ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

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INVITATION TO e-BID UNDER SINGLE STAGE COMPOSITE BID SYSTEM

Tender No. & Date : **SGI7771P19 dated 23.04.2018**

Tender Fee : **INR 1,000.00** ***(Non Refundable)***

Bid Security : **INR 78,000.00**

Bidding Type : **SINGLE STAGE COMPOSITE BID SYSTEM**

Bid Closing on : **07.06.2018 at 11.00 Hrs.**

Bid Opening on : **07.06.2018 at 14.00 Hrs.**

Bid Validity : **Bid should be valid for 90 days from bid closing date.**

Bid Bond Validity : **Bid Bond should be valid upto 06.12.2018.**
(Bid bond format has been changed. Please submit bid bond as per revised format)

Performance Guarantee : **Applicable @ 10% of order value.**

Integrity Pact : **Not Applicable**

OIL INDIA LIMITED invites electronic bids from Indigenous bidders under NATIONAL COMPETITIVE BIDDING on SINGLE STAGE COMPOSITE BID SYSTEM through its e-procurement site for the items detailed below –

Item No.	Item Description	Quantity	UoM
10	Hydrocarbon Gas Detection *(Technical Specification as per Annexure AA)*	1	NO.
20	Installation & Commissioning of Hydrocarbon Gas Detection	1	LSM

Note: - 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.

STANDARD NOTES:

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:

(i)	Annexure AA	: Technical Specification
(ii)	Annexure BB	: Bid Rejection Criteria / Bid Evaluation Criteria
(iii)	Annexure CC	: Commercial Check List
(iv)	Annexure DD	: Price Schedule
(v)	Annexure EE	: Annual Turn Over and Net Worth Certificate
(vi)	Annexure FF	: Addendum to Bid Security and Performance Security Clause

"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 For obtaining User ID and Password for accessing the tender document and for submission of bids, interested bidders are requested to go for Online Registration. Please visit the url: **https://etender.srm.oilindia.in/ irj/portal** and click on the link 'Supplier Enlistment for E-Tender' for online registration and generation of user id and password. Bidders are advised to apply for user ID and password at least 7(seven) days prior to the last date of tender fee payment for their own interests. User ID's shall be processed within 4(four) days subject to submission of complete information by the bidder. Once the registration is completed user id and password will be assigned to the bidder. The same user id and password may be used for participating in OIL's future tender also.

3.1 After completion of the Online Registration process and receipt of user id and password, bidder may submit the tender fee online. **Tender fee must be paid online through OIL's payment gateway only and no other instrument (Cash/DD/Cheques/Cashier Cheque, etc) will be acceptable**. Please refer the New Vendor Manual uploaded alongwith the tender and also available in the e-portal page for procedure for submission of tender fee and EMD online. *For bidders having existing user id and password issued by OIL, same may be used for submission of bid after payment of tender fee*. On receipt of requisite tender fee, bidder will be allowed to participate in the tender through OIL's e- Procurement portal. No physical tender documents shall be submitted.

NOTE: ***PSUs and SSI units are provided tender documents Free of Cost (as per Govt. guidelines), however they have to apply to OIL's designated office to issue the tender documents before the last date of sale of tender document mentioned in the tender.***

4.0 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. **The mandatory minimum Local Content (LC) requirement for claiming purchase preference linked with Local Contents under the Govt. policy against this tender is 22%.**

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.

6.0 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.**

7.0 EMD must be paid either through online mode or submitted as Bank Guarantee/LC.

8.0 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 Manger 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.

9.0 OIL has made arrangement for online confirmation of Bank Guarantee through SFMS Platform with Axis Bank, Guwahati. Accordingly, the following clause has been incorporated as addendum to clause no. 8.0 for 'Bid Security' under "Instruction to Bidders" and Clause no. 9.0 for 'Performance Security' under "Instruction to Bidders" of General Terms & Conditions for National Tender (National Competitive Bidding) for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005(For e-tenders).

The bank guarantee issued by the bank must be routed 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/Seller/Contractor shall submit to OIL the copy of SFMS message as sent by the issuing bank branch along with the original bank guarantee.

9.1 **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 '*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.

