

Minutes of Meeting held on 18.08.2015 regarding replacement of old & inefficient sub critical units by supercritical units.

List of participants is given at Annex.

1. Chairperson, CEA welcomed the participants and mentioned that the meeting is convened to discuss the possibility of replacing sub critical old & inefficient thermal units by supercritical units. This would enable effective utilization of already available scarce resources like land, water and coal. The old and inefficient units can be replaced in phased manner. He informed that as per policy of Government of India, five UMPP's are planned to be set up in plug and play mode and bidding to be initiated in this financial year. He further added that capacity of about 36000 MW TPS is more than 25 years old and these units could be replaced in phased manner. Ministry of Power has requested CEA to prepare a report on Retirement / Renovation / Replacement of old units so as to explore the possibility to replace with super critical units. Accordingly all the State Govts. are required to revisit their plan for R&M schemes for optimal utilization of scarce resources.
2. It was noted that no representative from Uttar Pradesh & West Bengal were present in the meeting.
3. CE (TPP&D) indicated that replacement of old units by new supercritical units is being encouraged by Govt. of India and the Min. of Coal has already issued guidelines for automatic transfer of coal linkage from old & inefficient units to new supercritical units. He apprised that during 13th plan generation capacity of about 86400 MW is likely to be added primarily through super critical units. He mentioned that land being scarce; utilities need to explore

possible options to utilize the existing land and other facilities in most effective manner. Thereafter, a presentation covering state wise status of old thermal units & their performance & operational parameters was given by Director (TPP&D), CEA based on which view of representatives of state utilities were sought.

4. **Haryana:** Panipat TPS Unit-1 to 4 (4 x110 MW) are more than 25 years old and life extension was taken up on units – 1 & 2 in 9th Plan. The PLF of these units is in the range of 10 - 14% at present. Proposal has already been received from HPGCL regarding replacement of these units by one of 800 MW unit for which transfer of coal linkages has been recommended by Min. of Coal. TOR for the Environment Clearance has recently been obtained.
5. **Punjab:** GND TPS Bhatinda Unit – 1 to 4 (4 x 110 MW) are having high heat rate and low PLF even after Life extension. The Representative from Punjab stated that life extension was done in these units and they would like to operate these units till 2021–22. On this CE (TPP&D) mentioned that Punjab Government should consider retirement of Units 1&2 since LE for these units was done in 2006-2007 and consider for replacement with super critical units. Ropar TPP Units 1 to 4 (4 x 210 MW) is having low PLF and is proposed for R&M. Director (TPP&D) opined that Government of Punjab should go for only small scale R&M. Ropar TPP is considered as a potential site for replacement by new supercritical units.
6. **Rajasthan:** Kota TPS units – 1 & 2 (2 x 110 MW) are undergoing R&M and Units 3&4 (2 x 210 MW) are proposed for R&M. Representative from Rajasthan informed that these units are having good PLF and Heat rate for

these units are 2600 to 2700 KCal/KWh. He intimated that MOEF&CC had not given clearance for increased chimney height due to aviation restriction in case of extension units. As such Kota is not considered as potential site for replacement with super critical units. It was reiterated that RRVUNL should take necessary measures for heat rate improvement of these units.

7. **Uttar Pradesh:** There was no representative from Uttar Pradesh. It was decided that a separate meeting shall be held with Uttar Pradesh. However, on the basis of information available it was apprised that Harduaganj unit 1 to 4 and unit 6 has been retired. One 660 MW extension unit has been Planned at Harduaganj for which NIT has been floated. Parichha Unit 1&2 (2x110 MW) are having very low PLF. Director TPR&M informed that in unit 2, R&M was carried out in 2012 but due to fire incident in crusher house there was no generation from the unit during 2014-15. Anpara TPS unit 1 to 3 (3x210 MW) have good PLF and heat rate and need based R&M was carried out in 2013. Chairperson CEA opined that UPRVUNL may send retirement proposals for poor performing old units in the state.

8. **Gujarat:** Ukai TPS unit – 1 and 2 (2x120 MW) have undergone life extension however there was no significant improvement even after that. Representative of GSECL stated that they were proposing to replace unit 1 and 2 by supercritical units. CE (TPP&D) requested GSECL to submit details regarding availability of land and water. GSECL stated that for Ukai unit 3 and 4 (2x200 MW) engineering works for replacement of ESP and Turbine has been completed. Ukai units 4 and 5 were having low PLF because of low schedule.

