FORWARDING LETTER

M/s_____

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Sub: IFB No. CIP4781P21 for 'CATHODIC PROTECTION SYSTEM FOR OIL PIPELINE IN THE STATES OF ASSAM, WEST BENGAL AND BIHAR, INDIA'.

Dear Sirs,

1.0 OIL INDIA LIMITED (OIL), a "Navaratna" Category, Government of India Enterprise, is a premier oil Company engaged in exploration, production and transportation of oil & natural gas with its Pipeline Headquarters at Guwahati, Assam.

2.0 In connection with its operations, **Tractebel Engineering Pvt. Ltd.** on behalf of OIL INDIA LIMITED (OIL), Guwahati (Assam) invites Local Competitive Bids (LCB) from competent and experienced Contractors through OIL's e-procurement Portal: https://etender.srm.oilindia.in/irj/portal for '**Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.** One complete set of Bid Document covering OIL's IFB for the above services is uploaded in OIL's e-procurement portal. You are invited to submit your most competitive bid on or before the scheduled bid closing date and time through OIL's e-procurement portal. For your ready reference, few salient points of the IFB (covered in detail in the Bid Document) are highlighted below:

(i)	IFB No. /E-Tender No.	:	**CIP4781P21**
(ii)	Type of Bidding	:	Open Indigenous E-Tender, Single Stage Two Bid System
(iii)	Bid Closing Date & Time	:	As mentioned in the E-procurement portal.
(iv)	Technical Bid Opening Date & Time	:	As mentioned in the E-procurement portal.
(v)	Price Bid Opening Date & Time	:	Will be intimated only to the eligible/qualified Bidders nearer the time.
(vi)	Bid Submission Mode	:	Bids must be uploaded online in OIL's E-procurement portal
(vii)	Bid Opening Place	:	Office of GM-Pipeline Projects Oil India Limited, Guwahati -781171, Assam, India.
(viii)	Bid Validity	:	120 days from date of Bid Closing
(ix)	Mobilization Time	:	30 days from the date of issue of Letter of Award (LOA)
(x)	Bid Security Amount	:	For Spread # A - Rs. 6.95 Lacs For Spread # B - Rs. 7.27 Lacs For Spread # C - Rs. 10.34 Lacs
(xi)	Bid Security Validity	:	As mentioned in the E-procurement portal.
(xii)	Original Bid Security to be submitted	:	Office of GM-Pipeline Projects Oil India Limited, Guwahati -781171, Assam, India.
(xiii)	Amount of Performance Security	:	10% of the Annualized Contract Value.
(xiv)	Validity of Performance Security	:	3(three) months beyond the defect liability period/warranty period.
(xv)	Duration of the Contract	:	18 (Eighteen) months (inclusive of Mobilization period) from the date of Letter of Award (LOA).

(xvi)	Quantum of Liquidated Damage for Default in Timely Mobilization	:	Refer General Conditions of Contract
(xvii)	Integrity Pact	:	Must be digitally signed & uploaded along with the Techno-commercial Bid.
(xviii)	Bids to be addressed to	:	Office of GM-Pipeline Projects Oil India Limited, Guwahati -781171, Assam, India.
(xix)	Last date for receipt of pre-bid queries	:	**13.08.2020** or two days prior to Scheduled Pre Bid Conference
(xx)	Pre-bid Conference date	:	**17.08.2020**
(xxi)	Venue of Pre-bid Conference	:	Will be confirmed before 13.08.2020 (It will be through VC or any other suitable mode)

Note:

A. 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.

B. Bank Guarantee issued by a Scheduled Bank in India at the request of some other Non-Scheduled Bank of India shall not be acceptable.

3.0 GUIDELINES FOR PARTICIPATING IN OIL'S E-PROCUREMENT

3.1 Bids are to be submitted online through OIL's E-Procurement Portal with digital signature. To participate in OIL's E-Procurement tender, bidders should have a legally valid digital certificate **of Class 3 with Organizations Name** and **Encryption Certificate** as per Indian IT Act from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India (http://www.cca.gov.in). Digital Signature Certificates having "**Organization Name**" field other than **Bidder's Name** are not acceptable. However, aforesaid Digital Signature

Certificates having Bidder's Name in the "Organization Name" field are acceptable.

Encryption certificate is mandatorily required for submission of bid. In case bidder creates response with one certificate (using encryption key) and then the bidder changes his Digital Signature Certificate, then the old certificate (used for encryption) is required in order to decrypt his encrypted response for getting the edit mode of the response. Once decryption is done, bidder may use new DSC certificate for uploading and submission of their offer. It is the sole responsibility of the bidder to keep their DSC certificate properly. In case of loss of the certificate, OIL INDIA LTD. is not responsible.

The authenticity of above digital signature shall be verified through authorized CA after bid opening and in case the digital signature used for signing is not of "**Class 3 with Organizations Name** and **Encryption Certificate**", the bid will be rejected.

Bidder is responsible for ensuring the validity of digital signature and its proper usage by their employee.

The bid including all uploaded documents shall be digitally signed by duly authorized representative of the bidding company.

The bid including all uploaded documents shall be digitally signed by duly authorized representative of the Bidder/Bidding company to bind the Bidder/Bidding company to the contract.

3.2 For participation, applicants already having User ID & Password for OIL's E-Procurement Portal need to register against the IFB. New vendors/existing vendors not having User ID & Password for OIL's E-Procurement Portal shall obtain User ID & password through online vendor registration system in E-Portal.

3.2.1 Bidders without having E-Tender Login ID and password should complete their online registration at least 07 (Seven) days prior to the scheduled Bid Closing Date and time of the tender. For online registration, bidder may visit OIL's E-Tender site https://etender.srm.oilindia.in/irj/portal.

3.2.2 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.

3.3 Parties, who do not have a User ID, can click on **Guest** login button in the E-portal to view and download the tender. **The detailed guidelines are available in OIL's E-Procurement site (Help Documentation)**. For any clarification in this regard, bidders may contact E-Tender Support Cell at Duliajan at erp_mm@oilindia.in, Ph.: 0374- 2807178/4903.

3.4 Details of process for submission of Bid Security (EMD) through the online payment gateway are available in Vendor User Manual under E-Procurement Portal. (**Note:** Important Points for on-line Payment can be viewed at Oil India's website at url: http://oil-india.com/pdf/ETenderNotification.pdf).

3.5 The link to OIL's E-Procurement Portal has been provided through OIL's web site (www.oil-india.com).

4.0 **PRE-BID CONFERENCE:**

4.1 A pre-Bid conference is planned to be held during **17.08.2020** through VC to explain the requirements of Company in details to the interested prospective Bidders and to understand bidders' perspective including exchange of views/clarifications, if any, on the Scope of Work, Bid Rejection/Bid Evaluation Criteria and other terms & conditions of the Tender. The parties who purchase the bid documents shall be allowed to participate in the Pre-Bid conference. For details of the venue, bidders may contact M/s Tractebel, Gurgaon Office.

4.2 At the most 2 (two) representatives from each prospective bidder shall be allowed to participate in the pre-bid conference. All costs for attending the pre-bid conference shall be to prospective bidders' account.

4.3 The prospective bidders shall submit their queries through E-mail / Fax / Courier addressed to M/s Tractebel, Gurgaon Office before 13.08.2020. Tractebel shall provide clarifications to the queries in the pre-bid conference. Bidders may contact (email balen_bharali@oilindia.in/ plproject@oilindia.in / sk.hussain@tractebel.engie.com)

4.4 However, clarifications/exceptions/deviations, if required any, should be brought out by the bidder prior to or during the Pre-Bid Conference only. After processing these suggestions, as a sequel to the pre-bid conference, Company/ Tractebel may communicate the changes in this regard, if agreed any, through an addendum to tender document to the prospective bidders who purchased the tender document. Company will not accept any exception/deviation to tender conditions/specifications once the same are frozen after the pre-bid conference and the non-compliant bid (s) shall be rejected outright against this tender.

4.5 Tentative date of pre-bid conference is 17.08.2020.

5.0 **IMPORTANT NOTES:**

Bidders shall take note of the following important points while participating in OIL's e-procurement tender:

i) The bid along with all supporting documents must be submitted through OIL's E-procurement site only except the "Original Bid Security" and following documents which shall be submitted manually by the bidder in a sealed envelope superscribed with OIL's IFB No./ E-Tender No., Bid Closing date and marked as "Original Bid Security" and addressed to GM-Pipeline-Projects, Pipeline Projects Department, Oil India Limited, Guwahati-781171, Assam(India).

Additionally, following documents to be submitted in hard form if specifically called for in the tender:

a) Printed catalogue and Literature, if called for in the tender.

b) Power of Attorney for signing the bid.

c) Any other document required to be submitted in original as per tender requirement.

The above documents including the Original bid security, must be received at Pipeline Project's office, OIL at Guwahati on or before 13:00 Hrs. (IST) on the technical bid closing date failing which the bid shall be rejected. A scanned copy of the Bid Security shall also be uploaded by the bidder along with their Technical Bid in OIL's E-procurement site.

ii) Bid should be submitted online in OIL's E-procurement site up to 11.00 AM (IST)(Server Time) on the date as mentioned and will be opened on the same day at 2.00 PM(IST) at the office of the GM-Pipelines-Projects, Guwahati in presence of the authorized representatives of the bidders.

iii) If the digital signature used for signing is not of "Class -3" with Organizations name, the bid will be rejected.

iv) The Company reserves the right to reject any or all the tenders or accept any tender without assigning any reason.

v) Conditional bids are liable to be rejected at the discretion of the Company.

vi) The bidders are required to furnish the composition and status of ownership of the firm in whose name bid documents have been purchased / issued along with one or more of the following documentary evidences (which are applicable to the bidder) in support of the same and scanned copies of the same should be uploaded along with the Technical Bid.

a) In case of Sole Proprietorship Firm, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, business and residential address, E-mail and telephone numbers of the owner and copies of Service Tax and Central Excise Registration Certificate.

b) In case of HUF, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form, Family Arrangement indicating therein the name, residential address, E-mail and telephone numbers of the owners in general and Karta in particular and copies of Service Tax and Central Excise Registration Certificate.

c) In case of Partnership Firm, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, residential address, E-mail and telephone numbers of all the partners (including the Managing Partner), registered partnership agreement/deed and copies of Service Tax and Central Excise Registration Certificate.

d) In case of Co-Operative Societies, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the helm of affairs, registration certificate from Registrar of Co-Operative Societies and copies of Service Tax and Central Excise Registration Certificate.

e) In case of Societies registered under the Societies Registration Act, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the helm of affairs, registration certificate from the Registrar of the state and copies Service Tax and Central Excise Registration Certificate.

f) In case of Joint Stock Companies registered under the Indian Companies Act, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, residential address, E-mail and telephone numbers of all the Directors or persons who are at the helm of affairs, Certificate of Incorporation from the Registrar of Companies, Memorandum and Articles and copies of Service Tax and Central Excise Registration Certificate.

g) In case of Trusts registered under the Indian Trust Act, Copies of Telephone/Electricity/Mobile Bill, PAN card, latest Income Tax Return form indicating therein the name, residential address, E-mail and telephone numbers of all the Trustee or persons who are at the helm of affairs, registration certificate from the Registrar of the state, Trust Deed and copies Service Tax and Central Excise Registration Certificate.

vii) The selected bidder will be required to enter into a formal contract, which will be based on their bid and O.I.L.'s Standard Form of Contract.

viii) The Bid Security / Performance Security Money shall not earn any interest.

ix) Time will be regarded as the essence of the Contract and the failure on the part of the Contractor to complete the work within the stipulated time shall entitle the Company to recover liquidate damages and / or penalty from the Contractor as per terms of the tender /contract.

x) The contractor will be required to allow OIL officials to inspect the work site and documents in respect of the workers' payment.

xi) **BACKING OUT BY BIDDER:** No Bidder can withdraw his bid within the validity or extended validity of the bid. In case any bidder withdraws their bid within the bid validity period, Bid Security will be forfeited and the party will be put on Holiday as per the Banning Policy (available in OIL's website) of Company. Once a bid is withdrawn, the offer will be treated as withdrawn and no further claim / correspondence will be entertained in this regard.

xii) **BACKING OUT BY L-1 BIDDER AFTER ISSUE OF LOA:** In case LOA issued is not accepted by the L1 bidder or the Performance Security is not submitted as per the terms of the contract within the time specified in the Bid Document, the Bid Security shall be forfeited and the bidder shall be dealt as per the Banning Policy (available in OIL's website) of Company.

xiii) ERRING / DEFAULTING AGENCIES: Erring and defaulting agencies like bidder, contractor, supplier, vendor, service provider will be dealt as per OIL's Banning Policy dated 6th January, 2017 available in OIL's website: www.oil-india.com.

xiv) **The tender will be governed by:**

Forwarding Letter

Instruction to Bidders

BEC-BRC- Bid Evaluation Criteria & Bid Rejection Criteria.

Part-I : General Conditions of Contract (GCC)

Part-II : Scope of Work and Technical Specification

Part-III : Special Conditions of Contract (SCC)

Part-IV : Price Schedule

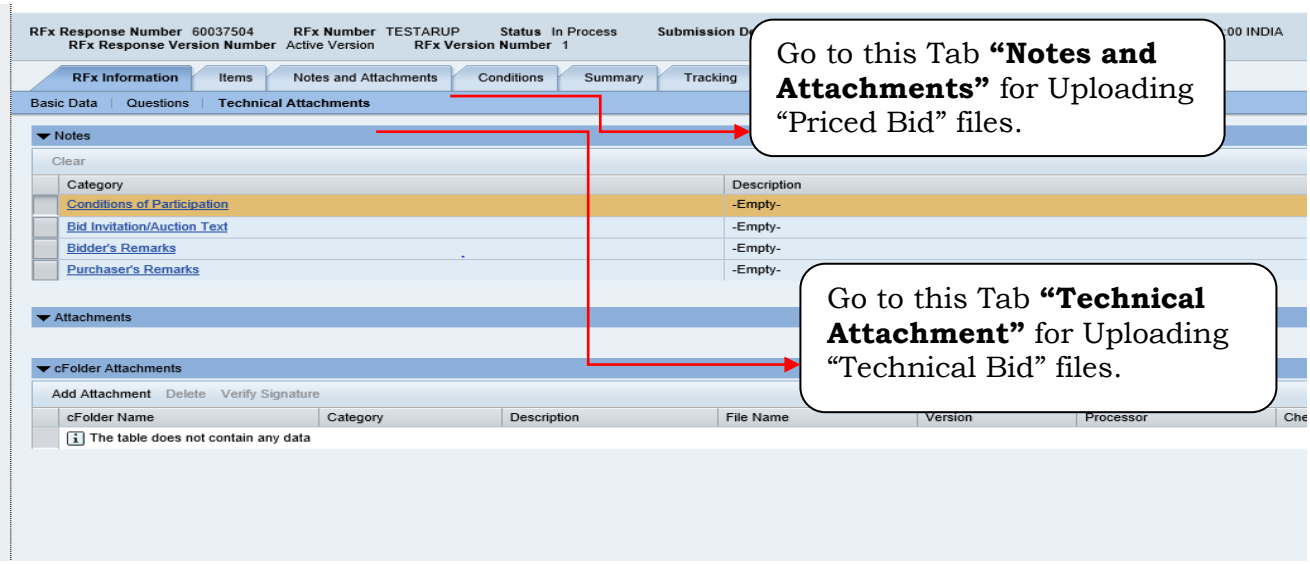
Part-V : Integrity Pact

Part-VI : Proforma and Annexures

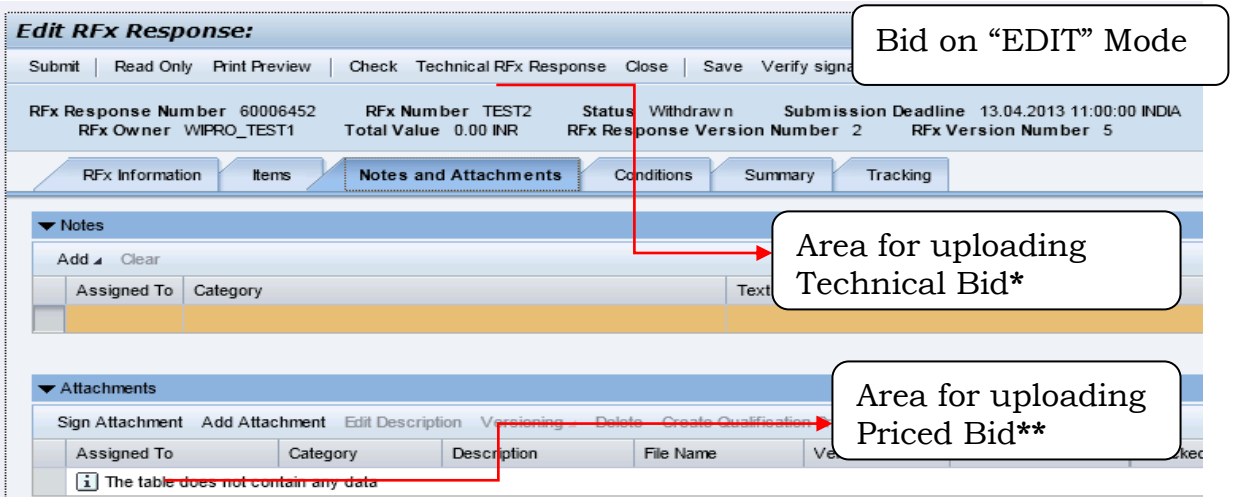
HSE Documents

xv) **Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the bid or submission of offers not substantially responsive to the bid in every respect will be at the bidder's risk and may result in the rejection of its offer without seeking any clarifications. Offers sent without the requisite value of prescribed bid security (if called for in the bid) in original will be ignored straightway.**

xvi) The tender is invited under **SINGLE STAGE-TWO BID SYSTEM**. The bidders shall submit both the "TECHNICAL" and "PRICED" bids through electronic form in the OIL's e-Procurement portal within the Bid Closing Date and Time stipulated in the e-Tender portal. The Technical Bid should be submitted as per Scope of Work & Technical Specifications along with all technical documents related to the tender and uploaded in **"Technical Attachments" Tab only**. **Bidders to note that no price details should be uploaded in "Technical Attachments" Tab Page. Details of prices as per Price Bid format/Priced bid to be uploaded under "Notes & Attachments" tab. A screen shot in this regard is shown below. Offer not complying with above submission procedure will be rejected as per Bid Evaluation Criteria mentioned in Clause 1.0 of (C) Commercial Evaluation Criteria.**



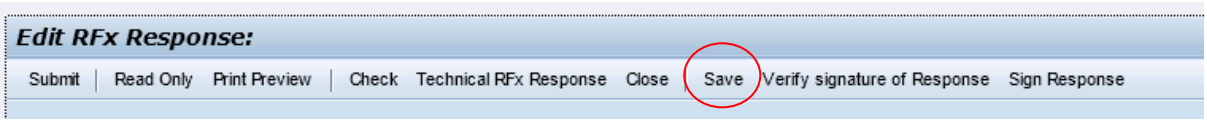
On "EDIT" Mode, Bidders are advised to upload "Technical Bid" and "Priced Bid" in the respective places as indicated below:



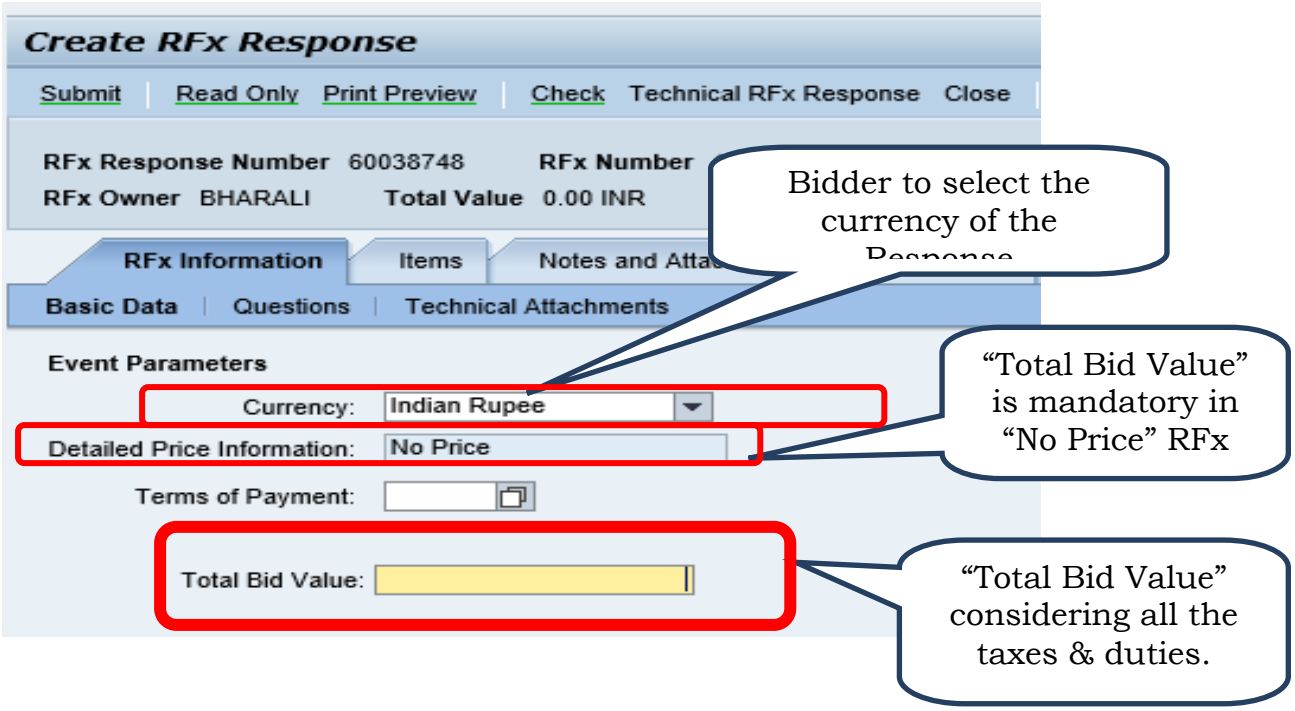
Note:

* The "Technical Bid" shall contain all techno-commercial details **except the prices**.

** The "Priced bid" must contain the price schedule and the bidder's commercial terms and conditions, if any.For uploading Priced Bid, click on Add Atachment, a browser window will open, select the file from the PC and name the file under Description, Assigned to General Data and click on OK to digitally sign and upload the File. Please click on Save Button of the Response to Save the uploaded files.



Maintenance of Total bid value in the Response: For convenience of the Bidders and to improve transparency, the rates/costs quoted by bidders against the E-tender shall be available for online viewing after price bid opening to those bidders whose price bids have been opened in the system. For tenders where **Detailed Price Information under RFx Information Tab is "No price"**, the Price Bid is invited through attachment form under "Notes & Attachment". As per the existing process, Bidders must upload their pricing as per the "Price Bidding Format" under **"Notes & Attachment"**. Additionally the bidders must fill up the **on-line field "Total Bid Value"** under Tab Page **"RFx Information"** with the Total Cost (Including the GST component) as per the amount of the Price Bid in attachment form.



The "Total Bid Value" as entered by the Bidder in the on-line response shall be displayed in the e-tender portal amongst the Techno-Commercially qualified bidders and Company will not take any responsibility whatsoever towards incorrect information furnished by the bidders in the "Total Bid Value" field.

It is to be noted that Amount mentioned in the "Total Bid Value" field will not be considered for bid evaluation and evaluation will be purely based on the "Price bidding Format".

(Please refer the Vendor User Manual available in the OIL's E-tender Portal)

6.0 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.

7.0 OIL now looks forward to your active participation in the IFB.

Sd-
(B Bharali)

CHIEF MANAGER MATERIALS (PL)

FOR GENERAL MANAGER - MATERIALS (PL)

FOR: CHIEF GENERAL MANAGER (PLS)

INSTRUCTIONS TO BIDDERS

1.0 Bidder shall bear all costs associated with the preparation and submission of bid. Oil India Limited, hereinafter referred to as Company, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

A. BID DOCUMENTS

2.0 The services required, bidding procedures and contract terms are prescribed in the Bid Document. This Bid Document includes the following:

(a) A Forwarding Letter highlighting the following points:

(i) Company's IFB No. & Type and Tender Fee

(ii) Bid closing date and time

(iii) Bid opening date and time

(iv) Bid submission Mode

(v) Bid opening place

(vi) Bid validity, Mobilisation time & Duration of contract

(vii) The amount of Bid Security with validity

(viii) The amount of Performance Guarantee with validity

(ix) Quantum of liquidated damages for default in timely mobilization etc

(b) Instructions to Bidders

(c) BEC-BRC- Bid Evaluation Criteria & Bid Rejection Criteria

(d) General Conditions of Contract (Part-I)

(e) Scope of work & Technical Specification,(Part-II)

(f) Special Conditions of Contract, (Part-III)

(g) Price Schedule, (Part-IV)

(h) Integrity Pact, (Part-V)

(i) Proforma and Annexures, (Part-VI)

(j) HSE Documents

2.1 The bidder is expected to examine all instructions, forms, terms and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a bid not substantially responsive to the Bid Documents in every respect will be at the Bidder's risk & responsibility and may result in the rejection of its bid.

3.0 TRANSFERABILITY OF BID DOCUMENTS:

3.1 Bid Documents are non-transferable. Bid can be submitted only in the name of the bidder in whose name the Bid Document has been issued.

3.2 Unsolicited bids will not be considered and will be rejected straightway.

4.0 AMENDMENT OF BID DOCUMENTS:

4.1 At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Documents through issuance of an Addendum.

4.2 The Addendum will be uploaded in OIL's E-Tender Portal in the Tab **"Technical Rfx"** and under External Area - "Amendments" folder. The Company may, at its discretion, extend the deadline for bid submission. Bidders are expected to take the Addendum into account in preparation and submission of their bid. **Bidders are to check from time to time the E-Tender portal ["Technical RFx" Tab and under the folder "Amendments"] for any amendments to the bid documents before submission of their bids. No separate intimation shall be sent to the Bidders.**

B. PREPARATION OF BIDS

5.0 LANGUAGE OF BIDS: The bid as well as all correspondence and documents relating to the bid exchanged between the Bidder and the Company shall be in English language, except that any printed literature may be in another language provided it is accompanied by an official and notarised English translated version, which shall govern for the purpose of bid interpretation.

6.0 BIDDER'S NAME & ADDRESS:

Bidders should indicate in their bids their detailed postal address including the Fax/Telephone /Cell Phone Nos. and E-mail address.

7.0 DOCUMENTS COMPRISING THE BID:

Bids are invited under Single Stage Two Bid System. The bid to be uploaded by the Bidder in OIL's E-Tender portal shall comprise of the following components:

(A) UN-PRICED TECHNICAL BID

(i) Complete technical details of the services and equipment specifications with catalogue, etc.

(ii) Documentary evidence established in accordance with Clause 10.0 hereunder.

(iii) Bid Security (scanned) in accordance with Clause 11.0 hereunder. Original Bid Security should be sent as per Clause No. 11.10 below.

(iv) Statement of Non-compliance (if any).

(v) Copy of Priced Bid (Schedule of Rates) ***without indicating prices***

(vi) Integrity Pact digitally signed by OIL's competent personnel, attached with the bid document to be digitally signed by the bidder.

(vii) Any other document as per tender requirement (scanned copy). Hard copy(s) of the same, if called for in the tender, should be sent separately to reach on or before **13:00 Hrs (IST) on the bid closing date failing which the bid shall be rejected.**

Note: Please note that no price details should be uploaded in UN-PRICED TECHNICAL BID under "Technical Attachment" Tab.

(B) PRICED BID

Bidder shall quote their prices in the Proforma available in OIL's E-procurement portal in the **"Notes & Attachments" Tab. The price quoted in the "PRICE BID FORMAT" will only be considered for evaluation.** The Priced Bid shall contain the prices along with the currency quoted and any other commercial information pertaining to the service offered.

8.0 BID FORM:

The bidder shall complete the Bid Form and the appropriate Price Schedule furnished in their Bid.

9.0 BID PRICE:

9.1 Prices must be quoted by the Bidders online as per the price bid format available in OIL's E-Tender Portal under "Notes & Attachment" Tab. Prices must be quoted by the bidders as per the Pricing format.

9.2 Prices quoted by the successful bidder must remain firm during its performance of the Contract and is not subject to variation on any account.

9.3 All duties and taxes (excluding GST) including Corporate Income Tax, Personal Tax, Entry Taxes if applicable etc. and other Cess/levies payable by the successful bidder under the Contract for which this Bid Document is being issued, shall be included in the rates, prices and total Bid Price submitted by the bidder, and the evaluation and comparison of bids shall be made accordingly. For example, personal taxes and/or any corporate taxes arising out of the profits on the contract as per rules of the country shall be borne by the bidder.

9.4 Bidders shall quote the prices in Indian Rupees only.

9.5 Bidders are advised to ensure timely submission of correct invoice(s) as per GST regulation with all required supporting document(s) within a period specified in Contracts/ LOA to enable Owner to avail Input Credit as applicable.

If input credit with respect to GST is not available to owner for any reason which is not attributable to owner, then Owner shall not be obligated or liable to pay or reimburse GST charged in the invoice(s).

9.6 It is presumed that bidder has already complied GST regulations. Bidder shall get registered in the three states i.e. Bihar, West Bengal & Assam before start of services.

9.7 All payment to be made by Owner shall be made in Indian Rupees only.

10.0 DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATIONS:

10.1 These are listed in **BID EVALUATION CRITERIA (BEC)** of the Bid document.

11.0 BID SECURITY:

11.1 The Bid Security is required to protect the Company against the risk of Bidder's conduct, which would warrant forfeiture of the Bid Security, pursuant to sub-clause 11.9 hereunder.

11.2 All the bids must be accompanied by Bid Security in Original for the amount as mentioned in the "Forwarding Letter" and shall be in the OIL's prescribed format as Bank Guarantee (BG) enclosed with the NIT .

The Bank Guarantee shall be valid for the time as asked for in the Bid Document. Bank Guarantees issued by Banks in India should be on non-judicial stamp paper of requisite value, as per Indian Stamp Act, purchased in the name of the Banker.

11.3 **Bidders can submit Bid Security on-line through OIL's electronic Payment Gateway. As in the tender there are three category of Spread, bidder quoting only for Spread C may submit online Bid Security/EMD i.e For Spread # C - Rs. 10.34 Lacs. Bank Guarantee is mandatory for Spread A & Spread B. However, bidder may choose bank Guarantee for Spread C also.**

11.4 Any bid not secured in accordance with **sub-clause 11.2** above shall be rejected by the Company as non-responsive.

11.5 The bidders shall extend the validity of the Bid Security suitably, if and when specifically advised by OIL, at the bidder's cost.

11.6 Unsuccessful Bidder's Bid Security will be discharged and/or returned within 30 days after finalization of IFB.

11.7 Successful Bidder's Bid Security will be discharged and/or returned upon Bidder's furnishing the Performance Security and signing of the contract. Successful bidder will however ensure validity of the Bid Security till such time the Performance Security in conformity with **Clause 29.0** below is furnished.

11.8 Bid Security shall not accrue any interest during its period of validity or extended validity.

11.9 The Bid Security may be forfeited:

i) The bidder withdraws the bid within its original/extended validity.

ii) The bidder modifies/revise their bid suo-moto.

iii) Bidder does not accept the order/contract.

iv) Bidder does not furnish Performance Security Deposit within the stipulated time as per tender/order/contract.

v) If it is established that the bidder has submitted fraudulent documents or has indulged into corrupt and fraudulent practice, the bid security shall be forfeited after due process in addition to other action against the bidder

11.10 In case any bidder withdraws their bid within the bid validity period, Bid Security will be forfeited and the party will be put on Holiday as per the Banning Policy (available in OIL's website) of Company.

11.11 **The scanned copy of the original Bid Security in the form of either Bank Guarantee or Banker's Cheque or Bank Draft must be uploaded by bidder along with the Technical bid in the "Technical Attachment" of OIL's E-portal**. The original Bid Security shall be submitted by bidder to the office of GM-Pipelines Projects, Oil India Ltd., Guwahati-781171(Assam), India in a sealed envelope which must reach GM- Pipelines Projects' office on or before 13:00 Hrs (IST) on the Bid Closing date.

11.12 A bid shall be rejected straightway if Original Bid Security is not received within the stipulated date & time mentioned in the Tender and/or if the Bid Security validity is shorter than the validity indicated in Tender and/or if the Bid Security amount is lesser than the amount indicated in the Tender.

11.13 The following is the Bank details of OIL for obtaining Bank Guarantee:

	Bank Details of Beneficiary	
a	Bank Name	AXIS BANK
b	Branch Name	GUWAHATI
c	Branch Address	CHIMBER HOUSE, G.S.ROAD, DISPUR ASSAM
d	Banker Account No.	140010200027654
e	Type of Account	Current Account
f	IFSC Code	UTIB0000140
g	MICR Code	781211002
h	SWIFT Code	AXISINBB140
i	Contact No.	8876501401
j	Contact Person Name	Mr. Dibakar Ghosh
k	Email Id	Guwahati.branchhead@axisbank.com

12.0 EXEMPTION FROM SUBMISSION OF BID SECURITY: In case any bidder is exempted from paying the Bid security, they should request OIL with supporting documents. The detailed guidelines for exemption of the Bid security are given below. The necessary documents must be uploaded in the technical bid(Technical Attachment) without which offer will be rejected.

12.1 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.

12.2 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.

12.3 Central Government Departments and Central Public Sector Undertakings (CPSUs) are also exempted from submitting bid security.

12.4 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 should also be enclosed.

12.5 Bids without EMD shall be rejected, if the technical offer does not include a valid copy of relevant MSE Certificate issued by appropriate authority.

13.0 PERIOD OF VALIDITY OF BIDS:

13.1 Bids shall remain **valid for 120** days from the date of closing of bid prescribed by the Company. **Bids of shorter validity will be rejected as being non-responsive.** If nothing is mentioned by the bidder in their bid about the bid validity, it will be presumed that the bid is valid for 120 days from Bid Closing Date.

13.2 In exceptional circumstances, the Company may solicit the Bidder's consent to an extension of the period of validity. The request and the response thereto shall be made in writing through Fax or e-mail. The Bid Security provided under Para 11.0 above shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request will neither be required nor permitted to modify their Bid.

C. SIGNING & SUBMISSION OF BIDS:

14.0 SIGNING OF BID:

14.1 Bids are to be submitted online through OIL's E-procurement portal with digital signature. The bid and all attached documents should be digitally signed by the bidder using "Class 3" digital certificates with Organizations Name [e-commerce application (Certificate with personal verification and Organisation Name)] as per Indian IT Act 2000 obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India before bid is uploaded. Digital Signature Certificates having "Organization Name" field other than Bidder's Name are not acceptable. Digital Signature Certificates having Bidder's Name in the "Organization Name" field are only acceptable.

The bid including all uploaded documents shall be digitally signed by duly authorized representative of the bidder holding a Power of Attorney to bind the Bidder to the contract.

If any modifications are to be made to a document after uploading, the same may be deleted and such revised document is to be Digitally Signed again before uploading. It is advised to delete the unwanted documents before submission of the response. The Power of Attorney shall be submitted by bidder as mentioned in Para 15.1 below.

In case the digital signature is not of "Class-3" with organization name, the bid will be rejected. Bidder is responsible for ensuring the validity of digital signature and its proper usage by their employees.

14.2 The original and all copies of the bid shall be typed or written in indelible inks. Since bids are to be submitted ONLINE with digital signature, manual signature is NOT relevant. The letter of authorisation shall be indicated by written Power of Attorney accompanying the Bid.

14.3 Any person signing the Bid or any other document in respect of this Bidding Document or other relevant documents on behalf of the Bidder without disclosing his authority to do so shall be deemed to have the authority to bind the Bidder. If it is discovered at any time that the person so signing has no authority to do so, the Company (OIL) may, without prejudice to any other right or remedy, cancel his Bid or Contract and hold the Bidder liable to the Company (OIL) for all costs and damages arising from the cancellation of the Bid or Contract including any loss which the Company (OIL) may sustain on account thereof.

14.4 Any physical documents submitted by bidders shall contain no interlineations, white fluid erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such correction shall be initialled by the person or persons who has/have digitally signed the Bid.

14.5 Any Bid, which is incomplete, ambiguous, or not in compliance with the Bidding process will be rejected.

15.0 SUBMISSION OF BIDS

15.1 The tender is processed under single stage - Two bid system. Bidder shall submit the Technical bid and Priced bid along with all the Annexures and Proforma (wherever applicable) and copies of documents in electronic form through OIL's e-procurement portal within the Bid Closing Date & Time stipulated in the e-tender. For submission of Bids online at OIL's E-Tender Portal, detailed instructions is available in **"User Manual"** available in OIL's E-Tender Portal. Guidelines for bid submission are also provided in the "Forwarding Letter". The Technical Bid is to be submitted as per Terms of Reference/Technical Specifications of the bid document and Priced Bid as per the Price Schedule. The Technical Bid should be uploaded in the "Technical Attachment" Tab Page only. Prices to be quoted as per Price Bid Format should be uploaded as Attachment just in the attachment link under "Notes & Attachments" Tab under General Data in the e-portal. **No price should be given in the "Technical Attachment", otherwise bid shall be rejected.** The priced bid ***should not*** be submitted in physical form and which shall not be considered.

However, the following documents in one set should necessarily be submitted in physical form in sealed envelope superscribing the "IFB No., Brief Description of services and Bid Closing/Opening date & Time along with the bidder's name and should be submitted to GM-Pipelines Projects, Oil India Ltd., Guwahati-781171 (Assam) on or before 13:00 Hrs (IST) on the bid closing date indicated in the IFB :

i) The Original Bid Security along with 1(one) photocopy

ii) Power of Attorney for signing of the bid

iii) Any other document required to be submitted in original as per bid document requirement.

Printed catalogue and literature if called for in the bid document.

Documents sent through E-mail/Fax/Telephonic method will not be considered.

15.2 All the conditions of the contract to be made with the successful bidder are given in various Sections of the Bid Document. Bidders are requested to state their non-compliance to each clause as per Proforma of the bid document and the same should be uploaded along with the Technical Bid.

15.3 Timely delivery of the documents in physical form as stated in Para 15.1 above is the responsibility of the bidder. Bidders should send the same through Registered Post or by Courier Services or by hand delivery to the Officer in Charge of the particular tender before the Bid Closing Date and Time. Company shall not be responsible for any postal delay/transit loss.

15.4 Bids received through the e-procurement portal shall only be accepted. Bids received in any other form shall not be accepted.

16.0 Before submission of Bids, Bidders are requested to make themselves fully conversant with all Conditions of the Bid Document and other relevant information related to the works to be executed under this contract.

17.0 DEADLINE FOR SUBMISSION OF BIDS:

17.1 Bids should be submitted online as per the online tender submission deadline. Bidders will not be permitted by System to make any changes in their bid/quote after the bid submission deadline is reached. Bidders are requested to take note of this and arrange to submit their bids within the submission deadline

to avoid last minute rush/network problems.

17.2 No bid can be submitted after the submission dead line is reached. The system time displayed on the e-procurement web page shall decide the submission dead line.

17.3 The documents in physical form as stated in Para 15.1 must be received by Company at the address specified in the "Forwarding Letter" on or before 13:00 Hrs(IST) on the Bid Closing Date. Timely delivery of the same at the address mentioned in the Forwarding Letter is the responsibility of the Bidders.

18.0 LATE BIDS: Bidders are advised in their own interest to ensure that their bids are uploaded in system before the closing date and time of the bid. The documents in physical form mainly the Original Bid Security if received by the Company after the deadline for submission prescribed by the Company shall be rejected and shall be returned to the Bidders in unopened condition immediately.

19.0 MODIFICATION AND WITHDRAWAL OF BIDS:

19.1 The Bidder after submission of Bid may modify or withdraw its Bid prior to Bid Closing Date & Time.

19.2 No Bid can be modified or withdrawn subsequent to the deadline for submission of Bids.

19.3 No Bid can be withdrawn in the interval between the deadline for submission of Bids and the expiry of the period of Bid Validity specified by the Bidder on the Bid Form. Withdrawal of a Bid during this interval shall result in the Bidder's forfeiture of its Bid Security and bidder shall also be debarred from participation in future tenders of OIL.

20.0 EXTENSION OF BID SUBMISSION DATE:

Normally no request for extension of Bid Closing Date & Time will be entertained. However, OIL at its discretion, may extend the Bid Closing Date and/or Time due to any reasons.

21.0 BID OPENING AND EVALUATION:

21.1 Company will open the Technical Bids, including submission made pursuant to clause 19.0, in presence of Bidder's representatives who choose to attend at the date, time and place mentioned in the Forwarding Letter. However, an authorisation letter from the Bidder must be produced by the Bidder's representative at the time of Bid Opening. Unless this Letter is presented, the representative will not be allowed to attend the Bid Opening. The Bidder's representatives who are allowed to attend the Bid Opening shall sign a register evidencing their attendance. Only one representative against each Bid will be allowed to attend. In technical bid opening, only "Technical Attachment" will be opened. Bidders therefore should ensure that technical bid is uploaded in the "Technical Attachment" Tab Page only in the E-portal.

21.2 In case of any unscheduled holiday or Bandh on the Bid Opening Date, the Bids will be opened on the next full working day. Accordingly, Bid Closing Date / time will get extended up to the next working day and time.

21.3 Bids which have been withdrawn pursuant to clause 19.0 shall not be opened. Company will examine bids to determine whether they are complete, whether requisite Bid Securities have been furnished, whether documents have been digitally signed and whether the bids are generally in order.

21.4 At bid opening, Company will announce the Bidder's names, written notifications of bid modifications or withdrawal, if any, the presence of requisite Bid Security, and such other details as the Company may consider appropriate.

21.5 Normally no clarifications shall be sought from the Bidders. However, for assisting in the evaluation of the bids especially on the issues where the Bidder confirms compliance in the evaluation and contradiction exists on the same issues due to lack of required supporting documents in the Bid (i.e. document is deficient or missing), or due to some statement at other place of the Bid (i.e. reconfirmation of confirmation) or vice versa, clarifications may be sought by OIL. In all the above situations, the Bidder will not be allowed to change the basic structure of the Bid already submitted by them and no change in the price or substance of the Bid shall be sought, offered or permitted.

21.6 Prior to the detailed evaluation, Company will determine the substantial responsiveness of each bid to the requirement of the Bid Documents. For purpose of these paragraphs, a substantially responsive bid is one, which conforms to all the terms and conditions of the Bid Document without material deviations or

reservation. A material deviation or reservation is one which affects in any way substantial way the scope, quality, or performance of work, or which limits in any substantial way, in-consistent way with the Bid Documents, the Company's right or the bidder's obligations under the contract, and the rectification of which deviation or reservation would affect unfairly the competitive position of other bidders presenting substantial responsive bids. The Company's determination of Bid's responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

21.7 A Bid determined as not substantially responsive will be rejected by the Company and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

21.8 The Company may waive minor informality or nonconformity or irregularity in a Bid, which does not constitute a material deviation, provided such waiver, does not prejudice or affect the relative ranking of any Bidder.

22.0 OPENING OF PRICED BIDS:

22.1 Company will open the Priced Bids of the techno-commercially qualified Bidders on a specific date in presence of representatives of the qualified bidders. The techno-commercially qualified Bidders will be intimated about the Priced Bid Opening Date & Time in advance. In case of any unscheduled holiday or Bandh on the Priced Bid Opening Date, the Bids will be opened on the next working day.

22.2 The Company will examine the Price quoted by Bidders to determine whether they are complete, any computational errors have been made, the documents have been properly signed, and the bids are generally in order.

22.3 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price (that is obtained by multiplying the unit price and quantity) the unit price shall prevail and the total price shall be corrected accordingly. If there is a discrepancy between words, and figures, the amount in words will prevail. If any Bidder does not accept the correction of the errors, their Bid will be rejected.

23.0 EVALUATION AND COMPARISON OF BIDS:

The Company will evaluate and compare the bids as per **BID EVALUATION CRITERIA (BEC)** of the Bid Document.

24.0 DISCOUNTS / REBATES:

Unconditional discounts/rebates, if any, given in the bid will be considered for evaluation.

24.1 Post bid or conditional discounts/rebates offered by any bidder shall not be considered for evaluation of bids. However, if the lowest bidder happens to be the final acceptable bidder for award of contract, and if they have offered any discounts/rebates, the contract shall be awarded after taking into account such discounts/rebates.

25.0 CONTACTING THE COMPANY:

25.1 Except as otherwise provided in **Clause 21.0** above, no Bidder shall contact Company on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded except as required by Company vide **sub-clause 21.6.**

25.2 An effort by a Bidder to influence the Company in the Company's bid evaluation, bid comparison or Contract award decisions may result in the rejection of their bid.

D. AWARD OF CONTRACT

26.0 AWARD CRITERIA:

The Company will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid for complete scope of work, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

27.0 COMPANY'S RIGHT TO ACCEPT OR REJECT ANY BID:

Company reserves the right to accept or reject any or all bids and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder, or bidders or any obligation to inform the affected bidder of the grounds for Company's action.

28.0 NOTIFICATION OF AWARD:

28.1 Prior to the expiry of the period of bid validity or extended validity, Company will notify the successful Bidder in writing by registered letter or by fax or E-mail (to be confirmed in writing by registered / couriered letter) that its Bid has been accepted.

28.2 The notification of award will constitute the formation of the Contract.

28.3 Upon the successful Bidder's furnishing of Performance Security pursuant to **Clause 29.0** below, the Company will promptly notify each un-successful Bidder and will discharge their Bid Security, pursuant to **Clause 11.0** hereinabove.

29.0 PERFORMANCE SECURITY:

29.1 On receipt of notification of award from the Company, the successful Bidder shall furnish to Company the Performance Security for an amount specified in the Forwarding Letter (and Letter of Award (LOA) issued by Company to Contractor awarding the contract) or in any other format acceptable to the Company and must be in the form of a Demand Draft or Bank Guarantee from any schedule Indian Bank or any Branch of an International bank situated in India and registered with Reserve Bank of India as scheduled foreign bank.

Bank Guarantee issued by a Bank, amongst others, must contain the following particulars of such bank:

a) Full address.

b) Branch Code.

c) Code Nos. of the authorized signatory with full name and designation.

d) Phone Nos., Fax Nos., E-mail address.

The domestic bidders will have to submit the Bank Guarantee from any of the scheduled banks and on non-judicial stamp paper of requisite value as per the Indian Stamp Act, purchased in the name of the issuing banker.

The Performance Security shall be denominated in the currency of the contract.

29.2 The Performance Security specified above must be valid for 3(three) months beyond the contract period after completion of warranty obligations. The Performance Security will be discharged by Company not later than 30 days following its expiry. In the event of any extension of the Contract period, Bank Guarantee should be extended by Contractor by the period equivalent to the extended period.

29.3 The Performance Security shall be payable to Company as compensation for any loss resulting from Contractor's failure to fulfil its obligations under the Contract.

29.4 The Performance Security will not accrue any interest during its period of validity or extended validity.

29.5 Failure of the successful Bidder to comply with the requirements of **clause 29.0 and/or 30.0** shall constitute sufficient grounds for annulment of the award and forfeiture of the Bid Security or Performance Security. In such an eventuality, action shall be taken as per OIL's Banning Policy.

30.0 SIGNING OF CONTRACT:

30.1 At the same time as the Company notifies the successful Bidder that its Bid has been accepted, the Company will either call the successful Bidder for signing of the agreement or send the Contract Form provided in the Bid Documents, along with the General & Special Conditions of Contract, Technical Specifications, Schedule of Rates incorporating all agreements agreed between the two parties.

30.2 The successful Bidder shall sign and date the contract and return it to the Company after receipt of LOA. Till the contract is signed, the LOA issued to the successful bidder shall remain binding amongst the two parties.

30.3 In the event of failure on the part of the successful Bidder to sign the contract, OIL reserves the right to terminate the LOA issued to the successful Bidder and invoke the Bid Security or the Performance Security if submitted by the successful Bidder.

31.0 INTEGRITY PACT:

31.1 OIL shall be entering into an Integrity Pact with the Bidders as per format enclosed at **Part V** of the Bid Document. The Integrity Pact has been duly signed digitally by OIL's competent signatory and uploaded in the OIL's e-portal. The Integrity Pact shall be returned by the bidder (along with the technical Bid) duly signed by the same signatory who signed the Bid i.e. who is duly authorized to sign the Bid. Uploading the Integrity Pact in the OIL's E-portal with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who has signed the bid. **If any bidder refuses to sign Integrity Pact or declines to submit the Integrity Pact, their bid shall be rejected straightway.**

31.2 OIL has appointed following three Independent Monitors (IEM) for a period of 3(three) years to oversee implementation of Integrity Pact in OIL. Bidders may contact the Independent External Monitors for any matter relating to the IFB at the following addresses:

a. Shri Sutanu Behuria, IAS (Retd.),

E-mail: sutanu2911@gmaiI.com

b. Shri Satyananda Mishra, IAS(Retd.),Former Chief Information Commissioner of India & Ex-Secretary, DOPT, Govt. of India

E-mail: satyanandamishra@hotmail.com

c. Shri Jagmohan Garg,

Ex-Vigilance Commissioner, CVC

e-Mail id : jagmohan.garg@gmail.com

32.0 LOCAL CONDITIONS:

It is imperative for each Bidder to be fully informed themselves of all Indian as well as local conditions, factors and legislation which may have any effect on the execution of the work covered under the Bidding Document. The bidders shall be deemed, prior to submitting their bids to have satisfied themselves of all the aspects covering the nature of the work as stipulated in the Bidding Document and obtain for themselves all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the various obligations under the Contract.

No request will be considered for clarifications from the Company (OIL) regarding such conditions, factors and legislation. It is understood and agreed that such conditions, factors and legislation have been properly investigated and considered by the Bidders while submitting the Bids. Failure to do so shall not relieve the Bidders from responsibility to estimate properly the cost of performing the work within the provided timeframe. Company (OIL) will assume no responsibility for any understandings or representations concerning conditions made by any of their officers prior to award of the Contract. Company (OIL) shall not permit any Changes to the time schedule of the Contract or any financial adjustments arising from the Bidder's lack of knowledge and its effect on the cost of execution of the Contract.

33.0 PURCHASE PREFERENCE POLICY (LINKED WITH LOCAL CONTENT)

(PP-LC)

Not Applicable.

34.0 SITE VISIT:

The Bidder, at the Bidder's own cost, responsibility and risk is encouraged to visit and examine the site of work and its surroundings, understand the logistics and obtain all information that may be necessary

for preparing the Bid and entering into a Contract for the required services/work. The Contractor shall be deemed prior to Pre-Bid Conference & submitting their Bid to have:

a) Inspected and examined the Site and its surroundings and carried out such surveys as it considers necessary;

b) Satisfied itself as to the nature of the work and materials necessary for the execution of the Works;

c) Satisfied itself as to the circumstances at the Site, including, without limitation, the ground and sub-soil, the form and nature of the Site and the climate and hydrological conditions of the Site;

d) Satisfied itself as to the means of communication with and access to & through the Site, the accommodation it may require and the precautions and the times and methods of working;

e) Obtained for itself all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the Contract price and its obligations under the Contract;

f) Satisfied itself with all the Indian as well as local conditions, factors and legislation which may have any effect on the execution of the work covered under the Bid Document.

g) Ascertained the general labour position at the Site and have understood the cost associated with engagement of the labours.

BID EVALUATION CRITERIA (BEC) /BID REJECTION CRITERIA (BRC)

I. VITAL CRITERIA FOR BID ACCEPTANCE:

The bid shall conform generally to the specifications and terms and conditions given in this bid document. Bids shall be rejected in case the services offered do not conform to required parameters stipulated in the technical specifications. Notwithstanding the general conformity of the bids to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.

A. TECHNICAL EVALUATION CRITERIA:

1.0 The following minimum criteria should be met by the bidder failing which their bid/offer will be rejected**:**

1.1 Bidder should have executed at least one contract for Permanent Cathodic Protection (PCP) work involving pre-design survey, design, supply, installation, testing, commissioning & post commissioning survey for buried cross-country hydrocarbon pipeline, of minimum 8" diameter, of length as defined below in last seven (07) years reckoned from the Original bid closing date.

Length of pipeline in single order for qualifying Spread # A	64 KM
Length of pipeline in single order for qualifying Spread # B	64 KM
Length of pipeline in single order for qualifying Spread # C	65 KM

1.2 The experience of a consortium member, if such a member has executed the job within its scope as the member of the consortium, which is required as experience as per the qualification criteria in clause A.1.1 will be considered. The appropriate documentary evidence is to be submitted towards such experience.

1.3 Documents required for meeting technical BEC requirement:

- Purchase Order / Work Order copy/ LOA
- Copy of SOR clearly describing the scope of work / Contract copy
- Completion certificate / Execution Certificate issued by owner certifying the size & length of pipeline executed.

In absence of requisite documents, OIL/Tractebel reserves the right to reject the bid without making any reference to bidders.

1.4 In case the bidder is executing a PCP contract which is still running and the quantity executed till one month prior to the Original Bid Closing date is equal to or more than the minimum requirement as mentioned above at clause no. A.1.1, such experience will also be taken into consideration provided that the bidder has submitted satisfactory work execution certificate to this effect issued by the end user / owner.

1.5 Bidders must quote for complete scope of work in each Spread. In case bidder quotes for incomplete scope of work, the bid shall be summarily rejected.