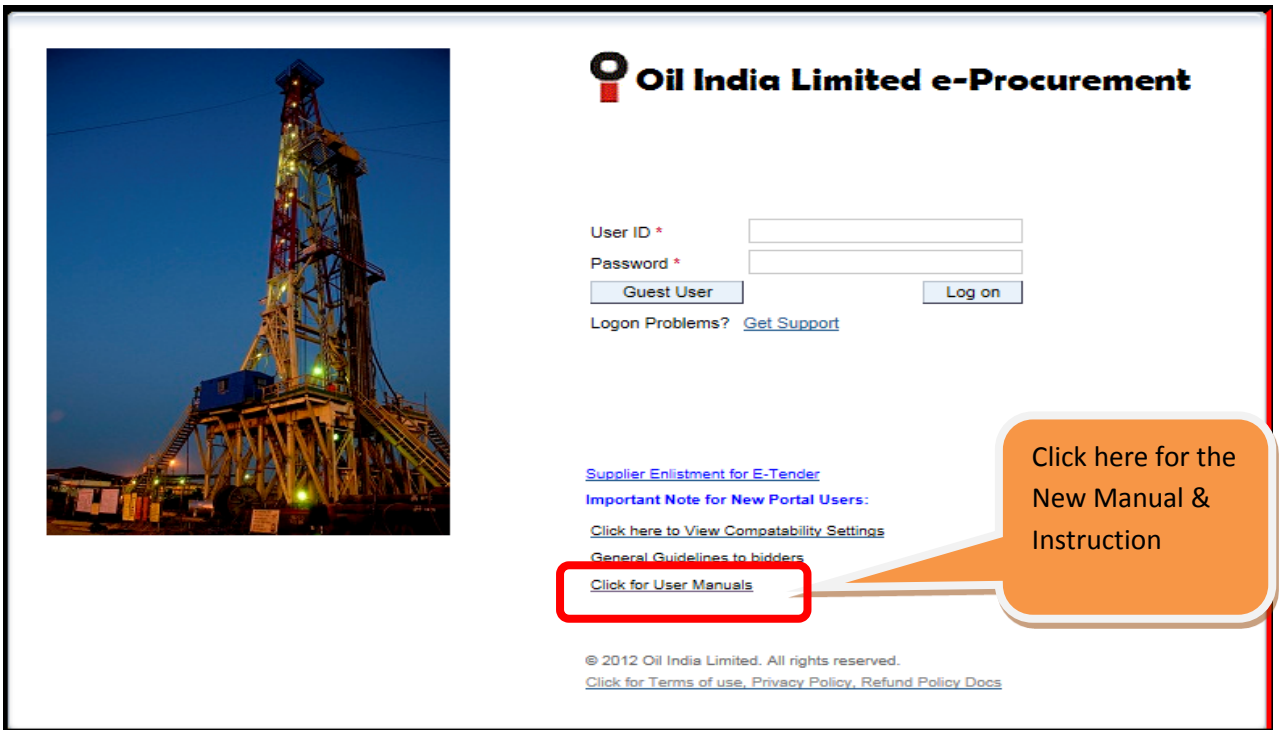
11.0 **Deemed export/Custom Duty benefits are not applicable against this tender and bidders should furnish prices without considering these benefits.**

12.0 The tender is invited under **SINGLE STAGE-COMPOSITE 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.

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.



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 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 4.0 above before **14:00 Hrs (IST)** on the bid closing date failing which the offer shall be rejected.

15.0 Other terms and conditions of the tender shall be as per General Terms & Conditions" in Booklet No. MM/LOCAL/E-01/2005 for E-procurement (LCB Tenders). 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.

16.0 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.

17.0 **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)
SR. MANAGER MATERIALS (PL)
FOR GENERAL MANAGER - MATERIALS (PL)
FOR: CHIEF GENERAL MANAGER (PLS)

ANNEXURE - AA

SCOPE OF SUPPLY AND TECHNICAL SPECIFICATION OF GAS DETECTION AND CONTROLLING SYSTEM

PREAMBLE:

Oil India Limited, Pipeline Department intends **to install Gas Detection and Controlling System for its installation located at Rangapani Terminal, Siliguri in the state of West Bengal** for multi-product pipeline of OIL. The proposed gas detection control system shall be placed in the control room and it shall be interfaced with the existing RTU/ PLC via Modbus Protocol.

This Tender has been floated for procurement of Gas detection system with Programmable Electronic System which meets safety standard of SIL-3 and other technical specifications as given in this tender document. Bidder to offer suitable Technical Solutions for OIL requirement and quote accordingly.

Bidder shall provide written guarantee for the availability of back-up engineering, maintenance support and spare parts for a period of ten (10) years from the date of commissioning of the system.

A. **SCOPE OF SUPPLY/ SERVICES**:

Main objective of the Gas Detection System shall be to detect hydrocarbon gas concentrations in Petroleum Oil Installations and initiate alarm or shutdown system as the case may be, at pre-defined levels to prevent any hazardous events and act as independent safety layers for mitigation of consequences to achieve overall process safety requirements of the plant.

Gas Detection system shall be designed to perform its function during normal, abnormal and design basis conditions.

Control system shall be based on open architecture system topology with fault tolerant network capabilities.

Gas detection system shall be based on the following and as per detailed scope of work.

1.0 Type of Gas Detectors / Sensors:

(i) IR based integrated (sensor cum transmitter) point type gas detectors for measurement, signal transmission and local monitoring in application area.
(ii) IR based Open Path detectors for measurement, signal transmission and monitoring in application area.
(iii) Location of the gas detectors to be installed in the facility:
  a) To cover distant density meter approximately 900 meters away from the facility.
  b) To cover the pig receiving barrel, MOVs, basket filter (2 Nos.), flow meter (2 Nos.), density meter (1 No.), pressure control valve (1 No.) areas inside the facility.
  c) One No. open path gas detector to cover 5 Nos. of product header valves spread along appx. 30 meters at the receiving end of the facility.

