

ADDENDUM-5

DATE: 30-11-2016

2nd Stage Pressure Conveying System Package for 1 x 700 MW Bellary Unit 3 project

Tender Ref : 77/16/6210/ANA Dtd. 03.10.2016

1. Bidder's Query and BHEL reply along with related attachment have been uploaded in the web.
2. Any further addendum such issued carry part of the bidding documents and this will be available at the website from where the original documents have been received / downloaded by the bidder. Hence bidders are requested to visit the website <https://bheleps.buyjunction.in> on regular basis.

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Enquiry No. 77/16/2610/ANA dtd. 03.10.2016
Item : 2nd stage pressure conveying system
Project : 1 x 700 MW Bellary Unit 3 Project

Sl. No.	SECTION OF SPECIFICATION	CLAUSE No.	DESCRIPTION	Bidder's Query	BHEL Reply
1	Technical Enquiry Specification of Dry Ash Handling System, Specification No. IS-1-10-2009PCS				
1.1		4.0 – Scope of Work and Services	Bidder shall visit the above project site before submitting the offer.	We propose to visit the project site before submitting our proposal against the bid enquiry. We request M/s BHEL ISG to depute concerned project engineering person to site along with us to understand the requirement and submit our competitive offer.	Bidder to confirm the date of visit. BHEL Project Engineer is available at site.
1.2		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 1. Bag Filter Body - 6 Nos 2. Cage for Filter Bags – 4 Sets 3. Filter Bag for bag Filter – 4 Sets	Kindly confirm that the for Six (6) Nos of Bag filters, all associated equipments such as Venturies, Pulse jet timers with header and pipe lines, DPT, DPG, Rotometer, Sequential timer with Junction Box, Monometer etc..are already available at site and the same shall be provided by M/s BHEL as free issue. Also please confirm only the specified quantity of Bag filter, Cage for bag filter and Filter bags are to be considered by bidder in scope of work.	Bidder has to provide the Bag filter body with associated equipments. Confirmed
1.3		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 4. Nuvafeeder - 9 Nos (Ash Transmitter)	Please note in Unpriced Format Annexure – A for Indigenous supplier, Mechanical Supply under Sl. No. A.4 the number of Nuvafeeder (Ash Transmitter) is indicated as 12 Nos. Please check and confirm the actual quantity to be considered by bidder. We understand some of the Nuvafeeders are already supplied and	Follow the specification.It is clearly mentioned “ In case the Nuvafeeder design is similar to design which is already supplied, then 9 Nos. are required otherwise 12 Nos are required. ” GA Drawing of Nuvafeeder is available with tender.

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				to be used, please provide the GA drawing of Nuvafeeder.	
1.4		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 8. Silo Vent Filter complete with cage, Bags ladder & panel etc. - 2 Nos	Please elaborate the requirement specified as “etc”.	If anything is required for proper functioning of Silo vent Filter, then bidder shall be provide the same within the cost of Silo Vent Filter.
1.5		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 14. Diffuse Hood inside silo – 10 Nos	Please furnish the silo GA drawing and arrangement details for more clarity.	Silo GA drawing is already available with Tender.
1.6		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 11. Fluidizing pads for buffer hopper – 6 Sets 12. Fluidizing pads for Nuvafeeder – 12 Sets 15. Fluidizing Pads for silo – 2 Sets	Please confirm that the MOC of Fluidizing Pads shall be Ceramic Tiles.	MOC for respective items shall be referred from the equipment drawings in the tender.
1.7		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 11. Fluidizing pads for buffer hopper – 6 Sets 12. Fluidizing pads for Nuvafeeder – 12 Sets	Please confirm that for Fixing fluidizing pads in Buffer Hopper, Nuvafeeder necessary openings are already available. Kindly furnish the opening sizes for fixing fluidizing pads. Also please provide the openings provided in Silo bottom for fluidizing air connections.	Bidder to visit site and check the same. Refer equipment drawings for opening sizes. Refer GA of silo and also visit site for better clarity on the same.

