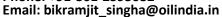


PO: Udayan Vihar

Guwahati – 781171, Assam (India) Phone: +91-361-2595682





# INVITATION TO e-BID UNDER SINGLE STAGE COMPOSITE BID SYSTEM

OIL INDIA LIMITED invites electronic bids for API 6D VALVES from INDIAN BIDDERS on SINGLE STAGE COMPOSITE BID SYSTEM through its e-procurement site on NATIONAL COMPETITIVE BIDDING BASIS (OPEN). Salient points of the Tender (covered in detail in the Bid Document) are highlighted below:

(i)	E-Tender No.	:	SGI5454P21 dated 16.10.2020
(ii)	Item Description		API 6D VALVES
(iii)	Type of Bidding	:	Online - Single Stage Composite Bid System
(iv)	Tender Fee	:	Not Applicable
(v)	Bid Closing Date & Time	:	19.11.2020 at 11.00 Hrs. IST
(vi)	Technical Bid Opening Date & Time		19.11.2020 at 14.00 Hrs. IST
(vii)	Price Bid Opening Date & Time		Will be intimated only to the eligible/qualified Bidders nearer the time.
(viii)	Bid Submission Mode	:	Bids must be uploaded online in OIL's E-procurement portal
(ix)	Bid Opening Place	:	Office of The Deputy General Manager - Materials (PL), Oil India Limited (Pipeline Headquarter), P.O. Udayan Vihar, Guwahati -781171
(x)	Bid Validity	:	120 days from date of Bid Closing
(xi)	Bid Security Amount	:	INR 1,16,990.00
(xii)	Bid Security Validity	:	Upto 18.06.2021
(xiii)	Original Bid Security (Bank Guarantee) to be submitted	:	Office of The Deputy General Manager - Materials (PL), Oil India Limited (Pipeline Headquarter), P.O. Udayan Vihar, Guwahati -781171
(xiv)	Amount of Performance Security	:	10% of Total Order Value
(xv)	Integrity Pact	:	Applicable
(xvi)	Pre-Bid Meeting	:	Not Applicable
(xvii)	Bids to be addressed to	:	Deputy General Manager - Materials (PL), Oil India Limited (Pipeline Headquarter), P.O. Udayan Vihar, Guwahati -781171.

#### The item details against the tender are given below:

ITEM NO.	MATERIALS DESCRIPTION	QTY	UNIT
10	API 6D Through Conduit Slab Gate Valve, 8"-600#, Butt Welded end	2	NO.
20	API 6D Plug Valve, 8"-600#, Butt Welded end	1	NO.
30	API 6D Plug Valve, 6"-600#, Butt Welded end	2	NO.
40	API 6D Plug Valve, 6"-600#, flanged end	5	NO.
50	API 6D Plug Valve, 3"-600#, flanged end	3	NO.
60	API 6D Plug Valve, 1 1/2 "-600#, Butt welded	2	NO.
70	API 6D Plug Valve, 1 1/2 "-600#, flanged end	18	NO.
80	API 6D Plug Valve with MOV Actuator, 8"-600#, Butt Welded end	1	NO.

The general details of tender can be viewed by opening the eRFx [Tender] under RFx and Auctions in the e-portal through Guest Login. The details of tendered items can be found in the Item Data and details uploaded under Technical RFX. The bidding document is available in the Technical RFx -> External Area - > Tender Documents.

The complete bid document along with details for participation in e-tenders are available on OIL's e-procurement portal <a href="https://etender.srm.oilindia.in/irj/portal">https://etender.srm.oilindia.in/irj/portal</a> as well as OIL's website <a href="https://www.oilindia.com/">https://www.oilindia.com/</a>.

#### NOTE:

- (a) All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e-portal only. Bidders should regularly visit above website and e-portal to keep themselves updated.
- (b) For technical support on various matters viz. Online registration of vendors, Resetting of Passwords, submission of online bids etc., bidders should contact OIL's ERP MM Deptt at following: Tel Nos.: 0374-2807178, 0374-2807171, 0374-2807192. Email id: erp\_mm@oilindia.in.
- (c) OIL's office timings are as below:

WEEKDAYS	TIME (IN IST)
Monday – Friday	07.00 AM to 11.30 AM; 01.00 PM to 03.30 PM
Saturday	07.00 AM to 11.00 AM
Sunday and Holidays	Closed

## **STANDARD NOTES**

(ix)

- 1.0 The tender will be governed by "General Terms & Conditions for National Tender (National Competitive Bidding)" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005(For e-tenders).
- 2.0 This Bidding document consists of:

Annexure XII

(i)	Annexure AA	: Technical Specification and Terms & Conditions
(ii)	Annexure BB	: Bid Rejection Criteria
(iii)	Annexure CC	: Commercial Compliance Sheet
(iv)	Annexure DD	: Price Schedule
(v)	Annexure EE	: Annual Turn Over and Net Worth Certificate
(vi)	Annexure FF	: Undertaking towards submission of authentic information/documents
(vii)	Annexure GG	: Arbitration clause for Settlement of commercial disputes between Central
		Public Sector Enterprises (CPSEs) inter se and CPSE(s) and Government
		Department(s)/ Organizations(s)
(viii)	Annexure HH	: Clause for Startup and MSE bidders

"General Terms & Conditions for National Tender (National Competitive Bidding)" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005(For e-tenders).

3.0 Bidders without having E-tender Login ID and Password should complete their online registration at least 7(seven) days prior to the scheduled bid closing date and time of the tender. For online registration, Bidder may visit the OIL's E-tender site https://etender.srm.oilindia.in/irj/portal.

: Integrity Pact

- 4.0 Necessary Login ID & Password will be issued by OIL only after submitting the complete online registration by the Bidder. In the event of late registration/incomplete registration by Bidder, OIL INDIA LIMITED shall not be responsible for late allotment of User ID & Password and request for bid closing date extension on that plea shall not be entertained by Company.
- 5.0 Bidders to note that Govt. of India under Micro, Small and Medium Enterprises Development (MSMED) Act 2006, has proclaimed the Public Procurement Policy, 2012 with effect from 1st April, 2012 in respect of procurement of goods and services, produced and provided by micro and small enterprises, by its Ministries, Departments and Public Sector Undertakings for promotion and development of Micro and Small Enterprises. A new Clause on applicability of Public Procurement Policy for procurement of goods from Micro and Small Enterprises (MSE) in the tender is furnished vide Amendment to General Terms and Conditions for Global Tender (MM/GLOBAL/E-01/2005). Bidders are requested to take note of the same and to submit their offers accordingly.
- 5.1 For availing benefits of Purchase Preference under Public Procurement Policy, the interested MSE Bidders must ensure that they are the manufacturer of tendered item(s) and registered with the appropriate authority for the said item(s). The technical offer of such MSE Bidders must include a valid copy of relevant MSE Certificate issued by appropriate authority specifying the item as per tender. Purchase Preference of 15% (fifteen percent) shall be extended to the eligible MSE Bidder (i.e. Manufacturer of tendered goods for procurement) over non-MSE L1 Bidder and PO shall be awarded for full tender quantity on such MSE bidder, subject to matching their quoted rates/costs with non-MSE L1 Bidder.
- 5.2 MSEs Units (manufacturers/Service Providers only and not their dealers/distributors) who are already registered with District Industry Centers or Khadi & Village Industries Commission or Khadi & Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts & Handloom or any other body specified by Ministry of MSME are exempted from payment of Bid Security (EMD) irrespective of their product category & capacity, subject to submission of valid MSME registration certificate issued by appropriate authority.
- 5.3 Micro or Small Enterprises (MSE) registered with District Industry Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of MSME shall submit copy of valid Registration Certificate for the items they intend to quote along with the bid. The Registration Certificate should clearly indicate the monetary limit, if any and the items for which bidder are registered with any of the aforesaid agencies. In case bidding MSE is owned by Schedule Caste or Schedule Tribe entrepreneur, valid documentary evidence issued by the agency who has registered the bidder as MSE owned by SC/ST entrepreneur/ Woman Entrepreneurs should also be enclosed. The turnover related figures of the bidders claiming as MSE bidders as mentioned above shall be considered based on Bidders self-declarations to be submitted with their bid as per new gazette notification no. CG-DL-E-26062020-220191 dated 26.06.2020. However, in case of any intentional misrepresents or attempts to suppress facts in the self-declaration, the bidder shall be liable to penalty as specified under section 27 of the Act.
- 5.4 Bids without EMD shall be rejected, if the technical offer does not include a valid copy of relevant MSE Certificate issued by appropriate authority. It is in the interest of such MSE Vendors to furnish a copy of complete certificate to the concerned tender handling officer of OIL at least seven (7) days prior to the scheduled Bid Closing Date of the tender. Late communication in this regard and request for bid closing date extension on that plea shall not be entertained by Company.
- 6.0 Bidder seeking benefits of MSME and Purchase Preference Policy (Linked with Local Content) shall clearly indicate the same in the tender with proper documents as stipulated in the tender.
- 7.0 Purchase Preference (Linked with Local Content) (PP-LC) is not applicable against this tender.
- 8.0 OIL INDIA LIMITED (OIL) has upgraded its E-tender Portal. As part of the new system, the intending bidder must have Encryption Certificate along with Digital Signature Certificate (DSC) of Class III [Organization]. All the Bids must be Digitally Signed using "Class III" digital certificate (e-commerce application) with 'Certificate Type: Organisation Certificate' as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3 with Organisation's Name" digital certificate, will be rejected.

- 9.0 EMD must be paid either through online mode or submitted as Bank Guarantee/LC. DD/Cheques/Cashier Cheque or any other mode will not be acceptable.
- 9.1 OIL has made arrangement for online confirmation of Bank Guarantee through SFMS Platform with Axis Bank, Guwahati. Therefore, bidders submitting Bid Security in the form of Bank Guarantee must route the BG through SFMS platform as per following details
  - a. (i) MT 760/MT 760 COV for issuance of bank guarantee
    (ii) MT 767/MT 767 COV for amendment of bank guarantee

The above message/intimation shall be sent through SFMS by the BG issuing bank branch to Axis Bank, Guwahati Branch, IFS Code – UTIB0000140, Branch Address – Axis Bank Ltd., Guwahati Branch, Chibber House, G.S. Road, Dispur, Assam, Pin – 781005.

- b. The Bidder shall submit to OIL the copy of SFMS message as sent by the issuing bank branch along with the original bank guarantee.
- 9.2 Bank Guarantee issued by a Scheduled Bank in India at the request of some other Non-Scheduled Bank in India shall not be acceptable.
- 10.0 Bidders are requested to go through the 'Vendor User Manual', 'Guidelines to Bidders for participating in OIL e-tenders', 'New Instruction to bidders for submission of bid' and 'Vendor User Manual for e-tendering' available in the e-portal home page before submitting offer in system.
- 11.0 Deemed export/Custom Duty benefits are not applicable against this tender and bidders should furnish prices without considering these benefits.
- 12.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with Tender no. and Due date to The Deputy General Manager Materials (PL), Oil India Limited (Pipeline Headquarter), P.O. Udayan Vihar, Guwahati -781171 before 14.00 Hrs. IST on the Bid Closing Date mentioned in the Tender.
  - a) Bid Security(EMD) submitted in the form of Bank Guarantee.
  - b) Detailed Catalogue (if any).
  - c) Any other document required to be submitted in original as per tender requirement.

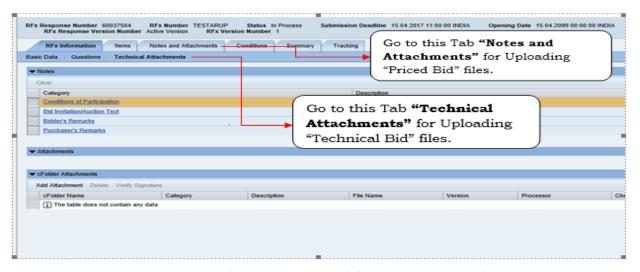
All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in triplicate.