2.0 Control System & System Description:

Control system of the Gas Detection shall be SIL-3 certified; configuration shall be based on programmable system design to meet above compliance.
The control system shall be stand-alone, based on fail safe philosophy having necessary hardware & software with graphics based MMI interface for installation in the Control Room. It shall be able to operate independently and its operation shall not be affected by failure of any other instrumentation system. The proposed system shall be engineered as one integrated control and safeguarding system with respect to operator presentation.

The system shall generate alarm as soon as the LEL and PPM level in the field crosses the set level in either one sensor or more sensors. In alarm condition there shall be an Audio- Visual Alarm in the Main Control Room to alert the Operator & the hooter should operate in the field to alert the field operator about the Alarm level.

The GDS shall be microprocessor based configurable, expandable, distributed, intelligent Safety system providing gas detection, alarm signaling, notification and capable of generating graphics, displays, historization, and alarms as minimum.

Control system shall have the feature to measure the field signal below 4mA DC or above 20mA DC for configuration gas detectors various operating statues (normal, fault condition and gas detected condition etc.) and should display all diagnostic /Maintenance information/Calibration via HART.

Detectors in a particular zone in the field may be arranged group wise as per the IO list in such case system engineering should be made in such a way that inputs are terminated in the different input cards in order to enhancing the system reliability.

Control system shall have capability to display process as well as system alarms on the HMI/ Display for operator's attention and action. Alarms shall appear immediately on the HMI/ Display as and when they occur on priority basis. It shall also be possible to display summary of all alarms in the sequence of their occurrence and shall disappear from display only when they are acknowledged and cleared.

Historization of the alarm/error/system fault/module change etc conditions shall be maintained in the data base of the system for at least 7000 (All together) entries.

It should also have –

i) Date and time of occurrence
ii) Point identification (i.e. Tag number) & description
iii) Type of alarm

Bidder shall supply necessary software, in this regard for event sequencing and logging.

All networking components shall be of Industrial grade.

The control system shall have well laid down procedure for on-line maintenance and faulty module replacement.

The control system shall have features for interfacing with OIL's third party system (RTU / PLC) through `MODBUS' protocol over TCP/IP.

3.0 Accessories:

i) Point type Gas detectors shall have integrated sensor and transmitter unit powered through 24 VDC supply.
ii) Open path Combustible Gas detectors shall be based on Infrared technology having a transmitter and receiver unit both powered by 24 VDC.
iii) Gas detector housing material shall be of SS 316.
iv) All enclosures for electrical equipment shall be suitable for use in hazardous area as per facility hazardous area classification & bidder shall submit valid test certificates issued by PESO. Flameproof enclosure which manufactured outside India & certified by accredited international authorities shall also have approval of PESO, India.
v) The gas detectors shall be minimum SIL-2 certified from TUV/FM.
vi) Monitoring of status of Main AC as well as DC power supply units (Both analog and digital) shall be configured in the PLC as a minimum requirement.

4.0 Operating Environment for the Monitoring and Control System:

i) Gas detection Monitoring system will be located in air-conditioned control room located in safe area. Normal operating condition will be 25 ±5 deg. C and 80 ±10% RH.
ii) The system shall continue to operate in case of HVAC upset conditions and when temperature may fall to 9°C or rise to 50°C with corresponding humidity vary from 20% to 90% (non-condensing).

5.0 Hazardous Area Classification & Environmental Protection:

i) Instruments located in hazardous area shall be certified to meet or exceed the electrical hazardous area classification.
ii) The field instruments, equipment and accessories etc. shall be flame-proof and suitable for hazardous area classification of Zone-1, Gr. IIA/B, T3 or better. Similarly, all field instruments, equipment and accessories etc shall be weather-proof to IP65/67 as the case may be.
iii) Instruments & all enclosures for electrical enclosures certified for use in hazardous area shall have certification for use by accredited authority like FM, CENELEC, BASSEFA, ATEX etc. and approved by PESO.

6.0 Cabling Philosophy:

i) Signal cables for gas detectors shall be armoured single triad and armoured 12-triad for multi-core cables. It will be of stranded copper conductor of minimum 1.5 Sq.mm for the point gas detectors inside the shed of the OIL Siliguri terminal and minimum 2.5 sq. mm for the gas detector to be installed near the Density Meter outside the terminal according to power loading calculations.
ii) Control cables for flame-proof external hooter shall be four core armoured cables. It will be of stranded copper conductor of minimum 1.5 Sq.mm or higher according to power loading calculations. Location of the hooter to be decided on site jointly with OIL.
iii) There shall not be any cable joints for signal, alarm and control cables.
iv) All the above ground cables shall be laid in galvanized metallic cable trays. Underground cables shall be laid with proper back filling.
v) Entry of the cables to the control room terminating in the control panel should be neat and exposed portion should be routed through cable tray mounted on wall.
vi) Bidder shall note that the supply of galvanised metallic cable trays is in the scope of OIL.

