

Queries raised by various vendors through e-mail & during pre-bid meeting of Tender Ref No. :- RGPPL/C&M/CS- 2613/OT-78 dtd. 6th March 2018 and its replies as follows.

SR.NO.	Section No.	BID document reference			Queries raised by bidders	RGPPL REPLY
		Page No.	Clause No.	Subject		
1		22 OF 51	4-C-2)	DMF	We Request you consider a vertical DMF instead of Horizontal.	Bidder to follow Technical specification requirement.
2		4 OF 6	1.03.03	UF permeate SDI	UF Permeate SDI will be as per the UF manufacturers standard.	Bidder to follow Technical specification requirement.
3		10 OF 18	3.06.08	NaoCl Dosing	We request you consider a electrochlorination instead of NaOCl dosing.	Bidder to follow Technical specification requirement.
4		19 OF 30	4.04.02	Type of valve actuators.	Kindly consider pneumatic actuated valves instead of electric.	Bidder to follow Technical specification requirement.
5		7 OF 18	3.02.02	Sea Water tapping	Piping distane between Sea water storage tank and Sea Water make up line is 100 m and moc is GRP.Kindly confirm the distance and MOC.	100 Meter is the approx distance. For exact detail, bidders are advised to visit the site. Regarding MOC of pipes. Bidder to refer Amendment No-1 to Technical Specification.
6		8 OF 18	3.04.02	Raw water blending	Kindly clarify the blending ratio.	Capacity of Blending water pump is already mentioned in the specification. Bidder to provide the same. (Refer Annexure-I to Sub section-IIA-01 Sec-VI Part-A page 17 of 51)
7		9 OF 18	3.05.04	Reject water	Kindly clarify whether to use the reject water ir dispose it.	Technical specification requirement is clear . Bidder to follow Technical specification requirement.
8		36 of 57	24.00.00	Bore log (Part-B Section –VI)	Bore Log not available in NIT	Borelogs from area adjoining to proposed Desalination Plant area is available. Bidder to refer Annexure-C to Sub-section-IIID-01/ Civil of Part-B/ Section-VI of Tech. Specs.
9		36 of 57	24.00.00	Minimum founding depth	Minimum founding depth not envisaged in data as per previous NTPC project soil data provided	Bidder to refer Clauses 24.04.00, 24.05.00 & 24.06.03 of Sub-section-IIID-01/CIVIL/Part-B/Section-VI of Tech. Specs. Geotechnical Investigation for the proposed Desalination Plant is in the scope of Contractor.
10				General	Previous Sand & Aggregate approved quarry not mentioned in NIT	Construction materials shall meet the requirement of Clause 20.00.00 of Sub-section-IIID-01/CIVIL/Part-B/Section-VI of Tech. Specs and relevant IS code. List of approved quarries not available with Owner. Bidder to survey for materials of required quantity and quality.
11		20 of 57	8.12.00		Anti striping agent not required during bitumen painting over RCC surface ,it is usually used in road work	Bidder to follow provisions of the Bid Document.
12				General	Disposal point from proposed Plant location in km.	Bidder to refer Clause 1.07.00 (o) of Sub-section-IIID-01/CIVIL/Part-A/Section-VI of Tech. Specs. Bidder is advised to visit the RGPPL plant for more details.
13				General	Remaining Vendor list for civil items except TMT Bar available with this specs.	All bought out items shall be from the approved vendors. For this purpose, bidders shall furnish the list of manufacturers of each of the bought out items in their bids, which shall be reviewed and finalized during the post bid discussions with the successful bidder. However, for Structural Steel and Reinforcement Steel (TMT bars) enlisted producers of main steel are provided at Cl. 5.0.0, Sub-section-IIIE-16-Civil Works of part-B/ Section-VI of Tech. Specs.
14				General	Blasting permission if required during excavation seen Laterite stone below 3 meter layer.	Bidder to refer Clause 24.10.00, Sub-section-IIID-01/CIVIL and Clause 7.1.2, Sub-section-IIIE-16/CIVIL WORKS, of Part-B/Section-VI of Tech. Specs., in this regard. Bidder to obtain permission for blasting work from concerned authorities.
15		20 of 57	8.12.00		Approval of M/S Bengal Bitumen Mathura or any equivalent sources who will manufacture the 85/25 grade bitumen(IOC,HPCL,BPCL not manufacturing the same).	Bidder to refer reply at Sr. No. 13 above.
16				General	Exiting plant layout drawing with all exiting services in plant area.	Bidder to refer Tender drawing-site layout for existing facilites and proposed site. For further details bidders are advised to visit site.

17		40 of 1066			Un interrupted Water supply as per tender clause page (free issue by NTPC)	As per tender document (ERECTION CONDITIONS OF CONTRACT (ECC))
18		40 of 1066			Un interrupted Free power supply for site work	As per tender document (ERECTION CONDITIONS OF CONTRACT (ECC))
19				General	Material entry system considering plant in running position how to optimized the time during site work	Entry as per standard procedure to be followed
20				General	Labour entry system considering plant in running position how to optimized the time during site work.	Entry as per standard procedure to be followed
21				General	Any Labour hutment land provided by NTPC for this project	Shall be provided
22				General	Permission for pre fabricated structural sheds truss ,columns etc considering plant in running condition subject to quantum of job in very less.	As per technical specification and agreed QAP
23				General	Disposal of Laterite stone during execution to be clear	as per tender documents
24		3 NA		Tender Document Fee	Details to transfer Tender Document Fee Online	Tender Document Fees may also be submitted in the same account as mentioned for the EMD
25		10		SRM Portal	Details/Process to Enroll on SRM Portal	Tenders are to be submitted in Hard Copy as mentioned in the tender document
26		10	82	GST invoice shall contain the following	The award of contract shall be on "work contract basis"	GST invoice shall be as per the BOQ/ SOR of awarded Letter of Award
27	QR			QR	Can an Indian subsidiary (100%) of parent co. participate in this tender? Can parent Co's qualification shall be considered for qualifying it's Indian subsidiary? Indian subsidiary does not have required qualification by themselves	The penultimate line of Q2 subject to note underneath, make it amply clear that any form of association/collaboation is acceptable subject to meeting the other points as per Q2; which include the tyes of collaborations. This is subject to the bidders meetings all the other qualifying criterion as indicated.
28				The bidder should have designed as on the date of bid opening	This provision is being very commonly used in tenders floated by M/s. ONGC, reputed Public Sector Undertaking, in the market. A copy of BEC recently floated by ONGC is attached for your ready	
29				QR	Can a foreign company and an indian company in which the same foreign company has 50% equity shareholding participate in the tender in a JV ?Will the foreign company's experience ,references and balance sheet be considered ?	
30					As requested before, pl confirm whether Indian subsidiary co of foreign company can be qualified on the basis of both technical & commercial QR through parent co.	
31					Is there any provision in the tender by which it can be bidded of Consortium/Joint Venture Modality? If yes, then what are the reuirments of the same and is the specific requirment for the prime bidders for the consortium/JV	
32		NIT	3 of 1066	Tender Fee	BHEL being CPSE, We request RGPPL for exemption from submission of tender fee	Tender Document shall prevail
33		NIT	2 of 1066	Firm Prices	We would request you to provide the Foreign exchange rates variation also during the Contract execution. Kindly accept	Tender Document shall prevail

34		NIT	3 of 1066	Integrity Pact	Kindly clarify whether the original Integrity pact signed by RGPPL will be provided by RGPPC or bidder will sign the Integrity pact attached in the tender at page 56.	Signed copy of Integrity Pact from RGPPL is attached as Appendix-A to the clarification to bidders. Agencies to submit the same as per the conditions of tender document
35		Sec-I/ ITB	18 of 1066	Integrity Pact	If original integrity pact has to be signed, kindly provide the same.	
36		NIT	4 of 1066	EMD	BHEL being CPSE, We request RGPPL for exemption from submission of EMD	Tender Document shall prevail
37		NIT	4 of 1066	EMD	Both the clauses are contradictory, As per NIT validity of EMD is for the 7 Months from the technical bid opening, However as per ITB referred clause EMD validity is 45 days beyond the Bid validity which is 6 Months (As per page no. 4)	If the EMD is submitted in the form of Bank Guaratee, then the validity of the Bank Guaratee should be 45 days beyond the Bid validity which is 6 months
38		ITB	18 of 1066	EMD		
39		NIT	14 of 1066	The Payment / reimbursement of statutory variations in the rates of tax and/or of new tax, duty or levy imposed under	We understand that statutory variations in the rates of tax and/or of new tax, duty or levy imposed under statute or law in India in line with the clause no. 63 would be on the total contract price including DD items upto the completion of the project.	As per tender document
40		ITB	38 of 1066	Handing over of Site	If handing over of the complete site, free of encumbrance's, is delayed beyond two months of notification of award, suitable time & price implication will be mutually discussed with the owner. Kindly accept	No delay in handing over site.
41		ITB (Agreed terms & conditions)	52 of 1066	Completion schedule	In the event of delayed input on part of Owner Viz. Utilities, Feedstock etc. Suitable price implication/ time extension shall be mutually discussed and settled. Kindly Accept	Not acceptable
42		ITB	37 of 1066	Force Majeure	a. Please add, "Strike at Project site/ contractors Works/ sub-Vendor Works, discontinuation of Electricity Supply" as force majeure condition.	As per tender document
43					b. Modalities arising on account of force majeure shall be mutually discussed and agreed upon.	
44		General		Billing Documents	List of documents as applicable for claiming milestone payments shall be discussed during Kick off meeting.	as per the terms of tender document
45		General		Taxes. Duties and Other Levies	We wish to submit that Contractor's responsibility shall be limited to submission of GST complaint Invoices as per Statutes and payment shall be made accordingly.	Not acceptable
46					Contractor shall not be responsible in the event of any procedural lapses/ delays, in availing of Input credit by RGPPL.	Not acceptable
47		ITB	36 of 1066	Defect Liability Period	If the commissioning gets delayed due to reasons attributed to RGPPL more than 3 months from mechanical completion, The DLP shall start from date of mechanical completion. Kindly confirm	As per tender document
48		General	-	Mode of payment	We request you to provide the payment thru on sight, Irrevocable letter of credit opened within 30 days of NOA in the name of the contractor.	As per tender payment conditions
49		General	-	Statutory Approvals	All Statutory approvals/ clearances required in the capacity as Owner of the Plant, shall be arranged by Owner including payment of fee/charges. Contractor shall render necessary assistance for the same.	All Statutory approvals/ clearances required for package to be obtained by Contractor. Any fee/levies in this regard is also in the scope of bidder. However RGPPL may provide necessary assistance whenever required.
50		General	-	Time Extension for due date of Bid submission	Considering the voluminous tender document, quantum of work, we request RGPPL to at least give 4 weeks' time from the date of replies to Bidders queries	BOD shall not be extended. Agencies are requested to submit the bid as per BOD on 20.04.2018
51	Technical specification Part-A, Sec. VI, Sub Sec.-I Project information	109/1066 Page: 13 of 13	Annexure-5	Sea water quality TDS: 30000 - 42000ppm Total hardness: 4000- 7500	The TDS values and sum of ions does not match for both the lower and higher ranges. The TDS with sum of ions total to 34082 - 43787ppm . Kindly recheck and confirm.	Minimum basic sea water quality is mentioned in the Annexure-5 and if bidder wishes to have other parameters/value they may take sea water sample, get analyzed and accordingly arrive at design.