- 13.0 Bidders are requested to examine all instructions, forms, terms and specifications in the tender. Failure to furnish all information required as per the tender or submission of offers not substantially responsive to the bid in every respect will be at the bidder's risk and may result in rejection of its offer without seeking any clarifications.
- 14.0 Any deviation(s) from the tender specification should be clearly highlighted specifying justification in support of deviation.
- 15.0 Original Bid Closing Date shall be considered by OIL for evaluation of BRC Criteria in case of any extension of the original bid closing date.
- 16.0 Along with the technical bid, bidders must submit duly filled undertaking as per format provided vide **Annexure-FF** as undertaking towards submission of authentic information/documents.
- 17.0 The tender is invited under **SINGLE STAGE-TWO BID SYSTEM**. The bidder has to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" through electronic form in the OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender. The "Techno-commercial Unpriced Bid" shall contain all technical and commercial details except the prices which shall be kept blank. Details of prices as per Price Schedule to be uploaded as attachment in the Attachment Tab "Notes and Attachments". Any offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in the tender.

In Technical Bid opening, only Technical Rfx will be opened. Therefore, the bidder should ensure that "TECHNO-COMMERCIAL UNPRICED BID should contain details as mentioned in the technical specifications as well as BEC/ BRC and upload the same in the Technical RFx Response-> User - > Technical Bid. No price should be given in above Technical Rfx otherwise the offer will be rejected. Please go through the help document in details before uploading the document and ensure uploading of technical bid in the Technical RFx Response-> User - > Technical Bid only. The "PRICE BID" must contain the price schedule and the bidder's commercial terms and conditions. Details of prices as per Price Schedule can be uploaded as Attachment under the attachment option under "Notes & Attachments".

Notes and Attachments

- Only price details should be uploaded
- Technical attachments → All technical bid documents except price details

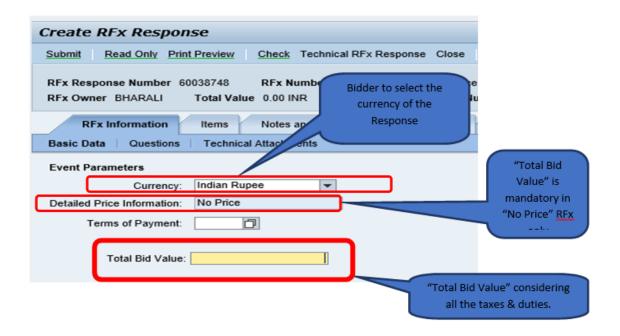


Bidders are requested to go through the 'New Vendor Manual', 'Guidelines to Bidders for participating in OIL e-tenders', 'New Instruction to bidders for submission of bid' and 'Vendor User Manual for e-tendering' available in the e-portal home page before submitting offer in system.



18.0 For the convenience of the qualified Bidders and to improve transparency, the rates/costs quoted by bidders against OIL's e-tenders shall be available for online viewing by such Bidders whose price bids are opened by Company. A Bidder can view item-wise rates/costs of all other such peer bidders against the tender immediately after price bid opening, if the e-tender is floated by Company with PRICE CONDITION. In case the Price Bid is invited by Company through attachment form under "Notes & Attachments" (i.e., NO PRICE CONDITION), Bidder must upload their detailed Price-Bid as per the prescribed format under "Notes & Attachment", in addition to filling up the "Total Bid Value" Tab taking into account the cost of all individual line items and other applicable charges like freight, tax, duties, levies etc. Under NO PRICE Condition (i.e. Price Bid in attachment form), the "Total Bid Value" as

calculated & quoted by the Bidder shall only be shared amongst the eligible bidders and Company will not assume any responsibility whatsoever towards calculation errors/omissions therein, if any. Notwithstanding to sharing the "Total Bid Value" or the same is whether filled up by the Bidder or not, Company will evaluate the cost details to ascertain the inter-se-ranking of bidders strictly as per the unloaded attachment and Bid Evaluation Criteria only. Online view of pries as above shall be available to the Bidders only upto seven days from the date of Price-Bid opening of the e-tender.



- 19.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that all documents which are to be submitted in a sealed envelope are also submitted at the address mentioned in note 12.0 above before 14:00 Hrs (IST) on the bid closing date failing which the offer shall be rejected.
- 20.0 Other terms and conditions of the tender shall be as per "General Terms & Conditions for National Tender (National Competitive Bidding)" for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005(For etenders). However, if any of the clause of the Bid Rejection Criteria / Bid Evaluation Criteria (BEC / BRC) contradicts the clauses in the General Terms & Conditions of the tender and/or elsewhere, those mentioned in the BEC/BRC shall prevail.
- 21.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer may be summarily rejected.
- 22.0 The Integrity Pact is applicable against this tender. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide <a href="Annexure XII">Annexure XII</a> of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. The name of the OIL's Independent External Monitors at present are as under:
  - 1. SHRI SUTANU BEHURIA, IAS (Retd.) E-Mail ID: sutanu2911@gmail.com
  - SHRI RUDHRA GANGADHARAN, IAS (RETD.)
     Ex-Secretary, Ministry of Agriculture
     E-mail ID: rudhra.gangadharan@gmail.com
  - Shri Om Prakash Singh, IPS (Retd.),
     Former DGP, Uttar Pradesh
     e-mail ID: Ops2020@rediffmail.com

23.0 No press advertisement will be published regarding amendment to Bidding Document or extension of Bid Closing Date. The same will be uploaded in OIL's website and informed to all prospective bidders who have received the bidding documents. Bidders to keep themselves updated.

Sd-(M.B. SINGHA) CHIEF MANAGER MATERIALS (PL) FOR: CHIEF GENERAL MANAGER (PLS)

#### **ANNEXURE-AA**

#### **TECHNICAL SPECIFICATIONS**

#### A. GENERAL NOTES:

- 1.0 All valves shall be used for liquid Hydrocarbons (Crude Oil) service.
- 2.0 All material shall be delivered at Company's designated storage yards at Duliajan, Assam. Detail address shall be provided in purchase order.
- 3.0 The quantities indicated for all items in this tender are subject to variation up to  $\pm 10$  % (minimum of one number, any fraction shall be taken as next whole number). The price quoted for the items shall remain valid for any change in quantity within such variation.
- 4.0 In case no start-up/commissioning spares are recommended by the Vendor but the same are required at the time of start-up/commissioning, the Vendor shall supply such spares free of cost.
- Vendor shall be responsible for the adequate preparation of material and application for shipment while transporting the valves to Company designated stores. Valves with weld ends shall be protected with bevel protectors. The welded ends shall be blanked off suitably with caps during transportation and while storage at site to avoid ingress of foreign particles etc. Valves with flange ends shall be protected with suitable covers such as plywood.
- 6.0 Within two (02) weeks of placement of order, the manufacturer shall submit documents for approval.
- 7.0 The Third Party Inspection (TPI) for each valve is to be carried out by an OIL approved internationally reputed inspection agency as per inspection plan. All costs related to TPI shall be in the scope of supplier. Name of the OIL approved Third Party Inspection (TPI) Agency: Lloyds/BVQI/TUV/RITES/IRS/DNV/Tuboscope Vetco.
- 8.0 Every valve shall be subjected to all the mandatory tests and checks called in the respective codes/ specification sheet or any third party as approved by the purchaser.
- 9.0 Every valve, its components and auxiliaries must be subjected to all the mandatory tests and checks called for in the respective codes, data sheets etc. by the manufacturer.
- 10.0 Radiography procedure, areas of casting to be radiographed shall be as per ASME B 16.34 and acceptance criteria shall be as per ASME B 16.34 Annexure-B. However, for areas of casting to be radiographed for types of valves not covered in ASME B 16.34, vendor shall radiograph castings in line with ASME B 16.34.
- 11.0 Inspection & Test Plan (ITP)/Quality Assurance Plan (QAP) as approved by purchaser shall be followed. Sample ITP is enclosed with the tender for reference.
- 12.0 The supplier shall also intimate OIL at least 15 (fifteen) days in advance prior to starting the TPI at manufacturing facility/ plant to enable purchaser for associating their personnel to witness the process of manufacturing and coating. If any anomaly is observed during inspection, supplier will ensure to correct the anomaly and re-inspect through TPI
  - All to & fro travel, boarding & lodging expenses for purchaser's Inspection personnel shall be to purchaser's account. However, all facilities required for inspection/ testing shall be provided by the successful bidder to purchaser's Inspection personnel.
- 13.0 <u>Documentation to be submitted along with offer:</u>
  - i) Manufacturer's complete descriptive and illustrative catalogue/literature.
  - ii) Valve Data Sheet incorporating following data along with others
  - a) Flow co-efficient C<sub>v</sub> or K<sub>v</sub>
  - b) Number of turns for manually operated valves.
  - iii) General Arrangement Drawing.
  - iv) Detailed dimensioned cross sectional drawing with parts / material lists, weight etc.
  - v) If the valve is regretted or has no deviation, the manufacturer shall write clearly on valve specification sheets as "Regret" or "No Deviation".
  - vi) On failure to submit documents as specified above, the offer is likely to be rejected.
- 14.0 <u>Documentation to be submitted along with Delivery of Materials:</u>
  - i) Certificate of conformance to API 6D International Standard.
  - ii) General Arrangement Drawing
  - iii) Detailed dimensioned cross sectional drawing with parts / material lists, weight etc.
  - iv) Valve Data Sheet
  - v) Pressure test report (including pressure, test duration, test medium and acceptance criteria).
  - vi) Test report shall be submitted for all mandatory tests as per approved ITP/ QAP. Test reports shall also be furnished for any supplementary tests as specified.
  - vii) Material test certificates (physical properties, chemical composition & heat treatment report) of the pressure containing parts shall be furnished for the valves supplied. Material

- test certificates for the other parts shall also be furnished for verification during inspection.
- viii) Catalogues/Drawings (Hard copy 3 sets, Soft copy in CD)
- ix) Installation, Operation and Maintenance Manual (Hard copy 3 sets, Soft copy in CD)
- x) Guarantee/Warranty certificate on the supplied product.

## 15.0 Marking:

- i) API Monogram, Valve markings, symbols, abbreviations etc. shall be in accordance with MSS-SP-25/ API 6D or the standard referred in specification sheet as applicable. Vendor's name, valve rating, material designation, nominal size, direction of flow (if any) etc. shall be integral on the body.
- ii) Each valve shall have a corrosion resistant tag giving size, valve tag / code no., securely attached to the valve body.
- 16.0 <u>Warranty:</u> Warranty shall be for 18 months from the date of dispatch/shipment or 12 months from the date of successful commissioning, whichever is earlier.

