.37	-11.02	-0.71	-1.16	-5.73	-9.43	-8.99	-9.93	-8.39	-9.38	-7.90	-4.42	-1.75	-1.63	-1.71	-12.82	-11.94	-13.54	-10.98	-15.67

Annexure -11.1(b)(2/2)

POWER SUPPLY POSITION IN WR FOR PERIOD FROM MAY 2012 AND SEPTEMBER 2012 (IN MUs)

Details	Chhatisgarh					Gujarat					Madhya Pradesh					Maharashtra				
	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
Availability (MUs)	1560	1339	1637	1483	1496	7332	7601	7448	7054	7035	4112	3057	3269	2973	3070	11442	10380	10856	10016	9270
Unrestricted Requirement (MUs)	1583	1363	1685	1503	1512	7351	7640	7512	7073	7037	4370	3412	3564	3001	3083	11832	10817	11218	10377	9535
Deficit(-)/Surplus(+) in MUs	-23	-24	-48	-20	-16	-19	-39	-64	-19	-2	-259	-355	-295	-28	-13	-390	-437	-362	-361	-265
Deficit(-)/Surplus(+) in %	-1	-2	-3	-1	-1	0	-1	-1	0	0	-6	-10	-8	-1	0	-3	-4	-3	-3	-3
Details	**Chhatisgarh**					**Gujarat**					**Madhya Pradesh**					**Maharashtra**				
	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
Availability (MUs)	1282	1060	1259	1463	1274	7012	6785	5989	5484	5486	3456	2937	2866	2879	2945	10956	9644	9235	9360	8942.67
Unrestricted Requirement (MUs)	1296	1080	1289	1481	1323	7022	6790	6033	5492	5503	4120	3274	3201	3062	3049	12994	11040	10601	10626	10406.75
Deficit(-)/Surplus(+) : in MUs	-14.29	-19.1	-30.1	-18.78	-49	-9.89	-4.31	-44.45	-7.73	-16.2	-664.61	-336.17	-334.85	-183.07	-103.85	-2038.07	-1395.25	-1366.46	-1265.17	-1464.08
Deficit(-)/Surplus(+) : in %	-1.10	-1.77	-2.34	-1.27	-3.70	-0.14	-0.06	-0.74	-0.14	-0.29	-16.13	-10.27	-10.46	-5.98	-3.41	-15.68	-12.64	-12.89	-11.91	-14.07
Details	**Goa**					**Daman & Diu**					**Dadra & Nagar Haveli**					**Western Region**				
	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
Availability (MUs)	258.20	218.53	265.86	253.07	221.15	156.54	148	167.46	172.75	148.43	343.30	324.00	398.84	406.67	349.63	25204	23068	24042	22358	21590.21
Unrestricted Requirement (MUs)	259.10	259.53	266.95	256.12	226.48	175.59	167.44	187.10	191.39	166.43	359.10	325.94	400.09	409.30	351.32	26074	23986	24833	22811	21911.21
Deficit(-)/Surplus(+) : in MUs	-0.9	-41	-1.09	-3.05	-5.33	-19.05	-19.44	-19.64	-18.64	-18	-15.8	-1.94	-1.25	-2.63	-1.69	-870	-918	-791.28	-452.52	-321
Deficit(-)/Surplus(+) : in %	-0.35	-15.80	-0.41	-1.19	-2.35	-10.85	-11.61	-10.50	-9.74	-10.82	-4.40	-0.60	-0.31	-0.64	-0.48	-3.34	-3.83	-3.19	-1.98	-1.47
Details	**Goa**					**Daman & Diu**					**Dadra & Nagar Haveli**					**Western Region**				
	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
Availability (MUs)	296.98	245.63	246.40	246.76	220.85	168.40	171.18	179.39	169.83	158.32	356.92	381.47	394.60	393.26	351.88	23528	21226	20169	19996	19378.88
Unrestricted demand (MUs)	300.81	246.70	246.59	247.25	224.33	186.64	189.17	198.35	188.63	176.58	358.07	383.03	397.84	396.03	354.79	26278	23001	21967	21492	21036.66
Deficit(-)/Surplus(+) : in MUs	-3.83	-1.07	-0.19	-0.49	-3.48	-18.24	-17.99	-18.96	-18.8	-18.26	-1.15	-1.56	-3.24	-2.77	-2.91	-2750.08	-1775.45	-1798.26	-1496.8	-1657.78
Deficit(-)/Surplus(+) : in %	-1.27	-0.43	-0.08	-0.20	-1.55	-9.77	-9.51	-9.56	-9.97	-10.34	-0.32	-0.41	-0.81	-0.70	-0.82	-10.47	-7.72	-8.19	-6.96	-7.88

Annexure-11.2

Voltages at the important 400 and 765 kV substations during the period MAY 2012 AND SEPTEMBER 2012

400 kV S/S	Indore		Itarsi		Karad		Dhule		Asoj		Kasor		Bhilai	
Month	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
May-12	427	397	427	402	429	395	432	402	420	401	422	406	430	406
Jun-12	427	403	427	403	432	398	432	406	422	393	423	406	428	409
Jul-12	428	400	430	399	433	400	436	400	421	402	421	405	426	400
Aug-12	430	394	428	398	434	403	436	402	421	390	423	405	426	401
Sep-12	427	400	427	399	435	400	438	400	420	400	421	400	431	400

400 kV S/S	Jetpur		Bina		Gwalior		Nagda		Khandwa		Sipat (765 kV)		Seoni (765 kV)	
Month	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
May-12	426	395	431	398	437	387	429	401	433	399	782	747	798	749
Jun-12	427	368	429	399	430	365	428	403	436	406	773	740	807	752
Jul-12	439	396	435	372	432	370	431	400	433	405	771	745	799	761
Aug-12	427	364	431	395	433	387	430	392	434	395	771	761	802	749
Sep-12	438	398	427	394	433	401	428	400	433	400	788	749	807	748

ANNEX -11.3(1/5)

Under Frequency Operation in various Constituent System of Western Region during the month May 2012
(Compiled from the data received from the constituents)