52	Technical specification Part-A, Sec. VI, Sub Sec.-I Project information	108/1066 Page: 12 of 13	Annexure-4	Design water quality for existing DM plant input TDS: 120ppm	The TDS values and sum of ions does not match. The TDS with sum of ions total to 204ppm . Kindly recheck and confirm.	The TDS value was given as 120 ppm , which was the average value measured in the lab. The sum of ions and TDS value does not match, as some of the ions concentration are expressed in PPM as CaCO3 (like Total Hardness, Sodium+ Potassium, Chloride, Alkalinity). And we would like to know the calculation of the TDS with sum of ions which results TDS of 204ppm
53	Technical specification Part-A, Sec. VI, Annexure-1 to Sub Sec.-II A 01	142/1066 Page: 4 of 51	1-B) Remineralization system	8) e) Design pressure: 8 kg/cm2	The design pressure specified is very high. Normally remineralization system will be operated at 3kg/cm2. Hence, 6kg/cm2 design pressure will be sufficient. Kindly confirm acceptance.	Bidder to follow Technical specification requirement.
54	Technical specification Part-A, Sec. VI, Annexure-1 to Sub Sec.-II A 01	143/1066 Page: 5 of 51	1-B) Remineralization system	8) h) Internals: SS316L	Since this is low pressure application, cPVC/ uPVC PN10 header laterals can be used. Kindly confirm acceptance.	Bidder to follow Technical specification requirement.
55	Technical specification Part-A, Sec. VI, Annexure-1 to Sub Sec.-II A 01	143/1066 Page: 5 of 51	1-B) Remineralization system	8) m) Surface flow rate: Not more than 5m/hr	The surface flow rate specified is very low. Normally 15m/hr velocity is suitable for remineralization filters. However, sufficient contact time of 10mins. Will be ensured. Kindly confirm acceptance.	Bidder to follow Technical specification requirement.
56	Technical specification Part-A, Sec. VI, Annexure-1 to Sub Sec.-II A 01	143/1066 Page: 5 of 51	1-B) Remineralization system	8) t) Make up of lime bed: once in week	As per clause, 1-B) 3) CO2 cylinder requirements are considered for 10 days. We request you to consider lime make up also as 10 days for easy operation of plant. Kindly accept.	Bidder to follow Technical specification requirement.
57	Technical specification Part-A, Sec. VI, Annexure-1 to Sub Sec.-II A 01	146/1066 Page: 8 of 51	2-B-3) Remineralization system	High pressure pump (2nd stage RO unit) 6) Maximum pump operating speed: 1500 rpm	Kindly allow for 2900rpm speed similar to SWRO HP pump so that we can offer higher efficiency pumps	Bidder to follow Technical specification requirement.
58	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - III TERMINAL POINTS & EXCLUSIONS	(220/1066) PAGE 2 OF 2	2.01.00	Exclusion: Mechanical: Supply of ...	Limestone, supply requirements are not provided in the tender. We presume that limestone is also excluded from Bidder's scope. Kindly confirm.	Bidder to refer Amendment No.-01 to Technical Specification
59	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - IV Functional guarantees & liquidated damages	225/1066 Page 4 of 6	1.03.03 b) i)	SDI shall be less than 2.	We request to modify the SDI guarantee as SDI <3. It is difficult to achieve/ guarantee such stringent SDI without accurate particle size distribution details. Most of the UF vendors provide SDI<3 guarantee only. Kindly review.	Bidder to refer Amendment No.-01 to Technical Specification
60	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - IV Functional guarantees & liquidated damages	225/1066 Page 4 of 6	1.03.03 b) iii)	For the design water quality and the permeate water capacity guaranteed, undiminished overall recovery of UF Plant shall be 92% upto the end of 5 years of operation with replacement guarantee of membrane elements.	Since, the operation of UF plant is by Customer, UF membrane guarantee can be provided upto 5 years of operation with prorated replacement only as per membrane manufacturer's recommendations. Kindly accept.	Bidder to follow Technical specification requirement.
61	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - IV Functional guarantees & liquidated damages	225/1066 Page 4 of 6	1.03.03	a) Permeate water quality at outlet of SWRO plant shall be as follows 3) TDS <400ppm	As per clause 3.01.02 Part-A, Sec.VI, Sub sec:II Scope - General,(pg.115/1066) SWRO unit product water quality is 500ppm which is contradictory to this clause. We presume that SWRO permeate TDS can be less than 500ppm. Kindly confirm	Bidder to refer Amendment No.-01 to Technical Specification
62	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - IV Functional guarantees & liquidated damages	225/1066 Page 4 of 6	1.03.03	a) Permeate water quality at outlet of SWRO plant shall be as follows 1) pH 7.5 to 8.5	SWRO permeate water pH will be around 5.6 - 6.5 after degasser since there is no pH correction dosing envisaged in the tender. Also, SWRO permeate pH is not important for remineralized water quality. Kindly accept.	Bidder to follow Technical Specification requirement. Any additional system/process required to meet the guarantee shall be also in the scope of bidder.
63	TECHNICAL SPECIFICATIONS SECTION VI, PART-A Annexure-1 to SUB-SECTION -IIA01	141/1066 Page 3 of 51	(1-A-3)	Degasser towers (for permeate from SWRO trains)	Since, the SWRO permeate is taken to BWRO and all the SWRO permeate is to be remineralized, we do not need degasser system. The dissolved CO2 which is already present in SWRO permeate will help reduce CO2 dosing before remineralization filter. Hence, the degasser system may be removed. Kindly accept.	Bidder to follow Technical specification requirement.

64	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - IV Functional guarantees & liquidated damages	226/1066 5 of 6	1.04.02 j)	Clarifiers & associated flocculation chambers, flash mixers and stilling chamber shall be designed for an overflow rate upto 120% of the design flow rate, without any effect on the effluent quality	As per Cl.4-H), Annexure-1 to sub sec. IIA01 pg164/1066 (26 of 51), each clarifier is to be designed for 125% design flow of one filter feed pump which contradicts this clause. Kindly confirm Clarifier and PT system design capacity	Technical specification requirement is clear . Bidder to follow the technical specification requirement. Design flow rate & overflow rate both are different.
65	PID Diagram for desalination plant CW-EN-9886-PVM-A-001	Sh: 7 of 9 974/1066		Permeate from RO line in Remineralization filter piping MOC: Duplex Ss	Duplex SS for BWRO permeate leading to remineralization filter is not warranted. Since this is low pressure application, cPVC/ uPVC piping is suitable. Kindly confirm acceptance.	Bidder to refer Amendment No.-01 to Technical Specification
66	TECHNICAL SPECIFICATIONS SECTION VI, Annexure-2 to Sub Sec: IIIA-11(MOC for pipes)	354/1066 Page 1 of 3		Permeate from SWRO plant Lime bed vessel piping... High Austenitic Stainless Steel : 1) UNS S31254 as per ASTM A 182/ASTM A 269 (254 SMO)/ASTM A 312/Equivalent -	SWRO plant permeate and Lime bed vessel piping are low pressure and low TDS application. Hence, super duplex ss with PREN >40 is not required. We propose uPVC/cPVC/ GRP pipes. Kindly accept.	Bidder to refer Amendment No.-01 to Technical Specification
67	TECHNICAL SPECIFICATIONS SECTION VI, Annexure-2 to Sub Sec: IIIA-11(MOC for pipes)	354/1066 Page 1 of 3		5 Degassified water (RO plant) Rubber lined carbon steel.	For degassed water rubber lined carbon steel MOC is not required. We propose uPVC/ cPVC pipe. Kindly accept.	Bidder to refer Amendment No.-01 to Technical Specification
68	TECHNICAL SPECIFICATIONS SECTION VI, Annexure-2 to Sub Sec: IIIA-11(MOC for pipes)	354/1066 Page 1 of 3	General	For all chemical dosing pipes	We propose cPVC sch. 80 for all chemical dosing pipe lines. This is best suitable and proven material for chemical application. Kindly accept.	Bidder to refer Amendment No.-01 to Technical Specification
69	TECHNICAL SPECIFICATIONS SECTION VI, Annexure-5 to Sub Sec: IIIA-11(Type & MOC for valves)	391/1066 Page: 3 of 10		5 High pressure feed water of 2nd sage RO Butterfly valves Body & Disc shall be Stainless steel of ASTM A 351 Gr. CF 8M/ ASTM A 182 S30451. b) Shaft shall be of Stainless steel to ASTM. A 276 Gr S41000 / ASTM A 473 S41000/ASTM A 351 Gr.CF 8M/Eqvt c) Seat shall be ASTM A182 F317/ASTM A 276 S31700/ASTM A 890 J93370 or Equivalent d) Seals shall be Nitrile rubber, EPDM (Ethylene propylene rubber), Hypalon	We recommend following valve MOC. a) Body shall be Cast Iron to ASTM A 48 Cl.40; BS: 1452 Gr.220 SG Iron - BS: 2789/Equiv. OR Cast Steel - ASTM. A 216 GR. WCB; BS:1504 Eq.Gr/Equivalent OR Fabricated Steel as per ASTM A515 Gr.60/80 and Body shall be internally lined with natural rubber, Ebonite or Polypropylene Disc: Shall be SS316 . The same moc is suitable for BWRO application also. Kindly accept.	Bidder to follow Technical specification Requirement.
70	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION - III TERMINAL POINTS & EXCLUSIONS	(219/1066) PAGE 1 OF 2	1.02.00	Outgoing terminal of 11KV panel near Frame VI gas turbine. (Two nos. 11 kV supply will be provided.)	In case of shut down , some drives are required to be operated through emergency supply for RO membrane preservation / Chemical cleaning / flushing. We request RGPPL to provide Emergency supply (0.415 KV) to the offered MCC.	Bidder to comply the specification requirements.
71	TECHNICAL SPECIFICATIONS PART-A, SECTION - VI SUB-SECTION-IIB-01 SCOPE – ELECTRICAL SYSTEMS/EQUIPMENT	(203/1066) PAGE 1 OF 3	2.00.00	Auxiliary transformers (110.415 KV) shall be provided to meet the demand on 415V systems under most onerous conditions, with the criteria that each 415 V switchgear / MCC / DB shall be fed by 2x100% transformers / feeders, and these shall be rated to carry the maximum load including owner's load (if applicable) expected to be imposed. The Auxiliary transformers shall be sized so as to have 10% margin at design	Please specify the owner load to be considered in Auxiliary transformer sizing. Also specify any Outgoing feeders to be considered in offered LT switchgear for owners use .	Bidder to comply the specification requirements.
72	TECHNICAL SPECIFICATIONS PART-A, SECTION - VI SUB-SECTION-IIB-01 SCOPE – ELECTRICAL SYSTEMS/EQUIPMENT	(204/1066) PAGE 1 OF 3	5.00.00	Between Employer's DCS, RI/O's, 11 KV switchgear and contractor's equipments.	Please furnish the location of Employer's DCS	Approx length is 2000 Mtr. For exact length bidder is advised to visit the site.