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1.8		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 16. Pressure Relief valve – 2Nos 17. Inspection Hole at silo top – 2 Nos 18. Man Hole at Silo Top – 2 Nos 19. Adapters below silo – 1 Lot	Please clarify that whether the Fly ash silo is of RCC Construction or Steel Fabricated. In case of RCC Silo, kindly confirm that for providing the description equipments suitable openings are already available in silo and furnish those details. In case of Steel silo please clarify the scope of work for openings for providing the description equipments.	Fly ash silo is of RCC Construction only. The description equipments suitable openings are already available in silo. However, bidder is requested to visit site for better clarity and understanding on the subject.
1.9		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 20. Swing Disc Valve between Buffer hopper and Transfer Hopper – 12 Nos	Please furnish the valve GA drawing.	Kindly check with GA of FAE Tower otherwise bidder can provide their own design which fits in the system..
1.10		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 21. Hangers for Transfer Hopper as applicable – 1 Lot	Please furnish the detailed GA drawing of Buffer hopper tower indicating Transfer hopper arrangements and details for more clarity.	Attached
1.11		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 23. Clamps as applicable – 1 Lot.	Please confirm that the clamps as indicated in the description is limited to Dry fly ash conveying pipe from Buffer Hopper to Fly ash silo, Conveying air pipe line from TAC to Buffer hopper and Fluidizing airline from silo fluidizing blowers to Fly ash silo only.	Clamps required for all works related 2 nd stage ash conveying system as per specification.
1.12		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 24. Heavy Grade Instrument air pipe (80/50/25 NB)- 1 Lot	Please confirm that if any additional size GI pipes is required the same shall be provided by BHEL at free of cost.	Bidder to procure the same as per the unit rate quoted by bidder.

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1.13		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 25. Fasteners like Nuts, Bolts, Studs, and washers etc. – 1 Lot.	Kindly confirm that the fasteners indicated in the description is limited to dry fly ash conveying pipe from Buffer Hopper to Fly ash silo, Conveying air pipe line from TAC to Buffer hopper and Fluidizing airline from silo fluidizing blowers to Fly ash silo only.	Fasteners required for all works related 2 nd stage ash conveying system as per specification. All fasteners shall be galvanized.
1.14		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 28. Insulation material. – 1 Lot.	Please confirm that the insulation material required is only for Fly ash silo fluidizing air line from Silo fluidizing blower to fly ash silo.	The insulation from Transport air compressor discharge line from TAC to FAE Tower and Fluidising line from ESP to Buffer Hopper is also in scope of bidder.
1.15		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 29. Painting – 1 Lot.	Please confirm that the painting required is only for dry fly ash handling system (i.e. Bidder supplied items) limited to the battery limits indicated for the proposed system.	Please check the Price format, painting is required for complete ash handling system (Wet + Dry)
1.16		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 30. Solenoid Valves – 1 Lot. Total Solenoid valves – 40 Nos a) BA Hopper area – 6 Nos b) Remaining Area – 34 Nos	Please once again check and confirm the quantity of Solenoid Valves (i.e. 40 Nos) indicated in the reference Sl. No. It seems to be less. Kindly check and confirm.	Bidder to refer drawings and visit site for better clarity and understanding on the subject.
1.17		4.3 – Mechanical Scope of Work. The list of Major items required for the dry ash handling system.	Sl. No. A) 34. Flanges – 1 Lot.	Please elaborate the requirement.	Flanges required for all works related 2 nd stage ash conveying system as per specification

