

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
M/s TALCHER FERTILIZERS LIMITED**



PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
OWNER : M/s TALCHER FERTILIZERS LIMITED



SL. NO	DOCUMENT NO	PAGE NO.	Cl. No	ITB REQUIREMENT	BIDDERS QUERIES	PMC REPLIES
1	PC-183/E-4012/S-V SPECIAL CONDITIONS OF CONTRACT	6 of 51	1.1.6	1.1.6 The CONTRACTOR shall provide necessary full technical assistance to OWNER including follow-up for obtaining the necessary approvals to be issued in the name of OWNER from the various statutory authorities.	As per Clause No.1.1.6 of SCC, only technical assistance is required for getting various statutory approvals pertaining to Fire Water Systems (OSBL FF) . However as per Clause No.2.1 sl.no.6 of Constructors's Scope of work, Approval from Statutory authorities and PECO/ CCOE is included in the scope of Contractor OSBL FF. Hence kindly clarify the Scope of Statutory Approvals & PESO approval.	NIT Clauses shall prevail.Statutory approvals as required for the complete package is in the scope of the Bidder.Also please refer clause 1.1.5 of SCC.
2	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	5 of 8	2.1	The scope of work of the Contractor shall include but not limited to the following: 6) Government / Statutory clearances required for any system and/or component shall be in scope of bidder.		
3	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	5 of 8	2.1	The scope of work of the Contractor shall include but not limited to the following: 6) PESO/CCOE license/certification for Diesel oil (petroleum class B) storage shall be obtained by bidder.		
4	PC-183/E-4012/S-V SPECIAL CONDITIONS OF CONTRACT	6 of 51	1.1.6	1.1.6 The CONTRACTOR shall provide necessary full technical assistance to OWNER including follow-up for obtaining the necessary approvals to be issued in the name of OWNER from the various statutory authorities.	Kindly provide the list of agencies with whom the Statutory approvals to be received	
5	PC-183/E-4012/S-V SPECIAL CONDITIONS OF CONTRACT	6 of 51	1.1.6	1.1.6 The CONTRACTOR shall provide necessary full technical assistance to OWNER including follow-up for obtaining the necessary approvals to be issued in the name of OWNER from the various statutory authorities.	In case of only technical assistance to be provided for Statutory Fire Approvals, then kindly clarify whether the cost incurred for arranging of all inspections required by Statutory Authorities shall be borne by us / Client.	
6	PC-183/E-4012/S-V SPECIAL CONDITIONS OF CONTRACT	13 of 51	1.2.8.7.17	1.2.8.7.17 Arrangements for all inspections required by Statutory Authorities and as specified in Technical Specifications shall be made by CONTRACTOR.		
7	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	2.0 FACILITIES TO BE PROVIDED BY CONTRACTOR : Facilities which shall be provided by Contractor of this NIT, as per activities mentioned in contractor's general scope of work, are listed as below: xxi) Water spray system for outdoor diesel oil storage at fire water pump house, Diesel oil storage of emergency DG set, all pump houses, cable cellars, transformers (irrespective of oil content quantity), ammonia/toxic service equipment/areas, bagging plant building(empty bag storage area) and other applicable areas as per attachment 5 in NIT.	Kindly provide the GA & Sectional drawings AS per P&ID it is shown in ISBL scope. Kindy clarify the scope	Flange joints of piping system for Toxic/flammable service in piping/equipment system in OSBL area. (Ex. OSBL pipe rack etc.). Further details shall be provided during detail engineering
8	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	2 of 8	2.0	viii) Piping along with valves and fittings for connecting from diesel oil day tanks (at fire water pump house) to bulk diesel oil storage tank area at battery limit.	1) We understand that the Diesel Storage near the EDG Building is the Bulk Diesel oil storage tank. 2) Kindly provide the material specification for Pipes, fittings & valves for Diesel oil line	As per attached PMS/VMS. Refer attachment 3 in NIT
9	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	xxi) ..Diesel oil storage of emergency DG set..	a) Diesel Oil Storage of emergency DG Set is not appearing in the Attachment 05. Hence kindly confirm whether Spray system is in the scope of OSBL FF contractor. b) Kindly provide the Dimension details of Diesel Oil Storage Tank	Amendment shall be issued, if required
10	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	2.0 FACILITIES TO BE PROVIDED BY CONTRACTOR : Facilities which shall be provided by Contractor of this NIT, as per activities mentioned in contractor's general scope of work, are listed as below: xxi) Diesel oil storage of emergency DG set	In case of requirement of water spray system for Diesel oil storage of emergency DG Set, we understand that the rings will be supported by pylon supports with RCC pedestals	Amendment shall be issued, if required
11	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	xxi) .cable cellars...	Eventhough cable cellars are mentioned here, as per Attachment 05 of NIT only the Cable cellars in the substation of WTP, DM plant and ETP & Bagging Plant are to be considered for MVW Spray system in the scope of OSBL FF contractor. Kindly confirm	Tentative size of cable cellar and Tentative details of Transformers shall be provided in Amendment, if required.
12	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7 of 14	4.2.1	4.2.1 Medium velocity Water Spray (MVWS) System - To be provided for the followings locations, but not limited to. - Compressor seals - Lube oil consoles - Knock out drums (with hydrocarbon bearing service) - Diesel/Petrol/Kerosene oil or any hydrocarbon liquid / oil tank - Coal/ Pet coke/ solid hydrocarbon material handling plant area - Pumps under racks.	1) We have provided the MVW Spray system as per the Attachment-05 - List of OSBL Facilities for Spray / Sprinkler, Building Fire Fighting & Gas Flooding Systems only. 2) If any other areas mentioned in this list to be covered, kindly provide the areas encountered with specific requirement mentioned like compressor seals, etc. 3) Also kindly provide th drawings & location for the same to enable us to design the system	Spray/Sprinkler system shall be as per bidders Engineering. Major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering
13	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	xxi) ... transformers (irrespective of oil content quantity)...	Kindly provide the List of Transformers including the Rating and locations to be protected with HWW Spray system	Tentative details of Transformers shall be provided in Amendment, if required.
14	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR		23	Transformers (all)		Tentative details of Transformers shall be provided in Amendment, if required.
15	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7 of 14	4.2.4	4.2.4 Sprinkler System The sprinkler system shall be designed and installed at the following locations, but not limited. Sprinkler system with deluge valves (dry type), shall be installed at the following Location: - All Buildings as per NBC 2016 (and/or latest edition) - Laboratory - Chemical room/storage area	We understand that this is a general specification and our scope is limited to the "Attachment-05 - List of OSBL Facilities for Spray / Sprinkler, Building Fire Fighting & Gas Flooding Systems only. ". Hence we have considered Sprinkler System for the areas mentioned in Attachment-05 only. Kindly confirm	Spray/Sprinkler/ Gas flooding system shall be as per bidders Engineering. Major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering
16	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8 of 14	4.2.4	4.2.4 Sprinkler System Sprinkler system (wet type with QBD), shall be installed at the following Location: - All buildings as per NBC 2016 (and/or latest edition) - Admin Building - Workshop building - Technical Building - Meeting Room/Hall - Canteen - Fire brigade building	We understand that this is a general specification and our scope is limited to the "Attachment-05 - List of OSBL Facilities for Spray / Sprinkler, Building Fire Fighting & Gas Flooding Systems only. ". Hence we have considered Sprinkler System for the areas mentioned in Attachment-05 only. Kindly confirm	Spray/Sprinkler/ Gas flooding system shall be as per bidders Engineering. Major facilities covered in attachment 9 in NIT. However any other minor facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering
17	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		22	IA/PA PACKAGE	1) We have considered Sprinkler system for IA/ PA Bldg. Kindly confirm. 2) Kindly provide us the GA Drawing, Sectional Drawings indicating the Height & architecture of Building.	Spray/Sprinkler system of IA/PA package (compressor shed , panel room) shall be as per attachment 5. Drawing/Layout to be provided during detail Engg.