73	TECHNICAL SPECIFICATIONS SECTION VI, PART-A ANNEXURE-2 TO SUB-SECTION – III-A-01	(198/1066) PAGE 8 OF 11	3.04.02	Continuous monitoring of differential pressure across Cartridge filters, water quality at the outlet (SDI, pH, Oxidization Reduction Potential) of Cartridge filters shall be provided and abnormal parameters shall be announced	Continuous monitoring of differential pressure across Cartridge filters, water quality at the outlet (pH, Oxidization Reduction Potential) of Cartridge filters will be provided , however for SDI, we will provide online Turbidity analyzer and a Manual SDI kit with booster pump). As some of the online SDI analyzers are not reliable Kindly accept.	Bidder to follow Technical specification Requirement
74	TECHNICAL SPECIFICATIONS PART B,SECTION -VI SUB-SECTION – III B-08 ILLUMINATION	(582/1066) PAGE 8 OF 13	4.06.00	Acceptance Test and Routine Test All lighting fixtures, lamps and other items shall be subjected to acceptance and routine test, as per relevant specified standards. Junction boxes, switch boxes, receptacle enclosure etc. shall be subjected to physical and dimensional	As work content /no of fixtures for this illumination package is minimal in quantity, We request RGPPL to accept from the dealers of approved sources by waiving off the inspection /testing.	Bidder to comply the specification requirements.
75	TECHNICAL SPECIFICATIONS SECTION -VI PART A, SUB-SECTION – III Terminal points & exclusions	(219/1066) Page 1 of 2	1.02.00	Electrical:	We may need additional feeder for HT motors for SWRO HP pumps. We request Customer to provide the same. Incase, additional feeders are not available, please provide Transformer & HT switchgear specifications (11kV/ 3.3kV)	Bidder to comply the specification requirements.
76	Technical specification Part-A, Sec. VI, Sub Sec.-I Project information	102/1066 Page 6 of 13	2.01.00	Soil Data	Kindly provide the safe soil bearing capacity	Bidder to refer Clauses 24.04.00, 24.05.00 & 24.06.03 of Sub-section-IIID-01/CIVIL/Part-B/Section-VI of Tech. Specs. Geotechnical Investigation for the proposed Desalination Plant is in the scope of Contractor.
77	Technical specification Part-A, Sec. VI, Sub Sec.-I Project information	97/ 1066 Page 1 of 13	1.00.00	General	Kindly provide the following 1. Contour map of the proposed site location 2. Specific Type of Civil Foundation if any. 3. The Details of availability & source of Construction/Drinking Water	Bidder to refer Clause 1.07.00 (a) of Sub-section-IIID-01/CIVIL/Part-A/Section-VI of Tech. Specs. Topographical survey & hence development of contour map of the proposed plant location is in Contractor's scope. Bidder is advised to visit the RGPPL plant for details of foundations of existing facilities. Bidder to refer Clause 1.08.00 of Sub-section-IIID-01/CIVIL/Part-A/Section-VI of Tech. Specs., regarding construction water.
78		205/1066	9.00.00	Dc System	Kindly Confirm Dc System Voltage Rating 220V Or 110V.	Bidder to comply the specification requirements.
79		208/1066	3.01.01	Electrical Power Supply System	Docu. 9886-Pvi-A-019 Not Available.	Bidder to refer Amendment No-1 to Technical specification
80		436/1066	3.01.00	Motor Type	Kindly Confirm Motor Eff.Class As Per Is12615:2011,However Eff-1 Has Not Manufactured.	Bidder to refer Amendment No-1 to Technical specification
81		460/1066	3.00.00.a	Constructional Feature	Cable Shall Be Armoured Or Unarmoured.	Bidder to refer Amendment No-1 to Technical specification
82		460/1066	3.00.00.b	Constructional Feature	Insulation Shall Be XpIe Or Pvc, If Xlpe Then Al Conductor To Be Use Which Cable Size.	Bidder to refer Amendment No-1 to Technical specification
83		470/1066	1.01.01	Sizing Of Lt Board	What Will Be Effice,If Motor Shall Be Ie2 Or Ie3,	Bidder to comply the specification requirements.
84		533/1066	2.02.00	Support System For Cable Tray	Only Uni-Strut Make, Kindly Provide Additional Vendros.	Bidder to comply the specification requirements.
85		628/1066	3.01.00.d	System Description	Vfd Shall Be With By-Pass Or Without By Pass.	Bidder to refer Amendment No-1 to Technical specification
86		630/1066	8.00.00	Stand By Arrngment	Additional Vfd Panel Required For Each Vfd Application.	Bidder to refer Amendment No-1 to Technical specification
87		205/1066	5.00.00.a	Ht Power Cable,Lt Cable	2Km Ht Cable Shall Be Laid Underground Or Overhead.	partly underground and remaining overhead / as per technical spec/ Bidder may visit the site to ascertain the site condition before bidding.
88				Area Classification	kindly specify the area classification as it will play an important role in the selection of Instrument. As per the datasheets the instruments ask for Die Cast alluminium enclosure, thus we assume the area classification would be safe area. Kindly confirm our assumption.	Bidder is considering only part of specification. Pls refer clause no. 1.06.00, IIC-02,Part-B along with other relevant clauses of specification.
89		210	section VI, Part-A, Clause no. 6.05.00	PLC interfacing	It said that bidders PLC to be interfaced with DM plants PLC via Optical Fibre Cable (OFC). Kindly confirm the distance between the SWRO plant and the DM plant to select cable length	Approx length is 750 Mtr. For exact length bidder is advised to visit the site.

90		211	section VI, Part-A, Clause no. 9.00.00	Fire and Gas detection	The fire and gas detection system asks for a separate PLC system. Kindly confirm our understanding as to, is the fire detection system in our scope or not and whether a separate PLC is to be considered for the same	Separate PLC system is not applicable. Here as per scope for fire system mentioned in specification, Analogue addressable Fire alarm panel will suffice the purpose.
91				Sub QR	SQ 1: Clarifiers must have a capacity of 150 m ³ /h. Is this capacity to be referred to one clarifier only, or to a previously-manufactured clarification system?	Technical specification is clear . Bidder to follow Technical specification requirement.
92				Sub QR	SQ 1: Clarifiers must have a capacity of 150 m ³ /h. Is this capacity to be referred to one clarifier only, or to a previously-manufactured clarification system?	Technical specification is clear . Bidder to follow Technical specification requirement.
93				Sub QR	SQ 2: Filters must have a capacity of 150 m ³ /h. Is this capacity to be referred to one filter only, or to a previously-manufactured filtration system?	Technical specification is clear . Bidder to follow Technical specification requirement.
94					Considering humongous civil activities at site & dual heavy rainfall in the region, we propose complete desalination plant in all whether proof Containerized System, pre-engineered & plug-to-play to minimize not only the on-site civil activity but also to reduce the delivery period from 18 months to just within 6-8 months. PI confirm.	Bidder to follow Technical specification requirement.
95					As plant site is remote & desalination technology need regular attention, so we propose to have fully automated plant, remotely operated through our Pune Office to minimize the attention of Plant O&M personnel of NTPC. This is best practices across the global for such small capacities. PI Confirm	Bidder to follow Technical specification requirement.
96					Availability of 3-4 storage tanks at site shall further compliment above containerized desalination model.	Bidder to follow Technical specification requirement.
97					There is intermediate performance guarantee of UF (Clause no 1.00.00 (e) of Technical Requirement of Ultra Filtration)has been mentioned as SDI <2 for 100% time. UF membrane manufacturers does not confirm to such requirements in normal operation of plant/ during the worst design conditions. Hence PI consider SDI < 3 for 95% time & SDI < 5 for 100% Time for UF Membranes. PI Confirm.	Bidder to refer Amendment No-1 to Technical specification
98					Tender UF Data Sheet mention pore size < 0.04 Micron. PI note that you have specified UF MOC as PVDF & PES. Most of the PVDF UF Membranes are above 0.04 Microns. PVDF Membranes are superior & more advance technology w.r.t. Chemical Tolerance & overall life of UF Membranes. Some of the Global & reputed UF brands e.g. GE/ Asahi/ Siemens- MEMCOR etc are more than 0.04 Micron. Pore size of different UF Membranes are different & part of their technology. PI specify UF outlet quality e.g. SDI/ Turbidity/ TSS , which can be measured by NTPC instead of pore size. We request to remove the pore size from Data Sheet, as we can contact & bring more UF vendors to NTPC.	Bidder to follow Technical specification requirement.
99					We also request for extension in bid submission by 4 weeks OR we need clear 6 weeks from the date of your confirmation on our questions & questions raised in pre-bid meeting by others.	BOD shall not be extended. Agencies are requested to submit the bid as per BOD on 20.04.2018
100	SUB-SECTION – I PROJECT INFORMATION	13 OF 13	Annexure -5	Fe content is Sea water	For 1.1ppm of Fe content , we recommend inclusion of Cascade Aerator in the scheme. Even if we consider NaOCl dosing & Coagulant dosing , aeration will be best suited for Fe removal. Request you to include Cascade aerator in the scheme to oxidize Ferrous to Ferric & remove in downstream Tube Settler	Bidder to follow Technical specification requirement. However, inclusion of any addition system required to meet the desired parameter is in the scope of bidder.
101	SUB-SECTION – II SCOPE - GENERAL	2 OF 18	1.01.00	Relocation of Existing system	We do not envisage this requirement. Please confirm	Bidder to follow Technical specification requirement.

102	II—SCOPE-GENERAL	16 OF 18	6.10.00	Special Tools & Tackles	We do not envisage the requirement of any special tools & tackles for the package, hence not considered	Bidder to follow Technical specification requirement
	II—SCOPE-GENERAL	8 OF 18	3.04.02	Blending of Raw water with SWRO Permeate	Please mention the % of raw water that will be blended with SWRO Permeate. Additionally please clarify the quality of water that will be used for blending.	Capacity of Blending water pump is already mentioned in the specification. Bidder to provide the same. (Refer Annexure-I to Sub section-IIA-01 Sec-VI Part-A page 17 of 51)
103	SUB-SECTION IIIA-03	1 OF 2	1.00.00 t)	Chemical Enhanced Backwash waste	We understand this waste will be collected in waste water neutralization sump, neutralized & then pumped to SWRO reject tank. Please confirm	Bidder understanding is correct.
	ULTRAFILTRATION					
104	SUB-SECTION IIIA-04	2 OF 12	2.00.00 f)	Source for Potable water	It is mentioned, potable water will be from BWRO permeate. We understand potable water will be sourced from SWRO Permeate as The TDS in SWRO Permeate will be < 500 ppm, rather than BWRO Permeate which has low TDS.	Bidder to follow Technical specification requirement.
	REVERSE OSMOSIS SYSTEM					
105	SUB-SECTION IIIA-04	2 OF 12	2.00.00 g)	Suck back tank	We suggest requirement of Suck back tank for SWRO only. It is indicated In tender as SWRO/RO hence please clarify.	Bidder to refer Amendment No-01 to Technical specification.
	REVERSE OSMOSIS SYSTEM					
106	SUB-SECTION IIIA-04	12 OF 12	18.02.00	MOC of Lime tank	We recommend the MOC of Lime tank to be RCC instead of SS. Please confirm	Bidder to refer Amendment No-01 to Technical specification.
	REVERSE OSMOSIS SYSTEM					
107	ANNEXURE-2 TO SUB-SECTION IIIA-11	1 OF 3	Annexure II 3)	MOC of SWRO Permeate & Lime Bed Vessel Piping	Please note, this line will have low TDS & low Pressure , hence Non metallic pipe CPVC/UPVC is suited instead of Duplex. Please confirm	For MOC of pipes, Bidder to refer Amendment No-01 to Technical specification.
	(MOC FOR PIPES)					
108	ANNEXURE-2 TO SUB-SECTION IIIA-11	1 OF 3	Annexure II 4)	MOC of BWRO Permeate piping	Please note, this line will have low TDS & low Pressure , hence Non metallic pipe CPVC/UPVC is suited instead of Stainless Steel. Please confirm	For MOC of pipes, Bidder to refer Amendment No-01 to Technical specification.
	(MOC FOR PIPES)					
109	SUB-SECTION - IV	3 OF 6	1.03.02	Remineralisation System	Please note, After Remineralisation we will guarantee the LSI to be positive, however Calcium , Alkalinity values will be indicative. It is difficult to estimate the amount of Calcium & Alkalinity re dissolved in the RO Permeate after LBV	Bidder to follow Technical specification requirement
	FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES					
110	SUB-SECTION - IV	4 OF 6	1.03.03) b)i)	SDI in UF Permeate	Please note all UF manufacturers guarantee SDI in UF Permeate as <3. Hence we will be able to give back to back guarantee of SDI <3 in UF Permeate.	Bidder to refer Amendment No-1 to Technical specification.
	FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES					
111	SUB-SECTION - IV	4 OF 6	1.03.03) b)iv) v) vii)	LSI, S&SDI and Chlorine in UF Permeate	Please note, UF can not guarantee LSI, S&SDI and Chlorine, since UF does not reject any dissolved matter, request you to remove these parameters as functional guarantee for UF system	Bidder to refer Amendment No-1 to Technical specification.
	FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES					
112	SUB-SECTION - IV	4 OF 6	1.03.03) b)iii)	Replacement guarantee of membrane elements	Please clarify the replacement of membranes will be on pro rata basis. It is not clear whether the replacement is based on 100% replacement or on pro rata basis	Bidder query is not clear. Bidder to follow Technical specification requirement
	FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES					
	SUB-SECTION - IV					

