

CENTRAL ELECTRICITY AUTHORITY
Grid Management Division

**SUMMARY RECORD OF DISCUSSIONS OF THE FIRST MEETING OF
NATIONAL POWER COMMITTEE HELD ON 15-04-2013**

The first meeting of National Power Committee (NPC) was held on 15th April 2013 under the chairmanship of Chairperson, CEA at CEA, New Delhi. POSOCO and PGCIL also attended the meeting as special invitees on the request of CEA. The list of participants at the meeting is enclosed.

Shri A.S. Bakshi, Chairperson, CEA & Chairman, NPC welcomed the members of the NPC and other participants to the meeting, and requested Member Secretary, NPC to take up the agenda for discussion.

1. Formation of NPC:

Shri Dinesh Chandra, Chief Engineer I/c (Grid Management), CEA and Member Secretary, NPC stated that this was the first meeting of the regular NPC subsequent to its establishment vide Ministry of Power's order dated 25th March 2013. The meeting had been convened at a short notice on the advice of the Ministry of Power with a view to expedite the implementation of recommendations of the Enquiry Committee on grid disturbances of 30th & 31st July 2012. He briefed salient points regarding constitution of the Committee and Conduct of Business Rules of NPC as per the MoP order, for information of the Committee. He particularly invited the attention of the members to the provision given in the NPC order to the effect that the decisions taken in NPC shall be considered concurred by respective RPCs for implementation.

Members noted the contents of MoP's order dated 25th March 2013 establishing NPC.

2. IMPLEMENTATION OF MEASURES TO PREVENT GRID DISTURBANCE

i). Third Party Protection Audit

The Committee noted that all the RPCs except WRPC had completed protection audit at the identified important substations in their respective regions. WRPC stated that protection audit would be completed by all the constituents of WR except MP by the end of April 2013. MP was likely to complete the task by 7th May 2013. Chairperson, NPC

desired completion of protection audit in MP as well within April 2013. WRPC assured to impress upon MP to finish this task by April 2013 itself.

All the RPCs confirmed that they had the meetings with their respective State Transmission Utilities (STUs) in connection with Renovation & Upgradation (R&U) of the protection systems in their respective states keeping in view the protection audit findings, and directed them to submit the DPR in that regard to the RPC within a month of the meeting as desired by the Ministry of Power. RPCs, however, opined that one month's time for preparation of a proper DPR for the substations in the state was less and should be raised to at least 3 months. RPCs further stated that most of the STUs were not financially well off and therefore, they were expecting funds, especially from PSDF, for taking up the said R&U project.

Chairperson intimated that though the Ministry of Power was making all possible efforts to arrange soft loans and funds from PSDF for this purpose, the States should not wait for the same as R&U of protection systems is essential for improving / maintaining the grid security. In reply to a query, Chairperson also clarified that the STUs which have already initiated corrective action for removal of deficiencies detected during protection audit and made expenditure for the purpose, would be entitled for reimbursement of the same from PSDF to the extent possible, when the funding from PSDF gets materialised. Regarding extension of time for submission of DPRs, Chairperson advised the RPCs to complete the task within a month from the date of their meetings with their STUs and latest by 15th May 2013.

After discussions, it was decided that all state transmission utilities will submit the DPRs for renovation & upgradation of protection systems including replacement of old switchgears at their all substations of 220 kV & above (132 kV & above in special category states) voltage rating keeping in view the deficiencies detected during the protection audit and the vintage of the substation, within a month of the meeting taken by Member Secretary with them for the purpose. The DPRs are to include cost estimation and time-frame of implementation of the scheme. WRPC was requested to ensure that protection audit in the substations of MP is completed within April 2013.

ii). **Reactive Power Planning**

Reactive power management was deliberated for managing both the high voltage conditions and low voltage conditions. It was informed that for the system at 400 kV & above, CTU is to prepare the plan for capacitors installation. However, capacitor installation plan at 132 kV & below needed to be carried out by the respective States. Director (SP&PA), CEA informed that Static VAR Compensators (SVCs) were being planned for installation at 22 locations in the country. He suggested that the States may also plan installation of SVCs of relatively smaller magnitude in the intra-state transmission system for reactive compensation.