2.0 BIDS FROM CONSORTIUM OF COMPANIES:

2.1 Bids from a consortium of companies comprising maximum three members (one Leader and two members) are also acceptable, provided the following requirement should be satisfied by the bidder:

a) The leader of the Consortium meets the qualification criteria as defined at clause **A.1.1** above.

b) Only the Leader of the consortium shall buy the bid document, submit bid and sign the contract agreement (in the event of award of contract) on behalf of the consortium.

c) The Bid Security shall be in the name of the Leader of the consortium on behalf of consortium with specific reference to consortium bid and name & address of consortium members. Similarly the Performance Security shall be in the name of the Leader on behalf of the consortium.

d) The division in scope of work between Consortium members shall be commensurate with their past experience. The overall Project management shall be performed by the Leader. The members of Consortium shall assume responsibility jointly and severally and shall submit Agreement/MOU along with the bid clearly defining the scope and responsibility of each member along with nomination of the Leader. This Agreement/MOU must remain in force at least to the end of Defects Liability Period and shall be extended if required as per Owner's advice.

e) Each member in a consortium shall be a legal entity and not an individual person.

f) The consortium agreement shall essentially identify the "Leader's and the member. The Consortium leader and the distribution of work will be identified and set forth in the bid and will not be permitted to change thereafter without the consent of owner.

g) No change in project plans, timetables or pricing will be permitted as a consequence of any withdrawal of failure to perform by a consortium member.

h) Any bidder or entity can bid either singly or as a member of only one consortium.

2.2 BIDS FROM INDIAN JOINT VENTURE COMPANIES:

In case, the bidder is an Indian Joint Venture Company who does not meet the experience criteria as per clause No. **A.1.1** above, may also bid on the strength of Joint Venture Partner provided all the following criteria are compiled:

a. The Joint Venture Partner at its own shall meet the experience criteria A.1.1 above. The experience of the Joint Venture Partner with other firms will not be qualified. In this regard, the documents establishing experience of the Joint Venture Partner shall be submitted as per clause A.1.3 above.

b. The primary bidder shall meet the financial criteria as per clause B. Financial, sub clause 1.0 below.

2.2.1 Acceptable Memorandum of Understanding (MOU) has to be made between joint venture partners, clearly defining the role/responsibility (scope of work) of each partner, binding the members jointly and severally to all obligations under the contract, if awarded. The MOU should be addressed to OIL and shall remain valid and binding till the end of Defects Liability Period and shall be extended if required as per Owner's advice.

3.0 Bidder(s) quoting in Joint Venture Partnership/Consortium with any firm are not allowed to quote separately/independently against this tender. The Joint Venture Partner is also not allowed to quote separately/independently against this tender. All the bids received in such case will be summarily rejected.

4.0 The Bid must cover entire services mentioned in the tender (i.e. Scope of Work/Terms of Reference). Bid, which does not include all the jobs/services mentioned in the tender document/price schedule format will be considered as incomplete and rejected.

5.0 A job executed by a bidder for its own organization/subsidiary will not be considered as experience for the purpose of meeting BEC.

6.0 Multiple/Alternative bids: A bidder (i.e. the bidding entity) shall, on no account submit more than one bid directly (as a single bidder or as a member of consortium) failing which all bids submitted by such bidder, shall stand rejected and EMD, if any, submitted by bidder shall be forfeited.

NOTE: Oil India Limited (OIL) / Tractebel reserves the right to contact the Client(s) referred by the Bidder for authentication of the documents submitted by the bidder. OIL / Tractebel may contact the clients/operators under intimation/copy to the respective bidder. OIL/Tractebel will not be responsible for Client(s) not conforming or not replying to OIL's/Tractebel's request for information. If OIL/Tractebel does not get an affirmative response within the stipulated time then such Bidder's technical bid will be considered as non-responsive. It will be the responsibility of the Bidder to take up the matter with his Client(s) and arrange for the confirmation as desired by OIL/Tractebel.

B. FINANCIAL EVALUATION CRITERIA:

1.0 The minimum annual financial turnover of the bidder during any of the preceding 03(three) financial/accounting years reckoned from the original bid closing date should be as under:

Annual Turnover requirement	**Amount (INR)**
For qualifying in Spread # A	Rs. 1.16 Crores
For qualifying in Spread # B	Rs. 1.22 Crores
For qualifying in Spread # C	Rs. 1.73 Crores

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

3.0 In case the bidder is a Consortium of companies, then the minimum annual financial turnover during any of the preceding 03(three) financial/accounting years reckoned from the original bid closing date for the consortium members should be as under:

Annual Turnover Requirement	**At least one of the member of the Consortium**	**Other member(s) of the Consortium**
For qualifying in Spread # A	Rs. 1.16 Crores	Rs. 58.00 Lacs
For qualifying in Spread # B	Rs. 1.22 Crores	Rs. 61.00 Lacs
For qualifying in Spread # C	Rs. 1.73 Crores	Rs. 86.50 Lacs

The net worth of all the consortium partners individually should be positive for the financial/accounting year preceding the bid closing date.

NOTE: IN CASE BIDDER IS QUOTING FOR MORE THAN ONE SPREAD THEN BIDDER SHALL MEET TECHNICAL & FINANCIAL BEC ON CUMMULATIVE BASIS FOR QUOTED SPREADS.

4.0 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 2018-19 has actually not been audited so far'.

Note:

(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 Appendix to BEC. Practicing Chartered accountants shall generate Unique Document Identification number (UDIN) for all certificates issued by them.

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.

NOTE: OIL/Tractebel reserves the right to ask for any Original or other relevant document to verify the certification.

C. COMMERCIAL EVALUATION CRITERIA:

1.0 Bids are invited under Single Stage Two Bid System i.e. Technical Bid (Un-priced) and Commercial Bid (Priced) separately. Bidders must submit both "Technical" and "Commercial" Bids in electronic form through online OIL's e-Tender portal accordingly within the Bid Closing Date and time stipulated in the e-Tender. The Technical Bid is to be submitted as per Scope of Work & Technical Specifications of the tender and the Commercial Bid as per the **PRICE BID FORMAT**.

2.0 Bidder shall offer firm prices. Price quoted by the successful bidder must remain firm during the execution of the contract and not subject to variation on any account. Bids with adjustable price terms will be rejected.

3.0 Bids with shorter validity will be rejected as being non-responsive.

4.0 **Bid Security in Original shall be furnished as a part of the Technical Bid and shall reach OIL's GM-Pipelines Projects' office at Guwahati on or before 12.45 Hrs (IST) on the bid closing date. A scanned copy of the bid security shall however be uploaded in OIL's E-Procurement portal along with the Technical Bid.The amount of Bid Security shall be as specified in the Forwarding Letter of the Bid Document. Bid without proper & valid Bid Security will be rejected**.

5.0 The Integrity Pact must be uploaded in OIL's E-Procurement portal along with the Technical Bid digitally signed by the same signatory who digitally signed the Bid i.e. who is duly authorized to sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit the Integrity Pact, their bid will be rejected.

6.0 Physical Bids, if any received from the bidders, shall not be considered and will be rejected.

7.0 Bids submitted after the Bid Closing Date and Time will be rejected.

8.0 Bids received through the e-procurement portal shall only be accepted. Bids received in any other form whether it be Telex/Cable/Fax/E-mail shall not be accepted.

9.0 The bid documents are non-transferable. Bid can only be submitted in the name of the bidder in whose name the User ID and Password have been issued & purchased the tender document online. Unsolicited bids will not be considered and will be straightway rejected.

10.0 Bids documents shall be typed or written in indelible ink and shall be digitally signed by the bidder or his authorised representative.

11.0 Any physical documents wherever called for, submitted by bidders shall contain no interlineations, white fluid erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such correction shall be initialled by the person or persons who has/have digitally signed the Bid.

12.0 Bidders shall bear, within the quoted rates, the personal tax as applicable in respect of their personnel and Sub-Contractor's personnel, arising out of execution of the contract.

13.0 Bidders shall bear, within the quoted rate, the corporate tax as applicable on the income from the contract.

14.0 Any Bid containing false statement will be rejected.

15.0 Bidders must quote clearly and strictly in accordance with the price schedule outlined in "Price Bid Format" of Bid Document, otherwise the Bid will be summarily rejected.

16.0 Non-submission of the documents as specified in BEC will result in rejection of bids.

17.0 Bidder must accept and comply with the following clauses as given in the Bid Document in toto failing which bid will be rejected –

i) Performance Guarantee Clause

ii) Force Majeure Clause

iii) Tax Liabilities Clause

iv) Arbitration Clause

v) Acceptance of Jurisdiction and Applicable Law

vi) Liquidated damage and penalty clause

vii) Safety, Environment &Labour Law

viii) Termination Clause

ix) Integrity Pact

x) Warranty and remedial of defects

xi) Liability

xii) Insurance

xiii) Complete scope of work

18.0 The Bids and all uploaded documents must be digitally signed using "Class 3" digital certificate [e-commerce application (Certificate with personal verification and Organization name)] 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.

D. PRICE EVALUATION CRITERIA:

The bids conforming to the technical specifications, terms and conditions stipulated in the bidding document and considered to be responsive after subjecting to Bid Evaluation Criteria will be considered for further evaluation as per the Price Evaluation Criteria given below:

1.0 Complete scope of work is divided into three spreads. Bidder has option to quote for one spread or more than one spread. Bidder to quote for complete scope of work for quoted spread. Bid submitted for part scope of work for quoted spread, shall be rejected. Bidder must quote for each SOR line item for quoted spread.

2.0 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.

3.0 In case the same bidder is technically and financially qualifying for all the three Spread separately but not in cumulative, and is also the L1 bidder for all the three Spread, the entire work shall be finalized on overall least cost to owner. If a bidder happens to be lowest in more than one Spread and has qualified only for one or more than one of the Spread and not all Spreads, as the case may be, once certain Spread is allocated to such L-1 bidder based on the least cost basis, the bidder ceases to be lowest bidder for the remaining Spread.

4.0 The bidders must quote their charges/rates in the manner as called for vide "Price Schedule" under Part -IV for each Spread.

5.0 Bidder must quote for all the items covered in Price Schedule of the each Spread quoted by them, else the bid will be rejected. The bid will not be evaluated if bidder fails to quote against the items mentioned in the Price Schedule for each Spread.

6.0 **Discount:** Bidders are advised not to indicate any separate discount. Discount if any, should be merged with the quoted price. Discount of any type indicated separately will not be taken in to account for evaluation purposes. However, in the event such offer without considering discount is found to the lowest, OIL shall avail such discount at the time of award of contract.

7.0 Evaluation of Price bid shall be carried out on overall basis means for complete scope of work for each Spread i.e. Spread # A, Spread # B, Spread # C.

8.0 EVALUATION OF PRICE BIDS

8.1 Total evaluated price for complete scope of work for each spread inclusive of Goods & Service Tax (GST) shall be compared. Lowest evaluated bidder shall be considered for Award for respective spread.

9.0 PURCHASE PREFERENCE:

9.1 Not applicable

E. GENERAL:

1.0 The compliance statement should be suitably filled up by the Bidder and to be uploaded alongwith the Techno-commercial bid. Exception/deviations with respect to the clauses under BEC/ BRC above shall not be accepted. However, in case the bidder takes exception to any clause of the tender document not covered under BEC/ BRC, then the Company has the discretion to load or reject the offer on account of such exception if the bidder does not withdraw/modify the deviation when/as advised by Company. The loading so done by the Company will be final and binding on the bidders.

2.0 To ascertain the substantial responsiveness of the bid, the Company reserves the right to ask the bidder for clarifications in respect of clauses covered under BEC also and such clarifications fulfilling the BEC clauses in toto must be received on or before the deadline given by the Company, failing which the offer will be summarily rejected.

3.0 If any of the clauses in the BEC / BRC contradict with other clauses of tender document elsewhere, then the clauses in the BEC / BRC shall prevail.

4.0 Bidders should provide copies of the following:

- GST Registration Certificate
- PAN Card
- Bank A/C NO, Bank Address, with IFSC Code
- Vendor Code (for existing vendors),
- P.F. Registration Number OR Declaration (Declaration by applicant that provisions of Provident Fund Act are not applicable to them. In case P.F. is required to be deposited later on, the same will be deposited by the bidder (Applicant).In case successful bidder doesn't have P.F. Code at the time of bidding and PF Act is applicable on him/her, the same has to be provided by him/her before signing of contract agreement and issue of work order by OIL.

APPENDIX-I

CERTIFICATE OF ANNUAL TURNOVER & NET WORTH

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 the audited financial statements of M/s.....(Name of the Bidder) for the last three (3) completed accounting years upto……..(as the case may be) are correct.

YEAR	TURN OVER In INR (Rs.) Crores	NET WORTH In INR (Rs.) Crores

Place:

Date:

Seal:

Membership No.

Registration Code :

UDI No. :

Signature

OIL INDIA LTD

GENERAL CONDITIONS OF CONTRACT

PART – I

GENERAL CONDITIONS OF CONTRACT

1.0 APPLICABILITY, DEFINITION & INTERPRETATION

1.1 Applicability

All clauses in the General Conditions of Contract [GCC] shall apply to all transactions except as otherwise stated in the Special Conditions of Contract [SCC] and/or BEC/BRC. Furthermore, in the event if there is any conflict between the Principal text of the Agreement and the Appendixes, the Principal text will prevail.

1.2 Definition & Interpretation

In the contract (as hereinafter defined) the following words and expressions shall have the meaning hereby assigned to them except where the context otherwise requires:

1.2.1 COMPANY/OIL/Operator:

Shall mean Oil India Limited [OIL] a public sector undertaking, incorporated under COMPANY's Act 1956 having its registered office at Duliajan-786602, Assam, India and includes its successor and permitted assigns.

1.2.2 CONTRACTOR:

Shall mean the person or persons, firm or COMPANY or corporation incorporated in India or abroad, who has been awarded with the contract and includes contractor's legal representatives, his successors and permitted assigns.

1.2.3 Contract:

Shall mean a written agreement between the COMPANY and the CONTRACTOR for execution of the services/works including all contract documents and subsequent amendments, if any.

1.2.4 Site:

Shall mean the place in which the operations/services are to be carried out or places approved by OIL for the purposes of the CONTRACT together with any other places designated in the CONTRACT as forming part of the site.

1.2.5 COMPANY's Site Representative/Engineer:

Shall mean the person or the persons appointed by the COMPANY from time to time to act on its behalf at the site for overall co-ordination, supervision and project management at site.

1.2.6 Sub-Contract:

Shall mean order/contract placed by the CONTRACTOR for any portion of the CONTRACT or work sublet with necessary written consent of COMPANY on third party. Such sub-letting shall not relieve the CONTRACTOR from any obligation, duty or responsibility under the CONTRACT.

1.2.7 Sub-Contractor:

Shall mean any person or firm or COMPANY (other than CONTRACTOR) to whom any part of the work has been entrusted by CONTRACTOR, with written consent of OIL or the persons appointed by OIL, successors and permitted assigns of such persons, firm or COMPANY).

1.2.8 Contractor's Representative:

Shall mean such person/or persons duly appointed representative at the site and base as the CONTRACTOR may designate in writing to the COMPANY as having authority to act for the CONTRACTOR in matters affecting the work and to provide the requisite services.

1.2.9 Contract Price/Value:

Shall mean the sum accepted or the sum calculated in accordance with the rates accepted in tender and/or the contract rates as payable to the CONTRACTOR for the entire execution and completion of the services/works, including amendments/modification/change order issued by the COMPANY.

1.2.10 Firm price:

The prices will remain unchanged, except for statutory changes, during currency of the CONTRACT unless specifically agreed to in writing by COMPANY.

1.2.11 Service/Works/Operations:

Shall mean and include all items and things to be supplied/done and all work/Service to be performed by the CONTRACTOR as specified in the Scope of Work under this CONTRACT and shall also include all extra, additional, altered or substituted works/services as required for the purpose of successful execution of the Contract.

1.2.12 Equipment/Materials/Goods:

Shall mean and include any equipment, machinery, instruments, stores, goods which CONTRACTOR is required to provide to the COMPANY for/under the CONTRACT and amendments thereto.

1.2.13 Drawings:
Shall mean and include all Engineering sketches, general arrangements/ layout drawings, sectional plans, all elevations, photographs, etc. related to the CONTRACT together with modification and revision thereto.

1.2.14 Specifications:
Means and includes all technical specifications, provision attached and referred to in the tender/contract document regarding method and manner of performing the services and qualities of the service/materials to be provided under the contract and also as modified by the COMPANY/its site representative during the execution of contract in the best interest of service.

1.2.15 Engineer In-charge (EIC):
Shall mean the person designated from time to time by the COMPANY and shall include those who are expressly authorized by the COMPANY to act for and on its behalf for operation of the contract.

1.2.16 Inspectors:
Shall mean any person or outside Agency nominated by COMPANY to inspect equipment, materials and services, if any, in the CONTRACT (stage wise as well as final) as per the terms of the CONTRACT.

1.2.17 Tests:
Shall mean such process or processes to be carried out by the CONTRACTOR as are prescribed in the CONTRACT, considered necessary by the COMPANY or their representative to ascertain quality, workmanship, performance and efficiency of equipment or services thereof.

1.2.18 Approval:
Shall mean and include the written consent duly signed by COMPANY or their authorized official in respect of all documents, drawings or other particulars in relation to the CONTRACT.

1.2.19 Day:
Shall mean a calendar day of twenty –four (24) consecutive hours beginning at 00:00 hours with reference to local time at the site.

1.2.20 Month:
Shall mean a calendar month as per Gregorian calendar.

1.2.21 Year:
Shall mean calendar year as per Gregorian calendar.

1.2.22 Working day:
Means any day which is not declared to be holiday by the COMPANY.

1.2.23 Bid/offer:
Shall mean the proposal/Offer along with supporting documents submitted by the bidder in response to the tender or enquiry in accordance with the terms of Tender or Enquiry, for consideration by COMPANY, prior to award of contract.

1.2.24 Guarantee:
Shall mean the period and other conditions governing the warranty/guarantee of the services as provided in the CONTRACT.

1.2.25 Mobilization:
Shall mean rendering the equipment fully manned and equipped as per CONTRACT and ready to begin work at site designated by the COMPANY and accepted by the COMPANY after inspection.

1.2.26 De-mobilization:
Shall mean the removal of all items forming part of the mobilization from the site of the COMPANY and inspection and acceptance thereafter by the COMPANY including compliance of requirement in relation to re-export of imported equipment/materials under concessional duty scheme in accordance with relevant notification from Customs Authorities.

1.2.27 Willful Misconduct:
Shall mean intentional disregard of good and prudent standards of performance or proper conduct under the Contract with knowledge that it is likely to result in any injury to any person or persons or loss or damage of property of the Company or Third Party.

1.2.28 Gross Negligence:
Shall mean any act or failure to act (whether sole, joint or concurrent) by a person or entity which was intended to cause, or which was in reckless disregard of or unjustifiable indifference to, avoidable and harmful consequences such person or entity knew, or should have known, would result from such act or failure to act. Notwithstanding the foregoing, Gross negligence shall not include any action taken in good faith for the safeguard of life or property.

1.2.29 Criminal Negligence:
Shall mean that the crime happened negligently, there was duty of care upon the Person but inadvertently due to his negligence, the duty was breached, which causes harm to the people in the form of death or serious injury.

1.2.30 GST Legislations:
'GST legislations' means 'any or all of the following legislations as may be applicable to the CONTRACTOR and OIL:

(A) The Central Goods & Services Tax Act, 2017;
(B) The Integrated Goods & Services Act, 2017;
(C) The Union Territory Goods & Services Tax Act, 2017;
(D) The respective State Goods & Service Tax Acts'
(E) The Goods and Services (Compensation to States) Act, 2017
(F) The Customs Act and the Customs Tariff Act.
(G) Any other applicable Act related to GST

2.0 CONTRACT DOCUMENT:

2.1 Governing language: The governing language for the CONTRACT shall be English. All CONTRACT documents and all correspondence and communication to be given and all other documentation to be prepared and supplied under the CONTRACT shall be written in English and the CONTRACT shall be construed and interpreted in accordance with English language.

2.2 Entire Agreement: The CONTRACT constitutes the entire agreement between OIL and the CONTRACTOR with respect to the subject matter of the CONTRACT and supersedes all communication, negotiations and agreement (whether written or oral) of the parties with respect thereto made prior to the date of this agreement, unless such communication(s) expressly forms part of the contract or included by reference.

2.3 Amendment in CONTRACT: No Amendment of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto. OIL shall not be bound by any printed conditions, provisions in the CONTRACTOR's BID, forms of acknowledgement of CONTRACT, invoice and other documents which purport to impose any condition at variance with or supplement to CONTRACT.

3.0 WAIVERS AND AMENDMENTS:

3.1 **Waivers:** It is fully understood and agreed that none of the terms and conditions of this contract shall be deemed waived by either party unless such waiver is executed in writing only by the duly authorized representatives of both the parties. The failure of either party to execute any right shall not act as a waiver of such right by such party.

3.2 **Change Program:** It is agreed that CONTRACTOR shall carry out work in accordance with the completion program (e.g. Drilling Programme) to be furnished by the COMPANY, which may be changed from time to time by reasonable modifications in the program as COMPANY sees fit. COMPANY's instruction in this regard shall be final and binding.

4.0 CONTRACT TIMELINE:

4.1 Effective Date of Contract:
The contract shall become effective as of the date COMPANY notifies the CONTRACTOR in writing that it has been awarded the contract. This date of issuance of Letter of Award (LOA) by the COMPANY will be the effective date of contract. All terms and conditions of the contract shall come into force with the date of issuance of LOA.

4.2 Date of Commencement of Operation:
The date on which the mobilization is completed in all respects and CONTRACTOR is ready to commence operation as per the contract provision [Certified by the COMPANY's representative] will be treated as the date of Commencement of Operation.

4.3 Duration of the contract:
The contract shall be valid for a period as defined in the LOA and Special Conditions of Contract [SCC].

5.0 SCOPE OF WORK/CONTRACT:
Scope of the CONTRACT shall be as defined in the CONTRACT, specifications, drawings and Appendices.

6.0 GENERAL OBLIGATION OF CONTRACTOR:
CONTRACTOR shall, in accordance with and subject to the terms and conditions of this Contract:

6.1 Perform the work described in the Terms of Reference/Scope of Work. The CONTRACTOR shall execute the work with professional competence and in an efficient and workman like manner.

6.2 Except as otherwise provided in the Terms of Reference and the special Conditions of the contract, employ all labours/personnel as required to perform the work.

6.3 Perform all other obligations, work and services which are required by the terms of this contract or which reasonably can be implied from such terms as being necessary for the successful and timely completion of the work.

6.4 Comply with all applicable statutory obligations specified in the contract.

6.5 CONTRACTOR shall be deemed to have satisfied himself before submitting their bid as to the correctness and sufficiency of its bid for the services required and of the rates and prices quoted, which rates and prices shall, except insofar as otherwise provided, cover all its obligations under the contract.

6.6 CONTRACTOR shall be deemed, prior to submitting their bids, to have satisfied themselves about the weather conditions, working culture in the area, socio-political environment, safety & security aspects, law & order situation and law of the land, and obtain for themselves all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the various obligations under the Contract.

6.7 CONTRACTOR shall give or provide all necessary supervision during the performance of the services and as long thereafter within the warranty period as COMPANY may consider necessary for the proper fulfilling of CONTRACTOR's obligations under the contract.

7.0 GENERAL OBLIGATION OF COMPANY:

COMPANY shall, in accordance with and subject to the terms and conditions of this contract:

7.1 Pay CONTRACTOR in accordance with terms and conditions of the contract.

7.2 Allow CONTRACTOR access, subject to normal security and safety procedures, to all areas as required for orderly performance of the work as specified in the Scope of Works of the contract or work connected therewith.

7.3 Perform all other obligations required of COMPANY by the terms of this contract.

8.0 DUTIES AND POWER/AUTHORITY:

8.1 OIL's site representative/engineer:

The duties and authorities of OIL's site representative/engineer are to act on behalf of OIL for:

(a) Overall supervision, co-ordination and Project Management at site.

(b) Proper and optimum utilization of equipment and services.

(c) Monitoring of performance and progress

(d) Commenting/countersigning on reports made by the CONTRACTOR's representative at site in respect of works, receipts, consumption etc. after satisfying himself with the facts of the respective cases.

(e) He shall have the authority, but not obligation at all times and any time to inspect/test/examine/verify any equipment machinery, instruments, tools, materials, personnel, procedures and reports etc. directly or indirectly pertaining to the execution of the work. However this shall not construe to imply an acceptance by the inspector. Hence, the overall responsibility of quality of work shall rest solely with the CONTRACTOR.

(f) Each and every document emerging from site in support of any claim by the CONTRACTOR has to have the countersignature/comments of the OIL's representative/engineer without which no claim shall be entertained by the OIL.

8.2 CONTRACTOR's representative:

(a) The CONTRACTOR's representative shall have all the powers requisite for the performance of the Service/Works, subject to holding due authorization from the CONTRACTOR.

(b) Representative(s) shall liaise with OIL's representative/engineer for the proper co-ordination and timely completion of the works and on any matter pertaining to the works.

(c) Representative(s) shall extend full co-operation to OIL's representative/inspector/engineer in the manner required by them for supervision/inspection/observation of equipment, material, procedures, performance, reports and records pertaining to works.

(d) To have complete charge of CONTRACTOR's personnel engaged in the performance of the work and to ensure compliance of rules and regulations and safety practice.

9.0 Personnel to be deployed by contractor:

CONTRACTOR warrants that it shall provide competent, qualified and sufficiently experienced personnel to perform the work correctly and efficiently.

9.1 The CONTRACTOR should ensure that their personnel observe all statutory safety requirement including those prescribed by the COMPANY. Upon COMPANY's written request, CONTRACTOR, entirely at its own expense, shall remove immediately any personnel of the CONTRACTOR determined by the COMPANY to be unsuitable and shall promptly replace such personnel with personnel acceptable to the COMPANY. Replacement personnel should be mobilized within 15 days from the date of issuance of notice without affecting the operation of the COMPANY.

9.2 The CONTRACTOR shall be solely responsible throughout the period of the contract for providing all requirements of their personnel including but not limited to, their transportation to & fro from Duliajan/field site, enroute/ local boarding, lodging, personal protective gear & medical attention etc. COMPANY shall have no responsibility or liability in this regard.

9.3 However, COMPANY shall provide available medical assistance/facilities to CONTRACTOR's Personnel in case of emergency at its own establishment on chargeable basis.

9.4 CONTRACTOR's key personnel shall be fluent in English language (both writing and speaking).

10.0 PERFORMANCE SECURITY:

10.1 On receipt of notification of award from the COMPANY, the CONTRACTOR shall furnish the Performance Security to COMPANY within 15 (fifteen) days from the date of issue of LOA for an amount specified in the Forwarding Letter and Letter of Award (LOA) as per Proforma-Form and must be in the form of a Bank Draft/Cashier's cheque/Banker's cheque*/ NEFT/RTGS/Electronic fund transfer to designated account of OIL# or Fixed Deposit Receipt (account OIL INDIA LIMITED) or irrevocable Bank Guarantee or irrevocable Letter of Credit (LC) from:

10.2 Any schedule Indian Bank or Any Branch of an International bank situated in India and registered with Reserve Bank of India as scheduled foreign bank in case of domestic CONTRACTOR/service provider, or

10.3 In case of foreign CONTRACTOR/service provider, the bank guarantee can be accepted from any scheduled bank in India or from International bank who has its branch in India registered with Reserve Bank of India.

Any foreign Bank which is not a Scheduled Bank in India, provided the Bank Guarantee issued by such Bank is counter-guaranteed by any Branch situated in India of any Scheduled Bank incorporated in India.

Bank Guarantee issued by a Scheduled Bank of India at the request of some other Non-Schedule Bank of India shall not be acceptable.

10.4 Bank Guarantee issued by a Bank, amongst others, must contain the following particulars of such bank:

Full address.
Branch Code.
Code Nos. of the authorized signatory with full name and designation.
Phone Nos., Fax Nos., E-mail address.

10.5 The domestic CONTRACTOR/service provider(s) will have to submit the Bank Guarantee from any of the scheduled banks and on non-judicial stamp paper of requisite value as per the Indian Stamp Act, purchased in the name of the issuing banker.

10.6 The foreign CONTRACTOR/service provider(s) will submit the Bank Guarantee from Banks of Indian origin situated in their country. In case no such bank of Indian origin is situated in their country, the Bank Guarantee may be submitted from the bankers as specified above.

10.7 The Performance Security shall be denominated in the currency of the contract.

10.8 The Performance Security specified above must be valid for the entire duration of the Contract and claim period should be valid for a minimum of 03 (three) months beyond the contract period. The Performance Security will be discharged by COMPANY not later than 30 days following its expiry of claim period. In the event of any extension of the Contract period, Bank Guarantee should be extended by CONTRACTOR by the period equivalent to the extended period.

10.9 The Performance Security shall be encashed by COMPANY on account of CONTRACTOR's failure to fulfil its obligations under the Contract and/or non-performance/un-satisfactory of the Contractor. Company shall not be

required to proof any loss or damage on account of Contractor's non-performance/un-satisfactory performance.

10.10 The Performance Security will not accrue any interest during its period of validity or extended validity.

10.11 Failure of the successful Bidder to comply with the requirements of clause 10.0 shall constitute sufficient grounds for annulment of the award and forfeiture of the Bid Security. In such an eventuality, action will be initiated as per the Banning Policy of OIL in vogue.

#Subject to credit in OIL's account within prescribed time

*The validity of Bank Draft/Cashier's/Banker's cheque (as applicable) should not be less than 3 months.

In the event CONTRACTOR fails to honour any of the commitments entered into under this agreement, and/or in the event of termination of the contract under provisions of Integrity Pact and/or in respect of any amount due from the CONTRACTOR to OIL, OIL shall have unconditional option under the guarantee to invoke the above bank guarantee and claim the amount from the bank. The bank shall be obliged to pay the amount to OIL on demand.

11.0 SIGNING OF CONTRACT:

11.1 The successful bidder is required to sign a formal detailed contract with OIL within a maximum period of 60 days of date of LOA. Until the contract is signed, the LOA as well as GCC & SCC as prescribed in the Tender, shall remain binding amongst the two parties. In the event of failure on the part of the successful Bidder to sign the contract, OIL reserves the right to terminate the LOA issued to the successful Bidder and invoke the Bid Security or the Performance Security if submitted by the successful Bidder. Such CONTRACTOR shall be put on holiday as per the Banning Policy of OIL [available at www.oil-india.in].

12.0 CLAIMS, TAXES & DUTIES:

12.1 Claims:

CONTRACTOR agrees to pay all claims, taxes and fees for equipment, labour, materials, services and supplies to be furnished by it hereunder and agrees to allow no lien or charge resulting from such claims to be fixed upon any property of COMPANY. COMPANY may, at its option, pay and

discharge any liens or overdue charges for CONTRACTOR's equipment, labour, materials, services and supplies under this CONTRACT and may thereupon deduct the amount or amounts so paid from any sum due, or thereafter become due, to CONTRACTOR hereunder.

12.2 Notice of claims:

CONTRACTOR or COMPANY, as the case may be, shall promptly give the other, notice in writing of any claim made or proceeding commenced for which that party is entitled to indemnification under the CONTRACT. Each party shall confer with the other concerning the defense of any such claims or proceeding, shall permit the other to be represented by counsel in defense thereof, and shall not affect settlement of or compromise any such claim or proceeding without the other's written consent.

12.3 Taxes:

12.3.1 CONTRACTOR, unless specified otherwise in the CONTRACT, shall bear all tax liabilities, duties, Govt. levies etc. including GST and customs duty, Corporate and personnel taxes levied or imposed on the CONTRACTOR on account of payments received by it from the COMPNAY for the work done under this CONTRACT. It shall be the responsibility of CONTRACTOR to submit to the concerned Indian authorities, the returns and all other concerned documents required for this purpose and to comply in all respects with the requirements of the laws in this regard, in time.

12.3.2 Tax levied on CONTRACTOR as per the provisions of Indian Income Tax Act and any other enactment/rules on income derived/payments received under the contract will be on CONTRACTOR's account.

12.3.3 CONTRACTOR shall be responsible for payment of personal taxes, if any, for all the personnel deployed in India by CONTRACTOR.

12.3.4 The CONTRACTOR shall furnish to the COMPANY, if and when called upon to do so, relevant statement of accounts or any other information pertaining to work done under the contract for submitting the same to the Tax authorities, on specific request from them in accordance with provisions under the law. CONTRACTOR shall be responsible for preparing and filing the return of income etc. within the prescribed time limit to the appropriate authority.

12.3.5 Prior to start of operations under the contract, the CONTRACTOR shall furnish the COMPANY with the necessary documents, as asked for by the COMPANY and/or any other information pertaining to the contract, which may be required to be submitted to the Income Tax authorities at the time

of obtaining "No Objection Certificate" for releasing payments to the CONTRACTOR.

12.3.6 Corporate income tax will be deducted at source from the invoice at the specified rate of income tax as per the provisions of Indian Income Tax Act as may be in force from time to time and COMPANY will issue TDS Certificate to the CONTRACTOR as per the provisions of Income Tax Act.

12.3.7 Corporate and personnel taxes on CONTRACTOR shall be the liability of the CONTRACTOR and the COMPANY shall not assume any responsibility on this account.

12.3.8 All local taxes, levies and duties, sales tax, octroi, etc. on purchases and sales made by CONTRACTOR shall be borne by the CONTRACTOR.

12.3.9 CONTRACTOR shall provide all the necessary compliances/invoice/ documents for enabling OIL to avail Input tax credit benefits in respect of the payments of GST which are payable against the CONTRACT. The CONTRACTOR should provide tax invoice issued under GST legislations for the goods and Services (indicating GST). Payment towards the components of GST shall be released by OIL only against appropriate documents i.e.: Tax Invoice/Bill of entry for availing input tax credit (as applicable).

12.3.10 The tax invoices as per above provisions should contain all the particulars as required under the invoicing rules under the GST legislations, including, but not limited to the following:

(i) Name, Address and the GST Registration Number (under the relevant Tax Rules) of the Service Provider (CONTRACTOR).

(ii) Name and Address and GST Registration Number of the Service Receiver (Address of OIL).

(iii) Description, Classification and Value of taxable service/goods and the amount of applicable tax (CGST, SGST, IGST, UTGST and cess).

12.3.11 In case of imported goods, CONTRACTOR/supplier is required to provide original Bill of Entry or copy of Bill of Entry duly attested by Custom authority.

12.3.12 The CONTRACTOR should mention the Place of supply in the invoice raised under GST Law.

12.3.13 OIL would not accept any invoice without its GSTIN mentioned on the invoice

***Note**: CONTRACTOR who is under composition levy of the GST legislation would raise Bill of supply instead of Tax invoice, which will have GSTIN of supplier as well as OIL.*

12.4 Goods and Services Tax:

12.4.1 "GST" shall mean Goods and Services Tax charged on the supply of material(s) and services. The term "GST" shall be construed to include the Integrated Goods and Services Tax (hereinafter referred to as "IGST") or Central Goods and Services Tax (hereinafter referred to as "CGST") or State Goods and Services Tax (hereinafter referred to as "SGST") or Union Territory Goods and Services Tax (hereinafter referred to as "UTGST") depending upon the import/ interstate or intrastate supplies, as the case may be. It shall also mean GST compensation Cess, if applicable.

12.4.2 Where the OIL is entitled to avail the input tax credit of GST:

OIL will reimburse the GST to the Supplier of Goods/Services (Service Provider) at actual against submission of Invoices as per format specified in rules/regulation of GST to enable OIL to claim input tax credit of GST paid. In case of any variation in the executed quantities, the amount on which the GST is applicable shall be modified in same proportion. Returns and details required to be filled under GST laws &rules should be timely filed by supplier with requisite details.

12.4.3 Where the OIL is not entitled to avail/take the full input tax credit of GST:

OIL will reimburse GST to the Supplier of Goods/Services (Service Provider) at actual against submission of Invoices as per format specified in rules/ regulation of GST subject to the ceiling amount of GST as quoted by the bidder. In case of any variation in the executed quantities (If directed and/or certified by the In-Charge) the ceiling amount on which GST is applicable will be modified on pro-rata basis.

12.4.4 The CONTRACTOR will be under obligation for charging correct rate of tax as prescribed under the respective tax laws. Further the CONTRACTOR shall avail and pass on benefits of all exemptions/concessions available under tax laws. Any error of interpretation of applicability of taxes/duties by the CONTRACTOR shall be to CONTRACTOR's account.

12.4.5 In case of statutory variation in GST, other than due to change in turnover, payable on the contract value during contract period, the Supplier of

Goods/Services (Service Provider) shall submit a copy of the 'Government Notification' to evidence the rate as applicable on the Bid due date and on the date of revision.

12.4.6 Beyond the contract period, in case OIL is not entitled for input tax credit of GST, then any increase in the rate of GST beyond the contractual delivery period shall be to Service provider's account whereas any decrease in the rate GST shall be passed on to the OIL.

12.4.7 Beyond the contract period, in case OIL is entitled for input tax credit of GST, then statutory variation in applicable GST on supply and on incidental services, shall be to OIL's account.

12.4.8 Claim for payment of GST/Statutory variation, should be raised within two [02] months from the date of issue of 'Government Notification' for payment of differential (in %) GST, otherwise claim in respect of above shall not be entertained for payment of arrears.

12.4.9 The base date for the purpose of applying statutory variation shall be the Bid Opening Date.

12.4.10 The CONTRACTOR will be liable to ensure to have registered with the respective tax authorities, wherever applicable and to submit self-attested copy of such registration certificate(s) and the CONTRACTOR will be responsible for procurement of material in its own registration (GSTIN) and also to issue its own Road Permit/E-way Bill, if applicable etc.

12.5 Anti-profiteering clause

12.5.1 As per Clause 171 of GST Act it is mandatory to pass on the benefit due to reduction in rate of tax or from input tax credit to the consumer by way of commensurate reduction in prices.

12.5.2 In case rating of Contractor is negative/black listed after award of work for supply of goods/services, then OIL shall not be obligated or liable to pay or reimburse GST to such vendor/Contractor and shall also be entitled to deduct/recover such GST along with all penalties/interest, if any, incurred by OIL.

13.0 CUSTOMS DUTY, IF APPLICABLE:

13.1.1 CONTRACTOR shall be responsible to import the equipment/tools/spares/consumables etc. required for execution of the contract. The CONTRACTOR shall undertake to complete all the formalities

as required under the Customs Act/Foreign Trade Policy (FTP) and indemnify OIL from all the liabilities of Customs in this regard.

13.1.2 CONTRACTOR will be solely responsible for payment of all applicable Customs Duty and to comply all Rules and Regulations. Total Contract Price/Value is inclusive of all Customs Duty, if not mentioned otherwise elsewhere in the Contract.

13.1.3 Above clause is to be read with Customs Duty Clause in SCC, if any.

14.0 INSURANCE:

14.1 CONTRACTOR shall at his own expense arrange secure and maintain insurance with reputed insurance companies to the satisfaction of the Company as follows:

Contractor at his cost shall arrange, secure and maintain insurance as may be necessary and to its full value for all such amounts to protect the works in progress from time to time and the interest of Company against all risks as detailed herein. The form and the limit of such insurance, as defined here in together with the under works thereof in each case should be as acceptable to the Company. However, irrespective of work acceptance the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be that of Contractor alone. Contractor's failure in this regard shall not relieve him of any of his responsibilities & obligations under Contract. All costs on account of insurance liabilities covered under Contract will be to Contractor's account and will be included in Value of Contract. However, the Company may from time to time, during the currency of the Contract, ask the Contractor in writing to limit the insurance coverage risk and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in value of Contract to the extent of reduced premium amounts. Contractor shall cover insurance with Indian Insurance Companies.

14.2 Any deductible set forth in any of the above insurance shall be borne by Contractor.

14.3 CONTRACTOR shall require all of his sub-Contractor to provide such of the foregoing insurance coverage as Contractor is obliged to provide under this Contract and inform the Company about the coverage prior to the commencement of agreements with its sub-Contractors.

14.4 All insurance taken out by Contractor or their sub-contractor shall be endorsed to provide that the underwriters waive their rights of recourse on the Company and to the extent of the liabilities assumed by Contractor under this Contract.

14.5 Certificate of Insurance:

Before commencing performance of the CONTRACT, CONTRACTOR shall furnish OIL with certificates of insurance indicating:

a) Kinds and amounts of insurance as required herein
b) Details of coverage
c) Insurance corporation or companies carrying the aforesaid coverage
d) Effective and expiry dates of policies
e) That OIL shall be given thirty (30) days written advance notice of any material change in the policy
f) Waiver of subrogation endorsement has been attached to all policies and
g) The territorial limits of all policies.

14.6 Contractor shall also inform the Company at least 60 days in advance regarding the expiry cancellation and/or changes in any of such documents & ensure revalidation/renewal, etc., as may be necessary well in time.

14.7 If any of the above policy expire or/are cancelled during the term of this CONTRACT and CONTRACTOR fails for any reason to renew such policies, OIL in no case shall be liable for any loss/damage occurred during the term when the policy is not effective. Furthermore, a penal interest @1% of the Total contract value shall be charged towards not fulfilling of the contractual obligations. Notwithstanding above, should there be a lapse in any insurance required to be taken by the Contractor for any reason whatsoever, loss/damage claims resulting therefrom shall be to the sole account of Contractor.

14.8 Contractor on demand from Company shall furnish the Insurance Policy having detail terms and conditions, with respect to any Certificate of Insurance submitted to the Company.

CONTRACTOR shall, at his own expense, arrange appropriate comprehensive insurance to cover all risks assumed by the CONTRACTOR under this CONTRACT in respect of CONTRACTOR's equipment, tools and any other belongings of the CONTRACTOR and its personnel as well deputed under this CONTRACT during the entire period of their engagement in connection with this CONTRACT including extensions if any. The CONTRACTOR shall also carry adequate insurance cover against damage/loss to third party person/property. OIL will have no liability on this account.

14.9 Principal Assured

The following are to be included as Principal Assured(s) in the Insurance Policies (except in case of Workmen's Compensation/Employer's Liability insurance):

"Oil India Limited, and CONTRACTOR's name (as appearing in the Contract /LOA)".

14.10 Waiver of subrogation:

All insurance policies of the CONTRACTOR with respect to the operations conducted hereunder as set forth in clauses hereof, shall be endorsed by the underwriter in accordance with the following policy wording:

"The insurers hereby waive their rights of subrogation against Oil India Limited or any of their employees or their affiliates and assignees".

14.11 Deductible:

The CONTRACTOR shall take policy with minimum deductible as per IRDA prescribed for the policy(ies). That portion of any loss not covered by insurance provided for in this article solely by reason of deductible provision in such insurance policies shall be to the account of the CONTRACTOR.

14.12 Compliance with Sec 25(1), of "The General Insurance Business (Nationalization) Act 1972"

Section 25(1) of "The General Insurance Business (Nationalization) Act 1972" is reproduced below:

"No person shall take out or renew any policy of insurance in respect of any property in India or any ship or other vessel or aircraft registered in India with an insurer whose principal place of business is outside India save with the prior permission of the Central Government".

The above requirement of aforesaid Act needs to be complied with by the CONTRACTOR wherever the aforesaid provisions of Act apply, and compliance confirmations submitted.

14.13 Loss Payee Clause:

The Insurance Policies should mention the following in Loss Payee Clause:
"In respect of Insurance claims in which OIL's interest is involved, written consent of OIL will be required".

14.14 On account payment to OIL in case of claim

In case any loss or damage happen and where OIL's interest is involved, OIL reserves the right to recover the loss amount from the CONTRACTOR prior to final settlement of the claim.

14.15 CONTRACTOR shall require all of its SUB-CONTRACTORs to provide such of the foregoing insurance cover as the CONTRACTOR is obligated to provide under this CONTRACT.

14.16 CONTRACTOR shall at all time during the currency of the contract provide, pay for and maintain the following insurance amongst others:

i) **Workman Compensation and/Employers' Liability Insurance**: Workmen's compensation and employer's liability insurance as required by the laws of the country of origin of the employee.

ii) **Commercial General Liability Insurance**: Commercial General Public Liability Insurance covering liabilities including contractual liability for bodily injury, including death of persons, and liabilities for damage of property. This insurance must cover all operations of CONTRACTOR required to fulfil the provisions under this Contract.

iii) **Comprehensive General Automotive Liability**: Automobile Public Liability Insurance covering owned, non-owned and hired automobiles used in the performance of the work hereunder, with bodily injury limits and property damage limits shall be governed by Indian Insurance Regulations.

iv) **Carrier's Legal Liability Insurance:** Carrier's Legal Liability Insurance in respect of all CONTRACTOR's items to be transported by the CONTRACTOR to the site of work, for physical loss or destruction of or damage to goods or merchandise, while in transit.

v) **Public Liability Act Policy:** Public Liability Act Policy covering the statutory liability arising out of accidents occurring during the currency of the contract due to handling hazardous substances as provided in the Public Liability Insurance Act 1991 and the Rules framed there under.

vi) **Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):** CONTRACTOR

shall, ensure that all his/its personnel deployed under this contract have obtained additional insurance coverage under the Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) through the participating banks and submit the proof of such insurance coverage to the satisfaction of OIL.

vii) CONTRACTOR's equipment used for execution of the work hereunder shall have an insurance cover with a suitable limit (as per international standards).

viii) **Any other insurance policy set forth in the SCC**

Note: An undertaking by the service provider has to be mandatorily provided during the Mobilization time that they have taken all the Insurance provisions as per the contract and as the Law and Insurance Regulation.

15.0 LIABILITY:

15.1 Except as otherwise expressly provided herein, neither COMPANY nor its servants, agents, nominees, CONTRACTORs, or sub-CONTRACTORs shall have any liability or responsibility whatsoever to whomsoever for loss of or damage to the equipment and/or loss of or damage to the property of the CONTRACTOR and/or their CONTRACTORs or sub-CONTRACTORs, irrespective of how such loss or damage is caused and even if caused by the negligence of COMPANY and/or its servants, agent, nominees, assignees, CONTRACTORs and sub-CONTRACTORs.

15.2 The CONTRACTOR shall protect, defend, indemnify and hold harmless COMPANY from and against such loss or damage and any suit, claim or expense resulting there from. Neither COMPANY nor its servants, agents, nominees, assignees, CONTRACTORs, sub-CONTRACTORs shall have any liability or responsibility whatsoever for injury to, illness, or death of any employee of the CONTRACTOR and/or of its CONTRACTORs or sub-CONTRACTOR irrespective of how such injury, illness or death is caused and even if caused by the negligence of COMPANY and/or its servants, agents nominees, assignees, CONTRACTORs and sub-CONTRACTORs. CONTRACTOR shall protect, defend, indemnify and hold harmless COMPANY from and against such liabilities and any suit, claim or expense resulting there from.

15.3 The CONTRACTOR hereby agrees to waive its right of recourse and further agrees to cause its underwriters to waive their right of subrogation against COMPANY and/or its underwriters, servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs for loss or damage to the equipment of the CONTRACTOR and/or its sub-CONTRACTORs and/or their employees when such loss or damage or liabilities arises out of or in connection with the performance of the contract limited to the CONTRACTOR's liabilities agreed to under this Contract.

15.4 The CONTRACTOR hereby further agrees to waive its right of recourse and agrees to cause its underwriters to waive their right of subrogation against COMPANY and/or its underwriters, servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs for injury to, illness or death of any employee of the CONTRACTOR and of its CONTRACTORs, sub-CONTRACTORs and/or their employees when such injury, illness or death arises out of or in connection with the performance of the contract limited to the CONTRACTOR's liabilities agreed to under this Contract.

15.5 Except as otherwise expressly provided herein, neither CONTRACTOR nor its servants, agents, nominees, CONTRACTORs or sub-CONTRACTORs shall have any liability or responsibility whatsoever to whomsoever for loss of or damage to the equipment and/or loss or damage to the property of the COMPANY and/or their CONTRACTORs or sub-CONTRACTORs, irrespective of how such loss or damage is caused and even if caused by the negligence of CONTRACTOR and/or its servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs. The COMPANY shall protect, defend, indemnify and hold harmless CONTRACTOR from and against such loss or damage and any suit, claim or expense resulting there from.

15.6 Except as otherwise expressly provided herein, neither CONTRACTOR nor its servants, agents, nominees, assignees, CONTRACTORs, sub-CONTRACTORs shall have any liability or responsibility whatsoever to whomsoever for injury or illness, or death of any employee of the COMPANY and/or of its CONTRACTORs or sub-CONTRACTORs irrespective of how such injury, illness or death is caused and even if caused by the negligence of CONTRACTOR and/or its servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs. COMPANY shall protect, defend indemnify and hold harmless CONTRACTOR from and against such liabilities and any suit, claim or expense resulting there from.

15.7 The COMPANY agrees to waive its right of recourse and further agrees to cause its underwriters to waive their right of subrogation against

CONTRACTOR and/or its underwriters, servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs for loss or damage to the equipment of COMPANY and/or its CONTRACTORs or sub-CONTRACTORs when such loss or damage or liabilities arises out of or in connection with the performance of the contract.

15.8 The COMPANY hereby further agrees to waive its right of recourse and agrees to cause it underwriters to waive their right of subrogation against CONTRACTOR and/or its underwriters, servants, agents, nominees, assignees, CONTRACTORs and sub-CONTRACTORs for injury to, illness or death of any employee of the COMPANY and of its CONTRACTORs, sub-CONTRACTORs and/or their employees when such injury, illness or death arises out of or in connection with the performance of the Contract.

16.0 LIMITATION OF LIABILITY:

a) Notwithstanding any other provisions herein to the contrary, except only in cases of willful misconduct and/or criminal acts and/or criminal negligence, neither the CONTRACTOR nor the COMPANY (OIL) shall be liable to the other, whether in Contract, tort, or otherwise, for any consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided however that this exclusion shall not apply to any obligation of the CONTRACTOR to pay Liquidated Damages to the COMPANY and/or COMPANY's right to forfeit the Performance Bank Guarantee(s) in terms of the contract.

b) Notwithstanding any other provisions incorporated elsewhere in the contract, the aggregate liability of the CONTRACTOR in respect of this contract, whether under Contract, in tort or otherwise, shall not exceed 100% of the Contract Price (if not specified otherwise in SCC), provided however that this limitation shall not apply to the cost of repairing or replacing defective equipment by the CONTRACTOR, or to any obligation of the CONTRACTOR to indemnify the COMPANY with respect to Intellectual Property Rights.

c) COMPANY shall indemnify and keep indemnified CONTRACTOR harmless from and against any and all claims, costs, losses and liabilities in excess of the aggregate liability amount in terms of clause (b) above.

17.0 LIABILITY OF UNION GOVERNMENT OF INDIA:

It is expressly understood and agreed upon by and between CONTRACTOR and OIL INDIA LIMITED, and that OIL INDIA LIMITED is entering into this agreement solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood and agreed that Union of India is not a party to this agreement and has no liabilities, obligations or rights, whatsoever hereunder. It is expressly understood and agreed that OIL INDIA LIMITED is an independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable laws of India and general principles of the Contract law. The bidder/CONTRACTOR expressly agrees, acknowledges and understands that OIL INDIA LIMITED is not an agent, representative or delegate of the Union of India. It is further understood and agreed that Union of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the contract. Accordingly, bidder/ CONTRACTOR hereby expressly waives, releases and foregoes any and all actions or claims, including cross claims, impleader claims or counter claims against the Union of India arising out of this contract and covenants not to sue the Union of India as to any manner, claim, cause of action or thing whatsoever arising of or under this agreement.

18.0 CONSEQUENTIAL DAMAGE:

Except as otherwise expressly provided, neither party shall be liable to the other for special, indirect or consequential damages resulting from or arising out of the contract, including but without limitation, to loss or profit or business interruptions, howsoever caused and regardless of whether such loss or damage was caused by the negligence (either sole or concurrent) of either party, its employees, agents or sub-CONTRACTORs.

19.0 RISK PURCHASE:

In the event, CONTRACTOR's failure to provide the services as per the Contractual scope, terms and conditions, COMPANY (OIL) reserves the right to hire the services from any other source at the CONTRACTOR's risk & cost and the difference in cost shall be borne by the CONTRACTOR. Further, OIL shall retain the right of forfeiture of Performance Bank Guarantee and any other action as deemed fit. In certain operational situations OIL reserves the right to take over the site including the service equipment at the risk and cost of the CONTRACTOR.

20.0 INDEMNITY AGREEMENT:

20.1 Except as provided hereof CONTRACTOR agrees to protect, defend, indemnify and hold COMPANY harmless from and against all claims, suits, demands and causes of action, liabilities, expenses, cost, liens and judgments of every kind and character, without limit, which may arise in favour of CONTRACTOR's employees, agents, CONTRACTORs and sub-CONTRACTORs or their employees or in favour of any third party(is) on account of bodily injury or death, or damage to personnel/property as a result of the operations contemplated hereby, regardless of whether or not said claims, demands or causes of action arise out of the negligence or otherwise, in whole or in part or other faults.

20.2 Except as provided hereof COMPANY agrees to protect, defend, indemnify and hold CONTRACTOR harmless from and against all claims, suits, demands and causes of action, liabilities, expenses, cost, liens and judgments of every kind and character, without limit, which may arise in favour of COMPANY's employees, agents, CONTRACTORs and sub-CONTRACTORs or their employees or in favour of any third party(is) on account of bodily injury or death, or damage to personnel/property as a result of the operations contemplated hereby, regardless of whether or not said claims, demands or causes of action arise out of the negligence or otherwise, in whole or in part or other faults.