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#### B. <u>ITEM SPECIFICATIONS:</u>

# ITEM NO. 10: VALVE DATA SHEET: API 6D THROUGH CONDUIT SLAB GATE VALVE, 8"-600#, WELDED END

Valve Manufacturer					
Valve Tag No.					
Valve Type	Slab Gate Valve, Through	n Conduit, suitable for	Pipeline	Pigging	
Purchaser's Spec. No.	As per tender	ANSI Rating		600# (PN 100)	
Design Standard	API 6D Latest edition	Piping Class	Piping Class Schedule 80		
Size, mm (inch) NB	DN 200 mm (8 Inch)	Face Finish of Flan	ges		
Ends	Butt Welded both ends				
VALVE DESIGN CONDITION	ONS				
Corrosion Allowance	1.5 mm	Temperature, °C		(-) 29 to 65 °C	
Service	Petroleum Crude Oil	Installation		Above Ground	
Design Factor					
CONNECTING PIPE DETAI	ILS				
Diameter	200 NB (8-Inch), OD 219	.1 mm			
Grade	API 5L X-46				
Wall Thickness, mm	7.1 mm				
VALVE OPERATOR REQU	IREMENT	STEM REQUIREME	ENT		
Type of operator	Manual Hand Wheel	Rising Stem		Required	
Gear-box	Required	Stem Extension		Not required	
Operator Data Sheet		Extension length, i	m		
	ICATION (Equivalent or Su				
PART DESCRIPTION	MATER	•	ı	MATERIAL OFFERED	
BODY	ASTM A516 GR.70/ASTM	1 A216 GR. WCB			
GATE	ASTM A516 GR.70/ ASTM	ASTM A516 GR.70/ ASTM A216 GR. WCB/			
	ASTM A105 with Cr steel/ENP facing/ AISI				
	316				
BONNET	ASTM A516 GR.70/ ASTM	A A216 GR. WCB			
SEAT RING	ASTM A516 GR.70/ ASTM	Л A216 GR. WCB/			
	ASTM A105 with Cr stee	I/ENP facing.			
STEM	ASTM A322 GR.4140/AS	TM A 182 Gr 6/			
	ASTM A564 Ty.630				
STEM HEAD	ASTM A322 GR.4140/AS	ASTM A322 GR.4140/ASTM A 182 Gr 6/			
	ASTM A564 Ty.630				
SPRING	INCONEL X-750 or equiv	alent.			
SEAT FACE O RING	VITON/HNBR				
SEAT GASKET O RING	VITON/HNBR				
BODY O RING	VITON/HNBR				
STEM O RING	VITON/HNBR				
BONNET FACE O RING	VITON/HNBR				
STUD	ASTM A 193 GR. B7/B7M				
NUT	ASTM A 194 GR. 2HM/ 2	H4/7			
VENT FITTING	ASTM A 105				
STEM PACKING	CORROSION INHIBITED D	DIE FORMED			
	FLEXIBLE GRAPHITE WIT	H BRAIDED ANTI	1		
	EXTRUSION RING/CHEVE	RON RINGS WITH	1		
	INJECTABLE TEFLON FILA	MENT			
Note:					

- 1. Testing shall be as per API 6D.
- 2. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 3. 100% Valve casting shall undergo radiographic examination.
- 4. Stem packing shall be renewable with Valve Open on stream.
- 5. Painting of the valves shall be as per Manufacturer's Standard.
- 6. Compressed asbestos filler (CAF) shall not be used for body sealing/gasket material.
- 7. Valves shall be supplied with locking devices.
- 8. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 9. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 10. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

# ITEM NO. 20: VALVE DATA SHEET: API 6D PLUG VALVE, 8"-600#, WELDED END

Valve Manufacturer				
Valve Tag No.				
Valve Type	Plug Valve			
Purchaser's Spec. No.	As per tender	ANSI Rating	600# (PN 100)	
Design Standard	API 6D Latest edition	Piping Class	Schedule 80	
Size, mm (inch) NB	DN 200 mm (8 Inch)	Face Finish of Flang	ges	
Ends	Butt Welded both ends	•		
VALVE DESIGN CONDITION	ONS			
Corrosion Allowance	1.5 mm	Temperature, °C	(-) 29 to 65 °C	
Service	Petroleum Crude Oil	Installation	Above Ground	
Design Factor				
CONNECTING PIPE DETAI	LS			
Diameter	200 NB (8-Inch), OD 219.1	. mm		
Grade	API 5L X-46			
Wall Thickness, mm	7.1 mm			
VALVE OPERATOR REQUI	REMENT	STEM REQUIREME	NT	
Type of operator	Manual Hand Wheel	Rising Stem	Not applicable	
Gear-box	Required	Stem Extension	Not required	
Operator Data Sheet		Extension length, m		
<b>VALVE MATERIAL SPECIF</b>	ICATION (Equivalent or Supe	erior)		
PART DESCRIPTION	MATERIA	<b>AL</b>	MATERIAL OFFERED	
BODY	ASTM A216 GR. WCB/ AST	ΓM A105/ ASTM		
	A234 GR. WPB			
Plug	(ASTM A216 GR. WCB/ AS	•		
	ASTM A234 GR. WPB)+0.0			
Stem (no casting)	(A1S1 4140+0.003" ENP)/			
Cover	ASTM A216 GR. WCB/ AST	TM A105/ ASTM		
	A234 GR. WPB			
Gland	ASTM A216 GR. WCB/ AST	TM A105/ ASTM		
	A234 GR. WPB			
Stem seal	,	RPTFE/VITON		
Stud bolts	ASTM A 193 Gr. B7/ B7M	·		
Nuts	ASTM A 194 Gr. 2H/4/ 7(G	Galvanized)		
Nata.				

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

# ITEM NO. 30: VALVE DATA SHEET: API 6D PLUG VALVE, 6"-600#, WELDED END

Valve Manufacturer					
Valve Tag No.					
Valve Type	Plug Valve				
Purchaser's Spec. No.	As per tender	ANSI Rating	600# (PN 100)		
Design Standard	API 6D Latest edition	Piping Class	Schedule 80		
Size, mm (inch) NB	DN 150 mm (6 Inch)	Face Finish of Flang	ges		
Ends	Butt Welded both ends		•		
VALVE DESIGN CONDITION	ONS				
Corrosion Allowance	1.5 mm	Temperature, °C	(-) 29 to 65 °C		
Service	Petroleum Crude Oil	Installation	Above Ground		
Design Factor					
CONNECTING PIPE DETAI	LS		•		
Diameter	150 NB (6-Inch), OD 168.3	3 mm			
Grade	SEAMLESS, ASME B36.10,	ASTM A106 Gr B SM	LS, Sch 80		
Wall Thickness, mm	10.97 mm				
VALVE OPERATOR REQU	REMENT	STEM REQUIREME	NT		
Type of operator	Manual Hand Wheel	Rising Stem	Not applicable		
Gear-box	Required	Stem Extension	Not required		
Operator Data Sheet		Extension length, m			
VALVE MATERIAL SPECIF	ICATION (Equivalent or Sup	erior)	•		
PART DESCRIPTION	MATERIA	AL	MATERIAL OFFERED		
BODY	ASTM A216 GR. WCB/ AST	TM A105/ ASTM			
	A234 GR. WPB				
Plug	(ASTM A216 GR. WCB/ AS	STM A105/			
	ASTM A234 GR. WPB)+0.0	003" ENP			
Stem (no casting)	(A1S1 4140+0.003" ENP)/	AISI 410			
Cover	ASTM A216 GR. WCB/ AST	TM A105/ ASTM			
	A234 GR. WPB				
Gland	ASTM A216 GR. WCB/ AST	TM A105/ ASTM			
	A234 GR. WPB				
Stem seal	RPTFE/VITON				
Stud bolts	ASTM A 193 Gr. B7/ B7M				
Nuts	ASTM A 194 Gr. 2H/4/ 7(0	Galvanized)			
A1 .					

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

#### ITEM NO. 40: VALVE DATA SHEET: API 6D PLUG VALVE, 6"-600#, FLANGED

Plug Valve				
As per tender	ANSI Rating		600# (PN 100)	
API 6D Latest edition	Piping Class		Schedule 80	
DN 150 mm (6 Inch)	Face Finish of Flang	ges	125 AARH (Smooth)	
Both Ends Flanged as per ASME B 16.5 RF				
NS				
1.5 mm	Temperature, °C		(-) 29 to 65 °C	
Petroleum Crude Oil	Installation		Above Ground	
LS				
150 NB (6-Inch), OD 168.3	mm			
SEAMLESS, ASME B36.10,	ASTM A106 Gr B SM	LS, Sch 8	30	
10.97 mm				
REMENT	STEM REQUIREME	NT		
Manual Hand Wheel	Rising Stem		Not applicable	
Required	Stem Extension		Not required	
	Extension length, r	n		
CATION (Equivalent or Supe	erior)			
MATERIA	<b>\L</b>	ı	MATERIAL OFFERED	
ASTM A216 GR. WCB/ AST	M A105/ ASTM			
A234 GR. WPB				
(ASTM A216 GR. WCB/ AS	TM A105/			
ASTM A234 GR. WPB)+0.0	03" ENP			
(A1S1 4140+0.003" ENP)/ AISI 410				
(A131 414010.003 ENT)	AI3I 410			
ASTM A216 GR. WCB/ AST				
ASTM A216 GR. WCB/ AST	M A105/ ASTM			
ASTM A216 GR. WCB/ AST A234 GR. WPB	M A105/ ASTM			
ASTM A216 GR. WCB/ AST A234 GR. WPB ASTM A216 GR. WCB/ AST A234 GR. WPB RPTFE/VITON	M A105/ ASTM M A105/ ASTM			
ASTM A216 GR. WCB/ AST A234 GR. WPB ASTM A216 GR. WCB/ AST A234 GR. WPB	M A105/ ASTM M A105/ ASTM (Galvanized)			
	Plug Valve As per tender API 6D Latest edition DN 150 mm (6 Inch) Both Ends Flanged as per A  DNS  1.5 mm Petroleum Crude Oil LS  150 NB (6-Inch), OD 168.3 SEAMLESS, ASME B36.10, 10.97 mm REMENT Manual Hand Wheel Required ICATION (Equivalent or Superation of	Plug Valve As per tender ANSI Rating API 6D Latest edition Piping Class DN 150 mm (6 Inch) Face Finish of Flan Both Ends Flanged as per ASME B 16.5 RF  DNS  1.5 mm Temperature, °C Petroleum Crude Oil Installation LS  150 NB (6-Inch), OD 168.3 mm SEAMLESS, ASME B36.10, ASTM A106 Gr B SM 10.97 mm  REMENT STEM REQUIREME Manual Hand Wheel Rising Stem Required Stem Extension Extension length, r  ICATION (Equivalent or Superior)  MATERIAL  ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB (ASTM A234 GR. WPB)+0.003" ENP	Plug Valve As per tender ANSI Rating API 6D Latest edition Piping Class DN 150 mm (6 Inch) Pace Finish of Flanges Both Ends Flanged as per ASME B 16.5 RF  DNS  1.5 mm Temperature, °C Petroleum Crude Oil Installation LS  150 NB (6-Inch), OD 168.3 mm SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 8 10.97 mm  REMENT STEM REQUIREMENT Manual Hand Wheel Rising Stem Required Stem Extension Extension length, m  ICATION (Equivalent or Superior)  MATERIAL ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB (ASTM A234 GR. WPB)+0.003" ENP	