After deliberations, it was agreed that **all State Transmission Utilities (STUs) would submit to CEA the schemes required for Reactive Power management in their respective states in consultation with their respective RPCs by 30th June 2013.**

iii). **Ensuring proper functioning of Under Frequency Relays (UFRs) and df/dt relays**

The Committee deliberated on procedures adopted by RPCs to ensure healthiness of all UFRs and df/dt relays installed in different States. ERPC informed that a team of engineers drawn from different constituents was carrying out the inspection on a regular basis. NRPC expressed difficulty in sending its engineers to all locations for inspection of healthiness of UFRs due to severe manpower crunch. Other RPCs also supported the views of NRPC. The Committee noted that the staff crunch was prevalent in almost all RPCs and there was a need to overcome it. In view of shortage of manpower, Chairman, NPC advised that the model adopted by ERPC could be used by other RPCs for the purpose of inspecting UFRs and df/dt relays.

After deliberations, it was decided that **all RPCs would ensure healthiness of UFRs and df/dt relays through regular inspection in a year of at least one-third number of total relays installed in their respective region. RPCs would also furnish the status of healthiness of UFRs and df/dt relays installed in the region to CEA on a quarterly basis.**

iv). **Islanding schemes**

NRPC informed that in the Northern Region, islanding schemes had already been formulated for Delhi, UP and Punjab by the respective STUs in consultation with NRPC,

PGCIL, NRLDC and CEA, and that other states like Rajasthan, Haryana, were also in the process of developing such schemes. ERPC, WRPC and SRPC informed that in their regions as well, some islanding schemes were already functional and others were under the process of development. NERPC expressed difficulty in preparation of islanding schemes in NE Region as it mostly contained gas based stations, which were set to trip before the suggested islanding frequency of 47.9 Hz. Keeping in view the peculiar conditions of NER, NPC requested CEO, POSOCO to extend necessary guidance / assistance to NERPC / NERLDC in formulation of the suitable islanding scheme(s) in that region, for which POSOCO agreed.

CEA suggested that the islanding schemes be developed by the STUs based on the guidelines mentioned in the Enquiry Committee report of 16th August 2013. The islanding schemes might be reviewed, if required, based on the recommendations of the Task Force on Power System analysis, which were expected shortly.

It was decided that **all RPCs would ensure completion of the process of designing / finalisation of the islanding schemes by the STUs of their region and submit the status & time-line of finalisation of scheme and implementation thereof by 30th April 2013. In case, no further islanding scheme was found feasible in a state, the same should be confirmed. A copy each of the reports of specific islanding schemes finalised / implemented would also be forwarded by the RPCs along with their comments thereon to CEA.**

3. Reporting the Status of implementation of the recommendations of the Enquiry Committee

Chairman, NPC informed that the implementation of recommendations of the Enquiry Committee was being monitored at the highest level in Ministry of Power regularly. Accordingly, he requested **all RPCs to update and forward the status of implementation of recommendations of the Enquiry Committee on Grid Disturbances of 30th & 31st July 2012 to CEA in the prescribed format on fortnightly basis regularly i.e. the status as on last day of a month to be forwarded by the 3rd day of the following month, and that as on 15th of the month to be forwarded by 17th of the month. All members agreed to submit the above information on fortnightly basis through RPCs.**

4. Flat under-frequency relays based automatic load shedding schemes

NPC noted that under-frequency relays (UFRs) in the Northern, Western and Eastern regions – running in synchronism with one another - were set to shed load automatically in 3 stages at 48.8, 48.6 and 48.2 Hz. In Southern Region, which was connected asynchronously with NEW Grid, the settings of UFRs were 49.0, 48.8 and 48.6 Hz. With improvement in the operating frequency regime and for enhanced system security, the proposal of POWERGRID in its Grid Security Expert System (GSES) report regarding increase in the setting of U/f relays and number of stages as 49.0, 48.8, 48.6 and 48.4 Hz was discussed. The quantum of load shedding by each state through UFRs and df/dt relays to the extent of 60% of peak demand of individual states as proposed in the GSES report was also discussed by the Committee.

