

SCOPE OF WORK

The vendor shall be responsible for the design, supply, and installation and commissioning of a Public Address system for 300*4 MW and 135*4 MW power plant. Software and Hardware License's, and all other associated accessories under the scope of vendor.

Complete PA system should be software driven.

All closed rooms, Emergency Exit stair cases and other area of should have speakers for emergency announcements.

The Contractor shall design the Acoustics complied PA system that is a state of the art system which shall all be used for Voice alarms. The Contractor shall supply Block diagrams, data sheets, EASE plots and all Complied calculations required to substantiate and support the design to Employers representative for Approval before appointment of PA system integrator.

The design shall take into consideration that the system shall have to perform 24/7 and shall be used for life safety announcements and be highly reliable with little or no down time required for periodic maintenance.

All critical components shall be monitored and where required redundancy shall be provided to ensure seamless operation in the case of a component failure.

The goal of this PA system designer should be to provide BALCO with a state of the art PA system that is Audible, Clear and reliable.

The design should ensure adequate functionality and capabilities as specified, offering a system that is both easy to use and cutting edge with future scalability so that it offers the users many years of service, without being out dated or replaced and it should be upgradable and interfaced with other building management systems.

The entire system shall be a monitored system with the ability to detect and report speaker line, cables and report faults in any part of the system including microphones, controllers, amplifiers and speakers. Vendor to do site co-ordination works with all relevant stake holders to execute assigned installation and commissioning of completed Public Address system till handing over of this project to BALCO.

The PA vendor should do configurations, which shall include zoning, supervision, diagnostics, testing ANC adjustments, equalization and delay alignment along with Compression and limiter settings.

The system shall be scalable with the ability to expand in the future. It shall complied have the ability to double its capacity if necessary with the addition of hardware, without the necessity to change any of the existing hardware.

Failure of any individual component shall not affect the operation or complied Performance of more than 20% of the system.

All electrical, Speaker cabling shall be FRLS (Fire retardant Low smoke) and shall comply with Indian standards institute Specifications (ISI). The amplifiers shall be rack mounted with a redundancy of 25% as spare capacity and the amplifier system shall be connected to the speaker system though controllers that can automatically switch defective amplifier out of the system and reconnect the speakers to spare amplifiers.

All amplifiers faults and errors shall be logged and reported to the master control station automatically. Visual

indication of all errors on the amplifier shall be a standard feature.

All Zones shall be equipped with dual speaker circuits (A, B). Permanent, non-audible supervision of the loudspeaker lines (ground leakage, short and open circuit), also during power saving mode, irrespective of activation of messages.

The warranty shall include the free supply of Spares, Labor and anything else that is required to restore or repair a faulty part of the PA system so that it is in 100% working condition and shall meet all Audio parameters set out in this tender after repairs are conducted.

During the warranty period the contractor shall provide a service wherein a fault in the system shall be attended to within 48 hours of the fault being reported by BALCO staff.

All offered system / solution furnished / offered shall be the latest state-of-the-art and it should be UL listed, products of a single manufacturer engaged in the manufacturing of PA system for at least 5 years. The authorized representative of the manufacturer must approve the design prior to the deployment and certify the installation of the complete system in compliance with the manufacturer's recommendations before handing over the system to BALCO. The bidder shall also clearly state whether support for the application supplied for this solution will be available directly from him or from an OEM with response time during the warranty period.

BALCO will issue a Provisional Acceptance Certificate (PAC) after successful execution of User Acceptance Test (UAT). Final Acceptance Certificate (FAC) will be issued after the deployed solution is functional, operational and stable for a period of 3 months. During this period a trained certified engineer shall be stationed at site by the bidders for post-production support.

Compliance with all applicable Codes, Standards and local Regulations, and obtaining approval by governing, regulatory and local authorities, if applicable.

Entire system and accessories must be UL listed and comply with specifications laid by NBC standards.

After commissioning, services and maintenance as per contract. This shall include all firmware upgrades and updates for next 3 years from the date of commissioning without any additional cost to BALCO.

Carrying out necessary maintenance activities post warranty, if entered in to agreement with BALCO for the same. Bidder shall provide the services of a factory trained and authorized technician to perform all system modifications, upgrades or changes.

Bidder to provide the OEM Certified Authorized Engineer to perform Installation, Testing & commissioning works. Bidder shall provide all hardware, software, programming tools and documentation necessary to modify the PA system on site without any additional cost to BALCO.

All software licenses along with Original media shall be supplied as part of the contract. Renewable & subscription license shall not be acceptable by BALCO. All licenses shall be in the name of BALCO.

In case of bidder(s) inability to continue in the contract, either during execution, post execution, warranty or post warranty period, the respective OEM stands guarantee to further continue with the terms of contract with no additional cost to BALCO.

