

CORRIGENDUM - 1 dated 20.03.2021 TO TENDER SPECIFICATION BHEL PSSR SCT 1950

Sub: Design, Manufacturing, Supply, Receipt at Site, Erection & Finishing works including Civil foundation, structural fabrication & erection, architectural and electrical works etc., and Handing over to site Removable/ Re-erectable type Pre-Engineered, Pre- fabricated Steel Sheds (I. Grit blasting & Painting shed for pipes – 1 No, II. Grit blasting & Painting shed for structures – 3 Nos) at 2x1000MWe Kudankulam Nuclear Power Project at Kudankulam, Radhapuram Taluk, Tirunelveli District of Tamil Nadu, India.

A. The following clarifications are provided in response to queries received from bidders.

S No	Clause No	Existing in tender	Bidder's query	BHEL's Reply
1.	Vol-IA Part – II Chap -2 Technical Specification	2.1.2 Design considerations: i. Size of the shed - 30M c/c x15M c/c X6M height (approximate)	In tender Vol-IA Part – II Chap -2 Technical Specification the size of building only specified the spacing of column size not furnished on both sides	<i>Design is in the scope of bidder</i> and the column spacing shall be as per the design by bidder as per the technical specifications.
2.	Vol-IA Part – II Chap -2 Technical Specification	2.1.3 and 2.2.3 CIVIL WORK DESIGN viii. SBC of soil may be considered as 25T for foundation for design of Civil foundations.	SBC of soil is given 25 Mt/Sqm without specifying the depth	3 to 4 m depth. Bidder shall also refer to the bore log data provided.
3.	–	–	Please furnish Bore Hole details of nearest site location	Please find enclosed (Annexure-1 – 5 pages) the nearby area bore log data.
4.	Clause 1.0 Salient Features of NIT, Sl.No. vii) EMD Amount	Rs.3,40,000/- (Rupees Three Lakhs Forty Thousand only) - Refer Vol-1A Part-II Chapter-1 of Technical Conditions of Contract (Volume-I, Book-I) for mode of payment of EMD. - Exemption of EMD for MSEs is not applicable for this tender. - One time EMD is not applicable for this tender	EMD exemption considering MSME vendor and COVID 19 pandemic situation.	Exemption of EMD for MSEs is not applicable for this tender. Accordingly, tender condition prevails.

NOTE:

- ALL OTHER CONDITIONS REMAIN UNCHANGED.
- BIDDERS ARE REQUESTED TO CONSIDER THIS CORRIGENDUM AS PART OF TENDER SPECIFICATION AND QUOTE ACCORDINGLY.

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R.Siva
Dy. Manager/SCT

Project		: Confirmatory Sub Soil Investigation at Kudankulam Nuclear Power Project (KKNPP) Unit 5 & 6, Kudankulam																						
Client		: SRC Projects Pvt. Ltd.																						
Equipment		: Hydraulic Rotary					Location					: OESC Building					Borehole No.			: BH-32				
Drilling orientation		: Vertical					Type of core barrel					: Double Tube					Co-ordinates			: N 1372.45 E -610.41				
Drilling method		: Rotary borehole drilling, sampling and testing					Type of Bit					: Diamond					Date			: 14/09/2019 - 21/09/2019				
Casing size		: HX/NX					Drilling Fluid					: Water					R.L. (m)			: 28.90				
Casing depth (m)		: HX:4.50m/NX:5.50m					Core diameter, mm					: 54					T.D. (m)			: 50.00 w.r.t. EGL				
FIELD INFORMATION (BOREHOLE LOG)																	Laboratory Testing Results							
Depth below EGL, m	Sample Depth below EGL, m	Sample Type	In-situ Tests	Reduced Level, m	Symbol	Description	TCR, %	SCR, %	RQD, %	WG	Fracture Index	Rock Piece	Water Loss Observations	Lugeon Value	PMT Results, MPa	Special Observations / Remarks	Point Load Index	UCS (Sat.), MPa	UCS (Dry), MPa	BTT, MPa				
0	0.00 - 0.50			28.90		0.00 m to 1.50 m - Light brown sandy clayey SILT, with organic matter										0.00m-4.50m:								
1																								
2	1.50 - 1.95				27.40		1.50 m to 4.20 m - Dense brown fine to medium subrounded to subangular SAND																	
3	3.00 - 3.45																							
4																								
5	4.20 - 4.30 4.30 - 5.50			24.70 24.60		4.20 m to 4.30 m - Very dense brown sandy coarse to medium GRAVEL	34	7	0	II-III	n.i.	1	4	P			4.50m-7.00m: Discontinuity angle of rock piece 7 is 55 deg Discontinuity angle of rock piece 8 & 9 is 88 deg							
6	5.50 - 7.00					4.30 m to 7.00 m - Weak to Average strength moderately weathered brown to whitish brown CHARNOCKITE with very closely to closely spaced subhorizontal to subvertical fractures	49	18	10	II-III	n.i.	5	8	P										
7	7.00 - 8.50																							
8																								
9	8.50 - 10.00			21.90		7.00 m to 10.00 m - Average to Strong moderately weathered grey to brownish grey CHARNOCKITE with medium to closely spaced horizontal to subvertical fractures	78	33	31	III-II	n.i.	9	16	P		7.00m-10.00m: Discontinuity angle of rock piece 9, 10, 11, 12, 13, 19, 18 & 19 is (75-88) deg								
10																								
							97	86	86	III-II	10	17	30	P			8.8	57.5						
																			83.6	12.6				