It was noted that the frequency of NEW as well as SR grid remained well above 49.0 Hz for most of the time and seldom declined to this level. The Committee, therefore, opined that the present UFRs' setting of 48.8 Hz for initiating automatic load shedding in NEW grid might be raised to 49.0 Hz or even 49.2 Hz to enhance system security without causing any discomfort to the consumers. NRPC had already approved setting of 1st stage of UFRs at 49.0 Hz for implementation along with other regions in the NEW Grid. All RPCs agreed to raise the setting of 1st stage of UFRs to 49.2 Hz keeping in view the better frequency profile. RPCs were also unanimous in stating that the quantum of load shedding to the tune of 60% of the peak demand of the states was too high and needed to be reduced to a realistic level keeping in view the prevailing power number. POSOCO clarified that quantum of load shedding of 60% of peak demand had been proposed for shedding through various defense mechanisms indicated in the report. The quantum for shedding through UFRs could be decided by the RPCs appropriately to ensure safe & secure operation of the grid. POSOCO proposed automatic load shedding through UFRs in 4 stages with 10% of the identified load to be shed at 1st and 2nd stage each, and 15% of the identified load to be shed at 3rd and 4th stage each. However, there was no agreement over the quantum of load shedding as well as the number of stages for automatic load shedding - whether existing 3 or proposed 4. The RPCs proposed to discuss these aspects with their constituents and revert back to NPC.

After discussions, it was decided that **the first stage of automatic load shedding through Under-Frequency Relays (UFRs) would be set at 49.2 Hz (against 48.8 Hz**

in NEW grid and 49.0 Hz in SR grid) at present in all the regions. Total number of stages for automatic shedding of load through UFRs - whether existing three or proposed four with a gap of 0.2 Hz between two consecutive stages - and the quantum of load to be shed at each level would be discussed by the RPCs internally with their constituents and revert back to NPC at the next meeting, which would be convened within next two months.

5. Review of Zone -3 Philosophy

Member Secretary, NPC informed that CEA had already reviewed line-wise loadability of each line and Zone-3 settings thereof, and sent to PGCIL and all RPCs for implementation. PGCIL informed that they had already reviewed and implemented revised Zone-3 settings for inter-state lines wherever required in the country in coordination with STUs and Generators. However, for the intra-state transmission lines, various data including existing Zone-III settings, had not been received by them, because of which they were unable to take similar action on such lines. **Chairperson, NPC requested all RPCs to advise their STUs to furnish all such data to Director (Operation), PGCIL within three weeks for further necessary action by them.**

6. Implementation of Demand Management scheme (IEGC 5.4), Grid Security Expert System and Demand Estimation (Agenda submitted by WRPC)

It was noted that the reports on GSES and ADMS prepared by POWERGRID had been discussed by all the RPCs and in-principle approval accorded thereto. However, WRPC informed that they did not have much clarity on many aspects contained in the said reports. Other RPCs also expressed similar views and suggested POWERGRID to have more detailed discussions with them.

It was decided after deliberations that the issues raised by RPCs would be taken into consideration or clarified by PGCIL to the satisfaction of the constituents at the time of detailed discussions for fine-tuning of the schemes at the level of RPCs. The issue might be referred to NPC later on if considered necessary by the RPC(s).

7. Review of UI Mechanism

It was noted that the prevalent UI mechanism was under review by Hon'ble CERC and hence, it was decided that **all RPCs and other power entities would send their comments / inputs in the matter directly to CERC for consideration.**

8. Training and Certification of System Operators

Members were of view that implementation of Pradhan Committee report on Ring Fencing of Load Despatch Centres (LDCs) wherein the training of System Operators has been envisaged, could not be properly taken up due to manpower crunch. WRPC informed that Gujarat and Maharashtra have already started the training programme on regular basis. Other members stated that due to manpower shortage, adequate number of system operators could not be spared for training. CEO, POSOCO informed that about 500 system operators had been imparted basic level training and 93 operators had been imparted training on regulatory side of system operation. He suggested that certification of system operators should be made mandatory by amending the IEGC / CEA's regulations.

After discussions, **NPC opined that certification of system operators be made mandatory through amendment of relevant regulations notified by CEA and CERC.**

9. Ring fencing of Load Despatch Centres

Pradhan Committee report on Ring Fencing the LDCs has already mentioned to make all RLDCs and SLDCs independent from their respective utility. Subsequent to creation of POSOCO, RLDCs are already in the process of getting independent from POWERGRID. However, it was felt that State Utilities had not taken adequate steps to make SLDCs independent. WRPC informed that a number of states including Gujarat had initiated steps like separation of balance sheet for load despatching function from other functions, with a view to making SLDCs independent in a gradual fashion. Members informed that the number of system operators in SLDCs were much less than those recommended in Pradhan Committee Report. Under such conditions, separation / creation of an independent LDC would adversely affect career prospects of the system operators. Therefore, the process of ring fencing of SLDCs was likely to take some more time.

