

**Agenda Note for 29th meeting of the Standing Committee on Power
System Planning of Northern Region**

1. Confirmation of minutes of 28th meeting held on 23.2.2010

Minutes of 28th meeting was circulated vide letters dated 09.3.2010. CEA has received comments from PSEB & HVPNL on the proposal of LILO of 400 kV Dehar-Bhiwani line at 400 kV Rajpura S/s and LILO of 400 kV Dehar-Panipat line at 400 kV Panchkula S/s to provide sufficient anchoring and control the over voltage at Dehar. It was reiterated by HVPNL and PSEB that these works would provide reliability to NR system for the benefit of entire region. This issue is taken up at item no.19 of this agenda.

As no other comment was received on the minutes of the 28th standing committee meeting the minutes of the meeting may be confirmed.

2. Transmission works in western part of Uttar Pradesh

The following transmission system was approved for western part of Uttar Pradesh in the 26th meeting of the Standing Committee for Power System Planning of Northern Region:-

1. 765 kV S/c Greater Noida – Hapur line
2. 400 kV D/c Quad Hapur-Dasna-Indrapuram-Ataur(Ghaziabad) line
3. 400 kV D/c Quad 765 Greater Noida –Noida Sector 137 line

UPPTCL requested CEA to review the above system as they were facing ROW and land acquisition problems in the construction of 400 kV Hapur-Dasna-Indrapuram D/C line and non-availability of land for establishment of 400 kV Noida Sector -137.

The issue was technically examined in CEA along with officers of UPPTCL and the above proposal was revised as:-

1. 400 kV D/C Quad Hapur(765 kV)-Ataur(Ghaziabad) line
2. 400 kV D/C Quad
3. Ataur(Ghaziabad)(765 kV)-Indrapuram line
4. 400 kV D/C Quad Gr.Noida (765 kV)-Noida(Sector -148) line
5. 400 kV D/c Quad Hapur(765 kV)-Dasna line

Members may note the same.

3.0 Transformation Capacity:

During 17th NRPC meeting held on 17/07/2010, it was discussed and agreed that subsequent to the synchronization of 220 kV Nalagarh-Mohali D/C Line, each of the existing 2x315 MVA transformers at Nalagarh 400/220kV substation are getting loaded beyond 250 MW on number of occasions during the month of June 2010. Looking into the overloading of the ICTs at Nalagarh, enhancing the transformation capacity at Nalagarh Substation was approved. Members may note.

Further 400/220 kV Abdullapur Substation of POWERGRID is currently having three (3) nos. ICTs. During June & July'2010, loading on each ICT had exceeded 200 MW. Looking into the load growth around Abdullapur, augmentation of transformation capacity by addition of One (1) no. 315 MVA, 400/220kV ICT has been agreed in 18th NRPC meeting. Similarly one more Transformer has also been agreed at Amritsar (POWERGRID) during the meeting (MOM awaited).

Many utilities in addition to allocated power are availing power under Open Access. It has been seen that for transfer of additional power, constraints are being faced in certain areas due to transformation capacity. Further, development of new load centres also lead to critical loading of transformers. Recently, NRLDC has highlighted certain areas, where there is a need for augmentation of transformation capacity. Many of these areas have been taken care of in planning and the transformer augmentations are under construction/ approved.

A detailed list of transformation capacity under execution/approved are enclosed in Annexure-I. States may indicate any additional transformation required for their existing/Future load requirement keeping in view the existing and proposed Transformers. As per the Planning Criteria, the system shall be capable of withstanding contingency of an inter connecting transformer without necessitating load shedding or rescheduling of generation. Same may be considered while indicating their transformation requirement.

Members of the Committee may indicate additional transformational capacity requirement, if any.

4. 2 Nos. of 220 kV Bays to Railways:

Provision of 2 nos. of 220 kV bays for Railways at Allahabad POWERGRID substation was discussed during the 28th Standing Committee Meeting held on 23/02/2010. During the meeting, it was informed that railways were not willing to sign the TSA, for common ISTS elements of NR to be built through private sector participation and as such unless Railways gives commitment for sharing the regional transmission charges, their request for access to regional transmission system cannot be considered. Railways vide letter dated 18/05/2010 (Annexure-II) have informed that it has signed the TSA on 07/05/2010 and requested for the allocation of bays. Accordingly, it is proposed that the two nos. of 220 kV bays at Allahabad 400/220 kV substation of POWERGRID may be allocated to Railways.

Members of the Committee may discuss and concur.

5. Bhiwani transformation Capacity:

A 765/400kV substation at Bhiwani has been approved as a part of development of 765 kV ring around NCR to facilitate dispersal of power from large generation complexes in Eastern region to the states of Northern Region. After discussion with HVPNL & CEA, it has been agreed to install 2x315 MVA, 400/220kV ICT at Bhiwani, instead of 2x500 MVA, 400/220kV ICT's, as recorded in NRPC meeting. HVPNL have desired provision of 2x315 MVA, 400/220kV ICT's at Bhiwani substation with six (6) numbers of 220kV line bays. The same has been agreed.

Members may note.

6. Parbati System

Following system has been agreed for Parbati-II & III transmission system.

Parbati-II (800MW) transmission system

Parbati-Koldam 400 kV 2 xS/c (Quad)

Parbati-III (520 MW) transmission system

LILO of both circuits of 400kV Parbati-II - Koldam at Parbati Pooling Point.

LILO of one circuit of Parbati-II-Parbati Pooling Point at Parbati-III.

Parbati Pooling Point - Amritsar 400 kV D/c.

Establishment of 400kV Parbati- Pooling Station (GIS).

Parbati-III Transmission system is under execution by POWERGRID and is expected to be commissioned by June '2011. On the other hand, Parbati-II is an IPTC project being implemented by PKTCL. The construction of Parbati-II transmission system is yet to start and as per PKTCL, it would match with commissioning of Parbati-II. To evacuate power from Parbati-III, a portion of the proposed Parbati-Koldam 400 kV 2*S/c line needs to be matched with Parbati-III transmission system. It may be noted that the power from Parbati-III cannot be evacuated without this section.

