

BOQ R1 : Fire protection & Detection Work for Auditorium Building at ITPS,OPGC LTD,Banharpali					
Sl. No.	Items	Unit	Qty.	Rate (in Rs.)	Amount (in Rs.)
I	FIRE DETECTION SYSTEM				
	Supply, Installation, Testing and Commissioning of Intelligent Addressable Fire Detection and Alarm System as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.				
	CONTROL EQUIPMENTS:				
1	32 bit microprocessor based Intelligent Addressable Fire Alarm Control panel with 2 Loops with battery back up. The panel would be modular, decentralized, with The panel shall be consisting with minimum 240 character LCD display and for networking. The Panel would be able to record atleast 60,000 events history. Each loop would be capable to have atleast 126/99 addressable detectors and addressable devices with up to 3.5km loop length . with 12V battery back up for 30 Minutes and battery charger in built . Make: ATIES/Honeywell (Morlay) /Siemens (UL approved)	No.	1		
2	Supply, Installation, Testing and Commissioning of 1 KVA LINE On line INTERACTIVE UPS WITH 8 hour BATTERY BACK UP etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. DETECTORS & OTHER MODULES (MAKE - ATEIS/Honeywell/Siemens)	No	1		
3	Supply, Installation, Testing and Commissioning of Intelligent Addressable type multicriteria detector with base for use as heat or smoke or combined both with automatic electronic addressing, microprocessor type with builtin integrated short circuit isolator including testing, commissioning etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	128		
4	Supply, Installation, Testing and Commissioning of Intelligent Addressable type beam detector with transmitter and base with automatic electronic addressing, microprocessor type with builtin integrated short circuit isolator including testing, commissioning etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. (The beam detector shall comply the latest standard and shall be with all necessary fixtures to fix it on wall surface)	Nos.	3		
5	Supply, fixing, Testing and Commissioning of Intelligent Addressable Manual Call Point as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	16		
6	Supply, Installation, Testing and Commissioning of Addressable Loop sounder with strobe interface module, power supply for sounder and programmable by software having operating temperature -10°C to + 55°C etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	7		
7	Supply, Installation, Testing and Commissioning of Analogue Addressable Control module with IP66 casing containing two relay outputs , each containing a potential-free DPDT contact with a fail-safe and in-built short circuit isolator including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.The ambient temperature range shall be -20C to +60C	Nos.	2		
8	Supply, Installation, Testing and Commissioning of Analogue Addressable Monitor module with IP66 casing containing four relay inputs , each containing a potential-free DPDT contact with a fail safe and in-built short circuit isolator including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.The ambient temperature range shall be -20C to +60C	Nos.	2		
9	Supply, Installation, Testing and Commissioning of Dual LED Response Indicator (LOCAL) as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	70		
	CABLE & WIRING ACCESSORIES				
10	Supply, fixing of 4"4" JB for mounting of detectors & other accessories with necessary fittings as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	169		
11	Supply, Installation, Testing and Commissioning of Outdoor Electronic Sounder with 4 distinct tone including 40W Speaker with required accessories as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	2		
12-a	Supplying of 2x1.5 sq.mm. ISI marked copper armoured conductor cable with gland socket and other wiring accessories on the existing surface/tray/shaft etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Rmt.	1800		
12-b	Laying, Testing and Commissioning of one number of PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of size not exceeding 25 sq.mm on surface as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Rmt.	1800		
13	Supply, fixing of 4.5Kg dry CO ₂ Fire extinguishers with wall mounting brackets first filling etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	7		
14	Supplying, fixing, 6 Kg ABC Powder(stored Pressure type) Fire extinguishers with wall mounting brackets first filling etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	17		
II	PUMPS & ACCESSORIES				
15	a) Supply, installing, testing, & commissioning of ELECTRIC DRIVEN HYDRANT PUMPS suitable for automatic operation consisting of the following. (as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.) b) Horizontal split casing centrifugal suction type pump complete for delivery of 2280 ltrs./minute against a total head of 60 mtr approximately to ensure a minimum pressure of 3.5 kg/sq cm at the farthest of topmost hydrant. The installation shall be complete with necessary pressure gauge with shut off cock on delivery side. (the pump should be tested for bench mark at factory and shall be gotten approved by the local fire Authority). complete with bronze impeller (hard finished and dynamically balanced), shaft and Mechanical seal. c) Squirrel cage induction motor suitable for 415 V, + 6%, 3 phase, 50 Hz, AC supply of 37.5 KW (50 HP) (or as per pump efficiency) rating for the above pump with synchronous speed of 2900 RPM type such as as per IP: 55, insulation and flexible coupling and coupling guard with the pump.	Set	1		

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	d) Common bed plate of fabricated mild steel channel or cast iron type with cushy foot mounting. All required civil work shall be included. No extra payment shall be made.				
