

KPCL/Yelahanka 	KARNATAKA POWER CORPORATION LIMITED 370 MW Yelahanka CAPP TITLE PROJECT INFORMATION	SECTION: B VOLUME-II SHEET 1 OF 1
1.0 Owner 2.0 Project Title 3.0 Location 4.0 Latitude and Longitude 5.0 Elevation above mean sea level 6.0 <u>Climatic Conditions</u> (a) <u>Temperature</u> i. <u>Monthly basis</u> Mean of daily maximum temperature Mean of daily minimum temperature ii Highest temperature recorded iii Lowest temperature recorded (b) Relative Humidity (c) <u>Rainfall</u> Annual average rain (d) <u>Wind Speed</u> i. Annual mean wind speed ii. Maximum mean wind speed iii Design Wind Speed Design Temperature : 7.0 Seismic data Zone	: Karnataka Power Corporation Ltd Shakthi Bhavan No.82, Race Course Road Bangalore-560 001 Karnataka, India : 1x370 MW Yelahanka CAPP : Doddaballapur Road, Yelahanka, Bangalore.-560064 Bangalore Dist Karnataka state,India : 13° 07' N Latitude 77° 35' E Longitude : 900 meters : 37° C : 11.5° C : 39°C : 9.9°C : Varies between 60% and 90% : 970 mm : 2.82 m/s : 3.71 m/s in the month of June. : 33 M/sec (As per IS: 875) : 28°C : : Seismic Zone II As per IS 1893	

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	2003						2004					
Month	Temperature in deg.Celsius				Mean RH %		Temperature in deg.Celsius				Mean RH %	
	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.
Jan	28.6	31.6	16.0	13.9	80	43	28.8	31.1	16.2	13.7	81	42
Feb	31.7	33.2	18.9	16.9	75	35	31.1	34.1	16.9	15.1	64	31
Mar	33.6	35.4	20.4	17.2	67	33	34.3	36.2	20.0	15.7	58	22
Apr	34.2	36.0	22.3	19.9	74	41	34.2	37.0	22.4	18.7	72	39
May	35.2	37.6	22.8	21.0	71	34	29.9	34.6	20.8	18.7	84	71
Jun	31.6	38.1	21.1	19.5	84	62	29.0	31.2	20.0	19.2	86	65
Jul	29.3	31.3	20.5	19.5	87	68	28.3	31.8	19.8	17.7	89	71
Aug	28.6	31.6	20.3	19.0	88	68	28.1	30.7	19.7	18.9	86	69
Sep	29.1	31.8	19.8	18.7	81	58	28.0	31.1	19.9	18.6	88	72
Oct	28.7	30.6	19.9	17.3	85	72	28.0	31.4	19.4	17.7	86	71
Nov	27.8	29.4	18.0	15.0	80	60	26.8	29.0	17.6	14.8	79	62
Dec	27.8	31.1	16.0	13.0	76	48	28.1	29.9	15.4	13.0	76	46

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Month	2005						2006					
	Temperature in deg.Celsius				Mean RH %		Temperature in deg.Celsius				Mean RH %	
	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.
Jan	29.3	31.8	16.8	13.9	79	42	28.5	32.5	16.0	13.4	72	42
Feb	31.6	35.9	17.9	14.3	64	29	30.6	34.1	15.5	12.3	59	25
Mar	33.6	36.4	20.5	17.2	68	27	32.0	34.4	19.9	17.9	69	37
Apr	32.7	35.4	21.7	19.9	72	47	33.8	36.3	22.3	19.6	72	37
May	33.9	37.4	21.7	18.5	78	47	32.4	37.0	21.4	19.4	76	55
Jun	30.3	33.8	20.8	19.3	84	60	29.6	32.2	20.4	19.0	83	66
Jul	28.5	30.4	20.2	18.3	89	70	28.5	30.9	20.1	18.5	84	63
Aug	28.1	30.5	19.9	18.6	87	68	29.0	31.6	20.1	19.3	83	62
Sep	28.2	31.5	19.9	18.8	87	66	29.9	32.4	20.5	19.5	91	61
Oct	27.4	30.5	19.7	16.6	91	78	29.5	31.4	20.0	18.8	81	63
Nov	26.2	29.9	17.3	13.5	82	67	27.7	30.6	19.0	16.6	83	68
Dec	26.8	29.4	16.6	13.6	80	61	27.1	28.2	15.8	14.2	83	56