Sl. No	Date	Gujarat		Chhattisgarh		Madhya Pradesh		Maharashtra	
		No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz
1	01-May-12	0	0	3	12	0	0	0	0
2	02-May-12	0	0	0	0	0	0	0	0
3	03-May-12	0	0	0	0	0	0	0	0
4	04-May-12	0	0	0	0	0	0	0	0
5	05-May-12	0	0	0	0	0	0	0	0
6	06-May-12	0	0	0	0	0	0	0	0
7	07-May-12	0	0	0	0	0	0	0	0
8	08-May-12	0	0	0	0	0	0	0	0
9	09-May-12	0	0	0	0	0	0	0	0
10	10-May-12	0	0	0	0	0	0	0	0
11	11-May-12	0	0	0	0	0	0	0	0
12	12-May-12	0	0	0	0	0	0	0	0
13	13-May-12	0	0	0	0	0	0	0	0
14	14-May-12	**NIL**		0	0	**NIL**		0	0
15	15-May-12	0	0	0	0	0	0	0	0
16	16-May-12	0	0	2	8	0	0	1	65
17	17-May-12	0	0	0	0	0	0	0	0
18	18-May-12	0	0	0	0	0	0	0	0
19	19-May-12	0	0	0	0	0	0	0	0
20	20-May-12	0	0	0	0	0	0	0	0
21	21-May-12	0	0	0	0	0	0	0	0
22	22-May-12	0	0	0	0	0	0	0	0
23	23-May-12	0	0	0	0	0	0	1	10
24	24-May-12	0	0	0	0	0	0	0	0
25	25-May-12	0	0	0	0	0	0	0	0
26	26-May-12	0	0	0	0	0	0	0	0
27	27-May-12	0	0	0	0	0	0	0	0
28	28-May-12	0	0	0	0	0	0	0	0
29	29-May-12	0	0	0	0	0	0	0	0
30	30-May-12	0	0	0	0	0	0	0	0
31	31-May-12	0	0	0	0	0	0	0	0
	Max	**0**	**0**	**3**	**12**	**0**	**0**	**1**	**65**
	Total	**0**		**5**		**0**		**2**	
Recommonded Load relief at 48.8 Hz / 48.6 Hz			***220***		***38***		***152***		***550***

ANNEX -11.3(2/5)

Under Frequency Operation in various Constituent System of Western Region during the month June 2012
(Compiled from the data received from the constituents)

Sl. No	Date	Gujarat		Chhattisgarh		Madhya Pradesh		Maharashtra	
		No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz
1	01-Jun-12	0	0	0	0	0	0	0	0
2	02-Jun-12	0	0	0	0	0	0	0	0
3	03-Jun-12	0	0	0	0	0	0	0	0
4	04-Jun-12	0	0	0	0	0	0	0	0
5	05-Jun-12	0	0	0	0	0	0	0	0
6	06-Jun-12	0	0	0	0	0	0	0	0
7	07-Jun-12	0	0	0	0	0	0	0	0
8	08-Jun-12	0	0	0	0	0	0	0	0
9	09-Jun-12	3	22.64	1	65	0	0	2	29
10	10-Jun-12	0	0	0	0	0	0	0	0
11	11-Jun-12	2	20.02	4	20	2	21.2	10	354
12	12-Jun-12	10	19.27	8	47	8	109.2	5	240
13	13-Jun-12	6	6.04	4	23	6	117.9	5	110
14	14-Jun-12	0	0	0	0	0	0	0	0
15	15-Jun-12	0	0	0	0	0	0	0	0
16	16-Jun-12	1	246	0	0	0	0	0	0
17	17-Jun-12	0	0	0	0	0	0	0	0
18	18-Jun-12	2	103.63	0	0	0	0	0	0
19	19-Jun-12	0	0	0	0	0	0	0	0
20	20-Jun-12	0	0	0	0	0	0	0	0
21	21-Jun-12	0	0	0	0	0	0	0	0
22	22-Jun-12	0	0	0	0	0	0	0	0
23	23-Jun-12	0	0	0	0	0	0	0	0
24	24-Jun-12	0	0	0	0	0	0	0	0
25	25-Jun-12	0	0	0	0	0	0	0	0
26	26-Jun-12	0	0	0	0	0	0	0	0
27	27-Jun-12	0	0	0	0	0	0	0	0
28	28-Jun-12	0	0	0	0	0	0	0	0
29	29-Jun-12	0	0	0	0	0	0	0	0
30	30-Jun-12	3	242.25	0	0	0	0	0	0
	Max	**10**	**246**	**8**	**65**	**8**	**117.9**	**10**	**354**
	Total	**24**		**17**		**16**		**22**	
Recommonded Load relief at 48.8 Hz / 48.6 Hz			***220***		***38***		***152***		***550***

ANNEX -11.3(3/5)

Under Frequency Operation in various Constituent System of Western Region during the month July 2012
(Compiled from the data received from the constituents)

Sl. No	Date	Gujarat		Chhattisgarh		Madhya Pradesh		Maharashtra	
		No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz
1	01-Jul-12	0	0	0	0	0	0.0	0	0
2	02-Jul-12	5	17.83	1	9	0	0.0	3	67
3	03-Jul-12	0	0	0	0	**3**	**30.9**	1	31
4	04-Jul-12	0	0	0	0	0	0.0	0	0
5	05-Jul-12	1	154.6	0	0	0	0.0	0	0
6	06-Jul-12	0	0	0	0	0	0.0	0	0
7	07-Jul-12	0	0	0	0	0	0.0	0	0
8	08-Jul-12	0	0	0	0	0	0.0	0	0
9	09-Jul-12	0	0	0	0	0	0.0	0	0
10	10-Jul-12	0	0	0	0	0	0.0	0	0
11	11-Jul-12	0	0	0	0	0	0.0	0	0
12	12-Jul-12	0	0	0	0	0	0.0	0	0
13	13-Jul-12	0	0	0	0	0	0.0	0	0
14	14-Jul-12	0	0	0	0	0	0.0	0	0
15	15-Jul-12	0	0	0	0	0	0.0	0	0
16	16-Jul-12	6	7.58	6	26	**1**	**34.9**	1	74
17	17-Jul-12	0	0	0	0	**2**	**78.9**	1	34
18	18-Jul-12	2	12.14	1	8	**1**	**80.5**	1	74
19	19-Jul-12	0	0	0	0	0	0.0	0	0
20	20-Jul-12	3	0	3	24	**3**	**40.5**	4	43
21	21-Jul-12	2	2.41	3	20	0	0.0	0	0
22	22-Jul-12	2	6.41	1	7	**1**	**66.6**	1	81
23	23-Jul-12	0	0	0	0	0	0.0	0	0
24	24-Jul-12	0	0	0	0	**1**	**86.0**	0	0
25	25-Jul-12	1	151.55	0	0	0	0.0	0	0
26	26-Jul-12	1	29.12	2	15	0	0.0	4	84
27	27-Jul-12	0	0	0	0	0	0.0	0	0
28	28-Jul-12	0	0	0	0	0	0.0	0	0
29	29-Jul-12	0	0	0	0	0	0.0	0	0
30	30-Jul-12	11	138.7	3	15	0	0.0	1	53
31	31-Jul-12	1	21	0	0	0	0.0	0	0
	Max	**11**	**154.6**	**6**	**26**	**3**	**86**	**4**	**84**
	Total	**35**	**541.34**	**20**	**124**	**12**	**418.25**	**17**	**541**
Recommonded Load relief at 48.8 Hz / 48.6 Hz			***220***		***38***		***152***		***550***

