

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED
(A Govt. of West Bengal Enterprise)
Bakreswar Thermal Power Project
P.O.Bk.T.P.P , Dist -Birbhum,Pin -731104

Notice No. WBPDC/EOI-Adv/CC/13-14/189/BkTPP

Date: 29.01.2014

Inviting Expression of Interest (EOI) For Upgradation of HMI System for Procontrol P13/42 DCS of Unit-1 (Stage-1) from Existing PMS System at BK.TPP. The chronological events for the entire bidding process would be as follows:

1. Description of Upgradation Job : As per Annexure-I
2. Earnest Money : Rs.5, 00,000.00(at the time of submission of Technical Bids).
3. Cost of EOI Documents : Rs.1000/-(One Thousand Only)
4. Sale of EOI Documents : 06.02.2014 to 26.02.2014 up to 01:30 PM
5. Pre-bid meeting : Date commence after short listing EOI Applicants.
6. Last date for submission of EOI : 18 -03-2014 upto 02.30 PM.
(Annexure -A)
- 6a. Last date of submission of Technical Bids. : Date commence later to the short listed EOI Applicants
- 6b. Technical Presentation. : Date commence after submission of Technical Bids.
- 6c. Last date of submission of Financial/Commercial Bids with relevant terms & conditions. : Date commence after Technical Presentation.

N.B. All the interested parties are requested to visit the site at actual and after that submission of necessary documents in favour of Expression of Interest.

Qualifying Requirement:

1. Bidder must have upgraded the HMI system from PMS system for Procontrol P13/42 DCS system of 200MW Steam Turbine Generator unit or above. Bidder must have upgraded that HMI system for at-least 600MW in total and those systems are running for more than 3 years.
2. Bidder must have a technical branch in India from where all types of technical support, Installation and commissioning will be done.
3. The offered system should be compatible with Procontrol P13 system without any hardware modification or addition on the P13 System.
4. Minimum two PO references for HMI Upgrade on Procontrol P13 system be enclosed along with the tender.
5. China based materials; license, technical support etc. are not acceptable.
6. Successful bidder must arrange a visit for a group of engineers from customer at their own cost to some 200 MW Steam Turbine units in which they have already completed PMS up-gradation. After satisfaction with the bidder's upgraded system, the customer team will give clearance for next phase of proceedings].

N.B. Training: 30 mandays at site and 30 mandays at works/vendor office for management, general maintenance and programming of supplied system.

The application form for Expression of Interest **Annexure - A**. will be issued from the purchase department, Administrative building 2nd floor room No: 20 or Down load from Net. Interested parties submit the duly filled in application form along with all relevant supporting documents **including the application fees Non-refundable Demand draft or pay order amounting Rs.1000 /- (Rupees One Thousand only)** drawn in favor of "The West Power Development Corporation Ltd" payable at any nationalized/schedule, bank/ at Suri or United Bank of India, Bk.T.P.P. EOI shall not be issued against cash/cheque/money order.

T. K. BOSE
SR.MGR(S & P)
BkTPP/WBPDCL

WBPDCL

**TECHNICAL SPECIFICATIONS
OF
HUMAN MACHINE INTERFACE (HMI) SYSTEM OF
PROCONTROL P13/42
FOR Unit#1 OF STAGE- I
(210 MW)**

**WBPDCL
BAKRESWAR THERMAL POWER PLANT**

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HMI UPGRADATION OF UNIT#1 OF STAGE-I

1.00.00. INTENT OF SPECIFICATION

This proposal is for design, manufacture, supply, erection and commissioning and handing over of human machine interface (PC based) system for Unit#1 of Stage-I PROCONTROL P13/42 system in place of existing PMS system supplied by BHEL in the year 1999.