21.0 INDEMNITY APPLICATION:

The indemnities given herein above, whether given by COMPANY or CONTRACTOR shall be without regard to fault or to the negligence of either party even though said loss, damage, liability, claim, demand, expense, cost or cause of action may be caused, occasioned by or contributed to by the negligence, either sole or concurrent of either party.

22.0 ROYALTY PATENTS:

Each party shall hold harmless and indemnify the other from and against all claim and proceedings for or on account of any patent rights, design, trade mark or other protected rights arising from any use of materials, equipment, processes, inventions and methods, which have not been imposed on the attending party by the terms of the contract or the specifications forming part thereof.

23.0 WARRANTY AND REMEDY OF DEFECTS:

23.1 CONTRACTOR warrants that they shall perform the work in a first class, workmanlike, and professional manner and in accordance with their highest degree of quality, efficiency and current state of the art

technology/industry practices and in conformity with all specifications, standards and drawings set forth or referred to in the Terms of Reference and with instructions and guidance, which COMPANY may, from time to time, furnish to the CONTRACTOR.

23.2 Should COMPANY discover at any time during the tenure of the Contract or till the Unit/equipment/tools are demobilized from site or base camp (if applicable) that the work does not conform to the foregoing warranty, CONTRACTOR shall after receipt of notice from COMPANY, promptly perform any and all corrective work required to make the services conform to the Warranty. Such corrective Work shall be performed entirely at CONTRACTOR's own expenses. If such corrective Work is not performed within a reasonable time, the COMPANY, at its option may have such remedial Work performed by others and charge the cost thereof to CONTRACTOR subject to a maximum of the contract value payable for the defective work which needs corrective action which the CONTRACTOR must pay promptly. In case CONTRACTOR fails to perform remedial work, or pay promptly in respect thereof, the performance security shall be forfeited.

24.0 SUBCONTRACTING/ASSIGNMENT:

24.1 CONTRACTOR shall not subcontract, transfer or assign the contract, or any part under this contract, to any third party(ies). Except for the main services under this contract, CONTRACTOR may sub-contract the petty support services subject to COMPANY's prior written approval. However, CONTRACTOR shall be fully responsible for complete execution and performance of the services under the Contract.

24.2 Consequent upon of placement of contract, if successful bidder(s)(other than Micro/Small Enterprise) is procuring materials/services from their sub-vendor, who is a Micro or Small Enterprise 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 with prior consent in writing of the purchasing authority/Engineer in Charge the details like Name, Registration No., Address, Contact No., details of material and value of procurement made, etc. of such enterprises shall be furnished by the CONTRACTOR at the time of submission of invoice/bill.

25.0 RECORDS, REPORTS AND INSPECTION:

The CONTRACTOR shall, at all times during the currency of the contract, permit the COMPANY and its authorized employees and representatives to inspect all the Work performed and to witness and check all the measurements and tests made in connection with the said work. The CONTRACTOR shall keep an authentic, accurate history and logs including safety records of each service item with major items consumed, which shall be open at all reasonable times for inspection by the COMPANY's designated representatives and its authorized employees. The CONTRACTOR shall provide the COMPANY's designated representatives with a daily written report, on form prescribed by the COMPANY showing details of operations during the preceding 24 hours and any other information related to the said services requested by the COMPANY whenever so requested. The CONTRACTOR shall not, without COMPANY's written consent allow any third person(s) access to the said information or give out to any third person information in connection therewith.

26.0 CONFIDENTIALITY, USE OF CONTRACT DOCUMENTS AND INFORMATION:

26.1 CONTRACTOR shall not, without COMPANY's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing pattern, sample or information furnished by or on behalf of COMPANY in connection therewith, to any person other than a person employed by CONTRACTOR in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only, as may be necessary for purposes of such performance with prior permission from COMPANY. However, nothing hereinabove contained shall deprive the CONTRACTOR of the right to use or disclose any information which is:

a) possessed by the CONTRACTOR, as evidenced by the CONTRACTOR's written records, before receipt thereof from the COMPANY which however the CONTRACTOR shall immediately inform to COMPANY; or

b) required to be disclosed by the CONTRACTOR pursuant to an order of a court of competent jurisdiction or other governmental agency having the power to order such disclosure, provided the CONTRACTOR uses its best efforts to provide timely notice to COMPANY of such order to permit COMPANY an opportunity to contest such order subject to prior permission from COMPANY.

26.2 CONTRACTOR shall not, without COMPANY's prior written consent, make use of any document or information except for purposes of performing the contract.

26.3 Any document supplied to the CONTRACTOR in relation to the contract other than the Contract itself remain the property of COMPANY and shall be returned (in all copies) to COMPANY on completion of CONTRACTOR's performance under the Contract if so required by COMPANY.

26.4 During the currency of the Contract, COMPANY and its employees, agents, other CONTRACTORs, sub-CONTRACTORs (of any tier) and their employees etc. may be exposed to certain confidential information and data of the CONTRACTOR. Such information and data held by the COMPANY, its employees, agents, other CONTRACTORs, sub-CONTRACTORs (of any tier) and their employees in the strictest Confidence and shall not be disclosed to any other party except on a need to know basis.

However, the above obligation shall not extend to information which:

i) is, at the time of disclosure, known to the public which CONTRACTOR shall immediately inform COMPANY;
ii) is lawfully becomes at a later date known to the public through no fault of CONTRACTOR subject to CONTRACTOR's undertaking that no information has been divulged by them to the public;
iii) is lawfully possessed by CONTRACTOR before receipt thereof from COMPANY which should be immediately informed to COMPANY;
iv) is developed by CONTRACTOR independently of the information disclosed by COMPANY which should be shared with the COMPANY;
v) CONTRACTOR is required to produce before competent authorities or by court order subject to prior permission from COMPANY;

27.0 REMUNERATION AND TERMS OF PAYMENT:

27.1 COMPANY shall pay to the CONTRACTOR during the term of the Contract the amount due from time to time calculated according to the rates of payment set and in accordance with other provisions hereof. No other payments shall be due from COMPANY unless specifically provided for in the Contract. All payments will be made in accordance with the terms hereinafter described.

27.2 Request for payment/part payment to third party i.e. other than the party on whom the contract has been awarded will not be entertained by OIL under any circumstances.

27.3 MANNER OF PAYMENT: All payments due by COMPANY to CONTRACTOR hereunder shall be made at CONTRACTOR's designated bank. Bank charges, if any will be on account of the CONTRACTOR.

27.4 Payment of any invoices shall not prejudice the right of COMPANY to question the validity of any charges therein, provided COMPANY within one year after the date of payment shall make and deliver to CONTRACTOR written notice of objection to any item or items the validity of which COMPANY questions.

27.5 INVOICES: Mobilization charges will be invoiced only upon completion of mobilization as certified by COMPANY representative and CONTRACTOR is ready at site for starting the services/operation. Payment of mobilization charges shall be made within 45 days following the date of receipt of undisputed invoices by COMPANY.

27.6 CONTRACTOR shall send invoice to COMPANY on the day following the end of each month for all daily or monthly charges due to the CONTRACTOR.

27.7 CONTRACTOR will submit 02 (Two) sets of all invoices duly super scribed `Original' and `copy' as applicable to the COMPANY for processing payment. Separate invoices for the charges payable under the contract shall be submitted by the CONTRACTOR for foreign currency and Indian currency.

27.8 Payment of monthly invoices, if undisputed, shall be made within 30 days following the date of receipt of invoice by COMPANY.

27.9 COMPANY shall within 30 days of receipt of the invoice notify the CONTRACTOR of any item under dispute, specifying the reasons thereof, in which event, payment of the disputed amount may be withheld until settlement of the dispute, but payment shall be made of any undisputed portion on or before the due date. This will not prejudice the COMPANY's right to question the validity of the payment at a later date as envisaged in clause no. 27.4 above.

27.10 The acceptance by CONTRACTOR of part payment on any billing not paid on or before the due date shall not be deemed a waiver of CONTRACTOR's rights in any other billing, the payment of which may then or thereafter be due.

27.11 Payment of Final demobilization charges shall be made if applicable within 45 days on receipt of invoice by COMPANY accompanied by the following documents from the CONTRACTOR:

a) Audited account up to completion of the Contract.
b) Tax audit report for the above period as required under the Indian Tax Laws.
c) Documentary evidence regarding the submission of returns and payment to taxes for the expatriate personnel engaged by the CONTRACTOR or by its sub-CONTRACTOR.
d) Proof of re-export of all items including the unutilized spares and consumables (excepting consumables consumed during the contract period) and also cancellation of re-export bond if any.
e) Any other documents as required by applicable Indian Laws.

In case, no demobilization charges are payable, the documents mentioned above will have to be submitted by the CONTRACTOR before release of the final payment by the COMPANY. A certificate from Chartered Accountant on (a), (b) & (c) above will suffice.

27.12 CONTRACTOR shall maintain complete and correct records of all information on which CONTRACTOR's invoice are based upto 02 (two) years from the date of last invoice. Such records shall be required for making appropriate adjustments or payments by either party in case of subsequent audit query/objection.

28.0 PAYMENT OF COMMISSION/FEE/REMUNERATION OF INDIAN AGENT /CONSULTANT/REPRESENTATIVE/RETAINER/ASSOCIATE OF FOREIGN PRINCIPAL (APPLICABLE IN ICB TENDERS ONLY):

The Commission/fee/remuneration of the Indian agent/ consultant/ associate/ representative/retainer, if any, will be paid within 30 days of the payment of invoice made to the CONTRACTOR, The amount of commission/ fee/remuneration as a percentage of invoice value as per contract provisions will be deducted by COMPANY/OIL from the monthly invoices of the CONTRACTOR and paid to the Indian agent/ consultant/ representative/retainer/associate.

29.0 DETAILS OF STATUTORY PAYMENTS LIKE EPF AND ESI ETC.

Wherever applicable, the CONTRACTOR (including those engaging 'International Workers') shall have itself registered under Employees' Provident Fund and Miscellaneous Provisions Act, 1952 and Employees'

State Insurance Act, 1948 and follow the relevant statutory provisions including Rules made there-under concerning contractual workers.

The CONTRACTOR shall be required to submit the following documents/details to the Corporation:

(i) Copy of PF-ECR duly stamped by the designated Bank, alongwith a print of the digitally signed PDF data sheet of the ECR, as proof of payment, each month, details of this PDF data sheet shall be verified by the appropriate authority (i.e. Payment Making Authority) in the COMPANY from the official website of EPFO (http://www.epfindia.gov.in).

(a) Copy of the online challan endorsed/stamped by the designated bank as proof of receipt of payment towards monthly contribution of ESI contribution.
(b) Copy of Return of contribution in respect of ESI for each contribution period of the six months i.e. for the contribution period ended 30th Sept and the contribution period ended 31st March.

(iii) As an Annexure to each EPF-ECR and ESI Challan(s), CONTRACTOR shall also furnish the following Certificates:

1) The furnished information is correct to the best of his knowledge.
2) In case any discrepancies or irregularities is/are noticed in this undertaking, then OIL is free to inform the PF/ESIC Authorities.
3) Before the completion of contract, CONTRACTOR shall serve one-month notice to all his contractual workers, informing that their services will be terminated.
4) Within one month on completion/expiry of the contract, CONTRACTOR shall pay all the dues/terminal dues such as leave with wages, bonus (if applicable), Gratuity (if applicable), to all his contractual workmen, failing which CONTRACTOR's Bank Guarantee/Security Deposit may be withheld by OIL.

COMPANY may verify the deposit of statutory contribution made by the CONTRACTOR~~s~~ with the EPFO/ESI authorities, where deemed necessary. However, before making payment of the last bill/invoice of the CONTRACTOR, the COMPANY may verify the details/status of the payment towards EPF/ESI made by the CONTRACTOR from the authorities/official website of EPF/ESI (i.e. http://www.epfindia.gov.in and http://www.esic.in). In case the information furnished by the CONTRACTOR is found to be incorrect the COMPANY shall take

appropriate action against the CONTRACTOR in accordance with law.

The CONTRACTOR agrees and undertakes to indemnify OIL for any liabilities arising out of declarations made by him in future on violation or provisions of the EPF Act 1952 and ESI Act 1948.

30.0 TIMELY MOBILISATION AND LIQUIDATED DAMAGES:

a) Time is the essence of this Contract. If the CONTRACTOR fails to mobilize and deploy the required manpower/equipment and/or fails to commence the operation within the period specified as specified under mobilization clause under SCC, OIL shall have, without prejudice to any other right or remedy in law or contract including sub clause (b) below, the right to terminate the contract.

b) If the contractor is unable to mobilize/deploy and commence the operation within the period specified in sub clause (a) above, it may request OIL for extension of the time with unconditionally agreeing for levy and recovery of LD. Upon receipt of such a request, OIL may at its discretion, extend the period of mobilization and shall recover from the CONTRACTOR, as an ascertained and agreed Liquidated Damages, a sum equivalent to @ 0.5% of contract value including mobilization cost, per week or part thereof of delay subject to maximum of 7.5% of the Contract Price.

c) The parties agree that the sum specified above is not a penalty but a genuine pre-estimate of the loss/damage which will be suffered by OIL on account of delay on the part of the CONTRACTOR and the said amount will be payable without proof of actual loss or damage caused by such delay.

d) LD will be calculated on the basis of Total Contract value [(if not specified otherwise in SCC] excluding duties and taxes, where such duties/taxes have been shown separately in the contract. However, the applicable GST on the LD shall have to be borne by the CONTRACTOR. Accordingly, the liquidated damages shall be recovered from the CONTRACTOR along with applicable GST.

31.0 FORCE MAJEURE:

In the event of either party being rendered unable by `Force Majeure' to perform any obligation required to be performed by them under the

contract, the relative obligation of the party affected by such `Force Majeure' will stand suspended as provided herein. The term force majeure as employed herein shall mean Acts of God such as earthquake, hurricane, typhoon, flood, volcanic activity etc.; war (declared/undeclared); riot, revolts, rebellion, terrorism, sabotage by persons other than the CONTRACTOR's Personnel; fires, explosions, ionising radiation or contamination by radio-activity or noxious gas, if not caused by CONTRACTOR's fault; declared epidemic or disaster; acts and regulations of respective Govt. of the two parties, namely the COMPANY and the CONTRACTOR and civil commotions, lockout not attributable to the CONTRACTOR.

Upon occurrence of such cause, the party claiming that it has been rendered unable as aforesaid thereby, shall notify the other party in writing within 72 (Seventy Two) hours of the alleged beginning and ending thereof, giving full particulars and satisfactory evidence in support of its claim.
Should 'force majeure' condition as stated above occurs and should the same be notified within 72 (Seventy two) hours after its occurrence the `force majeure' rate (if specified in the SCC of the Contract) shall apply for the first 15 (fifteen) days for each such occasion.

Either party shall have the right to terminate the Contract if such `force majeure' conditions continue beyond successive 60 (Sixty) days [or exclusively mentioned in the SCC of the Contract] with prior written notice of 15 days, provided termination of the Contract does not result into safety hazard to the life and property on account of withdrawal of operations or the operation is at critical stage. COMPANY shall have the absolute right to decide whether any safety hazard exists or operation is at critical position and decision of the COMPANY shall binding upon the CONTRACTOR.

Should either party decide not to terminate the Contract even under such condition, no payment would apply after expiry of fifteen (15) days force majeure period. [or exclusively mentioned in the SCC of the Contract]

Time for performance of the relative obligation suspended by Force Majeure shall then stand extended by the period for which such cause lasts.

If however, relative obligation of the party affected by such 'Force Majeure' is limited to part of the obligation(s), the contract shall not be terminated and the parties shall continue to perform their respective obligations, which are not affected by the 'force majeure' condition, provided the

obligations affected by the 'force majeure' do not preclude the parties in performing the obligations not affected by such conditions.

32.0 SET-OFF:

Any sum of money due and payable to the CONTRACTOR (including Performance Security refundable to them) under this or any other Contract, whether in progress or in future, may be appropriated by OIL and set-off against any claim of OIL (or such other person or persons contracting through OIL) for payment of a sum of money arising out of this contract or under any other contract made by the CONTRACTOR with OIL (or such other person or persons contracting through OIL).

33.0 WITHHOLDING:

COMPANY may withhold or nullify the whole or any part of the amount due to CONTRACTOR, after informing the CONTRACTOR of the reasons in writing, on account of subsequently discovered evidence in order to protect COMPANY from loss on account of:

33.1 For non-completion of jobs assigned as per Scope of Work/Terms of Reference.

33.2 Defective work not remedied by CONTRACTOR.

33.3 Claims by COMPANY's recognized sub-CONTRACTOR of CONTRACTOR or others filed or on the basis of reasonable evidence indicating probable filing of such claims against CONTRACTOR.

33.4 Failure of CONTRACTOR to pay or provide for the payment of salaries/ wages, contributions, taxes or enforced savings with-held from wages etc. with respect to personnel engaged by the CONTRACTOR.

33.5 Failure of CONTRACTOR to pay the cost of removal of unnecessary debris, materials, tools, or machinery.

33.6 Any failure by CONTRACTOR to fully reimburse COMPANY under any of the indemnification provisions of this Contract. If, during the progress of the work CONTRACTOR shall allow any indebtedness to accrue for which CONTRACTOR, under any circumstances in the opinion of COMPANY, may be primarily or contingently liable or ultimately responsible and CONTRACTOR shall, within five days after demand is made by COMPANY, fail to pay and discharge such indebtedness, then COMPANY may during the period for which such indebtedness shall remain unpaid, with-hold

from the amounts due to CONTRACTOR, a sum equal to the amount of such unpaid indebtedness.

33.7 Withholding will also be effected on account of the following:

i) Order issued by a Court of Law or statutory authority in India.
ii) Income-tax deductible at source according to law prevalent from time to time in the country.
iii) Any obligation of CONTRACTOR which by any law prevalent from time to time to be discharged by COMPANY in the event of CONTRACTOR's failure to adhere to such laws.
iv) Any payment due from CONTRACTOR in respect of unauthorised imports.

When all the above grounds for withholding payments are removed, payment shall thereafter be made for amounts so with-held.

33.8 COMPANY reserves the right to disburse or deposit the amount so withheld to the concerned person(s) or agency or government authority, as the case may be, besides nullifying such amount on account of loss suffered by the COMPANY against 33.2, 33.3, 33.6 & 33.7 above.

34.0 APPLICABLE LAWS:

The Contract shall be deemed to be a Contract made under, governed by and construed in accordance with the laws of India for the time being in force and shall be subject to the sole and exclusive jurisdiction of Courts situated in Gauhati High Court (or the High Court under whose territorial jurisdiction, the place of execution of contract falls).

This Agreement including all matter connected with this Agreement, shall be governed by the laws of India (both substantive and procedural) for the time being in force and shall be subject to exclusive jurisdiction of Courts, mentioned hereinabove. Foreign companies, operating in India or entering into Joint ventures in India, shall also be governed by the laws of India and shall be subject to sole and exclusive jurisdiction of above Courts.

The CONTRACTOR shall ensure full compliance of various Indian Laws and Statutory Regulations, as stated below, to the extent applicable, as stated below, but not limited to, in force from time to time and obtain necessary permits/licenses etc. from appropriate authorities for conducting operations under the Contract:

a) The Mines Act 1952
b) The Oil Mines Regulations, 1984

c) The Employees' Compensation Act, 1923
d) The Code of Wages, 2019
e) The Contract Labour (Regulation & Abolition) Act, 1970 and the rules framed there under
f) The Employees Pension Scheme, 1995
g) The Interstate Migrant Workmen Act., 1979 (Regulation of employment and conditions of service).
h) The Employees Provident Fund and Miscellaneous Provisions Act, 1952
i) Goods and Service Tax Act
j) Customs & Excise Act & Rules
k) Factories Act, 1948
l) Industrial Disputes Act, 1947
m) Payment of Gratuity Act, 1972
n) Environmental Protection Act, 1986 & other pollution control Acts.

Note: The above Acts are only indicative and not exhaustive. The Acts shall include the rules and regulations framed thereunder.

35.0 LABOUR LAWS:

i) CONTRACTOR shall comply with the provisions of various labour related laws, including but not limited to the Code of Wages, 2019, Employee Provident Fund and Miscellaneous Provisions Act 1952, COMPANY's Liability Act 1938, Employees' Compensation Act 1923, Industrial Disputes Act 1947, the Maternity Benefit Act 1961 and Contract Labour (Regulation and Abolition) Act 1970, Employment of Children Act 1938, Employees' State Insurance Act, 1948 or any modifications/amendment thereof or any other law relating thereto and rules made there under from time to time.

ii) No Labour below the age of eighteen [18] years shall be employed on the work.

iii) CONTRACTOR shall not pay less than what is provided under law to labourers engaged by him on the work.

iv) CONTRACTOR shall at his expense comply with all labour laws and keep the COMPANY indemnified in respect thereof.

v) CONTRACTOR shall pay equal wages for men and women in accordance with applicable Labour laws.

vi) If the CONTRACTOR is covered under the Contract Labour (Regulation and Abolition) Act, he shall obtain a license from licensing authority [i.e. office of the Labour Commissioner] by payment of necessary prescribed fee and the deposit, if any, before starting the work under the Contract. Such fee/deposit shall be borne by the CONTRACTOR.

vii) CONTRACTOR must obtain the PF Code from the concerned PF Authority under Employees Provident Fund and Miscellaneous Provisions Act, 1952. Similarly, CONTRACTOR must obtain ESI Code under Employees State Insurance Act.

viii) CONTRACTOR being the employer of the labours/personnel to be engaged under the contract shall be liable to pay gratuity to the labours/personnel as per the provision of the Payment of Gratuity Act, 1972 and accordingly, shall keep the COMPANY indemnified in respect thereof. If however, COMPANY requires to pay gratuity to such labour(s) as per the direction of the competent authority under the Act, COMPANY shall recover such amount from the outstanding dues payable to the CONTRACTOR under the contract or any other contract(s).

ix) CONTRACTOR shall furnish to Engineer in Charge the distribution return of the number & description, by trades of the work people employed on the works. CONTRACTOR shall also submit on the 4th& 19th of every month to Engineer in Charge a true statement showing in respect of the 2nd half of the preceding month & the 1st half of the current month (1) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (2) the number of female workers who have been allowed Maternity Benefit as provided in the Maternity Benefit Act 1961 on Rules made there under and the amount paid to them.

x) Engineer in Charge shall on a report having been made by an inspecting officer as defined in Contract Labour (Regulation and Abolition) Act 1970 have the power to deduct from the money due to the CONTRACTOR any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the Contract for the benefit of workers, non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the Contract or non-observance of the said regulations.

xi) The CONTRACTOR shall indemnify the COMPANY against any payments to be made under and for the observance of the provisions of the aforesaid acts without prejudice to his right to obtain indemnity from his sub-CONTRACTOR.

36.0 STATUTORY REQUIREMENTS:

During the tenure of this CONTRACT nothing shall be done by the CONTRACTOR in contravention of any law, act and/or rules/regulations, thereunder or any amendment.

37.0 GENERAL HEALTH, SAFETY & ENVIRONMENT (HSE) GUIDELINES:

37.1 It will be solely the CONTRACTOR's responsibility to fulfil all the legal formalities with respect to the Health, Safety and Environmental aspects of the entire job (namely; the person employed by him, the equipment, the environment, etc.) under the jurisdiction of the district of that state where it is operating. Ensure that all sub-CONTRACTORs hired by CONTRACTOR comply with the same requirement as the CONTRACTOR himself and shall be liable for ensuring compliance all HSE laws.

37.2 It will be entirely the responsibility of the Contractor/his Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in OIL's installations and safety of workers engaged by him. The crew members will not refuse to follow any instruction given by company's Installation Manager/Safety Officer/ Engineer/Official/Supervisor/Junior Engineer for safe operation.

37.3 Any compensation arising out of the job carried out by the Contractor whether related to pollution, Safety or Health will be paid by the contractor only.

37.4 Any compensation arising due to accident of the Contractor's personnel while carrying out the job, will be payable by the contractor.

37.5 When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE Measures Company shall have the right to direct the contractor to cease work until the non-compliance is corrected.

38.0 POLLUTION AND CONTAMINATION:

The CONTRACTOR shall be liable for all surface and sub-surface pollution to the extent caused by CONTRACTOR and resulting from CONTRACTOR's operation/service or spillage or dumping of solvents/additive substances or pollutants, which the CONTRACTOR brings to the Site for use in connection with Work to be performed under this Contract.

Notwithstanding anything to the contrary contained herein, it is agreed that except on the ground of willful misconduct or criminal misconduct, COMPANY shall release, indemnify and hold CONTRACTOR and its sub-CONTRACTORs harmless from any and all claims, judgments, losses, expenses and any costs related thereto (including but not limited to Court costs and "Attorney's fees") for:

a) Damage to or loss of any reservoir or producing formation; and/ or
b) Damage to or loss of any well; and/or
c) Any other subsurface damage or loss; and/ or
d) Any property damage or loss or personal injury or death arising out of or in connection with a blowout, fire explosion and loss of well control regardless of cause.

39.0 STATUTORY VARIATION/NEWLY ENACTED LAW:

39.1 All duties, taxes except otherwise specified in the Contract as applicable on the closing date of bid submission as per relevant acts and rules shall be in CONTRACTOR's account. Variation in case of custom duty on CIF value declared by the bidder shall be to COMPANY account.

39.2 In the event of introduction of any new legislation or any amendment or enforcement of any Act or Law, rules or regulations of Government of India or State Government(s) or Public Body, which becomes effective after the date of submission of Price Bid or revised price bid, if any, for this CONTRACT and which results in increased/decreased cost of the works under the CONTRACT through increased/decreased liability of taxes and/or duties, required to be paid by the CONTRACTOR, (other than personnel and Corporate taxes), the Parties shall agree to a revision in pricing to reflect such change subject to the production of documentary proof to the satisfaction of the COMPANY/CONTRACTOR as applicable to the extent which directly is attributable to such introduction of new legislation or change or amendment as mentioned above and adjudication by the competent authority (applicable when disputed by COMPANY) & the courts wherever levy of such taxes/duties are disputed by COMPANY/CONTRACTOR.

39.3 Any increase in net amount of the duties and taxes (i.e. the amount of taxes/duties payable minus eligible credit of taxes/duties paid on input services/inputs) after the contractual completion/mobilization date during the extended period will be to the CONTRACTOR's account, where delay in completion/mobilization period is attributable to the CONTRACTOR. However, any decrease in net amount of the duties and taxes (i.e. the amount of taxes/duties payable minus eligible credit of taxes/duties paid on input services/inputs) after the contractual completion/mobilization date will be to COMPANY's account.

39.4 The Contract Price and other prices given in the Schedule of Prices are based on the applicable tariff as indicated by the CONTRACTOR in the Schedule of Prices. In case this information subsequently proves to be wrong, incorrect or misleading, COMPANY will have no liability to reimburse/pay to the CONTRACTOR the excess duties, taxes, fees, if any finally levied/imposed by the concerned authorities. However, in such an event, COMPANY will have the right to recover the difference in case the rate of duty/tax finally assessed is on the lower side.

39.5 Notwithstanding the provision contained in Clause-39.1 to 39.4 above, the COMPANY shall not bear any liability in respect of:

i. Personal taxes on the personnel deployed by CONTRACTOR, his sub-CONTRACTOR/sub-sub-CONTRACTORs and Agents etc.

ii. Corporate taxes and Fringe benefit tax in respect of CONTRACTOR and all of their sub-CONTRACTORs, agents etc.

iii. Other taxes & duties including Customs Duty and GST in addition to new taxes etc. in respect of sub-CONTRACTORs, vendors, agents etc. of the CONTRACTOR.

iv. Any liability on the CONTRACTOR, which was accrued under the old law or contract, which the CONTRACTOR is obligated to pay either to the COMPANY or to the Government Authority.

39.6 In order to ascertain the net impact of the amendment/ revisions/enactment of various provisions of taxes/duties, the CONTRACTOR is liable to provide following disclosure to COMPANY:

i. Details of each of the input services used in relation to providing service to COMPANY including estimated monthly value of input service and GST tax amount.

ii. Details of Inputs (material/consumable) used/required for providing service to COMPANY including estimated monthly value of input and GST paid/payable on purchase of inputs.

39.7 The above provisions would be applicable only in case of variation in rate of taxes and duties on supply of services to OIL and not applicable on taxes and duties on input (goods and services) towards such services.

39.8 Any claim or reduction on account of change in law shall be accompanied with undertaking that the provisions of anti-profiteering clause under GST Act have been complied with.

40.0 SEVERABILITY:

Should any provision of this agreement be found to be invalid, illegal or otherwise not enforceable by any court of law, such finding shall not affect the remaining provisions hereto and they shall remain binding on the parties hereto.

41.0 Commission of misconduct/submission of fraudulent document by the bidder/contractor and Banning thereof:

The information and documents furnished by the bidder/CONTRACTOR in respect of the tender/contract are accepted by COMPANY to be true and genuine. However, if it comes to the notice of the COMPANY anytime either during the pendency of the tender or after award of the contract or after completion the contract that a Bidder/CONTRACTOR furnished fraudulent document/false information in relation to the subject tender/contract or committed any misconduct, appropriate action shall be taken against the Bidder/CONTRACTOR for debarment/banning of the bidder/CONTRACTOR from participating in any future tender of the COMPANY in terms of the COMPANY's Banning Policy, 2017 besides making the CONTRACTOR liable for other penal action including termination of ongoing contract(s) at his/her risk and peril. In such event, the Bid Security/Performance Security in respect of ongoing contract(s) shall be forfeited by the COMPANY.

42.0 SETTLEMENT OF DISPUTES:

42.1 Arbitration (Applicable for Suppliers/CONTRACTORs other than PSU and MSME):

1. Except as otherwise provided elsewhere in the contract, if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, in connection with construction, meaning, operation, effect, interpretation of the contract or breach thereof which parties are

unable to settle mutually, the same shall be referred to Arbitration as provided hereunder:

2. A party wishing to commence arbitration proceeding shall invoke Arbitration Clause by giving 30 days notice to the other party. The notice invoking arbitration shall specify all the points of dispute with details of the amount claimed to be referred to arbitration at the time of invocation of arbitration and not thereafter. If the claim is in foreign currency, the claimant shall indicate its value in Indian Rupee for the purpose of constitution of the arbitral tribunal.

3. It is agreed and undertaken by the Parties that irrespective of country of origin of the CONTRACTOR, the arbitration proceedings shall be governed by the Arbitration and Conciliation Act, 1996 and under no circumstances, the proceedings shall be construed as International Arbitration.

4. The number of arbitrators and the appointing authority will be as under:

Claim amount (excluding claim for interest and counter claim, if any)	Number of Arbitrator	Appointing Authority
Upto Rs.25.00 Lakh	Not applicable	Not applicable
Above Rs.25.00 Lakh Upto Rs.25 Crore	Sole Arbitrator	OIL
Above Rs. 25 Crore	3 Arbitrators	One Arbitrator by each party and the 3rd Arbitrator, who shall be the presiding Arbitrator, by the two Arbitrators.

5. The parties agree that they shall appoint only those persons as arbitrators who accept the conditions of the arbitration clause. No person shall be appointed as Arbitrator or Presiding Arbitrator who does not accept the conditions of the arbitration clause.

6. If any of the Arbitrators so appointed dies, resigns, becomes incapacitated or withdraws for any reason from the proceedings, it shall be lawful for the concerned party/arbitrators to appoint another

person in his place in the same manner as aforesaid. Such person shall proceed with the reference from the stage where his predecessor had left if both parties consent for the same; otherwise, he shall proceed de novo.

7. Parties agree and undertake that neither shall be entitled for any pre-reference or pendente-lite interest on its claims. Parties agree that any claim for such interest made by any party shall be void.

8. The arbitral tribunal shall complete the proceedings, make and publish the award within time stipulated in the Arbitration and Conciliation Act, 1996(as amended).
9. If after commencement of the arbitration proceedings, the parties agree to settle the dispute mutually or refer the dispute to conciliation, the arbitrators shall put the proceedings in abeyance until such period as requested by the parties. Where the proceedings are put in abeyance or terminated on account of mutual settlement of dispute by the parties, the fees payable to the arbitrators shall be determined as under:

    (i) 20%of the fees if the claimant has not submitted statement of claim.
    (ii) 40% of the fees if the pleadings are complete
    (iii) 60% of the fees if the hearing has commenced.
    (iv) 80% of the fees if the hearing is concluded but the award is yet to be passed.

10. Each party shall be responsible to make arrangements for the travel and stay etc. of the arbitrator appointed by it. Claimant shall also be responsible for making arrangements for travel/stay arrangements of the Presiding Arbitrator and the expenses incurred shall be shared equally by the parties.

    In case of sole arbitrator, both parties shall equally share all expenditures that may be required to be incurred.

11. The fees and other administrative/secretarial expenses of the arbitrator(s) shall not exceed the model fee as stipulated in Schedule-- of the Act and such expenses shall be equally borne by the parties.

12. The Place/Seat of Arbitration shall be Guwahati or the place where the contract is executed. The venue of the arbitration shall be decided by the Arbitrator(s) in discussion with the parties. The cost of arbitration sittings shall be equally borne by the parties.

13. The Arbitrator(s) shall give reasoned and speaking award and it shall be final and binding on the parties.

14. Subject to aforesaid, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof shall apply to the arbitration proceedings under this clause.

42.2 Arbitration (applicable in case of Contract awarded on Public Sector Enterprise):

a) 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) 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.

b) A party wishing to commence arbitration proceeding shall invoke Arbitration Clause and refer the dispute(s) to AMRCD with a copy to the other party. The notice invoking arbitration shall specify all the points of dispute with details of the amount claimed to be referred to arbitration at the time of invocation of arbitration and not thereafter.

c) Upon such reference, the dispute shall be decided by the Competent Authority appointed under the AMRCD, whose decision shall bind the parties finally and conclusively. The parties in the dispute will share equally the cost of the arbitration as intimated by the Arbitrator.

42.3 Arbitration (Applicable to Micro, Small and Medium Enterprise)

In the event of any dispute or difference relating to, arising from or connected with the Contract, efforts shall be made to resolve the dispute(s) amicably by mutual consultation and in case such dispute(s) cannot be resolved through mutual consultation, then same shall be resolved through the procedure as prescribed in Section-18 of the Micro, Small and Medium Enterprises Development Act, 2006.

42.4 Resolution of disputes through conciliation by OEC

(Not Applicable in cases where value of dispute is less than Rs. 25 Lakhs and more than 2 Crore)

If any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, in connection with construction, meaning, operation, effect, interpretation of the contract or breach thereof which parties are unable to settle mutually, Company at its discretion, on its own or on the request of the CONTRACTOR, may refer the dispute to Outside Expert Committee ("OEC") to be constituted by Corporate Business Committee (CBC), OIL as provided hereunder:

a) The party desirous of resorting to conciliation shall send a notice of 30 (thirty) days to the other party of its intention of referring the dispute for resolution through OEC. The notice invoking conciliation shall specify all the points of disputes with details of the amount claimed to be referred to OEC and the party concerned shall not raise any new issue thereafter.

b) OIL shall nominate three outside experts, one each from Financial/commercial, Technical and Legal fields from the Panel of Outside Experts maintained by OIL who shall together be referred to as OEC (Outside Experts Committee).

c) Parties shall not claim any interest on claims/counterclaims from the date of notice invoking conciliation till execution of settlement agreement, if so arrived at. In case, parties are unable to reach a settlement, no interest shall be claimed by either party for the period from the date of notice invoking conciliation till the date of OEC recommendations in any further proceeding.

d) The Proceedings of the OEC shall be broadly governed by Part III of the Arbitration and Conciliation Act, 1996 including any modifications thereof. Notwithstanding above, the proceedings shall be summary in nature and Parties agree to rely only upon documentary evidence in support of their claims and not to bring any oral evidence in the OEC proceedings.

e) OEC shall hear both the parties and recommend possible terms of settlement between the parties. The recommendations of OEC shall be non-binding and the parties may decide to accept or not to accept the same. Parties shall be at liberty to accept the OEC recommendation with any modification they may deem fit.

f) Where recommendations are acceptable to both the parties, a settlement agreement will be drawn up in terms of the OEC

recommendations or with such modifications as may be agreed upon by the parties. The settlement agreement shall be signed by both the parties and authenticated by all the OEC members either in person or through circulation. This settlement agreement shall have the same legal status and effect as that of an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal under Section 30 of the Arbitration and Conciliation Act, 1996.

g) OIL will share all other guidelines regarding reconciliation through OEC with the CONTRACTOR when it resorts to settlement through OEC. Both parties agree to adhere to these guidelines.

h) All the expenditure incurred in the OEC proceedings shall be shared by the parties in equal proportion. The parties shall maintain account of expenditure and present to the other for the purpose of sharing on conclusion of the OEC proceedings.

i) The OEC proceedings must be completed within a period of 3(three) months from the date of constitution of the OEC with a provision of extension of one months, subject to mutual agreement. The Place of OEC shall be either at New Delhi or Guwahati.

j) If the parties are not able to resolve the dispute through OEC or do not opt for conciliation through OEC, the party may invoke arbitration clause as provided in the contract.

k) The parties shall be represented by their in-house employees/executives. No party shall bring any advocate or outside consultant/advisor/agent. Ex-officers of OIL who have handled the matter in any capacity directly or indirectly shall not be allowed to attend and present the case before OEC on behalf of Contractor. However, ex- employees of parties may represent their respective organizations.

l) Solicitation or any attempt to bring influence of any kind on either OEC Members or OIL is completely prohibited in conciliation proceedings and OIL reserves the absolute right to close the conciliation proceedings at its sole discretion if it apprehends any kind of such attempt made by the Contractor or its representatives.

42.5 Exclusions

Parties agree that following matters shall not be referred to conciliation or arbitration:

i) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision to initiate any proceedings for suspension or debarment or banning, or decision to suspend or to ban or to debar business dealings with the bidder/CONTRACTOR and/or with any other person involved or connected or dealing with bid/contract/bidder/CONTRACTOR.

ii) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision under the provisions of Integrity Pact executed between OIL and the Bidder/CONTRACTOR.

iii) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision to comply with any order or directive of any statutory or government authority.

iv) Any claim which is less than Rs. 25 Lakh.

43.0 COMPLETION OF CONTRACT:

Unless otherwise terminated under the provisions of any other relevant Clause or extended through written communication, this Contract shall be deemed to have been completed at the expiry of the Period specified in the contract or period of defect liability, as provided for under the Contract, whichever is later.

44.0 TERMINATION:

44.1 Termination on expiry of the contract: This Agreement shall be deemed to have been automatically terminated on the expiry of the contract period unless OIL has exercised its option to extend this contract in accordance with the provisions, if any, of this contract.

44.2 Termination of contract for death: If the CONTRACTOR is an individual or a proprietary concern and the individual or the proprietor dies or if the CONTRACTOR is a partnership concern and one of the partners dies then unless, the COMPANY is satisfied that the legal heir of the individual or the proprietary concern or the surviving partners are capable of carrying out and completing Contract, the COMPANY is entitled to cancel the Contract for the uncompleted part without being in any way liable for any compensation payment to the estate of the deceased CONTRACTOR and/or to the surviving partners of the CONTRACTOR's firm on account of

the cancellation of Contract. The decision of the COMPANY in such assessment shall be final & binding on the parties. In the event of such cancellation, the COMPANY shall not hold the estate of the deceased CONTRACTOR and/or the surviving partners of CONTRACTOR's firm liable for any damages for non-completion of the Contract.

44.3 **Termination on account of Force Majeure**: Unless the contract provides otherwise, either party shall have the right to terminate this Contract on account of Force Majeure as set forth in Article-31.0 above.

44.4 **Termination on account of insolvency**: In the event that the CONTRACTOR or its collaborator or its guarantor at any time during the term of the Contract, becomes insolvent or makes a voluntary assignment of its assets for the benefit of creditors or is adjudged bankrupt or under the process of insolvency or liquidation, then the COMPANY shall, by a notice in writing have the right to terminate the Contract and all the CONTRACTOR's rights and privileges hereunder, shall stand terminated forthwith.

However, COMPANY shall be at liberty to give the Receiver or Liquidator or Insolvency Professional Manager, as appointed by the Competent Court/Tribunal, the option of carrying out the Contract subject to its technical & financial competence and his providing a guarantee for due and faithful performance of the Contract.

44.5 **Termination for Unsatisfactory Performance**: If the COMPANY considers that, the performance of the CONTRACTOR is unsatisfactory, or not as per the provision of the Contract, the COMPANY shall notify the CONTRACTOR in writing and specify in details the cause of dissatisfaction. The COMPANY shall have the option to terminate the Contract by giving 15 days notice in writing to the CONTRACTOR, if CONTRACTOR fails to comply with the requisitions contained in the said written notice issued by the COMPANY. In the event CONTRACTOR rectifies its non-performance to the satisfaction of the COMPANY, the option of termination may not be exercised by the COMPANY. If however CONTRACTOR repeats non-performance subsequently, COMPANY shall exercise the option to terminate contract by giving 07 days notice. Such CONTRACTOR shall be put on holiday as per the Banning Policy of OIL [available at www.oil-india.in].

44.6 **Termination due to change of ownership and Assignment**: In case the CONTRACTOR's rights and/or obligations under this Contract and/or the CONTRACTOR's rights, title and interest to the equipment/ material, are transferred or assigned without the COMPANY's written consent, the

COMPANY may at its option, terminate this Contract. COMPANY shall not be however under any obligation to accord consent to the CONTRACTOR for change of ownership & assignment of the contract.

44.7 If at any time during the term of this Contract, breakdown of CONTRACTOR's equipment results in CONTRACTORs being unable to perform their obligations hereunder for a period of 15 successive days, COMPANY at its option, may terminate this Contract in its entirely or partially to the extent non-performance, without any further right or obligation on the part of the COMPANY, except for the payment of money then due. No notice shall be served by the COMPANY under the condition stated above.

44.8 **Termination for delay in mobilization**: CONTRACTOR is required to mobilize complete equipment alongwith crew for commencement of services at the specified site within the maximum allowed number of days from the date of LOA/Notice for Mobilization as specified in the special conditions of contract. If the CONTRACTOR (successful bidder) fails to complete the mobilization as above, OIL shall have, without prejudice to any other clause of the CONTRACT, the right to terminate the contract.

44.9 Notwithstanding any provisions herein to the contrary, the Contract may be terminated at any time by the COMPANY on giving 30 (thirty) days written notice to the CONTRACTOR due to any other reason not covered under the above Article from 44.1 to 44.8 and in the event of such termination the COMPANY shall not be liable to pay any cost or damage to the CONTRACTOR except for payment of services as per the Contract upto the date of termination.

44.10 **Consequence of Termination**: In all cases of termination herein set forth, the relative obligations of the parties to the Contract shall be limited to the period up to the date of termination. Notwithstanding the termination of this Contract, the parties shall continue to be bound by the provisions of this Contract that reasonably require some action or forbearance after such termination.

Upon termination of this Contract, CONTRACTOR shall return to COMPANY all of COMPANY's properties, which are at the time in CONTRACTOR's possession.

In the event of termination of contract, COMPANY will issue Notice of termination of the contract with date or event after which the contract will be terminated. The contract shall then stand terminated and the CONTRACTOR shall demobilize their personnel & materials.

Demobilization charges shall not be payable by COMPANY in case of Article from 44.4 to 44.7.

45.0 TO DETERMINE THE CONTRACT:

In such an event the contract shall stand terminated and shall cease to be in force from the date of such notification by the COMPANY. Thereafter the CONTRACTOR shall stop forthwith any of the work then in progress, except those work which the COMPANY may, in writing, require to be done to safeguard any property or work, or installations from damages, and the COMPANY may take over the remaining unfinished work of the CONTRACTOR and complete the same through a fresh CONTRACTOR or by other means, at the risk and cost of the CONTRACTOR, and any of its sureties if any, shall be liable to the COMPANY for any excess cost occasioned by such work having to be so taken over and completed by the COMPANY over and above the cost at the rate/cost specified in the schedule of quantities and rates/prices.

46.0 WITHOUT DETERMINING THE CONTRACT:

To take over the work of the CONTRACTOR or any part thereof and complete the same through a fresh CONTRACTOR or by other means, at the risk and cost of the CONTRACTOR. The CONTRACTOR and any of its sureties are liable to the COMPANY for any excess cost over and above the cost at the rates specified in the schedule of quantities and rates/prices, occasioned by such work having been taken over and completed by the COMPANY.

47.0 ERRING/DEFAULTING AGENCIES:

Erring and defaulting agencies like bidder, CONTRACTOR, supplier, vendor, service provider will be dealt as per OIL's Banning Policy dated 6th January, 2017 available in OIL's website: www.oil-india.com. Moreover, OIL reserves the right to take legal or any other action on the basis of merit of the case.

48.0 MISCELLANEOUS PROVISIONS:

CONTRACTOR shall give notices and pay all fees at their own cost required to be given or paid by any National or State Statute, Ordinance, or other Law or any regulation, or bye-law of any local or other duly constituted authority as may be in force from time to time in India, in relation to the performance of the services and by the rules & regulations of all public

bodies and companies whose property or rights are affected or may be affected in any way by the services.

CONTRACTOR shall conform in all respects with the provisions of any Statute, Ordinance of Law as aforesaid and the regulations or bye-law of any local or other duly constituted authority which may be applicable to the services and with such rules and regulation, public bodies and Companies as aforesaid and shall keep COMPANY indemnified against all penalties and liability of every kind for breach of any such Statute, Ordinance or Law, regulation or bye-law.

During the tenure of the Contract, CONTRACTOR shall keep the site where the services are being performed reasonably free from all unnecessary obstruction and shall store or dispose of any equipment and surplus materials and clear away and remove from the site any wreckage, rubbish or temporary works no longer required. On the completion of the services, CONTRACTOR shall clear away and remove from the site any surplus materials; rubbish or temporary works of every kind and leave the whole of the site clean and in workmanlike condition to the satisfaction of the COMPANY.

Key personnel cannot be changed during the tenure of the Contract except due to sickness/death/resignation of the personnel or any other justified situation in which case the replaced person should have equal experience and qualification, which will be again subject to prior approval, by the COMPANY.

OIL INDIA LIMITED
(A Government of India Enterprise)

PIPELINE REHABILITATION PROJECT

TRACTEBEL ENGINEERING PVT. LTD.

SPECIFICATION
FOR
REVAMP OF
EXISTING CATHODIC PROTECTION SYSTEM

02	02.06.2020	Issued for Tender	BN	MS	SKH
01	27.05.2020	Second Issue	BN	MS	SKH
00	09.03.2020	First Issue	BN	MS	SKH
Rev.	**Date**	**Subject of revision**	**Prepared By**	**Checked By**	**Approved By**

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1.0 INTRODUCTION

OIL INDIA LIMITED (OIL), is a Government of India Enterprise, engaged in the business of Exploration, Production & Transportation of Crude Oil, Petroleum Products and Natural Gas and Production of LPG in India with participating interest in E&P sector in various overseas projects.

The Pipeline Department of Oil India Limited deals with transportation of hydrocarbons to different refineries and operates a total of 1860 Km of Hydrocarbon pipelines, comprising of 1206 km of Crude oil pipeline and 654 km of Product pipeline. It owns 1157 Km long x 18 m wide Right-of-way [ROW] from Duliajan, Assam, India to Barauni, Bihar, India. This ROW has multiple hydrocarbon pipelines viz. crude oil, product & natural Gas Pipeline all protected from a common Impressed Current Cathodic Protection (ICCP) system owned and maintained by OIL.

There are 5 existing pipelines which are laid in the common 18 m wide ROW strip (at some locations the ROW width reduces to 4 mtr) from Duliajan, Assam to Barauni, Bihar along with different Pump stations and Repeater stations are shown in 'Annexure-1: Drawing 1 and Drawing 2 (Schematic showing existing pipelines in the ROW from Duliajan to Barauni').

2.0 PROJECT BACKGROUND

A total of 1415 km of currently operating hydrocarbon pipelines are beyond or nearing completion of their design life, as mentioned below:

- The 406 mm (16") and 355 mm (14") crude oil pipelines, totalling 1161 Km are more than 50 years old.
- 249 km of NSPL and another refinery delivery line of 5 Km are approx 40 years old.

Due to natural degradation of the existing coal tar coating of these pipelines along with associated problems like shorted cased crossings and insulating flanges, the CP system is unable to adequately protect the pipeline system. Recent additions of more pipelines in the ROW [viz NSPL and DNPL] have increased the load on the CP System many folds. Aging anode beds have compounded the problem.

Intelligent Pigging Survey carried out for the crude oil as well as the NSPL product pipeline, indicates no major corrosion defects and hence de-rating of the pipelines is not recommended. Since the pipelines are in good health, issues related to Coating and CP system needs to be immediately addressed to ensure safe and reliable operation of the pipelines. Details of the pipelines are as per below Table

TABLE-A

Sl No	Pipeline Details	Owner	Diameter & Length	Type of coating	Year of commissioning
1	Duliajan Barauni pipeline (Referred as Mainline)	OIL	16"- 401 km 14"- 757 km	CTE	1962
2	Numaligarh Siliguri pipeline	OIL	16" – 249 km LL1 & LL2 + DBSN	CTE	1978
			16"- 405 km	CTE	2008
3	Tap Off Crude pipelines from Guwahati refinery to Mainline	OIL	10.75"- 7km	CTE	1962
4	Guwahati Siliguri Product Pipeline	IOCL	8.625"- 424 km	CTE	1968
5	Dulijajan Numaligarh Natural Gas Pipeline	AGCL/ NRL/O IL	16"- 191 km	CTE	2011

6	Crude delivery line near RS-2 Badulipar	NRL	16”- 13 km	CTE	
7	Tap Off Crude pipelines from Bongaigaon Refinery to Mainline	OIL	12.75”- 5km 16”- 5 km	CTE	1962

The external coal tar enamel coating of old pipelines (life > 30 years) have degraded over the years causing considerable reduction of coating resistivity (<5000 ohm-m2) thereby leading to a very high protective current demand with severe current attenuation along the length of pipelines. The distribution of CP current has also been affected by current drain through following structures:

1. Shorted cased crossings
2. Shorted isolation flanges
3. Above ground pipeline / valve due to Isolation flange installed only at one end at repeater station
4. Uncoated / buried block valves

The degraded CTE coating of Mainline & old NSPL pipeline are being recoated by in-situ application of various types of protective cold applied coating systems depending on the terrain / trench conditions as detailed below:

TABLE - B

Type of terrain / trench condition	Type of coating
Dry / Wet ROW during rainy season (pipe surface dry)	3 ply / 2 ply cold applied tape coating system comprising of three layers: primer, inner anti-corrosion tape (3ply) and outer mechanical layer(2ply) to be applied by hand wrapping machines.
Perennial swampy ROW (pipe surface dry but abrasive blasting not possible in the trench)	Visco elastic coating - Self-healing monolithic polymer wrap cold applied coating system comprising of two layers: Inner anti-corrosion visco-elastic layer and outer mechanical layer to be applied by hand.
Perennial submerged ROW (pipe surface wet)	Petrolatum based cold applied coating system comprising of three layers: primer, inner petrolatum tape, outer mechanical layer to be applied by hand.

The coating refurbishment of 1415 KM pipelines will be carried out in phases.

PHASE-I

- In phase-I, Coating refurbishment of 575 kms Pipeline were taken up and work are in progress. The refurbishment of the coating in 575 KM is being done in patches, i.e. 10 kms upstream and downstream of repeater / pump stations where CP Anode beds are installed.
- Also, in Phase I, recoating of all the buried block valves (in 1415 KM Pipeline),
- Replacement of flanged type isolation joints with monolithic isolation joints (MIJ) at Eight repeater stations (i.e.RS-1, RS-2,RS-3, RS-4/RS-5, RS-14, RS-15, RS-16 & RS-17) shall be completed and
- Repair / Removal / Mitigation shorted cased crossings within 575 Km Pipeline shall also be completed.
- Cathodic protection
    - Installation of various type of test lead posts – every km in the pipeline segments which are being recoated.

- Installation of Magnesium anodes based sacrificial cathodic protection system at cased crossings located in pipeline segments which are being recoated.
- Installation of surge divertors across MIJ's.

The 575 Kms pipeline segments which are being recoated are in three states and the work is being carried out by dividing in 5 spreads as per details below:

TABLE - C

Spread / Package	Station	State	Coating Length (KM)
1	PS-1(Duliajan) to RS-3(Kaziranga)	Assam	130
2	RS-3(Kaziranga) to RS-5(Jagiroad)	Assam	131
3	RS-5(Jagiroad) to RS-10 (Pratapkhata)	Assam	119
4	RS-10(Pratapkhata) to RS-14(Kishanganj)	Assam & West Bengal	115
5	RS-14(Kishanganj) to Barauni Pump Station	West Bengal & Bihar	80
Total			**575 KM**

The breakup of the above 5 packages is indicated in Annexure- I,Table-1.The rainy season in Assam / West Bengal tentatively starts from Mid- April till October / November i.e. there will only be 5 / 6 working months in a year However, the working months might vary to 6-7 months in Bihar. CP revamp works have to be planned accordingly.

The coating & CP survey works have to be carried out when the coating activity has been completed.

3.0 DEFINITIONS

Owner / Client	:	Oil India Limited (OIL).
PMC	:	Project Management Consultant
CP Contractor	:	Contractor employed by Owner for carrying out revamp of ICCP system and carrying out Coating & CP surveys as per project Requirements.
Vendor / Manufacturer	:	The party that manufactures and supplies material, equipment and / or services to the CP Contractor.