In this case, the OEM can propose a new bidder(s), authorized to handle their system and the vendor has to be approved by BALCO for carrying the job further. All other terms and conditions of the contract will apply to the new bidder (s) as well. .

Any “exclusion” from the scope in the offer of the Bidders have to be clearly indicated, in case not explicitly mentioned, the Bidders shall be responsible for providing the required hardware / equipment to make the system complete in all respects to meet the requirement of the basis of design.

In general, the work to be performed under this contract shall consist of:-

- a. The Vendor Shall Supply, Install, Commission and handover of the proposed PA system to BALCO in a fully operational condition.
- b. Shall organize Operational & Maintenance Training for BALCO team at the site.
- c. Installing & checking of all wiring for ensuring trouble free operation while maintaining the Standard.
- d. Proper Operation & scheduled maintenance activity plans for the installed system.
- e. Any statutory approvals required for clearance of the installation from the necessary authorities.
- f. Supply of necessary critical spares to be maintained at site for Quick restoration of the system

Besides the above, the general scope of work shall also include the following: -

- a. Supply of all drawings produced using latest edition of CAD software during the offer and “As Built” drawings post installation.
- b. Submission of Maintenance Schedule.
- c. Complete Operation & Maintenance Manual for all the systems installed.
- d. Training of Customer representatives for smooth operation.
- e. After commissioning, services and maintenance as per contract.
- f. Carrying out necessary

Installation: Installation of the system has to be as per laid down international and local standards. The installation should be in such a way that it should optimize the usage of each device (s) and should be installed in to give the best possible output.

- a. OEM has to recommend their authorized Bidders for the bidding.
- b. OEM has to vet & certify the design for installation before the execution of the project.

Applicable Standards & Specifications: The specifications and standards listed above form a part of this specification. The system shall fully comply with the latest issue of UL standards. The system, solutions and equipment/ devices must comply to latest standards/ guidelines/ specifications/ requirements laid down by NBC and other associated authorities.

Warranty should be 3 years for all the supplied parts, software and panels.

BOQ

S.No	Area/Locations	1200		540	
		Receiver/phone	Speaker	Receiver/phone	Speaker
1	ST/UAT	5	5	5	5
2	TG 0 meter	8	8	8	8
3	TG 6 meter	8	8	8	8
4	TG 12 meter	8	8	8	8
5	TG deaerator floor	8	8	8	8
6	Panel room DCS/valve mcc	8	8	8	8
7	Panel room electrical	8	8	8	8
8	Mill 0 meter	8	8	8	8
9	Mill 12 meter front	4	4	4	4
10	Feeder Floor	4	4	4	4
11	Boiler 0 meter	8	8	8	8
12	Boiler APH elevation	4	4	4	4
13	Boiler 12 meter	8	8	8	8
14	Boiler attemperation station	4	4	4	4
15	Boiler drum level	8	8	8	8
16	Boiler Gun elevation	16	16	16	16
17	BTG CCR	4	1	4	1
18	Below CCR 6 meter	1	1	0	0
19	415 DG house	1	1	1	1
20	Chiller 1&2	1	2	1	1
21	Chiller 3&4	1	2	0	0
22	SWAS 1&2	1	1	1	1
23	SWAS 3&4	1	1	1	1
24	Dozing room all unit	2	4	2	4
25	Compressor house	1	2	1	2
26	ESP 1&2 (TOP room)	4	4	4	4
27	ESP 3&4	4	4	4	4
28	AHP 1&2 compressor house	1	2	1	2
29	AHP 3&4 compressor house	1	2	1	2
30	AHP 0 meter (4 units) below hopper	4	8	4	8
31	FF Elevation	4	4	4	4
32	GEHO station	2	4	2	4
33	SILO top & bottom	8	8	8	8
34	AHP CCR	1	1	1	1
35	CHP conveyer	21	21	21	21
36	CHP CCR	1	1	1	1
37	CHP Yard	4	4	4	4

38	CHP CCR outside	0	1	0	1
39	Cosmos/NCB	1	1	1	1
40	Parking Main plant	1	1	1	1
41	Parking CHP	1	1	1	1
42	Fire fighting	1	1	1	1
43	Service water	1	1	1	1
44	DM plant	1	2	1	2
45	STP	1	1	0	0
46	Colling tower 1&2	1	1	1	1
47	Colling tower 3&4	1	1	1	1
48	Cooling tower outside	2	8	2	4
49	FOPH	1	1	1	1
50	TT	8	8	8	8
51	Portable crusher/yard	1	2	1	2
52	GIS	1	2	1	2
53	6.6 DG house	0	0	1	2
54	Other location	5	10	5	10
Total zones		212	237	210	230

Cable, patch cord, LIU, JB, switches, pigtail, rack, conduit and accessories will be in vendor's scope.