7.0 Junction Box:

i) Junction boxes in hazardous area shall be certified flameproof wherever flameproof instruments are connected to junction boxes as the case may be. Bidder must submit certificate from PESO in this regard.
ii) Junction boxes shall be weather-proof to IP65. Relevant certificate has to be furnished by the bidder.
iii) The junction boxes shall be provided with sufficient number of terminals to terminate all the pairs of multi-cable (including spare pairs) and shields of individual pairs as applicable.
iv) Junction boxes shall have separate external terminal for accommodating earthing wires up to 10sqmm.
v) Unused cable gland entries should be properly sealed with suitable SS blind plugs as per safety standards for Hazardous area applications.

8.0 Cable Glands:

All cable glands shall be double compression type, nickel-plated and weather proof and flameproof suitable for installation in an area classification of IEC Zone I Gas Group IIC. The cable glands shall be provided with PVC hood. Cable glands shall be suitable for cable dimensions with +/- 2mm tolerance. The plugs and adaptors shall also be weather proof and flameproof suitable for installation in an area classification of IEC Zone I Gas Group IIC.

9.0 Audio-Visual Alarm:

i) Acoustic and visual alarms shall be automatically activated from Gas detection control unit located in Control Room. For this purpose, one explosion proof hooter will be installed at field and additionally, one No. non-flameproof hooter along with flasher will be installed at the control panel inside the control room.
ii) On receipt of signal from detectors the tone used for gas alarm horns shall be clearly audible over a range covering the entire facility.
iii) For visible alarms, flashing beacons shall be provided for alarms in the field.

10.0 Portable Calibrator:

One set of portable purge calibrator for Hydrocarbon Detector consisting of a volume bottle containing a known gas / air mixture, a pressure regulator, a flexible hose and adaptor cap (to fit the sensing head)

shall be supplied to enable calibration of the sensors in the field without dismantling them. Material of constructions will be of SS316 as a minimum.

Bidder shall ensure necessary and sufficient supply of gases for calibration of all sensing heads.

11.0 The Bidder shall be responsible for all types of Civil, Mechanical, Electrical, & Instrumentation works for installation, commissioning, testing and calibration of the entire gas detection system covering the facility including all labour and miscellaneous expenses.

12.0 Interfacing with the existing RTU/ PLC:

In general, Controller shall provide data in a well-established protocol format preferably MODBUS protocol. The interface shall be redundant unless otherwise specified in the data sheet meeting all requirements.

13.0 Installation, Commissioning and Testing:

Bidder shall depute their team for installation of the entire system in accordance to the detailed scope of work including cable laying, testing and calibration checking of the field sensors and commissioning of the system.

Before installation, bidder shall thoroughly check all equipment for completeness and proper functioning. Bidder must initiate the remedial action, in case unsatisfactory operation of any item is observed, with intimation to Engineer-in-charge.

The bidder should ensure the safety of the workmen engaged during the course of commissioning within the facility. The commissioning of the job maintaining its quality and supervision is within the bidder's scope.

Daily job progress and necessary permit should be in liaise with the OIL site engineer of the facility.

General guidelines for selection and installation of the gas detectors in oil installations will be as under. However, actual selection for use of type of gas detectors shall be site specific and it will be finalized only after proper study considering plant layout, area to be covered, wind direction pattern and environmental conditions and in that case, actual requirements will vary from location to location.

Bidder shall arrange for to & fro travel to the installation sites, local conveyance and boarding & lodging during the installation. All charges shall be borne by the bidder.

14.0 Site Acceptance Test (SAT):

OIL shall provisionally takeover the system i.e. after satisfactory completion of functional performance test. System acceptance test shall commence only after the satisfactory performance of loop checking of all the gas detectors in the field and verification of records by OIL engineer at site or other competent personnel.

Following functional tests shall be part of system acceptance test as a minimum:

i) Hardware verification as per final bill of material.
ii) Visual and mechanical check-up for proper workmanship, identification, ferruling, nameplates etc.
iii) System configuration as per approved diagram. Complete set of manual with all operational procedures, ferruling documentation, hooter details and other wirings should be handed over to OIL after commissioning.
iv) Demonstration of all system diagnostics.
v) Checking of proper functioning of all drives, alarm summary etc.
vi) Complete drawing of the gas detectors installed in the facility to be displayed in the control room with proper tagging/ marking as applicable.

During above period, any malfunctioning of the system components shall be replaced/repaired as required free of cost (under bidder's scope). Once the system failure is detected, the acceptance test shall start all over again from the beginning.

15.0 Training:

Bidder shall impart training to site personnel for routine operation & preventive maintenance of the gas detection system. The training shall be imparted at owner's site for minimum 1(one) day immediately after commissioning.

Training on the operation of the entire systems as per functional requirement including start up and shut down of the system.

i) Maintenance training on the hardware & software being supplied.
ii) The different hardware components to be supplied by the bidder.
iii) Calibration and maintenance aspect of the field sensors.

Training shall be provided on "Free of Cost" basis.