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18	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	xxi) ... all pump houses...	Kindly provide the the Details of Pump House which are to be protected with MVV Spray System	Spray/Sprinkler system of pump house shall be as per bidders Enggineering. Major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering.
19	PC183-TFL-603-SEC-VI-A06 ATTACHMENT- 06 (CONCEPTUAL LAYOUT OF FIRE WATER PUMP HOUSE)			DWG NO.PC183-0000-0016 (REV.P1) CONCEPTUAL DRAWING OF FIRE WATER PUMP HOUSE FOR INTEGRATED COAL BASED FERTILIZER AND CHEMICALS COMPLEX	We request you to kindly consider the Minimum water level of the reservoir to be above the Top of Casing of the pumps which will be conveyed to you during detailed engineering stage	Tentative fire water reservoir & fire water pump house drawing is attached in attachment 9. Pump house along with required elevation of pumps shall be as per detail engineering by bidder.
20	PC183-TFL-603-SEC-VI-A06 ATTACHMENT- 06 (CONCEPTUAL LAYOUT OF FIRE WATER PUMP HOUSE)			DWG NO.PC150-0000-0217 (REV.P) GENERAL ARRANGEMENT OF FIRE WATER MOUNTING PUMP HOUSE	We understand that this drawing is not applicable for Fire Water Pump House	Drawing No. PC150-0000-0217 is reference purpose only.
21	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	2 of 8	2.0	iv) Draw off connection (4 way, level gauge, level transmitter), strainer mesh (at suction pit) for fire water reservoir will be in the scope of bidder.	Kindly provide the details / arrangement & quantity of Draw off connection to be provided for Fire Water Reservoir	As per detail engineering by bidder
22	Dwg. No. PC183-7115-0046 Rev.0 SCHEMATIC ARRANGEMENT FOR FIRE FIGHTING			Common Discharge manifold	Tender P&I Diagram does not indicate isolation valve in discharge manifold. Please confirm whether isolation valve is required in common discharge manifold to divide the same in two parts for ease of maintenance as followed in other similar projects.	As per detail engineering by bidder
23	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	5 of 7		4. FIRE WATER NETWORK DESIGN BASIS viii. Each Pump should have individual pump testing line with an isolation valve.	The Individual test line is not indicated in the P&ID of FWPH which is also a part of NIT. However it is specified in clause no.4 of Design Philosophy process, that individual pump testing line with isolation valve is required. But as per our previous experience with HAZOP the individual test line is required for each pumpset. Hence kindly clarify / confirm the requirement of Individual pump test line with isolation valves	As per PC183-TFL-4012-603-SEC IV-03 clause no.4 of Design Philosophy process shall prevail.
24	Dwg. No. PC183-7115-0046 Rev.0 SCHEMATIC ARRANGEMENT FOR FIRE FIGHTING			PumpTest Line		As per PC183-TFL-4012-603-SEC IV-03 clause no.4 of Design Philosophy process shall prevail.
25	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7 of 14	4.2	Instrument air service Piping/ Tubing shall be SS304.	Kindly provide the tapping points for instrument air for DV operation	Owner shall provide instrument air/service water/plant air/ drinking water at battery limit of fire water pump house , fire control room etc., facilities,and bidder has to take tapping from available point.
26	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7 of 14	4.2	Instrument air service Piping/ Tubing shall be SS304.	As per ATTACHMENT- 03, (PMS & VMS), Pipe Class D24 is mentioned for Instrument air (wet). But as per Clause No.4.2 of Design Philosophy Piping SS304 is used for Instrument air service piping. From the above details we understand the following 1) Instrument air (wet) piping is to be used downstream of the Deluge Valve in the detection line 2) SS304 piping is to be used for tapping from existing air line point provided by client to the deluge valve Kindly confirm / clarify our understanding	SS304 required for instrument air
27	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	4 of 14		4.1 Fire Hydrant System Flushing point with isolation gate valve and pressure gauge points (approx at the rate 300mtr. and at all battery limit tie in points) with isolation gate valve shall be provided on all headers.	Kindly provide the location , number & Size of flushing points to be considered	Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT. However finalize during detail engg.
28	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	5 of 14		4.1 Fire Hydrant System Number of hydrants shall be based on one hydrant post with two hydrant valves for every 30m (max.) of external perimeter of process units and storage tank area. For utility and other building areas, this distance shall be a maximum of 45m. Hydrants and/or water monitors shall be located keeping in view the different risks within the premises which are to be protected and ensuring effective coverage. Double hydrants (IS: 5290 type A, hydrant valve with single outlet) on each hydrant post (i.e. two hydrant valves mounted on each stand post) and at every 30m centre to centre, along the hydrant mains, shall be provided.	The spacing of Hydrants for utility areas are not clear from this specification. As per Conceptual Layout, 30m spacing has been considered from Hydrant to hydrant or from Hydrant to monitor inside the plant areas We understand that we have to consider the hydrants as per your Conceptual Layout only. Kindly confirm	Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT. However finalize during detail engg.
29	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	5 of 14		4.1 Fire Hydrant System Double hydrants (IS: 5290 type A, hydrant valve with single outlet) on each hydrant post (i.e. two hydrant valves mounted on each stand post) and at every 30m centre to centre, along the hydrant mains, shall be provided.	We understand from the Conceptual fire water layout that areas like Vikrampur Guest House, CISF Barrack is outside the plant battery limit and hence are to be provided with Single Headed Hydrant Valve as per the Layout. We are considering the same as per your Conceptual Fire Water layout. Kindly confirm	Bidder understanding is correct
30	CONCEPTUAL FIRE WATER LAYOUT			Fire Brigade Vehicle Parking area	Kindly confirm the TP Location for Fire Brigade vehicle parking for closing the ring	Tie in locations are marked in the Conceptual fire water layout drawing no. PC183-4012-921-001 attachment 1 in NIT. However finalize during detail engg.
31	CONCEPTUAL FIRE WATER LAYOUT			Sandbedding for UG Pipes	Sandbedding is not indicated in the typical detail of underground pipe. Kindly clarify any requirement of sandbedding for pipes running underground and provide the thickness of sandbedding	Refer Design philosophy (PC183-TFL-4012-603-SEC VI-4.0) clause no. 4.1.1 VII attached in NIT.
32	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	6 of 14	4.1.1	4.1.1 Buried Pipes The following points to be considered in designing of buried pipes ii) Underground pipe at crossing roads, access ways shall have RCC casing pipe (Culvert or Hume pipe). Underground piping at rail crossing shall be as per Indian railways.	This clause gives us option to use Culvert or Hume Pipe for road crossing. However Culvert is indicated in the Conceptual Fire Water Layout which also forms a part of NIT. Kindly clarify / confirm whether we can use Hume Pipe for single or two pipes crossing at a single place and culvert in case of more pipes crossing at a single place	As per detail engineering by bidder
33	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11 of 14	5.6	5.6 Hose Box Hose Box with accessories shall be provided for each hydrant post and each fire brigade connection (3 Way, 4 Way with isolation gate valve).	Since Hose Box is asked for Fire Brigade connection, we request you to kindly clarify the accessories required to be inside the Hose Box for Fire Brigade connection	Hose boxes required for fire brigade connection
34	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11 of 14		5.6 Hose Box Hose boxes shall be made of M.S. material and painted red with dimensions 18 SWG thick M.S. sheet, size 750 mm x 600 mm x 250 mm. Each box shall contain 2 nos.x 15 m of 21/2" fire hose (IS-636 Type-B) with gun metal nozzle , coupling, universal branch pipe (IS-903), MS spanner. 1no.	Since Hydrant valve MOC is SS304, we provide the MOC of the following items as SS304 1) Branch pipe with nozzle 2) Fire Hose Coupling	Amendment shall be issued, if required
35	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8 of 14		4.3 Foam System Foam system shall be provided for transformer area and hydrocarbon oil tank area.	a) Which type of Foam system to be considered for Transformer area ? b) We understand that bidder has to provide only Foam monitors in transformer and FO Tank area. Please confirm.	Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT. However finalize during detail engg.

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36	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8 of 14		4.3 Foam System Hydrocarbon oil tank area and LPG/NG gas skid area shall be surrounded by at least 3 foam monitors strategically installed, so that each tank or each gas skid is fully covered within the monitors throw range.	As per Conceptual layout NG gas skid is surrounded by 2 foam monitor only. Kindly confirm which document to follow.	LPG/NG gas skid area shall be surrounded by at least 3 foam monitors strategically installed, so that gas skid system is fully covered within the monitors throw range.
37	CONCEPTUAL FIRE WATER LAYOUT			3 Way FBI & 4 Way FBI	As per Clause 5.5 of the IS 3844 (Code of Practice for Installation and maintenance of Internal Fire Hydrants and Hose Reel) only 2 way or 3 way Fire Service Inlet is required for the risers (as applicable.). Hence kindly clarify the requirement of 3 Way FBI & 4 Way FBI indicated in many areas in the Conceptual Fire Water Layout	3 Way- 4 Way to be provided. Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT.
38	CONCEPTUAL FIRE WATER LAYOUT				Kindly clarify the purpose of Isolation valve (Whether the indicated valve is for flushing purpose or Isolation valve for Wet Risers). Clarity is required for studying the drawing	Tapping points for the facilities
39	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	5 of 14	4.1	4.1 Fire Hydrant System There may be cases where due to horizontal obstruction, a particular vessel/ process column may not be approachable by ordinary monitor or hydrant, elevated monitors shall be provided to take care of such conditions.	Kindly provide the location of elevated monitors	As per detail engineering by bidder
40	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	5 of 14	4.1	4.1 Fire Hydrant System Tall columns, structure, towers and equipment where it may not be possible to provide access staircases with hydrants on landing, will be considered as protected by hydrants at ground level, provided they are less than 15 m in height. When the height exceeds 15 m, the concerned hydrants shall be replaced by monitors. Alternate hydrants for protection of loading unloading bays, rail/truck gantries shall be replaced by water/foam monitors.	Kindly provide the details of any such location under OSBL Scope	As per detail engineering by bidder
41	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	6 of 14		4.1 Fire Hydrant System Field adjustable variables flow type remote operated monitors shall be provided for the protection of inaccessible equipment.	Kindly provide the inaccessible equipment location	Normally ,no facilities in OSBL areas are envisaged inaccessible , However if any, shall be finalize during detail engg.
42	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4 of 8	2.0	2.0 FACILITIES TO BE PROVIDED BY CONTRACTOR : Facilities which shall be provided by Contractor of this NIT, as per activities mentioned in contractor's general scope of work, are listed as below: xxxii) Civil works including excavation, backfilling, pipe sleepers, pipe crossover / jumper & structurals and other civil work for the smooth execution of fire fighting system.	Kindly provide the location and details of possible locations of pipe crossover to enable us to calculate the quantity	As per detail engineering by bidder
43	Hydrant Layout - Loading Platform, Track hopper			--	We request you to provide Culverts on both sides for Loading Platform & Track hopper as per layout for Crossing of Fire Pipes	As per detail engineering by bidder
44	CONCEPTUAL FIRE WATER LAYOUT			Pipe Sizes as per Layout	Kindly clarify whether the pipe sizes indicated in the layout are minimum or can be optimised	NIT specification is the minimum requirement.
45	ATTACHMENT- 03 (PMS & VMS)			Pipe Class : B24G Pipe Ends - 4" & below - THD	Since threaded joints are prone to leakages, we strongly recommend welded joints for G.I piping. These joints will be welded with Zinc rich electrode to maintain the anticorrosive property of the welded joints. Therefore, we request you to permit us to carryout welding of G.I pipe joints as per approved data sheet.	As per detail engineering by bidder
46	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8 of 14	4.4	4.4 Clean agent flooding system Gas flooding system with clean agent, diverter valve (if feasible), detectors & accessories for Control Room, Computer room, Computer console room, UPS room, Battery room, server/database rack room etc. shall be protected by clean agent system as per NFPA- 2001(Inergen/ Argonite/ Novec 1230).	1) We understand that the areas to be covered shall be as per Attachment-05 - List of OSBL Facilities for Spray / Sprinkler, Building Fire Fighting & Gas Flooding Systems of NIT. 2) However the rooms like UPS Room, Battery Room, Server/database rack room are not appearing in the GA Drawing of Fire Station Building. Hence kindly clarify the areas that are to be covered other than Control Room in the Fire Station Building (New)	Tentative fire station building drawing is provided with NIT. However shall be finalize during detail engg. By bidder.
47	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8 of 14	4.4	4.4 Clean agent flooding system Gas flooding system with clean agent, diverter valve (if feasible), detectors & accessories for Control Room, Computer room, Computer console room, UPS room, Battery room, server/database rack room etc. shall be protected by clean agent system as per NFPA- 2001(Inergen/ Argonite/ Novec 1230).	PMS is not provided for Clean agent system. Kindly provide	As per code and standard mentioned in NIT.
48	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11 of 14	6.0	6.0 FIRST AID FIRE FIGHTING EQUIPMENTS The selection of safety equipment should be such that it is correctly related to the type of fire expected in the area. The general guideline for selection and use shall be as per TAC/IS requirements. Fire extinguishers shall be provided as per TAC/IS. Contractor shall provide the Fire extinguishers items (BIS approved) as specified in tender.	We are providing Fire Extinguishers as per ATTACHMENT- 08 (FIRE EXTINGUISHER LIST). Kindly confirm	Bidder shall comply ATTACHMENT- 08 (FIRE EXTINGUISHER LIST) However Amendment, if any shall be issued.
49	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11 of 14	6.1	6.1 Fire extinguisher Following Fire Extinguisher types shall be provided. 1) 6Kgs., 9 Kgs. Capacity DCP Extinguishers (ABC type) shall be provided on Technological platforms/process ground floor and CCR. 2) 4.5 Kgs. Capacity Co2 Extinguishers shall be provided for Sub Stations & Control rooms 3) 22.5 Kgs Capacity Co2 Extinguisher shall be provided near transformer bay. 4) 50 Kgs capacity DCP Extinguishers (ABC type) shall be provided at critical operating area in plant. 5) 75 Kgs capacity DCP Extinguishers (ABC type) shall be provided at critical operating area in plant.	As per this clause 22. 5 Kgs. CO2 Extinguishers are required near Transformer bay, however the same is not appearing in the ATTACHMENT- 08 (FIRE EXTINGUISHER LIST). We request you to kindly consider the same & provide the updated list	Bidder shall comply ATTACHMENT- 08 (FIRE EXTINGUISHER LIST) However Amendment, if any shall be issued.
50	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11 of 14	6.1	6.1 Fire extinguisher Following Fire Extinguisher types shall be provided. 1) 6Kgs., 9 Kgs. Capacity DCP Extinguishers (ABC type) shall be provided on Technological platforms/process ground floor and CCR. 2) 4.5 Kgs. Capacity Co2 Extinguishers shall be provided for Sub Stations & Control rooms 3) 22.5 Kgs Capacity Co2 Extinguisher shall be provided near transformer bay. 4) 50 Kgs capacity DCP Extinguishers (ABC type) shall be provided at critical operating area in plant. 5) 75 Kgs capacity DCP Extinguishers (ABC type) shall be provided at critical operating area in plant.	As per this clause 50 kgs. DCP Extinguishers are required at critical operating area in the plant, however the same is not appearing in the ATTACHMENT- 08 (FIRE EXTINGUISHER LIST). Kindly provide the critical areas for 50 kgs DCP Extinguishers. Also kindly provide the updated list	Bidder shall comply ATTACHMENT- 08 (FIRE EXTINGUISHER LIST) However Amendment, if any shall be issued.
51	ATTACHMENT- 08 (FIRE EXTINGUISHER LIST)			FIRE EXTINGUISHER SYSTEM FOR OSBL FACILITIES TFL TALCHER 17. FUEL OIL UNLOAD STORE & FORWARDING AREA	Fuel Oil Unload Store & Forwarding area is not appearing in the Conceptual Fire Water Layout and Plot Plan. Kindly indicate the location in Plot plan and also provide GA Drawing of the area including the Tank details	Bidder shall comply ATTACHMENT- 08 (FIRE EXTINGUISHER LIST) However Amendment, if any shall be issued.
52	PC183-TFL-4012-603-SEC VI-6.0 SECTION VI - 6.0 DESIGN PHILOSOPHY – CIVIL & STRUCTURAL WORKS	5 of 76	1.0	1.0 DESIGN PHILOSOPHY FOR SCOPE OF WORK - CIVIL & STRUCTURAL WORK All civil works including design and construction of all foundations and super structures etc within battery limit as briefed below: 1. Fire fighting system control room and Fire Brigade station building (Ground+1 floor) along with fire brigade vehicle washing ramp, sludge pit, portable sludge drain pump (1 no.), utility air/water piping connected with rubber hoses, bituminous road around the periphery of Fire station building & its interconnection to nearby road and other facilities, etc. as per attached tentative drawing.	Kindly provide the details of Sludge drain pump, Utility air / water piping details & Tie in point for Utility air	Owner shall provide instrument air/service water/plant air/ drinking water at battery limit of fire water pump house , fire control room etc., facilities,and bidder has to take tapping from available point.