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

## ITEM NO. 50: VALVE DATA SHEET: API 6D PLUG VALVE, 3"-600#, FLANGED

Valve Tag No.            Valve Type         Plug Valve           Purchaser's Spec. No.         As per tender         ANSI Rating         600# (PN 100)           Design Standard         API 6D Latest edition         Piping Class         Schedule 80           Size, mm (inch) NB         DN 80 mm (3 Inch)         Face Finish of Flanges         125 AARH (Smooth)           Ends         Both Ends Flanged as per ASME B 16.5 RF           VALVE DESIGN CONDITIONS           Corrosion Allowance         1.5 mm         Temperature, °C         (-) 29 to 65 °C           Service         Petroleum Crude Oil         Installation         Above Ground           Design Factor          Installation         Above Ground           Design Factor          Above Ground           Convection Allowance         9 Petroleum Crude Oil         Installation         Above Ground           Diameter         80 NB (3-Inch), OD 88.9 mm           Grade         SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80           Wall Thickness, mm         7.62 mm           VALVE OPERATOR REQUIREMENT           Type of operator         Manual Hand Wheel         Rising Stem         Not applicable	Valve Manufacturer				
Purchaser's Spec. No. As per tender ANSI Rating 600# (PN 100)  Design Standard API 6D Latest edition Piping Class Schedule 80  Size, mm (inch) NB DN 80 mm (3 Inch) Face Finish of Flanges 125 AARH (Smooth)  Ends Both Ends Flanged as per ASME B 16.5 RF  VALVE DESIGN CONDITIONS  Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C  Service Petroleum Crude Oil Installation Above Ground  Design Factor  CONNECTING PIPE DETAILS  Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT  Type of operator Manual Hand Wheel Rising Stem Not applicable  Gear-box Required Stem Extension Not required  Operator Data Sheet  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)  Stem (no casting) (A1S1 4140+0.003" ENP)  Stem (no casting) (A1S1 4140+0.003" ENP)  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7 B7M (Galvanized)	Valve Tag No.				
Design Standard API 6D Latest edition Piping Class Schedule 80  Size, mm (inch) NB DN 80 mm (3 Inch) Face Finish of Flanges 125 AARH (Smooth)  Ends Both Ends Flanged as per ASME B 16.5 RF  VALVE DESIGN CONDITIONS  Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C  Service Petroleum Crude Oil Installation Above Ground  Design Factor	Valve Type	Plug Valve			
Size, mm (inch) NB DN 80 mm (3 Inch) Face Finish of Flanges 125 AARH (Smooth) Ends Both Ends Flanged as per ASME B 16.5 RF  VALVE DESIGN CONDITIONS  Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C Service Petroleum Crude Oil Installation Above Ground Design Factor  CONNECTING PIPE DETAILS  Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT STEM REQUIREMENT Type of operator Manual Hand Wheel Rising Stem Not applicable Gear-box Required Stem Extension Not required Operator Data Sheet Extension length, m VALVE MATERIAL SPECIFICATION (Equivalent or Superior) PART DESCRIPTION MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AIS1 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Purchaser's Spec. No.	As per tender	ANSI Rating		600# (PN 100)
Ends Both Ends Flanged as per ASME B 16.5 RF  VALVE DESIGN CONDITIONS  Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C  Service Petroleum Crude Oil Installation Above Ground  Design Factor  CONNECTING PIPE DETAILS  Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT STEM REQUIREMENT  Type of operator Manual Hand Wheel Rising Stem Not applicable  Gear-box Required Stem Extension Not required  Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM  A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM  A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM  A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Design Standard	API 6D Latest edition			
VALVE DESIGN CONDITIONS  Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C Service Petroleum Crude Oil Installation Above Ground  Design Factor  CONNECTING PIPE DETAILS  Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT STEM REQUIREMENT  Type of operator Manual Hand Wheel Rising Stem Not applicable Gear-box Required Stem Extension Not required Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Size, mm (inch) NB	DN 80 mm (3 Inch)	Face Finish of Flang	es	125 AARH (Smooth)
Corrosion Allowance 1.5 mm Temperature, °C (-) 29 to 65 °C  Service Petroleum Crude Oil Installation Above Ground  Design Factor	Ends	Both Ends Flanged as per A	ASME B 16.5 RF		
Service Petroleum Crude Oil Installation Above Ground  Design Factor	VALVE DESIGN CONDITION	NS			
Design Factor  CONNECTING PIPE DETAILS  Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT Type of operator Manual Hand Wheel Rising Stem Not applicable Gear-box Required Stem Extension Not required Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts  ASTM A 193 Gr. B7/ B7M (Galvanized)	Corrosion Allowance	1.5 mm	Temperature, °C		(-) 29 to 65 °C
Diameter 80 NB (3-Inch), OD 88.9 mm  Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT STEM REQUIREMENT  Type of operator Manual Hand Wheel Rising Stem Not applicable Gear-box Required Stem Extension Not required Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Service	Petroleum Crude Oil	Installation		Above Ground
Diameter       80 NB (3-Inch), OD 88.9 mm         Grade       SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80         Wall Thickness, mm       7.62 mm         VALVE OPERATOR REQUIREMENT         Type of operator       Manual Hand Wheel       Rising Stem       Not applicable         Gear-box       Required       Stem Extension       Not required         Operator Data Sheet        Extension length, m          VALVE MATERIAL SPECIFICATION (Equivalent or Superior)         PART DESCRIPTION       MATERIAL       MATERIAL OFFERED         BODY       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB       A234 GR. WPB         Plug       (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP       SEP         Stem (no casting)       (A1S1 4140+0.003" ENP)/ AISI 410       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Gland       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB       A234 GR. WPB         Stem seal       RPTFE/VITON         Stud bolts       ASTM A 193 Gr. B7/ B7M (Galvanized)	Design Factor				
Grade SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80  Wall Thickness, mm 7.62 mm  VALVE OPERATOR REQUIREMENT  Type of operator Manual Hand Wheel Rising Stem Not applicable  Gear-box Required Stem Extension Not required  Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	CONNECTING PIPE DETAI	LS			
Wall Thickness, mm  VALVE OPERATOR REQUIREMENT  Type of operator  Manual Hand Wheel Rising Stem Not applicable  Gear-box Required Stem Extension Not required Operator Data Sheet  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION  MATERIAL  ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A234 GR. WCB/ ASTM A105/ ASTM A234 GR.	Diameter	80 NB (3-Inch), OD 88.9 m	m		
VALVE OPERATOR REQUIREMENTSTEM REQUIREMENTType of operatorManual Hand WheelRising StemNot applicableGear-boxRequiredStem ExtensionNot requiredOperator Data SheetExtension length, mVALVE MATERIAL SPECIFICATION (Equivalent or Superior)MATERIALMATERIAL OFFEREDBODYASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBPlug(ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENPStem (no casting)(A1S1 4140+0.003" ENP)/ AISI 410CoverASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBGlandASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBStem sealRPTFE/VITONStud boltsASTM A 193 Gr. B7/ B7M (Galvanized)	Grade	SEAMLESS, ASME B36.10,	ASTM A106 Gr B SML	S, Sch 8	80
Type of operator Manual Hand Wheel Rising Stem Not applicable  Gear-box Required Stem Extension Not required  Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Wall Thickness, mm	7.62 mm			
Gear-box Required Stem Extension Not required Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	VALVE OPERATOR REQUI	STEM REQUIREMENT			
Operator Data Sheet Extension length, m  VALVE MATERIAL SPECIFICATION (Equivalent or Superior)  PART DESCRIPTION MATERIAL MATERIAL OFFERED  BODY ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Plug (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Type of operator	Manual Hand Wheel	Rising Stem		Not applicable
VALVE MATERIAL SPECIFICATION (Equivalent or Superior)PART DESCRIPTIONMATERIALMATERIAL OFFEREDBODYASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBPlug(ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENPStem (no casting)(A1S1 4140+0.003" ENP)/ AISI 410CoverASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBGlandASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPBStem sealRPTFE/VITONStud boltsASTM A 193 Gr. B7/ B7M (Galvanized)	Gear-box	Required	Stem Extension Not required		Not required
PART DESCRIPTION         MATERIAL         MATERIAL OFFERED           BODY         ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB           Plug         (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP           Stem (no casting)         (A1S1 4140+0.003" ENP)/ AISI 410           Cover         ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB           Gland         ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB           Stem seal         RPTFE/VITON           Stud bolts         ASTM A 193 Gr. B7/ B7M (Galvanized)	Operator Data Sheet		Extension length, m		
BODY       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Plug       (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP         Stem (no casting)       (A1S1 4140+0.003" ENP)/ AISI 410         Cover       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Gland       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Stem seal       RPTFE/VITON         Stud bolts       ASTM A 193 Gr. B7/ B7M (Galvanized)	VALVE MATERIAL SPECIF	ICATION (Equivalent or Supe	erior)		
A234 GR. WPB         Plug       (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP         Stem (no casting)       (A1S1 4140+0.003" ENP)/ AISI 410         Cover       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Gland       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Stem seal       RPTFE/VITON         Stud bolts       ASTM A 193 Gr. B7/ B7M (Galvanized)	PART DESCRIPTION	MATERIA	<b>AL</b>		MATERIAL OFFERED
Plug       (ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB)+0.003" ENP         Stem (no casting)       (A1S1 4140+0.003" ENP)/ AISI 410         Cover       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Gland       ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB         Stem seal       RPTFE/VITON         Stud bolts       ASTM A 193 Gr. B7/ B7M (Galvanized)	BODY	ASTM A216 GR. WCB/ AST	M A105/ ASTM		
ASTM A234 GR. WPB)+0.003" ENP  Stem (no casting) (A1S1 4140+0.003" ENP)/ AISI 410  Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)		A234 GR. WPB			
Stem (no casting)         (A1S1 4140+0.003" ENP)/ AISI 410           Cover         ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB           Gland         ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB           Stem seal         RPTFE/VITON           Stud bolts         ASTM A 193 Gr. B7/ B7M (Galvanized)	Plug	(ASTM A216 GR. WCB/ AS	TM A105/		
Cover ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)		ASTM A234 GR. WPB)+0.0	03" ENP		
A234 GR. WPB  Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Stem (no casting)	(A1S1 4140+0.003" ENP)/	AISI 410		
Gland ASTM A216 GR. WCB/ ASTM A105/ ASTM A234 GR. WPB  Stem seal RPTFE/VITON Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Cover	ASTM A216 GR. WCB/ AST	M A105/ ASTM		
A234 GR. WPB  Stem seal RPTFE/VITON  Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)		A234 GR. WPB			
Stem seal RPTFE/VITON Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)	Gland	ASTM A216 GR. WCB/ AST	M A105/ ASTM		
Stud bolts ASTM A 193 Gr. B7/ B7M (Galvanized)					
	Stem seal	RPTFE/VITON			
Nuts ASTM A 194 Gr. 2H/4/ 7(Galvanized)	Stud bolts		•		
	Nuts	ASTM A 194 Gr. 2H/4/ 7(G	alvanized)		

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

#### ITEM NO. 60: VALVE DATA SHEET: API 6D PLUG VALVE, 1 1/2" - 600#, WELDED END

Valve Manufacturer						
Valve Tag No.						
Valve Type	Plug Valve					
Purchaser's Spec. No.	As per tender	ANSI Rating	600# (PN 100)			
Design Standard	API 6D Latest edition	Piping Class	Schedule 80			
Size, mm (inch) NB	DN 10 mm (1 ½ Inch)	Face Finish of Flang	ges			
Ends	Butt Welded both ends		·			
VALVE DESIGN CONDITION	ONS					
Corrosion Allowance	1.5 mm	Temperature, °C	(-) 29 to 65 °C			
Service	Petroleum Crude Oil	Installation	Above Ground			
Design Factor						
CONNECTING PIPE DETA	LS		·			
Diameter	40 NB (1 ½ -Inch), OD 48.3	3 mm				
Grade	SEAMLESS, ASME B36.10,	SEAMLESS, ASME B36.10, ASTM A106 Gr B SMLS, Sch 80				
Wall Thickness, mm	5.08 mm					
VALVE OPERATOR REQU	IREMENT	STEM REQUIREME	NT			
Type of operator	Manual Hand Wheel	Rising Stem	Not applicable			
Gear-box	Required	Stem Extension	Not required			
Operator Data Sheet		Extension length, n	n			
VALVE MATERIAL SPECIF	ICATION (Equivalent or Sup	erior)				
PART DESCRIPTION	MATERIA	<b>AL</b>	MATERIAL OFFERED			
BODY	ASTM A216 GR. WCB/ AST	ΓM A105/ ASTM				
	A234 GR. WPB					
Plug	(ASTM A216 GR. WCB/ AS	•				
	ASTM A234 GR. WPB)+0.0					
Stem (no casting)	(A1S1 4140+0.003" ENP)/					
Cover	ASTM A216 GR. WCB/ AST	TM A105/ ASTM				
	A234 GR. WPB					
Gland	ASTM A216 GR. WCB/ AST	TM A105/ ASTM				
	A234 GR. WPB					
Stem seal	RPTFE/VITON					
Stud bolts	ASTM A 193 Gr. B7/ B7M	`				
Nuts	ASTM A 194 Gr. 2H/4/ 7(0	Galvanized)				
Note						

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

## ITEM NO. 70: VALVE DATA SHEET: API 6D PLUG VALVE, 1 ½ "- 600#, FLANGED

Valve Manufacturer			
Valve Tag No.			
Valve Type	Plug Valve		
Purchaser's Spec. No.	As per tender	ANSI Rating	600# (PN 100)
Design Standard	API 6D Latest edition	Piping Class	Schedule 80
Size, mm (inch) NB	DN 10 mm (1 ½ Inch)	Face Finish of Flang	ges 125 AARH (Smooth)
Ends	Both Ends Flanged as per	ASME B 16.5 RF	•
VALVE DESIGN CONDITION	ONS		
Corrosion Allowance	1.5 mm	Temperature, °C	(-) 29 to 65 °C
Service	Petroleum Crude Oil	Installation	Above Ground
Design Factor			
CONNECTING PIPE DETA	ILS		
Diameter	40 NB (1 ½ -Inch), OD 48.3	3 mm	
Grade	SEAMLESS, ASME B36.10,	ASTM A106 Gr B SM	LS, Sch 80
Wall Thickness, mm	5.08 mm		
VALVE OPERATOR REQU	IREMENT	STEM REQUIREME	NT
Type of operator	Manual Hand Wheel	Rising Stem	Not applicable
Gear-box	Required	Stem Extension	Not required
Operator Data Sheet		Extension length, r	n
VALVE MATERIAL SPECIF	ICATION (Equivalent or Sup	erior)	
PART DESCRIPTION	MATERI	AL	MATERIAL OFFERED
BODY	ASTM A216 GR. WCB/ AST	TM A105/ ASTM	
	A234 GR. WPB		
Plug	(ASTM A216 GR. WCB/ AS	•	
	ASTM A234 GR. WPB)+0.0		
Stem (no casting)	(A1S1 4140+0.003" ENP)/		
Cover	ASTM A216 GR. WCB/ AST	TM A105/ ASTM	
	A234 GR. WPB		
Gland	ASTM A216 GR. WCB/ AST	TM A105/ ASTM	
	A234 GR. WPB		
Stem seal	RPTFE/VITON		
Stud bolts	ASTM A 193 Gr. B7/ B7M	, ,	
Nuts	ASTM A 194 Gr. 2H/4/ 7(0	Galvanized)	
Note			

