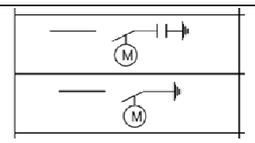
PROJECT :COAL GASIFICATION BASED FERTILISER PLANT AT TALCHER, ODISHA
TENDER NO. : PNMM/PC-183/E-4006/NCB ELECTRICAL DISTRIBUTION SYSTEM
SUBJECT : REPLY TO PRE-BID QUERIES : LOT4 Dated 28.05.2021

Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
1.	SLD	-	-		We would request you to kindly clarify the difference between isolated earthing switch and earthing switch. As per standard practice we have considered maintenance type earthing switch in the place of both type of earthing switch mentioned in SLD. Kindly clarify the same.	1. Isolator with motor operated isolated earthing switch. 2. Motor operated earthing isolated switch. Refer Legends in SLD.
2.	Section-VI-3.1, Power Transformers		8.3	Vector Group & Losses	1. We request you to please confirm the firm parameters of the Power transformer in order to provide best technical & competitive offer. However, in general Star-Star type ICT transformer is considered for GRID S/S. 2. Also , we request you to confirm the Losses of transformer.	Impedance: As per IS/IEC and Electrical System Study with consideration of limiting Short Circuit Current. Vector Group of Grid Transformers: Dyn11 (Tentative). However, LSTK Contractor to coordinate with OPTCL and consider Electrical System Study for finalisation of Vector Group. Efficiency of Transformers, as per NIT. Maximum Losses of Transformers shall be provided in Amendment.
3.	SecVI-3.1	9 of 97	1.2.2 (s)	SLD (DRG NO.- PC183-7411-0985A) Sh 1 of 2	We understand that Neutral Grounding Resistor (NER) or Neutral Grounding Transformer or Motorised NER is required for 120/150MVA transformer. Kindly specify the requirement elaborately. Also specify the restricted current to be flown through neutral alongwith duration of current rating for NER / NGT.	NGR rating shall be as per NIT. However, same shall be finalised during detailed engineering based upon Electrical System Study.
4.				SLD (DRG NO.- PC183-7411-0985A) Sh 1 of 2	We do not envisage any sizing of 120/150MVA , 220/34.5kV Transformer at MRSS in the scope of LSTK contractor. Kindly confirm.	Impedance: As per IS/IEC and Electrical System Study with consideration of limiting Short Circuit Current. Vector Group of Grid Transformers: Dyn11 (Tentative). However, LSTK Contractor to coordinate with OPTCL and consider Electrical System Study for finalisation of Vector Group. Vector Group of all other transformers shall be finalised by LSTK Contractor in line with NIT considering upstream transformers and downstream transformers.
5.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 3.5	Taping/s with the fire water mains shall be provided at plant battery limit (adjacent to the proposed plant location) as per requirement. The same (tie-in location/s) shall be decided during the detail engineering.	Kindly provide Existing Fire Pumping System Details (Capacity, Head, Qty)	Please find enclosed fire fighting layout for the complete plant . Tentative tie-in point for this package has been marked, other details as per NIT.
6.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 3.5	Taping/s with the fire water mains shall be provided at plant battery limit (adjacent to the proposed plant location) as per requirement. The same (tie-in location/s) shall be decided during the detail engineering.	Please clarify whether the Hydrant & Spray pipe network & its Pumping system is common or Separate.	Pumping System is common.
7.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 3.5	Taping/s with the fire water mains shall be provided at plant battery limit (adjacent to the proposed plant location) as per requirement. The same (tie-in location/s) shall be decided during the detail engineering.	Please provide the Existing Fire Hydrant & Spray Piping layout drg showing Existing Fire Pipe header and tapping point which can be extended for HVWS & Hydrant system for MRSS & OUSS.	Please find enclosed fire fighting layout for the complete plant . Tentative tie-in point for this package has been marked, other details as per NIT.
8.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 3.5	Taping/s with the fire water mains shall be provided at plant battery limit (adjacent to the proposed plant location) as per requirement. The same (tie-in	We are considering tapping distance from existing header as 50 metres. Please provide the exact length of tapping to be considered for the extension of Hydrant/ HVWS system.	Please find enclosed fire fighting layout for the complete plant. Tentative tie-in point for this package has been marked, other details as per NIT.

Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
				location/s) shall be decided during the detail engineering.		
9.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 3.5	Taping/s with the fire water mains shall be provided at plant battery limit (adjacent to the proposed plant location) as per requirement. The same (tie-in location/s) shall be decided during the detail engineering.	We assume that Existing Pumping Capacity, Pump head and water tank capacity is sufficient to take care the HVWS & Hydrant Fire fighting system. Hence Fire Pumping system or Booster Pumping System is totally excluded from our scope of work. Please confirm.	Please find enclosed fire fighting layout for the complete plant. Tentative tie-in point for this package has been marked, other details as per NIT. Detail of the Fire water system is as per NIT. Bidder to design their system accordingly.
10.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 6.1- 1)	Fire Hydrant shall be provided in a ring round the facilities of the plant and storage area in the contractor scope.	Hydrant Piping shall be normally laid aboveground on Pedetals. However at Rail/Road Crossing/Building Entry/Exit same shall be underground through Hume Pipe. Please confirm.	OK.
11.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 7.5	Fixed Water Spray System	We assume that there is the provision in the existing Annunciation Panel located in the existing Fire Water Pump house & Existing Plant Control Room building to take the input / output Signal from deluge valve panel of upcoming HVWS spray system for Cable Cellar & Transformer. So New annunciation panels are not required separately. Please confirm.	As per NIT.
12.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 7.5	Automatic fixed water spray system, designed in accordance with NFPA 15, with automatically pneumatically operated deluge valve having manual by-pass valve system & detectors, shall be installed to the following locations:	As per referred clause, Pnematically operated Deluge Valve shall be provided. Please note that, the same is normally be provided where the ambient Temperature will go below Freezing point of Water & also this will increase the system cost. Hence we propose Hydraulically Actuated Deluge Valve for HVWS System. Please confirm.	Hydraulically operated deluge valve to be used, Amendment shall be issued. Other conditions as per NIT.
13.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 7.9	The sprinkler system, wet type, shall be designed according to NFPA 13. Sprinklers system shall be installed in the hall and rooms, as applicable.	We understand that Sprinkler System shall be provided in Non Electrical Room only like Conference/Meeting Room, Office only. Please confirm	Noted.
14.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.2	Carbon dioxide gas flooding fire extinguishing system shall be provided for : • Electrical panels at substations & other locations.	Since CO2 flooding system is costly system, Kindly specify, in which electrical panels, we need to consider the same. There will be lot of Electrical Panel inside the Substation like LCC, CRP AC/DC Auxilliary Panel etc., So, clarity is required for proper Estimation. Also, What are the other location where this system needs to be considered. Please clarify.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided.
15.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.2	Carbon dioxide gas flooding fire extinguishing system shall be provided for : • Electrical panels at substations & other locations.	Please note that, CO2 is harmfull Gas & recommended for Unmanned areas only. Also, the Electrical Panels may have kept in manned rooms, So, we propose Direct Low Pressure Panel Injection System & Gas will be choosen as per NFPA 2001. Please confirm.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided.
16.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.1	Clean Agent (Inergen or Argonite) System shall be provided to : Rack Room, Panel room, Switch gear room, Computer rack room and Control Room, as applicable.	We understand that clean agent system shall not be provided in 220 KV & 33KV GIS Hall. Please confirm.	Clean agent system shall not be provided for Switchgear rooms, Amendment shall be issued.
17.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 7.5	Automatic fixed water spray system, designed in accordance with NFPA 15, with automatically pneumatically operated deluge valve having manual by-pass valve system & detectors, shall be installed	As per referred clause, Pnematically operated Deluge Valve shall be provided. Please note that, the same is normally be provided where the ambient Temperature will go below Freezing point of Water & also this will increase the system	Hydraulically operated deluge valve to be used, Amendment shall be issued.

Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
				to the following locations:	cost. Hence we propose Hydraulically Actuated Deluge Valve for HVWS System. Please confirm.	
18.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.2	Carbon dioxide gas flooding fire extinguishing system shall be provided for Electrical panels at substations & other locations.	Since CO2 flooding system is costly system, Kindly specify, in which electrical panels, we need to consider the same. There will be lot of Electrical Panel inside the Substation like LCC, CRP AC/DC Auxilliary Panel etc., So, clarity is required for proper Estimation. Also, What are the other location where this system needs to be considered. Please clarify.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided.
19.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.2	Carbon dioxide gas flooding fire extinguishing system shall be provided for : Electrical panels at substations & other locations.	Please note that, CO2 is harmfull Gas & recommended for Unmanned areas only. Also, the Electrical Panels may have kept in manned rooms, So, we propose Direct Low Pressure Panel Injection System & Gas will be choosen as per NFPA 2001. Please confirm.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided.
20.	Section : VI – 3.2.1, Fire Fighting System		Clause no. 8.1	Clean Agent (Inergen or Argonite) System shall be provided toRack Room, Panel room, Switch gear room, Computer rack room and Control Room, as applicable.	We are considering the the Clean Agent System for the follwing rooms as aplicable: 1. Computer rack room and Control Room 2. Control Relay Panel Room 3. Rack Room Further We are not considering clean agent system in 220 KV, 33KV GIS Hall & 11 KV Switchgear Room. Please confirm.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided. Clean agent system shall not be provided for Switchgear rooms, Amendment shall be issued.
21.	Section : VI – 3.2.1, Fire Fighting System			Cl.No.:7 FIRE WATER DISTRIBUTION SYSTEM	Kindly confirm whether common Hydrant cum Spray header shall be provided or Separate headers for Spray and Hydrant will be provided.	Common
22.	Section : VI – 3.2.1, Fire Fighting System				Since the component specifications are not provided, all MOC shall be complying relevant TAC / IS standards.	Codes & standards mentioned in NIT shall be followed.
23.	Section : VI – 3.2.1, Fire Fighting System			Cl.No.:7.5 Fixed Water Spray System	Kindly confirm whether MVWS system is required for cable cellar.	CO_2 gas flooding system in cable cellar in place of MVWS System. Amendment shall be issued.
24.	Section : VI – 3.2.1, Fire Fighting System			Cl.No.:7.5 Fixed Water Spray System	Specifications calls for pneumatically operated Deluge valve. We propose Hydraulically actuated Deluge valve system. If pneumatically operation is mandatory please confirm the tap-in point for compressed air piping.	Hydraulically operated deluge valve to be used. Amendment shall be issued.
25.	Section : VI – 3.2.1, Fire Fighting System			Cl.No.:8.0 Gas Flooding System	We understand that Gas flooding is not necessary for 220kV GIS hall and panel flooding is applicable only for MV rated electrical panels as per NBC. Hence, we are not considering any Gas flooding for LV panels, LCC panels and CRP panels. Kindly Confirm.	Bidder to decide for critical and unmanned locations as per Codes and standards. For manned location CO_2 flooding system shall not be provided. Clean agent system shall not be provided for Switchgear rooms, Amendment shall be issued.
26.	Section : VI – 3.2.1, Fire Fighting System			Cl.No.: 3.0 Scope	We are considering Conventional stand alone FDA system with adequate number of Zone cards and potential free contacts for Remote Monitoring. Kindly Confirm.	All provisions shall be made for interface and integration with Owner's Fire Alarm System. Fire Alarm System of MRSS and OUSS is not in LSTK Contractor's scope.