4.0 ABBREVIATIONS

OIL	:	Oil India Limited
PMC	:	Project management Consultant
CTE	:	Coal Tar Enamel Coated
DNPL	:	Duliajan Numaligarh Pipeline Limited
d/s or DS	:	Down stream / Outlet side
PPL/GSPL	:	Guwahati Siliguri Product Pipeline
MIJ	:	Monolithic Isolation joint [Electrical Isolation]

LL	:	Loopline-Pipeline segment laid in the sector LL PS5 & RS9 - RS5-ML Mainline
NH	:	National Highway
NSPL	:	Numaligarh Siliguri product Pipeline
IOCL	:	Indian Oil Corporation Limited a downstream Hydrocarbon Company
PS	:	Pumping Stations with ICCP stations
RS	:	Repeater Stations with ICCP stations
u/s or US	:	Up stream /Inlet side
FIM	:	Free Issued Material
TCP	:	Temporary Cathodic Protection
PCP	:	Permanent Cathodic Protection
ICCP	:	Impressed Current Cathodic Protection
TRU	:	Transformer rectifier unit
PSP	:	Pipe to soil Potential
TLP	:	Test Lead Posts
CAT	:	Current Attenuation Test
CIPL	:	Close Interval Potential Logging
DCVG	:	Direct Current Voltage Gradient.

5.0 STANDARDS

IS 8062:2006	:	Cathodic Protection System for Buried Pipeline Structure for Transportation of Natural Gas, Oil & Liquids
NACE Standard SP-0169 2013	:	Standard Recommended Practice for Control of External Corrosion on Underground or Submerged Metallic Piping Systems.
NACE Standard TM0497 2012	:	Standard Test Method for Mesaurement Technique Related to Criteria for Cathodic Protection on Underground or Submerged Mettallic Piping System
NACE Standard TM0109 2009	:	Standard Practise for Aboveground Survey Technique for the Evaluation of Underground Pipe Coating condition.
NACE Standard TMO102 2002	:	Standard Test Method for Measurement of Protective Coating Electrical Conductance of Electrical Properties.
NACE Standard SP0207 2007	:	Standard for Performing Close-Interval Potential Surveys and DC Surface Potential Gradient Surveys on Buried or Submerged Metallic Pipelines
NACE Standard SP-0177	:	Standard Recommended Practice -Mitigation of Alternating Current and Lighting Effects on Metallic Structures and Corrosion Control Systems.
NACE Standard SP-0286	:	Standard Recommended Practice - The Electrical isolation of Cathodically Protected Pipelines.
NACE SP-0200-2014	:	Steel Cased Pipeline Practices
NACE Publication No. 54276		Cathodic Protection Monitoring for Buried Pipelines.

VDE 0150	:	Protection against Corrosion due to Stray Current from DC installations.
BIS: 2148	:	Electrical Apparatus for Explosive Gas Atmospheres - Flameproof Enclosures "d"
IEC 79	:	Explosive Atmosphere
ASTM B 843	:	Standard Specification for Magnesium Alloy Anodes
ASTM B 418	:	Standard Specification for Cast and Wrought Galvanic Zinc Anodes

OISD Standards & CCE Norms

6.0 SCOPE OF CATHODIC PROTECTION SYSTEM:

The Scope of Work is divided in three Spreads as below: -

Spread	State	Total Pipeline Length in KM	Length of Re-Coated Pipeline in KM
A	Assam	313	190
B	Assam	300	190
C	West Bengal & Bihar	545	195

The scope of work of the CP tender comprises of:-

- Soil resistivity survey along the total length of the pipeline at every 500 mtrs and every HT line >66 kV locations where HT line is crossing or parallel, at a depth of 1 meter, 2 mtr and 5 mtr.
- Soil chemical analysis along the total length of the pipeline at 2 meter depth at every 3 km.
- Supply & Installation of new cathode junction boxes (CJB) at all ICCP stations as per Annexure- I, Table-4
- Supply & Installation of SCADA cable to make the remote monitoring of all the ICCP stations operational:
    - Number of ICCP stations requiring installation of SCADA cables at 40 location.
    - Proper operation of SCADA to be checked at all 45 locations.
- Supply & Installation of test stations, solid state decouplers and zinc grounding cells / zinc ribbon anodes at HT crossings on both DBPL and NSPL pipeline.
- Supply and Installation of polarisation coupons with permanent reference electrodes, test stations at every 5 km on both DBPL and NSPL pipeline falling within the 575 Km of newly coated section of DBPL.
- Checking the healthiness of existing reference electrodes at all the CP stations and replacement of faulty reference electrodes for Mainline, NSPL and GSPL pipelines.
- Supply and installation of F type test station at all the IJ locations of DNPL with connection to the OIL-mainline.
- Supply and installation of REJB cum B type TLP test station for connection to the TRU. The scope would include supply & installation of reference electrode and monitoring cable in the new REJB from all the pipelines at the station ie OIL-mainline, NSPL and IOCL GSPL and from the REJB to the CPTRU. One REJB + B shall be provided for each pump station and two REJB + B(u/s and d/s) shall be provided at each repeater station as indicated in Annexure- I, Table-5
- Checking the healthiness of all the TRU's installed at all ICCP stations (Total 45 no's including the new CP station at KM-5.0 near Duliajan) and replacing any defective components.
- Checking the healthiness of the monolithic isolation joints (MIJ) along the pipelines, also checking & testing the existing surge diverters (SD) across MIJs and the grounding of the unprotected side of the pipeline.

- Regulating / reducing the existing CPTRU's so as to meet the reduced current requirement of newly coated pipeline section and achieve the protection criteria in the coated section. Maintenance and monitoring of existing cathodic protection system for 6 months from the date of completion of entire CP work as per tender requirement.

- Coating and Cathodic protection surveys on recoated sections of 575 Kms to ensure that pipeline re-coating has been carried out properly and there are no coating damages. The recoating work of the section is being carried out in patches, thus there are chances that one complete recoated patch of 10 km shall not be available for survey, thus the contractors shall have to make multiple visits in one section for survey. The surveys shall comprise of the following:

  a. Current attenuation coating survey.

  b. CIPL survey

  c. CAT/CAT-A-Frame survey shall be carried out for identification of coating defects and bell hole inspections to be performed. Even if no coating defects are identified, contractor shall carry out dig verification at few locations randomly selected by OIL.

  d. AC pick up at all HT crossing by 24 hours data logging, including determination of AC Current Density via AC corrosion coupons.

  e. Coating conductance survey at all TLP-B locations

  f. ON / OFF potential at polarization coupons.

7.0 MAJOR ACTIVITIES COVERING COMPLETE SCOPE OF WORK INCLUDE THE FOLLOWING

7.1. Pre-Design Surveys and Design

- Soil resistivity survey and soil chemical analysis along the total length of the pipeline.
- Submission of Engineering documents and design calculation for earthing of the re-coated pipeline segments at HT crossings based on the actual soil resistivity data, including Technical Data sheets of solid-state polarization cells, zinc grounding cells & zinc ribbon anodes.
- Bill of quantities and post commissioning monitoring methodology, data recording formats, quality assurance control (QA/QC) methodology and necessary drawing and documents demanded by owner / Consultant.
- It is advised to collect all the additional data wherever required for design and evaluation of CP System.

7.2. Procurement

Procurement which includes supply, factory inspection, transportation, loading and unloading of cathode junction boxes, solid state decouplers, cathodic protection cables, test stations, permanent reference cells, polarization coupons, spark gap arrestors, zinc grounding cells / zinc ribbon anodes and all other material required for complete PCP work.

Submission and obtaining approval of all documents (vendor documents) related to procurement of items as mentioned above.

7.3. Installation & Commissioning

Installation, testing, pre-commissioning and commissioning of CP components as defined in the project specification / tender including job procedure for field testing, pre-commissioning and commissioning.

The installation of the CP system shall be supervised by competent person from CONTRACTOR.

All civil works associated with complete cathodic protection work are included in the scope of CP contractor. This shall include providing cable trenches, foundation for equipment etc. In case material have to be located outdoor, proper kiosk to prevent direct sunlight shall have to be supplied by CP contractor.

7.4. Cathodic protection –Surveys and system monitoring

Performing the coating and CP surveys to check the healthiness of coating and adequacy of cathodic protection. The scope includes submitting method statements of the various surveys for review and approval of owner / PMC. After approval of the procedures the work shall start under supervision of Owner / PMC. The surveys to be performed are, to check the health of the re-coated pipeline section, identify / locate / size coating holidays, check the effectiveness of the CP system and AC interference.

The CP contractor shall submit the daily reports of the survey as downloaded from the instrument with GPS coordinates of the TLP's. Also, a detailed analysis report on the basis of survey data, identifying the poorly coated, under-protected, overprotected areas. The report shall highlight the high consequence areas for records of OIL.

Maintenance and monitoring of cathodic protection system for the entire pipeline section for 6 months, the scope includes identifying the under and overprotected areas and regulate the CP output such that the complete coated pipeline section is within the protection criteria. The contractor shall check the integrity of installed cathodic protection system, cased crossings and to rectify any issues encountered as per approval from OIL / PMC.

In case of any deficiency observed during monthly monitoring of the CP system, the contractor shall augment it, so as to ensure adequate levels of protection as specified in CP acceptance criteria for this project.

7.5. Submission of documentation

The following documents are required to be submitted by the CP contractor:

- Design calculation on the type and number of grounding electrodes
- Submission of drawings and datasheets of CP components to be supplied under this tender for review and approval of OIL / PMC.
- As built drawings of stations indicating the location /route of the new SCADA cable.
- Survey procedures and post survey reports for review and approval of OIL / PMC.

The above details are indicative and the documents requirement shall be as per requirement of OIL / PMC.

8.0 CATHODIC PROTECTION DESIGN CRITERIA

The pipe to soil potential (P-S-P) is the criteria for effective cathodic protection. CP systems shall be designed to provide sufficient current to the pipeline, for its design life, to achieve an "OFF" potential over the entire pipeline, equal to or more negative than specified below. To avoid detrimental effects on the applied coating (dis-bondment) or on the pipeline (hydrogen induced stress cracking) due to over protection, "OFF" potentials for carbon steel shall not be more negative than the overprotection limit value as stated hereunder.

The pipe to soil potential (PSP) shall be between (–) 0.85V "Instant OFF" minimum and (–) 1.2V "OFF" maximum w.r.t. Cu-CuSO4 reference electrode.

At location of polarization coupon, the coupon to soil potential measurement shall be between (-) 0.85 "OFF" minimum and (-) 1.2 V "OFF" maximum w.r.t. Cu/CuSO4 reference electrodes.

In rare circumstances a minimum polarisation shift of (-) 100 millivolts w.r.t. Cu-CuSO4 reference electrode shall indicate adequate levels of cathodic protection for the pipeline.

A positive potential swing of ›50 mV (P-S-P) shall be considered as the criteria for presence of an interaction situation requiring investigation and incorporation of suitable mitigation measures by the CP Contractor.

For pipelines in anaerobic soils where there is presence of SRBs, the potential more electronegative -0.95V w.r.t. Cu-CuSO4 reference electrode is to be maintained.

9.0 SOIL RESISTIVITY AND SOIL ANALYSIS

The Cathodic Protection system to be based on site data generated from the pipeline ROW as per following:

9.1 Soil Resistivity

- Soil Resistivity [ρ] measurement from the entire 1157 km of pipeline ROW at every 500mtrs
- At all the High tension >66 kV crossing locations
- At all the locations where high-tension line> 66 kv is parallel within 30 mtr to the pipeline.

  Measurements at each location using Wenner's 4-pin method to be at depths 1, 2, &,5 m depth. The soil resistivity meter details with calibration certificate to be submitted for approval from OIL/PMC prior to start of the work.

9.2 SOIL ANALYISIS: Soil /Water samples to be collected from the entire 1157 km of pipeline ROW at every 3 km from 2 mtr depth for following analysis:

- Ionic Loading from an aqueous extract of the soil.
- Sodium, Potassium, Calcium, Magnesium [all in ppm].
- Chloride, Sulphate, Sulphide,Carbonate,BiCarbonate,Sulphite,Phosphate,Nitrate, Nitrite [all in ppm]
- Microbial Loading - Sulphate Reducing Bacteria [Presence/Absense of bacterial colonies] PH, Total Dissolved Solids [TDS], Redox Potentials, Moisture (%).

9.3 Additional data to be collected

The following data shall be collected to generate design data for evaluation of interaction / interference possibilities due to presence of other services in ROW / in vicinity.

i. Route and types of foreign service / pipeline in and around or crossing the right of way (including those existing and those which are likely to come up during contract execution) with pipe diameter, type of coating, type of cathodic protection, location of anode groundbeds, output current and voltage of CP Power Supply Unit.

ii. CP Contractor shall conduct necessary potential gradient surveys for existing anode ground beds that may interfere with the CP system of the pipelines covered under this project.

iii. Existing and proposed DC / AC power sources and systems using earth return path such as HVDC substations / earthing stations, fabrication yards with electric welding etc. in the vicinity of the entire pipeline route.

iv. Crossing or parallel running of any existing or proposed HVAC (66 kV & above) overhead power lines along with details of voltage.

v. Voltage rating, phases, sheathing details of underground power cables running along ROW or in its vicinity.

10.0 PIPELINE DETAILS

All the above pipelines mentioned in Table -1 are protected through impressed current cathodic protection system comprising of 45 CP stations. The details of parallel Pipeline with length is indicated in Table-2 of Annexure –I.

All the pipelines were electrically bonded through buried cables at the CP stations and at every 5 kms intervals, however the direct bonding is now being changed to bonding via TLP in the 575 km of recoated Pipeline section.

11.0 DETAILS OF EXISTING CATHODIC PROTECTION SYSTEM

The cathodic protection stations are provided with transformer rectifier units of rating 75V / 50A.The anodes ground beds in the ICCP stations are of a combination of deep ground, semi deep ground, vertical shallow and horizontal shallow ground beds. The anodes used are mostly MMO tubular anodes, however few anode beds have Hi Si Fe or MS angle anodes. The anode ground bed details are as per Table-3 of Annexure –I.

12.0 TECHNICAL SPECIFICATIONS

12.1 Cathodic Protection Cables

Cables shall be of annealed high conductivity stranded copper conductor, 650 /1100V grade XLPE insulated, armored, PVC sheathed conforming to IS-1554 part-I, except for reference cell, potential measurement and impressed current CP anode tail cables. All cables shall have an aluminium tag at both ends, ferrules and copper lugs at terminations. The size of the copper conductor of the cables shall be as below:

Anode and Cathode header Cable: For impressed current CP system the size of conductor of cables shall be based on the current to be carried, ground bed loop resistance and shall be of size 1C X 50mm^2 for positive, negative drainage cables armoured.

Reference electrode Cable / Polarization coupon Cable/ Monitoring cable: The cables for reference cells and coupon shall be of size 1C X 10 mm^2 and shall be un-armored

Reference electrode and monitoring Cable: The cables for reference / monitoring from REJB / test station to CPTRU shall be of size 16 C X 1.5 mm^2 and shall be un-armored

Cathode Cable: The negative drain cable from pipelines to the CJB shall be of size 1C x 35 mm^2, armored.

Bonding Cable: 1C x 25 mm^2 unarmoured cable for bonding, solid state decoupler / grounding cell and surge diverter connection purpose.

SCADA Cable: Instrumentation cable, 2.5mm^2, 24-core, stranded copper conductor, PE / PVC insulated and PVC sheathed, screened and armoured cable, PE / PVC insulation of each core shall be Numbered or colour coded for easy identification of each core.

12.2 Connection of parallel pipelines with common anode Bed & TRU:

The parallel DNPL, Mainline, NSPL & GSPL pipelines in the common ROW i.e. from Buridihing U/s CP station to Rangapani CP station – 34 locations are directly connected to the negative terminal of the rectifier through a cathode junction box. Due to direct cathode connections to the pipelines, there is no method to control the cathodic protection current required by individual pipelines to maintain the required PSP value. As the parallel pipelines are laid in different time frames (the main pipeline laid in 1962 and certain portion of NSPL in 2008 and DNPL in 2011), due to coating degradation of the main pipeline (coating resistivity < 5X103 ohm/m^2), bulk of the CP current is being drained by the main pipeline resulting in the other parallel pipelines getting reduced protective CP current and hence under-protection.

12.3 Cathode Junction Boxes

New cathode junction boxes are required to be supplied and installed at the CP stations as per Annexure- I, Table-4. The cathode junction box shall be provided by suitable rating shunt and resistor to control the current in each pipeline.

Cathode junction box (CJB) shall be installed for connecting the pipeline to the CPTRU unit. CJB shall have a bus bar with an incoming circuit for connecting to negative of the CPTRU and separate out going circuits for collection of negative drainage current from each of the pipelines. In every repeater station/pump station there shall be 2 CJB, one for current distribution to upstream section of every pipeline and one for current distribution to downstream section of every pipeline and a loop cable connecting both the CJB's. The incoming circuit shall have a current measurement shunt. Each out going circuits shall have isolation link, variable resistance of grid coil type and a current measurement shunt. One number spare outgoing circuit shall be provided.

CJB shall have sheet steel enclosure of minimum 3 mm thickness and hinged lockable shutters and shall have min one or 2 no's of 4" MS post mounting. CJB shall be weatherproof with degree of protection IP-55. The enclosure shall be hot dip galvanized to a thickness of 125 microns followed with red shade of epoxy painting inside and outside to a thickness of 300 microns surface. CJB shall have cathode bus of copper with nickel / silver plated or tinned. The terminals shall be of anti loosening type. Proper identification labeling shall be provided for each terminal with ferruling of cables. Each outgoing circuit label shall clearly indicate the size and identification of the pipeline to which it is connected. A nameplate of anodized aluminum with black back ground and white letters shall be fixed to the outer side of the junction box. The nameplate shall carry the following minimum information:

- Chainage in km.
- Connection scheme

Also, outside the box CJB should be marked prominently in white letters with the above information.

As built connection schematic to be fixed on the inside of the box in a permanent manner

Datasheet for Cathode Junction Box

Input cable size	1C x 50 sq mm
No. of output circuits	1C x 35 sq mm for cathode connections (No of connections as per Annexure-I, Table -4)
Busbar	Tinned copper bus bar 25x5 mm
Terminals	Stainless steel stud with double nut, spring and plain washer.
Shunt type	Magnesium Alloy
Shunt Rating*	As required
Variable Resistors*	Variable resistors (0.01-1 ohm, 100 W) to be decided by the contractor
Diodes*	Suitable rating
Enclosure	Sheet steel, 3 mm thick, suitable for mild steel post mounting. The enclosure will be hot dip galvanized to a thickness of 125 microns followed with red shade of epoxy paint inside and outside to a thickness of 300 microns.
Cable entries	The cables entering in the CJB from the post mounting should be sealed with silicone compound or visco-elastic gel to prevent moisture ingress in the CJB.
Name plates and labels	All internal component identification labeling is done using permanent marker.
Foundation	Concrete foundation of the CJB shall be minimum 30 cm above the GL with a slope to avoid corrosion & accumulation of water.

***Note :** The contractor to submit calculations for deciding the rating of shunt , resistor and diodes.

REFERENCE ELECTRODE JUNCTION BOXE (REJB) + B type Test station

New reference electrode junction boxes shall be required at the locations as per Annexure- I, Table-5. Also, it is to be ensured that where multiple pipelines are being protected by single CP station, three reference electrodes for each pipeline to be provided and connected in the REJB which are then connected to the CPTRU.

In every repeater/pump station REJB/Test Station shall be 2 numbers, one to cater to upstream section of every pipeline and one to downstream section of every pipeline.
Further REJB shall have connection configuration of a B-Type TLP so that it can be utilised in conjunction with the next 10 km B-Type TLP for future coating conductance test for mainline and NSPL. Further reference electrodes and monitoring cables shall be connected to CPTRU through the REJB. All cables,lugs etc.shall be in the scope of the contractor.

A REJB shall be installed for connecting the reference electrodes to the CPTRU unit. REJB shall have a bus bar with an incoming circuit for connecting to RE / FE connection of CPTRU and separate out going circuits for collection of reference electrodes and monitoring connection from each of the pipelines.

REJB shall have sheet steel enclosure of minimum 3 mm thickness and hinged lockable shutters and shall have min one or 2 no's of 4" MS post mounting. REJB shall be weatherproof with degree of protection IP-55. MS post to be painted with signal red enamel paint, over red oxide primer. The enclosure shall be hot dip galvanized to a thickness of 125 microns followed with red shade of epoxy painting inside and outside to a thickness of 300 microns surface REJB shall have cathode bus of copper with nickel/ silver plated or tinned The terminals shall be of anti loosening type. Proper identification labeling shall be provided for each terminal. Each outgoing circuit label shall clearly indicate the size and identification of the pipeline to which it is connected. A nameplate of anodized aluminum with black back ground and white letters shall be fixed to the outer side of the junction box. The nameplate shall carry the following minimum information:

– Chainage in km.

– Connection scheme

Also, as built connection schematic to be fixed on the inside of the box in a permanent manner.

Datasheet for Reference Junction Box

Input cable size	16C x 1.5 sq mm
No. of output circuits	3 nos each -1C x 10 sq mm for RE/monitoring connections and 4 cables for B type connection for each pipeline in the station, as per Annexure- I, Table-5
Busbar	Tinned copper bus bar 25x5 mm
Terminals	Stainless steel stud with double nut, spring and plain washer.
Enclosure	Sheet steel, 3 mm thick, suitable for mild steel post mounting. The enclosure will be hot dip galvanized to a thickness of 125 microns followed with red shade of epoxy painting inside and outside to a thickness of 300 microns.
Cable entries	The cables entering in the REJB from the post mounting should be sealed with silicone compound or visco-elastic gel to prevent moisture ingress in the REJB.
Name plates and labels	All internal component identification labeling is done using permanent marker.
Foundation	Concrete foundation of the REJB shall be minimum 30 cm above the GL with a slope to avoid corrosion & accumulation of water.

12.4 Solid State Decoupling Device (SSD)

Solid state decoupling device & zinc grounding cell shall be installed inside the test stations below each HT line crossing and at every 1 km at locations where HT line > 66kv is parallel within 25 mtr of the pipeline.

The device shall be suitable for grounding induced AC steady state and fault current and block cathodic protection DC current.

The location of installation of SSD shall be dependent on the induced AC on the pipeline as recorded during AC interference survey.

Device shall have the following minimum ratings:

Description	**Rating**
Type	Solid State
Mounting	Flat surface
Short duration fault current	5 kA @ 30 cycles
Lightning surge current rating	100 kA (10/350 µs)
Nominal discharge current	100 kA(8/20 µs)
DC Blocking voltage	-2.0 V / +2.0 V (standard)
AC rms steady state current rating at 50 Hz	45 Amp

12.5 SURGE DIVERTOR

Spark gap surge diverter shall be connected across each monolithic isolation joint to protect it from high voltage surges. Surge diverter shall be provided for the protection of insulating joints located at the ends of the pipe line/at terminals & in between.

The total system including cable, cable termination, anodes/surge diverters shall be suitable for the anticipated fault current magnitude at the location of its installation.

Unless otherwise specified the minimum rating of surge diverter shall be as below:

- Type : Spark gap
- Nominal discharge current rating (8X 20 µs waveform) : 100kA
- Lightning surge current rating (10X 350 µs waveform) : 100 kA
- Power frequency spark over voltage (50 hz) : ≤ 1.2 kV
- Rated impulse spark over voltage : ≤ 2.5 KV
- Make : Dehn/ OBO Betterman, Germany

12.6 Zinc [Zn] Anode

The Zinc [Zn] alloy anode shall conform to ASTM B 418 standard. The anode (other than ribbon anode) shall be packaged with special back fill. The metallurgical composition of anode, potential and consumption rate shall be as below:

Composition:

Element	**Weight**
Aluminium	0.005% max.
Cadmium	0.003% max.
Copper	0.002% max.
Iron	0.0014% max.
Lead	0.003% max.
Zinc	Remainder
Anode open circuit potential	(-) 1.1 volts w.r.t. CSE
Anode consumption rate	11.24 kg / (A yr) Max.

CONTRACTOR shall furnish spectrographic analysis from each heat both for Zinc (Zn) and Magnesium (Mg) anodes along with electrochemical test results. CONTRACTOR shall mention specifically the method of Spectrograph (Atomic Absorption/Emission Spectrometry/Photometric) for CONSULTANT/CLIENT Approval.

Special Backfill for Sacrificial Anodes

A) The composition of special backfill for sacrificial anodes shall be as below:

Gypsum	75%
Bentonite	20%
Sodium sulphate	5%

12.7 Zinc Ribbon Anode

Sl No	Properties	Value
1	Size	Min 12.7 x 14.28 mm
2	Weight	Min 0.89 kg/ m
3	Diameter of core	3.3 mm (max)

12.8 AC CORROSION COUPONS

AC corrosion coupons shall be installed at the locations of HT line crossings where high induced potential is recorded on the pipeline. The location of AC corrosion coupons shall be wherever the pipeline is either crossing or running parallel with overhead EHV/HV transmission lines of voltage grade 66 kV and above.

The coupon consists of a steel disc with an exposed area of 1cm², fitted into thick red PVC housing to give an impression of a holiday,with two cables , one for connection to the pipeline via a 10 ohm resistor and other for measurement of potential of the coupon. The purpose of the AC corrosion coupon is to identify the corrosion current density, which will help in classifying the intensity of corrosion. The connection between the coupon and the cable is properly encapsulated to stop the ingress of moisture.

12.9 Test Stations

OIL / PMC intends to install vandal proof reinforced concrete encased MS test station along the ROW to prevent damage by any third party.

The fabrication of reinforced concrete encased test station shall be as per drawing no P.010416-D-20706-009 pages 2 no's, installed at the below locations:

- Type F – At MIJ locations of DNPL stations with additional connection to OIL- mainline
- Type M - At EHV / HV AC / DC overhead line crossings and selected locations where EHV / HV overhead line is in the vicinity of the pipeline and interference problems are suspected, pipeline grounding through solid state de-coupling device, zinc and magnesium anodes.
- Type A + PC Polarization coupons
- In the vicinity of DC networks or grounding systems.

All the Test station enclosure shall be made of sheet steel of at least 3 mm thickness and shall be suitable for PVC pipe post mounting. Test stations shall have weatherproof enclosure having degree of protection IP-55 and hinged lockable shutter. The cable entry from the ground into the pipe shall be sealed with silicone compound or visco-elastic filler to prevent moisture entry. Also all cables entering the enclosure shall also be sealed with silicone compound or visco-elastic filler.

The Test stations installed along the ROW shall be concrete encased.

A nameplate of anodized aluminum with black back ground and white letters shall be fixed to the inner side of the test station. The nameplate shall carry the following minimum information:

– Pipeline Name

– Chainage in km.

- Test station connection scheme.
- Direction of product flow

OIL/PMC intends to install vandal proof reinforced concrete encased MS test station along the ROW to prevent damage by any third party. The concrete mounting for the Test station should have the letter OIL engraved and to be painted with 2 coats signal red enamel paint.

On the front of the Test station the chainage in km with TLP number, TLP Type and Pipeline name shall be painted using stencil.

The contractor shall ensure that the TLP connection to the pipe is complete in all respects prior to backfilling and no extra payment shall be made for any additional works involved due to this delay.

Terminals and different schemes of wiring shall be provided as per the test station connection scheme as per table -below. Minimum twenty percent spare terminals shall be provided in each test station. The location of all the test stations shall be marked with their connection schemes and other relevant information on alignment sheets.

Type of Test Station	**Purpose**
Type-A+PC	**Polarisation coupon test station- to be installed every 5 km within the 575km coating refurbished section** This test station is used for installation of polarisation coupon installed at every 5 km duly fitted with un-armoured 1c x 10 sq mm copper, XLPE primary insulation and PVC sheating cable, one for connection to pipeline for protection and other for potential measurement shall be provided for each coupon and third for connection to permanent reference electrode, the polarisation coupon shall be supplied with a Magnetic reed switch and link to be installed in the Test Lead Post . The supply and installation of cable and pinbrazing shall be included in the scope of contractor. One permanent reference electrode shall also be supplied and installed with the test station
Type-M	**High Tension Line Test Station** This test station shall be provided at high tension transmission line ≥ 66kV , crossing or parallel within 25 meters of the pipeline The dimension of the test station shall be designed to accommodate solid state decoupler with grounding electrodes and connection to AC corrosion coupon. In this test station two potential measurement cables of size 1C x 10 mm^2 copper cored, XLPE insulated / PVC sheathed connected to the pipeline by pin brazing / epoxy encapsulation shal be terminated. Also two grounding cables of size 1C x 25 mm^2 copper cored, XLPE insulated / PVC sheathed connected to the pipeline by pin brazing / epoxy encapsulation shall be terminated for connection to solid state decoupler and zinc grounding cell.
Type-F	**Insulating Joint test station** This test station shall be installed at each monolithic isolation joint location. There shall be two isolation joints per repeater station and each isolation joint shall be provided with a test station. In this test station one potential measurement cables of size 1C x 10 mm2 & one 1c x 25 mm2 copper cored, XLPE insulated / PVC (FRLS) sheathed connected to the each (protected / unptotected side) of the pipeline by pin brazing / epoxy encapsulation shall be terminated. Minimum No of terminals : 10 nos Each isolation joint shall be provided with a surge divertor for protection of the MIJ, also on the unprotected side of the pipeline, proper grounding shall be provided by plant earthing via a 1c x 25 mm2 copper cored, XLPE insulated / PVC (FRLS) sheathed cable.

The technical details of TLP-A+PC are as under:

A)	Panel Dimensions (Approx)	:	As per drawing
B)	Enclosure/Construction	:	Pipe mounted Outdoor type. The TLP will be fabricated from 3mm CRCA sheet. Confirming to IP55 degree of protection. Lockable door with padlocking facility shall be provided in the front.
C)	Mounting Arrangement		Reinforced concrete encasement
D)	Locking Arrangement		Centre Lock
E)	Terminal Type		Brass Nickel plated Nuts, Bolts and washer
F)	Cable entry/Mounting pipes	:	The TLP will be mounted on 1 Nos. 4" dia 4.5 mm thick PVC pipes. Both the pipes will be provided with suitable bends at the bottom to facilitate cable entry into the box.
G)	Cooling	:	Natural Air cooled.
H)	Painting TLP	:	The enclosure will be hot dip galvanized to a thickness of 125 microns followed with grey shade epoxy paint inside and outside to a thickness of 300 microns. Concrete encasement pillar to be painted with two coats of signal red enamel paint

The technical details of TLP type M are as under:

A)	Overall Dimension of Box	Top Plate		325 mm x 250 mm x 3 mm Thick MS.(tentative)
		Side Plate		460 mm x 440 mm x 200 mm x 3 mm Thick MS. (tentative)
		Rear Plate		440 mm x 275 mm x 3 mm Thick MS. (tentative)
		Bottom Plate		275 mm x 200 mm x 3 mm Thick MS. (tentative)
		Additional Bottom Plate		200 mm x 275 mm x 5 mm Thick. MS (tentative)
B)	Enclosure/Construction		:	Pipe mounted Outdoor type. The TLP will be fabricated from 3mm CRCA sheet. Confirming to IP55 degree of protection. Lockable door with padlocking facility shall be provided in the front.
C)	Mounting Arrangement			Reinforced concrete encasement
D)	Locking Arrangement			Centre Lock
E)	Terminal Type			Brass Nickel plated Nuts, Bolts and washer
F)	Cable entry/Mounting pipes		:	The TLP will be mounted on 1 Nos. 4" dia 4.5mm thk. PVC pipe. Both the pipes will be provided with suitable bends at the bottom to facilitate cable entry into the box.
G)	Cooling		:	Natural Air cooled.
H)	Painting TLP		:	The enclosure will be hot dip galvanized to a thickness of 125 microns followed with grey shade epoxy paint inside and outside to a thickness of 300 microns. Concrete encasement pillar to be painted with two coats of signal red enamel paint

Testing & Inspection

Test stations box shall be inspected by client at their discretion before dispatch, testing shall be conducted in accordance with international /national codes and standards, as per routine test done by manufacturer and additional test done by manufacturer.

12.10 Polarisation Coupons

CP contractor shall supply and install steel coupons of pipeline material along the recoated pipeline sections for both OIL- Mainline and NSPL to monitor the adequacy of the CP system to polarize/ protect coating holidays.

Coupon shall be installed at the following locations:

- CP station drainage points,
- Mid points along the pipeline recoated segment or every 5 km
- End of the recoated pipeline segment.

Coupons shall be installed at bottom 1/3rd portion of the pipeline and 250 mm away from the pipe surface.

The coupons shall be constructed from the pipeline material of coated surface 100 mm x 100 mm where an artificial coating defect of 1 cm^2 is created and exposed to soil. Three cables one for connection to pipeline for protection and other for potential measurement and third for connection to permanent reference electrode shall be provided for each coupon. The protection cable shall be connected through a magnetic reed switch inside the test station to enable measurement of coupon `OFF' potential.

A permanent reference electrode shall be installed adjacent to the coupon in a manner so as to measure the representative potential of the coupon. Magnets for operation of reed switch shall be provided as specified in the project specification/data sheet.

POLARISATION COUPON

Bare surface	1 cm^2
Sealing material	Epoxy or M-seal in GRP frame as per drawing
Connection from magnetic reed switch	Magnetic reed switch 50mA at 50 V DC
Material	Pipeline material

12.11 Permanent Reference Electrode (CU-CUSO4)

Three nos. of Cu-CuSO4 reference electrodes for each pipeline shall be installed at CP stations and shall be extended to the CPTR unit. One reference electrode shall be provided at each polarisation coupon location. The characteristics of the reference electrode are as below:

Stability : ± 10 mV with 3 micro-amp load

Temp range : 0 to 57.20C

Design life : 10 years

12.12 Cable to Pipe Connections

All cable connections to the pipeline including charged foreign pipeline (if any) shall be made using an (Owner) approved exothermic process e.g.: Pin Brazing. Prior to performing the pin brazing, the CP contractor is advised to check and record the pipeline thickness.

The pin brazing to have the following characteristics:

- Extremely low contact resistance $\leq 0.1\ \Omega$.
- Low transition resistance 7.5 to 14 $\mu\Omega$ per brazed joint
- High mechanical strength Binding strength 490 N/mm^2
  Shear Strength 245 N/mm^2
- Brazing temperature 650^0 C
- Time per Braze 2 Seconds
- Weather Effect Suitable for all weather operation
- Life 35 Years

Field Test cable connection through pin brazing to be field tested for contact resistance & Temperature etc.

Holiday testing of the pin brazing location to be conducted after coating repair. The contractor is advised to prepare a report with all the information as indicated for every connection.

13.0 CHECKING THE HEALTHINESS OF ALL THE TRU'S INSTALLED AT ALL ICCP STATIONS

The contractor shall be responsible to check the TRU operation and performance of each component. The scope of check includes the following:

1) TRU shall be operational in all modes with all healthy components

2) TRU shall be connected to mainline Reference electrodes.

3) Mainline PSP will be displayed in the TRU & PSP converter will be installed for SCADA display.

4) TRU shall be working in auto mode with proper drainage point PSPs of all connected pipelines

5) The TRU shall be provide with current interrupter, if not available one to be installed.

If required the malfunctioning TRU part shall be replaced with new one. The scope includes supply of any of the TRU spares as per requirement, the TRU spares list is attached as Annexure-II.

14.0 TESTING AND INSPECTION AT WORKS

Owner/ Owner's representative reserves the right to visit the works during manufacture of various equipment [Anodes, Cables, Junction Boxes etc.] to assess the progress of work as well as to ascertain that only quality raw material and fabrication technology is used for the same. All necessary assistance during such inspections shall be provided by the contractor/fabricator to owner's representative.

The minimum testing, inspection requirements for all components/ equipment shall conform to the requirements as defined in the relevant codes and standards. Detailed inspection and testing procedures along with the acceptance criteria, including various stages where hold points, review etc shall be for owners inspection, shall be prepared by CONTRACTOR for Owner's approval.

Test certificates including test records, performance curves etc. shall be furnished. All test certificates shall be endorsed with sufficient information to identify equipment to which the certificate refers to and must carry project title, owner's name and purchase order details etc.

Owner reserves the right to ask for inspection of all or any item under the contract and witness all tests and carry out inspection or authorise his representative to witness test and carry out inspection. CONTRACTOR shall notify the Owner or Owner's representative at least 20 days in advance giving exact details of tests, dates and addresses of locations where the tests would be carried out.

15.0 PACKING AND TRANSPORT

All equipment/ material shall be protected for inland/ marine transport, carriage at site and outdoor storage during transit and at site. All packages shall be clearly, legibly and durably marked with uniform block letters giving the relevant equipment/ material details. Each package shall contain a packing list in a water proof envelope. Copies of the packing list, in triplicate, shall be forwarded to owner prior to dispatch. All items of material shall be clearly marked for easy identification against the packing list.

16.0 SYSTEM TESTING

i. System testing at Site

Contractor shall furnish the detailed field testing and commissioning procedure for approval. Field tests as per the approved procedures shall be carried out on the equipment / systems before being put into service. The acceptance of the complete installation shall be contingent upon inspection and field test results being satisfactory.

Before the CP facilities are placed in operation all necessary tests shall be carried out to establish that all equipment, devices, wiring and connection, etc. have been correctly installed, connected and are in good working condition as required for intended operation.

Owner/Owner's representative may witness all the tests. At least one week's notice shall be given before commencing the tests.

All tools, equipment and instruments required for testing shall be provided by C P CONTRACTOR.

Generally following tests shall be carried out and recorded in proforma given in subsequent clauses.

Checking	:	Visual inspection, comparison with drawings and specifications
Inspection	:	Detailed physical inspection & Dimensions measurement
Testing	:	Simulation tests of equipment to determine its operational fitness.

i. Cables

- Cable no.
- Voltage grade
- Conductor cross section
- Continuity check
- Voltage test
- Insulation resistance values between core and earth.
- All cables shall be tested by 500 V Megger.

ii. Solid state decoupler

- Location/ identification number
- Rating
- Check for continuity
- Check for wiring
- Check for standby current drain with CP energisation (current drain with respect to voltage across the device/cell shall be recorded).

iii. Grounding Cell

- Location
- Type (no. of anodes)

iv Junction Boxes

- Painting /finishing of paint
- Connection scheme inside the box/indication of location
- Proper ferruling of cables
- Proper sealing of the cable entry location to prevent ingress of moisture and foreign material

v Test Stations (already installed at site & new)

- Painting /finishing of paint
- Connection scheme inside the box/indication of location
- Proper ferruling of cables
- Proper sealing of the cable entry location to prevent ingress of moisture and foreign material

17.0 AC & DC INTERFERENCE

17.1 AC interference measurement & installation of solid state decoupler and zinc grounding cells zinc ribbon anodes:

When a high voltage power line ≥ 66 kV crosses a pipeline or is parallel to the pipeline within a distance of 25 meter, a magnetic field generated by the overhead power lines induces an AC voltage onto the pipeline (which creates AC currents) due to varying three phase current. The inducted voltage is proportional to flow of current in the transmission line and inversely proportional to distance of the conductor.

The AC interference from the high tension line can cause :

- Fault current leading to damage to equipment connected to the pipeline and danger of shock to personnel operating on the pipeline
- Induced voltages on the pipeline leading to:

1. Personnel Shock Hazard
2. Coating damage
3. AC Corrosion of the Steel

AC induction on pipeline due to 66 kV and above overhead HV / EHV line crossing or running parallel within 25 meter shall be measured by continuous data logging at 60 seconds interval for 24 hours in the recoated pipeline segments and the AC current density shall also be determined by the contractor.

I. Personnel Shock Hazard

Wherever the pipeline is either crossing or running in parallel with overhead EHV/HV transmission lines of voltage grade 66kV and above and the induced AC voltage on the pipeline is > 15 V, it is mandatory that the pipeline shall be grounded to discharge any accumulated potential / surge that may appear in case of transmission line faults,

A steady-state touch AC voltage of 15 V or more on buried pipelines with respect to local earth at above-grade or exposed sections and appurtenances is considered to constitute a shock hazard as per NACE SP0177.

II. Coating damage

The effect of AC current during lightining / fault current leads to :

- Voltages of 1000 volts - 5000 volts causes coating damage
- >5000 volts can cause pipe structural damage

III. AC Corrosion :

The AC Corrosion is more observed on pipeline with a very good dielectric coating.

Based on studies of AC corrosion related failures, the following guideline was developed:

- AC corrosion is unlikely to occur at AC current densities less than 20 A/m^2;
- AC corrosion is unpredictable for AC current densities between 20 to 100 A/m^2;
- AC corrosion typically occurs at AC current densities greater than 100 A/m^2;
- Highest corrosion rates occur at coating defects with surface areas between 1 and 3 cm^2 (0.16 in^2 – 0.47 in^2)

The AC current Density can be calculated using the below formula:

$$I_{ac} = \frac{8V_{ac}}{\rho \cdot \Pi \cdot d}$$

I_{ac} = AC current density (A/m^2)

V_{ac} = AC volts (V)

ρ = soil resistivity (Ω - m)

d = holiday diameter (m)

To measure the AC current density on the pipeline we use AC corrosion coupons installed in the vicinity of high tension towers. AC coupons are small metallic coupon- carbon steel with 1 cm^2 of exposed metal.

Coupons shall be installed at bottom 1/3rd portion of the pipeline and 250mm approx away from the pipe surface

MITIGATON

The mitigation measures to reduce the effect of AC interference on pipeline/ person operating on the pipeline are:

- The pipeline shall be grounded through solid state decoupler with Zinc galvanic anodes of either solid anode or ribbon type. Sizing and quantity of anode shall be decided so as to achieve maximum total earth resistance of 5 ohm for each location where pipeline crosses EHV/HV transmission lines.
- Areas where soil resistivity is higher than 50 Ohm-m, zinc ribbon anodes installed in suitable backfill as recommended by the manufacturer instead of 20kg net prepacked Zinc solid anodes may be provided for grounding. The method of grounding shall be used such that the overall resistance of the anodes is less than 5 ohm.
- The pipeline shall be grounded at regular intervals of maximum 1km where EHV/HV transmission lines run parallel within 25m of the pipeline and induced AC > 15 V.

- Where transmission lines run in parallel more than 25m from the pipeline, however, continuous induced AC of voltage are beyond safe limits are noticed on the pipeline the same shall be mitigated by grounding the pipeline in line as above.

The total system including cable, cable termination, solid state decoupler and anodes shall be suitable for the anticipated fault current at the location of its installation.

17.2 DC Stray current interference:

CP contractor shall carry out testing for stray current study of the OIL recoated pipeline segments in common ROW for interference due to foreign pipelines/ structures running parallel or crossing in the recoated pipeline segments, interference on foreign pipelines/structures due to the CP of the OIL pipeline and anode ground beds.

Where recoated pipeline segments pass close to any existing foreign ground bed (with in 100 m approx), anodebed potential gradient survey shall be carried out to verify possible interference with the CP system of the pipelines covered under this project.

A positive potential swing of 50 to 100 milli volts or more shall be considered sufficient to indicate the presence of an interaction/ interference situation requiring investigation and incorporation of mitigation measures by the CP Contractor

Mitigation measures shall be provided depending on type of stray current electrolysis/interference. These shall include installation of direct bond or bond with variable resistor, diodes in the already installed TLP and if required installation of galvanic anodes for auxiliary drainage of current.

18.0 COATING AND CP SURVEYS ON RECOATED SECTIONS OF 575 KMS

18.1 Coating & CP surveys on recoated sections of 575 Kms shall be carried out to determine the following:-

1. Identify the effectiveness of CP system over the recoated section of pipeline segments.
2. Identify the under and over protected zones.
3. Identify the coating condition along the pipeline based on the current distribution.
4. Measuring the depth of the pipeline.
5. Identify the possibilities of coating disbondment.
6. Identify the coating defects including location and sizing and if the defect is anodic or cathodic.
7. Identify any type of interference along the recoated pipeline segments
8. AC interference at high voltage crossings.
9. Shorted cased crossings during CAT survey.
10. GPS co-ordinates of pipeline at all the data measuring points / intervals during each Survey

Repair of identified coating defects will not be in the scope of the CP contractor but will be in the scope of EPC Contractors nominated by OIL for refurbishment of the coatings and allied works.

18.2 General Requirement for conducting Coating and CP Surveys:

- Minimum qualification/experience of the persons deployed for the survey at site shall be Diploma / ITI with minimum 10 years of experience in the field of coating & CP surveys.
- Before starting the survey, contractor shall submit the bio-data along with certificates of the personnel for the approval of OIL / PMC.
- All the materials, equipments, instruments, manpower (skilled, unskilled), consumables, tool tackles, required to carry out the jobs are in the scope of CP contractor including their mobilization & demobilization, lodging, boarding etc.

- 575 Kms of Rehab shall be carried out in 5 spreads and length of each spread shall be as per Table 1 of ANNEXURE-I. CP survey work to be taken up progressively in stretches where coating work has been completed. The CP Contractor will deploy 2 survey teams to carry out the CIPL & CAT survey including coating conductance and AC interference survey in six months. Each survey team will be deployed in each spread.
- The CP contractor, in accordance with the above deployment will furnish the details of the CIPL / CAT / DATA RECORDER / PIPE LOCATOR / COATING CONDUCTANCE equipments & instruments etc. to be deployed at the site in the technical bid to ensure that CP & Coating surveys are conducted in time. Minimum deployment of equipment is as per Annexure-III of this tender document.
- All the measuring instruments should have the valid calibration certificate traceable to NABL / International standards / Manufacturer's calibration certificate.
- One master portable reference electrode shall be maintained at each spread with its valid calibration certificate. The other portable reference electrodes to be used for survey shall be calibrated on daily basis with the master reference electrode before the start of the survey and records are to be maintained for the same. If the potential difference is more than 10 mV and it can- not be adjusted, then same shall be replaced.
- The CP contractor shall submit a detailed procedure to carry out the CAT survey, CIPL survey, Coating conductance and AC interference survey along with formats to be used during the surveys, calibration certificates of the equipments to be used for approval prior to starting of work. The procedure qualification will be done at site before commencement of work. During procedure qualification, the CP contractor shall conduct a sample survey in presence of OIL / PMC and shall verify the results by excavating the coating defects and only after satisfactory report approved by the OIL / PMC further survey will be allowed.
- Carry out the CIPL (ON-OFF) survey at every 1 meter interval along the pipeline by locating the pipeline as per the specified procedure and guidelines. The testing will be conducted on each parallel pipeline in the common ROW.
- Carryout the CAT Survey (along with depth measurement) at 50 meter interval along the pipeline by locating the pipeline as per specified procedure and guidelines. The testing will be conducted for each parallel pipeline in the common ROW. At locations of high current attenuation, CAT with A frame shall be conducted to determine locations / size of coating defects. However, submerged crossing locations and locations of cased crossing where coating is not done are exempted on prior approval from OWNER/ Owner's representative.
- Coating conductance test will be conducted in each recoated pipeline segment of 10 kms.
- AC interference testing shall be conducted at every high voltage crossing / parallel running of HT towers which are < 25 meters from OIL pipeline ROW.
- DC interference with any foreign pipeline crossing / parallel with separate TRU & Anodegroundbed.
- To ascertain exact location, size and magnitude of coating defect throughout the periphery of the pipeline by carrying out the CAT A frame at the probable defect locations identified by the CIPL survey & CAT survey. CP Contractor shall quantify and categorize the coating defects in the terms of severity as Minor/Moderate/Severe and anodic / cathodic in accordance with NACE standard and criteria.
- The CP Contractor shall highlight the following in his report :-
  - Areas outside the polarized potential criteria,
  - Stray current pick up and discharge locations,
  - Any type of interference which may be due to HT transmission lines/ foreign pipeline crossing/ any other utility either crossing or running parallel to the pipeline etc,
  - Effectiveness of existing ICCP system and
- The probability of identification of defects will be 80%. In case of mismatch of the reported defects during CAT A frame survey and dig/field verification more than 20% for a particular pipeline segment the CP contractor has to re-survey (CIPL & CAT) the entire segment without any extra cost to OIL.

- The CP CONTRACTOR shall mention the Km. chainage, GPS coordinates and the distance of the defects from permanent bench marks for the identification of fault location and to relocate the same in future, if required.
- Preparation of the detailed reports of the entire survey work in tabulation form as well as in graphical form. The soft copy of the reports shall be GIS package / platform compatible.
- Summarizing and analysis of the total data along with recommendations for any adjustment, improvement, modification on the operative ICCP system and remedial measures to be taken for mitigation of encountered interference along pipeline etc.

The Coating and CP survey reports along with Observations, Analysis and Recommendations shall be prepared for each sections separately. The report will also contain photographs of damaged coating with GPS co-ordinates to enable the EPC contractor to carry out coating repairs.

18.3 Survey Procedure

While preparing the procedures & method statements for carrying out surveys, the CP Contractor shall consider the following guidelines.

18.3.1 CIPL Survey:

- CIPL survey procedure shall be as per NACE SP0207-2007 Standard Practice Performing Close-Interval Potential Surveys and DC Surface Potential Gradient Surveys on Buried or Submerged Metallic Pipelines.
- In the procedure and method statements to be submitted to Oil / PMC, CP Contractor after due verification shall specify the following:
  - All TRU's feeding the pipelines,
  - Parallel pipelines in the common ROW.
  - Foreign pipelines and Foreign Anodebeds and TRU's,
  - Grounding cells provided at MIJ if any,
  - Sacrificial Anodes at cased crossings,
  - Grounding cells at high voltage crossings without solid state decoupler,
  - any sacrificial anodes for hot spot protection,
  - sacrificial anodes on either side of river crossings.
  - bonding locations of the pipeline section considered for the CIPS survey
  - bonding location with foreign pipelines.
- During the survey, all bondings with foreign pipeline if any, grounding cells of MIJ and all sacrificial anodes shall be disconnected. However, bondings of OIL pipelines running in same ROW shall not be disconnected. Grounding Anodes/Earthing provided for the grounding through solid state decoupler shall not be disconnected.
- After completion of survey, the CP Contractor shall restore all disconnected CP bondings and anodes to original condition.
- All the OIL TR units are equipped with GPS based current interrupters. CP Contractor will check the working of all GPS based current interrupters prior to start of the CIPL survey.
- The CP contractor shall use a standard make 'MC MILLER' or equivalent microprocessor based CIPL survey equipment which is capable of taking CIPL and side gradient simultaneously ie. the data logger shall have one channel of recording line half cell reading and another independent channel for recording lateral half cell reading. Alternatively two single channel instruments may be used. Instrument shall be with valid calibration. If calibration error exists and it cannot be adjusted in the instrument, the error shall be duly taken care in final report generation / Documentation / CIPL data graphs.
- Half cells used for the day to day survey shall be reconditioned with fresh CuSO4 crystals at least once in a week to ensure "Saturated Cu/CuSO4 solution" and checked with the standard reference cell.

- Data logger shall have downloading facility and shall have sufficiently high sampling rate to Pick up PSP-OFF in 1 second duration. The data logger shall have the capability to record the GPS coordinates along with survey. Its accuracy to be cross checked and calibrated on daily basis.
- The CP Contractor shall keep the TR units in AVCC mode and record following details under existing system operating conditions.

(i) DC output voltage

(ii) Anode current

(iii) Pipe to Soil Potential (PSP)

(iv) Target Pipe to Soil Potential.

- The CP Contractor shall note down the CP Unit parameter, and put the CP Unit in AVCC mode and set the current so that the OFF PSP at the CP Unit Location should not be more negative than -1200mVCSE and at the end of the recoating section shall not be less negative than - 850mVCSE.
- Following parameters of CP Unit shall be noted down on daily basis and shall be maintained till completion of the CIPS survey:
  - AC/DC input voltage
  - AC/DC input current
  - DC output voltage
  - DC Output/Anode current
  - Pipe to Soil Potential (PSP)
  - Target Pipe to Soil Potential
- The ratio of the ON & OFF shall be set at 4:1 (i.e. if 4 Second ON & then 1 second OFF), the OFF time shall not be less than 0.4 seconds. The upstream and downstream TR units will be switched ON/OFF simultaneously. Number of TR units to be switched ON / OFF so that there is no effect on the OFF potential will be demonstrated at site prior to start of the survey.
- Synchronization test shall be conducted lasting for 48 hours duration to check that the timers stay in sync without error that may subvert the purpose of the survey.
- This test may be repeated as per instruction of OIL / PMC during the survey period if it is observed that sync is deviating or at any time a new timer need to be in place of a faulty one.
- CP system can be switched OFF for a maximum of 8 to 10 HRS. Only during the daytime while carrying out the survey. The CP system must be switched ON after survey work is completed for the day. The switching ON / OFF of CP system shall be strictly adhered to without fail by the CP contractor and all transportation of men and materials on this account has to be arranged by the CP Contractor.
- Before commencing the survey, the exact route of pipeline shall be located with a pipeline locator and marked so that survey operator follows the route exactly over the pipeline. Pipeline alignment shall be fixed by pipeline locator at regular intervals not more than 5 meters apart, for accuracy over the line of survey. Both peak and null modes of pipeline identification shall be used for accurate pipeline alignment fixation. A Rope line shall be laid on the alignment which shall have knots at every 1 meter interval for CIPS survey.
- Potentials shall be measured on ground surface exactly over the pipeline to minimize error due to inclusion of lateral soil potential drops in the measured values of pipe-to-soil potentials.
- Lateral CIPS survey shall be also performed to identify the anodic and cathodic areas
- Measure pipe to soil potential (ON/OFF) and other details at start test point of Pipeline Section and same may be recorded in data logger.
- CIPL survey shall be carried by logging (ON/OFF) potential measurement in data loggers at an interval of not more than 01 meter by leap frog /long leap technique over the predetermined route of pipeline. Also

other readings such as foreign line PSP, casing to soil potential, AC voltages shall be recorded at respective locations.