The section to be matched with Parbati-III would include from point of LILO, of Parbati-II - Koldam for Parbati-III inter connection, to point of proposed Parbati Pooling station. The total line section is about 5-6 Km. M/s Reliance have indicated that the award for the line section has already been placed and they would complete the line section required for evacuation of power from Parbati-III by June '2011. They have requested for approval of members for preponing the section. It is proposed that the section of Parbati-II – Koldam line required for evacuation of Parbati-III be proponed and recovery of tariff of the proponed section may be agreed. Tariff shall be as determined by CERC.

Members of the Committee may discuss and concur.

7. Injection of Parichha TPS at Mainpuri (POWERGRID):

For evacuation of power from various thermal projects, including Parichha, a composite transmission system was evolved. For immediate evacuation of power from Parichha TPS -2x250 MW, the following transmission lines were proposed.

Parichha-Orai 400kV D/c

Orai – 765/400kV Mainpuri (UPPCL) 400kV D/c

Beyond Mainpuri 765/400kV substation, 765/400 kV system was envisaged including 400kV interconnection with Mainpuri (POWERGRID). However there has been delay in identification/taking over of land of Orai 400kV and Mainpuri 765 kV. In view of above UPPCL has proposed to terminate 400kV D/c from Parichha at Mainpuri (POWERGRID), by utilizing the 400kV bay meant for Mainpuri (UPPCL) – Mainpuri(POWERGRID) line, for evacuation of Parichha TPS, AnnexureIV . After

construction of Orai and Mainpuri, UPPCL has proposed that Parichha-Mainpuri 400kV D/c shall be connected to these substations as envisaged earlier.

Presently, Mainpuri is connected to Allahabad & Ballabgarh through 400 kV D/c lines alongwith 2x315 MVA ICTs at Mainpuri. At Mainpuri, power is received from Allahabad substation and evacuation is through Mainpuri-Ballabgarh 400kV D/c line, in addition to 400/220kV transformers at Mainpuri. As per studies under certain conditions loading on Mainpuri – Ballabgarh would be about 900 MW. Injection of 500MW of Parichha at Mainpuri would further increase the loading by about 200-300 MW resulting into critical loading of the line.

Further as the line would be more than 260 km, the line reactors of 50 MVAR each at Mainpuri (PG) and Pariccha generation switchyard would be needed to be provided by UPPTCL.

Members of the Committee may discuss and concur.

8.220kV line Bays at Lucknow (PG) for UPPCL:

UPPCL has indicated vide its letter 20/07/2010 that a 220/132 kV, 2x100 MVA at Bakshi Ka Talab (periphery of Lucknow City) is being constructed. It is to be connected to 400kV S/s Lucknow (PG) by 220kV D/c line. UPPCL has also requested for approval of the same alongwith four (4) nos of 400kV S/s at Lucknow (PG), Annexure-IV

In this regard it may be mentioned that under Northern region strengthening scheme-XXIII augmentation of transformation capacity at Lucknow (PG) by 1x500 MVA transformer and four(4) numbers of 220kV bays are already under construction and is expected to be commissioned by December'2011. UPPTCL may clarify that whether the requirement of 2 Nos. of 220 kV bays is in addition to the 4 bays already being provided.

9. Meja TPS:

NTPC is developing 1320 MW (2x 660MW) power plant in Meja in Uttar Pradesh as a JV project with Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd. The expected commissioning schedule of the power plant is 2014-15. The allocation of power from the generation to NR beneficiaries as indicated by NTPC is as follows:

The allocation to Uttar Pradesh, the JV partner to NTPC, is 990MW.

From Meja 231MW (17.5%) is allocated to NR beneficiaries. (Uttarakhand-17MW, Delhi-58MW, Haryana-24MW, Punjab-36 MW, Rajasthan-50MW,Himachal-15MW, J&K-29MW, Chandigarh-2MW)

Unallocated power is 99 MW (7.5%)

For evacuation & transfer of power from Meja along with other generation projects of UPPCL it has proposed a composite transmission scheme. NTPC has requested to evolve associated transmission system for transfer of power to the beneficiaries.

The system was discussed in the 28th standing committee and following was proposed Meja- Allahabad (PG) 400kV D/c quad line to be constructed by PGCIL.

Allahabad (PG) - Rewa Road (Allahabad) 400kV D/c quad line to be constructed by UPPCL in place of earlier approved 400 kV Meja-Rewa Road (Allahabad) quad line.

UPPCL has now indicated that Meja-Rewa Road line is included in Package of works to be taken up through PPP route in UPPTCL. The bidding process of developer is already in advanced stage and no change can be done at this stage as the scope of works already approved by ETF and in process of approval by UPERC. Copy of UPPTCL letter in this regard is enclosed, Annexure-V

It may be mentioned, there is a need to integrate the system being developed by the state with ISTS and also provide system for transfer of power from Meja to other constituents. Further such a interconnection would help in evacuation power from the project in case of delay/ constraints in the state grid. In view of above following transmission system is proposed for transfer of 300 MW of power

Meja-Allahabad (POWERGRID) - 400 kV D/c .

Members of the Committee may discuss and concur.

10. Transmission system development in Himachal Pradesh:

HPPTCL has put up following agenda for development of transmission system in Himachal. Detailed agenda of HPPTCL is enclosed in Annexure -VI. A brief of the agenda is as follows

(i) Evacuation from Parbati Valley:

Banala 400kV is pooling Switching station being developed under Parbati-III. Several small hydel projects and medium/large projects are also at different stages of

development in the Beas valley upstream of Banala and shall require evacuation through Banala due to limited availability of Transmission corridors. HPPTCL has proposed to evacuate power from various hydro projects via Banala. The Projects and requirement are as below as indicated by HPPTCL.

Injection	Requirement at Banala	Time frame	Tariff to be Borne by
Phase-I : 220kV D/c from Naggarr to Banala : 200 MW	2 nos of 220kV bays & 500 MVA ICT	2012-13	HPPTCL
Phase-II :	500 MVA ICT	2016-17*	
LILO of Allain-Nallagarh 220kV D/c at Banala: 350 MW	4 nos of 220kV bays & 500MVA ICT	2010-11	Developers
220kV D/c line from Toshi Parvati to Banala: 520 MW	2 nos of 220kV bays & 2x315MVA ICT	2016-17*	
220kV D/c (Quad Moose) line from Chenab Basin to Banala for Furture projects in Chenab	2 nos of 220kV bays & 2*500 MVA ICT	2019-20*	

* These projects are tentative and are subject to review after taking in to account the actual progress on the ground.