ANNEX-11.3(4/5)

Under Frequency Operation in various Constituent System of Western Region during the month August 2012
(Compiled from the data received from the constituents)

Sl. No	Date	Gujarat		Chhattisgarh		Madhya Pradesh		Maharashtra	
		No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz
1	01-Aug-12	0	0	0	0	0	0.0	0	0
2	02-Aug-12	0	0	0	0	0	0.0	0	0
3	03-Aug-12	0	0	0	0	0	0.0	0	0
4	04-Aug-12	0	0	0	0	0	0.0	0	0
5	05-Aug-12	0	0	0	0	0	0.0	0	0
6	06-Aug-12	2	41.56	0	0	0	0.0	0	0
7	07-Aug-12	4	46.03	0	0	0	0.0	0	0
8	08-Aug-12	**4**	**87.7**	0	0	0	0.0	0	0
9	09-Aug-12	1	32.47	0	0	0	0.0	0	0
10	10-Aug-12	0	0	0	0	0	0.0	0	0
11	11-Aug-12	0	0	0	0	0	0.0	0	0
12	12-Aug-12	0	0	0	0	0	0.0	0	0
13	13-Aug-12	0	0	0	0	0	0.0	0	0
14	14-Aug-12	0	0	0	0	**NIL**		0	0
15	15-Aug-12	0	0	0	0	0	0.0	0	0
16	16-Aug-12	0	0	0	0	0	0.0	0	0
17	17-Aug-12	0	0	0	0	0	0.0	0	0
18	18-Aug-12	0	0	0	0	0	0.0	0	0
19	19-Aug-12	1	57.3	0	0	0	0.0	0	0
20	20-Aug-12	2	18.53	**1**	**8**	0	0.0	**1**	**89**
21	21-Aug-12	0	0	0	0	0	0.0	0	0
22	22-Aug-12	0	0	0	0	0	0.0	0	0
23	23-Aug-12	0	0	0	0	0	0.0	0	0
24	24-Aug-12	0	0	0	0	0	0.0	0	0
25	25-Aug-12	1	12	0	0	0	0.0	0	0
26	26-Aug-12	0	0	0	0	0	0.0	0	0
27	27-Aug-12	0	0	0	0	0	0.0	0	0
28	28-Aug-12	0	0	0	0	0	0.0	0	0
29	29-Aug-12	0	0	0	0	0	0.0	0	0
30	30-Aug-12	0	0	0	0	0	0.0	0	0
31	31-Aug-12	0	0	0	0	0	0.0	0	0
	Max	**4**	**87.7**	**1**	**8**	0	0.0	0	0
	Total	**15**	**295.59**	**1**	**8**	**0**	**0**	**1**	**89**
Recommonded Load relief at 48.8 Hz / 48.6 Hz			***220***		***38***		***152***		***550***

ANNEX-11.3(5/5)

Under Frequency Operation in various Constituent System of Western Region during the month September 2012
(Compiled from the data received from the constituents)

Sl. No	Date	Gujarat		Chhattisgarh		Madhya Pradesh		Maharashtra	
		No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz	No. of Occasions	Max Load Relief at 48.8 Hz
1	01-Sep-12	0	0	0	0	0	0.0	0	0
2	02-Sep-12	0	0	0	0	0	0.0	0	0
3	03-Sep-12	0	0	0	0	0	0.0	0	0
4	04-Sep-12	0	0	0	0	0	0.0	0	0
5	05-Sep-12	0	0	0	0	0	0.0	0	0
6	06-Sep-12	0	0	0	0	0	0.0	0	0
7	07-Sep-12	0	0	0	0	0	0.0	0	0
8	08-Sep-12	0	0	0	0	0	0.0	0	0
9	09-Sep-12	0	0	0	0	0	0.0	0	0
10	10-Sep-12	0	0	0	0	0	0.0	0	0
11	11-Sep-12	0	0	0	0	0	0.0	0	0
12	12-Sep-12	0	0	0	0	0	0.0	0	0
13	13-Sep-12	0	0	0	0	0	0.0	0	0
14	14-Sep-12	0	0	0	0	0	0.0	0	0
15	15-Sep-12	0	0	0	0	0	0.0	0	0
16	16-Sep-12	0	0	0	0	0	0.0	0	0
17	17-Sep-12	0	0	0	0	0	0.0	0	0
18	18-Sep-12	0	0	0	0	0	0.0	0	0
19	19-Sep-12	0	0	0	0	0	0.0	0	0
20	20-Sep-12	0	0	0	0	0	0.0	0	0
21	21-Sep-12	0	0	0	0	0	0.0	0	0
22	22-Sep-12	0	0	0	0	0	0.0	0	0
23	23-Sep-12	0	0	0	0	0	0.0	0	0
24	24-Sep-12	0	0	0	0	0	0.0	0	0
25	25-Sep-12	0	0	0	0	0	0.0	0	0
26	26-Sep-12	0	0	0	0	0	0.0	0	0
27	27-Sep-12	0	0	0	0	0	0.0	0	0
28	28-Sep-12	0	0	0	0	0	0.0	0	0
29	29-Sep-12	0	0	0	0	0	0.0	0	0
30	30-Sep-12	0	0	0	0	0	0.0	0	0
	Max	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Recommonded Load relief at 48.8 Hz / 48.6 Hz			***220***		***38***		***152***		***550***

Annexure-12

ANTICIPATED POWER SCENARIO IN WR FOR PERIOD FROM NOVEMBER 2012 TO JANUARY 2013 (IN MW)

Details	Chhatisgarh			Gujarat			Madhya Pradesh			Maharashtra		
	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13
Unrestricted demand (MW)	3210	3240	3258	12010	11950	12250	8250	8650	8250	19490	19610	19880
Availability (MW)	3150	3156	3164	11540	11710	11865	7692	7750	7381	17640	17820	17790
Deficit(-)/Surplus(+)												
(i) MW	-60	-84	-94	-470	-240	-385	-558	-900	-869	-1850	-1790	-2090
(ii) %	-1.90	-2.66	-2.97	-4.08	-2.05	-3.25	-7.26	-11.61	-11.77	-10.49	-10.04	-11.75