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	2007						2008					
Month	Temperature in deg.Celsius				Mean RH %		Temperature in deg.Celsius				Mean RH %	
	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.
Jan	28.9	32.1	15.8	14.2	79	40	29.2	31.2	16.1	13.6	77	38
Feb	30.9	33.8	17.3	13.7	73	38	29.9	33.1	18.6	16.0	75	41
Mar	33.9	35.9	20.8	18.6	65	25	30.3	32.6	19.1	14.4	69	44
Apr	34.1	36.4	21.7	18.2	71	34	33.0	36.9	21.5	18.9	71	37
May	33.4	35.8	22.0	20.0	76	52	34.1	36.0	21.6	20.3	76	46
Jun	29.9	34.4	20.9	19.7	81	61	29.5	32.0	20.4	18.7	83	59
Jul	28.8	30.2	20.4	18.8	86	68	28.7	32.4	20.1	18.6	87	67
Aug	27.9	31.7	20.1	19.1	88	71	27.7	29.9	20.2	19.2	89	72
Sep	28.0	31.3	20.0	18.8	88	69	28.5	31.6	19.8	18.4	85	60
Oct	28.5	32.3	19.7	16.7	82	64	28.1	31.4	19.4	14.7	85	70
Nov	27.9	30.1	17.4	12.7	71	56	27.6	30.0	17.9	15.0	78	58
Dec	26.3	29.6	16.5	11.8	81	57	27.3	28.7	16.4	13.9	80	49

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	2009						2010					
Month	Temperature in deg.Celsius				Mean RH %		Temperature in deg.Celsius				Mean RH %	
	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830 hrs.	1730 hrs.
Jan	28.1	31.9	15.3	12.1	78	38	28.1	29.5	17.1	14.1	82	41
Feb	31.8	35.2	17.7	15.3	63	26	31.8	34.4	18.2	14.3	72	29
Mar	33.1	35.5	20.4	17.3	66	28	34.5	35.7	21.3	18.5	68	27
Apr	34.5	37.0	22.2	20.0	70	30	34.5	37.6	22.7	20.3	71	43
May	32.8	36.9	21.6	19.2	79	53	33.0	36.2	22.3	19.3	78	52
Jun	29.7	31.8	20.4	18.4	84	61	29.9	34.0	21.2	19.5	86	66
Jul	27.9	30.0	20.1	19.4	86	66	27.5	30.2	20.3	19.1	89	72
Aug	28.6	31.1	20.3	19.3	87	65	27.4	29.8	20.5	18.8	88	69
Sep	28.1	31.3	20.2	18.2	88	73	27.8	31.8	20.2	18.7	89	67
Oct	28.8	31.0	19.4	17.9	77	53	28.5	30.4	20.4	18.4	87	69
Nov	27.4	29.9	19.3	15.5	84	67	26.4	29.2	19.3	17.5	88	74
Dec	27.0	29.3	17.7	15.0	84	62	26.4	29.9	16.9	12.9	85	56