1. This specification is intended to cover the following activities and services in respect of above mentioned work with all components and accessories to be installed at WBPDC, BkTPP, located at BkTPP in Birbhum district of West Bengal :-
 - a. Detailed design of all the equipment and equipment systems.
 - b. Providing engineering data, drawings and O&M manuals as specified.
 - c. Drawings, Data sheet, Format etc. for Owner's approval and records.
 - d. Packing and transportation from the manufacturer's works to the site, including custom/port clearance, if required.
 - e. Receipt, unloading, handling, storage, insurance, preservation and conservation of equipment at site.
 - f. Pre assembly if any, erection, testing, commissioning and putting into satisfactory operation in a planned and systematic manner acceptable to the Owner.
 - g. Supplying of mandatory spares as mentioned.
 - h. Reconciliation with customs authorities, if applicable.
 - i. Satisfactory conclusion/closing of the contract. Scope of work under this package is mentioned at clause 3.00.00 of this section but it is to be read in conjunction of all sections and covers all works related to this system mentioned anywhere in the document.

1.01.00. GENERAL INSTRUCTION TO BIDDER

1. The bidder is advised to visit the plant/ sites and collect any information or data as may be required by them, before quoting against this specification. The condition of plant/equipment shall be carefully assessed by the bidder for the data/information. The bidder is also advised to give technical information of the system which is being quoted along with relevant literature covering all technical specifications and its features.
2. Bidder to check receipt of complete documents referred to in the contents. In the event of order, the entire specification will form part of purchase order for compliance during execution.
3. Deviation, if any, shall be clearly brought out in the "Deviation Schedule". Otherwise, it will be construed that the bidder is fully complying with the specification.
4. In case of any dispute, Senior Manager(C&I)'s decision will be final and binding.

1.02.00 BID PROPOSAL

1. Following documents shall be submitted along with the offer. The documents forming part of the offer shall be neat, legible and in English.
 - 1.1. Detailed self explanatory technical catalogues describing Principles, Concept, and operation of system, system components, and special features. Filled in data sheets etc. of all the products/ systems offered. A list of such documents shall also be furnished.
 - 1.2. System arrangement drawings along with detailed descriptions.
 - 1.3. Complete BOM of the offered system. The BOM submitted shall contain the make, model number, rating of the item, population etc. Vendor's name & addresses of brought out items are also to be mentioned along with warranty certificates. Warranty clauses would include name of the customer.
 - 1.4. The break up price of each component may be furnished along with the offer, which shall be valid throughout the contract period. This shall be used for deletion or addition of any of the component during contract stage by suitable order amendment.
 - 1.5. Filled in "Deviation Schedule" with reason /justification for the deviation taken.

- 1.6.** Vendor shall also furnish a list of commissioning spares & special tools required for successful commissioning and handing over of the system to the owner.
- 1.7.** List and schedule of documents to be submitted by bidder for owner's approval and information, after placement of order.
- 1.8.** List of mandatory spares required for upkeep of the system.
- 1.9.** Detailed specifications of HMI system including PCs, Printer, communication system & software.