Details	Goa			Daman & Diu			Dadra & Nagar Haveli			Western Region		
	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13
Unrestricted demand (MW)	465	475	470	322	318	325	625	625	623	43500	43640	43780
Availability (MW)	413	418	418	260	262	262	612	621	621	41500	41968	42404.51008
Deficit(-)/Surplus(+)												
(i) MW	-52	-57	-52	-62	-56	-63	-13	-4	-2	-2000	-1672	-1375
(ii) %	-12.52	-13.54	-12.35	-23.62	-21.49	-24.16	-2.08	-0.66	-0.34	-4.82	-3.98	-3.24

ANTICIPATED POWER SCENARIO IN WR FOR PERIOD FROM NOVEMBER 2012 TO JANUARY 2013 (IN MUs)

Details	Chhatisgarh			Gujarat			Madhya Pradesh			Maharashtra		
	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13
Unrestricted Requirement (MUs)	2062	2144	2257	7500	7250	7540	6028	6679	6532	10610	10640	10850
Availability (MUs)	1940	2040	2150	6900	6750	7040	5460	5980	5780	10254	10250	10508.95085
Deficit(-)/Surplus(+)												
(i) MUs	-122	-104	-107	-600	-500	-500	-568	-699	-752	-356	-390	-341
(ii) %	-6.28	-5.11	-4.98	-8.70	-7.41	-7.10	-10.40	-11.69	-13.01	-3.47	-3.80	-3.25

Details	Goa			Daman & Diu			Dadra & Nagar Haveli			Western Region		
	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13	Nov-12	Dec-12	Jan-13
Unrestricted Requirement (MUs)	293	299	296	213	210	215	432	438	436	27250	27310	27536
Availability (MUs)	271	278	274	204	195	202	405	425	420	25840	25883	25750
Deficit(-)/Surplus(+)												
(i) MUs	-22	-21	-22	-9	-15	-13	-27	-13	-16	-1410	-1427	-1786
(ii) %	-8.10	-7.64	-8.07	-4.18	-7.63	-6.40	-6.67	-2.94	-3.83	-5.46	-5.51	-6.93

Annex 14.1 (2) Annex 14.1 1/2

CHHATTISGARH STATE POWER TRANSMISSION COMPANY LIMITED
(Successor Company of CSEB) (C.G. Govt. Undertaking)
STATE LOAD DESPATCH CENTRE: RAIPUR
PHONE: 0771– 2574172, FAX NO. 0771-2574174. email-csebsldc@gmail.com

No.03-02/SLDC/RA/UI/WRPC/ 1187 Raipur, Dtd. 06/08/2012

To,

The Member Secretary,
Western Regional Power Committee,
F-3, MIDC Area, Andheri (East),
Mumbai- 400 093.

प. क्षे. वि. स., मुंबई/WRPC
आवक संख्या/Inward No. 7397
दिनांक/Date 9/8/12

Fax No. 022-28370193.

Sub: - Grid incidences in WR-NR-ER-NER on 30.07.2012 & 31.07.2012- Request to call off the implication of the UI Charges during the disturbance period regarding.

Sir,

During the Grid incidences in WR-NR-ER-NER on 30.07.2012 & 31.07.2012 it has been observed that both the DSPM units of CSPGCL tripped simultaneously. The through off of 450 MW resulted in the change of the drawal status of CG State. An abstract of date 30.07.2012 for the period 00:00 hrs to 06: 00 hrs and 31.07.2012 for the period 12:00 hrs to 18:00 hrs is provided overleaf.

As such SLDC, CSPTCL request to call off the implication of the UI Charges during the disturbance period as declared by NLDC.

We hope that the dignitaries in the forthcoming CCM meeting may like to deliberate over the issue and request to include it in the agenda of forthcoming CCM meeting.

Chief Engineer (LD)
SLDC, CSPTCL, RAIPUR

Copy to:
1. The MD CSPTCL Daganiya Raipur.
2. The MD CSPDCL Daganiya Raipur.
3. The MD CSPGCL Daganiya Raipur.
4. The General Manager, POSOCO (formerly WRLDC), Plot No. F-3, MIDC Area, Marol, Andheri East, Mumbai. Fax No. 022 28235434
5. The Chief Engineer (Commercial). CSPDCL, Raipur. Fax No. 0771 2574442.

(2/2)

Grid incidences in WR-NR-ER-NER on 30.07.2012 31.07.2012 - IMPACT on CG STATE DRAWAL