9. **Madhya Pradesh:** Satpura TPS unit 1 to 5 (5 x 62.5 MW) have already retired. Unit 6 to 9 are having high heat rate. Representative from MP stated that they are going for need based R&M. Chairperson, CEA stated that heat rate for Satpura units 6 to 9 is very high and hence these units should be recommended for retirement. Representative of MP was requested to give details regarding availability of land and water. Amarkantak TPP Units 1 & 2 are already de-commissioned and Amarkantak extension TPP 2x120 MW is proposed to be retired in 2016-17 and it is proposed to set up a super critical unit in its place. Chairperson, CEA requested representative of Madhya Pradesh to send the proposal for retirement of Amarkantak extension TPP.

10. **Chhattisgarh:** The specific coal consumption of Korba stage – II units 3 & 4 (2 x 50 MW) and Korba Stage – III units 1 & 2 (2 x 120 MW) units is high. It was decided that CSPGCL shall move a proposal for retirement of these units. Koba west TPS units 1 to 4 (4 x 210 MW) are having good PLF. It was intimated that these units would continue to generate power. However, efforts should be made to bring down the heat rate which is presently high.

11. **Maharashtra:** Representative of MAHAGENCO informed that Nasik TPP units 1 & 2 were already decommissioned and units 3 to 5 are having good PLF. It was brought to their notice that heat rate of these units are very high. Koradi TPS unit – 6 is under life extension activity. The works relating to replacement of turbine, more efficient ESP etc. are under way and is likely to be completed to by August, 2016. On the basis of experience on unit 6, the decision for R&M on units 5 & 7 shall be taken. On the query of very low PLF of unit 5 of Koradi TPS which was below 1% in the FY 2014-15, the representative of MAHAGENCO informed that the low PLF of the unit was

due to its economic shut down. Representative of MAHAGENCO informed that they have proposed to decommission Koradi Unit 1 to 4 (420 MW) and requested CEA for recommending transfer of coal linkage from the decommissioned capacity of 840 MW (including decommissioned units at Bhusawal, Parli & Paras) to Koradi unit 8 & 9 of 660 MW each. They further suggested that the captive coal block allocated to Koradi TPP could be utilized for UMPP proposed in Maharashtra state. Regarding Bhusawal TPP units 2 & 3 (2 x 210 MW) it was decided that MAHAGENCO shall submit retirement proposal for these units as the specific coal consumption was too high and also was having low PLF due to economic shut down.

Representative of MAHANGCO informed that Khaparkheda TPP unit 1 & 2 is under R&M and performance is expected to improve. The Parli unit – 3 is under economic shut down. He further informed that on commissioning of Parli unit – 8 (250 MW), Unit 3 & 4 (2 x 210 MW) shall be retired. Regarding Chandrapur unit 1 to 4 it was informed that decision on R&M of these units shall be taken based on experience of Unit- 6 of Koradi TPS.

12.Telengana: Kothagudam units 1 to 8 are more than 25 years old and shall be proposed for retirement after commissioning of 800 MW extension unit. Ramagundam – B TPP (1x62.5 MW) having a PLF of 35.32% was proposed for retirement.

13.Andhra Pradesh: Dr. N. Tata Rao TPS units 1 to 3 (3x210 MW) have good PLF of 80 to 90%. It was decided in the meeting that these units may continue to operate till the extension unit (800 MW) is commissioned.

14.**Karnataka:** The representatives from Karnataka visited CEA on 13th Aug. 2015 and informed that Raichur TPS unit 1 & 2 (2 x210 MW) are more than 25 years old. The PLF of these units is above 70% and the station heat rate is 2500 Kcal/KWh. R&M activities for these units for improvement of heat rate and life extension is under way. Out of proposed R&M cost of Rs. 900 Crores, Rs. 180 Crores have already been spent and material worth Rs. 140 Cr has been procured. As the PLF and station heat rate of these units are quite good it was decided that these units would continue to generate power.

15.**Tamil Nadu:** Representative from Tangedco informed that Ennore TPS unit 1 to 5 (2x60 MW + 3x110 MW) is proposed for retirement after a 600 MW unit which is presently under construction gets commissioned. One 660 MW unit is proposed to be set up as replacement unit at Ennore TPS. Chairperson, CEA requested representative of Tangedco to submit the proposal for retirement of Ennore TPS units 1 to 5. Regarding Tuticorin TPS units 1 to 3 (3x210 MW) and Mettur TPS units 1 to 4 (4x210 MW) which are more than 25 years old, it was apprised that these units are having good PLF and are performing well.

16.**Jharkhand:** There was no representative from Jharkhand state. Director (TPP&D) intimated that Patratu TPS have been taken over by NTPC to set up 4000 MW plant. R&M works have been completed in unit no. 10 and in unit no. 9 it is under progress. Chairperson, CEA viewed that proposal for retirement of unit 1 to 8 to be initiated by Govt. of Jharkhand.