PROJECT :COAL GASIFICATION BASED FERTILISER PLANT AT TALCHER, ODISHA
TENDER NO. : PNMM/PC-183/E-4006/NCB ELECTRICAL DISTRIBUTION SYSTEM
SUBJECT : REPLY TO PRE-BID QUERIES : LOT4 Dated 28.05.2021

Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
27.				Site	Due to the country wide lockdown and travel ristrictions due to the Covid 19, we request M/s. Talcher to provide us the i).Construction material availability (aggregate, sand, borrowed earth, bricks etc..) and its rates along with supplier contact details. ii). Local condition like availibilty of water and power. iii).Availability of guest house, nearest bus/railway station, availability of guest house if any, detail of nearby any construction work. iv). Borewell depth to be considered for water supply, photographs of the proposed site etc... v). We would like to setup labour camp for approximately labour force of 300Nos (Skilled and unskilled) during the peak period adjecent to the proposed site. Request M/s. Talcher to provide permission for the same. Also provide us the distance of labour camp from proposed SS site location.	i. Availability of Construction material shall be ensured by the bidder itself. Rate of material and contact details of supplier presently is not available with TFL/PDIL. ii. Construction water and Power will be provided at one point on chargeable basis and further distribution will be done by bidder. iii. Guest house is not available within plant area. Availability of Guset house outside plant area, Bus stand/Railway station shall be verified by bidder itself or visit to site for actual condition. iv. Borewell is not allowed within plant Area v. Labour camp within plant area is not permissible. Bidders shall have make own arrangement outside plant area for labour camp.
28.				Site	We assume that necessary construction permission along with required gate passess without any delay will be provided to us for our staff, labour, vehicles and for working 24X7 round the clock. Kindly confirm	Shall be as per standard construction policy norms or as provided by TFL. Permission along with required gate passes will be provided to staff, labour, vehicles etc. subject to fulfilment and verification of necessary documents.
29.				Proposed Switchyard Land	We understand that proposed SWYRD land has been acquired by M/s. Talcher Fertilizers and same shall be handed over to us at the time of Notification of award. Please confirm	Noted. Land will be handed over during kick off meeting.
30.				Hinderance Register	Hinderance register shall be maintained by us at site which shall include the delays due to force majures,rainfall,naturalcalmaities, local issues etc. and extension/compensation shall be provided to us for the same.	Hinderance Register will be maintained by PDIL/TFL. Delay, extension/compensation shall be as per relevant clause of NIT.
31.				Site office,stores, batching plant, fabrication yard etc …	Request M/s. Talcher Fertilizers to permit for having site office / stores / batching plant/fabrication yard within Talcher Fertilizers proposed site for smooth coordination works.	Subject, to availability a piece of land will be provided within plant area. Bidder can use the area marked for this package.
32.				Technical Specification - Scope Of Work - Electrical Power System Studies (PC183-TS-0831)":	**CL: 2.2 – Cable temperature rise simulation (Page 669/1314): Study has to be carried out for:** • 220 kV cables (from gantry to GIS & GIS to transformers) only ? • If same has to be performed for 33 kV & 11 kV HV cables, please Confirm. • If LV 415V cables throughout the plant to be included in the study, then complete plant underground cable layout details to be shared, please confirm.	- 220 kV cables (from Switching Substation to GIS and GIS to transformers) - Entire fertiliser complex for all cables - During detailed engineering. Majority of cables within fertiliser complex are overhead.

PROJECT :COAL GASIFICATION BASED FERTILISER PLANT AT TALCHER, ODISHA
TENDER NO. : PNMM/PC-183/E-4006/NCB ELECTRICAL DISTRIBUTION SYSTEM
SUBJECT : REPLY TO PRE-BID QUERIES : LOT4 Dated 28.05.2021

Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
33.				Technical Specification - Scope Of Work - Electrical Power System Studies (pc183-ts-0831)":	**CL: 2.3.8 - Insulation coordination studies (Page 671/1314): As per our understanding of the RFQ and SLD of the system, following studies need to be performed:** • Insulation coordination study • Lightning over voltages for 220kV OHL and connected 220kV GIS/Cables confirm the selection criteria for the 220 kV surge arresters. • Switching over voltages associated with switching of 33kV cables and 11kV cables. • Faulted transient study for evaluation of maximum transient recovery voltage and its rate of rise across 220kV, 33kV & 11kV circuit breakers. • Ferro-resonance due to energization of transformer connected through long OHL/Cable, due to stuck pole operation of circuit breaker. • CB switching studies for largest MV motors • De-Energisation of the largest motor by respective circuit breaker at the point of the voltage wave using restrike model of a circuit breaker that causes the highest transient over voltage and high rate of rise. • CB switching studies for Capacitor banks (if any) • Energisation & de-energisation of capacitor bank by respective circuit breaker at the point of the voltage wave that causes the highest transient over voltage • Reclosing of capacitor bank by respective circuit breaker at the point of the voltage wave that causes the highest transient over voltage	- For entire fertiliser complex covering all 21 Nos. Substations. - As per NIT. - For entire fertiliser complex (All 21 No. Substations). - Noted. - Noted. - Noted for entire fertiliser complex (All 21 No. Substations). - Noted for entire fertiliser complex (All 21 No. Substations). - CB Switching for Capacitors shall be performed for entire fertiliser complex (All 21 No. Substations). - Noted for entire fertiliser complex (All 21 No. Substations). - Noted for entire fertiliser complex (All 21 No. Substations)

TABLE FOR FACILITIES/UNITS

SL.NO.	BLOCK DESCRIPTION	SIZE IN METRE	REMARKS
1.	AMMONIA PLANT	100 M x 120 M	
2.	UREA PLANT	200 M x 160 M	
3.	PETCOKE/FLUXANT STORAGE	200 M x 100 M	
4.	BAGGING PLANT	150 M x 30 M	
5.	WAGON LOADING PLATFORM	650 M x 20 M	
6.	COOLING TOWER FOR AMMONIA & UREA	-	
7.	FUEL OIL UNLOADING, STORAGE & FORWARDING AREA	70 M x 55 M	
8.	ADMIN. / TECHNICAL BUILDING (EXIST.)	60M X 40 M	
9.	DM WATER PLANT	170 M x 80 M	
10.	WATER TREATMENT PLANT	190 M x 100 M	
11.	AMM. STORGE TANK(2 Nos) WITH FLARE STACK	170 M x 100 M	
12	INST. AIR / PLANT AIR	50 M x 40 M	
13.	COVERED STORAGE SHED (ROM COAL)	290 M x 85 M	
14.	STEAM GENERATION PLANT	320 M x 240 M	
15.	FLARE STACK	R 100M	
16.	TRUCK/ LORRY WEIGH BRIDGE	20 M x 16 M	
17.	ELECTRICAL DISTRIBUTION SYSTEM & EDG	70 M x 240 M	
18.	TRUCK PARKING	170 M x 100 M	
19.	MECHANICAL/ELECT. WORKSHOP (EXIST.)	70 M x 40 M	

TABLE FOR FACILITIES/UNITS

SL.NO.	BLOCK DESCRIPTION	SIZE IN METRE	REMARKS
20.	UREA SILO (EXIST.)	238 M x 42 M	
21.	GAS CLEANING & PURIFICATION PLANT	330 M x 200 M	
22.	RAW WATER STORAGE	280 M X 270 M	
23.	CMD & COAL GASIFICATION PLANT	300 M X 200 M	
24.	HOLDING POND FOR ETP	27000 M2	
25.	ETP	110 M x 70 M	
26.	ASH /SLAG POND	300 M X 225 M	
27.	COOLING TOWER FOR CGP	-	
28.	AIR SEPARATION UNIT	215 M x 120 M	
29.	CENTRAL STORE (EXIST.)	60 M x 40 M	
30.	PLANT MAINT. OFFICE	60 M x 40 M	
31.	FIRE WATER STORAGE	85 M x 65 M	
32.	WAGON TIPPLER FOR COAL/PETCOKE/FLUXANT	20 M X 10 M	
33.	SUB-STATION	65 M X 35 M	
34.	SULPHUR STORAGE	50 M X 30 M	
35.	CANTEEN	60 M X 20 M	
36.	LAB. TECH. BUILDING	30 M X 18 M	
37.	FIRE WATER PUMP HOUSE	65 M X 15 M	
38.	FIRE BRIGADE VEHICLE PARKING		
39.	FIRE STATION (NEW)		