113	FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	5 OF 6	1.04.01) c)	Noise & Vibration level	Please indicate the limiting requirement	Bidder to refer Part-C GTR in this regard.
114	SUB-SECTION - IV FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	5 OF 6	1.04.02) b)	Availability factor	Request you to clarify how the availability factor will be measured for RO system.	Methodology for calculation of availability factor shall be finalized during post bid discussion/ detail engineering.
	ANNEXURE-1 TO SUB-SECTION - IV	4 OF 4	2.03.00 b)	Performance guarantee test of 1 year		
115	SUB-SECTION - IV FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	6 OF 6	1.04.02) j)	Oil & Grease level in Clarifier outlet	Please note, Annexure 5, Sea Water Quality does not mention inlet Oil content, however outlet oil guarantees are asked, we understand it is not part of guarantees, please confirm.	Bidder to refer Amendment No-1 to Technical specification.
	SUB-SECTION - IIIA-01 CLARIFIERS	10 of 10	2.04.00 f)	Solid Consistency from Centrifuge		
116	SUB-SECTION - IIIA-01 CLARIFIERS	10 of 10	2.04.00 f)	Solid Consistency from Centrifuge	Please note the solid consistency in sludge cake from centrifuge will be in the range of 20 -25%.	Bidder to follow Technical specification requirement.
	TECHNICAL SPECIFICATIONS					
117	SECTION - VI SUB SECTION-IIA-01	2 OF 8	3.00.00 4)	Permeate booster pumps	Request you to clarify the requirement of Permeate booster pumps in SWRO	Bidder to refer clause No. 8.00.00 Part-B Sub Section IIIA-04 Reverse Osmosis System page 08 of 12.
	SCOPE MECHANICAL SYSTEMS/EQUIPMENT					
118	TECHNICAL SPECIFICATIONS				Please clarify whether 1 No Filter Backwash tank to be separately considered. We can take suction for Filter backwash from Brine water Storage tank, we need not consider 2 separate tanks for brine storage. Please confirm.	Bidder to follow the Technical Specification requirement. For detail bidder to Refer Tender drawings.
	SECTION - VI SUB SECTION-IIA-01	3 OF 8	3.00.00 5)	Filter Backwash water storage tank		
119	TECHNICAL SPECIFICATIONS				Please note as there is remineralisation system required, we do not envisage the requirement of Degasser. Please confirm.	Bidder to follow Technical specification requirement.
	SECTION - VI SUB SECTION-IIA-01	3 OF 8	4.00.00	Degassifier system		
120	TECHNICAL SPECIFICATIONS				Request confirmation that only Epoxy painting of existing tanks to be considered in scope, we consider life span assessment of the tank is done by RGPPL	Bidder to follow the Technical specification requirement.
	SECTION - VI SUB SECTION-IIA-01	4 OF 8	5.00.00 7)	Existing tank modification		
	SCOPE MECHANICAL SYSTEMS/EQUIPMENT					

121	TECHNICAL SPECIFICATIONS	8 OF 51	2 B-3)1)	Purpose of High Pressure Pump(2 nd Stage RO)	We understand the purpose of this pump is only for RO2 Membrane feed pressure. Please confirm, as the mentioned purpose in tender document does not match	Technical Specification requirement is clear. Bidder to follow the technical specification Requirement.
	SECTION VI, PART A ANNEXURE-1 TO					
	SUB-SECTION IIA-01					
122	General			Existing Filter water Storage tank	Please clarify that Existing Filter water Storage tank will store BWRO Permeate Please also confirm the capacity of the existing tanks	Bidder to refer chapter Project information in this regard.

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.		

1	VI / A	I / PROJECT INFORMATION	13 OF 13	Annexure-5	Sea water analysis New line added	<table border="1"> <tr> <td>Oil & Grease (ppm)</td> <td>< 10</td> </tr> </table>	Oil & Grease (ppm)	< 10
Oil & Grease (ppm)	< 10							
2	VI / A	II / SCOPE-GENERAL	3 OF 18	1.10.00	Main and Alternate Proposals	Deleted		
3	VI / A	II / SCOPE-GENERAL	5 OF 18	3.01.02	Sea water shall be fed to first stage Sea Water Reverse Osmosis (SWRO) units to produce raw water of quality (TDS 500 PPM) and feed water for second stage RO units. Second stage RO units shall produce raw water of specified/desired quality (TDS 100 PPM).	Sea water shall be fed to first stage Sea Water Reverse Osmosis (SWRO) units to produce raw water of quality (TDS < 400 PPM) and feed water for second stage RO units. Second stage RO units shall produce raw water of specified/desired quality (TDS 100 PPM).		
4	VI / A	II / SCOPE-GENERAL	9 OF 18	3.05.03	RO system shall be provided with suck back arrangement Clean in Place (CIP) system, Flushing (FS) System with associated tanks, pumps etc.	RO system shall be provided with suck back arrangement (if required) Clean in Place (CIP) system, Flushing (FS) System with associated tanks, pumps etc.		
5	VI / A	II / SCOPE-GENERAL	16 OF 18	6.08.00 6.08.01	6.08.00 First Fill of Consumables, Oils & Lubricants, chemicals. 6.08.01 All the first fill and One year's topping requirements of consumable such as greases, oil, lubricants, servo fluids etc. which will be required to put the equipments covered under	6.08.00 First Fill of Consumables, Oils & Lubricants, chemicals. 6.08.01 All the first fill & one year's topping requirement of consumable such as lime (Calcite for LBV) , greases, oil, lubricants, servo fluids etc. which will be required to put the equipments		

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.		

					the scope of specifications, into successful commissioning/ initial operation and to establish completion of facilities shall be furnished by the bidder, unless specifically excluded under the Exclusions in these specifications and documents. Suitable standard lubricants as available in India are desired. Effort should be made to limit the variety of lubricants to minimum.	covered under the scope of specifications, into successful commissioning/initial operation and to establish completion of facilities shall be furnished by the bidder, unless specifically excluded under the Exclusions in these specifications and documents. Suitable standard lubricants as available in India are desired. Effort should be made to limit the variety of lubricants to minimum.						
6	VI / A	IIA-01 / SCOPE MECHANICAL SYSTEMS/EQUIPMENT	4 OF 8	5.00.00	6) Complete suck back arrangement Single membrane testing skid.	6) Complete suck back arrangement (if required) Single membrane testing skid.						
7	VI / A	IIA-01 / ANNEXURE-1	9 OF 51	2-B-1) 5)	(2-B)- RO (Reverses Osmosis-2 nd Stage) Plant 2-B-1) <u>General</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">5)</td> <td style="width: 40%;">Design Inlet Water quality (TDS Value)</td> <td style="width: 55%;">Permeate from SWRO (approx. 500 ppm)</td> </tr> </table>	5)	Design Inlet Water quality (TDS Value)	Permeate from SWRO (approx. 500 ppm)	(2-B)- RO (Reverses Osmosis-2 nd Stage) Plant 2-B-1) <u>General</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">5)</td> <td style="width: 40%;">Design Inlet Water quality (TDS Value)</td> <td style="width: 55%;">Permeate from SWRO (<400 ppm)</td> </tr> </table>	5)	Design Inlet Water quality (TDS Value)	Permeate from SWRO (<400 ppm)
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AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS						
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.								
8	VI / A	IIA-01 / ANNEXURE-1	12 OF 51	3-A)	3-A)- SWRO (REVERSES OSMOSIS) PLANT (1 st STAGE) <table border="1" data-bbox="844 451 1316 686"> <tr> <td>6)</td> <td>Design Effluent water quality (TDS Value)</td> <td>Less than 500 ppm</td> </tr> </table>	6)	Design Effluent water quality (TDS Value)	Less than 500 ppm	3-A)- SWRO (REVERSES OSMOSIS) PLANT (1 st STAGE) <table border="1" data-bbox="1417 451 1890 711"> <tr> <td>6)</td> <td>Design Effluent water quality (TDS Value)</td> <td>Less than 400 ppm considering inlet water temperature upto 30 deg C</td> </tr> </table>	6)	Design Effluent water quality (TDS Value)	Less than 400 ppm considering inlet water temperature upto 30 deg C
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6)	Design Effluent water quality (TDS Value)	Less than 400 ppm considering inlet water temperature upto 30 deg C										
9	VI / A	IIA-01 / ANNEXURE-1	20 OF 51	4-B)	4-B) ULTRAFILTRATION (UF) (FOR 1 ST . STAGE SWRO UNITS) <table border="1" data-bbox="844 836 1316 1023"> <tr> <td>8)</td> <td>Design permeate water quality</td> <td>Turbidity < 0.1 NTU, SDI < 2 for 100% of time.</td> </tr> </table>	8)	Design permeate water quality	Turbidity < 0.1 NTU, SDI < 2 for 100% of time.	4-B) ULTRAFILTRATION (UF) (FOR 1 ST . STAGE SWRO UNITS) <table border="1" data-bbox="1417 836 1890 1023"> <tr> <td>8)</td> <td>Design permeate water quality</td> <td>Turbidity < 0.1 NTU, SDI < 3 for 100% of time.</td> </tr> </table>	8)	Design permeate water quality	Turbidity < 0.1 NTU, SDI < 3 for 100% of time.
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8)	Design permeate water quality	Turbidity < 0.1 NTU, SDI < 3 for 100% of time.										
10	VI / A	III / TERMINAL POINTS & EXCLUSIONS	2 OF 2	2.01.00	Exclusions Mechanical Supply of alum, antiscalant, SMBS, HCl, NaOH, NaOCl, and chlorine including the first charge during commissioning & PG test are excluded from the scope of the bidder.	Exclusions Mechanical Supply of Alum, HCl, NaOH, NaOCl, CO₂ for Remineralisation, all chemicals for Ultrafiltration, SWRO & BWRO (IInd stage RO) required after commissioning and PG test.						