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53	SECTION VI – 10.0 PERFORMANCE AND GUARANTEE TESTS	4 of 5	2.7	2.7 Measurements during Guarantee Test: Pressure of min. 9 kg/cm2g at furthest point from pump house, as specified in fire water system layout, enclosed with this NIT.	We understand that the "furthest point from pump house" is the tie in points where the piping from the pump house connects with ISBL network. Kindly confirm & provide the list of Tie in points where 9 Kg/cm2g pressure is required	At all ISBL tie in point minimum pressure will be 9kg/cm2g
54	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		2	Sub station (WTP)	Kindly provide the GA Drawing of Substation (WTP), Cable Tray Details and Details of Transformers	Tentative size of cable cellar and Tentative details of Transformers shall be provided in Amendment, if required.
55	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		3	Sub station (DM +CPU)	Kindly provide the GA Drawing of Substation (DM+CPU), Cable Tray Details and Details of Transformers	Tentative size of cable cellar and Tentative details of Transformers shall be provided in Amendment , if required.
56	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		4	Sub station (ETP & STP)	Kindly provide the GA Drawing of Substation (ETP & STP), Cable Tray Details and Details of Transformers	Tentative size of cable cellar and Tentative details of Transformers shall be provided in Amendment , if required.
57	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		17	Urea product handling (Bagging Building)	1) It is indicated in the Attachment-05 - List of OSBL Facilities for Spray / Sprinkler, Building Fire Fighting & Gas Flooding Systems of NIT, that "Urea product handling (Bagging Building) to be protected with Spray / Sprinkler System. However we understand from Clause no.4.2.1 Medium velocity Water Spray (MVWS) System that only empty bags storage area is to be protected with Spray System. Kindly confirm	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting system shall be done by bidder, and same shall be finalized during detail engineering.
58	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		18	Sub station (Bagging Plant)	The GA Drawing is not attached in the Tender document. Kindly provide the GA Drawing of Substation (Coal Handling)	Amendment shall be issued, if required
59	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		19	Fire Brigade Station & Fire Control Station (new)	We understand that the Wet sprinkler System is to be provided for Fire Brigade Station (except areas like control room)	Bidder understanding is correct.
60	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		19	Fire Brigade Station & Fire Control Station (new)	We understand that the Control Room is the only area to be protected with Gas Flooding System	Please refer PC183-TFL-4012-603-SEC VI-4.0 attached with NIT
61	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		20	Fire Fighting Pump House	Kindly clarify whether the entire fire water pump house is to be protected with Sprinkler System	Spray/Sprinkler system of pump house shall be as per bidders Engineering. Major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting system shall be done by bidder, and same shall be finalized during detail engineering.
62	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		20	Fire Fighting Pump House	Kindly clarify whether the outdoor diesel oil storage at Fire Water Pump House is to be protected with Spray System.	please refer PC183-TFL-4012-603-SEC VI-4.0
63	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS		21	EDG Building + Panel room	Kindly provide the GA Drawing of EDG Building & Panel Room	Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT
64	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 36 OF 89	13.1	The intent of this specification is to define the functional and design requirements for an Integrated Fire Alarm System for buildings of Entire Plant area. This specification covers the requirements for selection, design, and engineering, manufacture, supply, inspection, installation, testing at site and commissioning of the system. The list of buildings & plant area shall be as per the following (for this please also refer piping input/layout for Fire fighting system attached elsewhere in the NIT)	Bidder understand's that only following list arear/building to be covered with fire Alarm system, please confirm. 1. Admin Building (Existing) 2. Technical Building (Existing) 3. Canteen building 4. Central Store (Existing) 5. Elect & Inst Workshop (Existing) 6. Mech Workshop (Existing) 7. Training Centre (Existing) 8. Urea Silo (Existing) 9. 132 kV Substation (Existing) 10. Main Receiving Substation - MRSS 11. Offsite & Utilities Substation - OUSS 12. EDG Building 13. Instrument Air & Plant Air Package 14. OSBL Cooling Tower Package 16. Urea product Handling (Bagging Building + Bagging Substation+ MCC Room + Conveyor System) 17. Plant Open Area 18. Fire Brigade Parking 19. Fire Station Building and Fire Control Room 20. Raw Water Pump House 21. Fire Water Pump House 22. Wagon Loading Platform 23. Pipe Rack 24. Truck Parking Area including Workers Room 25. Ash Dyke Package Substations and Pump House 26. Weigh Bridge 27. NG Metering Skid 28. Time Office (Main Gate) 29. Security Cabin – Material Gate 30. Plant Maintenance Office 31. Fuel Oil Storage Area	Refer clause 13.1 of Section VI-7.0
65	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 36 OF 89	13.2	The list of buildings & plant area (to be covered for interface and integration with Centralised Fire Detection & Alarm System) shall be as per the following. (please refer fire water layout for Fire fighting package system attached with this NIT).	Kindly Provide the make of existing Fire alarm System for integration of new and existing system in ring topology .	Fire Detection & Alarm System of entire Plant shall be interfaced & integrated seamlessly. Any hardware and Software required for the same shall be considered by Bidder. Make of ISBL Fire alarm System during detailed engineering.
66	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 42 OF 89	13.7	v) Each FACP shall be provided hot redundancy of power supply and processor/controller.	We understand that only Power supply and CPU redundancy is required in fire alarm system .Kindly Confirm	FACP shall have UPS input power supply. FACP shall be provided with hot redundancy in in-built power supply module and processor/controller.

