

ODISHA LIVESTOCK RESOURCES DEVELOPMENT SOCIETY

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CORRIGENDUM

NATIONAL COMPETITIVE BIDDING (NCB)
 Invitation for Bids for Laboratory Equipments

With reference to NCB IFB No.: 01/18-19

Sl. No.	Page No. and Section No. as per IFB	Detailed Description as per IFB		Queries raised by the bidders on pre bid meeting & through mail as on day of pre bid meeting	Changes / Amendments proposed	
		Item No	Name of Goods or Related Service			Technical Specifications and Standards
1	63, 64, 65 & 66 of Section VI, Sl. No 3, Item No. 4	4	Semi Automatic Distribution of LN2 (SADLN)	<p>Manufacturing, Supply, Erection & commissioning of SIVL line (Rigid & Flexible) for transfer of Liquid Nitrogen as follows: Transport Tanker to OMRs at Semen Bulk Storage and dispatch section Semen processing lab. Total estimated consumption points with individual valves-6 nos.</p> <p>Particulars LN2 Service fluid oC Design temp. Bar g Test pressure of 10.0</p>	<p>No queries have been received through e mail.</p> <p>- Modification in particulars and related services suggested during the pre bid meeting held on 26.11.2018.</p>	

Outer Pipe
(65 NB or Higher) - SA312
TP304Sch10S

Valve -
Manual operated
Cryogenic Globe valve -
SS Body, Bolted Bonnet for
liquid Nitrogen service
Size - 15 NB,
Working pressure - 10 Bar
Working Temperature - (-)
196 degree C
Preferred make of valve -
Herose, Mack, Bestobell
Safety Relief Valve
suitable for SILV of liquid
Nitrogen service-
Size - 1/2" inlet X 1 "outlet
End connection - threaded
Preferred make of SRV -
Herose, Mack, Bestobell
Junction Box -Onsite

inner pipe
Operating pressure 7.0
Operating Temp -196
Inner pipe SA312 TP304Sch10S
(15NB)
Outer pipe SA312 TP304Sch10S
(80NB)
Cryogenic valves Nonferrous
Cryogenic safety valves Nonferrous
Insulation type Multi Layer Insulation
Vacuum Level Below 20 micron
Vacuum retention 72 hrs. vacuum holding
test
Surface of outer jacket Cleaned and polished external surface of outer jacket.

Valve:
Operating conditions- Normally close
Type: VJ
Flow characteristic: Linear
General Specifications:
Valve Body; SS 304L or better grade
Valve sealing: Preferably Bellowed sealed type
Preferred makes:
On/Off, control and Manual Valves : Weka, Velan, ACME, Herose
Valves controllers : Emerson, Siemens, ABB
Technical specifications: Safety Valves (PSVs) as per standard of Govt. of India.
Technical Specifications: Cryogenic Vacuum Jacketed line
Design and sizing of the lines as per the flow, temperature and pressure requirements
The design shall ensure enough flexibility preferably using bellows or internal hoses.

fabrication of PUF junction box surrounding socket weld joint of two SIVL pre-fabricated segments to prevent frosting/sweating at the junction. TIC welding should be carried out for all onsite socket weld joints of SIVL segments.

The lines should be fabricated in segments with all the standard tests of vacuum jacketed line. The fabrication of the lines shall be as per applicable ASME or equivalent standards. The material shall be 304L or better grade. The pipes shall be seam less. The segments shall be assembled at the site with valves and other instrumentation. Each segment shall be equipped with vacuum pumping port. The contractor shall provide plunger for evacuation. The quality of each segment shall be such that after first pumping and sealing it shall hold the static vacuum for minimum 2 years. Vendor shall give guarantee for this. The leak rate for each weld and overall segment is as defined in section 6.1. The heat leak rate shall be 2 W/m max. These values shall be submitted for approval. Flow velocity max. 20 m/s. MLI shall be used as Insulation on the inner line. The make of this MLI shall be submitted for approval. Contractor has to provide vacuum pumping tools along with the lines. Length of Vacuum Jacketed (LN2) Line :- Approximately 90 mts.

- a) 75 g/s - ~30 m
- b) 60 g/s - ~10 m
- c) 5 g/s - ~20 m

Length of vapour line (120 g/s, 50 % vapour) - 30 m

Technical Specifications: Insulated line
Design and sizing of the lines as per the flow, temperature and pressure requirements
The material shall be 304L or better grade.
The pipes shall be seam less.
No formation ice or any condensation on the surface
The material used shall be as per safety norms for indoor applications
Insulation type (Armaflex or better grade)

and method of applying shall be submitted for approval during quotation process. The details and compatibility of insulation at cryogenics temperature shall be submitted. The material shall be 304L or better grade. Length of Gaseous Line: 90 mts.