- 1. Separate wrench shall be provided with each valve.
- 2. Minimum port area for regular pattern shall be 55%.
- 3. All valves shall be provided with valve position indicator.
- 4. Testing shall be as per API 6D.
- 5. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 6. 100% Valve casting shall undergo radiographic examination.
- 7. Stem packing shall be renewable with Valve Open on stream.
- 8. Painting of the valves shall be as per Manufacturer's Standard.
- 9. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 10. Valves shall be supplied with locking devices.
- 11. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 12. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 13. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

# ITEM NO. 80: VALVE DATA SHEET: API 6D PLUG VALVE, 8"-600#, WELDED END, MOV

Valve Manufacturer				
Valve Tag No.				
Valve Type	Plug Valve			
Purchaser's Spec. No.	As per tender	ANSI Rating	600# (PN 100)	
Design Standard	API 6D Latest edition	Piping Class	Schedule 80	
Size, mm (inch) NB	DN 200 mm (8 Inch)	Face Finish of Flang		
Ends	Butt Welded both ends	Tace Tillish Of Tiang	ge3	
VALVE DESIGN CONDITION				
Corrosion Allowance	1.5 mm	Temperature, °C	(-) 29 to 65 °C	
Service	Petroleum Crude Oil	Installation	Above Ground	
		Installation	Above Ground	
Design Factor  CONNECTING PIPE DETA				
		1		
Diameter	200 NB (8-Inch), OD 219.3	L mm		
Grade	API 5L X-46			
Wall Thickness, mm	7.1 mm	T		
VALVE OPERATOR REQU		STEM REQUIREMENT		
Type of operator	Motor Operated	Rising Stem	Not applicable	
	Valve Actuator			
Gear-box	Required	Stem Extension	Not required	
Operator Data Sheet	As enclosed	Extension length, m		
VALVE MATERIAL SPECIF	ICATION (Equivalent or Sup	erior)		
PART DESCRIPTION	MATERI		MATERIAL OFFERED	
BODY	ASTM A216 GR. WCB/ AS	TM A105/ ASTM		
	A234 GR. WPB			
Plug	(ASTM A216 GR. WCB/ AS	STM A105/		
	ASTM A234 GR. WPB)+0.0	003" ENP		
Stem (no casting)	(A1S1 4140+0.003" ENP)/	' AISI 410		
Cover	ASTM A216 GR. WCB/ AS	TM A105/ ASTM		
	A234 GR. WPB			
Gland	ASTM A216 GR. WCB/ AS	TM A105/ ASTM		
	A234 GR. WPB			
Stem seal	RPTFE/VITON			
Stud bolts	ASTM A 193 Gr. B7/ B7M	(Galvanized)		
Nuts	ASTM A 194 Gr. 2H/4/ 7(0	` '		
	, , ,	,		

- 1. The data sheet shall be read in conjunction with valve specification, actuator specification & actuator data sheet enclosed herewith.
- 2. All motor operated valves shall have additional provision of hand wheel operation.
- 3. Valve Opening/ Closing timing of the 8-Inch MOV plug valve: 24 40 seconds
- 4. Separate wrench shall be provided with each valve.
- 5. Minimum port area for regular pattern shall be 55%.
- 6. All valves shall be provided with valve position indicator.
- 7. Testing shall be as per API 6D.
- 8. Minimum Valve wall thickness shall be as per BS 1868/ API 6D.
- 9. 100% Valve casting shall undergo radiographic examination.
- 10. Stem packing shall be renewable with Valve Open on stream.
- 11. Painting of the valves shall be as per Manufacturer's Standard.
- 12. Compressed asbestos filler (CAF) shall not be used for body sealing/ gasket material.
- 13. Valves shall be supplied with locking devices.
- 14. Vendor shall confirm suitability of lubricant (if any) with respect to service and service conditions specified.
- 15. Valve shall be fire safe design as per API6FA/ API 607, latest editions.
- 16. All stud bolts and nuts shall be Hot-Dipped Zinc Galvanized (HDG) as per ASTM A153.

## DATA SHEET FOR MOV ACTUATOR (PLUG VALVE):

Actuator Manufacturer					
MOV Tag No.					
Valve Type	Valve Type API 6D PLUG VALVE, 8"-600#, Welded end, MOV				
SITE CONDITIONS					
Relative humidity:	95%	Temperature, °C	2 to 45 °C		
Altitude above MSL:	< 1000 M	Installation	Above Ground		
Environment:	Dusty	Location:	Outdoor		
TECHNICAL PARTICULARS					
Supply voltage	415V ±10%	Duty	S2 15 Min		
Supply frequency	50Hz ±3%	Area classification	Zone 2		
System neutral earthing:	Three Phase (TP) AC supply	Gas group	II A & II B		
System fault level	50 kA(for 1 sec)	Temperature class	T3		
Position indication:		Construction	Flameproof, Ex `d`		
Local	Mechanical/LCD	Ingress protection	IP 65		
Remote	Not Required	Painting	Shade 632 of IS 5		
Travel limit switch	Required	Fireproof requirement	Not required		
Potential free contacts for remote indication/		Valve duty:			
control:					
Valve open	Required	Full open & close	Yes		
Valve close	Required	Partial open & close	No		
Local/Remote switch	Required	Control requirement	Local & remote		
Remote control	Required	Cable glands & plugs for	Required, Flame proof &		
		unused entries	weather proof type		
Operation in	Not Required	Applicable standard	As detailed in note		
progress					
Remote stop PB	Required	Approved Make of MOV.:			
		(1) ROTORK CONTROLS (IN			
DCS interface	Required	MINDIA PVT. LTD. (3) EME			
		VALVE ACTUATION LLC; (4			
			; (6) AUMA RIESTER GMBH		
		& CO. KG; (7) BIFFI ITALIA	S.R.L;		

- 1. The purchaser will provide single point power supply to each actuator. Any other control supply voltage required shall be derived by the manufacturer within the actuator.
- 2. Remote input signals for opening/closing/stopping the MOV shall be provided through momentary closing of potential free contacts in Purchaser's panel. Necessary controls required for running the motor for the complete opening/ closing sequence of the valve using such input signals shall be provided by manufacturer in the actuator.
- 3. Vendor shall furnish complete data as per 'Manufacturer's Data' for each MOV Actuator as detailed below:
  - a) Actuator: Make, Type & Catalogue no., Applicable wiring diagram, Valve duty, Max. permissible no. of open & close per hour, Internal control supply in actuator, Recommended backup HRC fuse
  - b) <u>Motor:</u> Make, kW rating, Rated speed in RPM, Enclosure, Locked rotor (starting) current, Rated torque, Average load current
  - c) Basis for sizing & selection of actuator
  - d) Test & Approval certificates
- **4.** Vendor shall supply commissioning spares as required along with quantity required for commissioning the MOVs and the same shall be included within the quoted price of main equipment supply.
- **5.** The data sheet shall be read in conjunction with valve datasheet, actuator specification & Inspection & Test Plan enclosed herewith.
- **6.** Valve Opening/ Closing timing of the 8-Inch MOV plug valve: 24 40 seconds
- 7. The equipment shall comply with the requirements of latest revision of the following standards issued by BIS (Bureau of Indian Standards) unless specified otherwise:
  - IS 5 Colours for ready mixed paints and enamels
  - IS 325 Three-phase Induction Motors
  - IS 4691 Degrees of protection provided by enclosure for rotating electrical machinery

IS 4722	Rotating electrical machines- Specification
IS 5571	Guide for Selection of Electrical Equipment for Hazardous area
IS 9334	Electric Motor Operated Actuators
IS 13947	Low Voltage Switchgear and Control gear (Parts-1, 3, 4 & 5)

- **8.** The equipment shall also conform to the provisions of Central Electricity Authority Regulation 2010 and other statutory regulations currently in force in the country.
- **9.** Vendor shall ensure availability of spare parts and maintenance support services for the offered equipment for at least 10 years from the date of supply.

#### **10.** Technical Specifications for Actuator will be as follows:

#### **TECHNICAL SPECIFICATIONS**

Each MOV actuator shall include the motor, actuator unit, gears, position indicators, limit switches, hand-wheel, electrical starter and controls, terminal box etc. as a self-contained unit. The actuator shall be sized to provide adequate torque and/ or thrust to ensure the complete intended travel of the valve under the worst operating and electrical power supply conditions.

#### 10.1 Motor

- 10.1.1 The motor shall be 3-phase squirrel cage induction type unless specified otherwise in the data sheet. It shall have totally enclosed non-ventilated and surface cooled construction.
- 10.1.2 The motor shall be designed for valve actuator service with high starting torque and shall be suitable for Direct on line starting. It shall be rated for S2-15 minute duty and shall conform to IS 325 or equivalent international standards.
- 10.1.3 The actuator assembly shall be provided with Thermostat(s) embedded in it to achieve protection of motor against over-temperature.
- 10.1.4 The motor shall be suitable for starting under required torque with 75% of rated voltage at motor terminals.
- 10.1.5 The motor shall have class 'F' insulation with temperature rise limited to class `B' limits. Motor winding shall be treated to resist corrosive agents and moisture.
- 10.1.6 Motor rotor shall preferably be of die-cast aluminium and, if brazed, shall be free from phosphorous.
- 10.1.7 Motor installed in actuator shall be rated for minimum of 60 starts/stop per hour. This is minimum requirement of actuator envisaged for ON-OFF duty only.
- 10.1.8 In case of intrusive type actuator, anti-condensation heater shall be provided irrespective of IP-65 enclosure. However, in case of non-intrusive type actuator, space heater is not required.

## 10.2 Integral Starter and Control Transformer

The reversing starter, control transformer and local controls shall be integral with the valve actuator, unless specified otherwise in the data sheet. Solid state control of valve actuator and electrically isolated interface for remote control requirement shall be provided, wherever these features exist in manufacturer's design.

The integral starter shall be supplied with the following devices:

- a) Electrically and mechanically interlocked reversing contactors for opening and closing operations
- b) Control transformer with necessary tapping and protected with suitable easily replaceable fuses
- c) Terminal block for external cable connection fully prewired for internal devices of valve actuator.
- d) MOV Actuators operating with AC power supply shall be provided with Instantaneous Phase reversal protection.

# 10.3 Integral Push Button, Selector switches, Indications and Control devices

The following local control devices shall be provided integral with the MOV actuator:

- a) Push buttons for `Opening/ Closing/ Stop' or alternatively `Open/ Close' selector switch
- b) `Local/ Off/ Remote' selector switch, pad-lockable in each position
- c) Local continuous position indication from 'Valve fully open' to 'Valve fully closed' position, which may be of analogue or digital type using mechanical indication/ Indicating lamps/ LEDs.

## 10.4 Torque and Travel Limit Switches

Torque limit switches shall be provided to protect the motor from over-loading by cutting-off the power supply to motor during opening and closing operations. The limit switches shall be preset. However, it shall be possible to set the value of maximum torque during closing from 50% to 100% of rated torque of actuators. Travel limit switch shall be provided to cut-off the power supply to the motor at the end of preset limit of valve travel. The switches shall be provided with requisite number of potential-free contacts for valve actuator operation and for indication on remote panels as specified in data sheet. Instead of mechanical torque limit switches, magnetic

pulse counter/encoders to measure and control the stroke of actuator may be provided, wherever this feature exists in manufacturer's design.