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
M/s TALCHER FERTILIZERS LIMITED**



PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
OWNER : M/s TALCHER FERTILIZERS LIMITED



67	PC183-E/603/SecVI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 41 OF 89	13.5	Primary power supply shall be arranged by LSTK Contractor at one point to each Fire Alarm Panel. Suitable power distribution to various signalling and notification devices shall be included in the LSTK Contractor's scope. Also UPS/ Normal power supply to remotely located Repeater panel, sub-system, siren etc shall be provided by the LSTK Contractor on the basis of actual system configuration and requirements.	Bidder understand's that power supply for each FACP,RP and related items will be provided by client further cabling is in bidder scope. Please confirm exact location of power supply so that bidder can estimate power cable for further extension.	Power Supply to FACPs and All Repeater Panels in Fire Station Building and Fire Water Pump House shall be provided by Bidder from their UPS DB. Power Supply to Bidder's FACP in Area other than Fire Station Building and Fire Water Pump House shall be provided from Owner's UPS DB. Tapping of power from Owner's UPS DB to Bidder's FACP shall be in Bidder's scope. Location of power supply shall be finalised during detailed engineering.
68	PC183-E/603/SecVI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 43 OF 89	13.7, xxv	Whenever there is a third party actuation to happen, like closing of fire dampers, switching off supply/exhaust units etc, the actuation shall happen only when the fire signal is received from two different initiating devices located in a zone connected to different fire alarm panels .The communication between the FACPs shall happen with two pair cables and the fire alarm status of one panel shall be communicated to the second panel in which the control relay module of the third party device is connected to. Inter panel communication is a must and needs to be provided for controlled actuations .All the necessary systems to ensure reliable communications between panels are to be built into the FACPs.	Kindly Provide the No of potential free contacts required for tripping of third party devices .Also please note that we have provide potential free contacts at fire alarm panel further cabling to third party devices shall be in scope of M/S PDIL.Kindly Confirm	During detailed engineering. Cabling shall be in Bidder's scope.
69	PC183-E/603/SecVI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 46 OF 89	13.9.2	Power supply system including Ni-Cd battery bank shall be mounted inside the panel.	Please note battery charger is part of Fire alarm panel & suitable for Lead acid batteries only. Also note our previous experience and best of our knowledge no FA vendors are having the battery charger to charge Ni-cd battery, further there is no provision in the Fire alarm panel to connect external 24V DC supply. Therefore please confirm to use lead-acid battery instead of Ni-Cd battery.	Amendment may be issued, if required.
70	PC183-E/603/SecVI-7.0 DESIGN SPECIFICATION- ELECTRICAL FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER	SHEET 49 OF 89	13.13	Heat sensing cable shall be analogue type. It shall consist of four copper conductors, each covered with a colour coded, negative temperature co-efficient material. The cores shall be twisted together and protected by an outer sheath of high temperature, flame retardant PVC insulation. External mechanical protection shall be provided over the sensor cables. Vendor shall provide control unit for each 100 m length of the sensor cable.	1. Please provide the list of buildings having Cable gallery / Cable trench to be covered with LHS type fire detection. 2. Please share the detail i.e.Nos. of row & run of cable trays in cable gallery and cable trenches .	Tentative size of cable cellar shall be provided in Amendment, if required.
71	PC183-TFL-603-SEC-VI-3.0 FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER DESIGN PHILOSOPHY-PROCESS	SHEET 36 OF 89	13.1	The intent of this specification is to define the functional and design requirements for an Integrated Fire Alarm System for buildings of Entire Plant area. This specification covers the requirements for selection, design, and engineering, manufacture, supply, inspection, installation, testing at site and commissioning of the system. The list of buildings & plant area shall be as per the following (for this please also refer piping input/layout for Fire fighting system attached elsewhere in the NIT)	We understand that Fire Alarm System is not required in following Buildings .Kindly Confirm . 1. Vikrampur Guest House 2. CISF Barrack 3. School 4.Training Hostel 5.Fire Station (Existing) .	Refer clause 13.1 of Section VI-7.0
72	PC183-TFL-603-SEC-VI-3.0 FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER DESIGN PHILOSOPHY-PROCESS	SHEET 50 OF 89	13.15	Two Nos. OLED display monitor of Samsung/LG/Sony Make (1 No. for Coal Gasification and Ammonia-Urea Plant and 1 No. for remaining all OSBL Plants/Other Packages) for Graphics user interface (GUI) of minimum size 70 inches shall be installed in Fire Station Building Control Room for the display of whole plant layout and indicating location of all MCPs & detectors along with their status. These OLED Display monitors shall receive the data from ES/OWS. Necessary hardwares/software shall be provided for the same.	We understand that 70 Inch OLED Monitor display -1 No for OSBL area shall be supplied by fire fighting vendor and for ISBL area (Coal gasification and ammonia urea plant) OLED monitor shall be supplied by others .Kindly Confirm .	Both OLED Display Monitors shall be in Bidder's scope.
73	PC183-TFL-603-SEC-VI-3.0 FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER DESIGN PHILOSOPHY-PROCESS	-	-	Cable tray	We understand that Cable shall be laid in existing cable tray wherever available at site .Kindly Confirm	Confirmed.
74	PC183-7115-0046 P & ID Fire water pump House	-	-	Fire Water Tank	We understand that Instruments for fire water tank and interfacing with PLC is not in our scope ,Kindly Confirm .	The same shall be in Bidder scope
75	PC183-TFL-4012-603-SEC VI-3.0 FIRE FIGHTING SYSTEM OSBL, TFL, TALCHER DESIGN PHILOSOPHY-PROCESS	Sheet 3 Of 8	2.0 (iv)	iv) Draw off connection (4 way, level gauge, level transmitter), strainer mesh (at suction pit) for fire water reservoir will be in the scope of bidder.	Kindly Clarify the scope of Level Gauge and Level Transmitter for fire water reservoir .	The same shall be in Bidder scope
76	PC183-TFL-4012-603-SEC-VI-8.0 DESIGN PHILOSOPHY INSTRUMENTATION	Sheet 12 Of 67	3.9	SIL certification rating for all the instruments shall be minimum as per following list :- □ All Smart Positioners - SIL 2 □ All Transmitters - SIL2 □ All Solenoids - SIL 3 □ All Gas Detectors - SIL 2	We understand that for OSBL area SIL 2 certification is not required for Pump house instrument and other area .Kindly Confirm.	NIT requirement to be followed.
77	PC183-TFL-4012-603-SEC-VI-8.0 DESIGN PHILOSOPHY INSTRUMENTATION	Sheet 9 Of 67	1	PLC based control system (TMR/DMR)	Please confirm the type of PLC system required TMR or DMR .	Minimum requirement is DMR.
78	PC183-TFL-4012-603-SEC VI-7.0 DESIGN PHILOSOPHY - ELECTRICAL	Sheet 55 Of 89	14	Cathodic Protection	Kindly Clarify the scope of Current Cathodic Protection System for underground pipe .	Cathodic Protection System of complete Underground pipeline of Bidder shall be in Bidder's scope.
79	PC183-TFL-4012-603-SEC VI-1.0 (Project Description) Clause No. 1.0	3	1.0	Introduction Scope of work of the LSTK Contractor shall include Design, Engineering, Procurement, Supply, Fabrication, Inspection by Third Party Inspection Agency (TPI) as applicable, Route survey for ODCs, Insurance, Transportation of all equipment materials to work site, storage, construction and erection of all civil and structural, mechanical, electrical and instrumentation works, assembly and installation, obtaining all necessary statutory approvals, testing, mechanical completion, Pre-Commissioning, Commissioning, sustained load test & performance guarantee Test Run (PGTR) for the scope of work including total project management and handing over of the facilities under contractor scope of work duly completed on single point responsibility basis, as per TAC/NFPA/NBC (Latest Edition).	Please specify the statutory approvals require.	All necessary statutory approvals are in bidder scope as per NIT requirements.
80	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	2	2 iii)	Fire brigade vehicle parking building near coal, petcoke handling area, along with bituminous road around the periphery of the building & its interconnection to nearby road and other facilities, etc. as per attached tentative drawing.	We understood that Fire brigade vehicle parking building construction and its (RCC structure) and associated works shall be in bidder scope. Please confirm.	Construction of Fire brigade vehicle parking along with its peripheral road and its interconnection with existing plant road is in bidder's scope.
81	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	3	2 vii)	Outdoor diesel oil day tanks (01 separate fuel tank of 990 litre for each diesel engine pump) along with associated piping systems & accessories, at fire water pump house.	The mentioned capacity of diesel oil day tanks seems to be less based on pump capacity. We understood the capacity is tentative. It may vary during detailed engineering, please confirm	The capacity mentioned for diesel oil day tank is minimum. However, bidder shall provide adequacy calculations to affirm the system requirement.
82	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	3	2 xviii)	Hydrant network along with pipes, fittings, flanges, valves, strainers, instruments, fire fighting items, supports, painting, wrapping coating, etc., water spray system with deluge valve for cable caller and transformer, if applicable, inside/within package units as below (for details refer attached conceptual fire fighting layout). Layout shall be finalised by bidder during detail engineering after receiving the engineering input from respective package vendors. Following fire fighting packages system are in bidder scope.	As per specification Urea Silo & Urea conveyor system will be bidder scope but as conceptual fire water layout plan layout and drawing no. PC183-4012-921-001 excluded from our scope. Please conform the same is in our scope or not.	Fire water system & fire detection & control system of Urea product Handling (Bagging Building + Bagging Substation+ MCC Room + Conveyor System) will be carried out by bidder,same shall be shared during detail engineering.
83	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xx)	Water sprinkler system for plant/ non plant buildings, technological structure, areas. (Buildings constructed by bidder & separate agency) as per attachment 5 in NIT.	During our site visit we found technical building is also called as admin building but in as per attachment 5 in NIT mention the both are separate building please confirm wheatear it is one or separate building.	Kindly note technical buidling and admin building are two building blocks of one complex.
84	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xx)	Water sprinkler system for plant/ non plant buildings, technological structure, areas. (Buildings constructed by bidder & separate agency) as per attachment 5 in NIT.	During our site visit we found trainee Hostel in town ship area but as per conceptual fire water layout plan layout and drawing no. PC183-4012-921-001 the same is excluded from our scope. Please confirm hydrant system and sprinkler system for trainee Hostel will be in our scope or not.	Building fire fighting & sprinkler system for trainee hostel is in bidder scope as per attachment 5 in NIT. Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT, show the fire water distribution network, but not the spray/sprinkler system. Training Centre (inside plant) and training hostel (outside plant) both are in bidder's scope.
85	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxi)	Water spray system for outdoor diesel oil storage at fire water pump house, Diesel oil storage of emergency DG set, <u>all pump houses</u> , cable cellars, transformers (irrespective of oil content quantity), ammonia/toxic service equipment/areas, bagging plant building(empty bag storage area) and other applicable areas as per attachment 5 in NIT.	Please provide list of all pump house to be protected with spray/sprinkler system.	Refer attachment 5 in NIT.