29.82 37 19.55 12.1

29.65 37.6 20.03 12.9

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	2011						2012					
Month	Temperature in deg.Celsius				Mean RH %		Temperature in deg.Celsius				Mean RH %	
	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830hrs.	1730hrs.	Mean Max	Highest Max.	Mean Min.	Lowest Min.	0830hrs.	1730hrs.
Jan	28.9	31.3	15.7	12.6	71	34	28.9	30.6	16.2	12.0	78	38
Feb	30.1	32.2	16.9	14.0	64	29	31.4	35.4	17.2	14.0	69	25
Mar	33.1	34.8	19.4	15.2	61	22	34.4	35.6	20.6	17.7	66	23
Apr	33.1	34.6	21.6	19.1	78	44	34.9	37.5	22.6	20.7	72	34
May	32.4	34.8	21.3	19.3	80	55	33.0	35.2	22.1	19.5	79	47
Jun	29.0	30.9	20.4	19.2	88	69	30.9	34.1	21.0	20.0	77	51
Jul	28.1	30.4	20.1	18.9	88	68	28.8	32.2	20.4	19.2	84	59
Aug	27.5	30.2	20.1	19.2	89	73	28.5	32.4	20.2	19.5	86	66
Sep	28.3	30.8	20.1	18.2	86	62	29.2	32.5	20.3	19.2	82	56
Oct	29.3	31.0	20.3	18.2	87	71	28.5	32.3	19.6	18.0	81	61
Nov	27.3	29.5	17.9	15.0	78	61	28.1	30.8	17.6	13.3	75	52
Dec	27.4	29.8	16.3	12.8	77	47	28.0	30.7	16.9	14.4	81	48

29.60 34.8 17.5 12.0

30.36 37.5 19.56 12.0

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BANGALORE 560 001

Annexure-1 to MOM dtd 20/2/2015

KARNATAKA POWER CORPORATION LIMITED

TITLE

350MW YCCP PLANT

QUALITY OF TREATED WATER

Sl. No.	Particulars	Units	Value specified by KPCL	Values Agreed by BWSSB
		Hazen Units	<5	<5
1	Colour		Unobjectionable	Unobjectionable
2	Odour		0.6	0.6
3	Turbidity	NTU	7.2-7.3	7.2-7.3
4	pH value		1.2	<5
5	BOD	ppm	4.9	<10
6	COD	ppm	4.0	4.0
7	Total Suspended Solids	ppm	774	<800
8	Total Dissolved Solids	ppm	24.7	24.7
9	Alkalinity	ppm	41.45	<200
10	Chloride as Cl	ppm	129	<60
11	Sulphates as SO ₄	ppm	23.5	23.5
12	Silica - dissolved as Si O ₂	ppm	3	3
13	Silica - colloidal as Si O ₂	ppm	140	140
14	Ca hardness - as CaCO ₃	ppm	94	94
15	Mg hardness - as CaCO ₃	ppm	234	300
16	Total hardness - as CaCO ₃	ppm	12.14	12.14
17	% Sodium	ppm	6.57	6.57
18	Ammonical Nitrogen	ppm	0.31	0.31
19	Iron as Fe	ppm	<0.05	<0.05
20	Manganese as Mn	ppm	3.4	3.4
21	Total Kjeldhal Nitrogen	ppm	<0.5	<0.5
22	Total Residual Chlorine	ppm	1.3	1.3
23	Phosphate as PO ₄	ppm	<0.1	<0.5
24	Free Ammonia	ppm	0.56	1.0
25	Total Phosphorus	ppm	<1.0	<1.0
26	Oil & Grease	ppm	1.3	1.3
27	Nitrate nitrogen	ppm	<0.05	<0.05
28	Sulphide	ppm	0.39	0.39
29	Flouride as F	ppm	<0.05	<0.05
30	Copper as Cu	ppm	<0.05	<0.05
31	Zinc as Zn	ppm	<0.02	<0.02
32	Lead as Pb	ppm	<0.05	<0.05
33	Total Chromium as Cr	ppm	<0.001	<0.001
34	Mercury as Hg	ppm	<0.05	<0.05
35	Cyanide as CN	ppm	<0.05	<0.05
36	Phenolic Compounds as C ₆ H ₅ OH	ppm	<0.05	<0.05
37	Nickel as Ni	ppm	<0.001	<0.001
38	Arsenic as As	ppm	15 x 10 ⁶	<1
39	Coliform Organisms/100ml	ppm	15 x 10 ⁶	<1
40	Faecal Coliform Organisms/100ml	ppm	2	<1
41	MPN Count/100ml		Present	-
42	E-Coli			

* The worst TDS expected from the tertiary water is about 800 ppm. The equipment/system shall be designed for the same.

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CHIEF ENGINEER (G.S W)
Karnataka Power Corporation Ltd.