Sl. No.	SECTION OF SPECIFICATION	CLAUSE No.	DESCRIPTION	Bidder's Query	BHEL Reply
1.18		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Sl. No.2) Fly ash conveying pipe – 1 Lot. (250/300/350NB)	Please clarify the pipe quantity available at site with pipe sizes. Also please confirm that the supplied pipes are 9.52mm thick and the pipes are in random length of 10-12 mtr. Kindly let us know your requirement regarding sleeve couplings for joining. Incase bidder to supply sleeve coupling kindly confirm the MOC of sleeve couplings will be manufacturer standard.	250/300/350NB is available at site. If additional pipe is required to complete the Dry Ash handling system, the same shall be provide by the bidder and BHEL shall pay on the tonnage basis as mentioned in price format. The supplied pipes are 9.52mm thick and the pipes are in random length of 6 , and 10-12 mtr. Bidder to visit site for better clarity and understanding on the subject. The MOC of sleeve couplings shall be as per specification.
1.19		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Sl. No.3) Ash Line valves (KGV Type) – 1 Lot.	Please clarify the number of quantity and the location of specified valves. (Fly ash conveying line or Ash discharge below silo)	The Fly Ash Line Valve (KGV Type) is available as described in Flow Diagram and Layout drawings.
1.20		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Sl. No.4) Air Line valves – 1 Lot.	Kindly confirm adequate numbers of airline valves with suitable sizes are already available at site. If any additional quantity of valves required during detailed engineering the same shall be in BHEL scope.	Most of the air line valves are available at site. However, bidder is requested to visit site for better clarity and understanding on the subject. .Any additional valves required for completion of system shall be in the scope of the bidder.

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1.21		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Sl. No.5) Vent Fan for silo – 2 Nos.	Kindly confirm that Motor for vent filter fan along with necessary base frames, drive guards, pulleys, belts, couplings and all required hardware is available at site the same shall be provided by BHEL as free issue.	Bidder is requested to visit site for better clarity and understanding on the subject.
1.22		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Conveying air compressor, Instrument air compressor for silo, Fluidizing blower for silo area, Conditioning water pumps and Drain pumps.	Kindly confirm that the drive equipment's for BHEL free issue equipment including required base frames, drive guards, pulleys, belts, couplings and hardware shall be in BHEL scope and same shall be part of free issue material.	Bidder is requested to visit site for better clarity and understanding on the subject.
1.23		4.3 – Mechanical Scope of Work. The list of Major items available at site for 2 nd stage pressure conveying system.	Note: 4 - If the system is not working efficiently or the system has some inherent design flaws, in such a case the successful bidder will be liable to correct the system and BHEL's decision will be final and binding in such cases.	Kindly confirm that the description specified is limited within the battery limits i.e. dry fly ash conveying system from Buffer hopper to fly ash silo only.	Noted and confirmed. However, all the associated equipments are also in the scope of bidder.
1.24		4.4 - Site Activities	Erection and commissioning, trial run & PG test of the Items already available at site and the items supplied by bidder is in bidder's scope.	Kindly confirm that the Performance of BHEL free issue equipment's and materials are in BHEL scope.	The Performance of Dry Fly ash handling system is in bidder scope.
1.25		6.0 - Terminal points	Starting – From buffer hopper.	Please confirm that the scope of work starts from Buffer Hopper outlet with adopters and flanges for fixing top Diffuser feeder (gate).	Shall be as per specification only.

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1.26		7.0 Performances & Functional Guarantee Test & Handing Over:	- Operation of complete 2nd stage Dry Fly Ash Handling System (Pressure Conveying system) till performance of guarantee test accepted by the customer M/s KPCL shall be in scope of Bidder.	Please note that in Clause No. A.1, Sht 11 of 14 it is specified that the bidder shall be responsible to carry out "round the clock trouble free operation" of the complete 2nd Stage (Pressure Conveying) Ash Handling System (DCS based) for a period of 2 months. Bidder's O & M service as required beyond 2 months shall be as per the price quoted by the bidder at the time of order finalization. Kindly check and confirm the discrepancy	After completion of full Dry Fly ash system by bidder, bidder shall be responsible to carry out "round the clock trouble free operation" of the complete 2nd Stage (Pressure Conveying) Ash Handling System (DCS based) for a period of 2 months. Bidder's O & M service as required beyond 2 months shall be as per the price quoted by the bidder at the time of order finalization.
1.27		7.0 Performances & Functional Guarantee Test & Handing Over:	- Note: Bidder to refer enclosed Technical specifications SECTION – C5, VOLUME- 2, "PERFORMANCE GUARANTEES AND LIQUIDATED DAMAGES FOR PERFORMANCE" for performance guarantee requirements.	Please furnish the system design parameters to be considered by bidder.	134 TPH per stream. Total 4 (3W+1S) streams. With available Transport air compressor and its guaranteed power defined in the data sheet of TAC.
1.28		8.0 SPARES:	The Bidder shall include Mandatory spares as per enclosed "ESSENTIAL SPARES FOR ASH HANDLING SYSTEM" for the plant along with offer.	Please note that in the Essential Spares List Complete ash handling system spares are indicated. Kindly confirm that mandatory spares for BHEL free issue items are excluded from Bidders scope. Also please confirm that Bidder to consider the mandatory spares if any from the list (furnished by M/s BHEL) only for the equipment which are to be supplied by bidder.	Confirmed