Transmission under execution/planned envisages following connectivity to Banala:

Parbati-II / Parbati-III – Banala 400kV 2 x S/c

Banala- Amritsar 400kV D/c

Banala-Koldam 400kV D/c

The total power injection at Banala would be 1420 MW, Parbati-II – 800 MW, Parbati-III – 520 MW & Sainj -100 MW. And for evacuation of power of 1400 MW there will be only four (4) nos of lines. Presently at Banala no 220kV is under execution. The space availability at Banala is as below for future lines is as below

400kV line bays : 1 nos

400/220kV transformers : 2 nos

220kV line bays : 4 nos

Considering the margin in existing system and space availability for future expansion, one (1) number of 400kV bay, planning need to be reviewed.

Members of the Committee may discuss and concur.

(ii) 220kV bays at Chamera Pooling station :

For evacuation of power from Ravi basin a 220/400kV, 2x315 MVA pooling station near Chamera-II is under construction. In close vicinity of pooling station, HPPTCL is planning to implement 220/132/33kV S/s at Karian. HPPTCL has requested for 2 nos of 220kV bays at Chamera Pooling station for connecting 220kV pooling station of HPPTCL at Karian.

Members of the Committee may discuss and concur.

(iii) Evacuation of Sainj Power

HPPCL is constructing 100 MW Sainj HEP close to the proposed power house of Parvati HEP. The project is targeted for 2013. During the 26th SCM it was discussed and agreed that the generation at Sainj HEP could be evacuated through 132 kV D/C to 132/400 kV sub-station which could be connected at 400 kV through a 400 kV LILO from Parvati-II – Parvati –III 400kV S/C line or through a 400 kV S/C line either to Parvati –III or to Parvati-II. It was decided that NHPC would review the availability of space for additional 400 kV bay at Parvati II as well as Parvati III and intimate the position to CEA as well as HPSEB. HPPTCL has intimated that NHPC has confirmed that space for 400kV bays are neither available at Switchyard of Parvati-II nor at III. Himachal during TEC of the generation project has proposed evacuation of Sainj Power by creation of 400/132kV substation where power from Sainj shall be pooled and LILO of one circuit of Parvati-II – Parvati-III line near Parvati-II for injection of Sainj Power HEP into 400kV line between Parvati-II and Parvati-III.

Members of the Committee may discuss and concur.

(iv) Evacuation of power from HEP in Chanderbagha basin :

CEA has finalized transmission system for evacuation of power of total quantum of about 2600MW from Chanderbagha basin.

HPPTCL to evacuate power from small HEP's in Kullu and Manali has proposed 132/33kV pooling station at Palchan and a 220kV D/c with S/c from pooling station to Allain.

220/132/33kV pooling station at Naggar and a 220kV D/c (Quad) D/c to Banala.

As per plan there would be requirement of three corridors between Palchan and Banala and four nos of corridors between Naggar and Banala.

To reduce the requirement of number of corridors HPPTCL has proposed termination of one corridor from Khoksar pooling of Chenab basin at Palchan and augmentation of Palchan to Prini section to Quad Moose through ERS and extended to Naggar. In this regard following may be noted

From Chanderbagha basin we need to evacuate about 2600 MW. However the actual loadability would depend upon the length of the line, reactive support, etc. Further under outage of one circuit the power carrying capacity would be halved. To examine the alternative following inputs may be required:

Line lengths proposed in the basin long with interconnection.

Details of phased development of generation projects

Further, in this regard to evacuation of Chanderbagha basin power via Banala as mentioned in 8(i) there are constraints at Banala

Considering above proposal of evacuation of power from Chanderbagha through Banala is not feasible. Further considering physical constraints in construction of the lines Master plan needs to be reviewed. It is proposed a Task force with representative from HPPCL, HPPTCL, CEA and POWERGRID may be constituted, to develop a master plan for Chanderbagha Basin for consideration in the standing committee.

Members of the Committee may discuss and concur.

(v) Evacuation of power from HEP in Satluj Basin (Spiti valley):

For evacuation of power from Spiti valley a 220kV Pooling station has been proposed near Yangathang where in about 540 MW of power shall be pooled and would be evacuated by two nos of 220kV D/c with twin Moose to Jhangi 400/220 kV S/s. Enroute additional 321 MW would be injected into the lines making the total quantum of power carried by the lines would be about 860MW. Jhangi would be connected to Sherpa colony by 400kV lines with triple snow bird. Enroute Sherpa colony additional 960 MW would be injected from Powai making total injection as 1820 MW.

Originally it was conceived that Jhangi would be connected to Sherpa colony by two (2) nos of 400kV D/c with triple snow bird. In addition LILO of Baspa-Jhakri at Powai and Shong Tong Karcham. Hence between Powai and Sherpa colony there would be three

400kV corridors, two from Jhangi to Sherpa and One due to LILO of Baspa-Jhakri at Powai.

HPPTCL has indicated that due to congestion in the valley only two numbers of corridors can be built and suggested to review the evacuation arrangement.

HPPCL/HPTCL may kindly indicate the detailed phase development of generation projects in the basin.

It is proposed that the above Task force with representative fro HPPCL, HPTCL, CEA and POWERGRID would also look into Spiti Valley and the master plan to be developed for Chanderbagha Basin would also include evacuation from spiti valley generation projects.

Members of the Committee may discuss and concur.

11. Transmission System for Luhri HEP:

Satluj Jal Vidyut Nigam Limited (SJVN) is developing a 775 MW hydro electric power plant in Shimla/Mandi in Himachal Pradesh. The allocation of power from the generation to NR beneficiaries as indicated by SJVN is as follows:

Himachal Pradesh -447.64 Mw (57.76 % - including 1% of local area development), Haryana – 22.01 MW (2.24%) , Jammu and Kashmir 36.04 MW (4.65%), Punjab-39.14 (5.05%), Rajasthan- 38.52 MW (4.97%), Uttar Pradesh- 75.87 MW (9.79%), Uttarakhand- 13.02 MW (1.68%), Chandigarh 2.7 MW (0.35%), Delhi 48.83 MW (6.3 %) and unallocated 51.23 MW(6.61 %)

As intimated by SJVN the project is planned to be commissioned by the year 2018. SJVN has requested for identifying the system so that same can be taken mentioned in report and presentations, Annexure-VII.