TIME	KW GEN 1 220 MW	KW GEN 2 220 MW	KW GEN 3 400 MW	KW GEN 4 400 MW	DSPM GT 1 220 MW	DSPM GT 2 220 MW	CSEB UD/OD DRAWL	FREQ
0:00:00	198.55	207.59	195.64	200.00	244.97	209.18	-30.14	49.99
0:15:00	199.31	207.13	195.33	200.00	239.94	200.36	-66.56	49.75
0:30:00	199.47	207.74	195.02	200.00	240.24	207.89	-30.64	49.82
0:45:00	199.62	209.27	195.02	200.00	238.32	204.42	-35.08	49.77
1:00:00	201.76	210.34	193.80	200.00	240.03	207.03	-108.52	50.10
1:15:00	199.01	208.66	194.10	200.00	240.85	203.15	-44.89	49.82
1:30:00	202.53	209.42	193.80	200.00	236.92	205.48	-28.55	49.97
1:45:00	201.15	209.42	194.56	200.00	241.28	201.74	-262.04	49.85
2:00:00	199.77	210.19	195.02	200.00	237.43	205.42	-227.84	49.94
2:15:00	199.47	211.57	194.26	200.00	240.39	203.37	-100.51	49.85
2:30:00	200.85	211.26	193.34	200.00	241.22	203.49	-86.81	49.77
2:45:00	189.36	207.13	196.10	200.00	0.00	0.26	327.89	50.18
3:00:00	195.02	206.21	195.64	200.00	0.00	0.26	380.93	50.53
3:15:00	193.49	208.51	194.10	200.00	0.00	0.26	393.21	50.15
3:30:00	193.80	204.06	195.79	200.00	0.00	0.26	303.58	50.16
3:45:00	196.86	208.35	194.56	200.00	0.00	0.26	231.73	49.15
4:00:00	199.47	206.82	195.18	200.00	0.00	0.26	264.63	50.06
4:15:00	200.54	209.88	194.56	200.00	0.00	0.26	220.50	49.79
4:30:00	201.61	210.80	194.56	200.00	0.00	49.90	265.49	50.02
4:45:00	200.85	210.65	195.79	200.00	73.61	110.35	170.05	49.86
5:00:00	200.39	209.58	194.87	200.00	128.97	147.78	94.47	49.85
5:15:00	201.30	209.88	195.94	200.00	134.56	166.74	-53.48	50.08
5:30:00	199.47	208.35	195.18	200.00	168.86	170.97	-68.88	49.80
5:45:00	198.24	208.05	195.18	200.00	207.43	174.60	14.01	49.35
6:00:00	200.23	210.80	193.34	200.00	226.14	187.57	-10.46	49.92
12:00:00	200.85	210.96	196.56	199.00	239.14	208.31	-276.81	50.17
12:15:00	201.76	210.04	196.40	199.00	235.76	208.15	-396.08	49.84
12:30:00	201.30	210.65	197.17	199.00	239.94	192.95	-475.09	50.16
12:45:00	198.85	209.12	196.56	199.00	236.40	202.24	-377.42	49.77
13:00:00	197.93	208.51	195.02	199.00	236.40	209.81	-525.22	50.22
13:15:00	180.93	168.06	176.33	199.00	0.00	0.26	187.46	50.01
13:30:00	190.73	188.28	187.06	199.00	0.00	0.26	83.04	49.91
13:45:00	198.85	200.54	191.81	199.00	0.00	0.26	85.10	50.09
14:00:00	198.70	204.06	192.73	199.00	0.00	0.26	30.97	50.08
14:15:00	200.39	203.60	195.33	199.00	0.00	0.26	-0.71	50.09
14:30:00	190.89	204.52	191.96	199.00	0.00	0.26	127.61	49.40
14:45:00	190.73	205.75	195.02	199.00	0.00	0.26	171.93	49.97
15:00:00	191.81	209.58	196.10	199.00	0.00	59.19	92.96	50.00
15:15:00	190.73	209.27	195.18	199.00	0.00	124.00	100.96	50.28
15:30:00	191.50	208.35	197.17	199.00	0.00	140.37	55.57	49.60
15:45:00	192.11	210.34	195.18	199.00	0.00	171.87	66.53	50.05
16:00:00	190.89	210.19	192.73	199.00	111.55	188.24	-57.37	50.14
16:15:00	192.88	209.12	195.79	199.00	130.92	194.39	-33.07	50.32
16:30:00	192.88	209.88	196.56	199.00	154.70	201.70	-7.11	49.80
16:45:00	194.26	207.59	195.02	199.00	180.36	207.02	2.40	50.13
17:00:00	193.03	207.28	195.94	199.00	207.04	209.29	-33.96	50.04
17:15:00	191.19	207.74	197.17	199.00	219.52	209.61	-76.32	50.04
17:30:00	190.73	207.89	196.56	198.00	226.78	210.86	26.53	50.14
17:45:00	190.89	206.05	193.64	198.00	233.80	209.58	55.72	49.95
18:00:00	192.57	205.59	194.41	198.00	232.80	209.11	-49.61	50.02

SLDC, CSPTCL

Annex 5-2 1/1

Annex 14.2

CGPL

CGPL-UMPP/O&M/WRLDC/0[illegible]9.3

30th July 2012

To,

Mr. O.P.Singh,

Superintendent Engineer (Commercial Circle),

Western Regional Power Committee

F-3, Marol MIDC, Andheri (East)

Mumbai-400093

WRPC
आवक No 13377
दिनांक /Date 31/07/12

Sub: CGPL Mundra UI penalty for 30th July 2012

Dear Sir,

You are aware that there were instances of grid disturbances & various regional grid failures that has happened on 30th July 2012. Due to the above, there were disturbances in 400 kV system due to which our Unit #20 got tripped at 06:15 Hrs and Unit #10 got tripped at 06:58 Hrs on 30th Jul-12. The plant availability for CGPL Mundra was already submitted on 29th Jul-12 to WRLDC as per IEGC 2010 for scheduling of power for 30th July 2012. Due to the above tripping, CGPL,Mundra could not able to inject the power as scheduled.

Therefore, under the above circumstances ,any under injection during such grid failure is not attributable to CGPL and no UI penalty is payable during the same period

This is for your information & necessary action please

Kindly acknow ledge the receipt.

Thanking You.

Yours Sincerely,

For Coastal Gujarat Power Limited

Sharad Baijal

Head –Operations & Maintenance

Coastal Gujarat Power Limited

Annex B
14.3

CGPL-UMPP/O&M/WRLDC/0194

31st July, 2012

To,

Mr. O.P.Singh,

Superintendent Engineer (Commercial Circle),

Western Regional Power Committee

F-3, Marol MIDC, Andheri (East)

Mumbai-400093

प्र. कें. वि. स. मुंबई /WRPC
आवक संख्या / Inward No. 4379
दिनांक / Date 3/8/12

Sub: CGPL Mundra UI penalty for 31st July, 2012

Dear Sir,

You are aware that there were instances of grid disturbances that has happened on 31st July 2012. On account of the above, there were disturbances in 400 kV system due to which our Unit #20 got tripped at 05:08 Hrs on 31st Jul-12. The plant availability for CGPL Mundra was already submitted on 30th Jul-12 to WRLDC as per IEGC 2010 for scheduling of power for 31st July 2012. Due to the above tripping, CGPL, Mundra could not able to inject the power as scheduled.

Therefore, under the above circumstances, any under injection during such grid failure is not attributable to CGPL and no UI penalty is payable during the same period

This is for your information & necessary action please

Kindly acknowledge the receipt.

Thanking You.

Yours Sincerely,

For Coastal Gujarat Power Limited

Sharad Baijal

Head –Operations & Maintenance

3/8

(5) Annex 12 Pg 4 of 4

(14-4)

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.

MAHARASHTRA STATE LOAD DESPATCH CENTRE, KALWA

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

Office of The Chief Engineer
Maharashtra State Load Dispatch Center
Thane-Belapur Road, P.O. Airoli,
Navi Mumbai Pin – 400 708

ISO 9001

No. MSLDC/TECH/SO/ NO - 1815
Date: 22 AUG 2012

To,
The General Manager
WRLDC, POSOCO
Mumbai

Sub: Post dated Suo-Motu Revision of Bi-lateral power for 30th and 31st July-2012

Dear Sir,

Two major disturbances occurred on 30th and 31st July-2012 affecting NR and NR, ER, NER respectively. In either disturbance, no instruction of curtailment was received on 30th and 31st July 2012 for interstate bi-lateral transaction

Also, there was no revision of schedules on the WRLDC web-site on the same day. The instruction of curtailment was received for 31st July-2012 for power exchange powers (collective transaction) from 13:00 to 24:00 hrs

It is seen from implemented schedules posted on WRLDC web site that,

1) JSW-PSPCL power was reduced to zero from 02:30 to 16.00 hrs for 30/07/2012 and 13.00 to 24:00 hrs. for 31/07/2012 for OA transcation approved vide no. 15957A (78.50 MW RTC) and 16299A (70 MW RTC)
2) AMNEPL –West Bengal power was reduced to zero from 13:00 to 24.00 hrs for 31/07/2012 for OA transcation approved vide no.2603C(75 MW RTC)

It is observed that JSW -U4 to PSPCL and Abhijeet (AMNEPL) to West Bengal (WBSEB), OA transcation were revised Suo-Motu on next day in WRLDC schedules.