2.00.00 TECHNICAL SPECIFICATIONS

1. It should be compatible with existing system of PROCONTROL P13/42 system supplied by BHEL. The below mentioned specifications are of indicative only, detailed features and specification finalization of each device & components , networking etc. are to be carried out during detailed engineering. This is to be read in conjunction with scope of work (SOW) & terms & conditions (T&C). This Specification is primarily based on general type of Ethernet network based HMI system. Any other specific & best features of the latest DDC system are to be brought to notice by the vendor before finalization of engineering.
2. Existing PMS server 02 nos. & its OWS 06 nos. are to be replaced with new latest WINDOWS / LINUX based HMI system. The system is to be integrated with the existing Procontrol P13/42 DCS by providing suitable Pro-control interface cards/modules.
3. Servers (one active, other hot standby), work stations and network system should have dual LAN connection. They are to be of **hot redundant** type. Working server failure will be taken over by redundant server automatically with out any time delay. Associated diagnostic features will log this system alarm automatically with audio / visual alarms to operator as well. Other technical features like hard disk size processor type etc. of servers, OWS are to be finalized during detail design & engineering. Servers & OWS are to be of reputed make: HP/IBM. Server, OWS are to be of latest model with CD & DVD read & write facility. OWS PC with monitors are to be placed on the existing operator desk. Associated furniture, mounting brackets etc. if required so, may be supplied for giving it aesthetic look.
4. Monitors for Workstation (square monitor preferred) and Servers 24" sizes with adjustable height facility are to be supplied. At Shift Charge desk one HMI view only computer with TFT monitors of 20" sizes with adjustable height facility are to be supplied for new system. However , **OWS monitor sizes** are proposed only , technical features like picture quality, 24 hrs x7 days x 365 days operation , less eye strain, aesthetic look etc . are to be considered during detail engg. Standard 22" TFT monitors (with adjustable height) should be minimum if higher size is not technically feasible & suitable.
5. Remote View PC (Shift Charge PC) of proposed unit is to be provided in Shift Charge room at U#2. TG floor where all graphic pages, trends, reports etc. of relevant unit can be viewed and reports can be generated (both soft & hard form) out as per requirements. Existing LAN can be used.
6. **OPC connectivity** to be established for sending **adequate (Approx. 2000 Nos.) data** from OPC server **to existing Plant Data Server** located at remote. OPC server is

to be connected to Layer 3 switch via layer 2 switch. OPC server, Layer-3 switch, one L2 switch & firewall are to be placed at Unit#2 UCR & will be connected with the plant NET. Unit#1 L2 switch to Unit#2 layer-3 switch is to be connected through optical fiber cable (Dual Net). If required, the cable & associated all hardware new HMI system is to be provided by the vendor. It may be Fiber Optic or Ethernet cable as per system design as envisaged in schematic **Annexure-A**.

7. **Event logs/alarms/SOE** (standard resolution) storage required up to at least 01 year. 1 Sec sampling or better **trend data** to be stored for 5 years. Provision is required for storing different reports, logs, trends etc in portable hard drive of sufficient capacity with retrieval facility. Size, type of device & number of such devices are to be finalized during detailed engineering considering large volume of data to be handled. Trends, logs, reports should be event based, auto & manual trigger/programming facility as per technical requirements from case to case. Auto triggering may be event driven and/or time bound. All these data should be in hard printable & soft copy like trends in excel sheet etc. This system also to be provided in redundant servers/PC so that failure of one computer does not affect management information system.
8. Standard performance calculation package, auto report (shift, day, monthly, yearly), logs, X-Y plot , maximum-minimum values report, manual instantaneous report etc , process & system alarms are to be provided as mentioned in earlier point. This system also to be provided in redundant servers/PC so that failure of one computer does not affect generation of that scheduled reports etc. All these data should be available both in soft & hard form.
9. Power extension boards & cables from nearest power point are to be supplied.
10. 01 no. of Colour A4 size colour laser printer make HP is to be provided along with 02 set of printer spare cartridges per printer.
11. All existing features of PMS is to be retained and these are to be upgraded using latest features of HMI software as per customer requirement. Example: Multi window display (Main page and 4 windows) with adjustable sizes is to be provided. PMS features are attached (**Ref. Annexure - C.**)
12. All popups/face plates, group control, SGC, graphics etc. are to be designed for each drives . It will also show associated permissive & interlocks etc. in user friendly manner so that operator gets latest and real time information instantly. All present tags as well as additional tags required for modification in scheme are to be incorporated in HMI. There should be enough tag database left blank (atleast 20%) considering future requirement. Approx. Tag database will be around 25000 including spares.