CERC has notified regulations for “Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission”, 2009 and approved detailed procedures of CTU (i.e. POWERGRID) for the same. In accordance with above even Inter-State Generating Stations owned by the Central Government need to apply for Connectivity/Long Term Access as applicable. As per the information gathered from CTU they have already requested SJVN vide letters dated 28/04/2010, 30/08/2010 & 03/12/2010 for applying connectivity and Long Term Access, however the applications is yet to be received by CTU.

It is therefore requested that SJVNL may apply for connectivity and LTA to the CTU so that the transmission scheme may be finalised.

12. Singrauli-III TPS (500 MW):

NTPC is implementing Singrauli STPP Stage-III (500 MW) in Uttar Pradesh for the benefit of Northern region beneficiaries. As per NTPC letter, copy enclosed in Annexure-VIII, the Feasibility report (FR) for the project has been approved in August 2009 and various clearances are in advance stage. The units are likely to be commissioned in 2013-14. The indicative allocation of power from the generation to NR beneficiaries as indicated by NTPC is as follows:

Himachal Pradesh-20MW, Haryana-33MW, Jammu and Kashmir-39MW, Punjab-48MW, Rajasthan-68MW, Uttar Pradesh-188MW, Uttarakhand-24MW, Chandigarh-4MW, Delhi-76 MW

NTPC has requested for matching of Associated Transmission system to be planned to match the time frame of the generation project.

Presently following transmission system exist for evacuation of power from the generation Complex.

Singrauli Generation station (2000MW)

Singrauli-Lucknow 400kV S/c

Singrauli – Kanpur 400kV S/c

Singrauli-Allahabad 400kV 2xS/c

Singrauli-Anpara 400kV S/c

Singrauli-Rihand 400kV 2xS/c

Rihand Generation station-I & II (2000MW)

1500 MW Rihand-Dadri HVDC bipole

Rihand –Allahabad 400kV D/c

Rihand - Singrauli 400kV 2xS/c

Study has been carried out to study adequacy of the system to evacuate Singrauli-III generation. Study has been carried out for 2013-14 time frame. Maximum thermal condition has been simulated to study critical loading condition.

Base Case :

Result of Load flow simulation under base case is plotted in Exhibit-Singrl-I. It is seen that all line loadings are well within 500 MW and no overloading is observed. Following contingencies have been studied

Outage of Singrauli-Allahabad 400kV S/c – Exhibit-Singr-I-01

Outage of Singrauli-Lucknow 400kV S/c – Exhibit-Singr-I-02

Outage of Rihand –Dadri pole outage – Exhibit-Singr-I-03

From the simulation it is seen all line loadings are within limits. Maximum loading observed is on Singrauli-Anpara line viz 714 MW

With 500 MW additional generation at Singrauli:

Result of Load flow simulation under base case is plotted in Exhibit-Singrl-II. It is seen that all line loadings are well within 500 MW and no overloading is observed. Following contingencies have been studied

Outage of Singrauli-Allahabad 400kV S/c – Exhibit-Singr-II-01

Outage of Singrauli-Lucknow 400kV S/c – Exhibit-Singr-II-02

Outage of Rihand –Dadri pole outage – Exhibit-Singr-II-03

From the simulation it is seen with 500 MW additional generation at Singrauli, even under base case Singrauli- Anpara line gets loaded 623 MW even under base case. Under outage of one pole of Rihand-Dadri HVDC the line gets loaded 954 MW.

There is a need for additional outlets from Singrauli.

System strengthening for additional generation:

There are Severe Right of way constraints in construction of new lines from Singrauli. Some sections of the existing lines are Double circuit lines with single circuit strung. It is proposed to utilise the space by stringing of one more circuit in the Singrauli–Allahabad section. As per preliminary estimates about 50 km line section is on D/C Towers, Allahabad in addition to Singrauli/ Rihand circuit is also connected to eastern region via Allahabad-Sasaram 400kV d/c. Beyond Allahabad lines are already well loaded and have little margin to carry additional power. In view of above, Allahabad-Kanpur 400kV D/c is proposed. The load flow studies with proposed strengthening are plotted as below:

With System Strengthening scheme – Exhibit-Singr-III

Outage of Singrauli-Allahabad 400kV S/c – Exhibit-Singr-III-01

Outage of Singrauli-Lucknow 400kV S/c – Exhibit-Singr-III-02

Outage of Rihand –Dadri pole outage

– Exhibit-Singr–III-03

From the studies it is seen that all line loadings are within limit with proposed transmission scheme. In view of above following transmission scheme is proposed for evacuation of power from Singrauli-III

Siingrauli-Allahabad 400kV S/c

Allahabad-Kanpur 400kV D/c

NTPC has applied for connectivity, however it is suggested that they may apply for LTA, before taking up of implementation of above lines.

Members of the Committee may discuss and concur.

13. Anta-Kota 400kV Line -Agenda by RVPN:

For evacuation of power from RAPP complex and to strengthen the regional GRID POWERGRID has implemented following transmission system :

RAPP – 5&6 - Kankroli 400kV D/c

RAPP – Kota 400kV S/c

Kota – Merta 400kV D/c

Kankroli – Jodhpur 400kV S/c

Establishment of 400/220kV S/s at Kota & Kankroli

RRVNL has put up following agenda for connection of ISTS and transmission being developed by Rajasthan Detailed agenda of Rajasthan is enclosed in Annexure -IX. A brief of the agenda is as below:

For evacuation of power from generation projects in Rajasthan following transmission system has been Implemented/Under Construction

Chhabra-I (2x250 MW)

Chhabra-Hindaun 400kV S/c

Chhabra-Bhilwara 400kV S/c

Establishment of 1x315 MVA 400/220kV S/s at Hindaun & Bhilwara

Chhabra-Jhalawar 220kV S/c

Chhabra-Kawai-Baran-Dahra 220kV S/c

Chhabra-II (2x250 MW)

Chhabra-Dahra/Anta 400kV (Second Circuit)

RRVPNL have proposed interconnection of RRVPNL Anta substation with Kota (POWERGRID) substation by a 400kV S/c.

As per RRVPNL

The system loss would be less in proposed case (a reduction of 3MW)

Interconnection would facilitate interconnection between RAPP-C power plant and Chhabra Power Plant, which would enable bulk power transfer between generators under maintenance/ shut down/ power outages of the units at either of the generating complexes.