As there was no instruction from RLDC about the revision of power in real time power remained injected in the grid, hence affecting the Intra state settlement Energy account, as buyer's duration of purchase is revised post dated, causing imbalance.

Being the interstate power, it is requested issue decision in this regard of curtailed powers.

Chief Engineer
MSLDC, Kalwa.

Copy to:

- The SE (Commercial) WRLDC Mumbai
- The JSWPTCL New Delhi, AMNEPL Nagpur

Tele 91-22-27 60 1765 ,276 01 766
Fax 91-22-27 60 1769

web site : http://www.mahasldc.in
Email : celd@rediffmail.com

Annex-17.1

17.1

GPL-UMPP/O&M/Unit #20 /COD/WRLDC/0192

29th Jul 2012

To,

General Manager,

Western Region Load Despatch Centre,

F-3, MIDC Area, Marol,

Andheri (East)

Mumbai-400 093

Sub: Declaration of Commercial Operation by CGPL Mundra (UMPP)- Unit No.20 and Scheduling of Power

Dear Sir

You are aware that CGPL Mundra has successfully completed the 72 Hours Commissioning Test of Second Unit i.e. Unit No.20 on 28th Jul- 2012 in accordance with the Article 6 & Schedule 5 to PPA. The Commissioning Test Results has been verified by the Independent Engineer based on which Final Test Certificate has been issued by the Independent Engineer to all the Procurers vide its letter dated 28th Jul 2012 .

Therefore, as per the provisions of PPA , second unit(Unit No.20) will achieve its Commercial Operation (COD) on 30th Jul-12. Power from the above generating unit will be tentatively scheduled from 30th Jul-12 at 00:00Hrs in the share of Allocated Contacted Capacity as mentioned in PPA as per Annexure-1 and the same has been already submitted to you . CGPL, Mundra will declare the Capacity(DC) as per terms and conditions of Indian Electricity Grid Code 2010 (IEGC).

We will submit the Plant availability in MW and MWh from 29th July 2012 by 08:00 hours as per IEGC 2010 for scheduling from 30th Jul-12.

This is for your information and necessary action please.

Thanking You.

Yours Sincerely,

For Coastal Gujarat Power Limited

(Sharad Baijal- Head O&M)

Annex 17.2 1/2

एनटीपीसी
NTPC

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)

NTPC Limited
(A Govt. of India Enterprise)

केन्द्रीय कार्यालय/Corporate Centre

Ref. No. : 01 CD:227
Date : 31.07.2012

To
The Member Secretary
Western Region Power Committee
F-3, MIDC area, Andehri (East),
Mumbai-400 093

Sub: **Declaration of Commercial Operation of third 660 MW Unit # 3 of Sipat Super Thermal Power Station Stage-I.**

Dear Sir,

Unit #3 of 660 MW of Sipat Super Thermal Power Station Stage - I is declared for Commercial Operation w.e.f. 00:00 Hrs. of 01/08/2012

This is for your information and necessary action please.

Yours faithfully,

(M.R.V.Rama Rao)
ED (Comml.)

Copy to:

- Joint Secretary (Thermal), Ministry of Power, Govt. of India
- Western Region Beneficiaries (As per list attached)
- GM (WRLDC), western Region Load Dispatch centre, F-3 , MIDC Area, Andheri(East), Mumbai -400 093
- Chief Engineer (Grid Mgmt), CEA, West Block, Sewa Bhawan, Sector-I, R.K. Puram, New Delhi-110016
- Director (Statistics), CEA, Sewa Bhawan, Sector-I, R.K. Puram, New Delhi-110016.
- Secretary, Central Electricity Regulatory Commission, 3rd & 4th Floor Chanderlok Building,36, Janpath, New Delhi- 110001

एन टी पी सी भवन स्कोप कॉम्प्लेक्स, 7, इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110003 टेल/Tel : 24360100, फैक्स/Fax : 011-24361018
NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodi Road, New Delhi-110003, वेबसाइट/Website : www.ntpc.co.in

	COD of Unit III of Sipat stage-I	FAXNO
1	The Member Secretary WRPC	022-28370193
2.	Joint Secretary Thermal MOP Govt Of India	01123714367
3.	GM (WRLDC), western Region Load Dispatch centre, F-3 , MIDC Area , Andheri(East), Mumbai -400 093	022-28235434
4	Chief Engineer (Grid Mgmt), CEA, West Block, Sewa Bhawan, Sector-I, R K. Puram New Delhi-110016	011-26109750
5.	Secretary Central Electricity Regulatory Commission, 3rd & 4th Floor Chanderlok Building,36, Janpath New Delhi- 110001	011-23753923 011-23753920
6	OS control room WRHQ-I	022-28306068
7	WRHQ-I	022-28259345
8	WRHQ-II	0771-2544550

Annex-19 1/2

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)

आई.एस.ओ. 9001:2000 प्रमाणित कंपनी • ISO 9001:2000 Certified Company

पावरग्रिड

प्राप्तक क्रमांक/Inward No. 4758 /WRPC
दिनांक/Date: 14/9/12

सम्प्रीति नगर, नारी रिंग रोड, डाकघर : उप्पलवाडी, नागपुर - 440 026.
Sampriti Nagar, Nari Ring Road, P.O. : Uppalwadi, Nagpur-440 026.
दूरभाष/Phone : 0712-2641478-79, फैक्स/Fax : 0712-2641366
e-mail : pgcil@nagpur.dot.net.in

पश्चिम क्षेत्र पारेषण प्रणाली -I, क्षेत्रीय मुख्यालय / Western Region Transmission System-I, Regional Hqrs.

REF No.: WRTS-I:COMML:NGP: 75 Date: 11.09.2012

To,

As per distribution List.

Sub: Revised Declaration of Commercial operation of part of 400kV Korba-Birsinghpur TL from Location No.176/0 to Birsinghpur (MPPTCL).