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.		
11	VI / A	IV / FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	4 OF 6	1.03.03 b) i)	i) SDI shall be less than 2.	i) SDI shall be less than 3.
12	VI / A	IV / FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	4 OF 6	1.03.03 b) iv,v,vi,vii)	iv) LSI shall be limited to 0.5. v) S & DSI shall be limited to 0.5. vi) pH shall be in the range of 6.5 to 7.0. vii) Chlorine (ppm) shall be limited to Nil.	1.03.03. c) Water quality at the outlet of cartridge filters of SWRO Plant) shall be:- i) Turbidity (NTU) shall be limited to 1 ii) S & DSI shall be limited to 0.5 iii) pH shall be in the range of 6.5 to 7.0 iv) Chlorine (ppm) shall be limited to Nil

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS																												
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.																														
13	VI / A	IV / FUNCTIONAL GUARANTEE & LIQUIDATED DAMAGES	4 OF 6	1.03.03	<p>a) Permeate Water quality at the outlet of SWRO plant shall be as follows:</p> <table border="1"> <thead> <tr> <th>SI No</th> <th>Parameter</th> <th>Unit</th> <th>Design Value</th> </tr> </thead> <tbody> <tr> <td>1)</td> <td>pH</td> <td></td> <td>7.5 to 8.5</td> </tr> <tr> <td>2)</td> <td>Boron</td> <td>ppm as B</td> <td>Less than 1</td> </tr> <tr> <td>3)</td> <td>TDS</td> <td>ppm</td> <td>Less than 400</td> </tr> </tbody> </table>	SI No	Parameter	Unit	Design Value	1)	pH		7.5 to 8.5	2)	Boron	ppm as B	Less than 1	3)	TDS	ppm	Less than 400	<p>1.03.03 d) Permeate Water quality at the outlet of SWRO plant shall be as follows:</p> <table border="1"> <thead> <tr> <th>SI No</th> <th>Parameter</th> <th>Unit</th> <th>Design Value</th> </tr> </thead> <tbody> <tr> <td>1)</td> <td>pH</td> <td></td> <td>7.5 to 8.5</td> </tr> <tr> <td>2)</td> <td>TDS</td> <td>ppm</td> <td>Less than 400 ppm considering inlet water temperature upto 30 deg C</td> </tr> </tbody> </table>	SI No	Parameter	Unit	Design Value	1)	pH		7.5 to 8.5	2)	TDS	ppm	Less than 400 ppm considering inlet water temperature upto 30 deg C
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14	VI / B	IIIA-04 / REVERSE OSMOSIS SYSTEM	12 OF 12	18.02.00	Dosing of acid, alkali and lime shall also be provided to -----one (1) number lime tank of Stainless steel shall be provided with dissolving basket, agitator etc.	Dosing of acid, alkali and lime shall also be provided ----- one (1) number lime tank of Stainless steel / RCC shall be provided with dissolving basket, agitator etc.																												
15	VI / B	IIIA-11 / ANNEXURE-2 (MOC FOR PIPES)	1,2,3 OF 3		ANNEXURE-II	Chapter replaced with chapter ANNEXURE-2(R1)																												
16	VI / E	Tender Drawing	Sheet 7,8,9 OF 9		CW-EN-9886-PVM-A-001 sheet 7 of 9 CW-EN-9886-PVM-A-001 sheet 8 of 9 CW-EN-9886-PVM-A-001 sheet 9 of 9	CW-EN-9886-PVM-A-001(R1) sheet 7 of 9 CW-EN-9886-PVM-A-001(R1) sheet 8 of 9 CW-EN-9886-PVM-A-001(R1) sheet 9 of 9																												

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.		
17	VI / B	III B-01 / MOTORS	2 OF 8	3.01.00 (b)	Continuous duty LT motors up to 160 KW Output rating(at 50 deg.C ambient temperature), shall be Energy Efficient motors ,Efficiency class-Eff 1, conforming to IS 12615.	Continuous duty LT motors up to 160 KW Output rating (at 50 deg.C ambient temperature), shall be Premium Efficiency class-IE3, conforming to IS 12615, or IEC:60034-30.
18	VI / B	III B-04 / LT POWER CABLES	3 OF 5		New clause added	2.14.00 All LT power cables of sizes more than 120 sq.mm. shall be XLPE insulated.
19	VI / B	III B-07 / CABLING, EARTHING & LIGHTNING PROTECTION	10 OF 23	3.04.12	New clause added	3.04.12 c) All cables directly buried shall be armoured.
20	VI / B	B-12 / VARIABLE FREQUENCY DRIVES	2 OF 11	3.01.00. d)	Bypass Arrangement of the VFD system if specified.	DELETED
21	VI / B	B-12 / VARIABLE FREQUENCY DRIVES	4 OF 11	7.00.00 7.01.00 7.02.00	7.00.00 BYPASS ARRANGEMENT (OPTIONAL, IF SPECIFIED) 7.01.00 The VFD System shall have an optional feature to ----- after gaining speed, the load would be switched over to bypass mode. 7.02.00 Comprehensive motor protection scheme ----- during detailed engineering.	DELETED

AMENDMENT-01 TO TECHNICAL SPECIFICATION (SECTION VI)

SI No	SPECIFICATION REFERENCE				EXISTING	READ AS
	SEC/PART	SUB SEC.	PAGE NO.	CLAUSE NO.		

22	VI / B	B-12 / VARIABLE FREQUENCY DRIVES	4 OF 11	8.00.00	STANDBY VFD ARRANGEMENT (OPTIONAL, IF SPECIFIED)	STANDBY VFD ARRANGEMENT																
23	VI / A	IIC-01 CONTROL INST. / &	2 OF 5	3.01.01	Bidder to considerrating 415 V AC. Refer tender drawing CW-EN-9886-PVI-A-019	Bidder to considerrating 415 V AC. Refer tender drawing CW-EN-9886-PVI-A-019A																
24	VI / A	IIC-01 CONTROL INST. / &	5 of 5	8.00.00	Suitable electronic grounding..... during detailed engineering. Also refer enclosed scheme CW-EN-9886-PVI-A-019 in Part-B and sub-section titled "Basic Design Criteria" in Part-B, of this Technical Specification.	Suitable electronic grounding..... during detailed engineering. Also refer enclosed scheme CW-EN-9886-PVI-A-019A in Part-B and sub-section titled "Basic Design Criteria" in Part-B, of this Technical Specification.																
25	VI / B	IIC-06 ELECTRICAL POWER SUPPLY SYSTEM /	6 OF 6	11.00.00	Following C & I drawings related to this sub-section are enclosed herewith <table border="1" data-bbox="844 917 1335 1227"> <thead> <tr> <th>SI No.</th> <th>Drawing No.</th> <th>Sht Nos</th> <th>Drawing Title</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CW-EN-9896-POI-A-019</td> <td>1</td> <td>Scheme for 24V DC Power supply system</td> </tr> </tbody> </table>	SI No.	Drawing No.	Sht Nos	Drawing Title	1	CW-EN-9896-POI-A-019	1	Scheme for 24V DC Power supply system	Following C & I drawings related to this sub-section are enclosed herewith <table border="1" data-bbox="1417 917 1908 1195"> <thead> <tr> <th>SI No.</th> <th>Drawing No.</th> <th>Sht Nos</th> <th>Drawing Title</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CW-EN-9886-PVI-A-019A</td> <td>1</td> <td>Scheme for 24V DC Power supply system</td> </tr> </tbody> </table>	SI No.	Drawing No.	Sht Nos	Drawing Title	1	CW-EN-9886-PVI-A-019A	1	Scheme for 24V DC Power supply system
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SI No.	Drawing No.	Sht Nos	Drawing Title																			
1	CW-EN-9886-PVI-A-019A	1	Scheme for 24V DC Power supply system																			



ANNEXURE-2(R1)

S.No	Service	Material of Construction
1.	Low Pressure Sea Water and Brine from SWRO & RO plant (For Sea Water intake, Pipeline upstream and downstream of Clarifiers, filters & Ultra-filtration (UF) of SWRO plant, up to suction of HP Feed Pumps of SWRO plant, Brine at the downstream of ERU to Brine Water storage tank, filter backwash water line)	1) GRP as per ASTM D3517/ AWWA C950-88/ AWWA M45 2) UNS S31254 to ASTM A 312/ASTM A 182/ASTM 269/ ASTM 409/Equivalent. 3) UNS S32750 as per ASTM A 790 / A 182/Equivalent. – (*) 4) High density polyethylene(HDPE) pipes to ISO 4427:2007
2.	High Pressure Sea Water and Brine from SWRO plant (From discharge of HP Feed pumps of SWRO plant up to ERU inlet)	High Austenitic Stainless Steel : 1) UNS S31254 as per ASTM A 182/ASTM A 269 (254 SMO)/ASTM A312/ Equivalent - Refer Note * 2) UNS S32750 as per ASTM A 790 / A 182/Equivalent. – (*) Note (*): Having PREN (Pitting Resistance Equivalent Number) greater than 40
3.	Permeate from SWRO Plant (Product water of SWRO Plant to Degassers, piping at the upstream and downstream of product water transfer pumps up to Storage tanks/Potable water treatment system/2 nd stage RO Plant)	High Austenitic Stainless Steel : 1) UNS S31254 as per ASTM A 182/ASTM A 269 (254 SMO)/ASTM A 312/Equivalent - Refer Note * 2) UNS S32750 as per ASTM A 790 / A 182/Equivalent. – (*) Note (*): Having PREN (Pitting Resistance Equivalent Number) greater than 40
4.	Permeate from 2nd Stage RO plant (From RO plant to degasser inlet/any tank/ CO ₂ system)	<u>Stainless Steel:</u> 1) Stainless steel to ASTM A312, Gr. 316L sch.40s seamless for sizes 50mm and below 2) Stainless Steel to ASTM A312, Gr. 316L welded for sizes 65 mm NB and above.
5.	Concentrated Hydrochloric Acid (5 -30% Conc.)	1) <u>PP lined Carbon Steel:</u> IS:1239 Part-I (Heavy grade-Black), ASTM-A-53 Type-E Grade B/ASTM A 36/ IS: 3589-Grade 410/Equivalent and Galvanized to IS:4736 or equivalent, internally lined with 3 mm thick Polypropylene 2) CPVC as per ASTM F441, CPVC 4120 Schedule 80
6.	Dilute Hydrochloric Acid (Less than 5% Conc.)	1) <u>Rubber lined Carbon Steel:</u> IS:1239 Part-I (Heavy grade-Black), ASTM-A-53 Type-E Grade B/ASTM A 36/ IS: 3589 – Grade 410 / Equivalent and Galvanized internally lined with 3 mm thick Rubber of shore hardness 65 ± 5°A). 2) Chlorinated Polyvinyl chloride (CPVC) as per ASTM F441 CPVC 4120 Schedule 80
7.	Sulfuric Acid a) Strong (Conc.)	Alloy 20/Equivalent (Butt-weld fittings shall be used)
	b) Dilute (up to 10%)	Polypropylene lined steel/ Equivalent.
8.	Alkali (Sodium Hydroxide) a) Strong (5% and above)	Stainless Steel SS-316
	b) Dilute (below 5%)	Polypropylene lined steel/CPVC as per ASTM F441 CPVC 4120