Approval is sought for

Anta(RRVPNL)-Kota(POWERGRID) 400kV S/c

The cost of proposed 400kv S/c line, 400kV feeder bay at PGCIL's Kota S/s and its maintenance would be borne by RVPNL.

Under RAPP-7&8 a 400kV D/c corridor is proposed from Rapp to Jaipur. Under State schemes a 765 kV 2xS/c is proposed from Anta to Jaipur. The two corridors would be running in parallel. The proposed line shall act as a inter link between the corridors and shall help the grid.

Members of the Committee may discuss and concur.

13.0 Srinagar-Tehri Pooling Station:

As a part of master plan for evacuation of power from generation projects in Uttrakhand, a 400kV D/c has been proposed from Srinagar (330MW) to Srinagar 400kV substation. Srinagar 400kV substation would further be connected Kashipur substation of PTCUL. It has also been proposed to pool the power of other regional projects like Tapovan Vishnugarh, Pipalkoti etc. at Kashipur, during discussion PTCUL has suggested that for system reliability and stability there is a need of inter valley inter connection. Accordingly a 400kV D/c line from Tehri Pooling Station to Srinagar 400kV substation is proposed.

NTPC may inform the status of Lohari Nagpal and Uttrakhand may inform the status of Palam Maneri HEP.

Members of the Committee may discuss and concur.

14. Bus reactor at Rihand:

The proposal of bus reactor scheme was discussed in the 28th standing committee meeting held on 23rd February, 2010 it was agreed to provide 1x125 MVAR bus reactor at Rihand. NTPC in its letter has indicated that “ presently 80 MVAR bus reactors are being procured by NTPC under Rihand-II and Vindhyachal-IV and has requested to examine the possibility of installing 80 MVAR bus reactor in place of 125 MVAR for ease of procurement through the power transformer packages under Rihand-III”, Annexure-X.

In this regard it might be mentioned that Rihand generation bus is connected to Singrauli & Anpara generation complex and would have a short circuit of about 30-32kA. Considering the high short circuit level of Rihand and persistent high voltage in the complex, 125 MVAR bus reactor was proposed. In view of the constraint suggested above it is suggested that two (2) nos of 80 MVAR bus reactor may be installed on a single bay, equivalent to 160 MVAR bus reactor.

Members of the Committee may discuss and concur.

15. Rapp-7&8 (2x700 MW) of Nuclear Power Corporation:

M/s Nuclear Power Corporation of India limited is developing a 1400 MW (2x700 MW) Nuclear power plant in Rawatbhata, Chittorgarh in Rajasthan. In accordance CERC regulations 2009 for Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission, M/s Nuclear Power Corporation of India limited, has applied to POWERGRID for Connectivity of their 1400 MW Generation project. As per the application the Rapp-7 unit is scheduled for commissioning by June, 2016 while Rapp-8 schedule is December-2016.

Transmission system for RAPP-7&8 was in the standing committee meeting and following system was agreed during 16th Standing Committee Meeting held on 24.03.04 following transmission system was proposed :

RAPP – Jaipur 400 kV D/C line of which one circuit to be LILOed at Kota

RAPP – Nagda (WR) 400 kV D/C

The expected time schedule of commissioning of Rapp-7&8 while finalising the above scheme was 2009. As connectivity application the commissioning schedule of the

generation now is 2016. The system in Rajasthan has undergone sufficient change since 2004.

Presently Rajasthan has an installed capacity of about 4100 MW. By 2013-14 Rajasthan has proposed to add about 4500 MW. Future projects include an addition of about 4450 MW by XII plan. RRVPNL has proposed a 765/400kV substation at Anta from where 765kV 2xS/c has been proposed to Jaipur 765/400kV substation at Jaipur. The expected demand of Rajasthan by end of XII plan is about 11,400 MW as per 17th EPS. With the commissioning of proposed generations Rajasthan large amount of load would be met own generation.

Studies have been carried to evolve the transmission system for RAPP-7&8 considering above.

With proposed Rapp-7&8 generation

Study has been carried out for evacuation from Rapp-7&8. The system envisaged earlier i.e, Rapp-Jaipur 400 kV D/c (one circuit via Kota) and Rapp(NR) to Sujalpur(WR) a 400/220kV Substation under construction by LILO of Bina-Nagda has been considered as approved in 26th SCM of WR, instead of RAPP- Nagda as considered earlier. The result of simulation studies are tabulated as follows:

Base Case with proposed Rapp-7&8 : Exhibit-Rapp-I

Outage of one circuit Rapp-Kankroli 400 kV : Exhibit-Rapp-I-01

Outage of one circuit Rapp-Kota 400 kV : Exhibit-Rapp-I-02

The load flow under base case is plotted in Exhibit-Rapp-I. From the studies it is seen that all lines are loaded in a balance manner with 300-370 MW. Under outage of one circuit of Rapp-Kankroli the remaining circuit gets loaded to 485 MW. Under outage of one circuit of Rapp-Kota the other circuit gets loaded to 575 MW. From the studies it is seen that no constraint is envisaged in immediate evacuation of power.

While planning earlier, it was envisaged a major part of generation would be consumed in Rajasthan and power supply to other states would be through displacement. As indicated earlier the generation addition of about 9000 MW (4450 + 4500 MW) state generation is envisaged in Rajasthan which would meet the load requirement of Rajasthan. Hence the addition of RAPP-7&*8 would directly result increased flow on tie

line to the state. One of the low impedance path for evacuation of power would be 765 kV corridor beyond Jaipur.

As per under execution/planned transmission system, at Jaipur 765kV we have two (2) nos of 765kv lines from Gwalior (WR) & Anta and one 765kV line towards Bhiwani. It was envisaged that power from Gwalior partly would meet the load of Jaipur (in addition to power from Anta) and partly be transferred towards Bhiwani. With increased generation addition in Rajasthan and a large quantum of import from WR side, a large quantum of power would be required to be transferred out of the state. From the base case it is seen that of the 2400MW flowing on 765 kV line from Anta to Jaipur only 1300 MW flows through the transformer while remaining 1000 MW flows towards Bhiwani. With Gwalior-Jaipur line carrying about 2000 MW, the loading Jaipur-Bhiwani line is about 3000 MW, which is critical. Additional 765kV strengthening is required beyond Jaipur. With 2500 MW HVDC being planned to Bhiwani, the strengthening would have to be extended beyond Bhiwani.

