Annex – 6
(Long Term Measures)

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

S. N.	Project Code	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	P2	1	0	STATION	1	Installation of dry fly ash evacuation system at Stage-I		M/s.Ambuja cement Ltd started work in Nov 11 &will be completed in July 12.		AHP	
2	P5	1	0	STATION	1	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries		Pressure and Flow Transmitters for BFP, CEP & PA are available. Procurement will be done for CW flow in 12-13		TIC	C.W. flow measurement is not available for sp.power consumption.
3	P5	2	0	UNIT-1	2	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries		Only CW flow measurement is not available for sp power consumption.		TIC	
4	P5	3	0	UNIT-2	3	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries		Only CW flow measurement is not available for sp power consumption.		TIC	
5	P5	4	0	UNIT-3	4	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries		Only CW flow measurement is not available for sp power consumption.		TIC	
6	P5	5	1	UNIT-4	5	Installation of pressure and flow transducers to monitor the SEC for major auxiliaries		Only CW flow measurement is not available for sp power consumption.		TIC	

7	P12	1	20	UNIT-1	1	HPT retrofit		Order placed on BHEL for New HPT module for U 1. Replacement will be carried out during COH after receipt of material in Dec12		TM	
8	P12	2	20	UNIT-1	2	Water wall circulation upgrade to increase circulation ratio by 20 % through replacement of drum internals, forced circulation water walls or internally profiled/finned tube risers to enhance the heat transfer area of the water.		M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that the water wall circulation upgrade with forced circulation system is a major modification shall result into entire circulation system change from downcomers, ring headers, complete water wall & introduction of circulating pump etc. which is not a normal feature in a 210 MW units (which are generally natural circulation units). Unit no. 3 & 4 is also natural circulation units only. Hence this option is not a techo-economically suitable one.		BM	Not feasible
9	P12	3	20	UNIT-1	3	Boiler re-engineering for high ash coals		Work will be carried out in R&M in FY 15-		BM & AHP	EER&M

								16			
10	P12	4	20	UNIT-1	4	Replacement of ECO nest with improved design of ECO with improved gas velocity, Ceramic / hard coated steel cassette baffles and tube material up gradation.	Feb-10	Complete replacement of ECO coils is carried out during COH. Coils & Cassette baffles have been replaced. Cassette baffles found in good condition & extent of erosion is minimum. Therefore there is no need of material up gradation at present. However will be taken into consideration during next replacement.		BM	
11	P12	5	19	UNIT-1	5	Replacement of LTSH coils giving consideration to improvement in gas velocity, erosion protection devices and material up gradation.	Feb-10	As per observation up gradation of material is not necessary. Complete replacement of LTSH coils carried out during capital overhaul Jan 2010.		BM	
12	P12	6	18	UNIT-1	6	PADO (Performance analysis, diagnostic and optimization) software may be installed typically of BHEL or Teleperm		Earlier version of PADO i.e. Performance Evaluation Module is already available. Up gradation will be done in 2012-2013		TIC	

13	P12	7	19	UNIT-1	7	Increase in capacity of data highway and data storage & modernize the C & I system.		EAST package will be replaced by MAXDNA Budgetary offer is called. DPR under process.		TIC	
14	P12	8	19	UNIT-1	8	Installation of fixed capacitor banks at UAT secondary	Jul-11	The power factor correction and power saving are the main areas on the basis of which the suggestion was given. However if benefits are lower then power factor issue may be absorbed and recommendation may be differed. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		EM	Differed
15	P12	9	18	UNIT-2	9	HPT retrofit	Jul-11	Action plan will be prepared after receipt of new HPT module for Unit. No. 1 Refurbishment of spare module will be carried out for replacement in U2		TM	

16	P12	10	17	UNIT-2	10	Water wall circulation upgrade (20 %) through replacement of drum internals, forced circulation water walls and/ or internally profiled/ finned tube risers.	Jul-11	M/s. BHEL have replied vide letter no. R&M / Engg. Dtd. 08/09/2009 that the water wall circulation upgrade with forced circulation system is a major modification shall result into entire circulation system change from downcomers, ring headers, complete water wall & introduction of circulating pump etc. which is not a normal feature in a 210 MW units (which are generally natural circulation units). Unit no. 3 & 4 is also natural circulation units only. Hence this option is not a techo-economically suitable one.		BM	Not feasible
17	P12	11	17	UNIT-2	11	PADO (Performance analysis, diagnostic and optimization) software may be installed typically of BHEL or Teleperm.	Jul-11	Up gradation will be done in 2012-2013		TIC	

18	P12	12	16	UNIT-2	12	Replacement of ECO nests with better design and upgraded material.	Jul-11	Complete replacement of ECO coils is carried out during AOH in Sept 2010. Cassette baffles found in good condition & extent of erosion is minimum. Therefore there is no need of material up gradation at present. However will be taken into consideration during next replacement.		BM	
19	P12	13	16	UNIT-2	13	Replacement of LTSH coils giving consideration to improvement in gas velocity, erosion protection devices and material up gradation.	Jul-11	Complete replacement of ECO coils is carried out during AOH in Sept 2010. Cassette baffles found in good condition & extent of erosion is minimum. Therefore there is no need of material up gradation at present. However will be taken into consideration during next replacement.		BM	
20	P12	14	15	UNIT-2	14	Boiler re-engineering for high ash coals	Jul-11	Work will be carried out in R&M in FY 15-16		BM	EER&M