17.**Bihar:** Director (TPP&D) intimated that Barauani TPS unit 4 & 5 (2x50 MW) have been retired and Barauani unit 6 & 7 (2x105 MW) are under life extension.

18.**West Bengal:** There was no representative from West Bengal. Bandel TPS unit 1 to 4 (4x60 MW) which are more than 25 years old have low PLF and high heat rate. Santaldih TPP unit 1 to 4 (4x110 MW) are under shut down since long. Chairperson, CEA viewed that Government of West Bengal should go for retiring these units.

19.**DPL:** Director (TPP&D) intimated that DPL units 1 & 2 already have been retired and units 3, 4 & 5 are under shut down. Chairperson, CEA was of the view that action may be initiated for retirement of these units.

20.**DVC:** A presentation was made by DVC on Replacement plan of Durgapur TPS unit 3&4 (350 MW) and Chandrapura TPS Unit 1 to 6 of 130 MW each, out of which unit Chandrapura unit 4 to 6 have already been retired. According to their Plan, one 660 MW capacity unit at Durgapur and two nos. 660 MW capacity units at Chandrapura can be set up. It was decided that DVC shall submit retirement proposal for DTSP unit 3. The Bokaro TPS Units 1 & 2 (2x 210 MW) which are more than 25 years old are having low PLF and higher Heat Rate. DVC shall take appropriate action either to retire these units or improve their performance at the earliest.

After deliberations following action points were decided:

The report on 'Replacement of old & inefficient units with super critical units is to be submitted by end of Sept. 2015, therefore, next meeting would be held in 3rd week of Sept. 2015 to finalise the action plan. All the states are to submit information as per details below within a week.

- GND TPS Bhatinda Unit – 1 & 2 (2x110 MW) - Retirement proposal to be initiated.

Action : PSPCL, PDM Div. CEA

- Ropar TPP Units 1 to 4 (4 x 210 MW) - Can be considered as a potential site for replacement by new supercritical units. PSPCL was requested to give details regarding availability of land and water.

Action : PSPCL, TPP&D Div. CEA

- Kota TPS units – 1 & 2 (2 x 110 MW) - RRVUNL to take necessary measures for heat rate improvement of the units.

Action : RRVUNL, TPR&M Div. CEA

- UPRVUNL to submit retirement proposals for poor performing old units in the state and expedite on-going R&M works.

Action: UPRVUNL, TPR&M Div. CEA

- Ukai TPS unit – 1 and 2 (2x120 MW) – Replacement of the units by Supercritical units.

Action: GSECL, TPP&D Div. CEA

- Ukai unit 3, 4 & 5 (2x200 MW+210 MW) – Need based R&M works need to be expedited.

Action: GSECL, TPR&M Div. CEA

- Satpura TPS Unit 6 to 9 (200 MW + 3x210 MW) were recommended for retirement. MPPGCL to furnish give details regarding availability of land and water for replacement by Supercritical units.

Action : MPPGCL, TPP&D Div. CEA

- Amarkantak extension TPP 2x120 MW is fit case for retirement and to replace with a super critical unit. MPPGCL to submit the proposal for retirement of the units and furnish availability of Land, water etc.

Action : MPPGCL, PDM Div, TPP&D Div. CEA

- Korba stage – II units 3 & 4 (2 x 50 MW) and Korba Stage – III units 1 & 2 (2 of 120 MW) – Action for Retirement of the units is to be initiated.

Action : CSPGCL, PDM Div. CEA

- Koba west TPS units 1 to 4 (4 x 210 MW)- Heat Rate improvement needs to be done.

Action: CSPGCL, TPR&M

- Nasik TPP units 3 to 5 (3x210 MW) – Action for Heat Rate improvement needs to be taken.

Action: MAHAGENCO, TPR&M Div. CEA

- Koradi TPS unit – 6 (210 MW) - The life extension activity to be completed as per schedule.

Action: MAHAGENCO, TPR&M Div. CEA

- Parli unit – 3 & 4 (2x210MW) – Units to be retired after commissioning of Parli unit – 8 (250 MW)

Action: MAHAGENCO, PDM Div. CEA

- Bhusawal TPP units 2 & 3 (2 x 210 MW) - MAHAGENCO to submit retirement proposal for these units.

Action: MAHAGENCO, PDM Div. CEA

- Transfer of coal linkage from the decommissioned capacity of 840 MW (including decommissioned units at Bhusawal, Parli & Paras) to Koradi unit 8 & 9 of 660 MW each. – MAHAGENCO to send formal proposal to CEA.

Action: MAHAGENCO, TPP&D Div. CEA

- Khaparkheda TPP unit 1 & 2 – R&M works for performance improvement to be expedited.