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1.29		Clause No. A.1 Scope of Work for Operation and maintenance of Plant	Maintenance/repair/replace ment of items (like valves, pipes, pumps, compressors, Motors, Field instruments etc. and their components) supplied as free issue to bidder shall also be in the scope of the bidder.	Please confirm that the spares required during Commissioning and Operation and maintenance of BHEL free issue items are excluded from bidder's scope. If any spares required during Commissioning and Operation and maintenance period the same shall be furnished by M/s BHEL.	Follow the specification
1.30		Annexure – II, AHP Electrical E&C Works	3.0 Scope of Work and Unpriced Format Annexure – D Electrical E&C.	Please confirm that the scope of works for Electrical and C&I is limited to the quantity identified in the specification.	Confirmed
1.31		Unpriced Format Annexure – E for Indigenous supplier	Sl. No. E.2 Knife type isolation gate.	Please note that in the technical specification Cl. No. 4.3 Mechanical scope of work, Knife type isolation gate valves are not proposed. Hence the spares list specified in this clause may be deleted.	Spare list as applicable
1.32		Unpriced Format Annexure – E for Indigenous supplier	Mandatory Spares	Please confirm that Bidder to consider the mandatory spares in the scope of work only the items specified in the Annexure - E.	The bidder shall provide the spare of all the items which supplied by Bidder as per the attached essential spare list.
1.33	Annexure – I	Instrument Air Compressor spares list.	Description (Indure/Client) Part Number (Indure/Client)	Kindly confirm that the Mandatory spares for IAC are in BHEL's scope. The name " Indure " indicated in the description and part Number are may be deleted.	Not relevant to this tender.
2	Special Conditions of Contract				
2.1		Cl. No. 13. Deliver Schedule	a) Completion of Supply : Within two (2) months from the date of LOI.	a) Please note that the quantum equipments to be supplied for Mechanical, Electrical and C&I are high, hence we propose to	a) Completion of Supply : Within three (3) months from the date of LOI.

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			b) Completion of Erection & Commissioning; Two (2) Months from the date of availability of respective front/civil foundation.	kindly accept the completion period of supply (i.e. Two (2) months) from the date of drawings/datas approved by BHEL/KPCL. b) Please note that the quantum of erection and commissioning for mechanical, Electrical and C&I items are very high, hence we propose to kindly furnish six (6) month's time period for E&C from the date of availability of respective front/civil foundation.	b) Shall be as per SCC only.
3	General				
3.1			Pipe rack for Fly ash conveying pipe and Air conveying pipes.	Please confirm that all pipe racks for dry ash handling system from Buffer Hopper to Fly ash silo and conveying air from TAC to Buffer hoppers are in BHEL's Scope. Also confirm that all type of culverts if any are in BHEL's scope.	Confirmed. However, supports as required or as indicated the drawings shall be in the scope of bidder.
3.2			Pipe Raising Structure for ash conveying pipe	Please confirm the Scope of Pipe raising structure near Fly ash silos for Ash Conveying pipe line.	The same is supported on insert plates and structure required for the same shall be in the scope of bidder.
3.3			TAC, IAC and Fluidizing air pipes.	Please clarify and elaborate the scope of work for Pipes and valves for the followings. a) TAC – From Compressor to Buffer Hopper. b) IAC- Ash Handling plant area and From Silo area IAC to various IA requirement in silo area.	Follow the specification