#### 10.5 Control Facilities

The internal controls and monitoring circuits shall be incorporated within the integral starter along with transformer and control unit of valve actuator.

Remote control facility shall be provided as a standard feature. The remote control circuits shall be powered from internally derived control supply voltage. Common status contact indicating the availability of the MOV actuator for remote control shall be provided by monitoring the following: -

Loss of one or more phases of power supply

Loss of control circuit supply

Selector switch in local mode

Local stop push button set to 'Off

Motor thermostat tripped

Any other local fault/ abnormal condition.

Where applicable, one number hand-held infrared/blue tooth remote programming device required for site commissioning and reconfiguring (without the need of removal of the MOV cover) shall be supplied for each group of 10 valve actuators (subject to minimum one infrared/Bluetooth remote setting device, even if number of valve actuators are less than ten).

## 10.6 Interface with Owner's PLC/DCS / REMOTE PUSH BUTTON STATION

Potential free contacts for the following shall be provided in actuator assembly for hardwire interface with Owner's DCS/PLC and/or Remote Push Button station:

- a) Run indication
- b) Trip indication 2 Nos.
- c) Open status 2 Nos.
- d) Close status 2 Nos.
- e) Ready to start indication
- f) Torque high indication
- g) Thermostat status
- h) Open command 2 Nos.
- i) Close command 2 Nos.
- j) Local/Remote

## 10.7 Hand Operation

A hand wheel with hand/ auto lockable lever shall be provided for emergency operation of the MOV. The energisation of the motor shall automatically re-engage power operation.

## **10.8** Two-Wire Control system – Not required

#### 10.9 Digital Control System

If specified in data sheet, electric actuator shall be provided with an integrally mounted device providing digital connectivity with Owner's PLC/DCS for actuator control, status indication & monitoring. In this case, master station is not required any more. The control device shall meet the appropriate recognized protocol or BUS standards. Selection of protocol shall be as per data sheet only. Typical protocol/buses include:

- Modbus RTU
- Profibus DP
- Device Net
- Foundation Field Bus

Terminal for hardwired communication shall also be provided in addition to digital communication facility.

## 10.10 Remote Position Indicator

If requirement of remote position indication is specified in the data sheet, a 4-20 mA remote position transmitter shall be provided in the valve actuator and a continuous position indicator for mounting in purchaser's remote panel shall be supplied as a loose item. The remote position indicator shall continuously indicate the position of travel of the valve.

#### 10.11 Nameplate

Each motorized valve actuator shall be provided with a stainless steel nameplate furnishing the following details, attached firmly to it at a place convenient for reading:

- a) Actuator tag number as per data sheet
- b) Motor kW rating, motor short time rating, motor supply voltage, nominal motor phase current, auxiliary switch rating
- c) Maximum torque setting
- d) Actuator enclosure type, lubricant type
- e) Actuator type, wiring diagram number/ catalogue number, actuator serial number.

- A separate nameplate shall be provided for hazardous area application.
- 10.12 The enclosure of complete MOV actuator including motor, integral starter, control transformer unit and all control devices shall have minimum IP-65 degree of protection which shall include the `0' ring for complete environmental protection.

## 10.13 Wiring and Terminals

A11 devices provided in the actuator shall be wired up to the terminal block. The contacts for remote operation and indication shall also be wired up to the terminal block. Minimum 10% spare terminals shall be provided for future interlocks. Internal wiring for power and control circuits shall be appropriately sized for MOV actuator rating. Each wire shall be identified at both ends using PVC ferrules. The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal so that the actuator electrical components are protected from the ingress of moisture and foreign materials when the terminal cover is removed during installation and maintenance.

The actuator shall be provided with minimum five adequately sized cable entries viz., one for power cable and two for control cables. However, the actual number of control cable entries in actuators with 2-wire control system shall be provided based on job requirements as specified in data sheets/specification for control systems for MOVs. Suitable double compression cable glands shall be provided with each actuator for all cable entries and sealing plugs for all control cable entries. The cable glands and plugs shall be made of Nickel-plated brass. Plastic plugs shall not be acceptable.

#### 11. EQUIPMENT FOR CLASSIFIED HAZARDOUS AREAS

- a. Actuators meant for hazardous areas shall meet the requirements of IS 5571, IEC 60079 or equivalent international standards and shall be suitable for Gas groups and Temperature class as specified in the data sheet. Gas group IIB and Temperature class T3 (200°C) shall be considered if not indicated in data sheet. The manufacturer shall possess valid test certificates issued by a recognized independent test house (CIMFR/ Baseefa/ LCIE/ UL/ FM or equivalent) for the offered actuators. A11 indigenous equipment shall conform to Indian standards and shall have been tested and certified by Indian testing agencies. All equipment (indigenous and imported) shall also have valid statutory approvals as applicable for the specified hazardous locations from Petroleum and Explosives Safety Organisation (PESO / DGMS) or any other applicable statutory authority. All indigenous flameproof equipment shall have valid BIS license and corresponding marking as required by statutory authorities.
- b. Apart from the nameplate indicating the tag no., a separate nameplate shall also be provided on each actuator to indicate the details of the testing agency (CIMFR or equivalent), test certificate number with date, statutory approval number with date, approval agency (PESO / DGMS), BIS license number with date, applicable Gas group and Temperature class etc. The nameplates shall be riveted/ fixed with screws and not pasted. In case any of the standard details listed above are embossed on the enclosures, the same need not be repeated.
- 12. INSPECTION, TESTING AND ACCEPTANCE: The equipment shall be subject to inspection by TPI/ Owner or by an agency authorized by the owner as per approved Plan. Manufacturer shall furnish all necessary information concerning the supply to TPI/ Owner's inspector. During the course of manufacturing, the purchaser or his authorized representative shall be free to visit the works and assess the progress of work and the manufacturer shall render him all possible assistance to do so.
- 13. PACKING AND DESPATCH: All the equipment shall be divided into multiple sections for protection and ease of handling during transportation. The equipment shall be properly packed for the selected mode of transportation, i.e. by ship, rail or trailer. The equipment shall be wrapped in polythene sheets before being placed in crates/ cases to prevent damage to finish. The crates/ cases shall have skid bottoms for handling. Special notations such as 'Fragile', 'This side up', 'Centre of gravity', 'Weight, 'Owner's particulars', 'PO no.' etc. shall be clearly and indelibly marked on the packages together with other details as per purchase order.

The equipment may be stored outdoors for long periods before installation. The packing shall be completely suitable for outdoor storage in areas with heavy rains and high ambient temperature unless otherwise agreed. In order to prevent movement of equipment/ components within the crates, proper packing supports shall be provided. A set of instruction manuals for erection, testing and commissioning, a set of operation and maintenance manuals and a set of final drawings shall be enclosed in a waterproof cover along with the shipment

# **VALVE INSPECTION AND TEST PLAN (SAMPLE)**

SI.	Stage/ Activity	Characteristics	Quantum of	Record	Scop	e of Inspec	tion
No.			Check		Sub Supplier	Supplier	TPIA
1.0	Procedure						
1.1	Hydrostatic Test, Heat Treatment, NDT, Helium Leak Test And Other Procedures	Documented Procedures	100%	Procedure Documents	-	Н	R
1.2	WPS,PQR & WPQ	Welding Parameters & Qualification Record	100%	WPS, PQR & WPQ	-	н	W- New R- Existing
1.3	Pre-Qualification Tests	Fire safe, Cryogenic & Other Test as applicable	As per bid/ Purchase Specification	Acceptance Report	-	Н	W- New R- Existing
2.0	Material Inspection						
2.1	Castings & Forgings (Body, Bonnet, Disc, Stem, Body ring, Cover, Plug etc.)	Chemical, Mechanical, Heat Treatment, NDT, IGC & Other Properties as applicable	100%	Test Certificates	Н	R	R
2.2	Castings & Forgings (Body, Bonnet, Disc, Stem, Body ring, Cover, Plug etc.)	Visual & Dimension	100%	Inspection Report	Н	Н	-
2.3	Body and Bonnet/ Cover Castings	Radiography Examination	As per bid/ Purchase Specification	Films and report	Н	R	R
2.4	Bars for Trim material, as applicable	Chemical Analysis	Each Heat	Test Certificates& Lab Report	Н	R	-
2.5	Gaskets, Gear units, Fasteners, Gland, Packings, etc.	Physical / Chemical Properties	100%	Test Certificates & Lab Report	Н	R	R
2.6	Actuators, as applicable	Performance, Statutory Certificates as applicable	100%	Test Certificates, Inspection report	Н	Н	R
3.0	In Process Inspection						
3.1	Welding	Welding Parameters as per WPS / PQR	100%	Inspection Reports	-	н	-
3.2	Machining of components	Visual / Dimension	100%	Inspection Reports	-	Н	-
3.3	Plug coating, as applicable	ENP Coating/ HT	100%	Inspection Reports	Н	Н	R
4.0	Final Inspection						
4.1	Hydrostatic / Pneumatic Test and Helium Leak test as applicable	Leak Check	As per bid/ Purchase Specification	Test Report	-	Н	W

						naer No. Sc	
SI.	Stage/ Activity	Characteristics	Quantum of	Record	Scop	e of Inspec	tion
No.			Check		Sub Supplier	Supplier	TPIA
4.2	Visual / Dimension	Surface & Dimension Check	100%	Test Report	-	Н	R
4.3	Functional Test for Actuator Operated Valves, as applicable	Satisfactory Performance	100%	Test Report	-	Н	RW
4.4	PMI Check, as applicable	Chemical	As per bid/ Purchase Specification/ API std.	Inspection Report	-	Н	RW
4.5	Strip Check, as applicable	Verify Components & Differential hardness if applicable	Stamping of Valves which are witnessed by TPIA.	Inspection Report	-	т	R
4.6	Final Stamping	Stamping of Accepted Valves		Inspection Report	-	Н	Н
5.0	Painting						
5.1	Painting and Colour coding as applicable	Visual / Dry Film Thk (DFT) Check	100%	Inspection Report	-	Н	RW
6.0	Documentation & Inspection Certificate (IC)						
6.1	Documentation & IC	Review of Stage Inspection Reports / Test Reports & Issue of IC	100%	Supplier TC & IC	-	н	н

<u>Legend:</u> H - Hold (Do not proceed without approval), P - Perform, RW - Random Witness (As specified or 10% (min.1 no. of each size and type of Bulk item)), R - Review, W - Witness (Give due notice, work may proceed after scheduled date).

# INSPECTION AND TEST PLAN FOR ELECTRICAL MOTOR ACTUATED VALVE ACTUARTORS (SAMPLE)

SI.	Stage/ Activity	Characteristics	Quantum	Record	Scope	of Inspect	ion
No.			of Check		Sub Supplier	Supplier	TPIA
1.0	Procedure						
2.0	Material Inspection						
2.1	Incoming material like motor, gears, cable glands etc.	Functional & electrical tests     Statutory body certifications	100% by supplier	Material Test Certificate	н	Н	R
3.0	In Process Inspection						
3.1	Electrical MoV Actuator Assembly	- Visual, Dimensional, BoM	100% by supplier	Supplier's Test Record	-	Н	-
3.2	Actuator Body	- Pressure test of Flameproof Enclosures	100% by supplier	Supplier's Test Record	-	Н	R
4.0	Final Inspection						
4.1	Final Inspection	<ul> <li>Visual and Dimensional checks</li> <li>Check calibration status of all testing equipment</li> <li>BoM</li> <li>Functional and calibration test for torque of limit switches</li> <li>Direction of rotation</li> <li>Phase reversal</li> <li>Response time test</li> <li>Variation of supply voltage and frequency</li> <li>Test on output shaft</li> <li>Life test (if called for in specification), otherwise reports shall be submitted for review</li> <li>Output speed measurement</li> <li>Hand wheel/ auto mechanism check</li> <li>Check all remote contacts</li> <li>High voltage test</li> <li>Insulation resistance test</li> </ul>	100% by supplier & TPI	Supplier's Test Record and inspection witness report	-	Ι	H

SI.	Stage/ Activity	Characteristics	Quantum	Record		of Inspect	
No.	Stage, Metivity	Ondi deteriotico	of Check	1.00014	Sub	Supplier	TPIA
					Supplier	Supplier	111/4
4.2	Submission of certificates/ documents	<ul> <li>Certificate from testing agencies for suitability of Hazardous area</li> <li>Certificate of fireproof rating</li> <li>Test for motor as per IS/ IEC</li> <li>Type test certificates for motors</li> <li>Valid BIS license for indigenous supply</li> <li>Statutory approval certificates from CCE/ PESO for use in specified hazardous area</li> <li>Degree of protection certificate as applicable</li> <li>Life cycle test report</li> </ul>	Sample/ Prototype	Statutory approval certificates/ type test certificates	-	Н	R
5.0	Painting & Packing						
5.1	Painting and Packing	Visual / Dry Film Thk (DFT) Check Proper packing to prevent transit damage	100%	Inspection Report	-	Н	-
6.0	Documentation & Inspection Certificate (IC)						
6.1	Documentation & IC	Review of test reports and MTCs Inspection Reports / Test Reports & Issue of IC	-	Supplier TC & IC	-	н	н

<u>Legend:</u> H - Hold (Do not proceed without approval), P - Perform, RW - Random Witness (As specified or 10% (min.1 no. of each size and type of Bulk item)), R - Review, W - Witness (Give due notice, work may proceed after scheduled date).