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
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PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
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86	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxi)	Water spray system for outdoor diesel oil storage at fire water pump house, Diesel oil storage of emergency DG set, all pump houses, cable cellars, transformers (irrespective of oil content quantity), ammonia/toxic service equipment/areas, bagging plant building (empty bag storage area) and other applicable areas as per attachment 5 in NIT.	Spray/ sprinkler system for ammonia/toxic service equipment/areas excluded from our scope. We understood these area fall under ISBL, Please confirm.	Flange joints of piping system for Toxic/flammable service in piping/equipment system in OSBL area. (Ex. OSBL pipe rack etc.). Further details shall be provided during detail engineering
87	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxii)	Gas flooding system with clean agent, diverter valve (if feasible), detectors & accessories for control room and other applicable areas mentioned in NIT..	we understood that clean agent system will be provided at control room in New fire station. Please confirm. Please identify the location of Cylinder room. Cylinder room will be whose scope? Please confirm, clean agent system will be provided with 100% standby cylinder.	Please refer PC183-TFL-4012-603-SECVI-4.0, Clause No. 4.4 and PC183-TFL-4012-603-SECVI-8.0
88	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxix)	Seamless Integration of all Fire Detection & Alarm System of entire Fertiliser Plant. Detail scope of work shall be as per Electrical (PC183-TFL-4012-603-SEC VI-7.0) and instrumentation (PC183-TFL-4012-603-SEC VI-8.0) in NIT w.r.t Fire detection and alarm system as well as Fire & Gas detection system.	Please share the operation philosophy of seamless integration of fire detection alarm system with other system (i.e. electrical, instrumentation & other supplied Fire & Gas detection system). Also request to share single line diagram with battery limit marking for all system which is covered with this package & to be interfaced with this package.	Operation Philosophy of seamless integration of fire detection alarm system with other system shall be provided during detailed engineering. Refer clause 13.1 & 13.2 of Section VI-7.0 and Plot Plan for location of respective Areas.
89	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxx)	Cathodic protection system for buried piping.	Is cathodic protection required for pipe with anti corrosive material (as per Cl. No..... The under ground pipe to be wrapped with anti corrosive material, but in this cl. The under ground pipe shall be protected with cathodic protection, which is contradictory , please confirm which one to be consider)	For buried piping, wrapping coating & cathodic protection shall be done by bidder.
90	PC183-TFL-4012-603-SEC-VI-2.0 CONTRACTOR'S SCOPE OF WORK	4	2 xxxv)	Overhead storage tanks (potable water storage), septic tank, plumbing piping, fittings, taps (valves) for drinking water and sanitary purposes, respectively, at each building constructed by bidder.	We understood that these system shall be considered for fire water pump house, fire station & control building & fire vehicle parking area. Please confirm whether filling system of these overhead tank under whose scope. Also please specify the design criteria of these system	Owner shall provide instrument air/service water/plant air/ drinking water at battery limit of fire water pump house , fire control room etc., facilities,and bidder has to take tapping from available point
91	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	6	5.0	OPERATING PHILOSOPHY Fire fighting vendor shall provide a pressure transmitter at farthest point of network & its signal shall be provided in DCS & fire water panel.	Please note Main fire alarm panel will interface with Plant DCS. If we send pressure transmitter signal to fire alarm panel then the same will transfer to DCS. There is no need take separate signal to DCS . please confirm whether pressure transmitter signal goes to only fire alarm panel or both	Pressure Transmitter signal goes to control system ,it will not go to Fire alarm panel.
92	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	7	5.0	Bidder to provide Electro-Pneumatically operated deluge valve, wherever applicable (typical sketch is attached in Fire water schematic)	we understood that pneumatically operated deluge valves shall be used for only transformers. Please confirm Please specify, client will provide air line to all pneumatically operated deluge valve or bidder to arrange their own	Owner shall provide instrument air/service water/plant air/ drinking water at battery limit of fire water pump house , fire control room etc., facilities,and bidder has to take tapping from available point.
93	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	7	5.0	<input type="checkbox"/> Gas detection system shall be provided for process unit where hydrocarbons and flammable gas are being handled. The following types of gas detectors shall be considered in respective handling areas- <input type="checkbox"/> Ammonia detector <input type="checkbox"/> Hydrocarbon gas detector <input type="checkbox"/> Carbon monoxide (CO) gas detector for coal handling system <input type="checkbox"/> Hydrogen detector	Please share the list of building where hydrocarbons and flammable gas are being handled.	Flange joints of piping system for Toxic/flammable service in piping/equipment system in OSBL area. (Ex. OSBL pipe rack etc.). Further details shall be provided during detail engineering
94	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	7	5.0	The following types of flame detectors shall be considered as per mapping study <input type="checkbox"/> Hydrocarbon flame detector <input type="checkbox"/> Hydrogen flame detector	Scope not clear	Mapping study of piping system for Toxic/flammable service in piping/equipment system in OSBL area. (Ex. OSBL pipe rack etc.). Refer PC183-TFL-4012-603-SEC VI-3.0 in NIT. Further details shall be provided during detail engineering
95	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	7	6.0	HAZARDOUS AREA CLASSIFICATION AND HAZOP The hazardous area classification as per IS-5572 shall be done bidder along with the submission of hazardous area classification drawings & documents. HAZOP study shall be done by bidder of fire fighting system.	For Hazop studies various information required like material handled in the plant, entire process of the plant, which are suppose to be provided by client only. Here the entire package is divided into no of package i.e. ISBL, OSBL & other packages & in this fire protection system various building area in ISBL package & other package not in our scope, hence it is not possible us to carry out Hazop studies, we request to exclude this from our scope	HAZOP shall be done by bidder as per NIT
96	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	4	4.1	Fire Hydrant System Fire water network shall consist of mostly aboveground and/or underground, if required, piping systems.	Please confirm, hydrant networks shall be laid under ground only at road crossing. Also please confirm, if any existing pipe trestle can be use for laying fire pipe.	Underground piping shall be provided at Road/ Rail crossing, access road /ways, vehicle movement area. Refer PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING Bidder shall provide supports/structure for piping and other items in thier scope of work.
97	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	5	4.1	Tall columns, structure, towers and equipment where it may not be possible to provide access staircases with hydrants on landing, will be considered as protected by hydrants at ground level, provided they are less than 15 m in height. When the height exceeds 15 m, the concerned hydrants shall be replaced by monitors.	Please provide height or drawing of all tall columns, structure, towers and equipment whose height is more than 15 M	As per bidders Engg to comply NIT requirements.
98	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	6	4.1	Contractor to finalise hydrant layout on plot plan, with all the requirements such as number of Hydrants, Monitors, Foam system, sprinkler system etc., based on all statutory requirements & Code Guidelines, considering ease of maintenance and safe approach for fire fighting. Due consideration is to be given for providing Emergency escape routes also. Hydrants are to be strategically located to obtain maximum advantage of layout.	We understood pipe routing, pipe size, number of Hydrants, Monitors which are mentioned in conceptual fire water layout of OSBL facility (DRG. PC183-4012-921-001) are minimum or It may be as per system requirement	Minimum requirements are provided in NIT. Total job shall be as per bidders Engg to comply NIT requirements.
99	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7	4.2	Water Spray System, water sprinkler system and water curtain system Water spray, water curtain systems, permanently connected to fire water network, shall be provided with piping system, detectors, spray nozzles (chrome plated brass), deluge valves (dry type, pneumatically & hydraulically operated (only use where air is not available) with manual by pass valve, remote automatic and local manual operation), isolation valves, strainer, low point drain with valve and suitable restriction orifice to maintain the pressure requirements as per TAC/ IS	Please confirm whether , Spray and sprinkler system, Gas flooding system, shall be provided for the building of OSBL package as per ATTACHMENT- 05, or any other building to be covered with the same Please specify the area to be provided with water curtain system Please specify the area availability of pneumatically airline. We understood air line for detection line for transformer will provide by client at Deluge valve. Please confirm whether butterfly valve are permissible as by pass valve for deluge valve	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering. Water curtain system shall as per detail engg. By bidder, if required as per codes/specifications to complete the fire fighting system Owner shall provide instrument air/service water/plant air/ drinking water at battery limit of fire water pump house , fire control room etc., facilities,and bidder has to take tapping from available point.
100	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7	4.2.1	Medium velocity Water Spray (MVWS) System - To be provided for the followings locations, but not limited to. - Compressor seals - Lube oil consoles - Knock out drums (with hydrocarbon bearing service) - Cable cellars - Diesel/Petrol/Kerosene oil or any hydrocarbon liquid / oil tank - Coal/ Pet coke/ solid hydrocarbon material handling plant area - Pumps under racks.	Please provide location and details dimension of each equipment.	All isolation valve shall be Gate valve Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering.
101	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7	4.2.4	Water curtain system To be provided for the followings locations, but not limited to. - Ammonia/ Toxic gas/ vapour compressor and pumps - Ammonia/ Toxic gas/ vapour storage tank - Ammonia liquid tanker loading area	Please provide location of each equipment also provide drawing of each area.	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering.

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
M/s TALCHER FERTILIZERS LIMITED**



PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
OWNER : M/s TALCHER FERTILIZERS LIMITED