13. **Power Supply:** 240V AC UPS supply will be provided by BkTPP for all servers, Workstation and Switches. If there is requirement of 24 VDC power supply (uninterrupted) then this power supply is to be supplied by vendor. However BkTPP may give 24 VDC from existing battery charger supply point (depending upon availability) but its changeover scheme /arrangement is to be provided by vendor.
14. Redundant power supply and redundant fans are to be provided for all Servers.
15. All PC based system and associated network would have adequate hard & soft security system like hardware firewall, antivirus etc. Enough measure is to be taken to protect from out-world hacking of computers, DDC system keeping in view of machine security as a prime concern. In this regard, different protocols & communication signatures are to be designed as mentioned in **NOTE in Annexure-A**.
16. All drawing, details of system with bill of quantity along with mandatory spares are to be get approved before supply of material after detail engineering. But if any items (hard ware & software) found missing in any stages, these are to be supplied & commissioned with out any financial implication to WBPDCCL.
17. Whole HMI system is to be synchronized with existing Master slave clock system. It should have the facility of auto tracking on/off, if time difference goes beyond specific values.
18. A brief single line diagram of proposed HMI system scheme is enclosed for ready reference as per **Annexure - A**. Detailed scheme is to be finalized during engineering of the same. Tentative bill of material is enclosed as per **Annexure - B**.
19. All network switches should have redundant power supply of 240 VAC & 24 VDC. Networking structure is to be redundant type/ fail over mode.
20. Cables and other accessories: All types of cables & accessories are to be of reputed make. Ethernet cable should be CAT 5e/6. It should match with the communication protocol to be used in this system. Fiber optic cable should be of reputed make of single mode type as per system requirement and it should have 100% spare cores. These spare cores are to be terminated up to LIU at each ends.

21. Specification of Hardwares:

Ethernet Layer-2 Switch

Switch, Ethernet Layer-2, GIGABIT, Make D-Link , 10/100/1000 Base-T, 24 Port, Stackable Management Switch, with 4 Combo Ports (optical) and 24 UTP Ports, Model: DGS-1210-24 **or better**.

Ethernet Layer-3 Switch

Switch, Ethernet Layer-3, Make D-Link. Min. optical port 8 Nos. with single mode SFP module and min. 16 Nos. UTP Port **or better**.

Server#1, Server#2

Intel Xeon Quad core 2.0 GHz single Processor or better,3X520 GB Hard disk with RAID-5,8 GB RAM, 24" FLAT Monitor Std QWERTY Keyboard , Mouse ,DVD-R/W drive , 3x10/100/1000 Mbps LAN interface ,Redundant SMPS system (1200 W each). Make (HP/IBM) **or better**

OPC- Server

Intel core I5 2.0 GHZ or better, single processor, 520 GB hard disk , 4 GB RAM , 24" FLAT Monitor Std QWERTY Keyboard ,Mouse ,DVD-R/W drive , 2x10/100/1000 Mbps LAN interface, Make (HP/IBM) **or better**

Historian If required for long time data storage, trend, log

Intel Xeon Quad core 2.0 GHz single Processor or better,3X520 GB Hard disk with RAID-5,8 GB RAM,24" FLAT Monitor Std QWERTY Keyboard , Mouse ,DVD-R/W drive , 3x10/100/1000 Mbps LAN interface . Make (HP/IBM) **or better**

Workstation-PC

Intel core I5 2.0 GHZ or better, single processor, 520 GB hard disk, 4 GB RAM , 24" FLAT Monitor Std QWERTY Keyboard, Mouse, DVD-R/W drive, 2x10/100/1000 Mbps LAN interface, Make (HP/IBM) **or better**

Shift Charge Engineer

**One shift in charge client for monitoring only
(The distance of this client less than 100 meters from control room and can be connected to LAN)**

Intel core I5 2.0 GHZ or better, single processor, 520 GB hard disk , 4 GB RAM , 24" FLAT Monitor Std QWERTY Keyboard, Mouse, DVD-R/W drive, 2x10/100/1000 Mbps LAN interface, Make (HP/IBM) **or better**

FIRE-WALL

CYBEROAM or better

PRINTER

Color LaserJet Network Pinter Make: HP

External Data Storage (USB)