Abbreviations & Symbols											
	- DS (Disturbed Sample)		- SPT (Standard Penetration Test)	PMT - Pressuremeter Test				WG - Weathering Grade			
	- RC (Rock Core)		- Falling Head Permeability Test	E - Elastic Modulus from PMT (Top Value)				ROP - Rate of Penetration (Coring Rate)			
	- Wash Boring		- Packer Permeability Test	G - Shear Modulus from PMT (Bottom Value)				C - Complete Water Loss			
	- Ground Water Level		- Pressuremeter Test	T.D. - Termination Depth				P - Partial Water Loss			
				EGL - Existing Ground Level				N - No Water Loss			
				R.L. - Reduced Level				UCS - Unconfined Compressive Strength			
				BTT - Brazilian Tensile Test				LL - Liquid Limit			
				n.i. - non-intact core (Fracture index >10) Blank values indicate intact rock.				PI - Plasticity Index			

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Drilling orientation		: Vertical				Type of core barrel		: Double Tube				Co-ordinates								: N 1372.45 E -610.41		
Drilling method		: Rotary borehole drilling, sampling and testing				Type of Bit		: Diamond				Date								: 14/09/2019 - 21/09/2019		
Casing size		: HX/NX				Drilling Fluid		: Water				R.L. (m)								: 28.90		
Casing depth (m)		: HX:4.50m/NX:5.50m				Core diameter, mm		: 54				T.D. (m)								: 50.00 w.r.t. EGL		
FIELD INFORMATION (BOREHOLE LOG)																		Laboratory Testing Results				
Depth below EGL, m	Sample Depth below EGL, m	Sample Type	In-situ Tests	Reduced Level, m	Symbol	Description	TCR, %	SCR, %	RQD, %	WG	Fracture Index	Rock Piece		Water Loss Observations	Lugeon Value	PMT Results, MPa	Special Observations / Remarks	Point Load Index	UCS (Sat.), MPa	UCS (Dry), MPa	BTT, MPa	
10	10.00 - 11.50			18.90	+	10.00 m to 14.50 m - Strong slightly weathered light grey to grey CHARNOCKITE with medium to very closely spaced horizontal to subvertical fractures	94	77	76	I-II	8	31	43	P			10.00m-11.50m: Discontinuity angle of rock piece 37 & 38 is 30 deg			83.6		
11					+																	
	11.50 - 13.00				+			65	43	39	I-II		44	50	P			11.50m-14.50m:				
12					+																	
13	13.00 - 14.50				+	14.50 m to 35.50 m - Strong to Average strength slightly weathered light grey to grey CHARNOCKITE with closely to widely spaced horizontal to subvertical fractures	100	77	76	I-II	6	51	59	P					91.7			
14					+																	
15	14.50 - 16.00			14.40	+		100	72	72	I-II	10	60	68	P			14.50m-16.00m: Discontinuity angle of rock piece 60 & 61 is 88 deg					
16					+													Discontinuity angle of rock piece 61 & 62, 62 & 63, 67 & 68, 69 & 70 is 88 deg				
17	16.00 - 17.50				+		94	69	64	I-II	6	69	77	P			16.00m-20.50m:					
18					+																	
19	17.50 - 19.00				+		95	87	86	I-II	7	78	88	P								
20					+																	
20	19.00 - 20.50				+					I-II				P								
20					+																	
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 - Ground Water Level						 - Pressuremeter Test						BTT - Brazilian Tensile Test						LL - Liquid Limit				
												n.i. - non-intact core (Fracture index >10)						PI - Plasticity Index				
												Blank values indicate intact rock.										