Dear Sir,

Declaration of Commercial Operation of D/c Korba-Birsinghpur line (WRSS-II-Set-D) as intimated vide letter No.: WRTS-I:COMML:NGP:1120 dated 01.03.2012 stands revised as below:-

1) Balance part of Korba/Balco-Birsinghpur TL (first circuit) from Location No.176/0 to Birsinghpur(MPPTCL) has been commissioned successfully and is in operation from 29.02.2012.

2) Balance part of Korba-Birsinghpur TL (second circuit) from Location No.176/0 to Birsinghpur(MPPTCL) has been commissioned successfully on 31st March 2012 along with line reactor at Birsinghpur and is in operation.

D/c Portion from Korba Gantry till Loc 176/0 had been put in commercial operation as already intimated vide letters dated 03.10.2011 & 01.12.2011.

Accordingly, the monthly transmission charges of following assets shall be payable by concerned DICs as per CERC (sharing of Inter-State transmission charges & losses) Regulation 2010.

Sr.No.	Name of Asset	Date of Commercial Operation
01	Korba-Balco to Birsinghpur (first circuit)	01.03.2012
02	Korba to Birsinghpur (second circuit)	01.04.2012

Thanking you.

Yours Sincerely,

(Bharat Bhushan)
Executive Director (WR-I)

Contd...2

1. Member Secretary, WRPC, Mumbai.
2. MD, MP Tradeco, Jabalpur.
3. Managing Director, MSEDCL, Mumbai.
4. Managing Director, MSETCL, Mumbai
5. Chairman, GUVNL, Vadodara.
6. Managing Director, GETCO, Vadodara
7. Managing Director, CSPDCL, Raipur.
8. CMD, CSPTCL, Raipur.
9. Chief Engineer, GOA Electricity Department, Panjim.
10. Executive Engineer, Electricity Department, Diu and Daman, Moti Daman, Daman.
11. Executive Engineer, Electricity Department, Dadra & Nagar Haveli, Silvassa.

12. Shri Indranil Dutta,
    Vice President-Power, M/s BALCO Ltd.
    Captive Power Plant-1,
    P.O.: Jamnipalli, Korba,
    Pin-495 450 (Chhattisgarh) NOO

13. Shi R V Mathe,
    General Manager (Commercial)
    M/s Vandana Vidyut Ltd,
    "Vandanaa Bhawan", M. G. Road,
    Raipur-492 001(Chhattisgarh) India

ANNEX- VIII

VII

Annex - 19 (1/6)

LOCATION and REQUIREMENT OF SPECIAL ENERGY METERS						
		Western Region for upto 2014				
Sl.No.	S/Station	Feeders/ICTs	Main	Chk/Standby Meters	Total	No.of DCDs required
1	765kV SASAN UMPP					1
		765kv Silwar D/C	2	2	4	
		765kv Vindyachal P.SD/C	2	2	4	
		765kv Jabalpur D/C	2	2	4	
		765kv Satna D/C	2	2	4	
2	400kV SASAN UMPP					
		400kV Vindhayachal P.S D/C	2			
3	765 kV Satna					
		765kv Silwar D/C	2	0	2	1
		765/400kV ICT	1	1	2	
		765kv VIN Pooling Station D/C	2	0	2	
		765kv Bina(PG) S/C	1	0	1	
		765kv Gwalior(PG) D/C	2	0	2	
		765kv Sasan D/C	2	0	2	
4	765kv Indore PS					1
		765/400kV ICT	1	1	2	
		765kv Bina(PG) S/C	1	0	1	
		765kv Gwalior(PG) S/C	1	0	1	
		765kv Vadodara S/C	1	0	1	
		765kV Bhopal PS D/C	1	0	1	
		765kV Dwaraka Energy Ltd	2	0	2	
5	400kV Indore PS					
6	765kV Bhopal PS					1
		756kV Indore D/C	2		2	
		765kV Jabalpur D/C	2		2	
7	400kV Bhopal PS					
8	400kv VSTPS-STG-4					1
		400kv VIN Pooling Station D/C	2	2	4	
		GT- 11 & 12	0	2	2	
		ST-2Nos	0	2	2	
		765/400kV 2 ICTs	2	2	4	
		400kV Tie line 1&2 to VSTPS_STG-III	2	2	4	
10	765kV Vindyanchal Pooling Station					1
		765kV Satna D/C	2	0	2	
		765/400kV ICT-1&2	2	2	4	
		765kv Sasan D/C	2	0	2	
		765kv Rihand D/C	2	0	2	
		765kV Jabalpur PS D/C				
11	400kV Vindyanchal Pooling Station					
		400kv VSTPS-IV D/C	2	0	2	
		400kV Sasan D/C	2		2	
		400kV Jabua TPS	2			
12	765kv Jabalpur Pooling Station					1

LOCATION and REQUIREMENT OF SPECIAL ENERGY METERS

Western Region for upto 2014

Sl.No.	S/Station	Feeders/ICTs	Main	Chk/Standby Meters	Total	No.of DCDs required
		765kv Dharamjaygarh D/C	2	0	2	
		765kv Bina D/C	2	0	2	
		765/400kv 2*1500MVA ICTs	2	2	4	
		765kv Sasan D/C	2		2	
		765kV Bhopal PS	2			
		765kV Vindhayachal PS D/C	2			
		765kV C'garh UMPP D/C	2			
13	400kv Jabalpur Pooling Station					
		400kv Jabalpur D/C	2	2	4	
		400kv MB Power(MP) Ltd D/C	2			
		400kV Dhohil	2			
		400/220kV ICT-3	1	1		
		Vadodara D/C	2			
14	765kV Vadodara PS GIS					1
		765kv Indore(PG) S/C	1	0	1	
		765/400kv ICT-1&2	2	1	3	
		765kv Pirana D/C	2	0	2	
		765kV Dhule(IPTC) S/C	1			
15	400kV Vadodara PS					
		400kv Jabalpur D/C	2	0	2	
		400kv Asoj D/C	2	2	4	
		400kV Vatman	2			
16	765kV Pirana					1
		765kV Vadodara D/C	2			
17	400kV Vataman					1
		400/220kV ICT-1	1	1		
18	DNH	KALA GIS				1
		400kV Navasri D/C	2	0	2	
		400kV Boisar D/C	2	0	2	
		400/220kV 2*315MVA ICT	2	2	4	
19	DD	New Sub station GIS				1
		400kV Navi Mumbai S/C	1	0	1	
		400kV Vapi S/C	1	0	1	
		400kV Navasri D/C	2	0	2	
		400kV Boisar D/C	2	0	2	
		400/220kV 2*315MVA ICT	2	2	4	
20	Bachau					
		400kv Versana D/C	2		2	
		400kv ESSAR TPS D/C	2		2	
21	765kV Champa P.S.					1
		(+/-) 800kv Kurushektra D/C	2	0	2	
		765kv Raipur D/C	2	0	2	
		765kv Raigarh P.S. S/c	1	0	1	
		765kc Dharamjaygarh S/C	1	0	1	
		765/400kv 3*1500MVA ICTs	3	3	6	