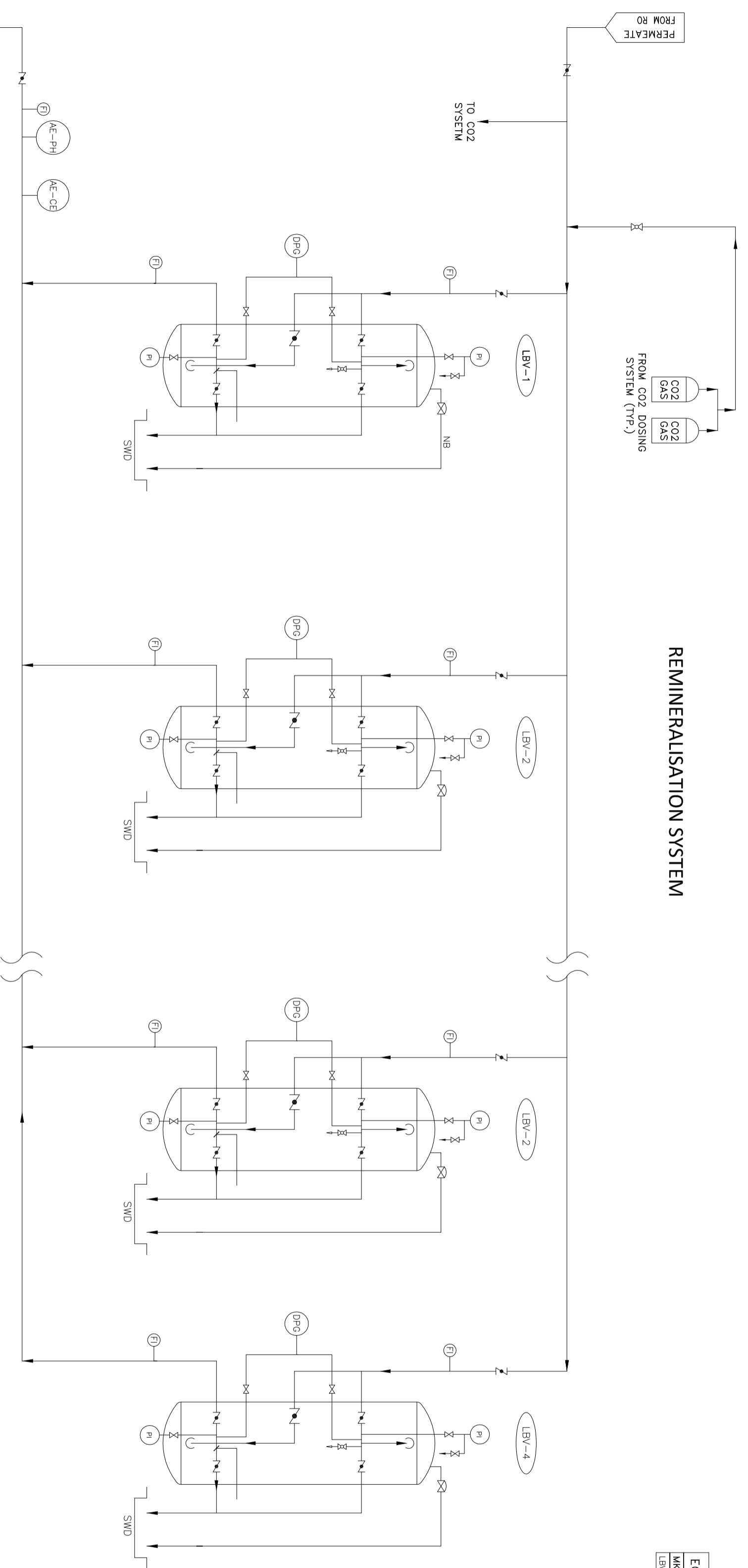


ANNEXURE-2(R1)

S.No	Service	Material of Construction
9.	Coagulant (Alum)	Rubber lined Steel/CPVC 4120 Sch.80
10.	Lime slurry/Solution/ Suspensions	Galvanised Steel /(as referred above) or CPVC as per ASTM F441 CPVC 4120
11.	Coagulant(Ferric Chloride), Anti-oxidant and Anti -scalant	CPVC as per ASTM F441 CPVC 4120 Sch.80 or Equivalent.
12.	Coagulant aid Solution	Rubber lined Steel (as referred above)/CPVC as per ASTM F441 CPVC 4120, Schedule 80/equivalent.
13.	Liquid and Gas Chlorine (Under Pressure)	Seamless Carbon Steel Schedule 80 (Heavy Duty)
14.	Chlorinated Water	1) Rubber lined Steel (as referred above) or CPVC as per ASTM F441 CPVC 4120 Schedule 80/ equiv. 2) HDPE as per ASTM D3350 CL 34543C, FM Class 150 or Equivalent for buried portion
15.	Wet Chlorine gas (Under Vacuum)	1) Polypropylene pipe as per relevant standard 2) CPVC as per ASTM F441 CPVC 4120 Schedule 80/equivalent.
16.	Sludge (From Clarifier /tube settler/lamella clarifiers)	1) GRP as per ASTM D3517/ AWWA C950-88/ AWWA M45 2) UNS S31254 as per ASTM A 182/ASTM A 269 (254 SMO)/ASTM A 312/Equivalent - Refer Note * 2) UNS S32750 as per ASTM A 790 / A 182/Equivalent. – (*) 3) HDPE as per ASTM D3350 CL 34543C, FM Class 150 or Equivalent for buried portion Note (*) : Having PREN (Pitting Resistance Equivalent Number) greater than 40
17.	Waste (Neutralized) effluent	1) Rubber lined Steel (as referred above) 2) HDPE as per ASTM D3350 CL 34543C, FM Class 150 or Equivalent for buried portion.
18.	Chemical Waste from vessels and tanks	1) CPVC as per ASTM F441 CPVC 4120 Schedule 80/equivalent. 2) HDPE (as referred above)
19.	Sodium hypo chloride/chlorite solution	High Austenitic Stainless Steel : 1) UNS S31254 as per ASTM A 182/ASTM A 269 (254 SMO)/ASTM A312/ Equivalent - Refer Note * 2) UNS S32750 as per ASTM A 790/A 182 - Refer Note * 3) Titanium as per ASTM B 861 / B862 Note (*) : Having PREN (Pitting Resistance Equivalent Number) greater than 40

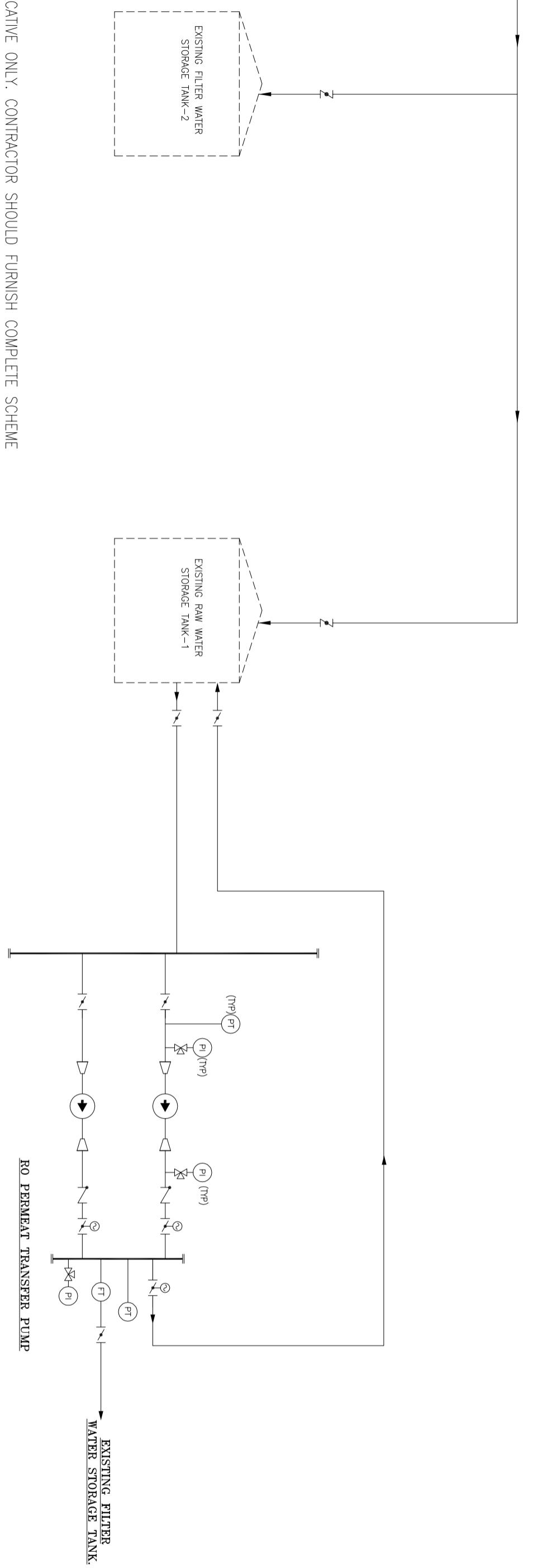
EQUIPMENT LIST - REMINERALISATION PLANT			
Sl. No.	DESCRIPTION	QTY.	
1	LMF BED VESSEL	4	

PHA - PH ANALYSER
 CA - CONDUCTIVITY ANALYSER
 FI - FLOW INDICATOR
 DPG - DP GAUGE
 PI - PRESSURE INDICATOR



LEGENDS:-

	SLUICE/GATE VALVE		(NORMALLY CLOSED)
	DIAPHRAGM VALVE		(NORMALLY CLOSED)
	GLOBE/BALL VALVE		(NORMALLY CLOSED)
	BUTTERFLY VALVE		(NORMALLY CLOSED)
	PLUG VALVE		(NORMALLY CLOSED)



FOR TENDER PURPOSE ONLY

OWNER
RATNAGIRI GAS AND POWER PVT.LTD.
 (A GOVERNMENT OF INDIA ENTERPRISE)
 (CONSULTANCY WING)