Technical Specifications: Isolator boxes
 Vacuum jacket material: SS304L
 Pipes material: SS316 L seamless
 Kenol Couplers : FIM

Isolator box shall be equipped with a vacuum port for evacuation
 Safety valve to avoid pressure build in case of vacuum loss
 MLI shall be wrapped above the isolators assembly.
 Isolator boxes shall be supported on the platform.

Technical Requirements: Welding and Radiography:
 Filler material shall be compatible with piping material
 All the weld joints shall be made of TIG welding
 100% radiography of all the lines joints.

Technical Requirements: Pipes and Flanges:
 All the piping (pipes, bends, Tees) and flanges shall be SS 304L or better grade
 All the pipes used shall be seamless
 The sealing gaskets shall be compatible with the application

Related Services :

- a) Onsite erection & commissioning of SIVL including wall support bracket / post as required for rigid SIVL by Angle, Plate, U-clamps etc .

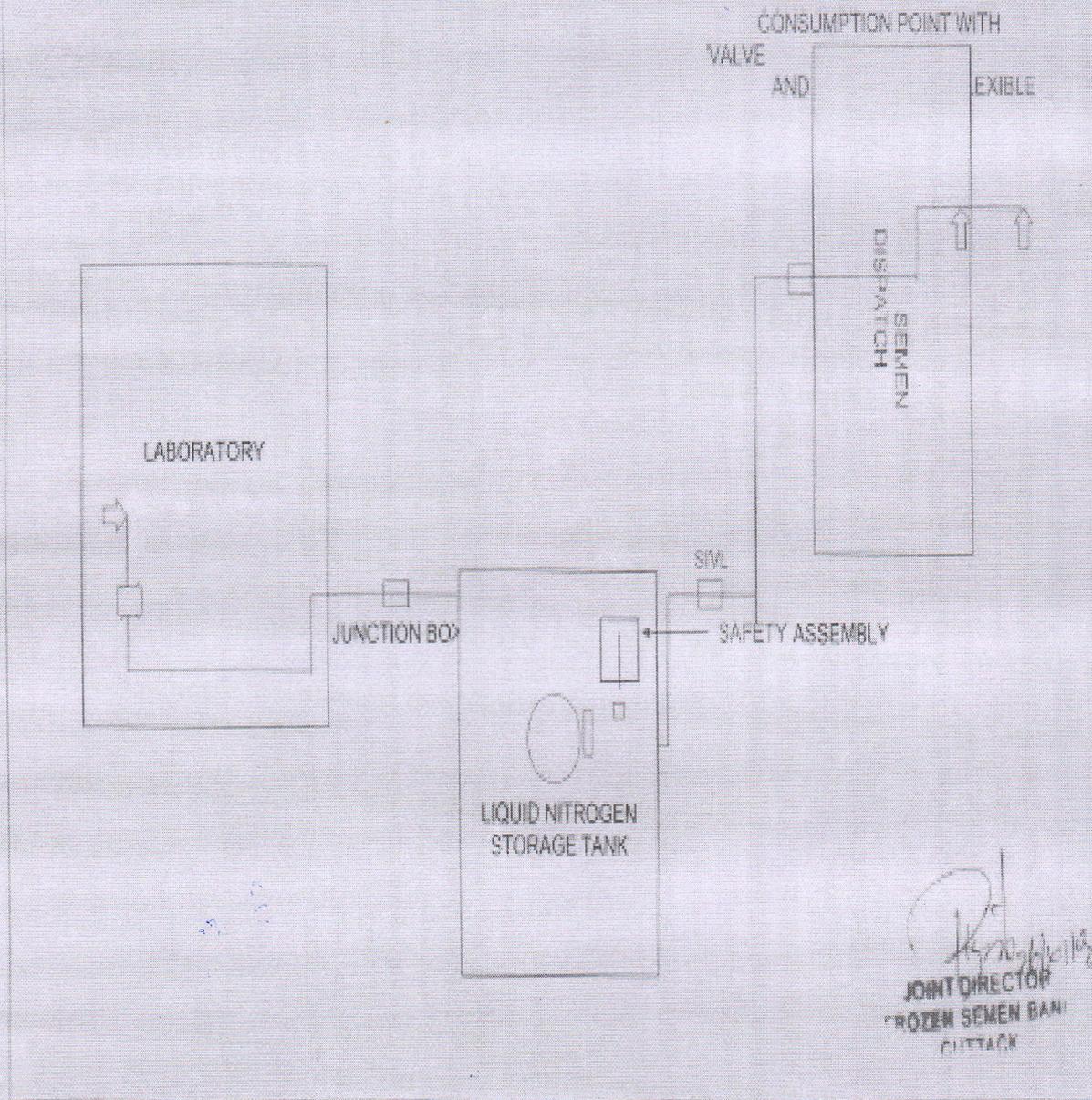
Related Services:

a)	Performance or supervision of the on-site assembly and/or start-up of the supplied Goods
Yes,	Scope of SADLN work: Work contains design, procurement, fabrication at FSB lab & Semen dispatch section, and site work. Process design Thermo hydraulic calculations, Instrumentation and lines details and sizing Drawings preparation (including

	<p>layouts) Fabrication and/or procurement of different segments of Nitrogen lines All the necessary spares and tools for future maintenance Salient Points for work execution: It is the responsibility of the contractor starting from the site visit to final acceptance test of the SADLN .The contractor shall visit the site before submitting the bid. The contractor has to arrange/provide all the necessary tools, equipment, cables, material and all other provisions required to carry out the above job. It is the complete scope of contractor including all the minor details like supports, cables, wiring, electrical wiring, Vacuum pumps etc., to finish the above work.</p>	
<p>b) All machinery & tools required for onsite execution is under contractor's scope. FSB, Cuttack would only provide electrical power, round O clock work permit & safe custody of machinery, tools & supplied goods.</p>	<p>b) <i>Furnishing of tools required for assembly and/or maintenance of the supplied Goods</i></p>	<p>Yes</p>
<p>c) Material test certificate – Chemical test certificate & tensile test certificate of inner pipe & outer pipe sample from NABL accredited laboratory in conformity with bid have to be furnished along with the supply. After installation piping would be tested by liquid Nitrogen keeping joint Box open to assure no leakage condition of onsite welded joint only. Then, onsite junction boxes would be fabricated. No frosting/sweating would be allowed upon SIVL except at both end</p>	<p>Detailed mechanical and thermal Design of SADLN as per the specifications</p>	<p>Yes, Complete documentation including operating manuals (Soft and Hard copies) QA/QC Procedures: The contractor is responsible for the quality of the ECDS throughout all phases of execution whether the work is performed by the contractor or Sub-contractors or Contractors. The contractor has to submit detailed QA/QC procedures for the following: <input type="checkbox"/> Design <input type="checkbox"/> Fabrication <input type="checkbox"/> Erection and Installation <input type="checkbox"/> Leak testing <input type="checkbox"/> Materials</p>

<p>90 of Section VI, Sl. No 4</p>	<p>Drawing Name</p> <p>Cryogenic Vacuum Jacketed line- Design and sizing of the lines as per the flow, temperature and pressure requirements</p> <p>Insulated line- Design and sizing of the lines as per the flow, temperature and pressure requirements.</p> <p>The successful bidder shall submit the design details after being approved by the competent authority & works will be taken up accordingly.</p>	<p>Cryogenic vacuum jacketed line (SIVL) – On receipt of purchase order successful bidder should prepare final layout drawing of SIVL & submit to the Joint Director, FSB, Cuttack for his approval. Manufacturing of SIVL would only be initiated on receipt of approval. The schematic drawing is attached in <i>Annexure-1</i> of this corrigendum for reference.</p>
<p>91 of Section VI, Sl. No 5</p>	<p>Inspections and Tests</p> <p>The following inspections and tests shall be performed:</p> <ul style="list-style-type: none"> • For semi automatic Liquid Nitrogen distribution System the successful bidder will arrange the inspection by Deputy Chief Controller of Explosives, Department of Petroleum Policy & Promotion, Govt. of India, Bhubaneswar after commissioning. • For power stabilizing unit for Semen Lab. the successful bidder will arrange the inspection by Executive Engineer, CESU, Cuttack after commissioning. • For all lab equipments a technical committee headed by Project Coordinator will make inspection of goods. 	<p>Inspections and Tests</p> <p>The following inspections and tests shall be performed:</p> <ul style="list-style-type: none"> • For power stabilizing unit for Semen Lab. the successful bidder will arrange the inspection by Executive Engineer, CESU, Cuttack after commissioning. • For all lab equipments a technical committee headed by Project Coordinator will make inspection of goods.

SCHEMATIC DIAGRAM OF PROPOSED SADLN AT FSB, CUTTACK



[Handwritten Signature]
JOINT DIRECTOR
FROZEN SEMEN BANK
CUTTACK