102	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	7	4.2.5	<p>Sprinkler System The sprinkler system shall be designed and installed at the following locations, but not limited. Sprinkler system with deluge valves (dry type), shall be installed at the following Location: - All Buildings as per NBC 2016 (and/or latest edition) - Laboratory - Chemical room/storage area Sprinkler system (wet type with QBD), shall be installed at the following Location: - All buildings as per NBC 2016 (and/or latest edition) - Admin Building - Workshop building - Technical Building - Meeting Room/Hall - Canteen</p>	<p>Please confirm whether , sprinkler system shall be provided for the building of OSBL package as per ATTACHMENT- 05, or any other building to be covered with the same.</p> <p>Please note that dry type sprinkler system and deluge valves system are completely different system. Dry type sprinkler system consisting of dry type of alarm valve with closed head sprinkler head. Deluge valve system consisting of deluge valve with nozzles (open sprinkler). Please what type of will be provided</p>	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering.
103	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8	4.3	<p>Foam system shall be provided for transformer area and hydrocarbon oil tank area. The transformer area shall be surrounded by at least 2 foam monitors strategically installed. Hydrocarbon oil tank area and LPG/NG gas skid area shall be surrounded by at least 3 foam monitors strategically installed, so that each tank or each gas skid is fully covered within the monitors throw range.</p> <p>Water cum foam monitors (SS304 body & nozzle, fixed stand post type, manual operation, 500-750 USGPM variable type flow, self inducing foam induction mechanism) along with portable type foam cans (each 200 Litres capacity) with 3% AFFF Foam, shall be provided for above areas.</p>	<p>Please confirm whether except foam monitor any other fixed automatic foam system for any equipment or not. If the same is required, please share the type of system, equipmnet to be protected, equipment location & dimensional detail'</p>	Bidder to follow PC183-TFL-4012-603-SECVI-4.0 clause no. 4.3
104	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	8	4.4	<p>Clean agent flooding system Gas flooding system with clean agent, diverter valve (if feasible), detectors & accessories for Control Room, Computer room, Computer console room, UPS room, Battery room, server/database rack room etc. shall be protected by clean agent system as per NFPA- 2001(Inergen/ Argonite/ Novec 1230).</p>	<p>Please confirm whether , Gas flooding system with clean agent, shall be provided for the building of OSBL package as per ATTACHMENT- 05, or any other building to be covered with the same.</p> <p>If the same shall be provided for other area , Please provide location and details dimension of each room/building to be provided with clean agent system.</p> <p>In this context, please note that Inergen / Argonite is extinguish fire by inerting i.e. reducing Oxygen concentration below 12 % , where as NOVEC 1230 extinguish the fire by chemical reaction, hence the design criteria of inert gas system & Novec System (FK-5-1-12) design basis are different. please confirm</p>	Bidder shall provide suitable gas flooding system
105	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	11	5.6	<p>Hose Box Hose boxes shall be made of M.S. material and painted red with dimensions 18 SWG thick M.S. sheet, size 750 mm x 600 mm x 250 mm. Each box shall contain 2 nos.x 15 m of 21/2" fire hose (IS-636 Type-B) with gun metal nozzle, coupling, universal branch pipe (IS-903), MS spanner. 1no. Hose Box with accessories shall be provided for each hydrant post and each fire brigade connection (3 Way, 4 Way with isolation gate valve).</p>	<p>As per manufacturer's standard for keeping Type - B hose , the hose box of size shall be 900mm x 600 mm x 250 mm required, please confirm which one to be considered.</p>	NIT specification is the minimum requirement.
106	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING	12	7.1	<p>SAFETY SIGNAGES Contractor shall provide the safety signages (in English & Hindi language) as per NBC/TAC , at strategic locations, for plant/ non plant areas buildings, technological structure, areas. Safety signages must be visible under both lighted & darkness</p>	<p>Please confirm whether self illuminated type safety signages are acceptable</p>	Bidder shall provide as per NBC/TAC.
107	PC183-TFL-4012-603-SEC VI-6.0 DESIGN PHILOSOPHY – GENERAL CIVIL & DESIGN BASIS	20	2.2	<p>BUILDING REQUIREMENTS Water supply, finishing works, plumbing works, sanitary fixtures, LAN system, EPABX system, electrical wiring system/fixtures, approach roads, drainage system, sewage system, fire fighting system, safety requirements etc. shall be mandatory requirement for all buildings / sheds under bidder's scope.</p>	<p>Please share the detail specification of Sanitary Fiture, LAN System, EPABX System.</p> <p>Also please specify detail of available water with pressure for Water Supply System for this buildings as three buildings are in different location.</p> <p>Also please share schematic diagram of water supply & plumbing system showing the battery limit.</p>	<p>1.0 Please refer civil section of tender document for specification of Sanitary Fiture. LAN System, EPABX System - Instrument dept. To reply 2.0 Process to reply? 3.0 Concern dept to reply?</p>
108	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	10	1.22	<p>Interface and Integration with Fire Detection & Alarm System of Other Plants like Coal Gasification Plant, Ammonia-Urea Plant, RWTP-DM-CPU Plant, ETP & STP . Steam Generation Plant, Coal/Petoke/Limestone Handling System, OSBL other Facilities etc. at Fire Station Building shall be in LSTK Contractor's scope. Also, provision for Interface and Seamless Integration with Fire Detection & Alarm System of 4 Nos. spares at Fire Station Building shall be in LSTK Contractor's scope.</p>	<p>Please note that different make FAP cannot be seamlessly networked with each other in ring topology as all OEM FAP have their own proprietary protocol. Different make FAP can be interfaced with each other through NO/NC contacts only OR MODBUS over TCP/IP open protocol from each FAP. All FAP can be integrated with existing SCADA/ DCS through MODBUS over TCP/IP. All panel data shall be available in SCADA/ DCS only through MODBUS over TCP/IP. ---Please Confirm</p>	Fire Detection & Alarm System of entire Plant shall be interfaced & integrated seamlessly. Any Hardware and Software required for the same shall be considered by Bidder.
109	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	16	4.1.1	<p>Following Feeders shall be made available at Offsite & Utilities Substation (OUSS) : - 4 Nos. 3.3kV Breaker Motor Feeders for LSTK Contractor's Main Fire Water Pump Motors. - 2 Nos. of 415V Breaker Motor Feeders for LSTK Contractor's Jockey Fire Water Pump Motors. - 2 Nos. of 415V 400 A Power Feeders for Distribution Board at Fire Station Building. - 2 Nos. of 415V 250 A Power Feeders for Distribution Board at Fire Pump House. 2 Nos. of 415V±10%, 50Hz±5%, 63 A Power Feeders at Owner's 415 V switchboard for Distribution Boards at Ash Pond Substation. - 2 Nos. of AC 115V 32A UPS supply feeder for LSTK Contractor's UPS Distribution Board (UPSDB). - 2 Nos. of AC 240V 32 A UPS supply feeder for LSTK Contractor's UPS Distribution Board (UPSDB). Tapping of power supply from respective Switchboard at Offsite & Utilities Substation (OUSS) (including supply of all required material), structural supports for cable tray, cable trays, cables, cable termination at both ends etc. shall be in LSTK Contractor's scope. Further distribution to equipment through proper type and size of cables, their supply, erection, testing and commissioning etc. shall be in LSTK Contractor's scope. LSTK Contractor shall indicate details of power requirement and the Rating of 415 V, 240V, 115V Feeders at Offsite & Utilities Substation in the Technical Bid.</p>	<p>We understood power cable with all accessories from power source to respective building/equipment (under LSTK Scope) shall be in our scope. Please confirm termination of these power cable in clients panel under whose scope. Also please share the power cable lying philosophy in outdoor area for the project.</p> <p>Please confirm the outdoor power cable can be layed on the available existing poewer cable tray in the plant or not.</p>	Termination of Cables at Owner's Switchgears shall be in Bidder's scope. Power cable shall be laid on Overhead Cable Trays in entire plant. Space in Owner's Pipe rack may be used for laying of cable trays . In case, Owner's Piperack is not available in Cable Route, structure and cable trays support for cable Trays shall also be in Bidder's scope.
110	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	17	4.2.2	<p>Separate 240VAC UPS Distribution Board shall be provided to feed Fire Control Room (to meet 250 lux in case of UPS Supply only)) & Fire Control Room lights (30% of total light), Fire Detection & Alarm System etc..</p>	<p>We understood all these power are made available by client wherever required</p>	Only Feeders shall be made available in Owner's Switchgear at OUSS. Tapping of Power from these feeders to Distribution Boards of Bidder shall be in Bidder's scope.
111	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	17	4.3.1	<p>33 % of total light shall be fed from Emergency Power (DG Power), in case of failure of Normal Power.</p> <p>10% of light or required Number of lights for safe evacuation, whichever is higher, shall be used as panic light (240V AC UPS) in case of complete shutdown and shall be fed from 240 V AC UPS DB.</p>	<p>We understood all these power are made available by client wherever required</p>	Only Feeders shall be made available in Owner's Switchgear at OUSS. Tapping of Power from these feeders to Distribution Board s of LSTK Contractor shall be in LSTK Contractor's scope
112	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	30	8.20	<p>Cable Laying 8.2.1 The cables shall generally be laid on overhead racks. Pipe racks where available, shall be used to support the cable racks.</p>	<p>Please confirm the outdoor power cable can be layed on the available existing poewer cable tray in the plant or not. Also please share Pipe racks layout details.</p>	Power cable shall be laid on Overhead Cable Trays in entire plant. Space in Owner's Piperack shall be used fro laying of cable trays . In case, Owner's Piperack is not available in Cable Route, structure and cable trays support fro cable Trays shall also be in LSTK Contractor's scope
113	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	38	13.1	<p>Minimum 6 Nos. FACP suitably located in above mentioned Buildings/Substations/Control Rooms/Plant and corresponding minimum 2 Nos. Repeater Panel covering all FACP's in Fire Station Building including all interface and integration shall be in LSTK Contractor's scope.</p>	<p>Please confirm whether all these fire alarm panel, repeater panels shall be provided by OSBL bidder but interfacing of all this shall be ISBL contractor scope, Please confirm.</p> <p>Also please confirm whether the panel quantity mentioned are minimum or shall be as per system requirement</p>	All Interface and integration shall be in scope of Fire Fighting Package LSTK Contractor. 6 Nos. FACP are minimum. In case, more FACP's are required as per Design, same shall be in Bidder's scope without any time & cost implication.
114	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	38	13.2	<p>Hook-up & integration of above Plants' Fire Detection & Alarm System with Centralised Fire Detection & Alarm System shall be in scope of LSTK Contractor in FO ring connection. Connection shall be such that all fire alarm system panel and repeater panel shall be connected in the same FO ring network. Necessary hardware, graphics and other software as required shall be considered for hook up and integration.</p>	<p>Please note that different make FAP cannot be seamlessly networked with each other in ring topology as all OEM FAP have their own proprietary protocol. Different make FAP can be interfaced with each other through NO/NC contacts only OR MODBUS over TCP/IP open protocol from each FAP. All FAP can be integrated with existing SCADA/ DCS through MODBUS over TCP/IP. All panel data shall be available in SCADA/ DCS only through MODBUS over TCP/IP. ---Please Confirm</p>	fire Detection & Alarm System of entire Plant shall be interfaced & integrated seamlessly. Any hardware and Software required for the same shall be considered by Bidder.