B. **TECHNICAL SPECIFICATIONS**:

1.0 Point Type Infrared Gas Detector:

(i) Sensor type: Infrared sensor Optical technology based explosion-proof Gas sensor with transmitter with Provision of Cleaning and Maintaining the Gas Cuvette
(ii) Principle of operation: Two IR lamp Producing Two Separate IR Beam. Temperature compensation shall be in-built.
(iii) Function: Shall be able to detect hydrocarbon gases in the range of 0-100% LEL
(iv) Calibration: Factory calibration at Methane or Propane
(v) Range: 0 to 100% LEL
(vi) Construction: Flameproof, 316SS body with dust/weather protection for outdoor installation.
(vii) Optical performance: Correct operation up to 75% obscuration, the same shall be configurable with facility for dirty optics warning. Provision for detectors to be made to avoid condensation. There must be provision of Cleaning and Maintaining sensor window by a cleaning cloth/material.
(viii) Input Power: 24V DC nominal (18-30V DC)
(ix) Output: 4-20 mA DC with HART
(x) Overall Accuracy: +/- 3% of LEL or better
(xi) Repeatability: +/- 2% FSD
(xii) Zero drift: Typically, 2 % FSD per year
(xiii) Response time: 90% of gas reading in less than 5 seconds (without filter/protection guards)
(xiv) Self-Check: Continuous self-check for immediate detection of internal failures
(xv) RFI /EMI protection compliance: EN50270:1999 Type 2 (EMC- electrical apparatus for the detection of combustible gas) / Electromagnetic compatibility directive 89/336/EEC.
(xvi) Operating temperature: -40 DEG TO + 80 DEG C
(xvii) Humidity: 0 to 95% RH
(xviii) Cable entry: ¾ inch NPT (F)
(xix) Area classification: Class-I, Div-I, Gr. C & D as per API RP-500 (Zone-1, Gr. IIA/B)
(xx) Enclosure classification: Explosion Proof (EExD) conforming to hazardous area classification to Class-I, Div-I, Gr. - C & D (Zone-1, Gr. IIA/IIB) and IP66
(xxi) Temperature Class will be T4.
(xxii) Hazardous Area Approval: FM/ ATEX/ CSA/ CENELEC/ UL and PESO. Relevant certificates are required to be furnished along with the bid.
(xxiii) Vibration and Performance Approval: FM 6320
(xxiv) Safety Integrity Level: SIL-2 (TUV / EXIDA / Accredited international agency) certified
(xxv) Accessories required: Mounting kits, Canopy, Tag Plates, Rain & Dust protection cover, Splash guard, One Set of calibration kit, Ex Proof & Weather proof double compression cable glands etc. as required.
(xxvi) Configuration and Warranty: Non-Intrusive Configuration Required; Warranty: 5 years
(xxvii) Quantity: 13 Nos. covering the entire facility including the distant density meter.

2.0 Open path Gas Detector:

(i) Sensor type: Infrared absorption to detect hydrocarbon gases over an open path

(ii) Detectable Gases: Propane/ Methane
(iii) Range: 0 to 5 LEL/ meter and 0 to 2000PPM/5000 PPM/mtr
(iv) Operating distance: 5 to 30 meter (Attenuator Needed)
(v) In-built Relay: 8 A @ 250 VAC / 8 A @ 30 VDC res. max. Four (4) SPDT - Fault, ppm Warning, LEL Warning and Alarm
(vi) Operating Voltage: 24V DC nominal (18-32V DC)
(vii) Output Signal: Linear 4-20mA DC + HART
(viii) Construction: Flameproof, 316SS body with dust/weather protection for outdoor installation. Terminal box shall be provided for further cabling (flying leads are not acceptable).
(ix) Accuracy: ±0.25 LEL-meters or ±10% of applied gas concentration, whichever is greater
(x) Displacement/ misalignment tolerance: +/- 1 degree.
(xi) Response time: better than or equal to 3 sec.
(xii) Warm-up Time: 1 minute for transmitter. 30 seconds for receiver from power-up when correctly aligned.
(xiii) Calibration Facility: Non-Intrusive configuration required
(xiv) Field Alignment: By Inbuilt digital display and adjustable mounting arms.
(xv) Local display: LED indication for - Normal, Fault condition & Gas detected condition complete with LED Display.
(xvi) Self-Check: Continuous self-check for immediate detection of internal failures
(xvii) RFI /EMI protection: Shall comply performance verified in accordance with EN 50241-1 and EN 50241-2.and-performance criterion as defined in EN 50270.
(xviii) Operating temperature: 40 deg C to + 60 deg C
(xix) Humidity: 5 to 95% RH
(xx) Repeatability: Better than +/- 5% of FS.
(xxi) Cable entry: 3/4 inch NPT (F)
(xxii) Area classification: Explosion-proof (Eexd) conforming to hazardous area classification to Class-I, Div-I, Gr.B, C & D (Zone-1, Gr. IIA/B). Temperature Class will be T3/T4
(xxiii) Enclosure classification and Material: IP66 and SS 316
(xxiv) Hazardous area approval: FM/ ATEX / CSA/ CENELEC/ UL and PESO. Relevant certificates are required to be furnished along with the bid.
(xxv) Approval for Performance and Vibration: FM 6325
(xxvi) Safety Integrity Level: SIL-2 (TUV /FM) certified.
(xxvii) Accessories Required: Mounting kits, detector alignment & one set of calibration kit, cell etc. Rain & Dust protection cover, Splash guard, alignment & mode selection kits, Junction box with terminals as required. Mounting bases and Ex Proof & Weather proof double compression cable glands etc. as required.
(xxviii) Warranty: Minimum 2 Years
(xxix) Quantity: 1 No.