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Equipment	: Hydraulic Rotary	Location	: OESC Building
Drilling orientation	: Vertical	Type of core barrel	: Double Tube
Drilling method	: Rotary borehole drilling, sampling and testing	Type of Bit	: Diamond
Casing size	: HX/NX	Drilling Fluid	: Water
Casing depth (m)	: HX:4.50m/NX:5.50m	Core diameter, mm	: 54
		Borehole No.	: BH-32
		Co-ordinates	: N 1372.45 E -610.41
		Date	: 14/09/2019 - 21/09/2019
		R.L. (m)	: 28.90
		T.D. (m)	: 50.00 w.r.t. EGL

FIELD INFORMATION (BOREHOLE LOG)																	Laboratory Testing Results				
Depth below EGL, m	Sample Depth below EGL, m	Sample Type	In-situ Tests	Reduced Level, m	Symbol	Description	TCR, %	SCR, %	RQD, %	WG	Fracture Index	Rock Piece	Water Loss Observations	Lugeon Value	PMT Results, MPa	Special Observations / Remarks	Point Load Index	UCS (Sat.), MPa	UCS (Dry), MPa	BTT, MPa	
20	19.00 - 20.50			14.40	+	14.50 m to 35.50 m - Strong to Average strength slightly weathered light grey to grey CHARNOCKITE with closely to widely spaced horizontal to subvertical fractures	90	86	83	I-II	5	89	95	P		16.00m-20.50m:					
	20.50 - 22.00				+		100	76	76	I-II	4	96	103	P			20.50m-22.00m: Discontinuity angle of rock piece 96 & 98 is (60-70) deg Discontinuity angle of rock piece 107 & 108 is 45 deg				
21					+																
					+																
22	22.00 - 23.50				+		100	93	93	I-II	1	104	108	P			22.00m-25.00m:				
					+																
23					+																
	23.50 - 25.00				+		96	88	88	I-II	1	109	113	P							
24					+																
					+																
25	25.00 - 26.50				+		99	46	46	I-II	8	114	119	P			25.00m-26.50m: Discontinuity angle of rock piece 114 & 117 is 88 deg				
					+																
	26.50 - 28.00				+		100	96	96	I-II	1	120	121	P			26.50m-28.00m:				
27					+																
					+																
28	28.00 - 29.50				+	99	88	88	II-I	2	122	126	P			28.00m-31.00m: Discontinuity angle of rock piece 134 & 135 is (70 - 88) deg					
					+																
29	29.50 - 31.00				+					II-I			P								
30					+																

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30	29.50 - 31.00			14.40	+	14.50 m to 35.50 m - Strong to Average strength slightly weathered light grey to grey CHARNOCKITE with closely to widely spaced horizontal to subvertical fractures	100	93	93	II-I	2	127	132	P			28.00m-31.00m: Discontinuity angle of rock piece 134 & 135 is (70 - 88) deg				
31	31.00 - 32.50				+		92	42	42	II-I	6	133	134	P							
					+																
32					+																
	32.50 - 34.00				+		84	27	27	II-I	8	135	136	P							
33					+																
34	34.00 - 35.50				+		100	95	95	II-I	2	137	141	P							
35					+																
	35.50 - 37.00			-6.60	+	35.50 m to 50.00 m - Average to Strong fresh light grey to grey CHARNOCKITE with closely to widely spaced horizontal to subvertical fractures	99	89	89	I	2	142	147	P							
36					+																
37	37.00 - 38.50				+		97	82	82	I	1	148	151	P							
38					+																
	38.50 - 40.00				+		99	96	96	I		152	153	P							
39					+																
40					+																

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40	40.00 - 41.50			-6.60	+	35.50 m to 50.00 m - Average to Strong fresh light grey to grey CHARNOCKITE with closely to widely spaced horizontal to subvertical fractures	99	95	95	I	1	154	156	P							
41					+																
	41.50 - 43.00				+		100	95	95	I		157	159	P							
42					+																
43	43.00 - 44.50				+		100	100	100	I	1	160	163	P							
44					+																
	44.50 - 46.00				+		99	97	97	I	1	164	166	P							
45					+																
46	46.00 - 47.50				+		100	97	97	I	1	167	170	P							
47					+																
	47.50 - 49.00				+		99	95	95	I	1	171	173	P							
48					+																
49	49.00 - 50.00				+		100	100	100	I	1	174	178	P							
50					+																

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