- Survey at river crossings and water crossings may be carried out with the help of a boat if required and silver / silver chloride (Ag-AgCl) half-cell (in case of saline water). A special procedure shall be prepared based on the specific site requirements. If CIPS survey has been performed with Ag-AgCl half-cells, then same needs to be converted with reference to Cu- CuSO4 ref. in the final report.
- - Distance traversed and physical features such as pipeline route markers, roads, rivers, canal /nala crossings, HT crossings, Valves etc. shall be recorded to assist with locating specific areas after processing the data.
- Pipeline chainage shall be considered starting from Isolation valve of PIG Launcher and end at Isolation valve of PIG receiver.
- CP Contractor shall download the data into the PC / laptop and to be sent to OIL / PMC Representative on daily basis.

Precaution during CIPL survey:

- Before starting the work, ensure that all tools and tackles and equipments required to complete the work is available in good condition and with valid calibration certificate.
- The calibration of the equipment / instruments at periodic interval shall be as follows:

• Reference electrode before start of survey	:	Daily.
• Synchronization of current interrupter timers	:	At least once in 2 days.
• Reconfirmation of the PSP at the starting point to continue with the survey	:	Daily
• Data transfer to the computer	:	Daily

- The person employed for carrying out the survey is qualified and experienced. Minimum qualification/experience of the persons deployed for the survey at site shall be Diploma / ITI with minimum 10 years of experience in the field of coating & CP surveys.
- Approved procedure of the survey is available at site.
- There should be proper contact of portable reference cell with the soil just above the pipeline.
- The reading of ON-OFF potential is taken in the data logger in the first fraction of second at the time of switching ON or OFF.
- Analysis and interpretation are required to be done by experienced CP personnel as per requirement in this document.
- Pipeline chainage and all references should be highlighted along with CIPL survey report.

18.3.2 Current attenuation test survey (CAT) with A frame survey:

- CP Contractor shall carryout pipeline current mapping with A frame survey at pipeline sections where coating is suspected to be damaged.
- The survey need to be carried out by the Instrument “Pipeline Current Mapper” of M/s Radio detection, U.K. (OR) any other equivalent equipment where in pipeline current mapping and A frame survey can be carried out simultaneously. The equipment shall have the inbuilt GPS enabled for recording the co-ordinates of the fault location after A-Frame.
- Procedure of the survey shall be submitted for approval of OIL / PMC before the start of survey. The procedure shall be in line with the NACE - NACE Standard TM0109 and Equipment manufacturer’s operating instructions, however minimum activities as mentioned in this document shall be performed invariably.

- The CP system shall be switched off for pipeline section (from one MIJ to next insulation Joint) for the purpose of the survey
- The basic equipment shall consist of a high power low frequency portable transmitter (4 Hz) connected at CP station or test posts and a hand held receiver. The low frequency transmitter signal shall be injected into the pipeline at the CP station or test points. The transmitter connected at the CPS station or test post, applies a special signal to the pipeline. The locator locates this unique signal at distances up to 30km (19 miles) identifying the position and depth of the pipe The equipment shall be capable of obtaining accurate readings in the appropriate range and minimize the effect of the magnetic field generated by AC transmission lines in close proximity to the survey area. Receivers shall be equipped with filters to minimize the effect of interference. The equipment must allow the proper recording, downloading, and archiving of the collected data. Software used to analyse the data gathered in the field must be compatible with the receiver and capable of properly processing the data.
- The survey along the pipeline shall be carried out after duly identifying the pipeline alignment using the Pipeline Locator's peak and null modes of operation. The pipeline ROW shall be identified using temporary markers, at defined distance intervals. This shall facilitate retracing back coating defect location for subsequent repair by EPC Contractor.
- Distance of survey traversed - survey chainage shall be accurately measured with tape for accurate demarcation. The same shall be re-matched with Pipeline marker chainage /TLP chainage, at regular intervals to avoid accumulation of error of measurement.
- The measurement by CAT survey shall be done at an interval of every 50 meters for along with depth measurement. All readings shall be taken with receiver held at right angles to the pipeline.
- The CP contractor has to arrange for field computer/laptop for downloading data from the CAT instrument. Field data analysis should be done at every 500 meter interval to identify places of high current attenuation, by plotting Pipeline Map current v/s Distance on graph sheets / Field computer for immediate on site review to undertake the A frame survey at close intervals.
- The progress and data report shall be submitted to OIL / PMC on daily basis.

19.0 Survey Report and Data collected format:

The survey report to be submitted will contain the following details and the data collected to be reported in formats as specified ANNEXURE- IV.

19.1 CIPL

For the purpose of the CIPL survey analysis, the limits of OFF PSP with respect CuCuSo4 (Half-cell) shall be between (–) 850 mV to (-) 1200 mV. Other factors like SRB and etc., shall also be considered.

Abrupt variations in OFF PSP should be considered for the analysis. Terrain considerations should be also incorporated.

Abrupt changes in ON PSP should be also considered for analysis.

The data shall be analyzed & documented in the report in view of the following:

- Identify the effectiveness of CP system over the entire length of pipeline.
- Identify the under and over protected zones.
- Identify the zones for any type of interference for stray current pick up and discharge or at a risk of Interference corrosion along the pipeline including location for further necessary action by OIL.
- Identify the possible shorted casings or unintentional contact with other metallic structures.
- Identify any Anodic & Cathodic area for the Pipeline section covered under lateral CIPS survey.

The CIPS survey to be produced in the tabulated form as well as graphical representation. Graph should be plotted in A-4 size landscape page set up covering maximum of 1 Km of Pipe length. It should also contain the lines for Min. and maximum OFF PSP limits, Pipeline segmentation showing Good / Poor CP protection,

Terrain physical features along with their legends. The lines of the ON & OFF PSP in the graph should be of different colors.

Report should be prepared from Isolation valve to Isolation valve (before and after IJ's) on Pipeline section.

Soft copy of the report and three Hard copy reports for each spread shall be submitted (Number of spreads 3)

19.2 CAT Survey

CAT survey report shall incorporate the system conditions like indicating the CP stations that were switched off, date of survey, CAT transmitter power source details like set current and mode of operation and location of CAT transmitter.

The final report documentation of CAT survey as a minimum shall involve each transmitter setup with its unique serial no. along with the pipeline current measured for easy identification. The serial no. shall be uniquely identified for each IJ-IJ section. It shall also include the system conditions like CP stations that were switched off, Date of survey, PCM transmitter power source details like set current and mode of operation and location of PCM transmitter and in Remark column features like TLP/KM marker / Road / Canal / River / Power line crossings etc.

Results of survey shall indicate Survey chainage, Pipeline chainage, GPS coordinates current, depth and remarks column which shall indicate the pipeline features like TLP/KM marker/Road/Canal/River/Power line crossings etc.

The CAT survey to be produced in the tabulated form (As per Annexure) as well as graphical representation. Graph should be plotted in A-4 size containing pipeline segmentation showing Good/ Poor Coating, Terrain physical features along with their legends.

As per locations identified in the CAT- A frame survey, dig verification of the coating defect locations shall be carried out by the CP contractor after approval from OIL/PMC. In case no coating defect locations/ poor coating are identified, then dig verifications shall be performed at 5 locations identified by OIL/PMC.

Report should be prepared from Isolation valve to Isolation valve (before and after IJ's) on a Pipeline section.

Soft copy of the report and three Hard copy reports for each spread shall be submitted (Number of spreads 3).

ANNEXURE-I:

TABLE-1 (CATHODIC PROTECTION SPREAD AND COATING REVAMP DETAILS)

Sl No	CP WORKS SPREAD	Chainage	Section	Phase-1 (Coating Revamp works)		
				Crude oil ML (in KM)	Branch Line (in KM)	NSPL (in KM)
1	**SPREAD A ASSAM** – CH 0 to 313.3 Km	Ch 0.00 to Ch 50.5	PS-1(Duliajan) to PS-2(Moran)	30		
2		Ch 50.50 to Ch 89.90	PS-2(Moran) to RS-1(Maduri)	20		
3		Ch 89.9 to 132.00	RS-1(Maduri) to PS-3(Jorhat)	20		
4		Ch 132.20 to Ch 172.00	PS-3(Jorhat) to RS-2 (Badulipara)	20		
5		Ch 172.00 to Ch 214.10	RS-2 (Badulipara) to RS-3 (Kaziranga)	20		
6		Ch 214.100to Ch 260.00	RS-3(Kaziranga) to PS-4(Sekoni)	20		20
7		Ch 260.500 to Ch 313.30	PS-4 (Sekoni) to RS-4(Ghani)	20		20
8	SPREAD B ASSAM – CH 313.3 to 612.9 Km	Ch 313.300to Ch 360.80	RS-4 (Ghani) to RS-5 (Jagiroad)	10		20
9		Ch 360.8 to Ch 401.00	RS-5(Jagiroad) to PS-5(Guwahati)	20		
10		Ch 401.300 to Ch 468.240	PS-5 (Guwahati) to (Jalukbari to Amingaon) to RS-8(Dharampur)	22	3.5 km Ghy Refinery BL	20
11		Ch 468.245 to Ch 512.975	RS-8 (Dharampur) to RS-9 (Barpeta Rd)	20		20
12		Ch 512.975 to Ch 556.720	RS-9 (Barperta Rd) to PS-6 (Bongaigaon)	20		
13		Ch 557.090 to Ch 602.895	PS-6(Bongaigaon D/S) to RS -10 (Pratapkhata)	20	4.5 km 12" BGR BL	
14	SPREAD C 1 WEST BENGAL & ASSAM – CH 612.9 Km (Is in Assam RS-10 Pratapkhata D/S) to 905.805 km	Ch 602.895 to Ch 655.485	RS-10 (Pratapkhata) to RS-11 (Chepani)	20		
15		Ch 655.485 to Ch 703.699	RS-11(Chepani) to PS-7 (Madarihat)	20		
16		Ch 704.092 to Ch 728.780	PS-7 (Madarihat) to RS-12 (Binnaguri)	25		
17		Ch 728.780 to Ch 784.425	RS-12(Binnaguri) to RS-13 (Odlabari)	20		
18		Ch 784.425 to Ch 853.919	RS-13(Odlabari) to PS-8(Sonapur)	20		
19		Ch 854.022 to Ch 905.805	PS-8(Sonapur) to RS-14(Kishanganj)	20		
20	SPREAD C2	Ch 905.800 to Ch 958.340	RS-14(Kishanganj) to RS-15(Belgachi)	20		
21		Ch 958.340 to Ch 1009.632	RS-15(Belgachi) to PS-9(Dumar)	20		

Sl No	CP WORKS SPREAD	Chainage	Section	Phase-1 (Coating Revamp works)		
				Crude oil ML (in KM)	Branch Line (in KM)	NSPL (in KM)
22	BIHAR – CH 905.805 to 1157.585 km	Ch 1009.632 to Ch 1058.440	PS-9(Dumar) to RS-16(Thanahbihpur)	NIL		
23		Ch 1058.440 to Ch 1110.755	RS-16(Thanahbihpur) to RS -17 (Khargaria)	20		
24		Ch 1110.775 to Ch 1157.580	RS-17(Khagaria) to Barauni Pump Station	20		
		TOTAL LENGTH IN KM PIPELINE WISE		16” -180 km + 14”-287 km	8 KM	100 KM
		GRAND TOTAL			**575 KM**	

TABLE 2 (PARALLEL PIPELINE DETAILS)

Sr. No	ICCP STATION (75V/50A)	PIPELINE IN THE ROW	MAILINE CHAINAGE (km)	DIA OF Main Line (mm)	DIA OF NSPL (mm)	DIA OF GSPL (mm)	DIA OF DNPL (mm)
1	Madhuban Despatch Station	DNPL	0.00	-	-	-	406.4
2	River Buridihing U/S	DNPL & ML	3.260	406.4	-	-	
3	Well No 254	DNPL & ML	5.00	406.4			406.4
4	Kuworigaon, SV-1	DNPL & ML	16.125	406.4	-	-	406.4
5	Moran, SV-2	DNPL & ML	46.708	406.4	-	-	406.4
6	PS2 Moran	DNPL & ML	50.430	406.4	-	-	
7	Gohain Gaon, SV-3	DNPL & ML	69.420	406.4	-	-	406.4
8	Mantonia- IPI TOP-3	DNPL & ML	102.000	406.4	-	-	406.4
9	Kakojan, SV-4	DNPL & ML	118.347	406.4	-	-	406.4
10	PS-3 Jorhat U/S	DNPL & ML	132.400	406.4	-	-	
11	PS-3 Jorhat D/S	DNPL & ML	132.700	406.4	-	-	
12	Dekagaon, SV-5	DNPL & ML	145.981	406.4	-	-	406.4
13	RS-2 Badulipar	DNPL & ML	172.025	406.4	-	-	406.4
14	NT (Numaligarh)	NSPL		-	406.4	-	-
15	RS-3 (Kaziranga)	ML & NSPL	214.115	406.4	406.4	-	-
16	PS-4 (Sekoni) U/S	ML & NSPL	259.800	406.4	406.4	-	-
17	PS-4 (Sekoni) D/S	ML & NSPL	260.010	406.4	406.4	-	-
18	RS-4 (Ghani)	ML & NSPL	313.325	406.4	406.4	-	-
19	RS-5 (Jagiroad)	ML & NSPL	360.820	406.4	406.4	-	-
20	PS-5 (Noonmati) U/S	ML & NSPL	401.300	406.4	406.4	-	-
21	PS-5 (Noonmati) D/S	ML, NSPL & GSPL	401.850	406.4	406.4	-	-
22	IOCL Guwahati	GSPL			406.4	203.2	-
23	KM-422	ML, NSPL & GSPL	422.000	355.6	406.4	203.2	-
24	KM-427	ML, NSPL & GSPL	427.000	355.6	406.4	203.2	-
25	RS-8 (Dharampur)	ML, NSPL & GSPL	468.245	355.6	406.4	203.2	-
26	RS-9 (Barpeta Road)	ML, NSPL & GSPL	512.975	355.6	406.4	203.2	-

Sr. No	ICCP STATION (75V/50A)	PIPELINE IN THE ROW	MAILINE CHAINAGE (km)	DIA OF Main Line (mm)	DIA OF NSPL (mm)	DIA OF GSPL (mm)	DIA OF DNPL (mm)
27	PS-6 (Bongaigaon) U/S	ML, NSPL & GSPL	556.720	355.6	406.4	203.2	-
28	PS-6 (Bongaigaon) D/S	ML, NSPL & GSPL	557.090	355.6	406.4	203.2	-
29	RS-10 (Pratapkhata)	ML, NSPL & GSPL	602.895	355.6	406.4	203.2	-
30	RS-11 (Chepani)	ML, NSPL & GSPL	655.485	355.6	406.4	203.2	-
31	PS-7 (Madarihat) U/S	ML, NSPL & GSPL	703.649	355.6	406.4	203.2	-
32	PS-7 (Madarihat) D/S	ML, NSPL & GSPL	704.092	355.6	406.4	203.2	-
33	RS-12 (Binnaguri)	ML, NSPL & GSPL	728.780	355.6	406.4	203.2	-
34	RS-13 (Odlabari)	ML, NSPL & GSPL	784.425	355.6	406.4	203.2	-
35	IOCL NJP	GSPL	824.500	355.6	-	203.2	-
36	RT (Rangapani)	NSPL	xxxxxxx	355.6	406.4	-	-
37	PS- 8 SonapurU/S	ML	853.919	355.6	-	-	-
38	PS-8 Sonapur D/S	ML	854.022	355.6	-	-	-
39	RS-14 Kishanganj	ML	905.800	355.6	-	-	-
40	RS-15 Belgachi	ML	958.345	355.6	-	-	-
41	PS-9 Dumar U/S	ML	1009.429	355.6	-	-	-
42	PS-9 Dumar D/S	ML	1009.632	355.6	-	-	-
43	RS-16 Thanabipur	ML	1058.440	355.6	-	-	-
44	RS-17 Khagaria	ML	1110.755	355.6	-	-	-
45	PS-10 Barauni U/S	ML	1157.580	355.6	-	-	-

TABLE 3 (ANODEBED DETAILS)

Sr. No	ICCP Station 75V/50A		Chainage (km)	Soil Resistivity (Ohm-m)	Type of Anode	Existing Anode Bed Details			
						Type of Anode Ground bed	Distance from the pipeline (mtrs)	Date of Comm.	Circuit resistance
1	Madhuban Dispatch Station	DNPL	0.00		MMO Anodes	Deep GB	100	2011	**3.63**
2	River Buridihing U/S	DNPL & ML	3.260	70.00	Hi-Si-Fe anodes	Deep GB & Temporary MS Angle GB	100	2001 & 2005	
3	Well No 254	DNPL & ML	5.00			Horizontal shallow			
4	Kuworigaon, SV-1	DNPL & ML	16.125		MMO Anodes	Deep GB	150	2011	**4.3**
5	Moran, SV-2	DNPL & ML	46.708		MMO Anodes	Deep GB	150	2011	**5.9**
6	PS2 Moran	DNPL & ML	50.430	60.00	MMO Anodes	Deep GB	100	2003	**7.9**
7	Gohain Gaon, SV-3	DNPL & ML	69.420		MMO Anodes	Deep GB	100	2011	**10.0**
8	Mantonia- IPI TOP 3	DNPL & ML	102.000		MMO Anodes	Deep GB	150	2011	1.2
9	Kakojan, SV-4	DNPL & ML	118.347		MMO Anodes	Deep GB	150	2011	2.2
10	PS-3 Jorhat U/S	DNPL & ML	132.400	70.00	Hi-Si-Fe + MMO Anode	Vertical Shallow	100 (aprox.)	2001	**5.3**
11	PS-3 Jorhat D/S	DNPL & ML	132.700	70.00	Hi-Si-Fe Anode	Vertical Shallow	100 (aprox.)	2011	**6.2**
12	Dekagaon, SV-5	DNPL & ML	145.981		MMO Anodes	Deep GB	150	2011	**3.3**
13	RS-2 Badulipar	DNPL & ML	172.025	75.00	MMO Anodes	Vertical shallow GB	100 (aprox.)	2001	**5.7**
14	NT (Numaligarh)				MMO Anodes	Vertical Shallow	100	2008	**10.2**
15	RS-3 (Kaziranga)	ML & NSPL	214.115	110.00	MMO Anodes	Deep GB & Vertical Shallow	150	2003 & 2008	**2.7**
16	PS-4 (Sekoni) U/S	ML & NSPL	259.800	70.00	MMO Anodes	Deep GB & Vertical Shallow	110	2002 & 2008	2.3

Sr. No	ICCP Station 75V/50A		Chainage (km)	Soil Resistivity (Ohm-m)	Type of Anode	Existing Anode Bed Details			
						Type of Anode Ground bed	Distance from the pipeline (mtrs)	Date of Comm.	Circuit resistance
17	PS-4 (Sekoni) D/S	ML & NSPL	260.010	125.00	MMO Anodes	Vertical Shallow & Vertical Shallow	100	2001 & 2008	1.4
18	RS-4 (Ghani)	ML & NSPL	313.325	27.00	MMO Anodes	Horizontal GB & Vertical Shallow	100	2002 & 2008	1.1
19	RS-5 (Jagiroad)	ML & NSPL	360.820	40.00	MMO Anodes	Horizontal GB & Vertical shallow	125	2001 & 2008	1.0
20	PS-5 (Noonmati) U/S	ML & NSPL	401.300	26.00	MMO Anodes	Horizontal GB	120	2002	1.1
21	PS-5 (Noonmati) D/S	ML, NSPL & GSPL	401.850	30.00	MMO Anodes	Vertical Shallow & Vertical Shallow	81	2001 & 2008	1.7
22	IOCL Guwahati	GSPL			MMO Anodes	Deep GB	-	2003	
23	KM-422 (Jhalukbari)	ML, NSPL & GSPL	422.000	28.00	MMO Anodes	Horizontal Shallow	87	2002	**24.3**
24	KM-427 (Amingaon)	ML, NSPL & GSPL	427.000	21.00	MMO Anodes	Vertical Shallow & Vertical Shallow	200	2001 & 2008	2.4
25	RS-8 (Dharampur)	ML, NSPL & GSPL	468.245	30.00	MMO Anodes	Horizontal GB & Vertical shallow	142	2002 & 2008	1.9
26	RS-9 (Barpeta Road)	ML, NSPL & GSPL	512.975	30.00	MMO Anodes	Vertical Shallow	70	2001& 2008 & 2016	**4.4**
27	PS-6 (Bongaigaon) U/S	ML, NSPL & GSPL	556.720	500.00	MMO Anodes	Deep GB	210	2016	**5.5**
28	PS-6 (Bongaigaon) D/S	ML, NSPL & GSPL	557.090	1200.00	MMO Anodes	Deep GB	150	2003& 2008	**4.8**
29	RS-10 (Pratapkhata)	ML, NSPL & GSPL	602.895	1200.00	MMO Anodes	Shallow Verticial	150	2001& 2008	**4.6**

Sr. No	ICCP Station 75V/50A		Chainage (km)	Soil Resistivity (Ohm-m)	Type of Anode	Existing Anode Bed Details			
						Type of Anode Ground bed	Distance from the pipeline (mtrs)	Date of Comm.	Circuit resistance
30	RS-11 (Chepani)	ML, NSPL & GSPL	655.485	130.00	MMO Anodes	Horizontal Anode Bed + Shallow Vertical	110	2003& 2008	**2.9**
31	PS-7 (Madarihat) U/S	ML, NSPL & GSPL	703.649	300.00	MMO Anodes	Deep GB	135	2003& 2008	2.3
32	PS-7 (Madarihat) D/S	ML, NSPL & GSPL	704.092	250.00	MMO Anodes	Shallow vertical	100	2004& 2008	1.7
33	RS-12 (Binnaguri)	ML, NSPL & GSPL	728.780	1000.00	MMO Anodes	Deep GB	100	2004& 2008	**6.5**
34	RS-13 (Odlabari)	ML, NSPL & GSPL	784.425	200.00	MMO Anodes	Distributed Deep GB	105	2001& 2008	**3.1**
35	IOCL NJP	GSPL	824.500	350.00	MMO Anodes	Deep GB	110	2004	**7.1**
36	RT (Rangapani)	NSPL			MMO Anodes	Distributed Deep GB (semi- deep)	180	2008	**3.7**
37	PS-8 Sonapur U/S	ML	853.919	190.00	Hi-Si-Fe + MMO Anode	Vertical & Horizontal GB	100 (aprox.)	2003	1.9
38	PS-8 Sonapur D/S	ML	854.022	190.00	Hi-Si-Fe Anode	Shallow Vertical GB	100 (aprox.)	2002	**2.8**
39	RS-14 Kishanganj	ML	905.800	235.00	MMO Anodes	Vertical Anode Bed.	134	2001	**8.4**
40	RS-15 Belgachi	ML	958.345	95.00	MMO Anodes	Horizontal GB	122	2001	**2.8**
41	PS-9 Dumar U/S	ML	1009.429	120.00	Hi-Si-Fe Anode	Deep GB	100 (aprox.)	2016	2.4
42	PS-9 Dumar D/S	ML	1009.632	120.00	MMO Anodes	Deep GB	100 (aprox.)	2003	**9.3**
43	RS-16 Thanabipur	ML	1058.440	25.00	MMO Anodes	Deep Well GB	148	2001	2.2

Sr. No	ICCP Station 75V/50A		Chainage (km)	Soil Resistivity (Ohm-m)	Type of Anode	Existing Anode Bed Details			
						Type of Anode Ground bed	Distance from the pipeline (mtrs)	Date of Comm.	Circuit resistance
44	RS-17 Khagaria	ML	1110.755	30.00	MMO Anodes	Deep GB	86	2001	1.1
45	PS-10 Barauni U/S	ML	1157.580	75.00	MMO Anodes	Deep GB	120	2003	2.2

Note:

1. The anodebed at Jhalukbari and Amingaon are located in a very congested area i.e. within the city boundaries.

TABLE-4

NEW CATHODE JUNCTION BOX DETAILS

Sr. No	ICCP STATION (75V/50A)	PIPELINE IN THE ROW	No of CJB	No of pipelines in each CJB	No of connections from pipelines in each CJB
1	Madhuban Despatch Station	DNPL			
2	River Buridihing U/S	ML			
3	Well No 254	ML			
4	Kuworigaon, SV-1	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
5	Moran, SV-2	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
6	PS2 Moran	ML	1	2 (u/s ML + d/s ML)	2
7	GohainGaon, SV-3	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
8	Mantonia- IPI TOP-3	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
9	Kakojan, SV-4	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
10	PS-3 Jorhat U/S	ML	1	1	1
11	PS-3 Jorhat D/S	ML	1	1	1
12	Dekagaon, SV-5	DNPL & ML	1	2	3 1 from u/s DNPL, 1 from d/s DNPL & 1 from ML
13	RS-2 Badulipar	DNPL & ML& 16” NRL crude delivery line downstream side	1	2+1	4 1 FROM DNPL,1

Sr. No	ICCP STATION (75V/50A)	PIPELINE IN THE ROW	No of CJB	No of pipelines in each CJB	No of connections from pipelines in each CJB
					FROM ML U/S,1 FROM ML D/S & 1 FROM NRL COD
14	NT (Numaligarh)	NSPL			
15	RS-3 (Kaziranga)	ML & NSPL	1(u/s)+1(d/s)	2	2
16	PS-4 (Sekoni) U/S	ML & NSPL	1	2	2
17	PS-4 (Sekoni) D/S	ML & NSPL	1	2	2
18	RS-4 (Ghani)	ML & NSPL	1(u/s)+1(d/s)	2	2
19	RS-5 (Jagiroad)	ML & NSPL	1(u/s)+1(d/s)	2	2
20	PS-5 (Noonmati) U/S	ML & NSPL	1	2	2
21	PS-5 (Noonmati) D/S	ML, NSPL, 8” water pipeline, old 10” crude oil delivery & new 10” crude oil delivery	1	2 + 3	5
22	IOCL Guwahati, Sector III	GSPL, 8”Water line , old 10” crude oil delivery & new 10” crude oil delivery	1	4	4
23	KM-422	ML, NSPL & GSPL	1	3	3
24	KM-427	ML, NSPL & GSPL	1	3	3
25	RS-8 (Dharampur)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
26	RS-9 (Barpeta Road)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
27	PS-6 (Bongaigaon) U/S	ML, NSPL & GSPL	1	3	3
28	PS-6 (Bongaigaon) D/S	ML, NSPL & GSPL, 12”crude delivery lines and 16” crude delivery lines	1	3+2	5
29	RS-10 (Pratapkhata)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
30	RS-11 (Chepani)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
31	PS-7 (Madarihat)	ML, NSPL & GSPL	1	3	3

Sr. No	ICCP STATION (75V/50A)	PIPELINE IN THE ROW	No of CJB	No of pipelines in each CJB	No of connections from pipelines in each CJB
	U/S				
32	PS-7 (Madarihat) D/S	ML, NSPL & GSPL	1	3	3
33	RS-12 (Binnaguri)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
34	RS-13 (Odlabari)	ML, NSPL & GSPL	1(u/s)+1(d/s)	3	3
35	IOCL NJP	ML,NSPL&GSPL	1	3	3
36	RT (Rangapani)	ML &NSPL	1	2	2
37	PS- 8 SonapurU/S	ML	1	1	1
38	PS-8 Sonapur D/S	ML	1	1	1
39	RS-14 Kishanganj	ML	1	1	2
40	RS-15 Belgachi	ML	1	1	2
41	PS-9 Dumar U/S	ML	1	1	1
42	PS-9 Dumar D/S	ML	1	1	1
43	RS-16 Thanabipur	ML	1	1	2
44	RS-17 Khagaria	ML	1	1	2
45	PS-10 Barauni U/S	ML	1	1	1

TABLE-5

ICCP STATION COMPONENTS DETAILS

Sr. No	ICCP STATION (75V/50A)	Mainline Chainage	PIPELINE IN THE ROW	No of CJB	No of Cu/CuSO4 reference electrodes	No of REJB cum B type TLP
1	Madhuban Despatch Station	0.00	DNPL			
2	River Buridihing U/S	3.260	ML			
3	Well No 254	5.00	ML			
4	Kuworigaon, SV-1	16.125	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML
5	Moran, SV-2	46.708	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML
6	PS2 Moran	50.430	DNPL & ML		3	2
7	GohainGaon, SV-3	69.420	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML

Sr. No	ICCP STATION (75V/50A)	Mainline Chainage	PIPELINE IN THE ROW	No of CJB	No of Cu/CuSO4 reference electrodes	No of REJB cum B type TLP
8	Mantonia- IPI TOP-3	102.000	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED, 1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML
9	Kakojan, SV-4	118.347	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML
10	PS-3 Jorhat U/S	132.400	ML	1	3	1
11	PS-3 Jorhat D/S	132.700	ML	1	3	1
12	Dekagaon, SV-5	145.981	DNPL & ML	1	-	2 F TYPES U/S – 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE D/S - 1 DNPL PROTECTED,1 UNPROTECTED SIDE CABLE 2 CABLES FROM ML
13	RS-2 Badulipar	172.025	DNPL & ML& 16” NRL crude delivery line downstream side	1	3	2
14	NT (Numaligarh)		NSPL			

Sr. No	ICCP STATION (75V/50A)	Mainline Chainage	PIPELINE IN THE ROW	No of CJB	No of Cu/CuSO4 reference electrodes	No of REJB cum B type TLP
15	RS-3 (Kaziranga)	214.115	ML & NSPL	2	6 (3- ML+ 3 NSPL)	2
16	PS-4 (Sekoni) U/S	259.800	ML & NSPL	1	6 (3- ML+ 3 NSPL)	1
17	PS-4 (Sekoni) D/S	260.010	ML & NSPL	1	6 (3- ML+ 3 NSPL)	1
18	RS-4 (Ghani)	313.325	ML & NSPL	2	6(3- ML+ 3 NSPL)	2
19	RS-5 (Jagiroad)	360.820	ML & NSPL	2	6(3- ML+ 3 NSPL)	2
20	PS-5 (Noonmati) U/S	401.300	ML & NSPL	1	6(3- ML+ 3 NSPL)	1
21	PS-5 (Noonmati) D/S	401.850	ML, NSPL, 8” water pipeline, old 10” crude oil delivery & new 10” crude oil delivery	1	6(3- ML+ 3 NSPL)	1
22	IOCL Guwahati		GSPL	1	3	1
23	KM-422	422.000	ML, NSPL & GSPL	1	9 (3- ML+ 3 NSPL+ 3 GSPL)	1
24	KM-427	427.000	ML, NSPL & GSPL	1	9 (3- ML+ 3 NSPL+ 3 GSPL)	1
25	RS-8 (Dharampur)	468.245	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2
26	RS-9 (Barpeta Road)	512.975	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2
27	PS-6 (Bongaigaon) U/S	556.720	ML, NSPL & GSPL	1	9(3- ML+ 3 NSPL+ 3 GSPL)	1
28	PS-6 (Bongaigaon) D/S	557.090	ML, NSPL & GSPL, 12”crude delivery lines and 16” crude delivery lines	1	9(3- ML+ 3 NSPL+ 3 GSPL)	1
29	RS-10 (Pratapkhata)	602.895	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2

Sr. No	ICCP STATION (75V/50A)	Mainline Chainage	PIPELINE IN THE ROW	No of CJB	No of Cu/CuSO4 reference electrodes	No of REJB cum B type TLP
30	RS-11 (Chepani)	655.485	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2
31	PS-7 (Madarihat) U/S	703.649	ML, NSPL & GSPL	1	9(3- ML+ 3 NSPL+ 3 GSPL)	1
32	PS-7 (Madarihat) D/S	704.092	ML, NSPL & GSPL	1	9(3- ML+ 3 NSPL+ 3 GSPL)	1
33	RS-12 (Binnaguri)	728.780	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2
34	RS-13 (Odlabari)	784.425	ML, NSPL & GSPL	2	9(3- ML+ 3 NSPL+ 3 GSPL)	2
35	IOCL NJP	824.500	GSPL	1	3	1(ONLY RE CONNECTIONS)
36	RT (Rangapani)	xxxxxxx	ML & NSPL	1	6(3- ML+ 3 NSPL)	1 (B ONLY FOR OIL)
37	PS- 8 SonapurU/S	853.919	ML	1	3	1
38	PS-8 Sonapur D/S	854.022	ML	1	3	1
39	RS-14 Kishanganj	905.800	ML	1	3	2
40	RS-15 Belgachi	958.345	ML	1	3	2
41	PS-9 Dumar U/S	1009.429	ML	1	3	1
42	PS-9 Dumar D/S	1009.632	ML	1	3	1
43	RS-16 Thanabipur	1058.440	ML	1	3	2
44	RS-17 Khagaria	1110.755	ML	1	3	2
45	PS-10 Barauni U/S	1157.580	ML	1	3	1

ANNEXURE- II: OPERATION AND TRU MAINTENANCE SPARES

1. OPERATIONAL SPARES

1. Permanent Reference electrode – Cu / CuSO4
2. Portable reference electrode—Cu / CuSO4
3. Shunt of 75 mV/60A
4. Solid state Decoupler
5. Polarisation coupon
6. Surge divertor
7. POT type variable resistors -0.01-1 ohm, 100 W
8. Diodes of rating- 50 Amp with suitable heat sink
9. Magnetic Reed switch- Break minimum 50 mA at 50 V DC

2. TRU SPARES

A) Critical Spares for T/R Units : (Make Kriston & Raychem RPG Ltd)	
S/R	**ITEM DESCRIPTION UNIT**
1	AC Mode Power Supply Card
2	Control Amplifier Card
3	Firing Card
4	Automatic Reference Selector
5	Relay Card
6	Pulse Driver Card
7	Completely assembled Mother Board
8	Completely assembled Display Board
9	SCR for TR unit
10	Diode for TR unit
11	Diode for TR unit
12	Diode-Diode Module for TR unit
13	SCR-SCR Module for TR unit
14	3 way RC Surge Diverter
15	Surge Suppressor for Contactor Coil
16	Lightning Arrestor

B) General Spares for T/R Units	
S/R	**ITEM DESCRIPTION UNI**
1	Analog Voltmeter
2	Analog Ammeter
3	Digital Voltmeter, 3 1/2 Digit Digital Display,
	Aux. Supply 230V AC
4	Digital Voltmeter 0-19.99V DC, 3 1/2 Digit Digital Display, **(For PSP)**
	Aux. Supply 230V AC
5	Digital Ammeter, 3 1/2 Digit Digital Display,
	Aux. Supply 230V AC
6	Toggle switch - 2 Pole ON/OFF
7	Toggle switch - 2 Pole, 2 way
8	AC supply ON indicator Lamp – 240V AC
9	Glass Cartridge Fuses
10	Filter Circuit Capacitor
11	2 Pole, 8way/6way Reference Voltmeter Selector Switch
12	2 Pole, 4way Reference Electrode Selector Switch
13	Fuse Link- NS6A/NS10A/NS16A/NS20A
14	Fuse Link- TIA25/TIA32/TIS50/TIS63
15	Fuse Holder type NSH
16	Fuse Holder type SM32H/SM63H
17	Ammeter Shunt
18	4-20mA Converter Modules for SCADA Interface with 230V AC supply (All types)
19	Non-GPS type Synchronizable Current Interrupter Timer - 230V AC with a toggle switch for ON/OFF of interrupter. Interrupter timer setting from 0.1 sec to 99 sec
20	GPS type Synchronizable Current Interrupter Timer – 230V AC with a toggle switch for ON/OFF of interrupter. Interrupter timer setting from 0.1 sec to 99 sec
21	GPS Antenna
22	Current Interrupter Contactor – 230V AC Coil
23	Input MCB/Output MCB
24	Coarse selector switch
25	Fine selector switch
26	Auto / Manual switch

ANNEXURE- III: LIST OF CP & COATING SURVEY EQUIPMENT

Sr No	Description of Equipment Required	Approved Makes	Quantity / Spread	Total
1	**CIPL Survey Equipment**			
1.1	Computerized GPS enabled Data logger for undertaking CIPL and Surface Potential Surveys. Input impedance > 10Mohm with AC rejection filters	Mc Miller Gx / DCVG UK	1	
1.2	Pipeline locator	Radiodetection / Spy / Mc Miller / Tinker Rasor	1	
1.3	Cu/CuSo4 reference electrodes fitted to poles	McMiller / DCVG / Tinker & Rasor	One pair	
1.4	**Current Interrupter**	**Reputed Make**	4Nos	
1.5	Cu/CuSo4 portable reference electrode (Master) for calibration	McMiller / Tinker & Rasor	2 Nos	
1.6	Cu/CuSo4 portable reference electrode for field work.	McMiller / Tinker & Rasor	4 Nos.	
2	**Current Attenuation Test and A Frame Survey**			
2.1	Transmitter and Receiver for pipeline current mapping **capable of performing CAT & A frame simultaneously, Inbuilt GPS**, having features to work as pipeline locator and record depth of cover with all accessories and software.	Radiodetection UK-Model PCMx or Equivalent	One set	
3	**Coating conductance survey**			
3.1	Current injector equipment for pipe resistance span measurement .	Reputed make	One set	
3.2	High Impedance Voltmeter. Impedance > 10M ohm	**Fluke / Mc Miller / Rishab / Equivalent.**	2 Nos	
4	**AC Interference Testing**			
4.1	**High Impedance meter equipped with Data logging of DC / AC Potential and Current with Impedance > 10M ohm**	**McMiller / Risabh or equivalent**	2 Nos	
4.2	**Digital and AC/DC Clamp On Meter**	**Meco / Rishab / Fluke**	2 Nos.	
4.3	**Cu/CuSo4 portable reference electrode for field work.**	**McMiller / Tinker & Rasor / Borin**	Same as 1.6 above	
4.4	**Soil Resistance Meter with Accessories**	**Nilson 400/ McMiller / Meggar**	1 No	
5	**DC Stray current Testing**			
5.1	**High Impedance meter equipped with Data logging of DC Potential with Impedance > 10M ohm**	**McMiller / Risabh or equivalent**	Same as 4.1 above	
5.2	**Cu/CuSo4 portable reference electrode for field**	**McMiller / Tinker &**	Same as 4.3	

Sr No	Description of Equipment Required	Approved Makes	Quantity / Spread	Total
	work.	**Rasor / Borin**	above	
5.3	**Digital Multimeter Meter & Current Interrupter**	**Reputed Make**	Same as 4.1 above	
6	**Soil resistivity testing**			
6.1	**Soil Resistance Meter with Accessories**	**Nilson 400/ McMiller / Meggar**	Same as 4.4 above	

ANNEXURE- IV- FORMATS

TR UNIT Data Template for CIPS Survey

TABLE 1

Pipeline Section Code & Name:

Sr. No.	Date of Reading	Location Name	Chainage	CP Unit O/P Voltage (V)	CP Unit O/P Current (A)	Pulse	Interrupter working in Sync. (Yes/No)

CIPS Data Template

TABLE 2

Pipeline Section Code & Name:

Sr. No.	Chainage	Terrain Feature	Date of Survey	Lateral OFF PSP (-) mV	Lateral ON PSP (-) mV	OFF PSP (-mV)	ON PSP (-mV)	Easting (X Cord)	Northing (Y Cord)	Altitude (Z Cord)	Diff in ON / OFF PSP (mV)	Remark (if any)

CAT Survey Data Template

TABLE 3

Pipeline Section Code & Name:

Sr. No.	Chainage	Terrain Feature	Current (mA)	Current Decibels	Current Loss	Depth	Direction	Measure Interval	Easting (X Cord)	Northing (Y Cord)	Altitude (Z Cord)	Remark (if any)

Dig Verification Template for Coating Defect

TABLE 4

Pipeline Details

Pipeline Name		Pipeline Code	
Pipeline Section Name		Pipeline Section Code	
Date			

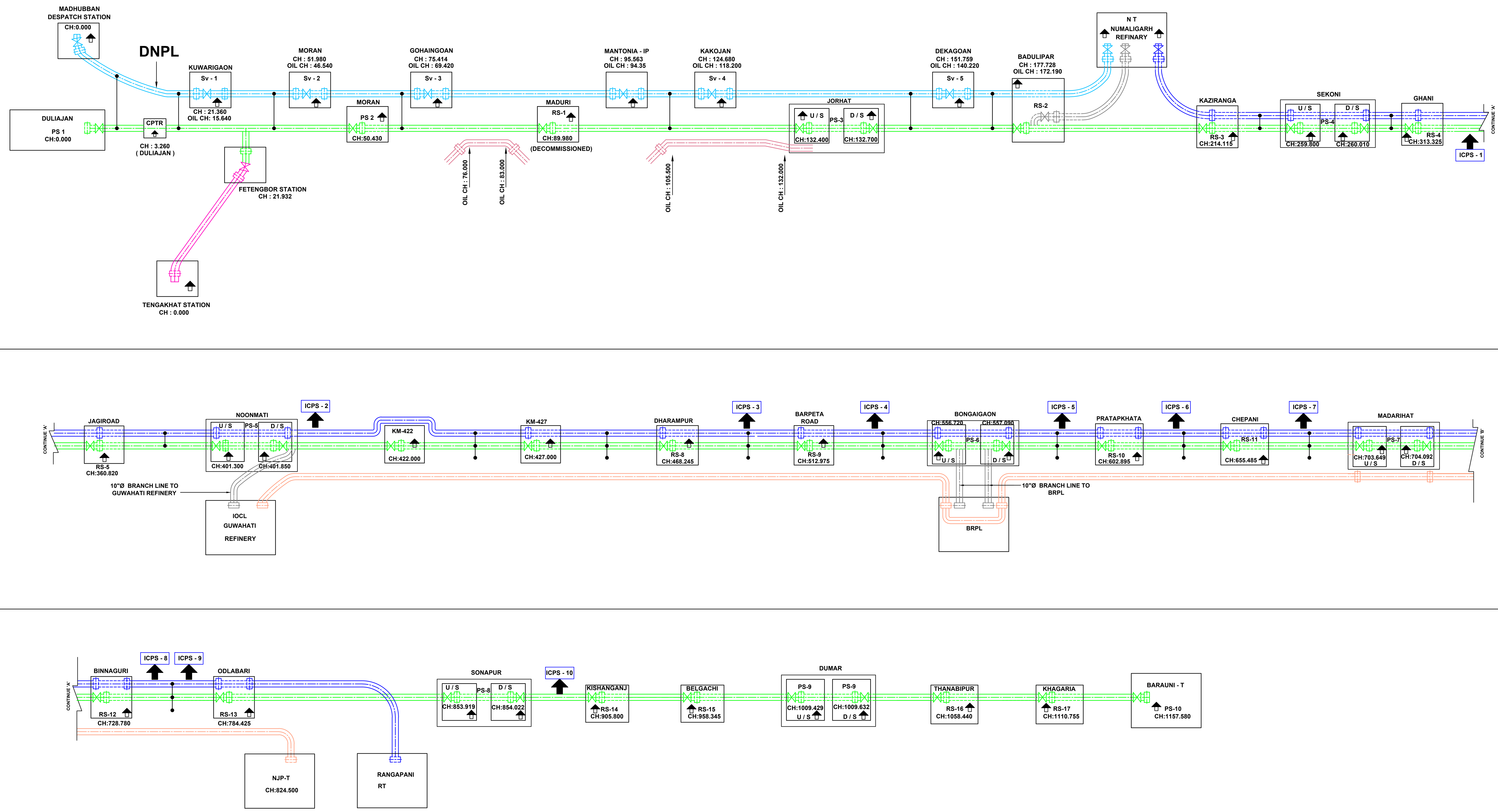
Inspection Survey Details

Inspection Survey	[CIPS/CAT A frame]	Vendor	
Report name		Report Date	

Anomaly Details

Anomaly Type		Anomaly ID & Distance	
Chainage (select)			
DGPS:	Odometer:	Chain/Tape:	Others:
Latitude		Longitude	
Upstream Marker/TLP Name		Downstream Marker/TLP Name	
Distance to U/S Marker		Distance to D/S Marker	

SCHEMATIC LAYOUT FOR EXISTING PIPELINE IN COMMON ROW (OIL INDIA)



LEGEND:

Symbol	Description
(grey line)	BRANCH LINE
(cyan line)	DNPL 16"Ø
(blue line)	NSPL 16"Ø
(green line)	MAINLINE 16" / 14"Ø
(orange line)	GSPL 8"Ø
(pink line)	ONGC - PL
(magenta line)	TSPL
(large arrow)	PROPOSED CP STATION
(valve)	MOV / HOV
(dashed box)	INSULATING JOINT
(small arrow)	CPTR
(dot-line-dot)	BONDINGS

Rev.	D M Y	Modifications	Drawn	Checked	Approved	Validated
00	31-03-2017	APPROVED FOR CONSTRUCTION.	Chetan	MK	NC	SKH

CUSTOMER
OIL INDIA LIMITED

PROJECT
PIPELINE COATING REHABILITATION WORK
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)

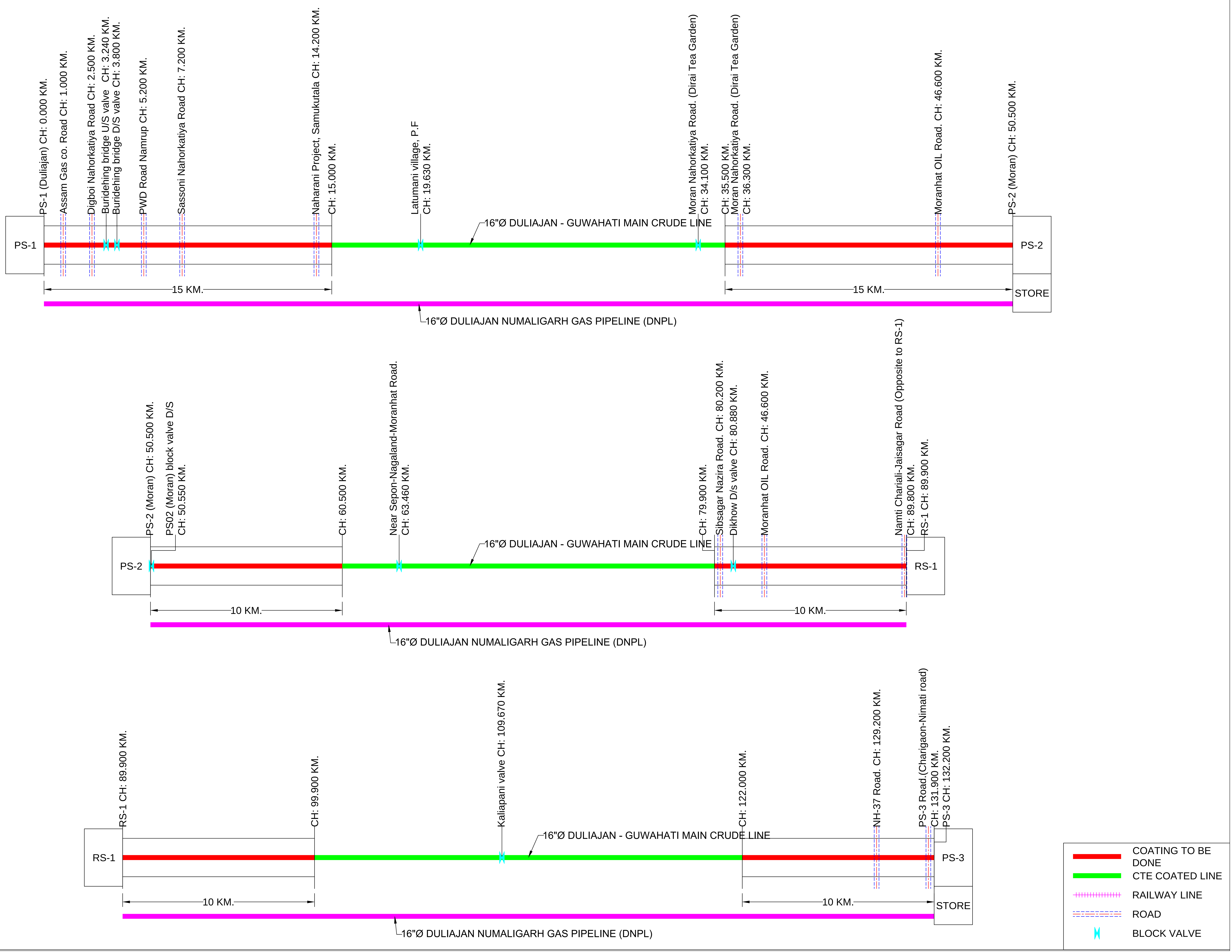
SUBJECT
SCHEMATIC LAYOUT FOR EXISTING PIPELINE IN COMMON ROU (OIL INDIA)

TRACTEBEL Engineering pvt. ltd.