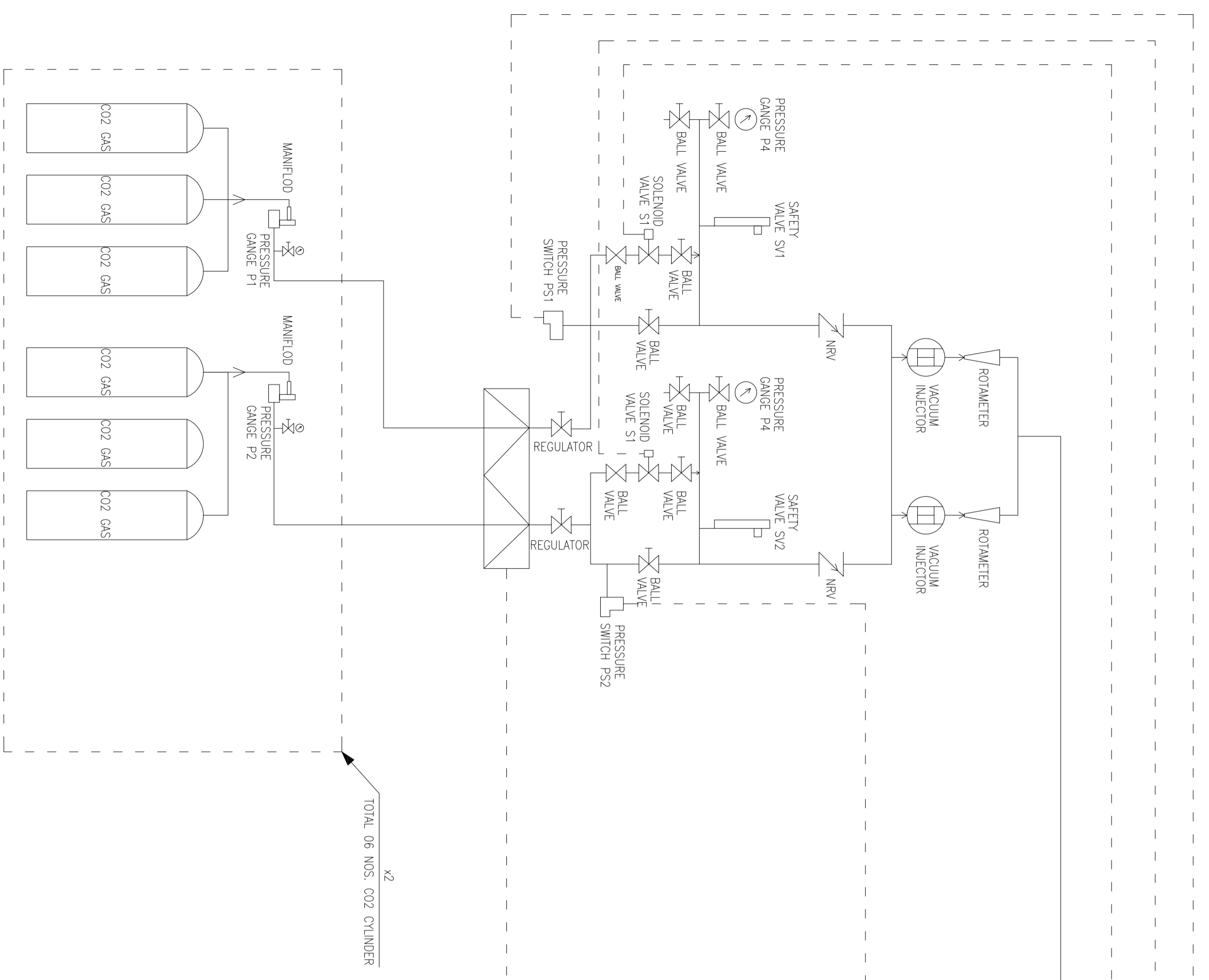
CONSULTANT
NTPC LTD.
 (A GOVERNMENT OF INDIA ENTERPRISE)
 (CONSULTANCY WING)

REV.	DESCRIPTION	DRAWN	DESIGN	CHKD.	M	C&I	C	E	APPD	DATE	DRG NO.	PROJECT	TITLE	SHEET NO.	REV. NO.	SIZE	SCALE
1	REVISED FOR TENDER									02.04.18		2X40cum/hr DESALINATION PLANT AT RGPPJ,	P&I DIAGRAM FOR DESALINATION PLANT	7	1	A1	NTS
0.	RELEASED FOR TENDER																

NOTES

1. THE SCHEME SHOWN IS INDICATIVE ONLY. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS DURING DETAILED ENGINEERING BASED ON TECHNICAL SPECIFICATION AND SYSTEM REQUIREMENTS. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS INCLUDING ALL INSTRUMENTS, VALVES ETC. FOR SMOOTH, SAFE, EFFICIENT, TROUBLE FREE OPERATION OF PLANT

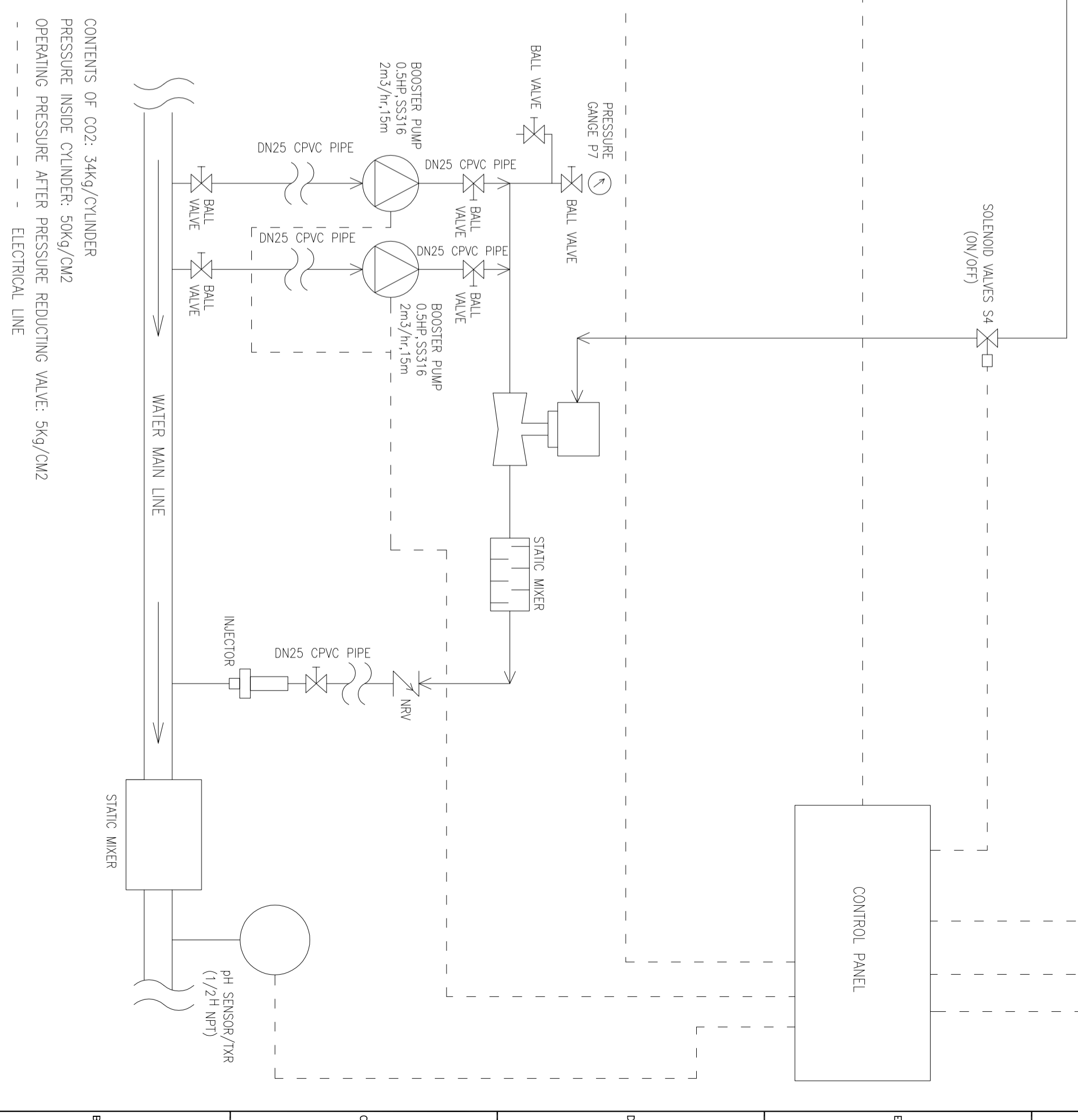
8 7 6 5 4 3 2 1



TOTAL 06 NOS. CO2 CYLINDER
x2

NOTES:-

1. THE SCHEME SHOWN IS MIN INDICATIVE ONLY. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS DURING DETAILED ENGINEERING BASED ON TECHNICAL SPECIFICATION AND SYSTEM REQUIREMENTS. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS INCLUDING ALL INSTRUMENTS, VALVES ETC. FOR SMOOTH, SAFE, EFFICIENT, TROUBLE FREE OPERATION OF PLANT



CONTENTS OF CO2: 34kg/CYLINDER
PRESSURE INSIDE CYLINDER: 50kg/cm2
OPERATING PRESSURE AFTER PRESSURE REDUCING VALVE: 5kg/cm2
ELECTRICAL LINE

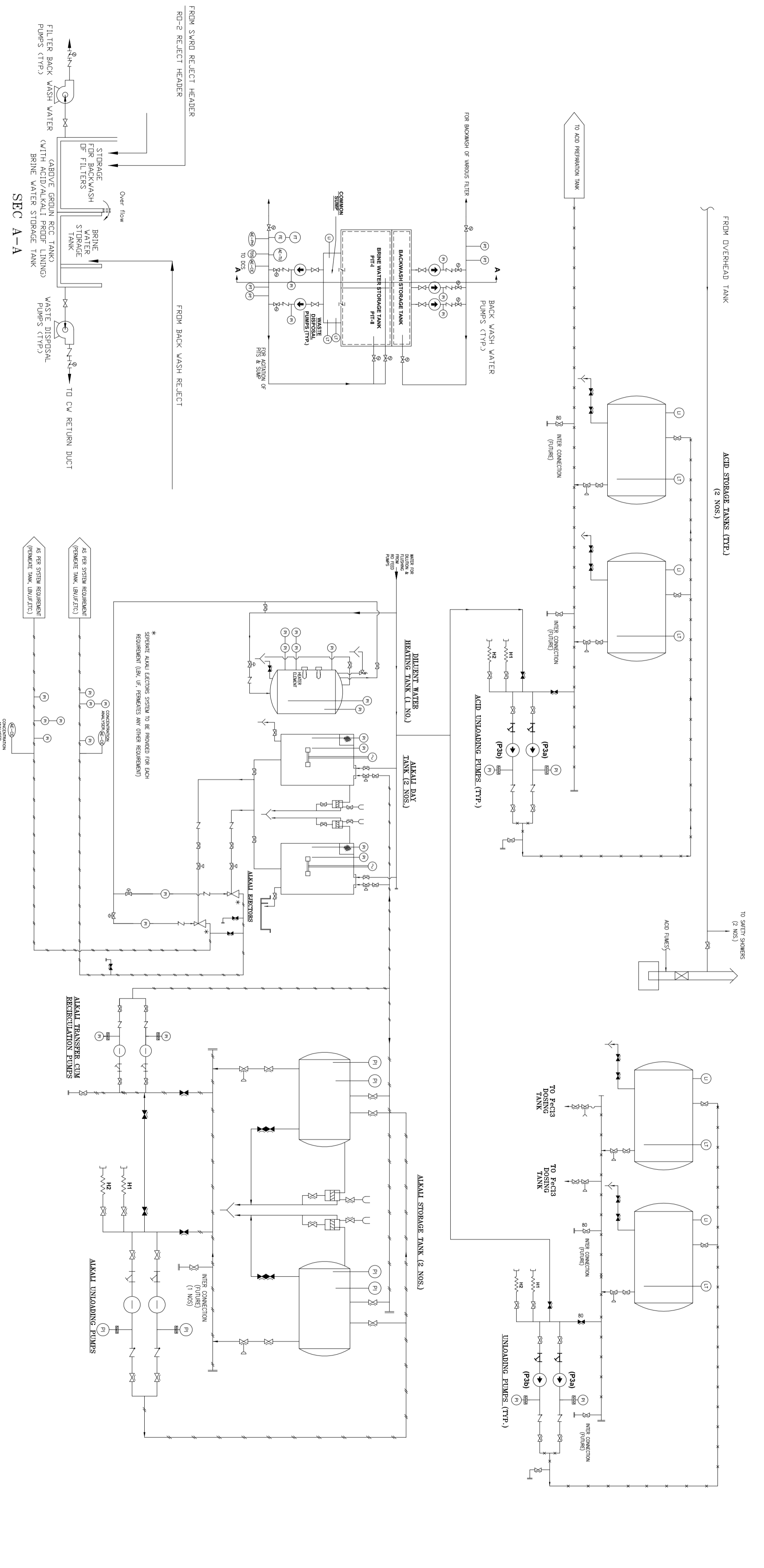
REV.	DESCRIPTION	DRAWN	DESIGN	CHKD	M	C&I	C	E	APPD	DATE	PRJCT	TITLE	DWG NO.	SHEET NO.	REV. NO.	SCALE
1	REVISED FOR TENDER									02.04.18	PROJECT	2X40cum/hr DESALINATION PLANT AT RGPLJ.	CW-EN-9886-PVM-A-001 (R1)	8 of 9	1	A1
0.	RELEASED FOR TENDER											P&I DIAGRAM FOR DESALINATION PLANT				