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
M/s TALCHER FERTILIZERS LIMITED**



PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
OWNER : M/s TALCHER FERTILIZERS LIMITED



115	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	41	13.5.28	13.5.28 Inbuilt battery backup light shall be considered of minimum 4 hrs. Backup wherever fire fighting equipment is placed	Please specify for which area this clause applicable since as per Cl. No 13.6 (Page No 535) battery back for Fire alarm system shall be for a minimum of 24 hours. At the end of that period, this shall be capable of operating the system during a fire and other emergency conditions for 2 hours at maximum connected load.	This clause is applicable for Fire fighting Equipment like Exit Signs etc. . For Lighting refer cl NO. 4.3.1 of Sec VI-7.0
116	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	41	13.7 ii)	The FACP panel shall have minimum 4 loops expandable to minimum 8 loops. Each loop shall be able to take min 120 Detectors/ Devices (any combination) with a loop length capable up to 2kms with 2Cx1.5 sqmm shielded twisted pair armoured cable. Control panel shall have provision for future expansion so that additional loops can be created by addition of loop cards modules. Each loop shall have min 25 % spare capacity for future requirement. Actual nos. of loop cards required based on design.	As per 13.7 xxxvii, it is mentioned 1600 meters to 3000 meters. Please confirm which one to be followed	Loop Length shall be as per OEM Standard . However, maximum loop length to be considered shall be 1600 meters.
117	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	42	13.7 v)	Each FACP shall be provided hot redundancy of power supply and processor/controller.	Hot redundancy of power supply also mentioned. However, in clause no. 13.6, it is mentioned that the primary power supply shall be UPS & the secondary power supply shall be through the battery. Since the battery is there for a secondary power supply, do you require redundancy in the power supply? Please clarify.	FACP shall have UPS input power supply. FACP shall be provided with hot redundancy in in-built power supply module and processor/controller.
118	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	42	13.7 vi)	Each FACP shall have inbuilt LCD colour touch screen (320*240 pixels) as per vendor specification to clearly indicate the location of fire, type of device activated other indications like service requirement of a component, etc.	Many OEMs does not use Touch screen due to safety reason in life safety product & they use Keypad. Please confirm screen with Keypad can also be considered	Inbuilt LCD colour touch screen shall be provided.
119	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	42	13.7 ix)	The FACP shall be capable of Public Address system integration with the use of RS485/Ethernet module or with the use of relays.	Please confirm Public Address System is under whose scope	PA system under Owner's scope.
120	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	42	13.7 viii)	In case of a Loop Card Failure, the FACP shall allow to replace the Loop card without switching off the panel and reprogramming.	It is advisable to switch off-panel while changing any card as removal of the card will generate multiple faults in the panel. Please confirm whether all loop card also redundant like the motherboard as mentioned.	In case of a Loop Card Failure, the FACP shall allow to replace the Loop card without switching off the panel and reprogramming. Vendor clarification is not acceptable.
121	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	42	13.7 xviii)	All the fire alarm modules (loop cards, networking cards, and communication card. Etc.) should be hot pluggable and hot swappable to facilitate easy replacement of faulty modules. All the electronic components shall be compatible to non-airconditioned environment for working satisfactorily.	It is advisable to switch off-panel while changing any card as removal of the card will generate multiple faults in the panel. Please confirm whether all card also redundant like the motherboard as mentioned.	All the fire alarm modules (loop cards, networking cards, and communication card. Etc.) should be hot pluggable and hot swappable to facilitate easy replacement of faulty modules. Vendor clarification is not acceptable.
122	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	43	13.7 xxvi)	EMC/EMI Monitoring - Signal-to noise ratio shall be high. To inform the possibility of a false alarm caused due to interferences from sources such as Motors, power cables, Wi-Fi routers, fluorescent lamps, network switches, mobile signals...etc. The panel shall display the EMI/EMC Current and Average Values reported by the detector. The User/Installer shall have access to this reading during Maintenance (with password protection).	We found that only one fire alarm OEM can provide this facility in their system, where as other Fire Alarm OEM does not having this facility in their system. Request to remove this clause from specification	Amendment may be issued, if required.
123	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	44	13.7 xxix)	System shall provide adequate EEPROM size to store minimum of 200 events fire/fault. The event shall be stored in LIFO structure. All events shall be time stamped. FACP shall have real time clock for event time stamping.	Event history of a minimum of 200 is too less for this size of the project. We suggest to relook the minimum quantity	Amendment may be issued, if required.
124	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	44	13.8	Repeater Panels	The Detail described in the specification, we found that repeater panel features are same as main fire alarm panel, but in general repeater panel is only meant for repeat annunciation of all fire alarm panels & no operation can be made from repeater panel. Please confirm whether we consider repeater panel as per specification or normal type repeater panel	Repeater Panels as asked for in NIT shall be provided.
125	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	48	13.10.1	Detectors for microprocessor shall be addressable type. Detectors shall be plug-in type and shall have twist lock action fitting. Multicolour LEDs provided on the detectors shall indicate Normal and Alarm state. Essential features of detectors are indicated as below.	Detector shall have a 360 degree view red color programmable LED which shall blink in case of normal operation & steady red color in case of an alarm. Multicolor LED shall not be available in general. Please confirm whether we can proceed with the standard type.	Multicolor LEDs provided on the detectors shall indicate Normal and Alarm state.
126	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	48	13.11.1	The Intelligent Addressable Multi sensor Detector of latest generation having multi color LED having two optical chamber and one thermal working and shall confine to the relevant standard having the following features.	Detector shall be multisensor type with both smoke & heat with working principle of light scattering as required. However dual optical smoke as mentioned in the heading of the clause seems to be OEM specific feature as this terminology is not available in IS code.	Multisensor detector with multi color LED shall be considered confirming to EN54/Vds standard. Vendor clarification is not acceptable.
127	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	50	13.14.4	It shall have minimum IP-55 enclosure and weatherproof construction suitable for outdoor installation. The break glass unit shall have a minimum dimension of 100x100x80mm.	For UL/ FM/VdS approved manual call points, their construction size & material shall be as per their standard design. Customization is not possible as MCP shall have the necessary approval as required. It shall be glass break type for both indoor & outdoor both. We suggest considering IP24 for indoor MCP & IP66 for Outdoor MCP.	Indoor MCP may be IP42. Amendment may be issued, if required.
128	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	50	13.15	Minimum 4 Nos. PC based ES/OWS (Industrial Grade of Dell/HP Make) of latest configuration (core i7 of latest generation with required software for GUI display & hookup etc.) shall be considered with minimum 30 inch LED monitors in fire station building. Minimum. 1 Nos. PC based ES/OWS (Industrial Grade of Dell/HP Make) of latest configuration (core i7 of latest generation with required software for GUI display & hookup etc.) shall be considered with minimum 30 inch LED monitors in CCR. 1 No. A3/A4 size colour Laserjet printer of HP make shall be provided for printing of alarm logs etc. Whole plant Fire Detection & Alarm network display, monitoring and control shall be from the above ES/OWS. These ES/OWS shall be integrated with the Repeater Panels installed in Fire Station Building Control (by respective Package Contractors as well as Fire Fighting Package Contractor). All required furniture for ES/OWS shall also be provided by LSTK Contractor. UPS power shall be provided for ES/OWS and other screens.	OWS/ GUI is also mentioned with quantity. Please confirm whether GUI with each panel required or the same on certain locations only? Moreover, please specify, monitor & control all panels from a central location only or each panel shall have the right to monitor & control all panels or individual panels.	Monitoring & control shall be done by individual panels of particular area. However, all fire alarm control panels shall be connected in ring topology. Centralized Fire Detection & Alarm System shall be installed at Fire Station Building where ES/OWS and Screens shall be installed for monitoring & control of complete fertilizer plant.
129	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	3	2.00	Main Plant Facilities (by LSTK M/s Wuhan) such as Ammonia & Urea Plant, dedicated Cooling Towers, Coal gasification plant (CGP), Solid material storage & handling, Ammonia Storage Tank, Ammonia -Truck & Wagon loading system etc) – ISBL. Fire fighting system bidder to provide required FW at B/L of ISBL.	We understood that, as per layout plot plan of proposed integrated coal-based fertilizer and chemical complex and Dwg. No. PC 183-0000-0001. The area marks by red is in bidder scope, Blue & magenta is in wuhan's scope. Please confirm.	Scope Battrly limit is marked in the refered drawing in NIT.
130	PC183-TFL-4012-603-SEC VI-3.0 SECTION VI-3.0 DESIGN PHILOSOPHY-PROCESS	5	4.00	i. Fire Water Network shall be sized for 120% of Design Water Rate. However, Fire Fighting Vendor shall confirm Design Pressure of Fire Water Header based upon Fire Water Pump discharge pressure.	Please confirm, the hydrant system shall be hydraulically designed such way when half the aggregate pumping capacity is being discharged at the farthest/hydraulically most remote point and the other half in the most vulnerable area.	As per bidders Engg to comply NIT requirements.
131	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	30	8.2.1	cable shall be laid overhead. However, wherever overhead cable routing is not feasible LSTK Contractor can go for cable trench / slit (Refer PDS attached with the NIT) as per the site requirement.	Please share cable trench layout.	Same shall be finalised during detailed engineering
132	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL	30	8.2.1	HV Power, LV Power and Control shall be on separate trays. Instrument and electrical cable trays shall be separate.	Instead of separate tray, Instrument and electrical cable can be laid in one tray however only Instrument cable laid in conduit. Please confirm.	HV Power, LV Power and Control shall be on separate trays. Instrument and electrical cable trays shall be separate.
133	ATTACHMENT- 09 List of Buildings drawing SIPL-R/TFL/FWR/101 GENERAL ARRANGEMENT DRAWING OF FIRE WATER RESERVOIR			Total fire water reservoir capacity required in two equal compartment for complete fire fighting system based on working pumps.	In your tender drawing No. SIPL-R/TFL/FWR/101 only plan (top view) is given with internal dimensions 49.8M x 49.8 M of each tank compartment with no dimensions height/ cross section is given in the drawing. Please provide the complete fire water tank drawing with cross section along with pump house with elevation of fire water outlet nozzle and minimum & maximum water level to check adequacy of fire water based on the working pumps.	Refer attachment 9 in NIT. Tentative elevation drawing attached also. However fire water piping system shall be as per detail engg, by bidder.
134	ATTACHMENT- 09 List of Buildings drawing SIPL-R/TFL/FWR/101 GENERAL ARRANGEMENT DRAWING OF FIRE WATER RESERVOIR			40" dia tank outlet valve. As per tender drawing outlet valve is under tank vendor scope.	Please confirm the scope, since all the 40" dia valves are shown in Schematic for Fire Fighting drawing under fire fighting vender scope..	Valves within the battery limit r shall be provided by bidder as per schmatic drawing.
135	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.2.1	Medium velocity Water Spray (MVWS) System - To be provided for the followings locations, but not limited to. - Compressor seals - Lube oil consoles - Knock out drums (with hydrocarbon bearing service) - Cable cellars - Diesel/Petrol/Kerosene oil or any hydrocarbon liquid / oil tank - Coal/ Pet coke/ solid hydrocarbon material handling plant area - Pumps under racks.	As per this list we understand that the MVW spray system is required for following buildings/ Areas:- - Diesel oil tanks for fire fighting pumps - Cable Cellars & galleries - Empty Bag Storage Area Please provide the list of cable cellars and layout of cable trays in each cable cellars.	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting sytem shall be done by bidder, and same shall be finalize during detail engineering. Tentative cable cellar size shall be provided in Amendment, if required.
136	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.2.2	High velocity Water Spray (HVWS) System To be provided for the followings locations, but not limited to. - Transformers irrespective of oil content & location	Please provide the number & list of transformers with rating of all transformers required to be protected.	Tentative details of Transformers shall be provided in Amendment , if required.