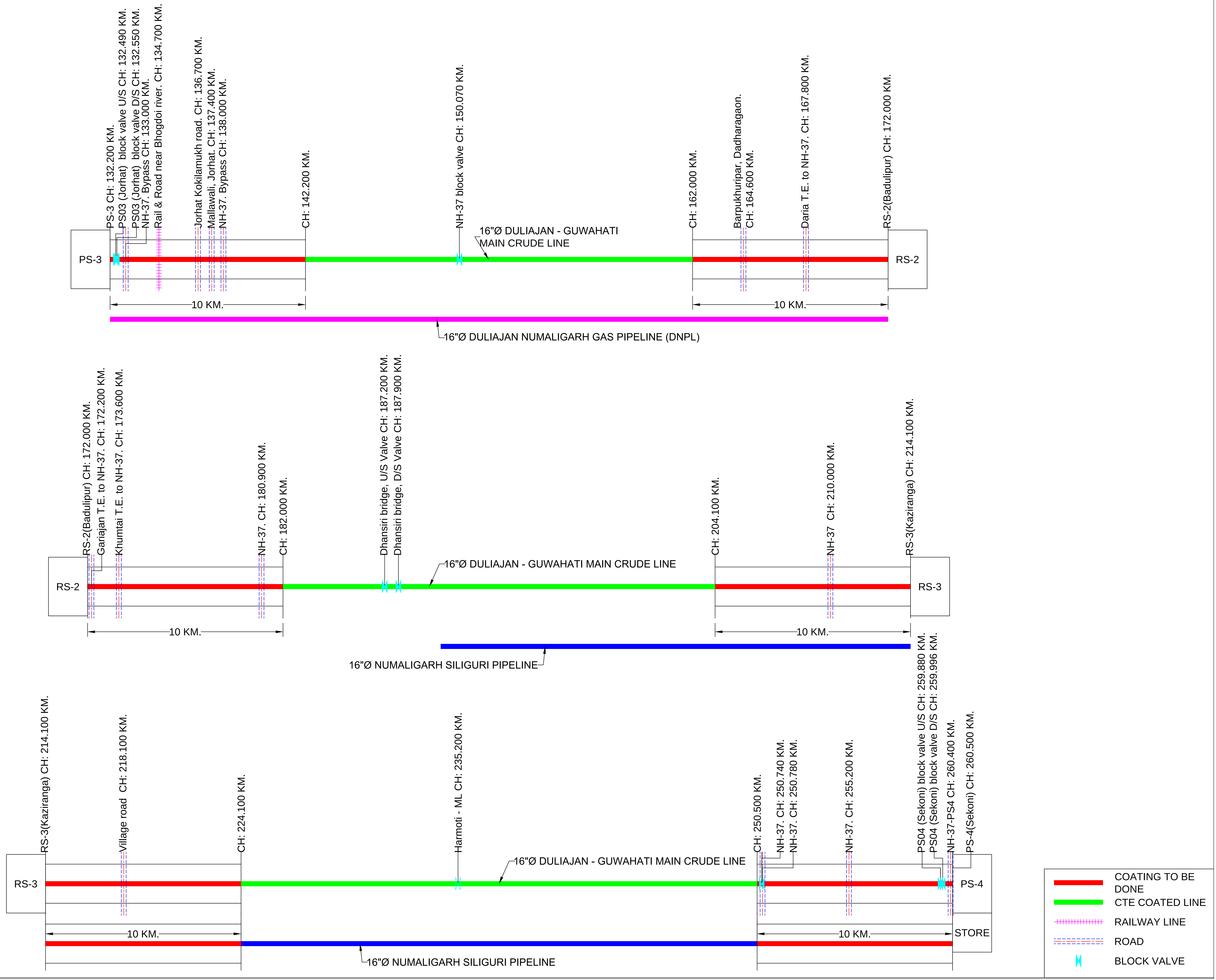
Size	Scale	Sheet	Rev.
A1	NTS	1 of 1	00

Project No.	Discipline Code	System Code	Serial No.
P.010416	D	20704	001

PIPELINE COATING REHABILITATION WORK
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)


PS-1 (Duliajan) CH: 0.000 KM.
Assam Gas co. Road CH: 1.000 KM.
Digboi Nahorkatiya Road CH: 2.500 KM.
Burideing bridge U/S valve CH: 3.240 KM.
Burideing bridge D/S valve CH: 3.800 KM.
PWD Road Namrup CH: 5.200 KM.
Sassoni Nahorkatiya Road CH: 7.200 KM.
Naharani Project, Samukutala CH: 14.200 KM.
CH: 15.000 KM.
Latumani village, P.F
CH: 19.630 KM.
Moran Nahorkatiya Road. (Dirai Tea Garden)
CH: 34.100 KM.
CH: 35.500 KM.
Moran Nahorkatiya Road. (Dirai Tea Garden)
CH: 36.300 KM.
Moranhat OIL Road. CH: 46.600 KM.
PS-2 (Moran) CH: 50.500 KM.
PS-1
16"Ø DULIAJAN - GUWAHATI MAIN CRUDE LINE
PS-2
15 KM.
15 KM.
STORE
16"Ø DULIAJAN NUMALIGARH GAS PIPELINE (DNPL)
PS-2 (Moran) CH: 50.500 KM.
PS02 (Moran) block valve D/S
CH: 50.550 KM.
CH: 60.500 KM.
Near Sepon-Nagaland-Moranhat Road.
CH: 63.460 KM.
CH: 79.900 KM.
Sibsagar Nazira Road. CH: 80.200 KM.
Dikhow D/s valve CH: 80.880 KM.
Moranhat OIL Road. CH: 46.600 KM.
Namti Chariali-Jaisagar Road (Opposite to RS-1)
CH: 89.800 KM.
RS-1 CH: 89.900 KM.
PS-2
16"Ø DULIAJAN - GUWAHATI MAIN CRUDE LINE
RS-1
10 KM.
10 KM.
16"Ø DULIAJAN NUMALIGARH GAS PIPELINE (DNPL)
RS-1 CH: 89.900 KM.
CH: 99.900 KM.
Kaliapani valve CH: 109.670 KM.
CH: 122.000 KM.
NH-37 Road. CH: 129.200 KM.
PS-3 Road.(Charigaon-Nimati road)
CH: 131.900 KM.
PS-3 CH: 132.200 KM.
RS-1
16"Ø DULIAJAN - GUWAHATI MAIN CRUDE LINE
PS-3
10 KM.
10 KM.
STORE
16"Ø DULIAJAN NUMALIGARH GAS PIPELINE (DNPL)
COATING TO BE DONE
CTE COATED LINE
RAILWAY LINE
ROAD
BLOCK VALVE

PIPELINE COATING REHABILITATION WORK
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)



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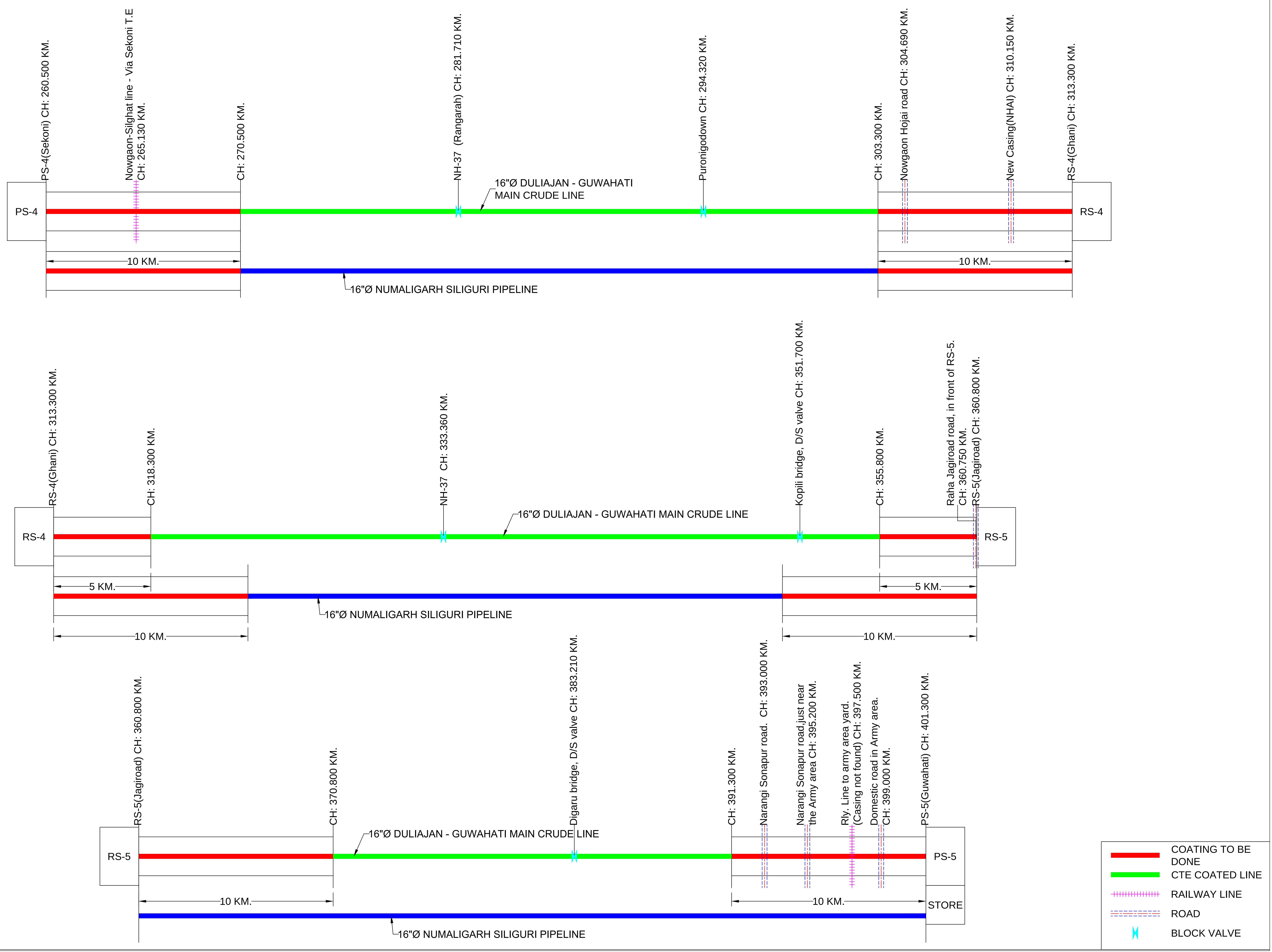

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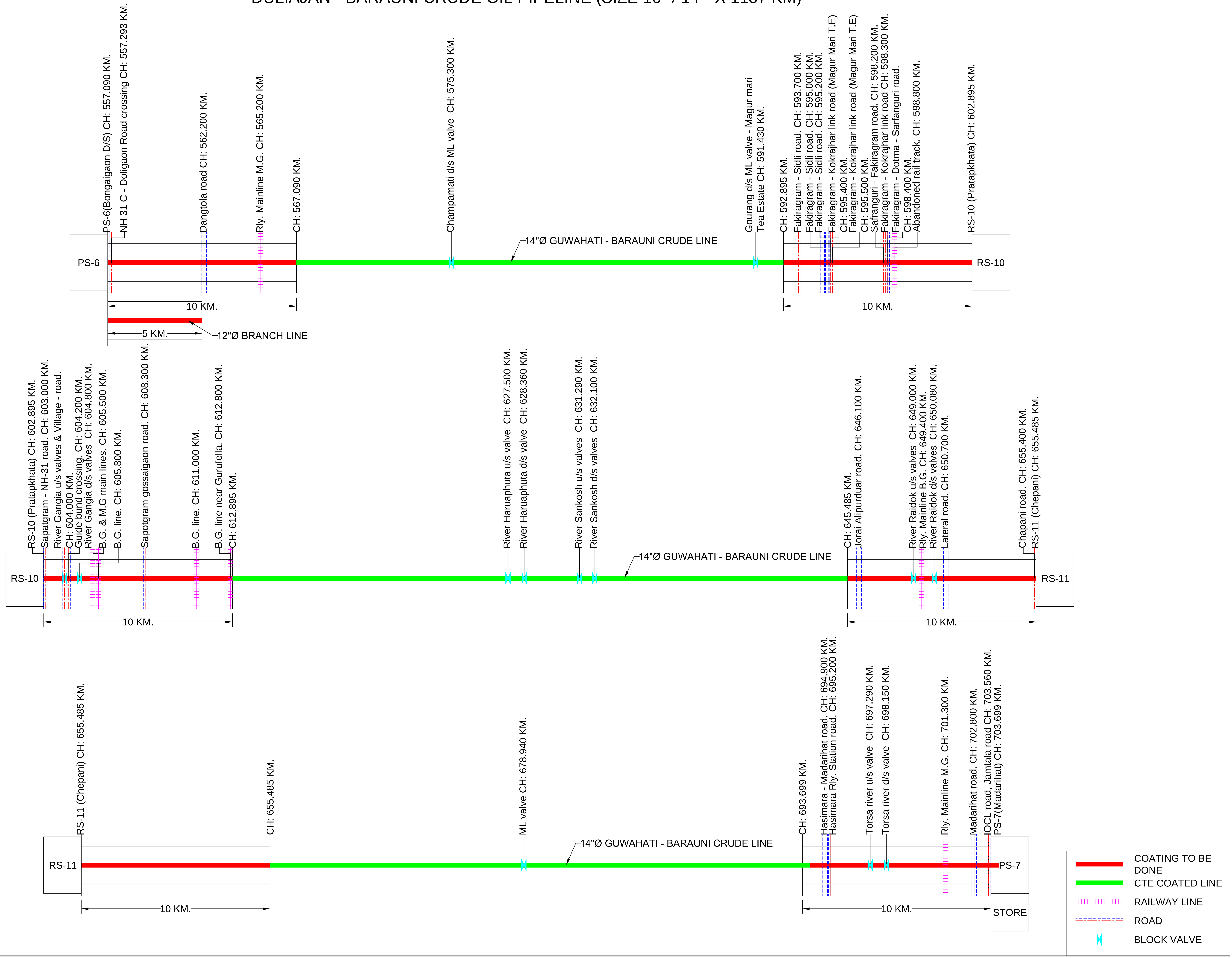
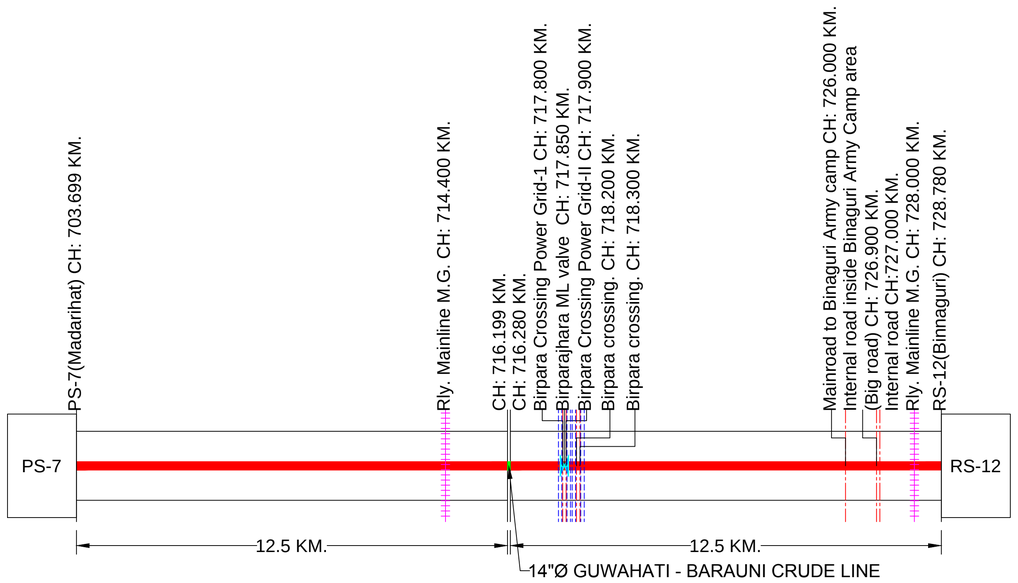
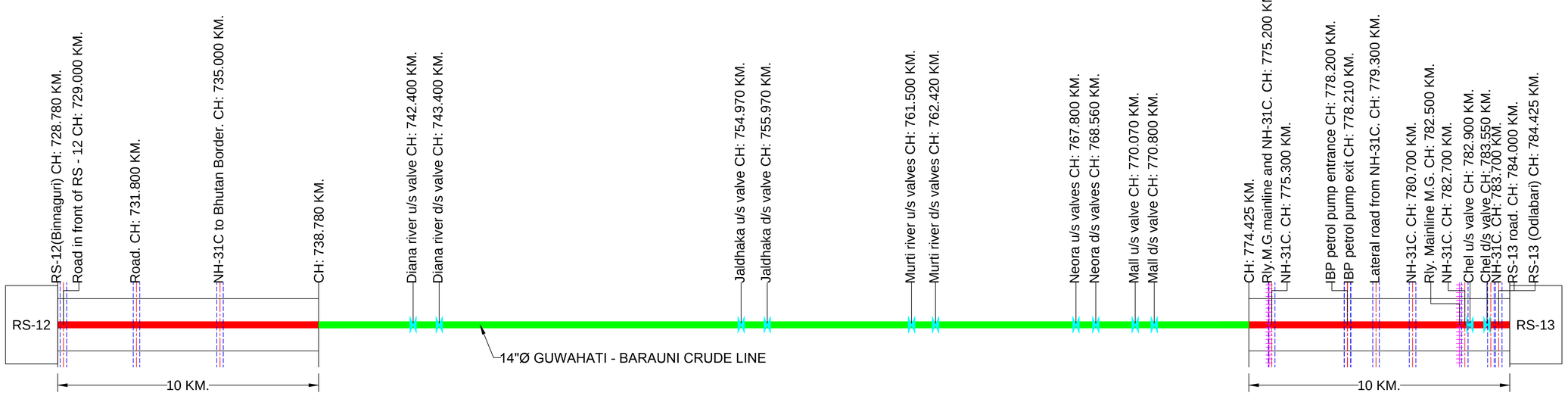
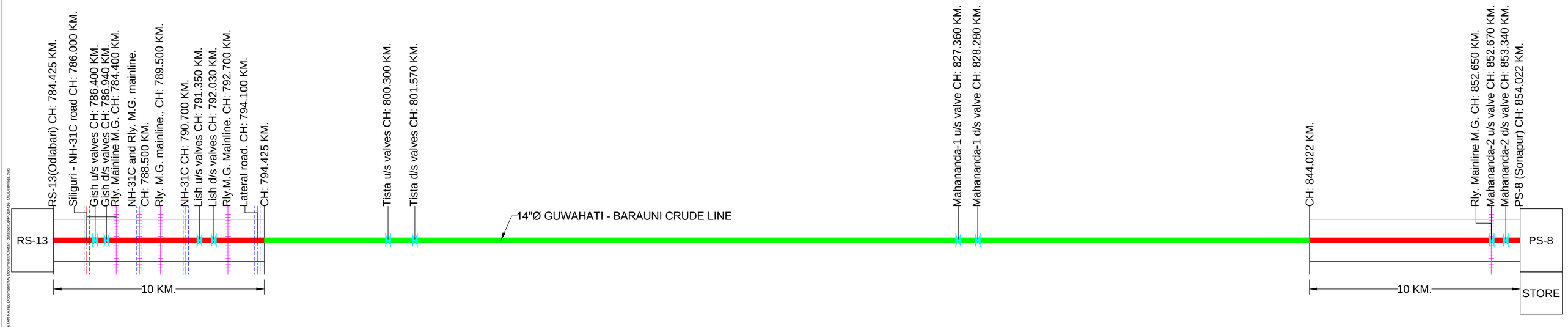


PIPELINE COATING REHABILITATION WORK
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)

COATING TO BE DONE
CTE COATED LINE
RAILWAY LINE
ROAD
BLOCK VALVE







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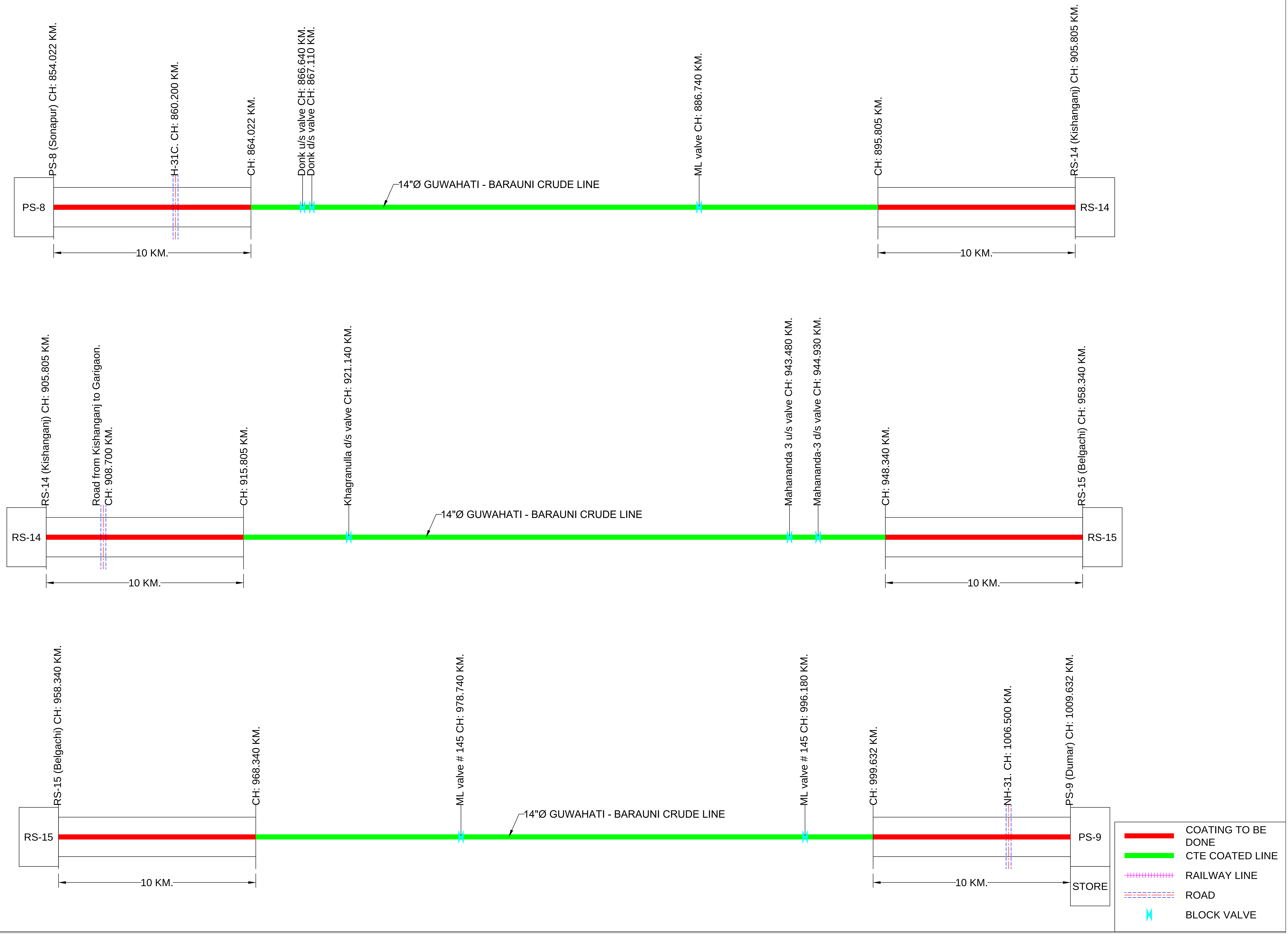

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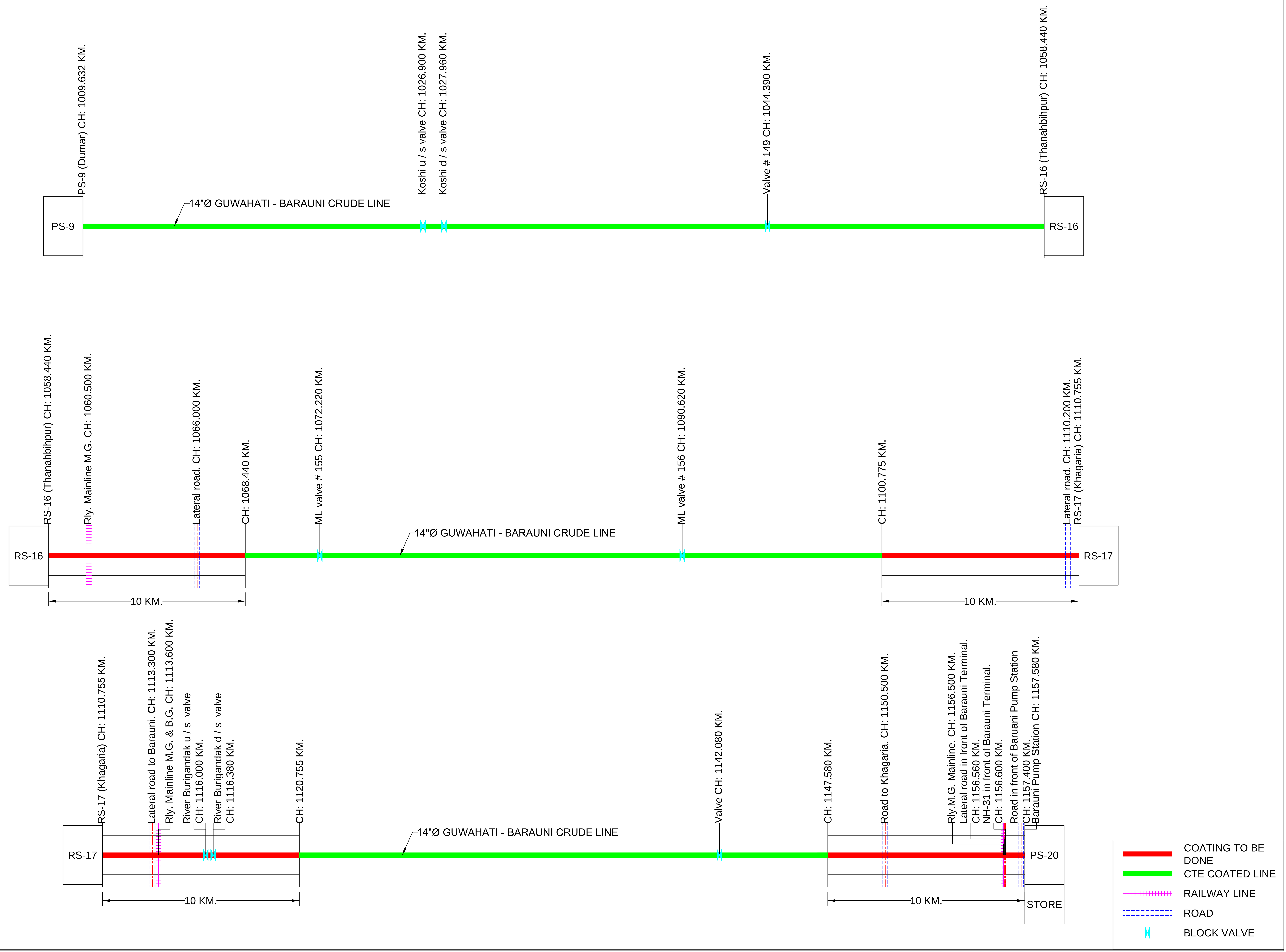
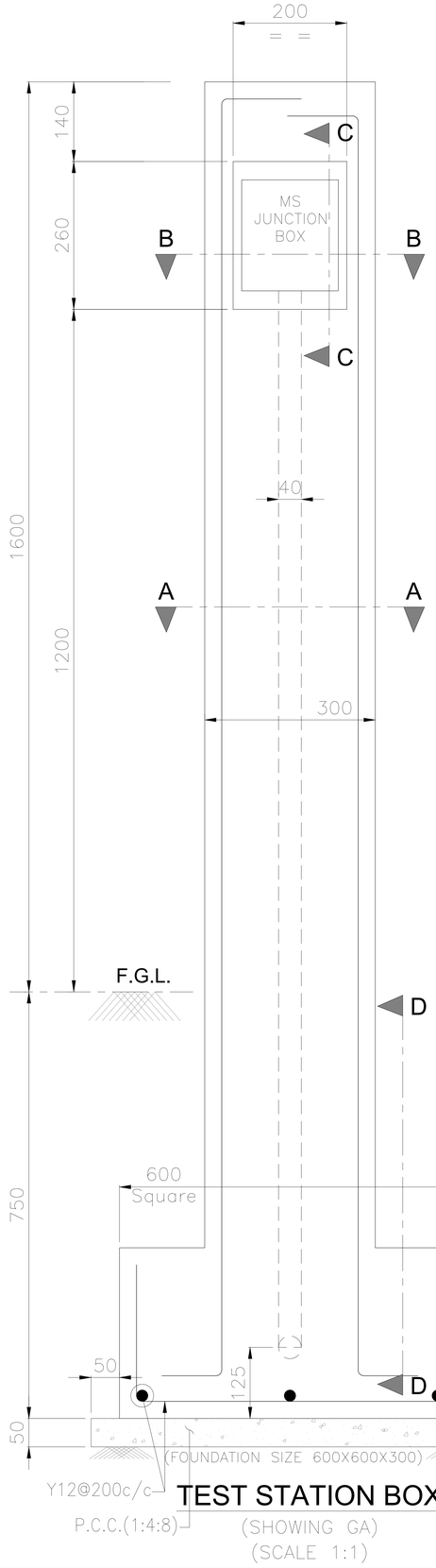
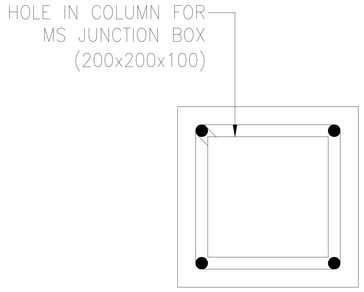




TEST STATION BOX
(SHOWING GA)
(SCALE 1:1)



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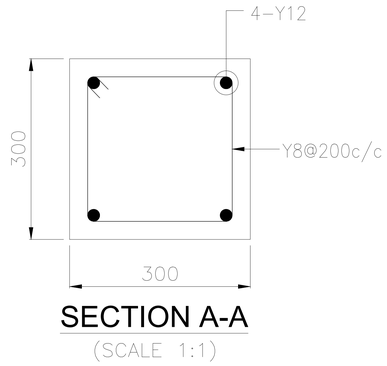

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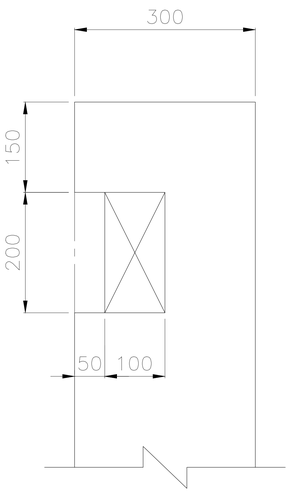

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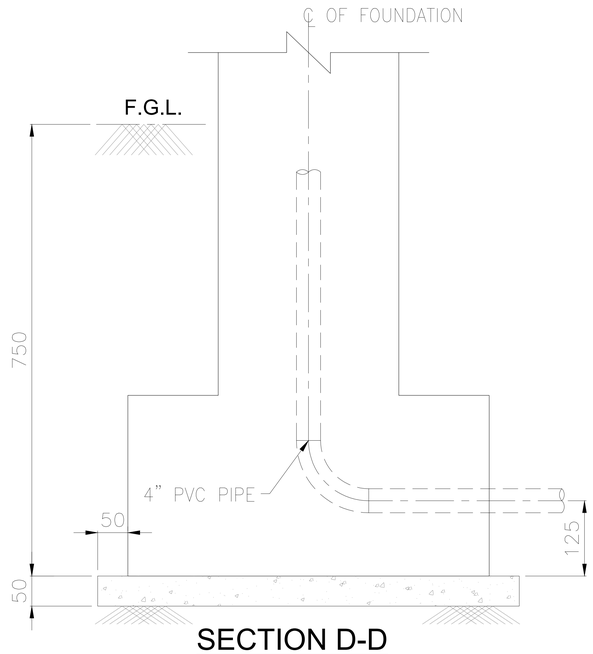
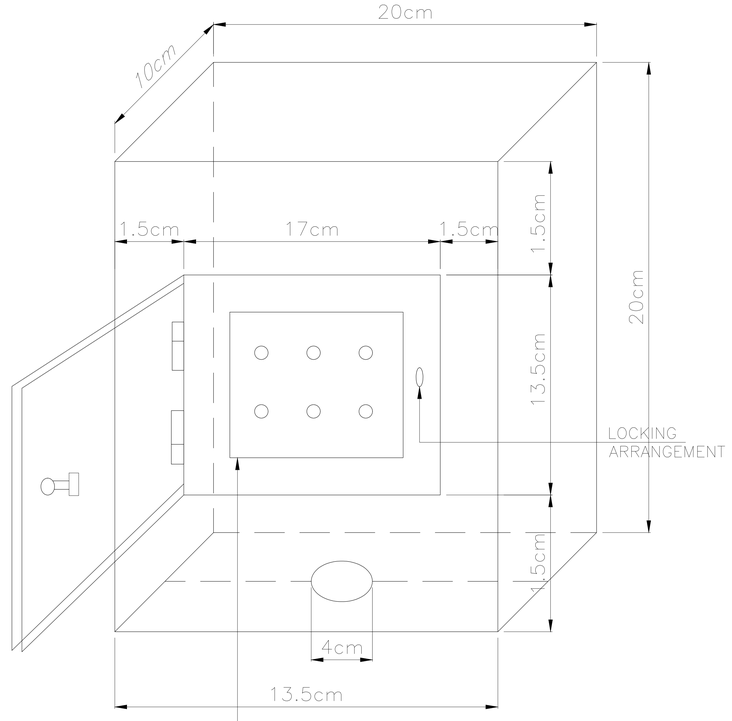


SECTION D-D



TERMINAL PLATE
PHENOLIC LAMINATED SHEET
(6X135X135)MM HAVING 6 NOS. OF TERMINAL
(BRASS STUD WITH NUTS WASHER & SPRING WASHER)

BOX SHALL BE MADE OF MS-SHEET OF THICKNESS OF MIN. 3MM WITH HINGED LOCKABLE DOOR HAVING NEOPRENE GASKET.

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER U.N.O.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
3. SPLICING LENGTH SHALL BE 42 TIMES DIA OF BAR & STIRRUPS SHALL BE SPACED AT 200C/C.
4. CLEAR COVER TO THE MAIN REINFORCEMENT SHALL BE AS.
   FOUNDATION = 40MM
   COLUMN = 30MM
5. CONCRETE MIX M25 SHALL BE USED IN ALL R.C.C. WORK UNLESS NOTED OTHERWISE.
6. ALL P.C.C. SHALL BE 1:4:8 UNLESS NOTED OTHERWISE.
7. HIGH STRENGTH DEFORMED BARS OF YIELD STRENGTH 415N/SQMM SHALL BE USED AS PER IS:1786 IN ALL R.C.C. WORK, ABOVE GROUND LEVEL.
8. SOIL BEARING CAPACITY OF 5.0T/SQM AT A DEPTH OF 0.75M FROM F.G.L. HAS BEEN CONSIDERED FOR FOUNDATION DESIGN. CONTRACTOR HAS TO ENSURE THE REQUIRED BEARING CAPACITY AT FOUNDATION LEVEL.
9. FOR ALL CONCRETE WORKS ORDINARY PORTLAND CEMENT OF GRADE 43 SHALL BE USED, U.N.O.
10. DEVELOPMENT LENGTH SHALL BE 42XDIA OF BAR.
11. BACKFILLING SHALL BE CARRIED OUT USING GOOD EARTH, LAID IN LAYERS OF 300MM AND CONSOLIDATED TO A PROCTOR DENSITY OF 95%.
12. EXCAVATED SOIL SHALL NOT BE USED FOR STRUCTURAL BACKFILLING.

Rev.	D M Y	Modifications	Drawn	Checked	Approved	Validated
0	06.03.2020	ISSUED FOR RFP	Sumit	TBS	AMK	SKH

CUSTOMER
OIL INDIA LIMITED

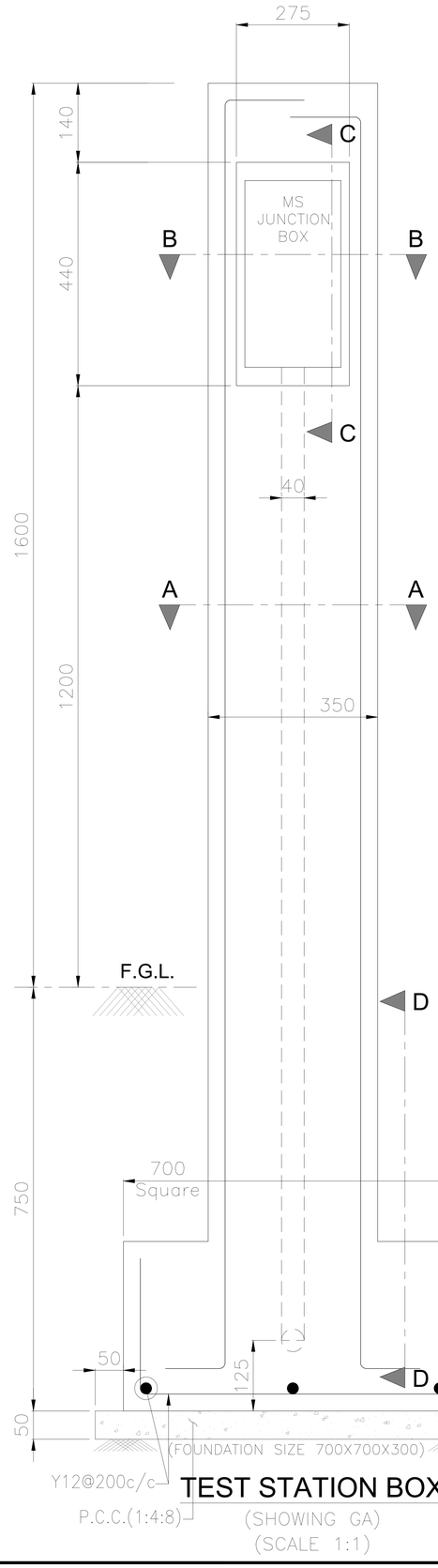
PROJECT
Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)

SUBJECT
FABRICATION & INSTALLATION OF
TEST STATION BOX
TYPE A, B, D, E & F

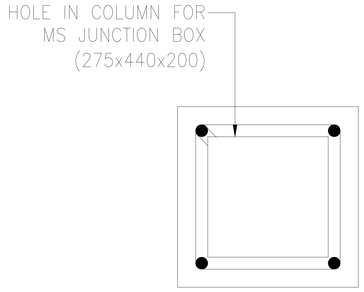
TRACTEBEL ENGIE
TRACTEBEL Engineering pvt. ltd.

Size	Scale	Sheet	Rev.
A3	NTS	1 of 2	0

Project No.	Discipline Code	System Code	Serial No.
P.010416	D	20706	0009



TEST STATION BOX
(SHOWING GA)
(SCALE 1:1)



SECTION B-B
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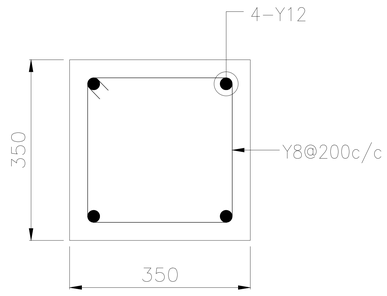

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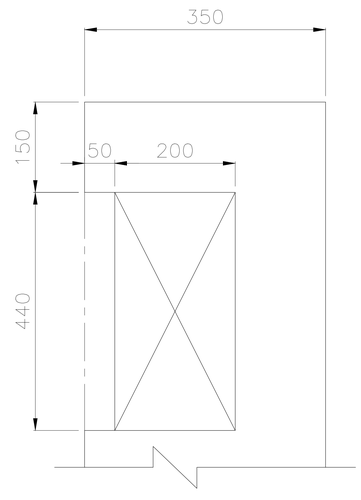

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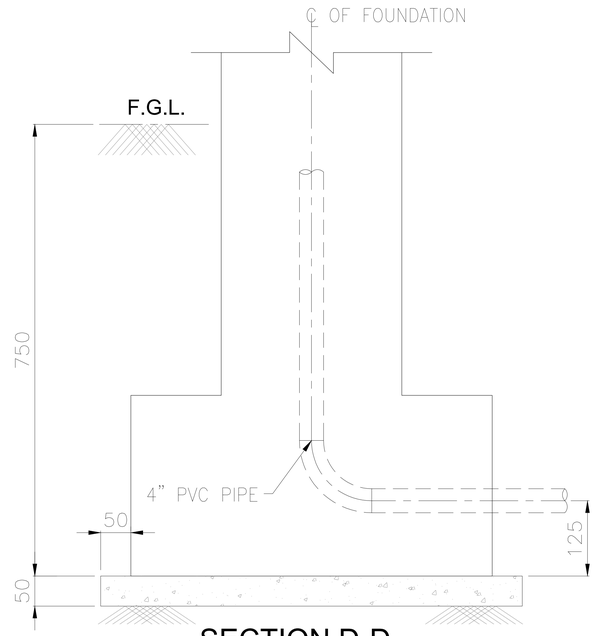
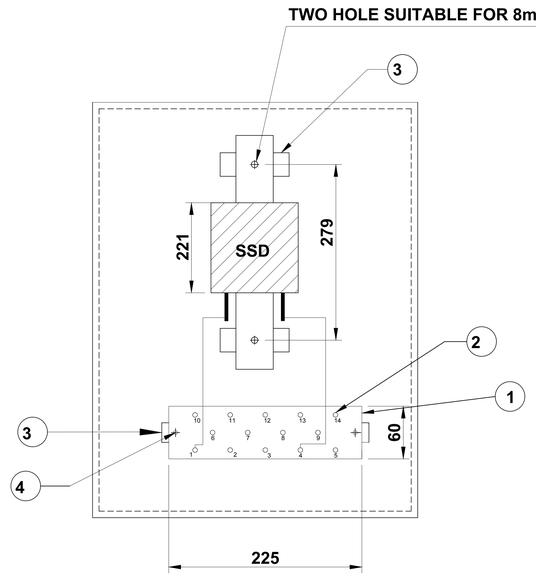
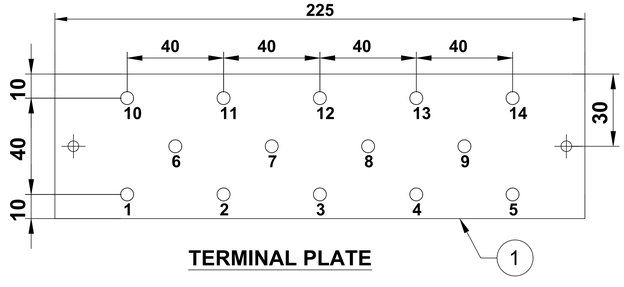


SECTION D-D



FRONT VIEW WITHOUT DOOR



TERMINAL PLATE

NOTES

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12. EXCAVATED SOIL SHALL NOT BE USED FOR STRUCTURAL BACKFILLING.

1	TERMINAL PLATE (BAKELITE) 225X60X6mm.
2	BRASS BOLT M 6 DIA X 40 mm LONG WITH 2 Nos. NUT & 4 Nos. WASHER WITH EACH TERMINAL.
3	MS ANGLE FOR FIXING TERMINAL PLATE 50 X 50 X 5MM
4	CROSS HEAD SCREW FOR FIXING TERMINAL PLATE (M 6 DIA 20 mm LONG)

Rev.						
0	06.03.2020	ISSUED FOR RFP	Sumit	TBS	AMK	SKH
Rev.	D M Y	Modifications	Drawn	Checked	Approved	Validated

CUSTOMER
OIL INDIA LIMITED

PROJECT
Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar
DULIAJAN - BARAUNI CRUDE OIL PIPELINE (SIZE 16" / 14" X 1157 KM)

SUBJECT
FABRICATION & INSTALLATION OF
TEST STATION BOX
TYPE M

TRACTEBEL ENGIE
TRACTEBEL Engineering pvt. ltd.

Size	Scale	Sheet		Rev.
A3	NTS	2	of 2	0
Project No.	Discipline Code	System Code		Serial No.
P.010416	D	20706		0009

OIL INDIA LTD

SPECIAL CONDITIONS OF CONTRACT

(PART-III)

TABLE OF CONTENTS

1.0 DEFINITIONS AND INTERPRETATIONS

In addition to meaning ascribed to certain initial capitalised terms in "GCC", following initial capitalised terms shall have the meaning as ascribed to such term hereunder. In case any term defined hereunder is also defined in "GCC", the meaning ascribed to such term hereunder shall prevail**.**

1.1 Definitions

Bid Documents	shall mean documents issued to the bidder pursuant to Forwarding letter.
Effective Date	shall mean the date on which Contractor's obligations will commence and that will be the date of Fax of LOA/ Notification of Award.

2.0 INTERPRETATIONS

2.1 Where any portion of the GCC is repugnant to or at variance with any provisions of the SCC then, unless a different intention appears, the provisions of the SCC shall be deemed to govern the provisions of the GCC and SCC provisions shall prevail to the extent of such repugnancy, or variations exist.

2.2 In Contract Documents unless otherwise stated specifically, the singular shall include the plural and vice versa wherever the context so requires.

2.3 All headings, subtitles and marginal notes to the clauses of the GCC, SCC or to the Specifications or to any other part of Bid Document are solely for the purpose of giving a concise indication and not a summary of the contents thereof, and they shall never be deemed to be part thereof or be used in the interpretation or construction thereof.

2.4 The terms fully capitalized and/or initial capitalized shall be interchangeable and shall have the meaning as assigned to fully capitalized term or initial capitalised term.

3.0 SCOPE OF WORK

3.1 Scope of work shall be as defined in Part- II. Complete scope of work is divided into three Spreads.

Spread # A- CP work in the State of Assam

Spread # B- CP work in the State of Assam

Spread # C- CP work in the State of West Bengal & Bihar

Bidders has option to quote for one spread or more than one spread (s). Bidder quoting for any spread(s) must quote for complete scope of work for quoted spread(s).

3.2 The duration of the contract shall be 18 months from the date of issue of Letter of Award (LOA) and the performance security shall be valid 3 months beyond the defect liability period.

3.3 The contractor shall allow weekly rest and daily working hours to his personnel/ workmen as per the relevant Act/ Law and Rules made there under. However, contractor shall ensure that no work shall be left incomplete/ unattended on any holiday/ weekly rest.

3.4 The contactor shall make own arrangements to provide all facilities like boarding and transport etc. to his employees/ workers engaged by the contractor.

3.5 Contractor shall maintain proper record of his working employee's attendance and payment made to them.

3.6 All the jobs mentioned under Scope of Services and Price Schedule shall be carried out as per the work procedures, documentations, recommendations of the manufacturer and as per guidelines / directions given by Engineer-in-Charge or his authorized representative to Contractor's Supervisor from time to time. In general, the work performed by the contractor shall conform to relevant standards and best engineering practices.

3.7 For complete scope of work, all parts of tender document are to be read.

4.0 INSPECTIONS AND TESTS

4.1 During execution of work, the works shall be inspected by the Company or its authorised representative for acceptance of the same.

4.2 The Company / Consultant or its representative shall have the right to inspect and/ or to test the material to confirm their conformity to the specifications.

5.0 STATUTORY VARIATIONS IN TAXES

5.1 The entire work covered under this contract shall be treated as works contract services. Bidder shall be required to quote their unit rates for all the items of Price Schedule as defined in Preamble to Price Schedule. Any statutory variation in the GST, during the contractual completion period only shall be considered by the company against documentary evidence.

6.0 TERMS AND MODE OF PAYMENT

6.1 **Advance**

6.1.1 The Company will not pay any advance.

The Payment terms shall be as follows:

The CONTRACTOR has to raise the RA bill on monthly basis and payment shall be made as per the following terms: -

6.1.2 For all SOR items

i) 90 % progressively on completion of work as certified in monthly progress bill.

ii) 10 % on completion of all work and acceptance thereof by EIC and Contract closure.

7.0 PAYMENT METHODOLOGY

7.1 The contractor shall raise invoices on monthly basis for works carried out duly certified by Engineer-in-Charge in triplicate. The contractor to ensure that the invoices of completed work should be raised & duly certified by Engineer-in-charge within one month to avoid any statutory penalties on delay in paying taxes.

7.2 The payment shall be released within 30 days from the date of receipt of invoice, if found to be in order and duly certified by Engineer-in-charge.

7.3 Company will release payment as per Part V.

7.4 The Payment shall be released through RTGS only.

8.0 COMPENSATION FOR IDLE TIME

8.1 No Idle time claim shall be entertained under any circumstances.

9.0 HEALTH SAFETY AND ENVIRONMENT (HSE)

9.1 The Contractor will strictly adhere to Health Safety and Environment policy as stated in tender document and/ or the policies followed by the Company.

9.2 All the safety rules and regulations prevailing and applicable from time to time at the installations as directed by Company will be strictly adhered to by the Contractor.

9.3 Contractor has to ensure the safety of man and machine all the times. Damages to OIL's equipment/ installations due to bad workmanship/negligence will be recovered as per the decision of Engineer-in-Charge, which will be final and binding upon the contractor.

9.4 The contractor shall supply all the protective safety equipment like helmets / hard head hats, gumboots / safety shoes, hand gloves, safety belts, eye protection, ear protection etc. to his workmen at his own cost as required by operations.

9.5 Carrying / striking of matches, open flames, lighters or smoking or other such acts, which may cause fire hazards at the work site / in the terminals / installations, is strictly prohibited.

9.6 Tobacco/ Ghutka chewing or other such acts, are strictly prohibited at the site.

10.0 PROVIDENT FUND

10.1 The Contractor shall strictly comply with the provisions of Employees Provident Fund Act applicable in India and register themselves with Regional Provident Fund Commission (RPFC) before commencing the work. The Contractor shall deposit employees and contractor contributions to the RPFC every month. The Contractor shall furnish along with each running bill, the challan / receipt for payment made to the RPFC for the preceding months.

10.2 In case the RPFC's challan / receipt, as above, is not furnished, Company shall deduct 5% (Five percent) of the payable amount from Contractor's running bill and retain the same as a deposit such retained amount shall be refunded to Contractor on production of RPFC Challan /receipt for the period covered by the related running bill.

11.0 POWER AND WATER CONNECTION

11.1 The Company/ Consultant will not provide any power and water during construction period. Contractor shall apply and obtain necessary power and water connection from relevant authority and will pay its uses charges or arrange the same from the other sources.

12.0 CONSTRUCTION AIDS, EQUIPMENTS, TOOLS & TACKLES

12.1 CONTRACTOR shall be solely responsible for making available for executing the WORK, all requisite CONSTRUCTION EQUIPMENTS, Special Aids, Cranes and the like, all Tools, Tackles and Testing Equipment and Appliances.

13.0 CONTRACTOR'S OBLIGATION AT SITE

13.1 Contractor shall establish site office in each Spread and have necessary / adequate office infrastructure for effective communication and documentation purposes.

13.2 Contractor shall provide transport for their technical staff and operatives to move from site to site, and to move tools and equipment from site to site.

13.3 Contractors shall make appropriate arrangements to ensure that their supervisor(s) are adequately mobile and can attend sites or meetings with COMPANY, other authorities without any undue delay.

13.4 Any change in key persons working at site shall be informed to the Company promptly.

13.5 Contractor shall submit Insurance policies and Labour licence to Engineer-in-charge before start of work. In absence of these documents, contractor will not be allowed to start the work.

14.0 COMPLIANCE WITH LAW

14.1 Wherever applicable, Contractor shall abide by all prevailing Laws of India including but not limited to:

14.1.1 Apprentices Act.

14.1.2 Contract labour (Regulation & Abolition) Act.

14.1.3 Employers Liability Act.

14.1.4 Environment Protection Act.

14.1.5 Factory Act.

14.1.6 Industrial Dispute Act.

14.1.7 Minimum Wages Act.

14.1.8 Payment of Wages Act.

14.1.9 Workman Compensation Act.

14.1.10 Building and Other Construction Workers (Regulation of Employment and Condition of service) Act, 1996

14.1.11 Any other Statute, Act, Law as applicable.

15.0 INSURANCE

15.1 Contractor shall at his own expense arrange, secure and maintain insurance with reputed insurance companies to the satisfaction of the Company as may be necessary and to its full value for all such amounts to protect the works in progress and his personnel from time to time and the interest of Company against all risks as detailed herein. The form and the limit of such insurance as defined herein together with the under writer works thereof in each case should be as acceptable to the Company. However, irrespective of work acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be that of Contractor alone. Contractor's failure in this regard shall not relieve him of any of his responsibilities and obligation under the Contract.

15.2 All costs on account of insurance liabilities covered under this Contract will be to Contractor's account and will be included in Contract Price.

15.3 Contractor as far as possible shall cover insurance with Indian Insurance Companies.

15.4 Contractor shall arrange Insurances under clause 31 of GCC as applicable for the subject Work.

16.0 SITE CLEANING

16.1 Contractor shall clean and keep clean (Housekeeping and cleanliness) the work site always to the satisfaction of the Engineer–in-charge for easy access to work site and to ensure safe passage, movement and working.

16.2 The Contractor shall dispose of the materials, debris etc. to any area, as decided by the Engineer–In–Charge.

16.3 No extra payment shall be paid on this account.

17.0 WORKMANSHIP

17.1 Regarding work completion, the decision of the Engineer-in-Charge will be final and binding.

18.0 COMPLETION DOCUMENT

18.1 As defined in Scope of Work and Technical Specification, Part II of tender document.

19.0 TIME LIMIT FOR CLAIMS

19.1 Under no circumstances whatsoever, shall the contractor be entitled to any compensation from Company on any account unless the contractor shall have submitted claim pertaining to the contract in writing to the Engineer-in-Charge within 30 days of cause of such a claim occurring. Contractor shall be deemed to have waived off its rights to claim the same, if the claim is not raised within this period.

20.0 EXECUTION OF WORK

20.1 The CONTRACTOR shall be responsible for ensuring that works throughout are executed in the most substantial, proper and workmanlike manner with the quality of material and workmanship in strict accordance with the SPECIFICATIONS and to the entire satisfaction of the ENGINEER-IN-CHARGE. The CONTRACTOR shall provide all necessary materials equipment labour etc. for execution of work till the completion of Contract.

21.0 DEFECT LIABILITY PERIOD

21.1 The Contractor warrants that the work carried out under the Contract are meeting the requirement of the Bid document and will rectify/ repair any defective work on receipt of instructions from Engineer-in-charge.

21.2 The Engineer-in-charge shall promptly notify the Contractor in writing of any claims arising under Defect Liability period.

21.3 Upon receipt of such notice, the Contractor shall, within a reasonable period, repair or replace the defective Goods or parts thereof, free of cost to the Company. The Contractor may take over the replaced parts/ Goods at the time of their replacement. No claim whatsoever shall lie on the Company for the replaced parts/ goods thereafter. In the event of any correction of defects or replacement of defective material during the defect liability period, the warranty for the corrected / replaced Goods or item or material shall be extended to a further period of twelve (12) Months from the date of such repair/replacement if put to use immediately or eighteen (18) Months. Defect liability period shall be 12 months from the date of handing over of the system to Company.

If the Contractor, having been notified, fails to remedy the defect(s) within a reasonable period, the Company may proceed to take such remedial action as may be necessary, at the Contractor's risk and expense and without prejudice to any other rights which the Company may have against the Contractor under the Contract / Agreement.

22.0 LIMITATION OF LIABILITY

22.1 Except in cases of wilful negligence or wilful misconduct, and in the case of infringement, the Contractor shall not be liable to the Company, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits provided that this exclusion shall not apply to any obligation of the Contractor to pay LD to the Company and the aggregate liability of the Contractor to the Company, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

23.0 THE ENGINEER-IN-CHARGE

23.1 Issue the contractor from time to time during the running of the Contract such further instructions as shall be necessary for the purpose of proper and adequate execution of the Contract and the Contractor shall carry out and bound by the same.

23.2 During the currency of this Contract, Company can increase and / or decrease the number of the services required & quantity of work /services shown in from the Schedule of Rates.

23.3 Order the Contractor to remove or replace any workmen whom the Company considers incompetent or unsuitable and opinion of the Company representative as to the competence of any workman engaged by the contractor shall be final and binding on the Contractor. Key personnel can be deployed at site only after getting approval from the Company/ Consultant.

24.0 RIGHT TO GET SERVICES CARRIED OUT THROUGH OTHER AGENCIES

24.1 Nothing contained herein shall restrict Company from accepting similar services from other agencies at its sole discretion and at the risk and cost of the contractor, if the contractor fails to provide the said services any time not up to the satisfaction of Engineer-in-Charge.

25.0 DEFENCE OF SUITS

25.1 If any action is brought before a Court, Tribunal or any other Authority against the Company or an officer or agent of the Company, for the failure, omission or neglect on the part of the CONTRACTOR to perform any acts, matters, covenants or things under the CONTRACT, or damage or injury caused by the alleged omission or negligence on the part of the CONTRACTOR, his agents, representatives or his SUB-CONTRACTOR's, or in connection with any claim based on lawful demands of SUB-CONTRACTOR's workmen or employees, the CONTRACTOR, shall in such cases indemnify and keep the Company and/or their representatives harmless from all losses, damages, expenses or decrees arising out of such action.

26.0 COMPANY MAY DO PART OF WORK

26.1 Upon failure of the Contractor to comply with any instructions given in accordance with the provisions of this Contract, the Company has the alternative right, instead of assuming charge of entire WORK, to place additional labour force, tools, equipment and materials on such parts of the work, as the company may designate or also engage another contractor to carry out the work. In such cases, the company shall deduct from the amount which otherwise might become due to the contractor, the cost of such work and material with ten percent (10%) added to cover all departmental charges and should the total amount thereof exceed the amount due to the contractor, the contractor shall pay the difference to the company.