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				c) Fluidizing airline- From ESP/Buffer hopper Blower to ESP hopper and Buffer hopper. d) Fluidizing airline- From Silo Blower to Fly ash silo.	
3.4			Lifting facilities in Fly ash silo area.	Please confirm that Lifting facilities such as cranes/hoist and its supporting required in Silo area, Silo Utility Building & Compressor House are in BHEL scope of work.	Lifting facilities like hoist and cranes for silo and silo utility building are supplied. However, the erection, testing and commissioning is in the scope of bidder. The lifting equipments like Hydra, Winch, Crane etc. required for the erection and commissioning of the 2 nd Stage Dry Fly Ash System and its associated equipments shall be in bidder scope.
3.5			Drain pipe in Silo area.	Please clarify the scope of drain pipe for silo area drain pump. If it is in bidder scope kindly specify the Pipe MOC and thickness to be considered by bidder up to discharge point. Also please indicate the pipe quantity to be included in bidder's scope,	Any additional pipe required for the completion of the Dry Fly Ash System shall be provided by the bidder and same shall be paid by BHEL on tonnage basis as mentioned in the price format
3.6			Fly ash silo	Please furnish the Fly ash silo GA drawing for more clarity.	Already available in tender.
3.7			Fly ash silo truck unloading.	Kindly confirm that the Manual and Pneumatic operated knife gate valve at silo outlet for truck unloading are already available at site and the same shall be furnished by BHEL at free of cost.	Confirmed

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3.8			IA requirement in Plant area	Please confirm the Instrument air required for pneumatic operated valves/equipments in Plant area is available for ash handling system. Also please confirm that the pipe lines and necessary valves required for above shall be provided by BHEL at equipment inlet.	Instrument Air for pneumatic operated valves/ equipments in Plant area is available for ash handling system. The erection of Pipe line and valve from nearby source is in bidder scope.
3.9			Ash Conveying rate	Please furnish the Fly ash conveying rate from Buffer to Fly ash silo to enable us to check the transport air compressor parameters indicated in the specification.	134 TPH per stream. Total 4 (3W+1S) streams.
3.10			Construction Power drinking water and potable water.	Please confirm that the construction power, drinking water and potable water required during erection and commissioning shall be provided by BHEL at one (1) point near erection site at free of cost. If it is chargeable basis please provide the tariff for the same.	bidder is requested to visit site for better clarity and understanding on the subject.
3.11			Water Pipes	Please confirm that the cooling/sealing water pipes required for the following equipments cooling shall be provided by BHEL at free of cost. 1. Vacuum Pumps 2. Transport Air Compressor. 3. Plant area instrument air compressor. 4. Silo area instrument air compressor. 5. ESP/Buffer hopper fluidizing blower if required. 6. Fly ash silo fluidizing blower if required.	Confirmed. If any additional pipe is required for the completion of the Dry Fly Ash System, then same shall be provided by the bidder and BHEL shall paid on tonnage basis as mentioned in the price format

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3.12			Handrail & ladders	Kindly confirm the scope of hand railing and Ladders for 2 Nos of vent filters located on Fly ash silo.	Bidder scope only
3.13			Water Pipes	Please confirm that supply of complete water pipes for the proposed system are excluded from Bidders scope the same shall be supplied by BHEL at Free of cost.	Confirmed. If any additional pipe is required for the completion of the Dry Fly Ash System, then same shall be provided by the bidder and BHEL shall paid on tonnage basis as mentioned in the price format.
3.14				Clarify the scope of work for Silo operating and Interconnection platforms.	It shall be as per the specification. The silo staircase fabrication and erection shall be in bidder scope.
3.15				In technical specification, details of silo staircase is not mentioned. Hence we request you to provide the same since fabrication and erection of silo staircase is in our scope.	The quantity of structural steel fabrication work for Silo Staircase is approx. 41 MT. The bidder shall follow the attached FQP of Structural Work at the time of fabrication and erection of staircase at site.