For DATA Archiving

1TB Capacity or better – Make: HP/SONY/TRANSCEND

3.00.00 SCOPE OF WORK (SOW):

1. It includes all works related to HMI system as mentioned in technical specification and T&Cs in our stage-I (U#1) unit. All works related to basic plant operation are to be completed during overhauling/shut down of unit within 20 days after start of work. However, other additional features and balance commissioning work are to be completed thereafter during running condition of the unit. All pre-shut down activities are to be completed so that work all can be finished within that time frame. Sr. Manager(C&I) will inform about the date of start of work.
2. It includes design & engineering of system, testing , supply, installation & commissioning of complete HMI system at site. All the engineering drawings are to be get finalized (mutually agreed by supplier & customer) according to site requirement. Vendor may visit site for collection of required data/ drawing etc. before finalization of engineering of the system without any financial implication to WBPDCCL.
3. Quantity of all items, Bill of material are to be finalized after engineering & design of system architecture.
4. Taking of backup in CD/DVD/Portable hard disk of each & every system is required. Relevant software for creating of back up from the system is also to be installed if required. Automatic periodic back-up feature will be preferred.
5. All software are to be provided in CD/DVD with original license. License hardware dongles are to be supplied and no soft keys are acceptable. Licenses are to be given for life long of the plant. In case, license hardware dongel becomes faulty these are to be replaced free of cost within 15 days from reporting by email/ letter/ Fax etc.
6. Removal, dismantling of existing HMI system including all computers & its accessories, panels, cables etc from the system. WBPDCCL will provide necessary help in this regard. Transportation of all removed items from local site to pre designated place is in the scope of WBPDCCL.
7. Supply, erection & commissioning of all types panels & its electrical system, power supply MCBs , suitable furniture, cables, network system including suitable cable trays/ channels for protection of the same are in the scope of vendor.
8. All types of related software & hardware like cables, special cables, network cable, power extension cable, JB's, TB's etc. & other necessary components are to be supplied which are not specifically mentioned but required to complete the system.
9. **Documents** : 5 Set of as built drawings & manuals (hard copy & soft copy) are to be submitted clearly mentioning system detail, present settings, installation & commissioning procedure, restoration , diagnostic information etc.
10. **Mandatory spares (Proposed)**: It is to be supplied with main material and have no

connection with erection & commissioning spares of vendors (if any). Proposed bill of material is enclosed as per **Annexure-B**, however actual quantity & type of spares will be finalized during detail engineering of the system.

11. All special tool & tackles, erection hardware & spares etc. are to be arranged by the vendor. Special tools & tackles which are to be used during erection & commissioning , are also to be supplied (01 each type) in mandatory spares
12. **Testing:** (a) Before dispatching of materials vendor should offer for customer testing at their works. All basic designing have to be completed before offering customer inspection. All / selected graphics , trends , reports , alarm packages are to be tested functionally and shortcoming of findings are to be modified after assembling various system, subsystems and computer peripherals. Vendor should have all theses testing facilities at their works. It may also happen that tested scheme (hardware/software) need to be modified during erection & commissioning of the system as per site requirement.
Vendor has the full responsibility to address & sort out the problems if arises so far. (b) All signals to & from each DDC panel to HMI will be tested at site depending upon site configuration during commissioning of the system. Speed & accuracy of the same should be matching with system.
13. **The bidder shall provide necessary technical and spares support for the supplied system throughout its expected life for at least 15 Years.**
14. The bidder shall carry out the job in phased manner as per rolling plan of Units overhauling. This will be communicated to vendor from time to time.
15. Packing and transportation from the manufacturer's works to the site including custom/port clearance, as required.
16. Receipt, unloading, handling, storage, insurance, preservation and conservation of the equipment at site.
17. Whenever a material or article is specified or described by the name of particular brand, manufacturer or trademark, the specific item shall be understood as establishing type in function and quality desired. Other manufacturers' products may also be considered provided sufficient information of the products are equivalent to those named.
18. If the bidder feels that, in his opinion, certain feature brought out in his offer are superior to what has been specified, these may be highlighted separately.
19. Presently Unit#1 real time data to plant data server through OPC server is to be established. In addition to this, there will be future provision for **third party interface like, offsite PLC data transfer to plant data server through this OPC server**. Data communication is to be established through Licensed OPC (server & client). **We need establishment of real time process data transfer through OPC to vibration monitoring system "System1 server" of M/s. Bently Nevada (M/s. GE Energy Measurement and Control).**

