Annex – 5
(Medium Term Measures)

Table 1: KTPS status of CPRI recommendation medium term measure.

S.N.	Total Nos.	Implemented till Date	STATION / UNIT	S. N.	CPRI Recommendations	Date / Month of Implementation	Work Done / Action Taken as on 31/12/2011	Effects / Results / Improvement seen	Section	Remarks
1	3	0	UNIT-3	1	TGA analysis of coals fired into the boiler can help to optimize combustion controls.		Proposal sent to HO in Non-DPR format. Approval received in Dec 11. Tender to be floated		WTP	
2			STATION	2	Improvement in coal GCV by Fuel cell		All possible measures are being taken		HO	
3			STATION	3	Change over to higher use of washed coal				HO	
4	10	2	STATION	1	Installation of air flow meters, air pressures for primary and secondary air circuits	Mar-10	Regarding correctness of sec. air flow for Unit-1 & 2 matter is already referred to OEM on dt:02/07/2008 procurement for air flow transmitter along with manifold carried out and installed in April10.		TIC	

5			UNIT-1	2	Furnace exit gas temperature monitoring system (FEGT) with HVT (high velocity traversing air cooled probes)		M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that this system is not a regular requirement & we have not supplied the requested high velocity traversing air cooled probes.		TIC	EER&M
6			UNIT-1	3	Boiler optical cameras composed of CCTV with filters or acoustic pyrometer signal processing for furnace flame & fireball visualization and temperature mapping		Planned in EER&M 15-16		TIC	EER&M
7			UNIT-2	4	Furnace exit gas temperature monitoring system (FEGT) with HVT (high velocity traversing air cooled probes) may be used		M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that this system is not a regular requirement & we have not supplied the requested high velocity traversing air cooled probes.		TIC	EER&M
8			UNIT-2	5	Boiler optical cameras composed of CCTV with filters or alternatively acoustic pyrometer signal processing technology for furnace flame and fireball visualization		Planned in EER&M 15-16		TIC	EER&M

					including temperature mapping					
9			UNIT-3	6	Furnace exit gas temperature monitoring system (FEGT) with HVT (high velocity traversing air cooled probes) may be used		M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that this system is not a regular requirement & we have not supplied the requested high velocity traversing air cooled probes.		TIC	Budgetary offer
10			UNIT-3	7	Boiler optical cameras composed of CCTV with filters or alternatively acoustic pyrometer signal processing technology for furnace flame and fireball visualization including temperature mapping		Work will be carried out in FY 2013-2014		TIC	
11			UNIT-4	8	Furnace exit gas temperature monitoring system (FEGT) with HVT (high velocity traversing air cooled probes) may be used.		M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that this system is not a regular requirement & we have not supplied the requested high velocity traversing air cooled		TIC	Budgetary offer

							probes.			
12			UNIT-4	9	Boiler optical cameras composed of CCTV with filters or alternatively acoustic pyrometer signal processing technology for furnace flame and fireball visualization including temperature mapping.		Work will be carried out in FY 2013-2014		TIC	
13			UNIT-4	10	Installation of air flow meters, air pressures for primary and secondary air circuits	Jan-00	Already available		TIC	
14	4	0	UNIT-1	1	Monitoring of noise level inside the mill		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM & TIC	Budgetary offer
15			UNIT-2	2	Monitoring of noise level inside the mill		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM & TIC	Budgetary offer
16			UNIT-3	3	Monitoring of noise level inside the mill		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM & TIC	Budgetary offer

17			UNIT-4	4	Monitoring of noise level inside the mill		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM & TIC	Budgetary offer
18	1	1	STATION	5	Enterprise resource management for O & M of the power plant	Sep-11	Covered in SAP/ERP		HO	
19	2	2	UNIT-2	1	Replacement of HP / LP turbine bypass valves & HP heater group bypass valves.	Sep-10	Valves servicing, reconditioning carried out in COH Sept 2010..		TM	
20			UNIT-3	2	Replacement of HP/ LP turbine bypass valves and HP heater group bypass valve.	Nov-09	Performance of the valves checked. Found normal. Reconditioning of these valves is a regular practice during overhauls		TM	
21	1	1	STATION	1	Knowledge management portal to be strengthened	Sep-11	Covered in SAP/ERP		HO	
22	12	2	STATION	1	Knowledge management portal to be strengthened	Sep-11	Covered in SAP/ERP		MIS / IT	
23			STATION	2	Up gradation of the data acquisition, storage and data high ways along with specialized or customized software for transparent, efficient operation and maintenance of the power plants to meet its objectives through network and internal integration of data.	Sep-11	Wide Area Network has already been established for MahaGenco by interfacing Power Stations LANs with HO network through leased circuits under GCR Project.		GM , IT	