#### **BID REJECTION CRITERIA (BRC**

#### I. <u>BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)</u>

The bids shall conform to the specifications, terms and conditions given in the tender. Bids shall be rejected in case the item(s) offered do not conform to technical specifications and to the respective international / national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications, and terms & conditions, the following requirements shall have to be particularly met by the bidders, without which the offer will be considered as non-responsive and rejected. All the documents related to BRC must be submitted along with the technical bid.

# (A) TECHNICAL CRITERIA:

1.0 The bidder shall be an Original Equipment Manufacturer of the tender item(s),

OR

Shall be a Certified Authorised Dealer/Authorised Representative/Distributor/Supply House of an Original Equipment Manufacturer of the tender item(s) having valid authorization letter/dealership certificate with warranty/guarantee back up from the principal (OEM). Copy of valid certificate shall be submitted along with the technical bid.

#### 2.0 IN CASE THE BIDDER IS AN ORIGINAL EQUIPMENT MANUFACTURER (OEM):

If the bidder is an OEM, then it must satisfy the following criteria and furnish the relevant documentary evidence as under along with the bid:

- 2.1 The Original Equipment Manufacturer(OEM) of the tender item(s) shall be holding relevant API certificate(s) with continuous validity for 5(five) years preceding original bid closing date of the tender. Copy of relevant API certificate(s) shall be submitted along with the technical bid. The API Certificate should remain valid throughout the duration of Purchase Order for execution, including extension, if any.
- 2.2 The bidder shall have experience of successful execution of a single order of minimum 2(two) nos. of 8 Inch, 600 Class or higher rating API 6D Gate Valve or Plug Valve in the last 5(five) years preceding the original bid closing date of the tender to any Oil & Gas Industry or service provider to an E&P company, either by themselves or through their agent/dealer/distributor/stockiest/supply house.
- 2.3 The following supporting documents with respect to bidder's past supply experience as per para 2.2 above must be submitted along with the technical bid, failing which the bid shall be considered as incomplete/non-responsive -
  - (i) Copy (ies) of purchase Order(s)/Contract(s) placed on the bidder by client(s).
  - (ii) In addition to copies of purchase orders/contracts, any of the following document or combination of documents that substantially confirm(s) successful execution of the order(s).
    - (a) Satisfactory completion certificate/performance report
    - (b) Tax Invoice etc.
    - (c) Consignee receipt delivery challan
- 2.3.1 The originals of these above mentioned documents shall have to be produced by the bidder as and when asked for by OIL.

<u>Note</u>: For the purpose of above clause, the date of those purchase order(s)/Contract(s) need not be within five (5) years preceding the bid closing date of the tender, but the date of execution must fall within the period of five (5) years prior to the original bid closing date of the tender.

#### 3.0 IN CASE THE BIDDER IS NOT ORIGINAL MANUFACTURER:

If the bidder is Certified Authorised Dealer/Authorised Representative/Distributor/Supply House of the offered product(s) of any OEM, then the bidder must furnish the following documentary evidences along with the technical bid, failing which the bid shall be rejected:

- 3.1 Authorisation Letter/Certificate from the OEM shall be submitted along with the technical bid. This certificate should be valid at the time of bidding and should remain valid throughout the duration of purchase order execution, including extension, if any.
- 3.2 The Original Equipment Manufacturer (OEM), of the offered items of the bidder, shall be holding relevant API certificate(s) with continuous validity for 5(five) years preceding original bid closing date of the tender. Copy of the relevant API certificate(s) of the OEM shall be submitted along with the technical bid. The API Certificate of the OEM should remain valid throughout the duration of Purchase Order for execution, including extension, if any.
- 3.3 The bidder shall have experience of successful execution of a single order of minimum 2(two) nos. of 8 Inch, 600 Class or higher rating API 6D Gate Valve or Plug Valve, of the same OEM against whose authorization the bidder is bidding, in the last 5(five) years preceding the original bid closing date of the tender to any Oil & Gas Industry or service provider to an E&P company.
- 3.4 The following supporting documents with respect to bidder's past supply experience as per para 3.3 above must be uploaded / submitted along with the technical bid, failing which the bid shall be considered as incomplete / non-responsive and be rejected.
  - (i) Copy (ies) of purchase Order(s)/Contract(s) placed on the bidder by client(s).
  - (ii) In addition to copies of purchase orders/contracts, any of the following document or combination of documents that substantially confirm(s) successful execution of the order(s).
    - (a) Satisfactory completion certificate/performance report
    - (b) Tax Invoice etc.
    - (c) Consignee receipt delivery challan
- 3.4.1 The originals of these above mentioned documents shall have to be produced by the bidder as and when asked for.

<u>Note</u>: For the purpose of above clause, the date of those purchase order(s)/Contract(s) need not be within five (5) years preceding the bid closing date of the tender, but the date of execution must fall within the period of five (5) years prior to the original bid closing date of the tender.

- 4.0 A job/supply executed by a bidder for its own organization/subsidiary cannot be considered as experience for the purpose of meeting Bid Rejection Criteria/Bid Evaluation Criteria.
- 5.0 <u>Bidder shall quote for all the items in the tender, otherwise the offer shall be rejected.</u>
- 6.0 <u>Delivery:</u> Delivery of the materials must be completed within 20(twenty) weeks from the date of issue of Purchase Order. The date of receipt of materials at site shall be considered as the date of delivery. However, Bidder to quote their best delivery period. Bidders should categorically confirm in their technical bid that the tendered items will be supplied within delivery period, without which the bid will be rejected.

#### (B) FINANCIAL:

- 1.0 Annual Financial Turnover of the bidder during any of preceding three financial/accounting years from the original bid closing date should be at least INR 29,25,660.00.
- 2.0 Net Worth of the bidder should be positive for the financial/accounting year just preceding to the original Bid Closing Date of the Tender.

3.0 Considering the time required for preparation of Financial Statements, if the last date of preceding financial/accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial/accounting year are not available with the bidder, then the financial turnover of the previous three financial/accounting years excluding the preceding financial/accounting year will be considered. In such cases, the Net worth of the previous financial/accounting year excluding the preceding financial/accounting year will be considered. However, the bidder has to submit an affidavit/undertaking certifying that the balance sheet/Financial Statements for the financial year ....... (as applicable) has actually not been audited so far.

#### Notes:

- a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid: -
- i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration No.), certifying the Annual turnover & Net worth as per format prescribed in **ANNEXURE EE**OR
- ii) Audited Balance Sheet along with Profit & Loss account.
- b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.

## (C) COMMERCIAL

- 1.0 Bids are invited under **SINGLE STAGE TWO BID SYSTEM** i.e., Technical Bid (Unpriced Bid) and Priced Bid separately in the OIL's e-Tender portal. Bidders shall quote accordingly. Please note that no price details should be furnished in the Unpriced bid. The "Unpriced Bid" shall contain all techno-commercial details except the prices, which shall be kept blank. The "Price Bid" must contain the price schedule only. The Technical Bid (Unpriced Bid) is to be uploaded in "Technical Attachments" Tab and Priced Bid to be uploaded in the "Notes & Attachments" Tab of the e-tender portal. Bids shall be rejected outright if the prices are indicated in the technical bid. **Bidder not complying with above submission procedure will be rejected**.
- 2.0 Bid security of INR 1,16,990.00 shall be furnished as a part of the bid. Any bid not accompanied by a proper bid security in ORIGINAL will be rejected without any further consideration. For exemption of submission of Bid Security, please refer Clause No. 8.0 of General Terms & Conditions for National Tenders (National Competitive Bidding), Booklet No. MM/LOCAL/E-01/2005 (For E-tenders). The Bid Security shall be valid till 18.06.2021.
- 3.0 <u>Warranty</u>: As per Clause No. A 16.0 under Annexure AA (Technical Specification). Bidder to confirm the same in their offer.
- 4.0 The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.
- 5.0 Validity of the bid shall be minimum **120 days** from the Original Bid Closing date. Bids with lesser validity will be rejected.
- 6.0 All the Bids must be Digitally Signed using Class III digital certificate (e-commerce application) with 'Certificate Type: Organisation Certificate' as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3" digital certificate, will be rejected.
- 7.0 Successful bidder will be required to furnish a Performance Bank Guarantee @10% of the order value. The Performance Security specified above must be valid for 3(three) months beyond the Warranty period indicated in the Purchase Order/contract agreement [Please refer General Terms & Conditions for National Tenders (National

Competitive Bidding), Booklet No. MM/LOCAL/E-01/2005 (For E-tenders)]. Bidder must confirm the same in their Technical Bid. Offers not complying with this clause will be rejected.

<u>Note</u>: The validity requirement of Performance Security is assuming despatch within stipulated delivery period and conformation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms & conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

- 8.0 MSME Bidders are exempted from payment of Bid Security (EMD) irrespective of their product category & capacity, subject to submission of valid MSME registration certificate issued by appropriate authority. Bids without EMD shall be rejected, if the technical offer does not include a valid copy of relevant MSE Certificate issued by appropriate authority.
- 9.0 Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.
- 10.0 Bids containing incorrect statement will be rejected.
- 11.0 No offers should be sent by Telex, Cable, E-mail or Fax. Such offers will not be accepted.
- 12.0 The following points are deemed as "non-negotiable" and offer shall be rejected straightaway without seeking clarification:
  - i. Validity of bid shorter than validity indicated in the tender.
  - ii. Original Bid Security not received within the stipulated date and time mentioned in the tender.
  - iii. Bid security with (a) Validity shorter than the validity indicated in tender and/or (b) Bid security amount lesser than the amount indicated in the tender.
  - iv. In case the party refuses to sign Integrity Pact.
- 13.0 Bidder must accept and comply with the following clauses as given in the Bid Document, failing which bid shall be liable for rejection:
  - i. Liquidated Damages (Note: In case of deduction of LD, LD amount will be deducted along with applicable rate of GST)
  - ii. Guarantee of material
  - iii. Arbitration / Resolution of Dispute
  - iv. Force Majeure
  - v. Applicable Laws
- 14.0 <u>DELIVERY ADDRESS</u>: All material shall be delivered at Company's designated storage yards at Duliajan, Dibrugarh, Assam. Detail address shall be provided in purchase order.
- 15.0 PRICE SCHEDULE:

Bidder shall submit the Price Break up as per <u>ANNEXURE - DD</u> Bidders should fill up the annexures, sign and upload under "Notes & Attachments" > "Attachments" only. <u>Evaluation of offers shall be done on F.O.R. Destination</u> basis.