Accordingly following strengthening is proposed. Northern region system strengthening Scheme - XXV

Jaipur-Bhiwani 765kV S/c (2nd)

Bhiwani (PG)-Hisar 400kV D/c

LILO of Moga-Bhiwadi 400kV D/c at Hissar

Studies indicate that with proposed system all line loadings are within limit. The result of loadflow studies are plotted in Exhibit Rapp-II

In view of above following is proposed

Transmission System for Rapp-7&8

Rapp-Jaipur 400kV D/c – one circuit via Kota

Rapp- Sujalpur 400kV D/c

Northern region system strengthening Scheme - XXV

Jaipur-Bhiwani 765kV S/c (2nd)

Bhiwani (PG)-Hisar 400kV D/c

LILO of Moga-Bhiwadi 400kV D/c at Hissar

Members may discuss and concur.

16. North Karanpura Transmission system :

During the 22nd meeting of the Standing Committee held on 12th March 2007 transmission system of various generation projects of which Northern region is also a beneficiary. During the discussion following system was agreed as part of evacuation system for North Karanpura

North Karanpura – Gaya 400kv D/c (Quad)

North Karanpura – Ranchi 400kv D/c (Quad)

Sipat/Korba (pooling)- Seoni 765kV S/c

Lucknow –Bareilly 765 kV S/c

Bareilly-Meerut 765 kV S/c

Agra-Gurgaon (ITP)-Gurgaon(PG) 400kV D/c (Quad)

2x500MVA 400/220kV substation at Gurgaon (ITP)

Presently as a part of transmission system for evacuation of DVC generation projects, Balia-Lucknow 765 kV S/c is under construction,. Similarly 765kV system beyond Meerut like Agra-Meerut 765kV and Meerut – Bhiwani 765kV are under construction “765kV scheme under central part of Northern region”.

The proposed Lucknow-Bareilly-Meerut 765kV would be the missing link connecting the two systems at 765kV level. Hence, even in case of delay in North Karanpura generation project the line lines would help in transfer of power from generations in Eastern region to Northern region. Similarly proposed Agra-Gurgaon (ITP)-Gurgaon(PG) 400kV D/c along with proposed Gurgaon substation would help in meeting the growing power demand of the area.

North Karanpura generation project of NTPC is delayed. Elements (iv) to (vii) would help in providing a strong interconnection between Eastern and Northern region and meeting the power demand of the region with reliability and security while facilitating transfer of power from generation projects in Eastern region to Northern region, including North Karanpura.

In view of above it is proposed that elements (iv) to (vii) may be taken up for system strengthening delinking it with the commissioning of North Karanpura generation project. Here it might be mentioned that the transmission elements are being implemented as a private sector project. Members may discuss and concur

17. Patiala-Ludhiana 400kV D/c and LILO of Patiala –Hissar 400kV at Katihal :

During the 18th Standing Committee meeting of Northern region held on 06/06/2005. During the meeting following transmission scheme was approved as transmission system for evacuation of power from Rampur HEP (412 MW).

LILO of Nathpa Jhakri – Nalagarh 400 kV D/c line at Rampur

Patiala – Ludhiana 400 kV D/c

LILO of Patiala –Hissar 400kV line at Kaithal

Item (i), LILO of Nathpa Jhakri – Nalagarh 400 kV D/c line at Rampur, was for immediate evacuation of power from the project

Item(ii) and Item (iii) in addition to facilitating evacuation of power from the project would also help in strengthening the Grid. In this regard it may be mentioned that studies had shown overloading on Ludhiana - Malerkotla section, which required to be strengthened. After further analysis of the study cases, it was observed that 400 kV line between Patiala and Ludhiana would provide the required strengthening optimally. LILO of Patiala – Hissar line at Kaithal, item(iii), shall ensure balanced loading on Patiala-Kaithal-Hissar 400kV Corridor. Similarly Patiala-Ludhiana 400kv D/c, item(ii), would facilitate evacuation of power from Patiala, which is connected Nathpha Jhakri generation complex via Nalagarh, and would also provide an additional feed to Ludhiana.

In view of above it is proposed that item (i) would be commissioned matching with the Rampur generation while Item (ii) and (iii) be commissioned as early as possible.

Members may discuss and concur.

18. Transmission system for evacuation of power from IPP projects in Jharkhand & West Bengal:

During the 28th standing committee meeting of Northern region transmission system for evacuation of power from 3300 MW IPP generation coming up in phase-I in Jharkhand & West Bengal was discussed and as part of the scheme following was agreed

System strengthening in NR

- New 2x1500MVA 765/400 kV substation at Varanasi and Kanpur
- Gaya – Varanasi 765 kV S/c
- LILO of one ckt of Tillaiya – Balia 765 kV D/c at Varanasi
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhatikra 765 kV S/c
- 400kV connectivity for new 765/400kV S/s at Varanasi & Kanpur
 - o Varanasi-Sarnath(UPPCL) 400kV D/c (Quad)
 - o LILO of Sasaram-Allahabad 400kV line at Varanasi
 - o Kanpur (765/400kV) – Kanpur Existing 400kV D/c (Quad)

However as per site information there is no space for additional bays exists at Sarnath (UPPCL) for termination of Varanasi-Sarnath(UPPCL) 400kV D/c (Quad). In view of above it is proposed that orientation of Sasaram-Sarnath(UPPCL)-Allahabad may be reverted back to original arrangement of Sasaram-Allahabad direct line and the bays vacated at Sarnath (UPPCL) shall be used for termination of Varnasi (765/400kV)-Sarnath (UPPCL) 400kV line. The remaining system shall remain same as discussed during the 28th standing committee meeting of Northern region.

Members may discuss and concur.

19. LILO of 400kV lines from Dehar:

During the 27th meeting of the Standing Committee on Transmission System Planning of Northern Region held on 30th May, 2009 for Enhancing System Reliability by LILO of 400 kV Dehar-Bhiwani and 400 kV Dehar-Panipat was discussed. It was explained LILO of the lines would provide sufficient anchoring and control the voltage at Dehar. Further as the length of the line would be reduced the load ability would also increase.

In earlier meeting HVPNL had expressed the view that LILO of 400 kV Dehar-Panipat line at Panchkula be covered work under regional scheme. Earlier PSEB had also now expressed reservations to carry out the works at their cost.