							Connectivity of Coal Office, Ngp & Hydro divisions at Pune & Nashik is planned through SAP, ERP Project. The action plan for online monitoring of coal & oil energy, water consumption is same as already mentioned at sr. no. 3, 10 & 16.			
24			UNIT-1	3	Increase of the length of the APH baskets by 10 %, Upgradation of APH heat exchanger matrix & regenerative dynamic sealing		Referred to OEM vide letter no. KHG / BM / Corr. 362 / 13416 Dtd.26/10/2009 Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL. Will be taken in EER&M		BM	EER&M
25			UNIT-1	4	Smart soot blower system.		Action will be taken after installation in CSTPS Unit-5 or 6, on trial basis. (Decision as per MOM No.CE/WORKS/CPRI-Consultation/		TIC	EER&M

							No.09510 dt.26.07.2011)			
26			UNIT-1	5	Replacement of AVR (automatic voltage regulator) by digital voltage regulator (DVR).		Material received. Shall be commissioned for U1 in AOH in Jan12		TIC	
27			UNIT-2	6	Replacement of APH baskets with longer basket length, better material and better heat transfer; and hydrodynamic geometric profile & regenerative dynamic sealing		Referred to OEM vide letter no. KHG / BM / Corr. 362 / 13416 Dtd.26/10/2009 Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL. Will be taken in EER&M		BM	EER&M
28			UNIT-2	7	Replacement of AVR (automatic voltage regulator) by digital voltage regulator (DVR).		Work will be carried out in 2012-2013.		TIC	
29			UNIT-2	8	Smart soot blower system.		Action will be taken after installation in CSTPS Unit-5 or 6, on trial basis. (Decision as per MOM No.CE/WORKS/CPRI-Consultation/No.09510 dt.26.07.2011)		TIC	EER&M

30			UNIT-3	9	Replacement of APH baskets with longer basket length, better material and better heat transfer; and hydrodynamic geometric profile.		Referred to OEM vide letter no. KHG / BM / Corr. 362 / 13416 Dtd.26/10/2009 Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL. Planned in FY 13-14 subject to approval of OEM		BM	Budgetary offer
31			UNIT-3	10	Smart soot blower system		Action will be taken after installation in CSTPS Unit-5 or 6, on trial basis. Decision as per MOM No.CE/WORKS/CPRI-Consultation/No.09510 dt.26.07.2011		TIC	
32			UNIT-4	11	Replacement of APH baskets with longer basket length, better material and better heat transfer; and hydro dynamic geometric profile.		Referred to OEM vide letter no. KHG / BM / Corr. 362 / 13416 Dtd.26/10/2009 Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL. Planned in FY 13-14 subject		BM	Budgetary offer

							to approval of OEM			
33			UNIT-4	12	Smart soot blower system.		Action will be taken after installation in CSTPS Unit-5 or 6, on trial basis. Decision as per MOM No.CE/WORKS/CPRI-Consultation/ No.09510 dt.26.07.2011		TIC	
34	31	22	STATION	1	Introduction of digital AVR system		Material received. Will be commissioned in Jan12 forU1		TIC	
35			STATION	2	Replacement of APH seals.	Jan-00	Already in practice as damaged APH seals are replaced during short shutdowns & full set is replaced during overhauls.		BM	
36			STATION	3	Reducing the pressure drop in flue gas duct and ESP.		For Unit 1 & 2 included in boiler re-engineering. For unit 3 & 4 reply is awaited from M/s BHEL Reminder letter is sent on dt. 19/12/2009 Second Reminder is sent on date 03/04/2010.		BM & AHP	EER&M