- 20.** After initial commissioning (unit wise), system may be handed over to WBPDC and defects liability period starts for a period of 60 days. Vendor has to complete all important & essential checking and rectification of defects within this period. Warranty period of Min12 months starts after completion of defect liability period. Vendor has to provide all round technical support 24 hrs. × 7 days after commissioning till completion of warranty period. Vendor to resolve technical defects arising out of this up-gradation which are found to be commissioning defects and affecting power generation within 24 hours.

4.00.00 TERMS & CONDITIONS (T&C)

A) Qualifying Requirements:

1. Bidder must have upgraded the HMI system from PMS system for Procontrol P13/42 DCS system of 200MW Steam Turbine Generator unit or above. Bidder must have upgraded that HMI system for at-least 600MW in total and those systems are running more than 3 years.
2. Bidder must have a technical branch in India from where all type of technical support, Installation and commissioning will be done. **They should have capability to provide this support for atleast 15 years from India from date of PO.**
3. The offered system should be compatible with Procontrol P13 system without any hardware modification or addition on the P13 System.
4. Minimum two PO references for HMI Upgrade on Procontrol P13 system be enclosed along with the tender.
5. China based materials, license, technical support etc. are not acceptable.
6. **Participated bidder in EOI (Expression of interest) must submit a brief technical proposal for up gradation with schematic diagram and** arrange a visit for a group of engineers from customer at their own cost to some 200 MW Steam Turbine units in which they have already completed PMS up-gradation **same as proposed by them. Based on the report of visiting team and further evaluation of the appropriate authority limited tendering may be done between the successful vendors.**

B) Other TERMS & CONDITIONS

1. Total Contract period shall be one year, however completion period of erection & commissioning work of the unit would be within 20 days. **Decision of Sr. Manager(C&I) would be final & binding for delay of work. Penalty for delay of work will be 10% of order value may be deducted.**
2. All the works not specifically mentioned but required to complete the same are also to be carried out without extra cost. Decision of Sr. Manager(C&I) would be final & binding.
3. Contract will be awarded on composite responsibility basis (a) For supply of material including mandatory spares & (b) Erection & commissioning including insurance and transportation.
4. **Contract Performance bank guarantee (CPBG)** is to be submitted (10% of entire

contract value) by the vendor.

5. **Transport & Insurance** : In the scope of the vendor and details of the same is to be submitted in the offer.
6. **Payment terms:**
 - (a) **For supply portion :**
 - (i) 60 % payment will be released after SRV.
 - (ii) 20 % payment will be released progressively against erection & commissioning of the system on pro-rata basis.
 - (iii) 10 % payment will be released after completion of defect liability period.
 - (iv) 10 % payment will be released after 6 months from completion of defect liability period.
 - (b) **For Mandatory spares :** 100 % payment will be released after SRV.
 - (c) **For Services portion :**
 - (i) 80 % payment will be released progressively on pro-rata basis against erection & commissioning of the system.
 - (ii) 20 % payment will be released after 6 months from completion of defect liability period.
7. Vendor has to give guarantee of the system for 12 months after commissioning of each system. Any problems/defects regarding software & hardware are to be rectified by the vendor free of cost. The system is to be made functional after attending problem as early as possible, in case of failing to do so, a penalty may be imposed seeing the seriousness of problem. Decision of Sr. Manager(C&I), BkTPP regarding the delay & penalty etc. would be final & binding.
8. **Training :** 30 mandays at site and 30 mandays at works/vendor office for management, general maintenance and programming of supplied system.
9. 240 ± 10% V AC Power Supply will be arranged by WBPDCCL at the point of Installation.
10. Any other special Power Supply required to make the system functional shall be arranged by the supplier/vendor.
11. Taxes: Excise Duty, Sales Tax (VAT) and any other govt. duties at the time of delivery, will be borne by WBPDCCL at actual.
12. Traveling, Boarding & Lodging and any other related expenses of supplier personnel at site shall be borne by the supplier/vendor.
13. If any item, part of item or component found defective or goes defective during installation and commissioning, it shall be the responsibility of supplier to procure the spare and replace at their cost immediately.
14. For any decision regarding technical or non-technical in nature, Sr. Manager(C&I)'s decision would be final & binding at any point of contract.