NOTES:–

1. ALL DIMENSIONS AND COORDINATES ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. REFRENCE BENCH MARK (⊕) POINTS IS W.R.T GLOBAL CO-ORDINATES HAVING N-2312910.151 & E-308680.833 (GRID COORDINATES N-000.0M, E-000.0M)
3. EQUIPMENT SIZES AND LOCATIONS ARE TENTATIVE.
4. BLOCK SIZE OF FACALITIES ARE TO BE FINALIZED AFTER GETTING VENDOR INFO.
5. PIPE RACK LOCATION & SIZES MARKED ARE SCHEMATIC.
6. CENTER LINE OF EXISTING ROAD & PERIPHERAL ROAD TO BE MAINTAINED WITH MINOR ADJUSTMENT & SAME SHALL BE ALIGNED WITH EXISTING BOUNDARY WALL.
7. IT IS ASSUMED THAT 220 KV EXTERNAL POWER SUPPLY TIE-IN SHALL BE AT THE BOUNDARY WALL CLOSE TO THE LOCATION OF ELECTRICAL DISTRIBUTION SYSTEM BLOCK.
8. BATTERY LIMIT IS TENTATIVE AND SHALL BE FINALISED DURING DETAILED ENGG.

LEGEND :~

- PROPOSED FACILITIES
- EXISTING FACILITIES
- NEW RAILWAY TRACKS
- ROAD FACILITIES [TO BE USED]
- GREEN BELT AREA

TOTAL PLANT AREA = 490.7 ACRE (APPROX.)

AREA FOR NEW PLANT = 326.8 ACRE (APPROX.)

TOTAL GREENBELT AREA = 163.9 ACRE (APPROX.)

S.NO.	REFERENCE DRAWINGS	NUMBERS
07.	WATER SUPPLY AND DRAINAGE SYSTEM	17125–361000–WSXX_REVOA
06.	WATER SUPPLY AND DRAINAGE SYSTEM	17269–362000–WSXX_REVOB
05.	TOPOGRAPHICAL & CONTOUR SURVEY DRAWING	SA/RCF/TALCHER/2017/TOPO–DWG
04.	MASTER PLAN OF MINING	FURNISHED BY CLIENT
03.	MASTER PLAN [FCI, TALCHER UNIT].	DRG. NO. 501
02.	INDEX PLAN [FCI, TALCHER UNIT].	DRG. NO. 635
01.	PLANTS LAYOUT [FCI, TALCHER UNIT].	TFU–M–GN–6341

REV.	DATE	DESCRIPTION	PPD.	CKD.	APPD.
P3_OP	24.05.21	PRELIMINARY ISSUED	AM	DR	AMAR
P2	26.02.21	PRELIMINARY ISSUED	AM	DR	AMAR
P1	22.01.21	PRELIMINARY ISSUED	AM	DR	AMAR
P	15.01.21	PRELIMINARY ISSUED	AM	DR	AMAR

CLIENT : M/s. TALCHER FERTILIZER LIMITED

LOCATION : TALCHER, ANGUL DISTRICT, ODISHA(INDIA)

TITLE : CONCEPTUAL FIRE WATER LAYOUT OF OSBL FACILITY FOR INTEGRATED COAL BASED FERTILIZER AND CHEMICALS COMPLEX

REV. P1 / P2 / P3_OP

SHEET 1 OF 1

SCALE :~ 1 : 2200

DRG. No.:~ PC183–0000–0011

FILE :~ PC183–0000–0011_RP3_OP

PROJECTS & DEVELOPMENT INDIA LTD. NOIDA