16	a) Supply, installing, testing, & commissioning of Diesel Engine DRIVEN HYDRANT PUMPS suitable for automatic operation consisting of the following. (as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.) b) Diesel Engine Driven Fire Pump of Capacity 137 m3/hr, 60 mtr head, with 85 BHP, 1800 rpm Radiator Cooled Diesel Engine, Cast Iron Body, bronze impeller, Stainless steel shaft, base frame, coupling, coupling guard (for delivery of 2280 ltrs./minute against a total head of 60 mtr approximately to ensure a minimum pressure of 3.5 kg/sq cm at topmost hydrant) etc complete set without battery, as per technical data sheet enclosed. Make : KIRLOSKAR/ Similar Superior make. All required civil work shall be included. No extra payment shall be made.	set	1		
17	a) Supply, installation, testing & commissioning of ELECTRIC AUTOMATIC PRESSURISATION JOCKEY PUMPS set consisting of the following including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. b) Horizontally mounted single stage centrifugal end suction type Jockey Pump complete for delivery of 180 ltrs. / min against a total head of 60 meters approx complete with bronze impeller shaft c) Squirrel cage induction motor suitable for 415 V, 50 Hz, AC supply of 10 HP , suitable rating for the above pump with synchronous speed of 2900 RPM TEEC type such as as per IP : 55 and flexible coupling and coupling guard with the pump. Motor shall accept +/- 6% variation and +/- 3% variation in frequency. Common bed plate of fabricated mild steel channel or cast iron type with cushy foot mounting. All required civil work shall be included. No extra payment shall be made.	Set	1		
18	Fabricating, Supplying, erection, testing and commissioning of totally enclosed cubicle type free standing, floor mounted, compartmentalized, sectionalized, dust, damp and vermin proof, with suitable natural ventilation arrangement, front and rear accessible, lockable power cum CONTROL PANEL , fabricated from 1.6/ 2mm thick MS sheet (to give IP 54 protection) spray painted with approved colour shade, have 4 strip sleeved aluminium / aluminium alloy bus bar, bus bar supports, interconnecting from bus bars to outing swatches / MCCBs including earthing the board suitable to accomodate the following including numbering etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. All pumps to be provided with over load relay. all starter to be provided with single phase preventer. necessary cable alloys space for spare switches, internal wiring and copper earthing of all equipment shall also be included. all switch gears / control gears shall be motor duly rating. provision shall be made for providing potential free contacts to all pumps starters for connections <u>to building automation system</u> . Cubical panel as described above with following: Incoming section :250 Amps, 3 pole MCCB with neutral link 50 KA, 415 V + 1 No, Digital voltmeter with phase selection push button = 1 No, 3 phase LED indication lamps, instrument fuses and switches 400 Amp AL Bus bar Outgoing Section: Hydrant Pumps. 160 A TP MCCB with neutral link 50 KA 415 V, Suitable for motor duty = 1 no, 63 A TP MCCB with neutral link 50 KA 415 V, Suitable for motor duty = 3 no, (One Standby) On / Off indicating Lamp = 1 sets. Suitable fully automatic star delta starter for motor complete with single phase preventer relay = 2 nos. for (50 HP and 10 HP) CT Ratio 200:5 = 3 nos, Ratio- 50:5 = 3 nos, Ratio- 50:5 = 3 nos, Other accessories like , Earth bus 25 x 5 AL. Including compartment and accessories for Diesel Engine driven Pump Control and automation.	Set	1		
19	Supplying of PVC insulated PVC ARMoured ALUMINIUM CONDUCTOR CABLES 1100 V grad including necessary suport clamps and connection plugs complete in all respect as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.				