LOCATION and REQUIREMENT OF SPECIAL ENERGY METERS

Western Region for upto 2014

Sl.No.	S/Station	Feeders/ICTs	Main	Chk/Standby Meters	Total	No.of DCDs required
		765kV Chhatisgarh UMPP	2	0	2	
22	400kv Champa PS					
		400kV KSK Mahanadhi D/C	2		2	
		400kV LANCO D/C	2		2	
		400kV Chhattisgarh stiel Power D/C	2		2	
23	765kV Silwar					1
		765kv Sasan D/C	2	0	2	
		765kv Satna D/C	2	0	2	
24	765kV Bina (PG)					
		765kv Indore S/C	1	0	1	
		765kv Satna S/C	1	0	1	
		765kv Gwalior S/C	1	0	1	
25	400kVRaigarh Pooling Station near Kotra					1
		400kv Karamsad DC	2	2	4	
		400kv Raigarh(existing) D/C	2	0	2	
		400kV Athena Chhattisgarh Power Ltd D/C	2		2	
		400kV Korba west Power ltd D/C	2		2	
		4000MW,+/-600kV Bipole terminal(Dhule_PG)	2		2	
		400kV RKM Power D/C	2		2	
		400kV SKS Power Gen	2		2	
		400kV DB Power Ltd D/C	2		2	
26	765kV Raigarh Pooling Station near Kotra					1
		765kv Champa P.S. S/c	1	0	1	
		765/400kv 4*1500MVA ICTs	4	4	8	
		765kV Raipur PS D/C	2		2	
		765kV Raigarh PS(Tamnar) D/C	2		2	
27	765kV Raigarh PS(Tamnar)					1
		3*1500MVA ICTS	3	3	6	
		765kV Raigarh PS (Kotra) D/C	2	0	2	
28	400kV Raigarh PS(Tamnar)					
		400kV JPL 2*D/C	4			
29	765kV Sipat					
		765kv Ranchi S/C	1	1	2	
30	Aurngabad					
		1200kv Wardha D/C	2	0	2	
		400kv Aurangabad(MSETCL) D/C	2	0	2	
31	765 Raipur PS					1
		765kv Wardha D/C	2	0	2	
		765/400kV ICT-1(1500MVA)	1	1	2	
		765kV Raigarh PS(kotra) D/C	2		2	
		765kV C ampa PS D/C	2		2	
32	400kV Raipur PS					
		GMR Chhattisgarg D/C	2		2	

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LOCATION and REQUIREMENT OF SPECIAL ENERGY METERS						
		Western Region for upto 2014				
Sl.No.	S/Station	**Feeders/ICTs**	**Main**	***Chk/Standby Meters***	**Total**	No.of DCDs required
		400kV Raipur(existing) D/C	2		2	
33	765kV Dharamjaygarh					1
		765kv Jharsuguda 2*D/C	4		4	
		765kv Ranchi S/C	1	0	1	
		765kv Sipat S/C	1	0	1	
		765kv Jabalpur P.S 2*D/c	4	0	4	
		765kv champa S/C	2	0	2	
34	400kV Daramjayagarh					
		400kV VVL D/C	2		2	
		400kV BALCO D/C	2		2	
35	Bilaspur Pooling Station					1
		765kv Sipat D/C	2	0	2	
		765kv Seoni D/C	2	0	2	
		765/400kv 3*ICT	3	3	6	
36	400kV Bilaspur					
		400kV ACB D/C	2			
37	765kV Wardha					1
		765kV Aurangabad D/C	2	0	2	
		765kv Seoni D/C	2	0	2	
		765kv Raipur D/C	2	0	2	
		400kv Mauda D/C				
38	Mauda TPS					1
		400kv Wardha D/C	2	0	2	
		132kv MSETCL D/C	2	0	2	
		GT-1 & 2	2	2	4	
		ICT-1 & 2	2	2	4	
39	Solapur NTPC					1
		Approximate SEMs required	10	0	10	
40	765kV Padge (PG) GIS					1
		400kv Padge (MSETCL)	1	0	1	
		765/400kV 2*1500MVA ICTS	2	2	4	
		765kV Auragabad D/C	2		2	
41	400kV Padghe(PG)					
		400kV Padghe(MSETCL) D/C	2		2	
42	765kV Auragabad(PG) GIS					1
		765kV Padghe(PG) D/C	2		2	
		765/400kV 2*1500MVA ICTs	2	2	4	
		765kV Wardha 2* D/C	4	4	8	
		765kV Dhule S/C	1		1	
43	400kV Aurangabad					
		400kV Khargar D/C				
44	765kV Dhule(IPTC)					1
		765/400kV 2*1500MVA ICTS	2	2	4	
		765kV Vadodara(PG) S/C	1	1	2	

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LOCATION and REQUIREMENT OF SPECIAL ENERGY METERS						
		Western Region for upto 2014				
Sl.No.	S/Station	**Feeders/ICTs**	**Main**	***Chk/Standby Meters***	**Total**	No.of DCDs required
		765kV Aurangabad S/C	1	1	2	
45	400kV Dhule(IPTC)					
		400kV Dhule(MSETCL) D/C	2		2	
		400kV Dhule(PG) D/C	2		2	
46	400kV Dhule(PG)					1
		400kV Dhule(IPTC) D/C	2		2	
		400kV Nasik D/C	2		2	
		400/220kV 2*315MVA ICT	2	2	4	
		400kV Malegaon D/C	2		2	
		4000MW,+/-600kV bipole terminal_Raigarh(Kotra)	2		2	
47	400kV Vapi(existing)					
		400/220kV 315MVA 3rd ICT	1	1	2	
48	765kV Bina S/S					
		765kV Gwalior 3rd S/C	1		1	
49	765kV Gwalior					
		765kV Bina 3rd S/C	1		1	
		765kV Jaipur S/C	1		1	
			268	71	308	26
		Summary of requirement of SEMs & DCDs				
		Total No. of SEMs required	**268**	**71**	**308**	
		Spares @20%			**62**	
		Net Total			**370**	
		Total No. of DCDs required			**26**	
		Spares @20%			**5**	
		Net Total			**31**	
		TYPE OF METER			**Model-A**	

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Action to be taken by
WRTS-2
WRTS-2
WRTS-2
WRTS-2
WRTS-2