21	P12	15	15	UNIT-2	15	Increase in capacity of data highway and data storage & modernize the C & I system.	Jul-11	EAST package will be replaced by MAXDNA Budgetary offer is called. DPR under process.		TIC	
22	P12	16	14	UNIT-2	16	Installation of fixed capacitor banks at UAT secondary	Jul-11	The power factor correction and power saving are the main areas on the basis of which the suggestion was given. However if benefits are lower then power factor issue may be absorbed and recommendation may be differed. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		EM	Differed
23	P12	17	14	UNIT-3	17	HPT retrofit	Jul-11	HPT, IPT glands refining carried out in May 11 during COH.		TM	
24	P12	18	13	UNIT-3	18	Capability upgrade of instruments and controls	Jul-11	HMI system will be installed. PR under preparation		TIC	
25	P12	19	12	UNIT-3	19	Replacement of ECO nest with improved design of materials, erosion control and performance	Jul-11	Complete set of Economiser coils replaced during AOH in MAY 2011. (19/05/2011)		BM	

26	P12	20	11	UNIT-3	20	Installation of fixed capacitor banks at UAT secondary	Jul-11	The power factor correction and power saving are the main areas on the basis of which the suggestion was given. However if benefits are lower then power factor issue may be absorbed and recommendation may be differed. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		EM	Differed
27	P12	21	10	UNIT-4	21	HPT retrofit	Jul-11	Action plan implemented in COH Jan 2011		TM	
28	P12	22	9	UNIT-4	22	Modernization of instruments and controls including data highway and data storage	Jul-11	HMI system will be installed. PR under preparation		TIC	
29	P12	23	8	UNIT-4	23	Performance analysis software with provision for data downloadable into a data base and EXCEL sheet can be procured for on- line analysis of performance. The same can also be used for sensitivity analysis of parameter variations for performance improvement. Alternatively, PADO (Performance analysis, diagnostic and optimization)	Jul-11	Earlier version of PADO i.e. Performance Evaluation Module is already available. Up gradation will be done in 2012-2013 .HMI system will be installed		TIC	

						software may be installed typically of BHEL or Teleperm.					
30	P12	24	7	UNIT-4	24	Installation of fixed capacitor banks at UAT secondary	Jul-11	The power factor correction and power saving are the main areas on the basis of which the suggestion was given. However if benefits are lower then power factor issue may be absorbed and recommendation may be differed. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		EM	Differed

31	P12	25	6	STATION	25	Installation of fixed capacitor banks at UAT secondary	Jul-11	The power factor correction and power saving are the main areas on the basis of which the suggestion was given. However if benefits are lower then power factor issue may be absorbed and recommendation may be differed. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		EM	Differed
32	P13	1		STATION	1	Installation of VFD for ID fans (Stage-I)		Planned in EER&M 15-16		TIC	EER&M
33	P13	2		STATION	2	Installation of VFD for FD fans		Planned in EER&M 15-16		TIC	EER&M
34	P13	3		UNIT-1	3	VFD for FD fan		Vijaywada TPS has VFD for FD fan and CSTPS team may visit to assess the benefits of the scheme. The implementation decision shall be based on visit & study outcome. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		TIC	EER&M
35	P13	4		UNIT-1	4	Installation of VFD for ID fans .		Work will be carried out during R&M		BM & TIC	EER&M

36	P13	5		UNIT-1	5	Installation of VFD for FD fans		Work will be carried out during R&M		BM & TIC	EER&M
37	P13	6		UNIT-1	6	Capital overhaul, restoration of the steam paths in steam turbine	Jan-10	IPT and LPT steam flow path corrected as per design values in AOH Jan10		TM	
38	P13	7		UNIT-2	7	VFD for FD fan		Vijaywada TPS has VFD for FD fan and CSTPS team may visit to assess the benefits of the scheme. The implementation decision shall be based on visit & study outcome. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		TIC	EER&M
39	P13	8		UNIT-2	8	Installation of VFD for ID fans .		Work will be carried out during R&M		TIC	EER&M
40	P13	9		UNIT-2	9	Installation of VFD for FD fans		Work will be carried out during R&M		TIC	EER&M
41	P13	10		UNIT-2	10	Capital overhaul, restoration of the steam paths in steam turbine	Sep-10	Revisioning of steam path, correction in HPT & IPT carried out in COH Sept 2010..		TM	

42	P13	11		UNIT-3	11	VFD for FD fan		Vijaywada TPS has VFD for FD fan and CSTPS team may visit to assess the benefits of the scheme. The implementation decision shall be based on visit & study outcome. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		TIC	
43	P13	12		UNIT-3	12	Capital overhaul, restoration of the steam paths in steam turbine	Nov-09	Performance checked. Found normal. Regular practice during overhauls		TM	
44	P13	13		UNIT-4	13	VFD for FD fan		Vijaywada TPS has VFD for FD fan and CSTPS team may visit to assess the benefits of the scheme. The implementation decision shall be based on visit & study outcome. (Decision as per MOM No.CE/WORKS/ CPRI-Consultation/No. 09510 dt.26.07.2011)		TIC	
45	P13	14		UNIT-4	14	Capital overhaul, restoration of the steam paths in steam turbine	Jan-11	Action plan implemented in COH Jan 2011		TM	
	Total	**446**	**374**		**45**		**24**				