Action: MAHAGENCO, TPR&M Div. CEA

- Chandrapur unit 1 to 4 - decision on R&M of the units shall be taken based on experience of Unit- 6 of Koradi TPS.

Action: MAHAGENCO, TPR&M Div. CEA

- Kothagudam units 1 to 8(4x60 MW + 4x120 MW) and Ramagundam – B TPP (1x62.5 MW) – Retirement Plan to be submitted to CEA.

Action : TSGENCO, PDM Div. CEA

- Dr. N. Tata Rao TPS units 1 to 3 (3x210 MW) – Retirement Plan to be submitted to CEA

Action : APGENCO, PDM Div. CEA

- Raichur TPS unit 1 & 2 (2 x210 MW) – On going R&M works to be expedited.

Action: KPCL, TPR&M Div. CEA

- Ennore TPS unit 1 to 5 (2x60 MW + 3x110 MW) – Units to be retired after a 600 MW unit gets commissioned. One 660 MW unit is proposed to be set up as replacement unit at Ennore TPS. TANGEDCO to furnish information on land & water availability.

Action: TANGEDCO, PDM Div. CEA, TPP&D Div. CEA

- Retirement of Patratu unit 1 to 8 to be initiated by Govt. of Jharkhand.

Action: JUVNL, PDM Div. CEA

- Barauni unit 6 & 7 (2x105 MW) – On going R&M works to be expedited.

Action : BSPGCL, TPR&M Div. CEA

- Bandel TPS unit 1 to 4 (4x60 MW) and Santaldih TPP unit 1 to 4 (4x110 MW) – Proposal for Retirement of the units to be initiated.

Action: WBPDCCL, PDM Div. CEA

- DPL units 3, 4 & 5 are under shut down. Action to be initiated for retirement of the units.

Action : DPL, PDM Div. CEA

- DVC to submit retirement proposal for DTSP unit 3 (140 MW).

Action : DVC, PDM Div. CEA

- Replacement units at Durgapur and Chandrapura – Action to be initiated.

Action : DVC, TPP&D Div. CEA

- Bokaro TPS Units 1 & 2 (2x 210 MW) - DVC to take appropriate steps either to retire these units or improve their performance at the earliest.

Action : DVC, TPR&M Div. CEA

Meeting ended with vote of thanks to the chair.

LIST OF PARTICIPANTS

S.No	Name (S/Sh.)	Designation	Organisation
1.	Major Singh	Chairperson , CEA	CEA
2.	P.D. Siwal	Chief Engineer (TPP&D)	CEA
3.	A.K. Mishra	Chief Engineer (FM)	CEA
4.	Chandra Shekhar	Chief Engineer (OPM)	CEA
5.	Alok Saxena	Consultant	CEA
6.	Sanjay Sharma	Chief Engineer (TETD)	CEA
7.	Prahlad	Chief Engineer (PDM)	CEA
8.	B.K. Sharma	Chief Engineer (TPE&CC)	CEA
9.	N.S.Mondal	Director (TPP&D)	CEA
10.	Rajeev Kumar	Director (TPRM)	CEA
11.	Satbir Singh	Director (PDM)	CEA
12.	K. Khemchandani	Dy. Dir. (TPP&D)	CEA
13.	Sunit Kumar Gupta	Dy. Dir. (TETD)	CEA
14.	B. Venkata Sandeep	Assistant Director	CEA
15.	Lokendra Meena	Assistant Director	CEA
16.	P.S. Arya	CE (PPMC&IT)	RRVUNL, Jaipur
17.	Abhay Singhal	TA to CE (PPM)	RRVUNL, Jaipur
18.	V.S. Mander	SE / TH. Designs	PSPCL, Patiala
19.	B.S. Padam	ASE / TH. Designs	PSPCL, Patiala
20.	K.K. Shah	ACE (P&P)	GSECL, Vadodara
21.	S.B. Agarwal	MD	CSPGCL
22.	Khalid Nafees	EE	MPPGCL
23.	Sudhir Saxena	Addl. (CE)	MPPGCL
24.	V.M. Jaideo	CE (FMI)	MSPGCL
25.	M.D. Godwe	CE (P&P)	MSPGCL, Mumbai
26.	S.B. Soni	Dy. CE (FMC)	MSPGCL
27.	U.C. Nagappan	CE (Thermal)	TANGEDCO, TNEB Tamil Nadu
28.	Er. K. Sivaprakash	Director (Generation)	TNEB Ltd. Chennai
29.	R.P Tripathi	Member (Tech)	DVC
30.	H. Chatterjee	CE (M) / Engg.	DVC