**PRE BID QUERIES REPLY (LOT 1) – Fire Fighting System
M/s TALCHER FERTILIZERS LIMITED**



PROJECT : FIRE FIGHTING SYSTEM FOR OSBL FACILITIES ON PACKAGE BASIS
TENDER ID : 2022_PDIL_674308_1
TENDER REF NO. : PNMM/PC-183/E- 4012/NCB
OWNER : M/s TALCHER FERTILIZERS LIMITED



137	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.2.3	Water curtain system To be provided for the followings locations, but not limited to. - Ammonia/ Toxic gas/ vapour compressor and pumps - Ammonia/ Toxic gas/ vapour storage tank - Ammonia liquid tanker loading area	As per the provided details we understand that the Water Curtain system is not covered under our scope of fire fighting contractor, since all the listed buildings are part of ISBL areas. Please clarify.	Water curtain system shall as per detail engg. By bidder, if required as per codes/specifications to complete the fire fighting system
138	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.2.4	Sprinkler System The sprinkler system shall be designed and installed at the following locations, but not limited. Sprinkler system with deluge valves (dry type), shall be installed at the following Location: - All Buildings as per NBC 2016 (and/or latest edition) - Laboratory - Chemical room/storage area	We note that dry type sprinkler system for all Buildings as per NBC 2016 (and/or latest edition). Please note that this is very generalized statement we request you to provide the list of buildings where dry type sprinkler is required to be provided.	Sprinkler system shall as per detail engg. By bidder, as per codes/specifications to complete the fire fighting system
139	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.2.4	Sprinkler system (wet type with QBD), shall be installed at the following Location:- - All buildings as per NBC 2016 (and/or latest edition) - Admin Building - Workshop building - Technical Building - Meeting Room/Hall - Canteen - Fire brigade building	All Buildings as per NBC 2016 (and/or latest edition). Please note that this is also generalized statement. We understand that the wet type sprinkler system is to be provided in following buildings:- - Admin Building - Workshop building - Technical Building - Meeting Room/Hall ---- This must be a part of building - Canteen - Fire brigade building Please confirm.	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting system shall be done by bidder, and same shall be finalized during detail engineering.
140	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.3	Foam System The transformer area shall be surrounded by at least 2 foam monitors strategically installed.	We understand that for transformer areas the water cum foam monitors (SS304 body & nozzle, fixed stand post type, manual operation, 500-750 USGPM variable type flow, self inducing foam induction mechanism) along with portable type foam cans (each 200 Litres capacity) with 3% AFFF Foam, shall be provided by the fire fighting contractor. Please confirm.	Please refer Conceptual fire water layout drawing no. PC183-4012-921-001 attached in NIT. However finalize during detail engg.
141	PC183-TFL-4012-603-SEC VI-4.0 DESIGN PHILOSOPHY-PIPING		Cl. No. 4.4	Clean agent flooding system Gas flooding system with clean agent, diverter valve (if feasible), detectors & accessories for Control Room, Computer room, Computer console room, UPS room, Battery room, server / database rack room etc. shall be protected by clean agent system as per NEPA-2001 (Inergen/ Aronite/ Novec 1230)	Please provide the details of buildings with specified areas wherein inert gas system have to be provided. We understand that inert gas/clean agent gas flooding system shall be provided as per NFPA 2001, 2012.	Clean agent system for major facilities as per NIT. However any other facilities required to complete the fire fighting system shall be done by bidder, and same shall be finalized during detail engineering.
142	ATTACHMENT- 05 LIST OF OSBL FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING SYSTEMS			LIST OF FACILITIES FOR SPRAY/SPRINKLER, BUILDING FIRE FIGHTING & GAS FLOODING OSBL, TFL PLANT	Spray/sprinkler system is required for following sub stations:- - Sub station (WTP) - Sub station (DM +CPU) - Sub station (ETP & STP) - Sub Station Bagging Plant Please clarify that whether these buildings are having separate cable cellar or not to consider spray system accordingly. Please also confirm that in all the building listed in Attachment - 5 are to be provided with sprinkler	Spray/Sprinkler system for major facilities covered in attachment 5 in NIT. However any other facilities required to complete the fire fighting system shall be done by bidder, and same shall be finalized during detail engineering. Tentative size of cable cellar shall be provided in Amendment, if required.
143	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL			13.0 Fire Detection and Alarm System	As per Cl. No. 13 of tech specs PC183-TFL-4012-603-SEC VI-7.0, the requirement of fire alarm system shall be as per Attachment - 5. Please specify the clear requirement for fire alarm & fire protection for all these listed buildings.	Refer Cl. No. 13 Sec VI-7.0
144	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL		CL. No. 4.1.5	All Distribution Boards shall be provided with two incoming feeders and one bus tie having auto/manual changeover facility.	Two Nos I/M feeder required for all DBs Kindly confirm if the same is applicable for switch socket DB, air conditioning DB, Lighting DB	Refer SLDs at page 765 to 771 of NIT.
145	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL		CL. No. 8.2.2 & 8.2.4	Conflict in Electrical - requirement of cable trays.	Please confirm MOC of cable trays to be considered for electrical system (GS or FRP).	FRP cable trays shall be provided in corrosive area. Other Areas shall have GS Cable Trays
146	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL		CL. No. 13.9.2	Equipment Mounting	As tech specs Ni-Cd Battery is considered for fire alarm system however in general fire alarm practice SMF lead acid batteries are considered. Kindly confirm.	Amendment shall be provided, if required.
147	PC183-TFL-4012-603-SEC VI-7.0 DESIGN SPECIFICATION- ELECTRICAL		CL. No. 3.1 & 4.3.1	Conflict in Electrical	Please confirm power supply voltage/type for panic lights.	240 V AC UPS power shall be considered for Panic Lights as per clause 4.3.1 of Sec VI-7.0
148	General Electrical Queries				Power supply for Fire alarm panel Connection of all FACP and repeater panel in FO ring network Scope of UPS supply for OEWS/ FO Converter located at CCR. Scope of power supply for FO Converter Fire alarm-DCS connectivity / PLC-DCS Connectivity / PLC-CG and AU plant FGS/ESD connectivity. Source of emergency DG power for Emergnt lighting system. Kindly confirm make/models of existing fire alarm system in ISBL areas for enabling complete interfacing of the system. Please share FAS Scheme for existing ISBL areas please confirm location of panels for interfacing fire fighting PLC with CG Plant & AU Plant. Also confirm scope of cables, FO converter and other hardware for the same. We have not considered emergency and panic lighting fixtures/DBs for fire bridge parking area. Only normal lighting system is considered. Please confirm. Sub-station of WTP, DM-CPU, ETP & STP are not in FAS list. Kindly confirm.	Power Supply to Fire Alarm Panels shall be from 240 V UPS Power DBs. Noted. shall be in Bidder scope shall be in Bidder scope Emergency Power shall be made available at OUSS. During detailed engineering. Fire Detection & Alarm System of entire Plant shall be interfaced & integrated seamlessly. Any hardware and Software required for the same shall be considered by Bidder. During detailed engineering. Location of panels for interfacing shall be at fire control room, scope of cables, FO converters, and other hardware shall be in bidders scope Emergency Lighting to be considered by Bidder.
149	Clause No. 14 of SPECIAL CONDITION OF CONTRACT- PC-183/E-4012/S-V Rev.0			Payment terms of Supply	We request you to consider following payment terms: - a) 10% of supply value shall be paid as interest free advance against submission of Advance Bank Guarantee (ABG) of equivalent amount valid till 3 months after completion of contract. The value of the advance BG shall be reduced half yearly based on the adjustment of the advance payment. b) 10% of total supply value excluding GST will be released on placement of purchase orders as per the list of major tagged items. c) 70% of total supply value shall be released against pro rata supply of material at site. d) 7% of total supply value shall be released after issue of preliminary acceptance. f) 3% of total supply value shall be released after issue of final acceptance.	Refer clause 13.0 of Section VI-7.0 PDIL /TFL shall review & revert
150	Clause No. 14 of SPECIAL CONDITION OF CONTRACT- PC-183/E-4012/S-V Rev.0			Payment terms of Spares	We request you to consider following payment terms: - a) 10% of total spare value shall be paid as mobilisation advance against submission of Advance Bank Guarantee (ABG) of equivalent amount valid till completion of supply of spares. b) 90% of spare value shall be released against receipt of material at site.	PDIL /TFL shall review & revert
151	Clause No. 14 of SPECIAL CONDITION OF CONTRACT- PC-183/E-4012/S-V Rev.0			Payment terms of Installation of supply items and civil work	We request you to consider following payment terms: - a) 90% shall be paid on pro-rata basis against running bill. b) 7% shall be released after issue of preliminary acceptance. c) 3% shall be released after issue of final acceptance.	PDIL /TFL shall review & revert
152				BOCW/ Labour cess	Please inform that the BOCW/ labour cess @ 1% of total contract value including supply, installation, civil work etc. shall have to be considered by the bidder.	The clause is self explanatory. BOCW cess as applicable shall be included in the quoted TOTAL CONTRACT PRICE
153				Construction of Fire water pump house.	Please confirm/ clarify that the fire water pump house construction shall be as per drawing no. PC183-0000-0016, Rev.P2 only. Further please confirm that drawing no. PC150-0000-0217, Rev P shall not be relevant/ applicable for fire fighting contractor.	Tentative fire water pump house drawing (PC183-0000-0016, Rev.P2) is provided with NIT. However shall be finalized during detail engg. By bidder.
154				Cathodic protection	Please confirm that cathodic protection for underground piping shall be in contractor scope of work.	Confirmed.