5.00.00 INSPECTION

1 . The complete system has to be offered for inspection by WBPDCI and the bidder shall give 15 days advance notice for arranging the inspection after the system is made fully ready.

2. After inspection and certification by WBPDCI the equipments can be dispatched.

ANNEXURE- B**6.00.00 TENTATIVE BILL OF MATERIAL :**

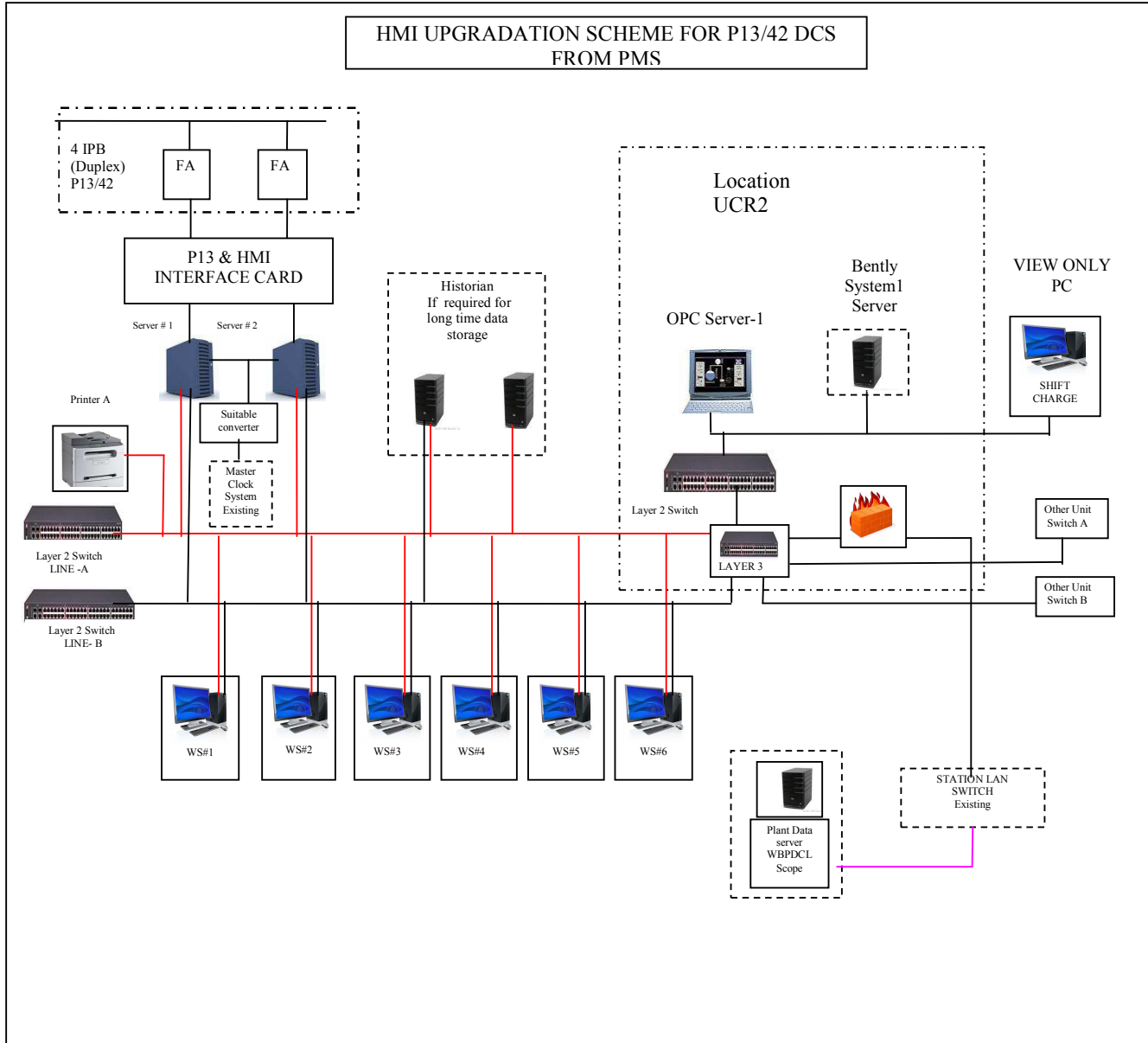
This BOQ is tentative and to be finalized during detailed engineering.