a	Power Cable Aluminium 3 core x 50 sqmm	Mtr.	20		
b	Power Cable 3 core x 10 sqmm	Mtr.	15		
c	Power Cable 4 core x 10 sqmm	Mtr.	40		
d	Control Cable Cu armoured, 2 core x 2.5 sqmm	Mtr.	60		
20	Laying, Testing of one number of PVC insulated and PVC seathed / XLPE power cable of 1.1 KV grade of following sizes on surface as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC..				
a	Up to 25sqmm	Mtr.	115		
b	exceeding 25 sq.mm and up to 120 sq.mm	Mtr.	20		
21	Supplying and making end termination with brass compression gland and aluminum lugs for following size of PVC insulated and PVC sheathed / XLPE aluminum cable of 1.1 KV as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.				
a	Power Cable Aluminium 3 core x 50 sqmm	Set	4		
b	Power Cable 3 core x 10 sqmm	Set	2		
c	Power Cable 4 core x 10 sqmm	Set	2		
d	Control Cable Cu armoured, 2 core x 2.5 sqmm	Set	10		
22	Supplying and fixing of GI earthing strip 25mm x 5 mm from all motors and MCC panel to be connected in all aproved manner to general earthing system as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Mtr.	40		
23	Supplying, fixing and testing of level controllers, PRESURE SWITCHES , wiring, cabling from level controller / pressure switch to panel etc. complete as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. to operated the system automatic/manual. Pump shall be protected against running dry. (Indfoss/Danfoss) IPS 100	Each	7		

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24	Supplying, fixing and testing of Dial Type PRESURE GAUGE (Range 0-10 kg/cm ² 4" Dial) complete with pipe stem & cock as reqd.(H-Guru/Friebeg) as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	6		
III	PIPING AND ACCESSORIES (HYDRANT, WET RISER & SPRINKLER SYSTEM)				
25	Supplying, laying, jointing and testing of following sizes Heavy gauge, C-Class MS pipe, flanges and fittings such as Bends, Tees, reducers, rubber insertions and galvanised nut & bolts, as per IS: 3589 with up to date amendment including fixing the pipe on wall / ceiling with suitable M.S. strip/ clamps / bracket & painting with one coat of anticorrosive paint / primer and two coats of synthetic enamel paint etc. complete as required. Pipe shall have welded connections complete with bevel cut by angle grinder and use of three phase rectifier welding set. Rate shall also include cost of hanger & clamps as per specification including cost, conveyance, taxes of all materials, labour charges, mechinaries,T& P etc. complete and as per direction of EIC (including all civil breakage and making good the same. Pipes brought to site shall have bevel edge at ends shall be varnish coated externally.) Make:JINDAL/ BANSAL/ TATA/SAIL				
a	200 MM	Mtr.	15		
b	150 MM	Mtr.	140		
c	100 MM	Mtr.	110		
d	80 MM	Mtr.	15		
e	25 MM	Mtr.	5		
26	Supplying, fixing and testing of SINGLE HEADED HYDRANT VALVE inlet complete with 63mm dia female instantaneous outlet of S.S. as per type "A" of IS: 5290 - 1977 with plastic blanked cap, steel chain as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	7		
27	Supplying, fixing and testing collecting head with 63 mm dia instantaneous type inlet 150 dia flanged, outlet with built in check valve/non return valve for FIRE BRIGADE CONNECTION fire riser as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Four way Make : SAFEGUARD/FIRESHIELD	Each	1		
28	Supplying, fixing and testing 63 mm dia 15M LONG reinforced rubber lined HOSE PIPE as per IS: 636-1962 part - A, with S.S. male & female coupling with copper wire to the hose pipe as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	14		
29	Supplying, fixing and testing of Standard Short size SS branch pipe with S nozzle 16mm dia outlet with standard male instantaneous spring lock type 63mm dia coupling Branch pipe and nozzle shall confirm to IS 903 - 1985 as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	7		
30	Supplying, fixing and testing of first aid HOSE REEL full swinging type with 30 M length X 20 mm dia double braided rubber pipe IS: 12585 with ABS plastic shut off nozzle of 6 mm dia.Hose shall be connected to the Riser through GI (H) 25 mm dia pipe connection from riser to hose reel including all sockets, nipples, elbows and 25 mm ball valve. fixed on wall with dash fasteners. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	6		