As the LILO of above lines is required since it will help in controlling the over voltages being experienced on the line which is resulting in frequent opening of the line, it is proposed to take up above work as part of system strengthening scheme.

Further it may be mentioned that during low hydro period the 400/220kV, 250 MVA ICT at Dehar becomes overloaded/critical loaded. Many a times this has to be opened to avoid over loading of the ICT resulting in loss of interconnection between 400kV and 220kV level at Dehar, less reliable supply for Punjab and low fault level at Dehar. In view of above it is proposed to augment the existing transformation by one additional 500 MVA transformer. In case of space constraint it is proposed that existing 250 MVA transformer may be kept as spare and proposed 500MVA transformer may be installed.

In View of above following transmission is proposed :

As part of above mentioned Northern region system strengthening Scheme - XXV

LILO 400 kV Dehar-Bhiwani at 400 kV Rajpura

Dehar-Panipat LILO at 400 kV Panchkula (PG)

As part of above Augmentation of transformation at Dehar

Augmentation by 1x500 MVA at Dehar

Members may discuss and concur.

20. Evacuation of Power from Rosa generation project in Uttar Pradesh – Agenda by UPPTCL

a) Following transmission system is under operation for evacuation of power from Rosa TPS-Stage I (2x300 MW) which was in principally agreed in the 26th SCM held on 13/08/2010

Rosa – Shahjahanpur 220 kV D/c

Rosa – Hardoi 220 kV D/c

Rosa – Badaun 220 kV D/c

Based on the load flow studies following transmission system has been approved by UPPTCL for Rosa Stage –I :

Rosa – Shahjahanpur 220 kV D/c

Rosa – Badaun 220 kV D/c

Rosa – Some Place near CBganj and Dohana line, then breaking it in to 2 Single ckt lines with one ckt to CBganj and second to Dohana (expected by Nov 2011)

UPPTCL has sought the technical approval for the above scheme.

The above transmission system comes under the purview of the STU and STU may implement the same. Members may take note of it.

b) Transmission M/s Rosa Power Supply Company Limited had applied seeking Long-term Open Access for transfer of 300 MW power from Stage-II (2x300 MW) of Rosa Power Project located at Shahjahanpur, U.P. Out of 600 MW power, 300 MW power is allocated to Uttar Pradesh and balance 300 MW is to be distributed between Delhi (150 MW) and Haryana (150 MW). The application was discussed in the Long Term Open Access Meeting held on 30/05/2009 at Nainital alongwith 27th Standing Committee Meeting of Northern Region during the meeting it was decided that Long-term Open Access can be granted for 25 years subject to following:

Long Term Open Access to Rosa Power Company shall be granted after the commissioning of following strengthening scheme:

Bareilly – Meerut 765 kV S/c

One ckt of Lucknow – Bareilly 765 kV line

Bareilly-Kashipur–Roorkee–Saharanpur 400 kV D/c (Quad conductor)

For connectivity of Rosa Power Plant with the grid the following was agreed :

Rosa- Shahjahanpur 400 kV D/c

Shahjahanpur is expected to be commissioned by November'12.

As per the information from POWERGRID, that first unit of Stage-II is to be commissioned by September '2011 and second unit by December'2011.

UPPTCL has stated that there is likelihood that 400 kV Shahjahanpur substation and proposed to LILO one ckt of Unnao – Bareilly 400 kV D/c line at Rosa TPS alongwith bypassing of Series compensation of Unnao

As agreed earlier power from Rosa is to be injected at Rosa TPS and therefore in view of the early commissioning schedule of the generation till the commissioning of Shahjhanpur S/s following is proposed

Till the commissioning of Shahjhanpur S/s, Rosa generation may be connected to the grid by connecting proposed Rosa-Shahjhanpur line to one circuit of Lucknow –Bareilly 400kV line i.e LILO of Lucknow-Bareilly line at Rosa generation. In other words POWERGRID would construct one D/c line (LILO portion upto proposed site of Shahjhanpur substation) and Rosa would also bring their line upto proposed site of Shahjhanpur substation and they can be joined as to make Rosa – Lucknow and Rosa – Bareilly 400 kV S/c lines. This would avoid any additional expenditure and avoid bypassing of the series compensation. Till the commissioning of system identified in (ii) existing system margins could be used for evacuation of power from the project subject to approval of NRLDC.

Member may like to discuss

21. Kishnepur- New Wanpoh 400kV D/c

During the 23rd Standing Committee Meeting of NR Tr. Planning, establishment of New Wanpoh 400/220kV substation alongwith Kishenpur – New Wanpoh 400 kV D/c was agreed as a System Strengthening Scheme. While carrying out the route survey for Kishenpur-New Wanpoh 400kV D/c line, it was observed that there is serious Right of Way Problem for crossing the 7-8km Pir Panjal mountain range. During the 28th SCM of Northern Region held on 23/02/2010, ROW constraints for proposed Kishenpur – New Wanpoh 400 kV D/c while crossing Pir Panjal mountain range and utilization of Pampore – Wampoh – Ramban – Batote – Udampur 132 kV D/c, a 7-8 km corridor stretch, for Kishenpur – New Wampoh 400 kV D/c was discussed.

After detailed discussion, PDD in principle agreed to provide the 132kV line corridor for crossing Pir Panjal mountain range for which the 132 kV line section (about 7-8km) would be dismantled. It was agreed that the decision about providing normal 400 kV D/c line or Multicircuit line for crossing Pir Panjal shall be taken after the discussion by Member (PS), CEA with J&K officials. The matter was taken up by CEA with J&K and J&K had replied that they would agree to the proposal of providing Multicircuit line in

Pir Panjal area with a provision of 2 nos. of 220 kV circuits for J&K and two 400 kV circuits of the planned line for crossing Pir Panjal mountain range for about 8 km. Accordingly, POWERGRID is going ahead with the above.

Members may note.