S. NO.	DESCRIPTION	UNIT	QTY
1.	HMI Server with 24" monitor, keyboard, mouse	Set	02
2.	Pro-control Interface card for 2 Nos. servers (for 4Nos. duplex IPB). 1 set for each server.	Set	2
3.	OWS with 24" monitor, keyboard, mouse	Set	6
4.	Remote view shift charge PC with 20" square monitor, keyboard, mouse (Hardware configuration should be same as OWS)	Set	01
5.	OPC server with 20" monitor, keyboard, mouse	Set	01
6.	Network switch Layer 2 (L2) with 4 Combo Ports, Make: D-Link	No	03
7.	Network switch Layer 3 (L3) with 4 Combo Ports, Make: D-Link	No	01
8.	FO cable (Single Mode)	Km	01
9.	Ethernet LAN CAT 5e/6 cable	Km	01
10.	Hardware Firewall	No	01
11.	A4 colour Printer	No	01
12.	Light interface unit(LIU)- approx.	No.	02
13.	FO patch cords	No	8

PROPOSED MANDATORY SPARES

S. NO.	DESCRIPTION	UNIT	QTY
01.	HMI Server with 24" monitor, keyboard, mouse (each type) with dongle	Set	01
02.	Pro-control interface card	No.	02
03.	HMI Server with 24" monitor, keyboard, mouse	Set	01
04.	Network switch Layer 3 (L3) with 4 Combo Ports, Make: D-Link	No.	01

ANNEXURE - A



ANNEXURE- A

APPLICATION FORM:

SL NO	Particulars	
1	Name of the Organization :	
	Address (Regd. Office) :	
	E-mail :	
	Telephone No., Fax & Website :	
2	Name of the contact person:	
	Telephone:	
	Email ID	
3	Type of the Organization (Public Sector /Limited/Private limited/Partnership, Proprietary /Society / Any other.) :	
4	Chief of the Organization:	
	Email Id :	
	Telephone No:	
5	Registration details: (enclose certificates):	
	• Company Registration	
6	PAN No (enclose certificate):	
7	Activities of the Company: (List the activities)	
8	List of PSU's/ Government/ Non Government Clients (with contact details like Address, contact no, contact person, phone number and e-mail id)	
9	Turnover of the company for the last 3 years : (Enclose certificate from the Chartered Accountant)	

10	Total no. of Employees: <input type="checkbox"/> Technical Staff <input type="checkbox"/> Non-Technical Staff	
11	No. of Offices / Centers (enclose the list):	

12. List of similar projects handled (provide the details in the following format) during the last 3 years:

i) Name of the client :

ii) Contract person :

iii) Address and telephone no :

iv) Brief statement about how their requirements are similar to those in this proposal:

13. The reports of the trials conducted at customers for at least three projects similar to those being requested in this proposal (enclose certificates).

14. Any other information, the applicant wants to furnish:

I hereby declare that the above information is true to the best of my knowledge.

Signature with Name & seal