31	Supplying, fixing and testing of weather proof standard HOSE CABINATE (0.75 M x 0.6 M x 0.3 M) having central opening glazed door with 6 mm thick clear glass including necessary locking arrangement with Allan key, power coating with PO red paint and for housing 2 nos. RRL hose pipe, 1 NO branch pipe. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	7		
32	Providing & making drainage provision for the riser with 25 mm dia BALL VALVE completed as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Each	2		
33	Supply, Installation, Testing and Commissioning of dual plate spring operated wafer type NON RETURN VALVE complete with bolts, nuts, washers and neoprene rubber gaskets as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Make: ISI Approved				
a	200 MM	Each	2		
b	150 MM	Each	3		
c	100 mm	Nos.	1		
d	80 MM	Each	1		
34	Supply, Installation, Testing and Commissioning of C.I. butterfly valves as per BS 5155 slim seal standared lever operated type with required flanges, nuts, bolts etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Make: L&T / INTERVALVE/H SARKAR				
a	150 MM	Each	2		
b	100 MM	Each	4		
c	80 MM	Each	1		
35	Supply, Installation, Testing and Commissioning of SUCTION STRAINER / FOOT VALVE complete including matching flanges, nuts & bolts etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Make: L&T / INTERVALVE/H SARKAR	Each	2		
	200 MM				

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36	Supply, Installation, Testing and Commissioning of AIR RELEASE valves with required flanges, nuts, bolts etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. MAKE- ISI Marked	Each	1		
37	Supply, Installation, Testing and Commissioning of Cast Iron body, Leaded Tin Bronze wedge/ ring, flanged Sluice valve of Non rising spindle type as per IS:14846, PN 1.0 Rating, for suction and delivery side of the pumps with flanges, bolts, nuts, washers, gaskets etc as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Make: I & T / INTERVALVE/H SARKAR				
a	150 MM	Each	2		
b	80 mm	Each	1		
38	Supply, Installation, Testing and Commissioning of Cast Iron Body flanged Y-type Strainer with SS screen complete with suitable flanges, nuts, bolts, gaskets etc. as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC. Make: I & T / INTERVALVE/H SARKAR				
a	150 MM	Each	2		
b	100mm dia.	Nos.	1		
c	80mm dia.	Nos.	1		
IV	TERRACE PUMP AND PANEL				
39	Supply, Installation, Testing and Commissioning of electrical motor driven Booster pump of Monoblock type capable to deliver 450LPM at 35MWC.(Approximate 7.5HP) The pump shall be coupled to TEFC motor of suitable HP with speed of 2900RPM and complete set shall mounted on common base frame. I/C R.C.C. Pump foundation for Terrace Pump as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.	Nos.	1		
40	Supply, Installation, Testing and Commissioning of Gun metal chrome finished Ball valves with fittings of screwed end type as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete and as per direction of EIC.				
a	15mm dia.	Nos.	2		
b	25 mm dia	Nos.	1		
41	Supply, Installation, Testing and Commissioning of Control Panel for Fire pumps as detailed below Providing and fixing dust and vermin proof motor control panel fabricated from 14 SWG MS sheet with stove enamelled paint as per specification including cost, conveyance, taxes of all materials, labour charges, T& P etc. complete as per direction of EIC (for above mentioned Fire Booster pump with automatic operation) and comprising of: a) One feeder of 63 ampere 4 Pole MCCB, 35KA. b) One fully automatic DOL starter with push buttons and indicating lights. c) One panel type volt meter 96mm square with Rotary selection switch for reading voltage between phase and neutral or incoming feeder. d) Three Neon Phase indicating lights on the incoming Main. e) One Ampere meter 96mm square panel type of 0-50A range. f) Etched plastic identification plates for all switch gears. h) All internal wiring should be colour coded from incoming main to switchgear, starters, meters, indicating lights.	No.	1		
TOTAL AMOUNT					
GST HAS TO BE CONSIDERED EXTRA AT ACTUAL					