After some discussion, **it was decided that RPCs would advise their states to furnish the status of separation of load despatching activity from other activities financially & administratively with a view to making their Load Despatch Centres independent & impartial. This information would be forwarded by RPCs to CEA before the next NPC meeting.**

10. Implementation of CEA Regulations

Member Secretary, NPC stated that the regulations notified by CEA as per the mandate of Electricity Act, 2003 were not being enforced properly. Not only this, in some cases, even ignorance to CEA regulations had also been observed. CEA sought suggestions from the members regarding some mechanism to ensure proper enforcement of its regulations.

CEO, POSOCO stated that while most of the system operators were aware about IEGC and other regulations of CERC, similar level of awareness was not there about CEA regulations. It was noted that regulations of CEA found mention in many CERC regulations and that as per provisions in the Electricity Act, 2003, violation of CEA regulations could be enforced by filing suitable petitions in respective Electricity Regulatory Commissions.

Upon deliberations, **RPCs were requested to examine the possible methods to check violations and ensure implementation of CEA regulations and forward their inputs to CEA before the next meeting of NPC for consideration.**

11. Common commercial input data formats for all RPCs (Agenda proposed by WRPC)

WRPC stated that RPCs were preparing UI pool account, Reactive Energy account, Regional Energy account, Regional Transmission account and various other reports based on the input data provided by RLDCs / NLDCs. However, the input data formats were not uniform among the regions. The methodology of data processing and preparing these accounts was also not uniform in all the regions. To bring uniformity in the preparation of these accounts, they proposed that the data formats, procedures and methodologies of account preparation be standardized, so that software for preparing the said accounts could be on the same platform and common for all the RPCs. Member Secretary, WRPC also suggested that representatives from NLDC, RLDCs and RPCs

associated with the preparation of the above accounts may formulate the procedures, methodologies and upgradation / renovation of the existing softwares being used in RPCs.

Other members were of the opinion that it would be very difficult to develop common input formats or similar procedure of accounting for all the RPCs as there were region specific variations in accounting. After some discussions, **it was decided that RPCs would examine the proposal of WRPC and send their comments thereon to CEA.**

12. Fund Requirement

The item could not be discussed due to paucity of time and it was deferred to the next meeting.

Meeting ended with a vote of thanks to the chair.

Participants at the 1st meeting of NPC held on 15th April 2013

Chairperson, NPC:

Sh. A. S. Bakshi, Chairperson, CEA

Members of NPC:

S/Sh,

1. Smt. Neeraja Mathur, Member (GO&D), CEA
2. S. S. Yadav, M.D., PTCUL & Chairperson, NRPC
3. P. K. Pahwa, Member Secretary, NRPC
4. S. K. Negi, MD, GETCO, & Chairperson, TCC, WRPC
5. S. D. Taksande, Member Secretary(I/C), WRPC
6. P. Sriramarao, Director, APTRANSCO & Chairperson, TCC, SRPC
7. S. R. Bhat, Member Secretary(I/C), SRPC
8. Pradeep Jena, CMD, OPTCL & Chairperson, ERPC
9. Prasanta Kr. Pradhan, Director, OPTCL & Chairperson, TCC, ERPC
10. Ankan Bandopadhyay, Member Secretary(I/C), ERPC
11. S.K. Rai Mohapatra, Member Secretary (I/C), NERPC
12. Dinesh Chandra, Chief Engineer I/c (GM), CEA & Member Secretary, NPC

Special Invitees:

1. S.K. Soonee, CEO, POSOCO
2. V.K. Agrawal, ED, NLDC
3. S. Sen, ED(OS), Powergrid

Other Participants:

1. S. Bhatnagar, Chief Engineer, PTCUL
2. Pankaj Batra, Chief Engineer I/c (Regulatory Affairs), CEA
3. S. N. Kayal, Director, GM Div., CEA
4. Pradeep Jindal, Director, SP&PA Div., CEA
5. S. Satyanaran, SE, WRPC
6. Ajay Talegaonkar, SE, NRPC
7. D K Srivastava, Director, GM Div., CEA
8. Hemant Pandey, Director, GM Div., CEA
9. B. S. Meena, Asst. Director, CEA
10. A. Sensarma, DGM, Powergrid