27.0 GENERAL

27.1 All personnel of the contractor entering on work premises shall be properly and neatly dressed and shall wear uniform badges while working on premises of the Purchaser including work sites.

Contractor shall provide all labour and necessary supervision to carry out the work as per the scope of work as defined in tender document, which forms part of this contract in accordance with the conditions of the contract laid down in this part of contract read in conjunction with General Conditions of Contract

28.0 ADDRESS FOR CORRESPONDENCE

COMPANY:

A. THE PROJECT MANAGER
Oil India Ltd., PHQ-Guwahati
Email: pvrmurthy@oilindia.in/ plproject@oilindia.in

B. CONSULTANT:

The Project Manager,
Tractebel Engineering Pvt. Ltd.
Intec House, Institutional Area
Sector 44, Gurgaon- 122 002,
Haryana
Telephone : +91 (0124) 469 8500
Email : sk.hussain@tractebel.engie.com

C. Engineer-in-charge

Tractebel Engineering Pvt. Ltd

Address & phone no. will be provided to later on.

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 **.....** 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.

3. 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. 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.

2. 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.

3. 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.

5. 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.

.....
For the Principal

.....
For the Bidder/Contractor

Witness 1: .....

Witness 2: .....

Place.
Date .

OIL INDIA LTD

PROFORMA & ANNEXURES

PART VI

PROFORMA - I

BID FORM

To
THE CM (CONTRACTS)
OIL INDIA LIMITED
(A Govt. of India Enterprise) P.O.
GUWAHATI-781171
DIST. KAMRUP(M)
ASSAM

Subject : IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.

Dear Sir,

Having examined the General and Special Conditions of Contract and the Scope of Work & Technical Specification including all attachments thereto, the receipt of which is hereby duly acknowledged, we the undersigned offer to perform the services in conformity with the said conditions of Contract and Scope of Work & Technical Specification for the sum of
____(Price not to be indicated)___ stated below or such other sums as may be ascertained in accordance with the Price Bid Form attached herewith and made part of this Bid:

We undertake, if our Bid is accepted, to commence the work within (_____) days calculated from the date of issue of Company's LOA.

We agree to abide by this Bid for a period of **120 days** from the date fixed for Bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof in your notification of award shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this _____ day of _____ 2020.

Signature and seal of the Bidder: _____

(In the capacity of) : _____

Name of Bidder : _____

****

PROFORMA – II

LETTER OF AUTHORITY

To
THE CM (CONTRACTS)
OIL INDIA LIMITED
(A Govt. of India Enterprise) P.O.
GUWAHATI-781171 DIST.
KAMRUP(M)
ASSAM

Sir,

Subject : IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.

We _____ confirm that Mr. _____
(Name and address) as authorized to represent us to Bid, negotiate and conclude the agreement on our behalf with you against Invitation No.:_____ for
'IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.

We confirm that we shall be bound by all and whatsoever our said representative shall commit.

Yours Faithfully,

Signature: _____
Name : _____
Designation: _____
For & on behalf of: _____

Note: This letter of authority shall be printed on letter head of the Bidder and shall be signed by a competent person to bind the Bidder.

****

PROFORMA - III

STATEMENT OF NON-COMPLIANCE

(Only exceptions/deviations to be rendered)

Subject : IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.

1.0 The Bidder shall furnish detailed statement of **exceptions/deviations,** if any, to the tender stipulations, terms and conditions in respect of each PART of Bid Document in the following format:

PART No.	Clause No. (Page No.)	Non-Compliance	Remarks

Authorized Person's Signature: _____

Name: _____

Designation:_____

Seal of the Bidder:

NOTE: OIL INDIA LIMITED expects the bidders to fully accept the terms and conditions of the bid document. However, should the bidders still envisage some exceptions/deviations to the terms and conditions of the bid document, the same should be indicated as per above format and submit along with their bids.
If the "**Statement of Compliance**" in the above Proforma is left blank (or not submitted along with the technical bid), then it would be construed that the bidder has not taken any exception/deviation to the tender requirements.

****

PROFORMA- IV
(To be submitted on bidder's letter head)

[TO BE FILLED-UP / SUBMITTED BY THE BIDDER ON ITS LETTER HEAD FOR E-REMITTANCE]

Name:

FULL Address:

Phone Number :

Mobile Number :

E-mail address :

FAX Number :

Bank Account Number:
(in which the Bidder wants remittance against invoices)

Bank Name :

Branch :

Address of the Bank:

Bank Code :

IFSC/RTGS Code of the Bank:

NEFT Code of the Bank :

PAN Number :

Goods & Service Tax (GST) Number:

_____

Signature of Vendor with Official Seal

Note: This declaration shall be printed on letter head of the Bidder and shall be signed by a competent person.

****

PROFORMA-V
FORM OF BID SECURITY (BANK GUARANTEE FORMAT)

To:
M/s. OIL INDIA LIMITED,
PROJECT SECTION, PHQ
GUWAHATI,
ASSAM, INDIA, PIN -781171.

WHEREAS, (Name of Bidder) _____ (hereinafter called "the Bidder") has submitted their offer Dated _____ for the provision of certain services (hereinafter called "the Bid") against OIL INDIA LIMITED, GUWAHATI, Assam, India hereinafter called the Company)'s Tender No**.** _____ KNOW ALL MEN BY these presents that we (Name of Bank) _____ of (Name of Country) _____ having our registered office at _____(hereinafter called "Bank") are bound unto the Company in the sum of (*_____) for which payment well and truly to be made to Company, the Bank binds itself, its successors and assignees by these presents.

SEALED with the
Said Bank this ___ day of _____ 2020.

THE CONDITIONS of these obligations are:

1. If the Bidder withdraws their Bid within its original/extended validity; or
2. The Bidder modifies/revises their bid suomoto; or
3. The Bidder does not accept the contract; or
4. The Bidder does not furnish Performance Security Deposit within the stipulated time as per tender/contract; or
5. If it is established that the Bidder has submitted fraudulent documents or has indulged into corrupt and fraudulent practice.

We undertake to pay to Company up to the above amount upon receipt of its first written demand (by way of letter/fax/cable), without Company having to substantiate its demand provided that in its demand Company will note that the amount claimed by it is due to it owing to the occurrence of any of the conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date (**--/--/--) and any demand in respect thereof should reach the Bank not later than the above date.

The details of the Issuing Bank and Controlling Bank are as under:

A. Issuing Bank:

   BANK FAX NO:

   BANK EMAIL ID:

   BANK TELEPHONE NO.:

   IFSC CODE OF THE BANK:

B. Controlling Office:

   Address of the Controlling Office of the BG issuing Bank:

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTORS _____

Name of Bank & Address _____

Witness _____
Address _____
_____

(Signature, Name and Address) Date:

_____
Place: _____

* The Bidder should insert the amount of the guarantee in words and figures.
** Date of expiry of Bank Guarantee should be minimum 30 days after the end of the validity period of the Bid /as specified in the Tender.

****

PROFORMA-VI

FORM OF PERFORMANCE BANK GUARANTEE
(To be submitted by the successful bidder in case of award of contract)

To:
M/s. OIL INDIA LIMITED,
PROJECT SECTION
PIPELINE DEPARTMENT, GUWAHATI
ASSAM, INDIA, PIN –781 171.

WHEREAS _____ (Name and address of Contractor) (hereinafter called "Contractor") had undertaken, in pursuance of Contract No. _____ to execute (Name of Contract and Brief Description of the Work) _____ (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the
Contractor shall furnish you with a Bank Guarantee as security for compliance with Contractor's obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;
NOW THEREFORE we hereby affirm that we are Guarantors on behalf of the Contractor, up to a total of (Amount of Guarantee in figures) _____ (in words _____), such amount being payable in the types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of guarantee sum as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or the work to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way cease us from any liability under this guarantee, and we hereby waive notice of such change, addition or modification.

This guarantee is valid until the ----------day of ----------

The details of the Issuing Bank and Controlling Bank are as under:

A. Issuing Bank:

BANK FAX NO:

BANK EMAIL ID:

BANK TELEPHONE NO.:

IFSC CODE OF THE BANK:

B. Controlling Office:

Address of the Controlling Office of the BG issuing Bank:

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTORS _____

Designation _____

Name of Bank _____

Address _____

Witness _____

Address _____

Date _____
Place _____

Note: Bank details of Oil India Limited may be required by Bank for issuance of Bank Guarantee (BG):

BANK DETAILS OF BENEFICIARY		
a	Bank Name	AXIS BANK
b	Branch Name	GUWAHATI
c	Branch Address	CHIMBER HOUSE, G.S.ROAD, DISPUR ASSAM
d	Banker Account No.	140010200027654
e	Type of Account	CURRENT ACCOUNT
f	IFSC Code	UTIB0000140
g	MICR Code	781211002
h	SWIFT Code	Axisinbb140
i	Contact No.	8876501401
j	Contact Person Name	Mr. Dibakar Ghaosh
k	Fax No.	Not available
l	Email Id	Guwahati.branchhead@axisbank.com

PROFORMA-VII

FORMAT FOR UNDERTAKING
(IN TERMS OF TENDER NO. CIP4781P21)
(On Non-Judicial Stamp Paper of Rs. 100/-)
TO BE NOTORISED

To
CM-PROJECT
OIL INDIA LIMITED
GUWAHATI

Dear Sirs,

UNDERTAKING/DECLARATION BY THE BIDDER IN RESPECT OF TENDER NO. **CIP4781P21**

This is in connection with the Bid submitted by me/us, ……..... (Name of Bidder), against Tender No. **IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'**

I/We, the afore mentioned Bidder against the subject tender, hereby declare that my/our quoted rates include the following -

(a) Labour wages as per Minimum Wages Act and notifications issued by the Central Govt. from time to time, including P.F, insurance and Bonus.
(b) Material and Equipment (if any) cost.
(c) PPE cost.
(d) IME (Initial Medical Examination) cost (Not Applicable).
(e) Other charges / cost including overheads, profit, insurance and handling charge..

I/We, the afore mentioned Bidder against the subject tender take note that minimum wages may increase from time to time as notified by statutory authority and Central Govt. and undertake that I/We shall not make Company (i.e. OIL) liable to reimburse me/us for such statutory increase in wage rates of the labours/workers engaged by me/us during the entire period of the contract, including extension if any. Currently, such increase in the wage rates is twice in a year. I/We have bid after considering this increase in wage rates for the entire period of Contract including extension provision.

I/We, the afore mentioned Bidder against the subject tender, further undertake that I/We will pay my/our workers the existing Daily wages as notified under the.
Minimum Wages Act from time to time by the Central Govt. and such statutory or any other increase in the wages rates including consequent increase in statutory.

contributions like provident fund etc. of contract labours engaged by me/us shall be borne solely by me/us during the entire period of the contract, including extension if any, without any cost implication whatsoever upon the Company.

I/We further agree and undertake that in case of any violation of the above undertaking, Oil India Limited (OIL) shall be at liberty to take appropriate action against me/us in terms of the Tender/Contract including but not limited to termination of contract and debarment from future business with OIL. I shall duly comply with all the statutory obligations, more particularly under applicable labour laws. I further agree and undertake that in case of any dispute or claims arise out of my non-compliance of statutory obligations under the Contract, by the Labourers engaged by me or by any statutory authorities, I shall only be responsible for the same and hold the Company harmless against such dispute or claims. I further authorize the Company, in the event of my default or non-compliance of any statutory obligations, to

deduct/recover and adjust such amount or claim against my Bills due under the Contract or against any other existing or future Contracts with the Company including performance security.

I/We declare that the information given above is true and any misstatement, misrepresentation, or suppression of facts in connection with the above undertaking may entail rejection of the bid and cancellation of contract, if awarded.

Yours faithfully,

1.Authorized Signatory with Seal

_____
(Bidder)

Place:-

Date:-

****

PROFORMA - VIII

FORMAT FOR UNDERTAKING

(To be submitted on bidder's letter head)

Subject : IFB No. CIP4781P21 for 'Cathodic Protection System for Oil Pipelines in the State of Assam, West Bengal and Bihar'.

To:
M/s. OIL INDIA LIMITED,

CONTRACTS SECTION
PIPELINE DEPARTMENT, GUWAHATI
ASSAM, INDIA, PIN –781 171.

Sub: UNDERTAKING/DECLARATION BY THE BIDDER IN RESPECT OF TENDER NO. CIP4781P21

We _____ confirm that we are submitting our bid and quoting the SOR for the following spreads.

Firm/Bidder	Spreads	Quoted (YES/NO)	Bid Security Covered (YES/NO)
XXXX	SPREAD A		
	SPREAD B		
	SPREAD C		

Signature: _____

Name: _____

Designation:_____

Seal of the Bidder:

****

Form – 1

Details of Work Done
(For satisfying the Bid Evaluation Criteria)

Sl. No	Description of Work	Location of Work	Client Address and contact details including email	Value of Contract	Schedule Completion Date	Date of Actual Completion	Reasons for Delay, if any

Note:

1. Copies of Completion Certificates along with Work Orders/Contract Documents of the Works as per Bid Evaluation Criteria are to be enclosed.
2. Work completed earlier than the period indicated in Bid Evaluation Criteria need not be indicated here.
3. List of work, not as per qualifying criteria indicated in Bid Evaluation Criteria need not be indicated here.

SEAL AND SIGNATURE OF THE BIDDER

Form – 2
Present Commitments of the Bidder
(In case of Consortium each member to fill this form)

Sl. No	Description of Work	Client & Address	Value of Contract	Contract Period	Date of Commencement of Work	% of Completion as on date	Expected Date of Completion	Remarks

Note:

1. This list must be a full list of all type of works in hand.

SEAL AND SIGNATURE OF THE BIDDER

Form – 3 (Not Applicable)
Format for Bio Data of Key Personnel

Paste Photograph Here

1.	Name					
2.	DOB					
3.	Place of Birth					
4.	Nationality					
5.	Contact Details, Phone No., Email					
6.	Languages Known (Read, Write Speak)					
7.	Educational Qualifications.					
8.	Professional Qualifications.					
9.	Affiliations to Professional Bodies					
10.	Professional Experience					
11.	Organization	From	To	Years	Position	Responsibilities
	Computer & Software's Proficiency					
12.	Any Other information					

SEAL AND SIGNATURE OF THE BIDDER

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

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

Ref. No_____ Date _____

To,

GM PROJECTS
Oil India Limited, Pipeline Headquarters
Narangi, Guwahati

Sub: Undertaking of authenticity of information/documents submitted
Ref: Your tender No._____ Dated _____

Sir,

With reference to our quotation no. ..... dated..... against your above-referred tender, we hereby undertake that no fraudulent information/documents have been submitted by us.

We take full responsibility for the submission of authentic information/documents against the above cited bid.

We also agree that, during any stage of the tender/contract agreement, in case any of the information/documents submitted by us are found to be false/forged/fraudulent, OIL has right to reject our bid at any stage including forfeiture of our EMD and/or PBG and/or cancel the award of contract and/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)

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 any): USD 1.00 = INR .....

Place:
Date:

Seal:

Membership No.:
Registration Code:
UDIN No.:

Signature:

Applicable for Global Tenders.

Form – 4
CHECK LIST

Bidders are requested to duly fill in the checklist. This checklist gives only certain important items to facilitate the bidder to make sure that the necessary data/information as called for in the bid document has been submitted by them along with their offer. This, however, does not relieve the bidder of his responsibilities to make sure that his offer is otherwise complete in all respects.

Please ensure compliance and fill in relevant information against following points:

Sl. No	Description	Document Name	Pg. No of Document	Complied Yes/No
1	Bid document complete in all respects with pages in sequential order			
2	Confirm that the price bid has been duly filled in for each item and complete in all respects			
3	Confirm that annual financial reports for last three Financial years submitted with Technical Bid.			
4	Confirm that the certificate (as per Annexure AA) issued on letter head of the Chartered accountant Firm is enclosed with Technical Bid.			
5	Confirm that the copies of GST registration, PAN, PF, ESI, Certificate of incorporation from registrar of companies are submitted with the offer.			
6	Confirm that copies of documents establishing the bidder's experience & eligibility are enclosed with Technical Bid.			
7	Confirm that the duly filled in Form 1 & 2 are enclosed with technical bid.			
8	Confirm that the notarized Bio-Data/CV of the Key personnel viz: Project Manager, Design Manager, Resident Construction Manager, Planning Manager, Contracts Manager, Finance Manager are enclosed with Technical Bid	Not Applicable		
9	Confirm that the duly filled in Form 3 is enclosed with technical bid.	Not Applicable		

SEAL AND SIGNATURE OF THE BIDDER

COMMERCIAL COMPLIANCE SHEET

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

OFFER REF:			
NAME OF THE BIDDER:			
Srl. No.	**Particulars**	**Yes/No/Not Applicable**	**Remarks**
1	Whether bid submitted under Single Stage Two Bid System? i.e. Whether Price are uploaded in "Notes & Attachment" and technical unpriced bid submitted under "Technical Attachment"?		
2	Whether ORIGINAL Bid Bond (not copy of Bid Bond) submitted exactly as per format? If YES, provide details -		
	(a) EMD Type (Online/BG)		
	(b) Amount		
	(c) Name of issuing Bank		
	(d) Validity of Bid Bond		
	(e) Whether Bid Bond is valid till		
3	Whether ORIGINAL Bid Bond (not copy of Bid Bond) submitted exactly as per format? If NO, Provide the details in "Remarks Column". In case of MSE unit, **MSE certificate to be uploaded under "Technical Attachment" as a part of technical bid.**		
4	Whether offered firm prices?		
5	Whether quoted offer validity of 120 days from the date of final bid closing of the tender?		
6	Whether quoted Mobilization period as per tender?		
7	Quoted for Spread A , B & C?Please specify.		
8	Whether quoted as per tender (without any deviations)?		
9	Whether quoted any deviation?		
10	Whether deviation separately highlighted?		
11	Whether agreed all the tender clause?		
12	Whether Price Bid submitted as per Price Schedule		
13	Whether quoted for all the SOR items?		
14	Whether confirmed acceptance of tender Payment Terms?		
15	Whether confirmed to submit PBG as asked for in tender?		
16	Whether agreed to submit PBG within 30 days of placement of order?		
17			
18	Whether all applicable Taxes & Duties have been quoted?		
19	Whether all BRC/BEC clauses accepted?		

20	Whether MSME? If yes, whether documents enclosed as per tender.		
21	Whether Annual turnover & Net worth Certificate submitted?		
22	Whether Undertaking towards submission of authentic information/documents submitted.		
23	Whether the Digital signature used is Class III digital certificate (e-commerce application) with 'Certificate Type: **Organization Certificate'**		

AGREEMENT FORM

This Agreement is made on ____ day of _____ between Oil India Limited, a Government of India Enterprise, incorporated under the Companies Act 1956, having its registered office at Duliajan in the State of Assam, hereinafter called the "Company" which expression unless repugnant to the context shall include executors, administrators and assignees on the one part, and M/s _____ (Name and address of Contractor) hereinafter called the "Contractor" which expression unless repugnant to the context shall include executors, administrators and assignees on the other part,

WHEREAS the Company desires that Services _____ (brief description of services) should be provided by the Contractor as detailed hereinafter or as Company may requires;

WHEREAS, Contractor engaged themselves in the business of offering such services represents that they have adequate resources and equipment, material etc. in good working order and fully trained personnel capable of efficiently undertaking the operations and is ready, willing and able to carry out the said services for the Company as per Section-II attached herewith for this purpose; and

WHEREAS, Company had issued a firm Letter of Award No. _____ dated _____ based on Offer No. _____ dated _____ submitted by the Contractor against Company's IFB No. **CIP4781P21** .

WHEREAS, Contractor accepted the above Letter of Award vide--------- and submitted Performance Bank Guarantee No. ---------- Dated---------- valid till---------- issued by ----------(Bank's name with detailed address) for an amount of ----------. All these aforesaid documents shall be deemed to form and be read and construed as part of this agreement/contract. However, should there be any dispute arising out of interpretation of this contract in regard to the terms and conditions with those mentioned in Company's tender document and subsequent letters including the Letter of Intent and Contractor's offer and their subsequent letters, the terms and conditions attached hereto shall prevail. Changes, additions or deletions to the terms of the contract shall be authorized solely by an amendment to the contract executed in the same manner as this contract.

NOW WHEREAS, in consideration of the mutual covenants and agreements hereinafter contained, it is hereby agreed as follows -

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. In addition to documents herein above, the following Sections and Annexures attached herewith shall be deemed to form and be read and construed as part of this agreement viz.:

(a) Section-I indicating the General Conditions of this Contract;

(b) Section-II indicating the Terms of Reference;

(c) Section-III indicating the Special Conditions of Contract;

(d) Section-IV indicating the Schedule of Rates.

3. In consideration of the payments to be made by the Company to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Company to provide the Services and to remedy defects therein in conformity in all respect with the provisions of this Contract.

4. The Company hereby covenants to pay the Contractor in consideration of the provision of the Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS thereof, each party has executed this contract at Guwahati, Assam as of the date shown above.

Signed, Sealed and Delivered,

For and on behalf of Company (Oil India Limited)

for and on behalf of Contractor (M/s. _____)

Name:

Status:

In presence of

Name:

Status:

In presence of

1.	1.
2.	2.

REVAMP OF EXISTING CATHODIC PROTECTION SYSTEM, OIL PIPELINES - PTS HSE

Project : P.010416
Document No. : P.010416 D11031 005
Tender Document No.

Oil India Ltd, Assam
Assam | India

PUBLIC

28 July 2020

TENDER
HSE of Tender Document, Vol.I of I, Rev.00

OIL INDIA LIMITED

Pipeline Rehabilitation Project-Phase I of 575 Km

TABLE OF CONTENTS

1. INTRODUCTION

OIL INDIA LIMITED (OIL), is a Government of India "NAVARATNA" Category Enterprise, engaged in the business of Exploration, Production & Transportation of Crude Oil, Petroleum Products and Natural. Gas and Production of LPG in India with participating interest in E&P sector in various overseas projects.

The Pipeline Department of Oil India Limited deals with transportation of hydrocarbons to different refineries and thus operates a total of 1860 Km of Hydrocarbon pipelines, which comprises of 1206 Km of Crude oil trunk pipeline and 654 KM Product pipeline. For this purpose, it owns a 1157 Km long x 18 m/14 m wide Right-of-way [ROW] from Duliajan, Assam, India to Barauni, Bihar, India. This ROW has multiple hydrocarbon pipelines viz. crude, product & natural Gas, all protected from a common Impressed Current Cathodic Protection (ICCP) system owned and maintained by OIL. Out of these pipeline in the ROW, the 406 mm (16") and 355 mm (14") crude oil pipelines, totalling 1161 Km are more than 50 years old and 249 km of NSPL and another refinery delivery line of 5 Km are approx. 40 years old. Thus, a total of 1415 km of currently operating hydrocarbon pipelines are beyond or nearing completion of their design life.

In order to ensure continued safe and reliable operation of the pipelines and also to enhance the life of the pipeline system by another approx. 30 years, it is proposed to Rehabilitate 575 Km of the said 1415 Km pipelines in patches under Phase-I of the Project in the states of Assam, West Bengal and Bihar

2. PURPOSE

Purpose of this document is to spell out clear requirements of planning, execution, checking, auditing and review for execution and to communicate the minimum requirements that will be adhered to by CONTRACTOR and their Sub-Contractor for Pipeline Rehabilitation Project and to comply with Owner policies and HSE management system to achieve ultimate target "Goal ZERO"

CONTRACTOR shall be responsible for development of detailed HSE Plan covering all minimum requirements given in this document. HSE Plan by contractor will be reviewed and approved by Owner which will be audited for HSE implementation.

This document shall be considered as a main document for HSE Control as well as coordination of the Contractor's HSE Management.

Intended Audience

The target audience would be CONTRACTOR staff/ workers, visitors (Contractors, Subcontractor and Vendors) and other subcontractor as may be appointed directly by CONTRACTOR.

3. SCOPE AND FIELD OF APPLICATION

This PTS-HSE&S shall be applicable for Pipeline Rehabilitation Project from planning phase to commissioning phase. It is responsibility of the Contractor and their Subcontractor to implement the HSE Plan throughout the project.

Any deviation may lead to a penalty action.

4. DEFINITIONS

The following definitions and terms are applied in this document.

Accident

Undesired event giving rise to death, ill health, injury, damage or other loss.

Audit

Systematic examination to determine whether activities and related results conform to planned procedures and whether these procedures are implemented effectively and are suitable for achieving carried the organization's policy and objectives.

Confined Space

Any enclosed or partially enclosed space that is not primarily designed as a work area, and satisfies one or more of the following criteria:

- Has restricted access or egress,
- Is at atmospheric pressure during occupancy,
- Has the potential to contain a toxic or flammable atmosphere,
- Has the potential to be oxygen deficient or enriched,
- Or has the potential to create an engulfment situation,

A space that satisfies one or more of these criteria is a confined space. Examples include pits, trenches, pipes, sewers, tanks, silos, drains.

Environment

Surroundings in which an organization operates, including air, water, land natural resources, flora, fauna, humans, and their interrelation.

First Aid Cases

A minor work related injury that requires a single treatment by a qualified first aider or doctor and the injured person is able to return to work after treatment.

Medical Treatment Cases (MTC's)

A minor work related injury that requires hospital treatment by a Physician and which results in the injured person returning to work on the day of the accident or the first work day after the day of the accident.

HSE

Health, Safety Environment.

HSE Management

The part of the overall management system that includes organizational structures, planning activities, responsibilities, practices, processes and resources for developing, implementing, achieving, reviewing and maintaining the HSE policy.

Hazard

Source of situation with a potential for harm in terms of injury or ill health, damage to property, damage to the work place environment, or a combination of these:-

Hazard Identification

Process of recognizing that a hazard exists and defining its characteristics.

Hot Work

Any work involving the use of an ignition source such as welding, gas cutting and grinding.

Incident

Event that gave rise to an accident or had the potential to lead to an accident.

Note: An incident where no ill health, injury, damage, or other loss occurs is also referred to as a “Near-Miss”. The term “Incident” includes “Near-Misses”.

Lost Time Incident (LTI's)

Work related injuries that cause incapacity for work on the next day or shift. All accidents, which result in one or more day(s) lost time shall be regarded as a LTI.

Objectives

Overall HSE goal, arising from the HSE policy, that an organization sets itself to achieve, and which is quantified where practicable.

Note: Objectives must be as quantifiable as possible.

Occupational Health

Conditions and factors that affect the well-beings of employees, temporary works, CONTRACTOR and its subcontractor’s personnel, visitors and any other in the work place.

Occupational Illnesses

Work related abnormal condition or disorder, other than that resulting from a work injury caused by or mainly through exposure at work. Whether a case involves a work injury or occupational illness is determined by the nature of the original event or exposure that caused the case and not by the resulting condition. Work injuries are caused by a single event in the working environmental: cases resulting from anything other than a single event area considered occupational illnesses and are recordable as such.

Examples of occupational illness incidents would be where an employee was identified as suffering from noise induced hearing loss, or an employee's hearing re-assessment shows their condition has worsened comparatively per record after 6 monthly assessments.

Performances

Measurable results of the HSE Management System related to the Organization's control of health, safety and Security risk and environmental aspects, based on HSE policy and objectives.

Policy

Statement by the organization of its intentions and principles in relation to its overall HSE&S performance which provides a framework for action and for the setting of its HSE objectives and targets.

Safety

Freedom from unacceptable risk of harm

Target

Detailed performance requirement applicable to the organization or parts thereof, quantified where practicable, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

5. HSE&S MANAGEMENT SYSTEM REQUIREMENT

5.1. Policy Strategy and Goal

5.1.1. Policy Statement

All work under Pipeline Rehabilitation Project will be under Owner operation control and HSE Policy of Owner will be applicable for this project. All agencies including Contractor and their Sub Contractor shall honour and follow the same.

The Contractor shall have HSE policy statements that are the key document that define the management commitment towards HSE issues. The HSE policy shall be in compliance with the national/International standard and legal and other requirement of the country concern. The management policies shall be supported by an HSE management system structure comprising of supporting processes and procedures and plans, which clearly define activities and outline responsibilities of all personnel.

5.1.2. Strategy

Contractor and sub-contractor shall develop the strategy to achieve the highest possible health, safety and environmental standards throughout the project. Contractor and their Sub contractor shall be expected to follow the below mentioned strategy. The strategy is:

- Project Management and Supervision will be vetted to ensure their suitability and competence in HSE Management.
- The HSE Plan will be fully explained to all personnel and implemented accordingly.
- A message from the contractor and sub-contractor senior management to all new starters regarding the Projects HSE requirements.
- Responsibilities for HSE shall be clearly defined and personnel shall be held accountable for all HSE matters within their area of work and authority. Failure to observe HSE requirements will lead to disciplinary action/penalty.
- The Contractor shall have a Disciplinary Procedure for breach of HSE policies, procedures and practices which will be fully explained to all and vigorously administered by all levels of Management and Supervision.
- All levels of Management, including those of Sub-contractors shall have a Personal Safety commitment. The Contractor HSE Manager shall audit the implementation of these Personal Safety Commitment.
- All Contractor Personnel must acknowledge the HSE offier/Advisers position and authority through actively supporting and acting upon their decisions.
- Sub-contractors & Supervision shall be assessed on their performance and approach to HSE Management throughout the duration of the project. The Contractor Project Manager and HSE Manager/Adviser shall carry out this assessment.

- All Contractor Management, including those of Sub-contractors shall be seen to be visible and play an active role in HSE Management on site.
- All potential sub-contractors shall be required to complete an HSE questionnaire, including details of their HSE management system, which shall form part of the pre-award assessment, and where appropriate pre-award audits shall be conducted by the HSE department.

The Contractor HSE Manager will give a presentation on the agreed HSE Strategy to all Contractor Project Management

5.1.3. Goal

Key health, safety environmental and Security goals have been set to give drive and direction to owner activities and improvement plans. The Contractor and their Subcontractor shall adopt these goals as a minimum.

Key goals are:

- Minimize the impact on the environment.
- Eliminate, reduce or control risks to ALARP.
- Fully comply with applicable standards and legislation.
- Incur no incidents resulting from their activities.

5.2. Planning

5.2.1. HSE Plans

Prior to the commencement of contractual activity, the contractor shall submit a written Project-specific HSE plan to Owner for review and approval. Contractor shall prepare the Project HSE plan addressing their work activities, hazards and risk controls, training needs identification, audits and safety promotional activities. Purpose of the project HSE plan is to provide assurance of effective working of the interface between the HSE Management Systems of company and contractor's at specific project level.

Contractor shall prepare training plan addressing the number of training programs, training elements, number of training personnel to be trained. Contractor shall prepare Occupational Health plan addressing periodic medical examination, specific medical examination plan like crane operators medical fitness test etc.,

Method Statements:

Method statements shall be prepared for all critical jobs like excavation, hot works in hydrocarbon premises, work at height, heavy lifts, confined space entry, waste collection & disposal, or any non-routine works.

5.2.2. Hazard Identification, Risk Assessment and determining Control

5.2.2.1. GENERAL

The Contractor and their Subcontractor shall ensure that Hazard Identification and Risk Assessments are carried out to identify all the hazards and risks associated with work for the Project and that information is communicated to the staff and workers who are required to carry out the work. Upon commencement of employment on the Project, the Contractor and their sub-contractor shall ensure that all staff is issued with a pack of generic risk assessments covering the main activities, they will be requested to carry out during their employment. During the preparation of the Work the Contractor shall identify whether the activity can be adequately controlled by the generic risk assessment or whether a specific risk assessment is required. Where task specific risk assessments are identified, it shall be the responsibility of Contractor to produce the task risk assessment (HAZAN) and ensure that it is issued with the relevant Work Pack/Method Statement prior to the commencement of activities. Commissioning Procedures and Risk Assessments shall be prepared by the Contractor and subject to review by Owner prior to commissioning activities being allowed to proceed, a Permit to Work request shall be submitted. This shall be accompanied by a Hazard analysis / Safety Checklist which will determine the hazards and risks associated with the activity and controls required to ensure the effective and safe application of the activity / process at the time. The Hazard analysis / Safety Checklist shall be used in conjunction with the information contained within the Material Safety Data Sheets (MSDS) Commissioning Procedures and Commissioning Risk Assessments. A safety talk (documented) discussing the Hazard identification and risk assessment shall be given by the Contractor to each person prior to starting of work on each shift.

5.2.2.2. PROJECT EXECUTION PHASE

Prior to commencement of work, it is absolutely necessary that the Contractor and their subcontractor identify the possible hazards associated with its site activities. Owner view and guidance can be taken in identifying possible hazardous activities.

Depending on nature and possible harmful impact of the risk, control measures are decided to eliminate or mitigate the impact of the risk with within level.

It is the responsibility of the contractor and their sub-contractor to perform risk analysis for their activities as per their own standard in line with the Owner standard.

The procedure for hazard identification and risk assessment shall takes into account:

- Routine and non-routine activities.
- Activities of all persons having access to the work place (including contractors and visitors).
- Human behaviour, capabilities and other human factors.
- Identified hazards originating outside the work place capable of adversely affecting the health and safety of persons under the control of the organization within the work place.
- Hazards created within the vicinity of the work place by work-related activities under the control of the organization.
- Infrastructure, equipment and materials at the work place, whether provided by the organization or others.
- Changes or proposed changes in the organization, its activities or materials.
- Modification to HSE management system, including temporary changes, and their impacts on operations, processes, and activities.
- Any applicable legal obligations relating to risk assessment and implementation of necessary controls.
- The design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

5.2.2.3. OFFICE ACTIVITIES

Possible hazard associated with the office/ project office activities shall be identified. Depending on nature and possible harmful impact of the risk, control measures are decided to eliminate or mitigate the impact of the risk within level. The risk assessment shall be reviewed periodically. It is the responsibility of the HSE Manager or nominated person to perform the risk analysis.

5.2.2.4. INTERFERENCE RISK PREVENTION PLAN

The parties (Contractors and Sub Contractors) should jointly establish a written Interference Risk Prevention Plan defining the measures taken by each company with a view to preventing risks of interference between activities, installations and equipment, as well as the measures taken to ensure compliance with the Life-Saving Rules.

5.2.2.5. HIERARCHY OF CONTROL

While determining the control measures, or considering to the existing control, consideration shall be given to reducing the risks according to the following hierarchy:

- Elimination.
- Substitution.
- Engineering control.
- Signage / warning and / or administrative controls.
- Personal Protective Equipment.

5.2.3. Legal and Other requirement

Contractor shall identify the applicable legal and other requirement and shall be evaluated periodically. Following list outlines the minimum applicable Indian regulations related to Safety and Environment that will apply throughout the Project and an update and status monitoring register shall be maintained.

Environment:

- The Water (Prevention & Control of Pollution) Act 1974 and Rules,
- The Air (Prevention & Control of Pollution) Act, 1981 and Rules,
- Environment (Protection) Act, 1986 amended 1991 and Environment Protection Rules,
- The Hazardous Wastes (Mgt. & Handling) Rules, 1989 and amendments,
- Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989 and amendments,
- Noise (Pollution & Control) rules 2000 and amendments,
- Ground Water (Regulation, development and Management) Act 2005,

Safety:

- OISD Guidelines,
- The Petroleum Act 1934 and Rules 1976,
- Gas Cylinders Rules, 1981,
- Motor Vehicles Act 1988 and Rules,
- Explosives Act and Rules,
- Indian Electricity Act and Rules,
- The Public Liability Insurance Act, 1991 and Rules,
- National Building and Other Construction Act 1996 and Rule 1998 and amendments,

5.3. Objective/Target

5.3.1. Objective

Project has the following key objectives:

- Promote Health, Safety & Environmental management as a company priority.
- Consolidate and improve the health, safety and environmental performance.
- Develop a culture of reporting without fear of blame.
- Actively involve everyone in providing a safe, healthy and secure environment.
- Take ownership of HSE responsibilities.

The Contractor shall adopt these objectives in their HSE&S plan

5.3.2. Target

The following minimum HSE target shall be followed:

Indicator	Target
Fatality	Zero
Frequency Rate	Zero
Severity Rate	Zero

Environmental Damage	Zero
Occupational Illness	Zero
Induction, Training, Inspection, Audit	As per plan
Legal compliance	100%

Contractor shall submit the Weekly/ Monthly HSE Report to the Owner.

5.4. Implementation and Operation

5.4.1. Organization

The Contractor HSE organization chart with CV of key personnel assigned for the project shall be submitted to Owner for approval

5.4.2. Resources

Contractor and their Subcontractor shall provide adequate resources to ensure proper supervision skills and competent manpower without overburdening the staff.

The foundations of health, safety, environmental control rely heavily on human factors for their success. Contractor shall ensure that systems, which operate to manage the human element in the company, have HSES considerations built into them. The following five "Human Resources" elements shall be addressed in the Contractor's management system:

- Recruitment of competent personnel,
- Training of personnel,
- Medical fitness,
- Assessment of attitudes to Health, Safety, Environmental and Security matters,
- Disciplinary measures associated with infringement of HSE standards,

Competence of project personnel can affect the health, safety, environmental and wellbeing of themselves, co-workers and the community. The competence and fitness of personnel shall be assured in three ways:

- By ensuring that those employees who have been hired to carry out a particular job are competent to do so and possess the necessary qualification and references as validation.
- By ensuring that employees are assessed, trained and supervised in order to become and remain competent.
- By ensuring that employees are medically fit to do their work.

5.4.3. HSE Resources

- Contractor shall ensure adequate HSE resources are provided to execute the job
- Typically the requirement of HSE personnel for the site is as follows :

Employee Strength (Including sub-contractor)	Minimum Strength of HSE personnel required
No. of Employees < or = 50	1 no. HSE Supervisor with background and knowledge of HSE issues
No. of Employees 51 – 100	2 no. HSE Supervisor with at least one supervisor with environmental management background / experience
No. of Employees 101 – 500	1 no. HSE Supervisor for every 50 employees + 1 no. HSE Engineer

The minimum standard for Contractor HSE personnel should be:

HSE Supervisor:

- Should be a Diploma holder in Engineering (3 years college course graduate with Chemical / Mechanical / Electrical / Civil) or Science Graduate (Chemistry / Physics / Mathematics) with 3 years' experience as supervisor in Oil & Gas / Refinery / Petrochemicals or Bulk Chemical Manufacturing companies or Large Construction sector. Degree / Diploma Correspondence course studies are not accepted. He / she must be able to communicate, write and read English. And

- Safety Diploma from any recognized Institute.

HSE Engineer:

- Should be a graduate Engineer (Chemical / Mechanical / Electrical / Civil) or a Science Graduate from a recognized university with more than 5 years' experience as supervisor / safety in-charge in Oil & Gas / Refinery / Petrochemical / Bulk Chemicals Industry / large construction sector. Correspondence course studies are not accepted and
- Diploma or PG diploma in Safety from any recognized institute. He / she must possess site safety leadership attributes.
- Contractor shall submit scrutinized CVs as per requirement prior to the job. Owner HSE shall evaluate the CVs and conduct personal interview of the proposed candidates. Only Owner approved Contractor HSE personnel are permitted to work at site. In case of replacement of approved Contractor HSE Personnel, the contractor should plan in advance and follow the above procedure.

5.5. Roles, Responsibility, Authority and Accountability

Contractor and their Sub contractor shall define the Roles, Responsibility, Authority and Accountability of an individual associated with this project in their HSE Plan related to Health Safety Environment and Security. The more defined minimum responsibilities of key personnel are highlighted as below.

5.5.1. Project Manager (PM)

The Contractor Project Manager shall: -

- Ensure the Contractor Project HSE Plan is implemented throughout the project
- Monitor progress towards achieving the objectives and be responsible for making arrangements to amend project HSE Plan to achieve these objectives.
- Satisfy himself / herself as to the competence of all of his project staff.

- Arrange for the pre-planning and preparation of work procedures where required, including the involvement of Sub-contractors.
- He shall ensure that the necessary resources are available on time for the effective implementation & supervision
- Ensure that Contractor systems are in place whereby work related hazards are identified, evaluated and controlled prior to task commencement.
- Ensure that all Sub-contractors meet their obligations under current legislation, codes of practice, Owner HSE Policy or procedures and all conditions set out in contractual documents. He shall also ensure that copies of the Sub-contractors HSE Policy statement, means of implementation, employer's liability insurance certificate and the name of the person responsible for HSE on the contract have been received and are available.
- Keep abreast of current relevant legislation, codes of practice and industry standards.
- Carry out monthly HSE inspections along with the Project HSE Manager/Adviser, Construction Engineers and the Owner.
- With the assistance of the HSE Manager/Adviser allocated to the project receive, collate and analyse HSE documentation which is presented weekly in the standard format.
- Attend regular meetings with his Company counterpart (and Subcontractors representative where relevant) to promote Accident Prevention and Safe Working practices.
- Initiate and assist in the investigation of any accident / incident or near miss and make any arrangements necessary to allow the project / company to fulfil its statutory obligations.

5.5.2. Construction Manager

The Contractor Construction Manager shall:-

- Assist the Project Manager, Integration Manager and Construction Engineers in promoting HSE and providing a safe working environment for all personnel involved in this Project.
- Assist in the implementation of the Contractor Project HSE Plan.
- Chair the monthly health, safety and environmental committee meeting involving management, supervision, workforce, safety representatives and sub-contractors.

- Participate in health, safety and environmental audits and inspections
- Monitor progress towards achieving the objectives and be responsible for making arrangements to amend project HSE Plan to achieve these objectives.
- Satisfy himself/herself as to the competence of his supervisory staff.
- Arrange for the pre-planning and preparation of work procedures where required, including the involvement of Sub-contractors.
- Ensure that systems are in place whereby work related hazards are identified, evaluated and controlled prior to task commencement
- Communicate HSE requirements to all the disciplines and involved parties.
- Monitor, Control & Report all construction activities and ensure compliance to governing Authorities of India, State, Municipal, Local or other regulations applicable at the location of work.
- View Understand, adopt and implement Permit to Work system and implement all control majors protectively.
- Update the HSE Plan and periodically to incorporate recommendations, improvements, any statutory/ legal requirement and communicate the same to all concern for compliance.
- Coordinate effectively with the company for managing, implementing, monitoring, controlling & reporting HSE Plan requirements.

5.5.3. Contractor Construction Engineer

The Contractor Engineers shall:-

- Familiarise himself / herself with the Project HSE Plan requirements.
- Co-operate and assist the Project Manager/Construction Manager in achieving the project objectives.
- Ensure that safe working procedures and practices are implemented by those under his control and ensure that sufficient plant and equipment is made available and properly maintained to enable any operation to be carried out safely.
- Ensure that adequate welfare facilities are provided and maintained as required by legislation.
- Ensure that all statutory, project forms and registers are maintained.
- Acquaint himself / herself on the competency of site personnel to carry out their duties.

- Make himself / herself aware of existing legislation, codes of practices and project HSE procedures which relate to the operation and consult with Project HSE Adviser in respect of any HSE&S problem.
- Assist in the investigation of any accident / incident or near miss and make any arrangements necessary to allow the project / company to fulfil its statutory obligations.
- Be part of the Project HSE Team.
- Assist, where necessary with the monthly HSE inspections with the Project HSE Manager/ Adviser, Project Manager and Owner HSE Representative.

5.5.4. Contractor Project HSE Manager

The Contractor Project HSE Manager shall: -

- Assist and advise the Project Manager and Supervisors in meeting the project objectives.
- Ensure that all project personnel are conversant with their obligations relating to HSE in accordance with both the project HSE plan and the requirements of the Owner and current legislation.
- Make himself / herself aware of all current Occupational Health, Safety and Environmental Legislation, codes of practice and procedures.
- Monitor compliance with the Project Health, Safety and Environmental Plan and Owner HSE&S procedures, make regular site inspections and prepare detailed reports of site performance. Copies of such reports and inspections will be sent to Project Manager.
- Establish a working relationship with Owner HSE group and their services and facilities when required.
- Establish a working relationship with supervisors/foremen and where appropriate consult with them on aspects of HSE.
- Liaise with Health, Safety and Environmental enforcing authorities and local fire officers, to ensure compliance with all legislation and approved codes of practice.
- Ensure that all statutory reports are compiled and forwarded to the appropriate departments.
- Monitor, in line with the HSE Management System / Project HSE Plan - Audit Schedule, the HSE performance of the Company during the tenure of the project.

- Where appropriate identify, in conjunction with the Project Manager / Training Department, any necessary HSE Training and if required assist the Training Department with the development of training programme to meet the requirements of the project.
- When required review and update the Project Health, Safety & Environmental Plan.
- Examine trends and propose actions to prevent recurrence of incidents, accidents & near misses.
- Advise Project Management on current and future legislation affecting work done under the contract.
- Liaise with Company and Sub-contractors counterparts and attend meetings as required.
- Attend regular HSE meetings with Project Management and other interested parties with respect to safe working by Company, Contractors and Sub-contractors engaged on the project.
- Evaluate potential hazards on new types of equipment or processes and assist in the preparation and implementation of new policies and procedures. Monitor the site and report HSE violations or unsafe working conditions immediately to supervisors, Project Manager and Operations Manager, where necessary.
- Monitoring and reviewing quality of JSA's/Risk Assessments for quality and compliance.
- Collate and analyse all accident, incident and near miss reports and other HSE information relating to Company employees, Contractors and Sub-contractors on the project.
- Highlight HSE issues, make recommendations and/or issue instructions (based on reports, audits and accident analysis) which will be implemented in order that HSE performance may be enhanced.
- Co-ordinate and ensure implantation of Company security & gate pass requirements.
- Conduct & coordinate all HSE communication activities at site level.
- Coordinate and ensure carrying out of initial inspection & periodic inspection of all the equipment, machineries, tools, tackles and generate / maintain records/ reports.
- Ensure availability of quality PPEs in sufficient quantity. And maintain records of the same. .

- Coordinate & ensure identification of Permit to Work requirements, plan and apply for the permits in advance.
- Drive the behavioural based observation program throughout the project.

5.5.5. Contractor Supervisors

The Contractor Supervisors in charge of particular operations have the day to day responsibility for HSE within their area of operations. They shall:-

- Familiarise themselves fully with the Contractor Project HSE Plan and relevant Owner HSE Policies and procedures.
- Carry out risk assessments for the work activities they supervise.
- Carry out pre-job inspections prior to the commencement of work.
- Conduct tool box talk briefings with their workforce and keep a register of attendees.
- Ensure the provision of special equipment and techniques where appropriate for their work activities.
- Ensure that personnel under their Supervision are competent and adequately trained in the use of equipment and machinery which they may be required to use and they are fully aware of any associated or potential hazards.
- Ensure that all personnel wear the appropriate personal protective equipment in accordance with Owner policy and statutory requirements.
- Ensure that potential HSE hazards are reported and appropriate arrangements made to deal with them.
- Ensure Good Housekeeping is maintained at all worksites and that machinery / equipment is correctly maintained and inspected to the required standard.
- Consult with Contractor Management with regard to implementation of the Owner HSE Policy, HSE Legislation & Safe systems of work, etc.
- Ensure all personnel are aware of and understand all actions necessary in the event of emergencies.
- Bring to the attention of the Owner HSE Representative any contentious matter which cannot be resolved at HSE Meetings or items that may require action by Project Management.

5.5.6. Contractor Employees

All employees shall:-

- Take reasonable care for the Health and Safety of themselves and other persons who may be affected by their acts or omissions at work.
- Co-operate with the Company and with fellow employees in order to enable them to comply with all relevant HSE legislation.
- Not interfere with any item of equipment or machinery for which they are not duly authorised to operate, maintain or otherwise work upon.
- Wear the required safety clothing at all times or safety equipment where necessary
- Observe all signs and notices, report all hazards they observe.
- Acquaint themselves with all actions necessary in the event of site emergencies or alerts.
- Comply with all legislative and site HSE instructions pertaining to their area of employment.
- Comply with and participate in current and future HSE initiatives which are or may be implemented by their Company or Owner.
- Work safely and in a manner which does not involve "short cuts."
- Report all accidents, incidents and near misses in which they have been involved or have witnessed.

5.6. Training and awareness

As part of a pro-active approach towards maintaining the highest level of HSE performance, the Contractor shall develop and implement procedures and training programmes designed to meet changes in legislation, procedures, work practices and new technology for all personnel and in particular new personnel, or personnel transferred to new assignment. This ensures that all personnel are suitably qualified in terms of education, knowledge, skills, capabilities and fitness as appropriate to their positions.

All training information, records and certificates shall be properly documented, kept and made available for verification

A training matrix shall be developed for all levels of employee to ensure that the minimum levels of HSE training are identified and personnel are trained and competent to do their job. Such training shall include but not be limited to use of grinders, PPE, blasting and cleaning equipment, manual handling, lifting operations and welding.

Additional training may be necessary as site conditions change or new HSE procedures are introduced.

Contractor and their subcontractor personnel shall participate in any additional training, which may be provided or organized by the Owner.

5.6.1. Supervisory Training

A supervisory training course shall be designed to provide a positive introduction and appropriate knowledge to enable supervisory staff to provide leadership and contribute to effective safety management throughout all phases of the project. There should be a strong emphasis on behavioural safety in the course. New Supervisors shall commence training at the earliest opportunity once their appointment has been confirmed.

The aims and objectives of the training are to provide all supervisory staff with skills and knowledge to establish a safe system of work within their area of responsibility.

5.6.2. Job Safety Analysis/Risk Assessment Training

The Contractor and their Sub contractor shall ensure that, personnel assigned to the Project receive training in Risk Assessment / Job Safety Analysis.

The training shall provide the basic knowledge of hazard identification and will take for risk reduction.

5.6.3. Induction Training

The Contractor shall ensure that all personnel (including Contractor, staff, manual workforce, Sub-contractors, vendors and commissioning personnel) involved in the construction and commissioning of the project will attend an Induction course prior to commencement of work and record shall be maintained.

Contractor's Project HSE Manager shall conduct the inductions. Language will be English / Hindi and regional (depending on audience).

The induction course may be tailored to suit the current status of the project, and will always cover the main course headings shown below:

- Welcome and Introduction
- Driving and Operating
- Equipment on Site
- Entering the Site
- Personal Protective Equipment
- Security and Awareness
- Injuries and Emergencies
- Policy, Law and Information
- Use of Equipment
- Manual Handling
- Safety Systems
- Safety in Practice
- Hazards and Detection
- Safety in an Emergency
- Environmental Care
- Systems Implementation
- Health & Hygiene Rules
- Disease prevention
- Security System

After the induction there will be a short assessment and the results will be communicated within 1 working day. If a participant fails they must re-attend the safety induction on next day.

As a part of the induction process all personnel working on the site will be given a familiarization tour by their supervisor.

In certain circumstances such as short term visitors or day visitors to the project, the requirement to attend an interactive induction may be replaced with a requirement for the visitor / vendor to attend a short induction which includes details of what to do in the event of emergency, minimum standards of PPE etc. In such circumstances, the visitors / vendors must be accompanied at all times when in construction areas and must not conduct any physical hands-on work. If there is any doubt regarding the requirements for inductions for visitors, guidance should be sought from the Owner HSE Department.

As soon as it is practicable, orientation signs shall be erected on the site to help personnel easily find their way around.

5.6.4. Tool Box Talks

5.6.4.1. DAILY TOOL BOX TALKS

Objective & Agenda:

To ensure adequate & correct communication of work planned, location of work, hazard involved and control required to be implemented for safe execution of particular activities to all involved. Prime objective is to embark on work with clear understanding and with clear identification of all hazard and control plan in place.

Responsibility to deliver daily tool box talk : Contractor and their Subcontractor HSE Manager / Site Supervisor

Site Supervisor for specific work location shall conduct a tool box at the commencement of work on daily basis. If different team is working in different area, separate tool box talk covering location and hazard involved shall be carried out.

Each toolbox meeting shall cover the following agenda:

- Discuss safety issues from the previous day.
- Brief description of activities planned for the day & associated hazard.
- Information & resources required to put controls in place.
- Location specific hazard and instructions.
- Requirement of PPEs.

It is responsibility of supervisor to convey PPE requirement to all workers and ensure compliance to the same and shall be checked during tool box talk before embarking on work.

Tool box talk report shall be prepared and kept at site within one hour of talk and it must be signed by all attendee to ensure participation of all in the talk.

5.6.4.2. TEAM TALKS

Responsibility of Team Talk: CONTRACTOR HSE Manager

Team talks to be given prior to start of any new activity. It is a discussion with the work party about the activity to be carried out and should include minimum of the following:-

- Details of the activity and hazards that may arise.
- Details of Permit to Work (PTW).
- Work Method/Job Hazard Analysis (JHA)/Risk Assessment.
- Personnel Protective Equipment requirements.
- Equipment and Tools to be used.
- Emergency Response.
- Standby rescue equipment (fire extinguisher, emergency eye wash / shower...)
- Feedback from the working party about the method of work.
- Feedback of the safety learning points from the previous day.

Depending on the size of the work group Mass Tool Box Talk meeting and Team talk can be combined into one.

Record note or report of the above meetings shall be submitted to Owner within 3 working days.

5.7. Communication, participation and Consultation

5.7.1. Internal Communications

- HSE Inductions/ Training Sessions.
- Risk Assessment/JSA.
- Internal Correspondence.
- Internal coordination meetings.
- Monthly HSE reports.
- Toolbox meetings/Pre-Start briefings.
- Project HSE Committees.

- Office HSE Meetings.
- Site Management Inspections / Walks.
- HSE alerts.

5.7.2. External Communications

- Notification of government and statutory authorities.
- Company Correspondence.
- Second and Third Party Audits.
- Client Performance Surveys.
- Public and Industry Exhibitions/ Presentations.
- Outside publications.