3.0 Explosion Proof Hooter:

(i) Area Classification: CL 1, Div.1 (Zone 1), Gr. II-A& B, T3
(ii) Hazardous area approval: Certificate of approval from CCOE is required to be furnished along with the bid.
(iii) Protection Degree: IP 65 or better
(iv) Supply Voltage: 230 V AC
(v) Power Consumption: 10 W
(vi) Sound Power: Minimum 100 dBA at 1 metre (Multi tone Selectable)
(vii) Body Material: Aluminium
(viii) Electrical Connection: ½ inch NPTF
(ix) Mounting: 2-inch Pipe mounting (Required mounting accessories to be provided)
(x) Others: Unit to be supplied with field mounted reset push button
(xi) Quantity: 1 No. for outdoor hazardous area application
(xii) Audibility: Loud enough to cover the entire range of the facility

4.0 Explosion Proof Flasher:

(i) Area Classification: CL 1, Div.1 (Zone 1), Gr. II-A& B, T3
(ii) Hazardous area approval: Certificate of approval from CCOE is required to be furnished along with the bid.
(iii) Protection Degree: IP 65 or better

(iv) Supply Voltage: 230 V AC
(v) Power Consumption: 1.8 W
(vi) Body Material: Aluminium
(vii) Electrical Connection: ½ inch NPTF
(viii) Mounting: 2-inch Pipe mounting (Required mounting accessories to be provided)
(ix) Others: Unit to be supplied with field mounted reset push button for outdoor application
(x) Quantity: 1 No.

5.0 Single Triad Armoured Signal Cable:

(i) Type: 1 Triad, Armoured, Shielded Signal Cable with overall sheath colour - Black
(ii) Conductor Size: 1T X 1.5 Sq.mm or higher. & 1T X 2.5 Sq.mm or higher.
(iii) Quantity: As per site requirement (Minimum 1500 metres)
(iv) Conductor: Annealed electrolytic grade stranded copper conductor
(v) No. of strands: 7/0.53 mm'
(vi) Twists: Number of Twists shall not be less than 10 Per Meter.
(vii) Insulation Grade: 600V /1100V
(viii) Primary Insulation: Extruded Flame Retardant Type C PVC compound. 85 Deg. C confirming to IS-5831 of minimum thickness 0.5 mm
(ix) Insulation Thickness: Thickness shall be as per IS: 1554 - I. A ripcord shall be provided for inner jacket
(x) Inner and Outer Jacket Insulation: Extruded Flame Retardant, Low Smoke 90 Deg C PVC
(xi) Confirming to IS-5831 Type ST-2
(xii) Oxygen Index: Over 30% (At Room Temp.)
(xiii) Temperature Index: Over 250 Deg C.
(xiv) Fire Retardant Low Smoke: As per IEC 332-3 Part 3 CAT A
(xv) Insulation Resistance, Voltage and Spark Test: As per BS 5308 Part II.
(xvi) Armoring: Galvanized steel wire / strip as per IS 1554 Part I.
(xvii) Colour Code:
Outer Sheath/ Jacket: Black
Inner Sheath/ Jacket: Black
(xviii) Conductor Insulation: As per Manufacturer standard
(xix) Maximum DC Resistance (of the Conductor of the completed cable): Shall not exceed 12.3 ohms / km at 20 Deg C
(xx) Capacitance:
Mutual Capacitance of the pair: Shall not exceed 250 Pf / Meter at a frequency of 1 kHz.
Capacitance between any core and screen: Shall not exceed 400 Pf / Meter at a frequency of 1 kHz.
(xxi) L / R Ratio of adjacent cores: Shall not exceed 40 micro Henry / ohms
(xxii) Drain Wire for overall screen: The drain wire shall be in continuous contact with aluminium side of the shield.
(xxiii) Resistance including shield: Shall not exceed 30 ohms / km.
(xxiv) Electrostatic Noise Rejection ratio: Shall be over 76 dB
(xxv) Pair Identification: Pair / Core identification shall be provided with numbers at intervals of not more than 250 mm.
(xxvi) Meter Marking: At every 1 Meters
(xxvii) Element Screen / Shield: Aluminum backed Mylar / polyester tape of thickness 0.05 mm bounded together with the metallic side down helically applied with either side having 25% overlap and 100% coverage.
(xxviii) Overall diameter and other dimensions: As per IS-1554 Part I
(xxix) Quantity: Minimum 3500 metres for the 1.5 Sq. mm conductor cables and Minimum 1500 metres for the 2.5 Sq. mm conductor cables

6.0 12-Triad Multi-Core Armoured Signal cable:

(i) Type: 12 Triad, Armored, Shielded Signal Cable with overall sheath color - Black
(ii) Conductor Size: 12T X 1.5 Sq.mm or higher.
(iii) Quantity: As per site requirement (Minimum 1500 metres)
(iv) Conductor: Annealed electrolytic grade stranded copper conductor
(v) No. of strands: 7/0.53 mm'
(vi) Twists: Number of Twists shall not be less than 10 Per Meter.