							Data of pressure drop across ESP will be sent to BHEL shortly			
37			STATION	4	Improving the BFP efficiency by overhauling of pump & motors	Jan-00	Already in practice. BFP 1A cartridge replaced in 2009 ,2A in Feb 10, 3A in Nov 10, 3C in Mar 11. Action plan is prepared for Unit no. 4 BFP.		TM & EM	
38			STATION	5	Improving the CEP efficiency by overhauling of pump & motors	Jan-00	Pump overhauling done during respective units AOH. Preventive maintenance & Motor overhaul done periodically.		TM & EM	
39			STATION	6	Optimizing the PA flow at mills.	Jan-00	PA flow is maintained proportional to coal flow.	Improvement in mill performance	Operation	
40			STATION	7	Improving the PAF efficiency by overhauling of fans & motors	Jan-00	EM : Already in practice. BM : Fans are overhauled as per schedule of replacement		BM & EM	

							of liners or AOH			
41			STATION	8	Installation of intelligent motor controller for conveyor motors.		Budgetary offer for VFD (110 KW) for Conv. 2C & 2D motor is received & proposal will be processed in DEC-2011.		CHP	
42			STATION	9	Installation of intelligent motor controller for chimney fan motors.	Jan-00	For energy conservation ,it is occasionally run, hence differed		EM	
43			STATION	10	Replacement of CT fan blades from GRP to FRP and resizing the motor to 75 kW.	Jan-10	Replaced in U1 and shall be replaced for other units in phased manner		TM & EM	
44			STATION	11	Installation of intelligent motor controller for service air compressor at WTP and air compressor at Ozone plant.		Budgetary offer not received.		EM	Budgetary offer
45			UNIT-1	12	Replacement of major extraction & NRV	Jan-00	Extraction valve and major NRVs servicing and rectification is carried out. Regular practice during overhauls		TM	

46			UNIT-1	13	Long retractory soot blowers may be re-commissioned.		M/s BHEL have replied that issues have been taken with sister units for analysing the problems. Reply is awaited. Reminder on 18/03/2010 is sent to M/s BHEL.		BM	Budgetary offer
47			UNIT-1	14	Replacement of HP Heater 5	Jan-00	The performance of the heater is satisfactory		TM	
48			UNIT-1	15	Replacement of HP Heater 6	Jan-10	Replaced in Jan2010. Gain in HR by 20Kcal/kwhr		TM	
49			UNIT-1	16	Replacement of APH seals.	Jan-00	Replacement of APH seals have been carried out in AOH Jan 10		BM	
50			UNIT-1	17	Reducing the pressure drop in flue gas duct and ESP		Will be included in EER&M		BM & AHP	EER&M
51			UNIT-2	18	Replacement of HP heater 6	Sep-10	Replacement carried out in COH Sept 2010.		TM	
52			UNIT-2	19	Replacement of HP heater 5	Jan-00	Inspection of parting plane baffle, tube leak carried out in COH Sept 2010.Performance found OK.		TM	
53			UNIT-2	20	Long retractory soot blowers may be re-commissioned.		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM	Budgetary offer

54			UNIT-2	21	Replacement of Extraction & NRVs with valves of better materials	Oct-10	Valves servicing, reconditioning carried out in COH Sept 2010..		TM	
55			UNIT-2	22	Replacement of APH seals.	Jan-00	Work completed in AOH in Sept 10		BM	
56			UNIT-2	23	Reducing the pressure drop in flue gas duct and ESP		Will be included in EER&M		BM & AHP	EER&M
57			UNIT-3	24	Replacement of major extraction & NRVs with valves of better materials.	Jan-00	Performance of the valves checked. Found normal. Regular practice during overhauls		TM	
58			UNIT-3	25	Long refractory soot blowers may be re-commissioned.		Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM	Budgetary offer
59			UNIT-3	26	Replacement of APH seals.	May-11	Full set of seals is replaced during overhauls.		BM	
60			UNIT-3	27	Reducing the pressure drop in flue gas duct and ESP	May-11	CAVT is carried out during AOH/COH for flue gas path from APH outlet to ESP inlet and diverting plated are provided accordingly. Work done in AOH in May 2011.		BM & AHP	

61			UNIT-4	28	Replacement of major extraction & NRVs with valves of better materials.	Jan-11	Action plan implemented in COH Jan 2011		TM	
62			UNIT-4	29	Long retractory soot blowers may be re-commissioned.	Jan-11	Reminder vide letter no. KHG/BM/CORR./2010/336/11898 Dtd. 31/08/10 is sent to M/s. BHEL.		BM	
63			UNIT-4	30	Replacement of APH seals.	Jan-11	Already in practice. Seals replaced in forthcoming overhaul in Jan-2011.		BM	
64			UNIT-4	31	Reducing the pressure drop in flue gas duct and ESP	Jan-11	CAVT is carried out during AOH/COH for flue gas path from APH outlet to ESP inlet and diverting plated are provided accordingly. Work carried out in COH in Jan 2011.		BM & AHP	
	64	**30**				**30**				