- 15.1 The bids conforming to the specifications, terms and conditions stipulated in the enquiry and considered to be responsive after subjecting to the Bid Rejection Criteria will be considered for further evaluation as per the Bid Evaluation Criteria given below:
  - 1. Basic Material Value including TPI, if any
  - 2. Pre-despatch Inspection Charges, if any
  - 3. Packing & Forwarding Charges, if any
  - 4. Total Ex-Works Value (1+2+3)
  - 5. GST on Total Ex-Works Value (4)

- 6. Compensatory Cess, if any
- 7. Total FOR Despatching Station Value (5+6+7)
- 8. Freight Charges upto destination
- 9. GST on Freight Charges (8)
- 10. Insurance Charges @0.5% of (7) inclusive of GST
- 11. Total Value (7+8+9+10)
- 15.2 COMPARISON OF OFFER: Comparison of offers shall be done on Total Value vide Srl. No. 11 (Total Value).
- 15.3 Domestic bidders must quote inland freight charges upto Destination. In case bidder fails to quote inland freight charges, highest freight quoted by domestic bidder (considering pro-rata distance) against this tender or OIL's estimated freight, whichever is higher, shall be loaded to their offer for comparison purpose.
- 15.4 If there is any discrepancy between the unit price and the total price, the unit price will prevail and the total price shall be corrected. Similarly, if there is any discrepancy between words and figure, the amounts in words shall prevail and will be adopted for evaluation.
- Other terms and conditions of the enquiry shall be as per General Terms and Conditions for National Tenders (National Competitive Bidding), Booklet No. MM/LOCAL/E-01/2005 (For E-tenders). However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BEC/BRC) mentioned here contradict the Clauses in the General Terms and Conditions for National Tenders (National Competitive Bidding) of the tender and/or elsewhere, those mentioned in this BEC/BRC shall prevail.

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**ANNEXURE: CC** 

# **COMMERCIAL COMPLIANCE SHEET**

The Commercial Compliance Sheet must be completed and submitted with your offer. Please ensure that all these points are covered in your offer. These will ensure that your offer is properly evaluated. Please mark 'Yes', 'No' or 'Not Applicable' or specify against the following questions, in the right-hand column.

	R REF:		
NAM	E OF THE BIDDER:	Ţ Ţ	
Srl. No.	Particulars	Bidder's Confirmation Yes/No/Not Applicable	Remarks
1	Whether bid submitted under Single Stage Composite Bid System?		
	Whether ORIGINAL Bid Bond (not copy of Bid Bond) submitted exactly		
	as per format? If YES, provide details -		
2	(a) Amount		
_	(b) Name of issuing Bank		
	(c) Validity of Bid Bond		
	(d) Whether Bid Bond is valid till		
3	Whether offered firm prices?		
4	Whether quoted offer validity of 120 days from the date of final bid		
	closing of the tender?		
5	Whether confirmed delivery period as per tender?		
6	Whether quoted as per tender (without any deviations)?		
7	Whether quoted any deviation?		
8	Whether deviation separately highlighted?		
9	Whether agreed to the Warranty clause?		
10	Whether Price Bid submitted as per Price Schedule?		
11	Whether quoted all the items/qty. of tender?		
12	Whether indicated the country of origin for the items quoted?		
13	Whether technical literature / catalogue uploaded?		
14	Whether confirmed acceptance of tender Payment Terms?		
15	Whether indicated the place from where the goods will be dispatched. To specify:		
16	Whether road transportation charges up to Destination quoted?		
17	Whether offered Ex-works price including packing/forwarding charges?		
18	Whether weight & volume of items offered indicated?		
19	If Pre-despatch/shipment inspection charges applicable, whether quoted separately?		
20	Whether confirmed to submit PBG as asked for in tender?		
21	Whether agreed to submit PBG within 30 days of placement of order?		
22	Whether indicated import content in the offer?		
23	Whether all applicable Taxes & Duties have been quoted?		
24	Whether all BRC/BEC clauses accepted?		
25	Whether MSME? If yes, whether documents enclosed as per tender.		
26	Whether <b>Annexure EE</b> - Annual turnover & Net worth Certificate submitted?		
	Whether affidavit/undertaking submitted certifying that the balance		
26	sheet/Financial Statements for the financial year (as applicable)		
	has actually not been audited so far, if applicable?		
27	Whether <b>Annexure – FF</b> - Undertaking towards submission of authentic		
۷/	information/documents submitted.		

**ANNEXURE: EE** 

# **CERTIFICATE OF ANNUAL TURNOVER & NETWORTH**

TO BE ISSUED BY PRACTISING CHARTERED ACCOUNTANTS' FIRM ON THEIR LETTER HEAD					
TO WHOM IT MAY CONCERN					
This is to certify that the following financial positions extracted from audited financial statements of M/s (Name of the bidder) for the last 3 (three) completed accounting years upto(as the case may be) are correct.					
YEAR	TURNOVER In INR (Rs.) Crores/ USD Million*	NET WORTH In INR (Rs.) Crores / USD Million*			
*Rate of conversion (if used an	y): USD 1.00 = INR				
Place: Date:					
Seal:					
Membership No.: Registration Code: <b>UDIN:</b>					
Signature:					

<sup>\*</sup>Applicable for Global Tenders.

# **ANNEXURE - FF**

# FORMAT OF UNDERTAKING BY BIDDERS TOWARDS SUBMISSION OF AUTHENTIC INFORMATION/DOCUMENTS

(To be typed on the letter head of the bidder)

Ref. No	Date
То,	
The Dy. General Manager (Materials)PL Oil India Limited, Pipeline Headquarters Narangi, Guwahati	
Sub: Undertaking of authenticity of information/documen Ref: Your tender No Dated	ts submitted
Sir,	
With reference to our quotation no date undertake that no fraudulent information/documents have	d against your above-referred tender, we hereby been submitted by us.
We take full responsibility for the submission of authentic i	nformation/documents against the above cited bid.
submitted by us are found to be false/forged/fraudulent, O	tract agreement, in case any of the information/documents IL has right to reject our bid at any stage including forfeiture or nd/or carry out any other penal action on us, as deemed fit.
Yours faithfully, For (type name of the firm here)	
Signature of Authorised Signatory	
Name : Designation : Phone No. Place : Date :	
(Affix Seal of the Organization here, if applicable)	

# ANNEXURE - VII (Revised)

# **BID SECURITY FORMAT**

TO,

OIL INDIA LIMITED
PIPELINE HEADQUARTERS
P. O. – UDAYAN VIHAR,
GUWAHATI - 781171
ASSAM, INDIA

Full address of the bank:
 Email address of the bankers:
 Mobile nos. of the contact persons:

1. Address of the controlling office of the BG issuing banks:

2. Name of the contact persons at the controlling office with their mobile nos. and email address:

B. Controlling Office

	ereas (herein after called 'the Bidder') has submitted thei				
	No dated against OIL INDIA LIMITED, PIPELINE HEADQUARTERS, GUWAHATI				
	SAM, INDIA (hereinafter called the Purchaser) 's tender No for the supply of				
	(hereinafter called 'the Bid') KNOW ALL MEN by these presents that				
	(hereinafter called 'the Bank') are bound unto the				
	chaser, in the sum offor which payment and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents.				
we	if and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents.				
Sea	aled with the said Bank thisday ofday				
тні	E CONDITIONS of this obligation are:				
1.	If the Bidder withdraws their Bid during the period of Bid validity specified by the Bidder,				
	or				
2.	If the Bidder, having been notified of the acceptance of their bid by the Purchaser during the period of bid validity:				
	a) fails or refuses to accept the order; or				
	b) fails or refuses to furnish the performance security				
	or				
3.					
will	We undertake to pay to the Purchaser up to the above amount upon receipt of their first written demand (by way of the condition) are referred to substantiate their demand, provided that in their demand the Purchaser language in the conditions, specifying the curred condition or conditions.				
ten	This guarantee will remain in force up to and including (Bidder to indicate specific date as mentioned in the der), and any demand in respect thereof should reach the Bank not later than the above date.				
The	e details of the issuing bank and controlling bank are as under:				
Λ	Issuing Bank				

Signature & Seal of the Bank

**ANNEXURE - GG** 

Arbitration clause for Settlement of commercial disputes between Central Public Sector Enterprises (CPSEs) inter se and CPSE(s) and Government Department(s)/Organizations(s) - Administrative Mechanism for Resolution of CPSEs Disputes (AMRCD).

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in OPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018.

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**ANNEXURE - HH** 

#### STARTUP AND MSE VENDORS

In case a Startup [defined as per Ministry of Commerce and Industry (Department of Industrial Policy and Promotion, DIPP) latest notification]/ MSE is interested in supplying the tendered item but does not meet the Pre-Qualifying Criteria (PQC)/ Proven Track Record (PTR) indicated in the tender document, the Startup/MSE is requested to write a detailed proposal separately, and not against the present tender requirement, to the tender issuing authority about its product. Such proposals shall be accompanied by relevant documents in support of MSE (where applicable) or in case of Startup, following documents shall be given:

- 1. Certificate of Recognition issued by the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India.
- 2. Certificate of incorporation.
- 3. Audited Profit & Loss (P&L) Statement of all the Financial Years since incorporation. In case where the Balance sheet has not been prepared, bidder shall submit a certificate in original from its CEO/CFO stating the turnover of the bidding entity separately for each Financial Years since incorporation along with a declaration stating the reason for not furnishing the audited P&L Statement. This certificate shall be endorsed by a Chartered Accountant/Statutory Auditor.

The Proposal shall be examined by OIL and OIL may consider inviting a detailed offer from the Startup/MSE with the intent to place a TRIAL or TEST Order, provided the Startup/MSE meets the Quality and Technical Specifications.

In case the Startup/MSE is successful in the Trial Order, the vendor shall be considered for PQC exemption/relaxation (as the case may be) for the next tender for such item till the time it remains a Startup/MSE.

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## **ANNEXURE - XII**

#### **INTEGRITY PACT**

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder)......hereinafter referred to as "The Bidder/Contractor"

#### Preamble:

The Principal intends to award, under laid down organizational procedures, contract/s for **SGI5454P21.**The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organization "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an external independent Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

## Section: 1 -Commitments of the Principal

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - 1. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.
  - 2. The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.
  - 3. The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a Page 2 of 6 substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

#### Section: 2 -Commitments of the Bidder/Contractor

- (1) The Bidder/Contractor commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
  - 1. The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which h e/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- 2. The Bidder/Contractor will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 3. The Bidder/Contractor will not commit any offence under the relevant Anticorruption Laws of India; further the Bidder/Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 4. The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- (3) The Bidder/Contractor signing Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/she will await their decision in the matter.

#### Section 3 -Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

- 1. If the Bidder/Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.
- 2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
- 3. If the Bidder/Contractor can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.
- 4. A transgression is considered to have occurred if in light of available evidence, no reasonable doubt is possible.
- 5. Integrity Pact, in respect of a particular contract, shall be operative from the date Integrity Pact is signed by both the parties till the final completion of the contract or **as mentioned in Section 9- Pact Duration whichever is later**. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings

### **Section 4 - Compensation for Damages**

(1) If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit / Bid Security.

- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Security Deposit / Performance Bank Guarantee.
- The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder/Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount or the liquidated damages, the Bidder/Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

#### **Section 5 - Previous transgression**

- (1) The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

#### Section: 6 -Equal treatment of all Bidders/Contractor/Subcontractors

- (1) The Principal will enter into Pacts on identical terms with all bidders and contractors.
- (2) The Bidder / Contractor undertake(s) to procure from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the provisions laid down in this agreement/Pact by any of its sub-contractors/sub-vendors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

#### Section: 7 - Criminal charges against violating Bidders/Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

## Section: 8 -External Independent Monitor/Monitors

- (1) 1. The Principal appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.
- The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

- As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Independent External Monitor shall give an opportunity to the bidder / contractor to present its case before making its recommendations to the Principal.
- (6) The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.
- (7) If the Monitor has reported to the Chairperson of the Board a Substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- (8) The word 'Monitor' would include both singular and plural.

#### **Section: 9 - Pact Duration**

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded. If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

## Section: 10 - Other provisions

- (1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this agreement must be, signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

M. B. SINGHA	
CMM (PL)	
For the Principal	For the Bidder/Contractor
	Witness 1:
	Witness 2:
Place: GUWAHATI	
Date: 17.10.2020	