(vii) Insulation Grade: 600V /1100V
(viii) Primary Insulation: Extruded Flame Retardant Type C PVC compound. 85 Deg. C confirming to IS-5831 of minimum thickness 0.5 mm
(ix) Insulation Thickness: Thickness shall be as per IS: 1554 - I. A ripcord shall be provided for inner jacket
(x) Inner and Outer Jacket Insulation: Extruded Flame Retardant, Low Smoke 90 Deg C PVC
(xi) Confirming to IS-5831 Type ST-2
(xii) Oxygen Index: Over 30% (At Room Temp.)
(xiii) Temperature Index: Over 250 Deg C.
(xiv) Fire Retardant Low Smoke: As per IEC 332-3 Part 3 CAT A
(xv) Insulation Resistance, Voltage and Spark Test: As per BS 5308 Part II.
(xvi) Armoring: Galvanized steel wire / strip as per IS 1554 Part I.
(xvii) Colour Code:
Outer Sheath/ Jacket: Black
Inner Sheath/ Jacket: Black
(xviii) Conductor Insulation: As per Manufacturer standard
(xix) Maximum DC Resistance (of the Conductor of the completed cable): Shall not exceed 12.3 ohms / km at 20 Deg C
(xx) Capacitance:
Mutual Capacitance of the pair: Shall not exceed 250 Pf / Meter at a frequency of 1 kHz.
Capacitance between any core and screen: Shall not exceed 400 Pf / Meter at a frequency of 1 kHz.
(xxi) L / R Ratio of adjacent cores: Shall not exceed 40 micro Henry / ohms
(xxii) Drain Wire for overall screen: The drain wire shall be in continuous contact with aluminium side of the shield.
(xxiii) Resistance including shield: Shall not exceed 30 ohms / km.
(xxiv) Electrostatic Noise Rejection ratio: Shall be over 76 dB
(xxv) Pair Identification: Pair / Core identification shall be provided with numbers at intervals of not more than 250 mm.
(xxvi) Meter Marking: At every 1 Meters
(xxvii) Element Screen / Shield: Aluminum backed Mylar / polyester tape of thickness 0.05 mm bounded together with the metallic side down helically applied with either side having 25% overlap and 100% coverage.
(xxviii) Overall diameter and other dimensions: As per IS-1554 Part I
(xxix) Quantity: As per site requirement (Minimum 100 metres) from common junction box from the facility shed to control room terminating in the control panel.

7.0 4-Core Armoured Signal Cable for Hooter and Flasher mounted at field:

Insulated & sheathed with solid copper conductor round wire armoured cable 1100 Volts grade as per IS 1554 (Part I) 1988.

(i) No. of core: 4 (FOUR)
(ii) Conductor type: Solid Plain Annealed Copper.
(iii) Conductor Shape: Circular
(iv) Conductor Cross Section Area: 1.5 Sq.mm
(v) Thickness of insulation on each conductor: 0.8mm
(vi) Type of insulation: XLPE Thermosetting PVC Insulation.
(vii) Bedding: Extruded PVC.
(viii) Armour: Galvanized Steel Wire Armour.
(ix) Overall dia of cable: 16.3mm (approx.)
(x) Should comply requisite BIS requirements with latest amendments.
(xi) Quantity: Minimum 200 metres (or as per site requirement) for the outdoor Hooter and Flasher to be installed at field.

8.0 Junction Box:

(i) Material of JB: Cast Aluminum Alloy (LM6)
(ii) Mounting: Outdoor, Hazardous area
(iii) Enclosure: Industrial, Explosion proof and Weather Proof to IP 66 or better
(iv) Approvals: For explosion-proof, ATEX and CCOE is required to be submitted along with the bid.

(v) Ambient Temperature: 0 to 60 Degree C
(vi) Colour: Light grey, Epoxy coated
(vii) Terminals: Spring loaded. Vibration proof. Clip on type
(viii) Construction: Junction box shall have doors which shall be of hinged type and these shall be fixed with SS or cadmium plated countersunk screws
(ix) Terminals size: Minimum 2.5 sq.mm
(x) Terminal Numbering: Required, suitable for 2.5 sq.mm conductor; Terminal details to be displayed inside the junction box.
(xi) Cable Entry: Bottom & side, Main cable :1 1/2" NPT(F) or as per requirement & branch cable entry: 12 nos ¾ " NPT(F)
(xii) Mounting Accessories: Required
(xiii) Tag Plate: Required
(xiv) Plugging of entry ports: Blind plugs shall be provided to block all idle entries. The entry points shall be plugged by PVC caps during transportation.
(xv) Tag Numbers: As specified
(xvi) Quantity: 1 No.