FOR TENDER PURPOSE ONLY

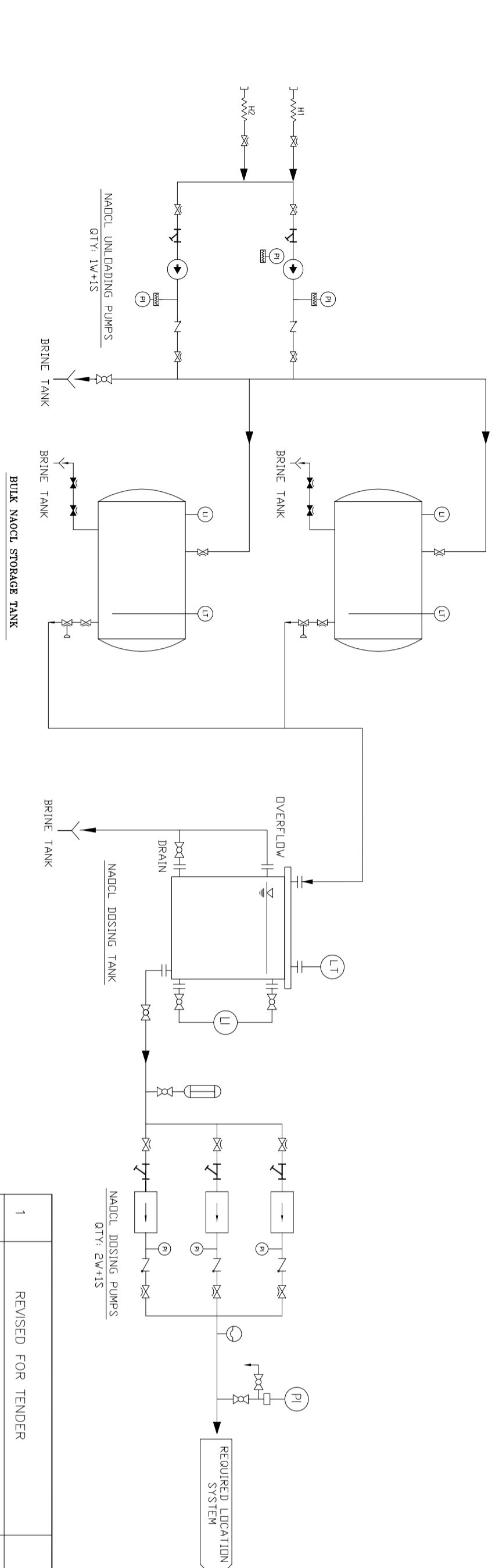
OWNER
RATNAGIRI GAS AND POWER PVT.LTD.

CONSULTANT
NTPC LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
(CONSULTANCY WING)

PROJECT: 2X40cum/hr DESALINATION PLANT AT RGPLJ.
TITLE: P&I DIAGRAM FOR DESALINATION PLANT
DWG NO.: CW-EN-9886-PVM-A-001 (R1)
SHEET NO.: 8 of 9
REV. NO.: 1
SCALE: A1



SEC A-A



- NOTE :-
1. THE SCHEME SHOWN IS INDICATIVE ONLY. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS DURING DETAILED ENGINEERING BASED ON TECHNICAL SPECIFICATION AND SYSTEM REQUIREMENTS. CONTRACTOR SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS INCLUDING ALL INSTRUMENTS, VALVES ETC. FOR SMOOTH, SAFE, EFFICIENT, TROUBLE FREE OPERATION OF PLANT
 2. ALL THE DRAINS CHEMICAL WASTE OVERFLOW TO BE SENT TO BRINE WATER STORAGE TANK THROUGH A NEUTRALIZATION PIT & PUMPING ARRANGEMENT.

REV.	DESCRIPTION	DESIGN	CHKD.	C&I	C	E	APPD.	DATE	PRG NO.	TITLE
1	REVISED FOR TENDER							02.04.18		2X40cum/hr DESALINATION PLANT AT RGPPPL
0.	RELEASED FOR TENDER							02.11.17		P&I DIAGRAM FOR DESALINATION PLANT
										CW-EN-9886-PVM-A-001 (R1)

FOR TENDER PURPOSE ONLY

OWNER
RATNAGIRI GAS AND POWER PVT.LTD.

CONSULTANT
NTPC LTD.
(A GOVERNMENT OF INDIA ENTERPRISE)
(CONSULTANCY WING)

PROJECT: 2X40cum/hr DESALINATION PLANT AT RGPPPL
TITLE: P&I DIAGRAM FOR DESALINATION PLANT
SHEET NO: 9 OF 9
REV. NO: 1
SCALE: A1
DATE: 02.11.17

APPENDIX-A

INTEGRITY PACT

between

RATNAGIRI GAS & POWER PRIVATE LIMITED (hereinafter referred to as "The Employer")

and

..... (hereinafter referred to as "The Bidder/Contractor")

and

..... (hereinafter referred to as "JV Partner/ Consortium Members"
(if applicable))

Preamble

The Employer invites the bids from all eligible bidders and intends to enter into contract for with the successful bidder(s), as per organizational systems and procedures. The Employer values full compliance with all relevant laws and regulations, and the principles of economical use of resources, and of fairness and transparency in its relations with its Bidder(s) and/or Contractor(s).

Section 1 Commitments of the Employer

1. The Employer Commits itself to take all measures necessary to prevent corruption and to observe the following principles in this regard:-
 - a) No employee of the Employer, either in person or through family members including relatives, will in connection with the bidding for or the execution of a contract, demand or accept a promise for or accept for him/herself or for a third person, any material or immaterial benefit to which he/she is not legally entitled to.
 - b) The Employer shall, during the bidding process treat all Bidders with equity and reason. The Employer will, in particular, before and during the bidding process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the bidding process or the contract execution.
 - c) The Employer will exclude from the process all known prejudiced persons.
2. If the Employer obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or if there be a substantive suspicion in this regard, the Employer will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Contd../.

Section 2 Commitments and Undertakings by the Bidder/Contractor

- 1 The Bidder/Contractor commits and undertakes to take all measures necessary to prevent malpractices & corruption. He commits himself to observe the following principles during his participation in the bidding process and during the execution of the contract:
 - a) The Bidder/ Contractor undertakes not to, directly or through any other person or firm offer, promise or give or influence to any employee of the Employer associated with the bidding process or the execution of the contract or to any third person on their behalf any material or immaterial benefit which he/she is not legally entitled, in order to obtain in exchange any advantage of any kind whatsoever during the bidding process or during the execution of the contract.
 - b) The Bidder/ Contractor undertake not to enter into any undisclosed agreement or understanding, whether formal or informal with other Bidders. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other action to restrict competitiveness or to introduce cartelization in the bidding process.
 - c) The Bidder/Contractor undertakes not to commit any offence under the relevant Anti-corruption Laws of India; further the Bidder/Contractor will not use improperly, any information or document provided by the Employer as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically for purposes of competition or personal gain and will not pass the information so acquired on to others.
 - d) The Bidder/ Contractor will, when presenting his bid undertakes, to disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2 The Bidder/ Contractor will not instigate and allure third persons/parties to commit offences outlined above or be an accessory to such offences.

Section 3 Disqualification from Bidding Process and Exclusion from Future Contracts

1. If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of any provisions of Section 2 or in any other form so as to put his reliability or credibility as Bidder into question, the Employer shall be entitled to disqualify the Bidder(s)/ Contractor(s) from the bidding process or to terminate the contract, if signed on that ground.
2. If the Bidder/ Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Employer shall

Contd./..

be entitled to exclude including blacklist and put on holiday the Bidder/ Contractor for any future tenders/contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Employer taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 3 years.

3. A transgression is considered to have occurred if the Employer after due consideration of the available evidence concludes that no reasonable doubt is possible
4. The Bidder with its free consent and without any influence agrees and undertakes to respect and uphold the Employer's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
5. Subject to full satisfaction of the Employer, the exclusion of Bidder/ Contractor could be revoked by the Employer if the Bidder/ Contractor can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

Section 4 Compensation for Damages including Forfeiture of Earnest Money Deposit/ Security Deposit/ Performance & Advance Bank Guarantees

1. If the Employer has disqualified the Bidder/ Contractor from the bidding process or has terminated the contract pursuant to Section 3, the Employer shall forfeit the Earnest Money Deposit/Bid Security, encash Contract Performance Bank Guarantees in addition to excluding the bidder from the future award process and terminating the contract.
2. In addition to 1 above, the Employer shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor's Default.

Section 5 Previous Transgressions

1. The Bidder swears on oath that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country conforming to TI approach or including with any Public Sector Enterprise/ Undertaking in India or any Government Department in India that could justify bidder's exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, Bidder can be disqualified from the bidding process or the contract, if already awarded, can be terminated on this ground.

Contd../.

Section 6 Company Code of Conduct

Bidders are also advised to have a company code of conduct (clearly rejecting the use of bribes and other unethical behaviour) and a compliance program for the implementation of the code of conduct throughout the company.

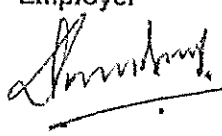
Section 7 Pact Duration

This Pact comes into force from the date of signing by all the parties. It shall expire for the Contractor 12 months after the last payment under the respective contract, and for all other unsuccessful bidders 6 months after the contract has been awarded.

Section 8 Miscellaneous Provisions

1. This Pact is subject to Indian Law. The place of performance and jurisdiction shall be New Delhi.
2. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
3. The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.
4. If the Contractor is a JV partnership/Consortium, this agreement must be signed by all the partners of JV/Consortium Partners as the case may be.

The Parties hereby sign this Integrity Pact aton this day of.....200....

<p>Employer</p>  <p>Witness</p> <p>1. _____</p> <p>2. _____</p>	<p>Bidder/ Contractor</p> <p>Witness</p> <p>1. _____</p> <p>2. _____</p>	<p>Joint Venture Partner(s)/ Consortium member(s) (As Applicable)</p> <p>Witness</p> <p>1. _____</p> <p>2. _____</p>
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