22. Agenda for evacuation of Power from 4000 MW UMPP Project at Bhedabahal (Sundergarh district) in Orissa

1.0 Orissa Integrated Power Ltd. (OIPL) has applied for grant of Long Term Open Access for evacuation of power from 4000 MW Ultra Mega Power Project (UMPP) proposed to be set up near Bhedabahal village in Sundergarh district of Orissa. Allocation of power from this UMPP, as indicated by Ministry of Power, Govt. of India is as given below:

Sl.	Beneficiary	Allocation(MW)
1	Orissa	1300
2	Uttar Pradesh	300
3	Uttarakhand	200
4	Punjab	500
5	Rajasthan	400
6	Haryana	400
7	Madhya Pradesh	400
8	Chhattisgarh	200
9	Tamilnadu	300
	Total	4000

The unit wise commissioning schedule as indicated by generation developer is as given below :

Sl. No.	Unit	Commissioning Schedule
1	1st Unit (800 MW)	Mar - 2016
2	2nd Unit (800 MW)	Sep - 2017
3	3rd unit (800 MW)	Mar - 2017
4	4th unit (800 MW)	Sep - 2017
5	5th unit (800 MW)	Mar - 2018

2.0 A comprehensive transmission system comprising of high capacity 765kV EHVAC transmission corridors from Orissa to Northern region via Western region has already been planned for evacuation of power from Phase-I IPPs(6080 MW) in Orissa and the same is under implementation. Further, about 12000MW generation projects have applied for Long Term Access/Connectivity and expected to come up in subsequent phases in Orissa. Keeping in view the techno-economical viability as well as operational flexibility of hybrid transmission system, it is proposed to plan high capacity HVDC transmission link for evacuation of power from Orissa UMPP project. Accordingly, for Orissa UMPP, +800kV, 6000MW HVDC bipole line has been planned from Jharsuguda pooling station in Orissa to Bulandshahar(UP) in Northern region. The share of Orissa (1300MW) from UMPP may be delivered through 400kV interconnection from Jharsuguda sub-station to suitable locations in Orissa grid. However, in order to limit the huge rush of power in the underlying 400kV system as well as to limit the short circuit level of Orissa/Eastern grid substations, power may be delivered to Orissa grid through radial connection of one or two units of UMPP generation project.

3.0 The major transmission system proposed for Orissa-UMPP generation projects is given below.

± 800 kV, 6000 MW HVDC Bi-Pole from Jharsuguda# to Bulandshahar.

Orissa UMPP-Jharsuguda 400kV 2 x D/c line (Quad Moose Conductor)

Power Supply to Orissa from Jharsuguda 400kV bus through radial connection of UMPP generation unit

#Depending upon the development of Phase-II IPP projects the location of HVDC may be shifted to Angul

Strengthening in Northern Region for dispersal of power from Bulandshahar

Bulandshahar – Ambala 765 kV D/c

Ambala – Malerkotla 400 kV D/c

Bulandshahar – Neemrana 400 kV D/c

LILO of Meerut – Moga 765 kV S/c line at Bulandshahar

Establishment of 2x1500 MVA, 765/400 kV substation at Bulandshahar. Considering the space constraints Bulandshahar 765/400 kV substation may be constructed as GIS station. (Here it is to mention that Meerut – Moga 765 kV S/c line was agreed in Standing Committee and NRPC as system strengthening in Northern Region for Tillaiya, Barh and Nabinagar, however considering the requirement of power flow from Western UP towards Haryana/Punjab/J&K, it is proposed that this line may be taken up on priority & be commissioned at the earliest and the Balia – Lucknow, which was also agreed as system strengthening in Northern Region for Tillaiya, Barh and Nabinagar may be taken up during Tillaya time frame.)

Members may please discuss and approve.

23. Corrigendum to the minutes of Meeting (MoM) of the Standing Committee on Power System Planning in Eastern Region held on 20-09-10 at NRPC, New Delhi.

Common system strengthening for transfer of power from Phase-I generation projects in Jharkhand and West Bengal to NR/WR (Under the scope of PGCIL):

The requirement of the common system strengthening works were finalized into three region specific groups viz. 'ER', 'NR' and 'WR' in the last meeting of Standing Committee held on 14th Sept.'09. As proposed by PGCIL, the works were regrouped into two parts i.e. Part-A & Part-B for implementation. On this, PGCIL further proposed to include establishment of 765kV Varanasi S/s and associated 765 and 400kV lines for delivery of power to NR under Part-A, which were taken under Part-B. PGCIL representative stated that due to delay in commissioning of Tilaiya UMPP project, LILO of 765kV Gaya – Balia line at Varanasi in NR would be done in place of LILO of Tilaiya – Balia line at

Varanasi. Accordingly, the scope of work under Part-A & Part-B for the common system strengthening would be as following:

a) Common system strengthening for transfer of power from Phase-I generation projects in Jharkhand and West Bengal - Part-A

- Ranchi – Gaya 400 kV (Quad) line via pooling station proposed near Essar / Corporate generation projects
- Ranchi New (765/400kV S/s) - Dharamjaygarh / near Korba 765kV S/c
- Establishment of 400kV Pooling Station (Jharkhand Pool) near Essar and Corporate generation projects. This will be a switching station without ICTs
- New 2x1500 MVA, 765/400 kV substation at Varanasi
- Gaya – Varanasi 765 kV S/c
- LILO of Gaya - Balia 765 kV S/c line at Varanasi
- 400kV connectivity for new 765/400kV S/s at Varanasi
 - Varanasi - Sarnath (UPPCL) 400kV D/c (quad)
 - LILO of Sasaram - Allahabad 400kV line at Varanasi

b) Common system strengthening for transfer of power from Phase-I generation projects in Jharkhand and West Bengal - Part-B

- New 2x1500 MVA, 765/400 kV substation at Kanpur
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhatikra 765 kV S/c
- Kanpur (765/400kV) - Kanpur (Existing) 400kV D/C (Quad)

c) Private Sector line: In addition to the above work to be undertaken by PGCIL, Dharamjaygarh – Jabalpur 765kV D/C line (2nd line) would be under the scope of private sector. Associated 765kV line bays at Dharamjaygarh and Jabalpur sub-station would be under the scope of POWERGRID.

The charges of the common transmission system would be borne by the generation developers of Jharkhand as well as WBSEDCL till the time the long term beneficiaries are finalized. Further, the regional charges of Eastern Region would be borne by the developers of Jharkhand projects in proportion to their installed capacity and by WBSEDCL corresponding to open access quantum i.e. 1000MW. The regional charges for WR and NR would also be shared by the developers of

Jharkhand projects and WBSEDCL in proportion to the power allocated to these regions. Once, the long-term beneficiaries are tied-up, transmission charges would be shared by the beneficiaries in proportion to their allocation.

All the constituents of ER have concurred for the above. Members may discuss and concur.