9.0 Controller for Gas Detection System:

(i) Type: Programmable Electronics System suitable for gas detection
(ii) Memory: Log File Memory for diagnostics purposes with back-up battery
(iii) SIL 3 Approval required from TUV
(iv) Power supply: 230 V AC Supply through MCB/ ELCB of proper rating
(v) Inputs:
Analog inputs: 24
Digital Inputs: 4
(vi) Outputs:
Digital Outputs: 4
(vii) Modbus over TCP/IP and RS 485
(viii) Redundancy: All processors and up to I/O level required
(ix) Diagnostics: Continuous on line
(x) HMI/ DISPLAY: In built on the panel
(xi) Alarm: One No. non-flame proof Hooter to be provided in the Control panel as common alarm for all the gas detectors mounted at field. Also a flasher shall also be installed for visual indication of alarm.
(xii) EMI/ RFI: No Interference
(xiii) DC power supply: 24 V DC
(xiv) Earthing: Required for the entire control panel as per standard.
(xv) Terminal Details: All wiring details inside the panel should be ferruled, numbered and details documentation should be submitted to OIL.
(xvi) Also, hardware details such as processor architecture, programming and all electronic modules should be submitted to OIL in a hard bound document.
(xvii) Remote I/O Facility: Required
(xviii) Provision of FO cable connection: Required
(xix) HART Compatibility and Management: Required, should be able to retrieve and manage all information (Diagnostic, Calibration & Maintenance)
(xx) Performance Approval: ATEX Performance approval for gas detection
(xxi) Operating Temperature: 5 Deg C to 55 Deg C
(xxii) Quantity: 1 No.

ANNEXURE - BB

BID REJECTION CRITERIA & BID EVALUATION CRITERIA

I. BID REJECTION CRITERIA (BRC):

The bids must conform to the specifications, terms and conditions given in the tender document. Bids shall be rejected in case the items offered do not conform to the required minimum/ maximum parameters stipulated in the technical specifications and to the respective international /national standards wherever stipulated.

Notwithstanding the general conformity of the bids to the stipulated specifications and terms and conditions, the offer/ offers will be considered as non-responsive and is/are liable to be rejected, if the following conditions are not fulfilled:

(A) TECHNICAL

1.0 Bidder must have experience of manufacturing and supply of Hydrocarbon Detectors and Gas Detection Controller System in previous 5 (five) years to be reckoned from the original bid closing date of the tender.

2.0 Bidder must have manufacturing/fabrication facility with adequate testing/quality assurance facility as per applicable codes.

3.0 The bidder should have experience of supplying at least 1(one) such (*similar to specification of this tender*) Hydrocarbon Gas Detection System in a single order in preceding 5(five) years reckoned from the original bid closing date.

4.0 Documentary evidence for clause 3.0 above must be provided along with the bid in the form of purchase order and completion certificate or payment certificate or Tax Invoice from the user/owner, failing which offer will be rejected.

5.0 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.

6.0 **Delivery Period**: **Delivery and Installation & Commissioning of the Hydrocarbon Gas Detection System shall be completed within 6(Six) months from the date of issue of Purchase Order. Bidder shall categorically confirm acceptance of the delivery period in the bid.**

(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 19,50,000.00.

1.1 **Net worth** of bidder must be positive for preceding financial/ accounting year.

2.0 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 the case may be*) 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 Number), 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 COMPOSITE BID SYSTEM**. Bidders shall quote accordingly.

2.0 **Bid security of INR 78,000.00 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 for submission of Bid Security, please refer Clause No. 8.8 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 06.12.2018.**

3.0 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.

4.0 **Validity of the bid shall be minimum 90 days from the Original Bid Closing date. Bids with lesser validity will be rejected.**

5.0 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.**

6.0 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.

7.0 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.

8.0 Bids containing incorrect statement will be rejected.

9.0 No offers should be sent by Telex, Cable, E-mail or Fax. Such offers will not be accepted.

10.0 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.

11.0 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

ii. Guarantee of material
iii. Arbitration / Resolution of Dispute
iv. Force Majeure
v. Applicable Laws

12.0 **DELIVERY LOCATION: The Hydrocarbon Gas Detection System is to be delivered, installed and commissioned at the following address -**

RANGAPANI TERMINAL STATION
(NUMALIGARH REFINERY LIMITED MARKETING TERMINAL)
OIL INDIA LIMITED,
P.O. RANGAPANI, PIN – 734434, SILIGURI,
DIST – DARJEELING, WEST BENGAL.

13.0 **PRICE SCHEDULE:**

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

13.1 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
2. Packing & Forwarding Charges, if any
3. **Total Ex-works Value (1+2)**
4. GST on Total Ex-Works Value
5. Compensatory Cess, if any
6. **Total FOR Despatching Station Value (3+4+5)**
7. Freight Charges upto destination
8. GST on Freight Charges
9. Insurance Charges @0.5% of (7) inclusive of GST
10. Installation & Commissioning Charges
11. GST on Installation & Commissioning Charges
12. **Total FOR Destination, Site Value (6+7+8+9+10+11)**

13.2 Comparison of offers shall be done on Total Value vide Srl. No. 12 (Total FOR Destination Value).

13.3 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.

13.4 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.

13.5 Other terms and conditions of the enquiry shall be as per General Terms and Conditions for LCB Tender. 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 & Conditions of LCB Tender of the tender and/or elsewhere, those mentioned in this BEC/BRC shall prevail.

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