5.7.3. Participation and consultation

The participation of employees shall be ensured by their:

- Appropriate involvement in hazard identification, risk assessments and determination of controls;
- Appropriate involvement in incident investigation;
- Involvement in the development and review of HSE policies and objectives;
- Incident investigation and presentation of fact finding and preventive actions initiated to be discussed in MOM with a copy to Owner HSE Manager.
- Employee shall be informed about their participation arrangements, including who is their representative(s) on HSE matters.

a. It will be the responsibility of contractor to involve their subcontractor and worker.

5.8. Documentation and Record

5.8.1. Documentation

The HSE management system documentation shall include:

- HSE Policy and objective.
- HSE Plan/Manual.
- Hazard Identification and Risk assessment & Job Safety Analysis.

- Environmental Aspect & Impact Analysis.
- Emergency Management Plan.
- Journey Management Plan.
- Environmental Management Plan.
- Security Management Plan
- Legal and Other Requirement guidelines or other document as required.

5.8.2. Records

- HSE Induction Record.
- HSE Training Record.
- Tool Box Talks Record.
- HSE Inspection Report.
- HSE Audit Report.
- HSE Meeting Report.
- Test Certificates of Lifting tools and Tackles.
- Fitness certificate of vehicles and equipment.
- Vehicle paper.
- Health Check-up Record.
- Environmental Monitoring Report.
- HSE performance Report.
- Incident/Accident Record.
- First Aid Case/Medical case record or other record as required

5.9. General Promotions

The Contractor shall implement forums, meetings and communication structures to provide the knowledge and awareness which promote a strong Health, Safety, Environmental culture.

The Contractor may utilize incentive schemes, periodicals, posters, bulletins, mail shots and promotions as a constant reminder of the commitment to health, safety and environmental issues.

5.9.1. Sub-contractors

All Proposed Sub-contractors shall be vetted for their suitability and competence. The results of this vetting process shall be evaluated by the Project Manager / HSE Manager and HSE Adviser and an HSE audit shall be carried out prior to contract award.

All Sub-contractors shall demonstrate the suitability of their Management and Supervision in managing HSE during the Project. On Site Sub-contractors shall be assessed on the performance and approach to health, safety and environmental management throughout the duration of the project.

All Project Management, including those of Sub-contractors shall play an active role in HSE Management on site. Off Site Sub-Contractors premises surveillance by the HSE Department shall be conducted at regular intervals during the project, in accordance with an agreed schedule or when there is concern over their HSE performance / commitment.

Owner has the right of access at all reasonable times. All findings shall be corrected by the Contractor and their Subcontractor at their own cost.

6. OPERATION CONTROL

6.1. HSE Meetings

Contractor HSE meetings will be held on a monthly basis as a minimum and will include a review of the Project Weekly Reports, previous minutes and action points. Site level HSE implementation & control issues for each area / block, Safety learning points, HSE concerns, coordination requirements arising from field audit or inspections...etc. shall also be discussed. Attendees will include:-

- Project Manager or Construction Manager.
- HSE Manager /Advisor
- Sub-contractors Site Management.
- Site Supervisor.
- Commissioning Representative.
- Owner Representative Staff.

- Worker representative

The Project Manager or Construction Manager shall chair the meeting, which shall be minuted. Action points will be noted on the standard format. Persons will be nominated to carry out actions and a target completion date will be set. The Project Manager shall ensure that those personnel nominated to carry out an action are given the resources necessary to carry out the action and that they are carried out within the agreed time scale.

6.2. HSE Forums

Contractor shall hold an HSE Forum at quarterly intervals to which Safety Representatives are invited together with Supervision, workforce and Owner representative with a view to joint problem solving and the development of a constructive working relationship to enhance and promote HSE on the Project.

6.3. Permit to work

The permit-to-work system is an administrative control and communication system designed to clearly identify the various scopes of work to be carried out on the Project site and their associated hazards to prevent accidents, fire and equipment damage.

The permit-to-work system of Contractor shall be applicable for the construction activities as per the approved HSE Plan of the project.

When working at Owner Facility contractor shall adopt the Owner Permit to Work System.

The Contractor Project Site In-charge has the overall responsibility to ensure that the permit-to-work system is practiced in accordance with its purpose and intent and to review the system periodically to assess the effectiveness of the system and make necessary adjustments to improve the system.

During commencement of equipment testing and commissioning activities the Owner Permit to Work procedure shall be used.

Personnel involved in the administration and operation of the permit to work system shall receive training and information appropriate to their responsibilities and duties as set out in the permit to work procedure. To ensure that conflicting/simultaneous operations are identified, daily permit co-ordinator's meetings will be held with all relevant area authorities.

Supervisors shall also ensure that pre-job inspections of worksites are undertaken and Task Risk Assessments carried out prior to work being commenced. Job orientated tool box talk briefings shall be utilised as a further aid to ensure safe working systems are in use during the project and shall be conducted and recorded by the worksite Supervision whenever a permit is initiated.

Permit to Work checks and regular site monitoring shall be undertaken during the validity period of the permit. Employees shall be encouraged to provide positive feedback and comment on the Permit to Work System and working practices at HSE Meetings and tool box talk HSE briefings. Compliance with Permit to Work procedures shall form part of this Project HSE Plan / HSE Management System audit and inspection program.

6.3.1. Types of permits

- Hot work permit.
- Height work permit.
- Confined Space work Permit.
- Excavation work permit.
- Electrical Work Permit.
- Lifting Permit

6.3.2. Permit Application

The Site Engineer who is responsible for the inspection work which requires a work permit will fill out the APPLICATION part of the permit from stating the scope of work, work location, etc. Prior discussion with the site engineers who are performing the inspection work must be held to ensure that they understand the job scope and safety precautions.

6.3.3. Permit Approval

The Permit Approving Authority (may be Site in Charge or another person nominated by Site In charge) will review the application with the site engineer before issuing the permit. If the work has a potential to expose hazards in the Project site such as welding job, the Permit Approving Authority shall specify all necessary safety precautions to be taken and visit at the work site to ensure that all such requirements are complied with before issuing the permit.

6.3.4. Confirmation and Acceptance of Permit Conditions

The Permit applicant and the Approving Authority must arrange for a site visit to confirm that all preparation works are completed and the permit conditions have been maintained. General conditions such as adequate emergency escape route, Fire fighting equipment, personal protective equipment etc. shall be confirmed.

6.3.5. Job Completion and Acceptance

It is essential that when the job is completed, the permit applicant must sign off the work permit and returns it to the Approving Authority indicating whether the job has been completed safely & satisfactorily.

6.3.6. Permit Validity

Work Permits should only be valid for a specific period of time as mentioned in permit and in all cases be expired at the end of one working shift from the time of approval. The expired Work Permit can only be extended if the safety conditions are maintained through physical confirmation.

Work Permits to be allowed to run up to six days so long as they are closed on last working week day whichever is earlier.

6.3.7. Permit Suspension and Cancellation

If there is an emergency such as fire outbreak in the site, all work permits issued will be automatically suspended and work must be stopped until clearance is given by the permit approving authority before work can be resumed. If the safety conditions established have changed due to the emergency, the work permit should be treated null and void and a fresh one should be re-issued if work is to be resumed after the emergency is called off.

Approving authority, HSE Manager or any responsible person can suspend / cancel the permit if it is perceived to be in violation with the conditions stipulated in the permit. A fresh permit has be issued before work can resume again with due precautions.

6.4. Hazardous Material Safety Data Sheet (MSDS)

The identification of hazardous substances and control of risks must be comprehensive and systematic. This starts with how containers of chemicals are received and distributed throughout the facility and the maintenance of MSDS records. Material Safety Data Sheets (MSDS) shall be available and maintained for all chemicals used in the workplace. Employees should be trained on their use and MSDS shall be readily available in the work area. It is responsibility of store in charge or designated personnel to ensure obtaining and timely communication of information about MSDS to all personnel and safe keeping of all material including segregation and labelling as per guidelines and recommendation of MSDS.

6.5. Personal Protective Equipment (PPE)

Mandatory PPE for site and Temporary site, allocation of PPE should be based on the risk assessments related to the particular tasks to be undertaken.

6.5.1. Mandatory PPE

The Contractor and their Subcontractor shall observe and comply with all legislative safety requirements (The Building and Other Construction Workers Rules 1998 and BIS standards listed) regarding the issue and type of personal protective equipment and shall ensure that such equipment is issued to personnel. The equipment and clothing shall be of a type suitable for working conditions and appropriate to the respective trades and shall be of a standard which complies with legislative requirements. All PPE will meet the IS or BS or EN standards. In addition to the mandatory PPE for site, allocation of PPE shall be based on the risk assessments related to the particular tasks to be undertaken.

Employees required to work on site will be provided with: -

- Safety Helmets.
- Hearing Protection.

- Safety Boots.
- Overalls long sleeves fire resistant.
- Safety Glasses.
- Gloves.

In addition to mandatory PPE, other PPE specific to task or hazard is required to be provided.

It should also be noted that loose clothing, long hair, necklaces rings and safety harness with unattached lanyard, should not be worn around rotating machinery or energized conductors.

The following equipment shall also be available on site as required.

- Safety Harness with dual shock.
- Welding Screens.
- Protective Leathers absorber lanyards.
- Safety Goggles.
- Safety Visors.
- Burning Goggles.
- Specialist Gloves.
- Welders helmet-hood.
- Knee Pads.
- Respiratory Protective Equipment.
- Compressed Air Fed Screens.
- Battery Powered Air Fed.
- Screens.
- Prescription Safety Glasses or
- Inertia Reels.
- Oversize safety glasses.

Respiratory PPE Fitness: Personnel required to wear respiratory protection on a regular basis (i.e. insulation workers) are to be certified medically fit to wear the equipment by the CONTRACTOR Managing Physician

Where necessary, and only when other control measures are deemed inadequate, employees shall be provided with respiratory protective equipment of an approved type.

The selection of the appropriate type will be made after consultation with the Health, Safety & Environmental Department. The Health, Safety & Environmental Department will make recommendations for the Selection, Use and Maintenance of Respiratory Protective Equipment.

Where required, HSE personnel will provide training & instruction in the use of Respiratory Protective Equipment (RPE) to supervisors and operatives.

The use of self-contained or airline fed respirators may be considered for use by suitably trained personnel for working within vessels or other confined spaces where impure air or air deficient in oxygen may be present.

All visitors must meet the minimum requirement of approved safety helmet, boots, gloves, eye protection, high visibility waist coat, hearing protection and gloves if proceeding onto the work site. It is the responsibility of personnel arranging for visitors to attend site to notify them of this requirement, and to ensure that they comply with the requirement.

The Contractor shall ensure that the issue, maintenance and inspection of all PPE equipment, where applicable is in accordance with the relevant legislation requirements.

All Supervisors and members of the workforce shall receive training / instruction in the use of Protective Equipment which they may be required to use in pursuance of work related activities or for Emergency Purposes.

The nature and detail of such training shall be appropriate to the type of equipment, the nature of the perceived hazard and the HSE Responsibilities of the person involved.

All PPE shall meet Owner HSE site management's approval prior to usage.

Owner shall have the right to instruct any contractor’s personnel not using the designated PPE to leave the site immediately. No claims from Contractor will be accepted by company if this action is taken

6.6. Child Labour

The CONTRACTOR shall comply with the Owner policy on child labour and accordingly, ensure that neither it or its agents nor its Sub-Contractors shall employ or utilize the services of a person below the age of eighteen (18) years in the provision of the Services. Proof of age to be furnished along with application for entry permission

6.7. Drugs and Alcohol

It is strictly forbidden to bring in / work under the influence of alcoholic drinks or illegal drugs in site, office and company premises. Random testing will be carried out without any advanced notice.

The CONTRACTOR shall ensure that none of its personnel including those of its Sub-Contractors shall perform any part of the Services while under the influence of alcohol or any illegal drug or substance.

6.8. Horseplay and Fighting

Horseplay and Fighting are defined as physical striking or unauthorized manhandling of personnel.

As a GENERAL POLICY, fighting at site or at yard or within offices is an offence that shall not be condoned. On reporting /observing such act, CONTRACTOR shall take immediate appropriate action and report to Owner.

6.9. Smoking Policy

Smoking is not allowed in the area under operational control including vehicle. The Contractor shall have a formal policy relating to smoking in the interests of the health and safety of its employees. Failure to comply shall result in disciplinary action.

6.10. Fire Arms

Firearms and explosives of any description are not permitted at site or offices. Failure to comply shall result in disciplinary action.

6.11. Sexual Misconduct

Personnel found or caught participating in acts of a sexual nature at site or offices shall be immediately terminated from the project.

6.12. Cell Phone Usage

Cell phones are NOT allowed on controlled Gas Fence Area. All contractor personnel are required to surrender cell phones to designated Safety Coordinator /HSE Manager prior to commencing work or going for work inside the gas fence. Usage of Cell phone while driving is violation to LSR and will subject to immediate disciplinary action including termination.

6.13. Substance Abuse

Owner has implemented a formal Substance Abuse Policy in the interest of the health and safety of its employees. Failure to comply shall result in disciplinary action.

6.14. Life Saving Rule (LSR)

Lives saving rules are mandatory to be complied with during all work execution within area of operational control. All the contractor, and subcontractor persons shall undergo a mandatory induction of LSR and sign off that they have understood the rules. If anyone chooses not to follow the LSR, they choose not to work for the project and with OWNER. . Maximum appropriate disciplinary action will be taken after investigation.

ENGIE

For Group employees, temporary workers and personnel from external companies

OUR LIFE-SAVING RULES

Target: **zero** fatal accident

Do not walk or stand under a load.

Stay out of the path of moving vehicles, plant and equipment.

Clip on your harness when working at height.

Only enter a trench if the appropriate wall supports are in place.

The atmosphere must be tested safe before entering a confined space and monitored as you work.

Do not perform hot work unless the fire or explosion risks have been eliminated.

Verify that there is no live energy (mechanical, chemical, electrical, fluids under pressure, etc.) before starting work.

Do not handle your phone or any other communication device when driving.

Do not drive under the influence of alcohol or drugs.

6.15. Signs and Warning Barricades

When hazardous work is to be performed, the appropriate signs, symbols and barrication must be posted by the Contractor and their Subcontractor prior to starting work and must be removed or covered promptly when the hazards no longer exist. Non Compliance shall be reported to the Owner

Danger signs must be used where a hazard exists. Caution signs must be used only to warn against potential hazards or to caution against unsafe practices. Traffic signs to control travel of mobile equipment, vehicles and pedestrians shall be posted throughout the job site. Various safety signs made of material that will withstand weather conditions are displayed throughout the job site.

Warning barricades must be erected and maintained at least two (2) meters from the edge of an excavation or opening. Hard barrication shall be done for the existing facilities nearby to protect from any damage due to construction activities and also water blanketing arrangement shall be done. Warning barricades shall immediately be removed once the hazard is eliminated. No one shall remove safety signs, barricades and tags unless so directed by the proper authority.

6.16. Tools and Equipment

All tools and equipment provided for use on the Project for Contractor and Sub-Contracting personnel shall meet the requirements of current Legislation (The Building and Other Construction Workers Rules 1998) and BIS standards.

Monthly and quarterly maintenance checks shall be conducted for all heating / burning / welding gas equipment. Electrical equipment, power tools and safety equipment will be tested and inspected in accordance with Contractor Procedure and/or Owner SOP.

Lifting & Rigging Equipment shall be complete with current certification. Lifting / rigging equipment and containers will be examined and colour coded at 3 month intervals and re-tested and certified when required in accordance with legal requirements. They shall also be visually inspected prior to each & every use.

Scaffolding shall have current inspection certificates. Steel wire stings ropes and hawsers shall all be inspected monthly along their entire length.

6.17. Fire Prevention and Protection

Firefighting equipment shall be inspected on a regular basis and maintained in good order. In addition, Construction activities shall be catered for by the provision of sufficient numbers and types of fire extinguishers at various locations throughout the working areas.

These extinguishers shall be regularly inspected and maintained by qualified personnel. The Contractor shall follow the Project Emergency Response Plan for dealing with fires on site or in accommodation camps.

Personnel should be trained to use extinguishers and fire hose. Flammable materials shall be stored in properly labelled containers and away from the source of ignition.

Accumulation of trash, oily rags, combustible materials and similar fire hazards of any nature will not be permitted. All welding and cutting torches must be equipped with fire arrest valve.

All alleyways, driveways, roads, stairway, ladder and transformers shall be kept clear of hazardous material and equipment.

Refuelling of diesel equipment shall be done only in prescribed areas and with approved equipment. Contractor shall take all measures to minimize spills and to clean up immediately any spills, which may accidentally occur. Refuelling equipment with the engine running is strictly prohibited.

During any hot work operation, a pressurized fire hose and fire extinguisher, filled in 10Kg dry chemical powder, must be provided at place of hot work.

Fire Watcher / Stand-by Man shall be assigned at any work place where any heating, welding, spark and flame producing is involved.

6.17.1. Deployment of Fire Extinguishers.

Contractor should ensure that adequate numbers of portable fire extinguishers are installed at various locations of the project area. The quantity and location of potable fire extinguishers shall be designed as per the Project fire hazard / fire protection requirement. DCP, Form, and CO2 Fire extinguishers of sufficient Quantity should be kept at all prime locations which are easily accessible for extinguishing the initial fire.

6.17.2. Maintenance of Fire Protection Equipment

The Site HSE Coordinator/ Officer and supervisors are responsible to maintain their own fire extinguisher in operational condition. All fire extinguishers shall be checked every month and confirmed on each sticker or inspection tag. The Site HSE Officer will check this sticker and record will be kept.

6.18. Lock out Tag out (LOTO)

LOTO is a system to manage the risk of exposure of people to energy and hazardous substance by safe isolation of equipment and locking movable device and placing tag at each point of isolation.

6.19. Housekeeping

The Contractor shall maximise good housekeeping by: -

- Regular monitoring of the worksites by Supervision.
- Discussion at HSE Meetings.

The need for good housekeeping practices shall also be discussed at project meetings, HSE induction, tool box talks and HSE forums. Housekeeping inspections will be included in regular inspections / audits conducted by Contractor. The comments and recommendations as a result of the inspection / audit will be allocated to departments or individuals to be either investigated or rectified within an allocated time scale.

As a minimum the Contractor and Sub-contractors housekeeping standards shall involve daily checks to ensure: -

- Overall site cleanliness and tidiness.
- The avoidance of walkway obstructions and tripping hazards.
- Escape routes are maintained free of obstruction at all times, identified and illuminated.
- Access to emergency equipment is not impeded by tools, materials or debris.

- All tools onsite are in good condition and suitable for the job in hand. Tools, surplus materials or debris are removed from the worksite as soon as they are known to be surplus to requirements.
- Appropriate stacking of construction materials and safe storage of all hydrocarbons and other chemicals.
- Posting safety notices in all hazardous areas and in Public places.

Housekeeping is the one of the most important items influencing the efficiency and safety. It is the responsibility of all employees, supervisors and workmen alike to practice good housekeeping.

- Securing of clear access;
- Elimination of potential fire causes;
- Maintaining a safe work environment;
- Maintaining a healthy work environment;
- All supervisors at site of Contractor will give daily inspections instructions. In addition to these inspections;
  - Periodic management inspections and joint inspection by the Site Safety Committee will be organized and conducted by the Contractor;
  - Site Safety committee will establish a scheme to promote a house keeping program;
  - Jointly conduct housekeeping audit and instruct their work areas.

6.20. Control of Substances Hazardous to Health

The Contractor shall ensure that all substances classified as hazardous to health which are transported, used or created during work on the Project are controlled in such a way as to minimise the risk to the health of staff and others and to the environment, in accordance with Indian Regulations. Work conducted by the Contractor and its Sub-contractors that involves the use of hazardous substances shall comply with all the requirements of legislation. Hazardous material related activities shall be monitored by the Contractor to ensure all requirements of the regulations are satisfied. The Contractor shall not accept any materials on site unless accompanied with the Supplier's / Manufacturer's Material Safety Data Sheet documentation. A complete list of all hazardous substances shall be held within the Health, Safety and Environmental Department and a duplicate copy shall be held within the Medical Centre for use in an emergency.

6.20.1. Ionising Radiation

The Contractor shall provide advice and information on radiography as required under the Ionising Radiation Regulations and shall conduct all work in accordance with BIS - IS 2598 - 1966 for Radiography and the Owner Permit to Work system. Suitably qualified personnel shall carry out the work in accordance with the requirements of the regulations and will be subject to routine HSE audit and inspections. The Contractor shall publish and circulate contingency plans for dealing with emergencies involving radioactive isotopes and all radiographers shall be trained in isotope retrieval techniques. Notices shall be displayed on project notice boards and work areas giving details of times and areas where radiography will be taking place and key project personnel shall be given copies of notifications in person.

6.21. Adverse Weather

In the event of adverse weather, the Contractor shall conduct a tour of the worksites to determine if they are safe. Where there is a disagreement, then the ultimate decision whether a site is safe or not will lie with Owner. Owner shall not be responsible for the stoppage of work due to adverse weather. Where adverse weather is forecast, then suitable contingency measures will be implemented before work commences.

Weekly weather forecasts shall be provided by the Contractor.

6.21.1. Heat Stress

Heat stress, from exertion or hot environments, places workers at risk for illnesses such as heat stroke, heat exhaustion or heat cramps. Contractor shall ensure the awareness program on adverse weather and preventive measures.

To prevent heat stress drink plenty of water; at least eight glasses per day and more if involved in vigorous activity.

Prevention-

Learn to recognize the symptoms of heat stress. Pace the work, taking adequate rest periods (in shade or cooler environment).

Use adequate fans for ventilation and cooling, especially when wearing personal protective equipment (PPE).

Site workers have to wear regulation overalls and hardhats. Always try to keep shaded from direct sunshine when possible. Your hardhat will not only protect your head from falling objects and such, but will also protect your head from direct sunshine.

Drink plenty of water. In hot environments the body requires more water than it takes to satisfy thirst. Small quantities taken at frequent intervals, about 150-200 mL of water every 15 to 20 minutes is an effective method for body fluid replacement

Heat Stroke

A condition that occurs when the body becomes unable to control its temperature, and can cause death or permanent disability.

Symptoms

- High body temperature
- Confusion
- Loss of coordination
- Hot, dry skin or profuse sweating
- Throbbing headache
- Seizures, coma

First Aid

- Request immediate medical assistance.
- Move the worker to a cool, shaded area.
- Remove excess clothing and apply cool water to their body.

Heat Exhaustion

The body's response to an excessive loss of water and salt, usually through sweating.

Symptoms

- Rapid heart beat
- Heavy sweating

- Extreme weakness or fatigue
- Dizziness
- Nausea, vomiting

6.22. First Aid and Medical Facility

Contractor shall provide a first aid facility that will be adequately equipped to meet with regulatory requirements. A qualified medical attendant will attend the facility on a 24 hour basis.

Other serious injuries in case of lost time accidents shall be evacuated to the designated hospital for receiving proper treatment according to the Project Emergency Contact Organization.

The Contractor shall ensure that a suitable number of personnel receive formal first aid training on every work site in the ratio of 1 trained first aide to every 50 men on sites

6.22.1. Medical Evacuations

The decision to evacuate an injured person will rest with the qualified Medical Attendant. Evacuation for medical reasons may be for one of the following;

- Injury as a direct result of an accident.
- Ill Health or a recurrence of an illness not associated with an accident.
- In all instances the Medical Attendant will give the advice.

6.23. Occupational Health and Hygiene

The Contractor and their Subcontractor shall ensure that all their Personnel are medically fit to perform the Services. If applicable, the Contractor and their Subcontractor shall adhere to the government regulations and Owner guidelines for medical surveillance or occupation health hazards monitoring. The Contractor and their Sub contractor shall ensure that their personnel shall maintain the highest standards of hygiene. The Contractor and their Sub contractor shall comply with the Company standards for sanitation, sewage, water supply, food canteen, and laundry and garbage disposal.

CONTRACTOR shall be responsible for setting up of temporary wash room/ toilet facilities at site including arrangement of water and daily cleaning and keeping it hygiene. Contractor and Subcontractor personnel found to be littering outside washroom/ toilet facility shall subject to disciplinary action up to termination

Certain work and the handling of some substances may cause dermatitis or other skin diseases, unless the skin is in a healthy condition, kept clean and the appropriate protective clothing and barrier creams are utilised. Washing hands before taking food is essential in all cases, particularly when work involves handling toxic chemicals and other substances.

Care shall be taken to ensure that employees clothing does not become soiled or contaminated to a dangerous extent. Clothing which hazardous substances have contaminated shall be removed immediately.

The Contractor shall make efforts to improve employee's awareness in areas such as:

- Vibration,
- Noise,
- Hazardous substances,
- Lifestyle Health,

All food handlers shall require undergoes specific personal hygiene and food preparation induction. Annual medical examination of food handler shall be ensured. Separate toilet facilities shall be provided for food handlers. Contractor shall ensure the applicable requirement as per FSSAI (Food Safety and Standard Authority of India) guidelines

All personnel shall observe the personal hygiene controls implemented as part of the site canteen preventative disease controls. E.g. the disinfecting of hands prior to entry to canteen facilities is mandatory. Hand disinfectant dispensers shall be made available at all canteen entry points. All staff shall be inducted in their use and reasons for such use in the prevention of illnesses such as "Winter Sickness" disease, Noro virus and other hygiene related illnesses.

6.24. Control of Interface Management

All interfaces between construction and commissioning activities shall be controlled by the permit to work system. The Contractor shall develop a system to control the handover of systems from construction to commissioning for Owner approval.

6.25. Water Abstraction/Discharge

Consultation shall take place with the Owner to determine what licences or consents are required if the project requires extract/discharge water from/to the site water reservoir in excess of the amount permitted.

6.26. Shift Handovers

To reduce the risk of poor communications and lack of appreciation of ongoing activities, which could result in personal injuries, equipment damages etc. the shift handovers have to be effective. Measure to ensure their effectiveness shall include:

- Minuted written handovers,
- Permit reviews at shift end,
- Walk round job sites at shift end,
- Status reports on leak/pressure testing, isolation changes etc.

6.27. Lighting

Sufficient lighting (BIS Standard - IS: SP70 -2000) shall be provided during construction to enable personnel to work safely. All access/egress ways shall be clearly lit.

6.28. Manual Handling / Lifting

The requirements for manual handling shall be minimised and wherever possible, supported by mechanical aids wherever practicable. Specific training in manual handling instruction shall be included within the Health, Safety and Environmental induction programme.

6.29. Shot blast / High Pressure Water Jetting / Coating / Painting

Shot blasting & High Pressure Water Jetting shall be carried out in controlled areas and conditions. Only authorized personnel shall be allowed into these areas whilst blasting / jetting / painting is taking place. Cleaning of shot blast debris and ultimate removal shall be carried out on a regular basis. All personnel working in the blast sheds shall be provided with the appropriate Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) dependent upon the type of operation being carried out and materials being used.

6.30. Access/Egress

Due to the nature and scale of the construction activities, there is increased risk arising from increased and sometimes unauthorised traffic and personnel movements. This could result in personal injury/death, equipment damage and increased pollution.

To reduce the risk the following shall be introduced:

- One-way traffic system, where practicable;
- Barrier protection around vulnerable equipment;
- Ensure all plant drivers are fully trained in the vehicle usage e.g. Crane, Excavator, Fork Lift Trucks, mobile access platforms etc.

6.31. Pressure/Leak Testing

All pressure/leak testing activities shall be controlled by the permit to work system and procedure. Demonstrably competent personnel only shall carry out such operations. Test sites shall be adequately barrier and warning signs placed.

6.32. Lifting Operations & Lifting Equipment

A Rigging Supervisor shall allocate and control all lifting operations, and be assisted by experienced designated Riggers. All ground areas over which cranes/side boom will operate shall be inspected prior to operations. Crane/side boom operators shall be selected from a cadre of experienced operators who have the required experience and certification.

For routine, non-routine lifts or lifts that present potential problems due to their geometry, a lift study shall be conducted by the Contractor design department to identify any risks associated with the activity. The information from the study shall form the basis of tool box talks which will explain the procedure and controls to all personnel involved in the lift.

The Contractor and subcontractor shall ensure the lifting permit shall be obtained prior to start any lifting operation.

The Contractor shall conduct the tool box talk prior to the commencement of the lift. Heavy lifts shall have detailed lifting method statements developed e.g. use of adjustable lifting frame. In order to coordinate between the various authorities who will be carrying out lifting activities, a lifting superintendent shall be appointed. Regular monitoring and auditing of cranes/side boom and their necessary certification shall be carried out by the Contractor's HSE Department. Lifting supervisors and superintendents shall be competent in the control and specifying of rigging equipment and lifting operations. All such personnel shall be approved by Owner. All lifting tackles, slings etc. shall have unique identification numbers permanently marked on them. Contractor shall maintain a register of all lifting tackle, slings, stoops etc. All lifting tackles, slings etc. shall be regularly inspected and have current inspection certificate

All the Safety Requirement related to Lifting and Hoisting shall be implemented and followed throughout the project as mentioned below:

6.32.1. Risk Assessment

Prior to commencing any lifting operations a risk assessment shall be carried out to identify associated hazards, their severity and likelihood of occurrence and should form the basis of the risk assessment process, with the objective of ensuring that all tasks have Low Risk through elimination or adequate control.

All risk assessments shall be formally documented.

The risk assessment shall address but not limited to the following aspects and activities:

- Communication and language difficulties;
- Weight, size, shape and centre of gravity of load;
- Availability of approved lifting points on load;
- Method of slinging/attaching/detaching the load;
- Overturning/load integrity/need for tag lines;
- Suitability and condition of Lifting Equipment to be used;
- Initial and final load positions and how it will get there;
- Lifting over live equipment; If any,
- Number and duration of lift(s);
- Conflicting tasks in area;
- Environmental conditions including weather and permissible limits;
- Lighting in the pick-up and lay-down areas;
- Proximity hazards, obstructions, path of load (e.g. potentially live electrical, hydraulic or pneumatic lines, underground conduits, bridges and overhead structures);
- Working under suspended loads;
- Access and emergency escape routes for the Lifting Appliance Operator and load handlers (e.g. Banks man, Slinger);
- Experience, competence and training of personnel;
- Number of personnel required for task;
- Pre Visibility of the load shall be maintained at all times by either the Lifting Appliance Operator or the person guiding the load (Banks man / Signaller), who shall maintain communication with the Operator at all times either via hand signals, radio or a relay Signal Banks man.-Use Inspection of equipment by Operator;

6.32.2. Define the Lift

If a risk assessment and Lift Plan do exist then they shall be assessed to confirm that they are still applicable (e.g. changes to personnel, equipment, site layout or work environment could all result in the need for re- assessment of hazards). Assuming that significant changes have not taken place then lifting operations may proceed under the requirements of the Lift Plan subject to approval.

If the lifting operations have not been carried out before, a competent person of contractor (with adequate practical and theoretical knowledge and experience of planning lifting operations) shall be appointed and approved by Owner to prepare a Lift Plan – this person may or may not be involved in executing the lift. In defining the lift the following parameters shall be established:

- Load weight, shape, centre of gravity and availability of adequate lifting points;
- Initial and final load positions and how it will get there;
- The environment in which the Lifting Equipment will be used.

Inspection of Lifting Equipment-Inspections shall be carried out by a qualified inspector and shall comply with local Controlling Documents identifying the inspection frequency and acceptance/rejection criteria.

Periodic Inspections-A qualified inspector shall inspect all Lifting Equipment periodically.

Inspection intervals should not exceed the time limit and in any case shall not exceed 12 months. Inspections shall also be conducted if the integrity of the equipment may have been affected due to:

- Involvement in an incident;
- Exposure to overloads;
- Modification or repair;
- Change in condition of use.

Records of all inspections shall be maintained and shall be available for inspection.

6.32.3. Pre-Use Inspection

Prior to each use all items of Lifting Equipment shall be visually inspected by the competent person. It is in a good state of repair and safe to carry out the lifting activity. All the lifting tools and tackles shall be inspected by the third party in accordance with State Factory Rule

A register recording the following data shall be maintained for all Lifting Equipment:

- Manufacturer and description;
- Identification number;
- SWL;
- Date when the equipment was first taken in use;
- Particulars of defects and steps taken to remedy them;
- Dates and numbers of certificates of tests, inspections, and examinations, and name of person who performed these;
- Due dates for previous and next periodic inspection or periodicity of inspections;
- Maintenance Log.

A Lift Plan shall be prepared for every lift. The Lift Plan shall identify:

- The competent person planning the lift;
- Equipment required;
- Personnel required and their particular roles;
- Step-by-step instructions;
- Communication methods to be used;
- Contingency and rescue plans.

All Lift Plans – generic, specific or engineered – shall be developed, reviewed and approved by persons competent to do so as approved by Owner. For example:

- Routine or simple plans could be reviewed and approved by a Crane or Rigging Supervisor;
- Complicated plans by the Site Manager.
- Heavy Lift Plans by a qualified, specialist engineer.

6.32.4. Execution Communication of Lift Plan

- Prior to starting of lifting operations a competent person shall hold a Toolbox Talk with all Personnel assigned to carry out the lift.
- The Person-in-Charge (PIC) shall be clearly identified and made known to all members of the lift team and personnel in the proximity.
- All personnel involved in the lifting operation shall have their individual responsibilities clearly allocated.
- All personnel should have the opportunity to review the findings of the risk assessment and the details of the Lift Plan to ensure that everyone clearly understands and agrees with the methods and control measures to be used.
- Lifting operations shall be conducted in strict accordance with the approved Lift Plan. Any variation from the agreed Lift Plan shall result in the job being stopped and reassessed to ensure continued safe operation.
- The Lifting Appliance Operator shall obey an emergency stop signal at all times, no matter who gives it.
- When lifting operations need to be controlled by signals, a designated signal person shall be assigned. Signals between the Lifting Appliance Operator and the designated signal person (Banks man / Signaller) shall be discernible - audibly or visually - at all times.
- The appropriate load-radius chart for the Lifting Appliance configuration in use shall be visible to the operator.
- Load to be lifted shall be confirmed to be within the rated capacity of the Lifting Equipment and attached by means of suitable Lifting Accessories.
- The Operator of the Lifting Appliance shall not leave the operating controls while the load is suspended unless suitable risk management controls have been put in place for ensuring security of the load and site (e.g. restraining the boom and load hoist, telescoping and slewing (swinging); outrigger function; providing notices and barriers).

6.32.5. Points to remember for a Safe Lifting

- Is everyone aware of and do they fully understand the lifting and hoisting procedures applicable to the lift?
- Does the operator and crews are competent to take up the Task
- Has everyone attended the toolbox talk?

- Has a pre-use inspection of the Lifting Equipment been carried out and are the Lifting Accessories tagged or marked with:
- Ensure Safe Working Load of slings and equipments
- A unique identification number
- A valid third party inspection certification.
- Have the Yellow colour code to demonstrate passed inspection
- Are all safety devices working?
- Does everyone know the Person-in-Charge of the lift?
- Is everyone competent and aware of his or her tasks?
- Is there a current Lift Plan and JSA/RA and does everybody understand the job and precautions?
- Does the Person-in Charge know the load bearing capacity of the crane parking area before lifting?
- Does everyone know the environmental limits (e.g. maximum permissible wind speed) for the lift?
- Is the lift area controlled and is everyone clear if the load falls or swings?
- Are signalling methods and communication agreed and clear to you?

6.32.6. Colour Coding

- Colour-coding entails marking each item with a clearly visible and durable patch of the appropriate colour on quarterly basis.
- For equipment on a quarterly schedule, the color-coding is detailed in the inspection departments' procedure for the control of lifting gear.
- Notices must be prominently displayed around the Site indicating the color(s) 'in date' at the time.
- Where color-coding is also used for ladders, steps or trestles, the same colors and system of coding applies.

6.32.7. Wire Ropes and Slings

Wire ropes and slings must be removed from service if any one or more of the following defects are observed:

- There are more than two broken wires in any single leg.
- The rope diameter has been reduced to less than 95% of its nominal value.
- The rope is distorted due to kinking or crushing, or from core collapse.

- There is any damage or distortion immediately adjacent to the termination.
- There is any damage, apart from superficial surface marking, to the ferrule on a ferrule- secured eye-terminated sling.
- The thimbles are loose or deformed.

6.32.8. Lowering Operation

- Risk assessment shall be carried out before lowering and effective communication should be done among all involved personals.
- Lowering calculation must be exercised and deployment of the lowering crane (side booms) must be done as per appropriate requirement.
- Signalling shall be done by authorised foreman only.
- Ensure appropriate measures are taken for overhead hazards.
- Persons are not allowed towards trench side / under the boom at the time of lowering.

Note- Hydra crane is not permitted to do the lifting operation.

6.33. Welding and Gas Cutting

Gas equipment shall be regularly inspected and a thorough system of inspection / maintenance is to be in place. All gas equipment used shall have flash back arrestors fitted. Personnel carrying out any of the above activities shall be issued with all Personal Protective Equipment (PPE) required including Respiratory Protective Equipment (RPE) and hearing protection.

In addition all Welders shall be issued with fire retardant coveralls.

Flame retardant fire blankets must be used to minimize the possibility of personal injury / damage to equipment by sparks etc. created from welding / burning activities.

Fire extinguishers shall be available throughout the project sites and fire extinguishers shall be positioned close by when carrying out any welding or burning activities for use in the event of an emergency. Gas cylinders shall be securely mounted in the vertical position and shall not be allowed into enclosed areas. Coated / primed surfaces shall be carefully assessed to ascertain whether extra precautions are required.

Contractor shall develop the Hot Work Procedure in line with requirement stated in this PTS.

6.33.1. Hazards

The particular hazards arising from welding, gas cutting and grinding are:-

- Burns from radiation, hot metal splatter or the accidental handling of hot objects
- Damage to the eyes from radiation or flying particles.
- Toxic fumes from the hot work, particularly when working in confined spaces or with contaminated objects.
- Welding and cutting fumes contain nitrogen oxides and ozone from the air, metal oxide fumes from the burning of the base metal and the welding rods, and fumes produced from the burning of the fluxes and any coatings or deposits present.
- Oxygen deficiency from welding or flame cutting in confined spaces.
- Noise from hammering, chiseling and from certain types of welding process.
- Electric shock from certain types of equipment.
- Fire or explosion from hot work or unattended, open and not properly earthed electric currents in areas containing flammable or combustible materials.
- Damage to equipment caused by stray electric currents.
- Fire or explosion from inadequate control of the welding or cutting gases used.
- Spurious activation of flame detectors by radiation disturbing plant controls or protective systems.

6.33.2. Precautions during Electric Arc Welding

- The metal frames and cases of mains-powered welding rectifiers, transformers and voltage regulators and of engine driven welding machines must be positively earthed locally throughout the work.
- Welding leads and return leads must be protected against physical damage.
- Insulated electrode holders and cable lugs / protectors must be used.

- The return lead must be attached to the work piece as close as reasonably practicable to the welding point.
- If mains power is used, the work piece must be positively earthed using a well-protected earth wire connected at both ends by bolted lugs or secure screw clamps.
- Bolted joints in pipelines and structures must not be relied upon to provide adequate electrical continuity for welding currents.
- Electric arc welding should not be carried out on equipment suspended from a crane because of the risk of damage to lifting wires from uncontrolled stray currents.
- Welders must not wear metal rings, bracelets or necklaces during the work as induced currents from the welding equipment might heat these.
- Dry, non-conductive gloves should be worn.
- All Welders shall be issued with fire retardant coveralls.
- The welder must always disconnect the electrode holder from the supply before attempting to replace an electrode.
- The welder should not lean against an earthed conductor whilst manipulating live electrodes.
- Welders working with electrodes fed from different phases of a three-phase supply should not work in close proximity to one another.
- Flame retardant fire blankets must be used to minimize the possibility of personal injury / damage to equipment by sparks etc. created from welding / burning activities
- Fire extinguishers shall be available throughout the project sites and fire extinguishers shall be positioned close by when carrying out any welding or burning activities for use in the event of an emergency

6.33.3. Precautions during Flame Welding and Gas Cutting

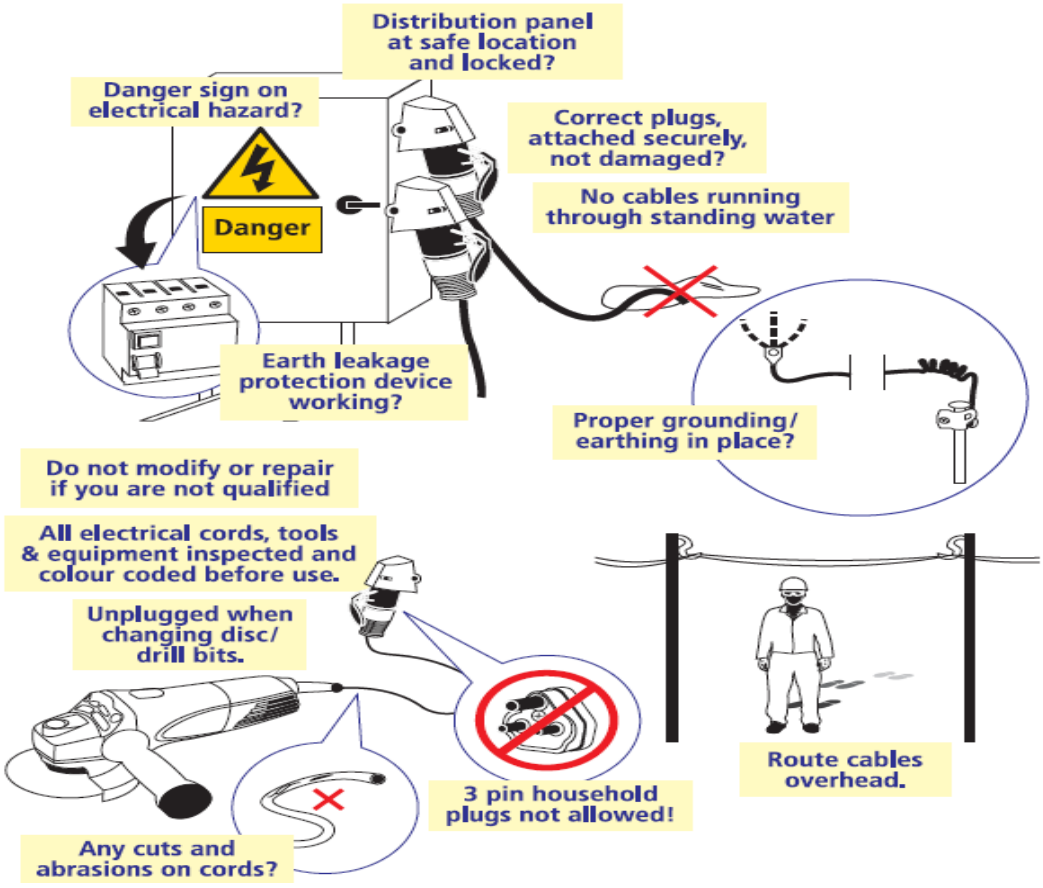
- Gas equipment shall be regularly inspected and a thorough system of inspection / maintenance is to be in place. All gas equipment used shall have flash back arrestors fitted
- Compressed gas cylinders must be kept on the trolley when it is use.
- Gas cylinders must be secured in the vertical position to prevent them being knocked or pulled over.
- Long lengths of hose should be avoided, but; -

- Cylinders must be kept far enough away from the welding or cutting operations to prevent contact with sparks, flames and metal splatter.
- Cylinders must be placed where they are unlikely to be damaged by stray electric currents or falling objects.
- Cylinders must not be taken into confined spaces.
- The torch must always be lit from a lighter provided for the purpose. There should be no attempt to light it from hot metal.
- Fire extinguishers shall be available throughout the project sites and fire extinguishers shall be positioned close by when carrying out any welding or burning activities for use in the event of an emergency

6.34. Electrical Safety

All portable and permanent electrical equipment and appliances used within the Project site buildings shall be checked and certified as required by the Electrical Regulations. The items shall be recorded in the inspection register, and tags are fitted to provide visual evidence that they have been tested, the date of the next test and the fuse rating for the equipment.

All workers who will work with electrical activities shall adhere to Electrical Safety Rules as shown in the picture.



6.35. Radiography

RADIATION is energy in transit in the form of high speed particles and electromagnetic waves. Effects of an exposure to radiation:

- Radiation can cause cancer.
- It may also cause other adverse health effects, including genetic defects in the children of exposed parents or mental retardation in the children, exposed during pregnancy.

Following basic precautions must be observed for radiography operations and transportation:

- Only personal from the recognized inspection organization are authorized to use or transport radioactive sources for testing purposes.
- The Radiography Permit must be completed and signed by the appropriate personnel before work is allowed to commence.
- The radiography area must be barricaded; a blinking light must be active with audible siren while operation is under progress.
- The display of warning sign must be placed at appropriate place to radiography area.
- Throughout the entire duration of testing with radioactive sources, a safety guard will be posted, in addition to the warning signs. The decisions and orders of these safety guards must be strictly adhered to at all the times.
- All primary containers in which radioactive materials is used or stored must be labelled with an approved label showing:
  - The words “Caution Radioactive Material”
  - Identification of the radioactive substance.
  - The amount of radioactivity.
  - The date labeled.
- No individual is to undertake work with radioactive materials or radiation sources without prior sufficient knowledge and training.
- Eating, drinking, smoking and the application of cosmetics are forbidden in work areas where radioactive material is stored or used.
- Return unused radioactive material and radiation sources to proper storage when not in use.
- All authorized personnel are subject to a regular medical checkups and continual medical monitoring; a copy of such medical shall be available for inspection.

Transportation of Radioactive Material:

- Only authorized personnel will be allowed to transport sealed source.
- Radiation warning signs must be fitted to the vehicles carrying the sealed source.
- The source will be located inside a suitable container.
- The container will be secured in the cargo compartment of the vehicle and shall be securely fixed.
- The source will not be transported inside the personnel area of the vehicle.

- The vehicle should never be left unattended when the source is in the vehicle.

6.36. Confined Space Work

A Confined Space is a fully or partially enclosed space that is not designed and constructed for continuous human occupancy, which has limited or restricted means of entry or exit, and where there is a safety or health Risk. Contractor shall develop the Confined space procedure in line with the requirement stated in this PTS.

6.36.1. Common Precautions for Confined Space Entry

Whether or not breathing apparatus is to be worn, the precautions for the entry of personnel into a confined space must include protection of the working atmosphere:

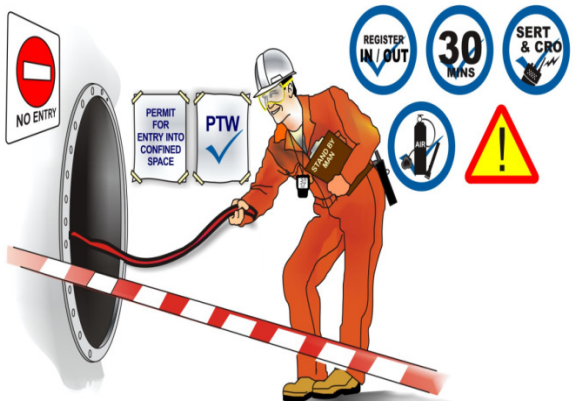
- Clearance of asphyxiant atmospheres from the confined space, except where an inert gas atmosphere is specially required for the work.
- Clearance of vapors or materials that might be flammable or which may release flammable vapors including any coating blisters, which might conceal volatile flammable materials, which is hazardous to health.
- Wind sails, fans or air eductors with fresh air may supplement adequate natural ventilation, except where inert gas conditions are specifically required. Under no circumstances may Oxygen gas be used in an attempt to correct oxygen deficiency in a confined space. The equipment is appropriately selected and properly earthed to avoid any possible source of ignition where there is risk of flammable atmospheres.
- Safeguards against contamination of the space from the surrounding area.
- Any action to be taken in the event of a change in wind direction should be clearly specified.
- Protection against leakage, within the confined space, of any welding or cutting gases used. Provision for safe disposal of any gas or fume produced within the space by the equipment used for the work. Fume extraction facilities may be required.

- Where pneumatic tools are used special care is necessary to ensure that they are not coupled up to Nitrogen supplies by mistake, or to (instrument) air systems and/or without using oilers.
- The initial tests and any re-tests after a period when the space is believed to have become contaminated must be carried out personally by the authorized competent person. Routine monitoring and re-tests after breaks in the work may be delegated to Authorized Gas Testers.
- If electrical equipment is needed inside the Confined Space (e.g. lighting) use low voltage equipment if available. If low voltage equipment is not available, an earth leakage current device or ground fault circuit interrupter must be used to protect entrants against electric shock.

6.36.2. Attendants

Attendant must be present at all times while entrants are in the Confined Space.

The duties of the trained attendant(s) outside the confined space are:



- Prevent unauthorized Entry and take action if conditions change.
- Maintain a record of numbers and names of people in the Confined Space.
- To maintain contact with the person(s) inside and to be able to communicate with other persons in the case of an emergency.
- When breathing apparatus is in use, to ensure that the air supply from outside is maintained and safeguarded against contamination.

To assist in any rescue that might be necessary but not to enter the confined space leaving the outside unattended.

Where language differences exist, at least one attendant must be capable of communication in English and in any other language necessary to be understood by all the persons in the confined space.

In circumstances where it is not possible for the attendant(s) to keep the person(s) inside under continuous observation, suitable personal alarms must be used to maintain continuous communication.

Stop the work and evacuate the Confined Space if ventilation systems fail, contaminants exceed agreed limits, conditions become unsafe, or other emergencies at the site require evacuation.

Activate the emergency response team in the event of emergency.

The Attendant must not attempt a rescue unless it is conducted as defined in the rescue plan.

Arrangements must be made for any necessary recovery operation to be carried out without leaving the space unattended from the outside.

6.36.3. Confined Area (Not Confined Space)

Due to the simultaneous presence of construction and operations it is likely that space on the sites, near facilities, will be congested and confined. This is likely to result in increased risk of personal injury, and equipment damage. Mitigation that should be considered to reduce the risks could include the following:

- Physical segregation of the activities with adequate space and area management controls introduced;
- Implementation of a Simultaneous Operations procedure;
- Introduce traffic routes and controls;
- Introduce pedestrian routes to separate them from vehicle traffic;
- Cross project management and permit meetings;
- Materials storage area;

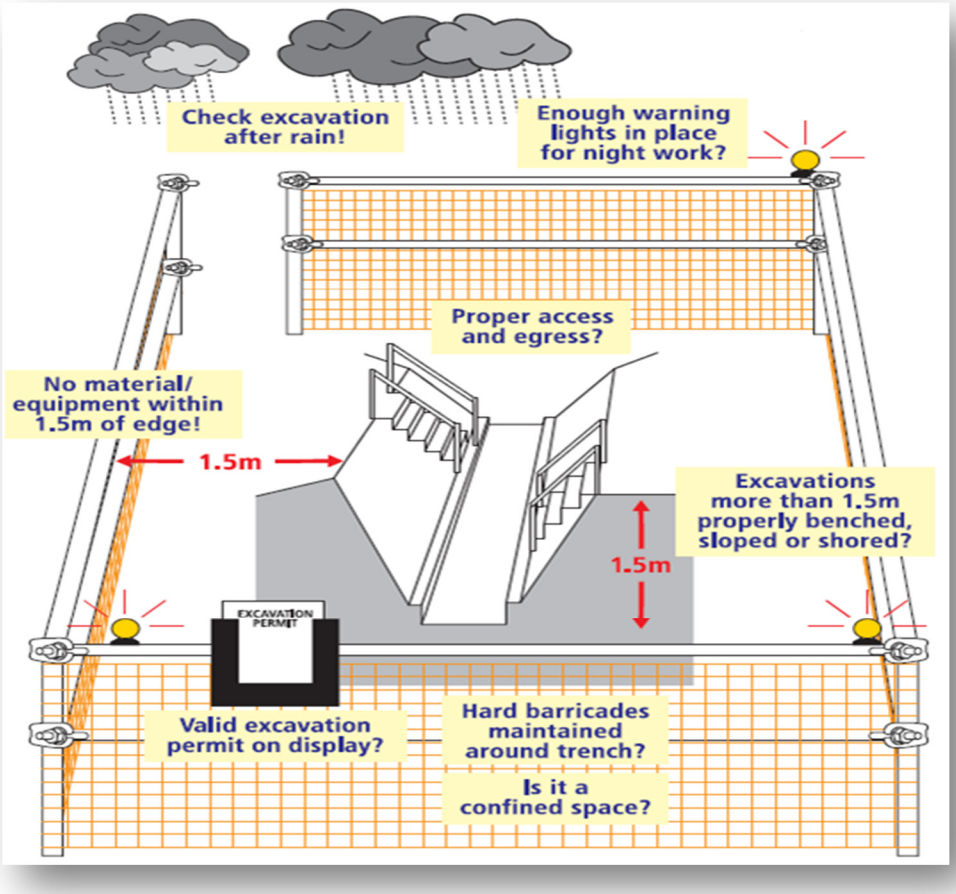
6.37. Excavations

An Excavation is any man-made cut, cavity, trench or depression in the earth's surface, formed when earth is removed. Excavation means any breaking of ground more than 0.5M deep or cutting into floors. It includes the driving of piles, stakes or posts into the ground. It will normally also include breaking/drilling into walls, floors or ceilings. Excavation below 1.2 M must be considered as confined space and shall be supported by Job Safety Analysis/Risk Assessment.

Permit Holder shall be responsible for attaching the underground facilities drawings with permit to work.

Excavation is applies to:

- Excavations on dry land greater than 0.5 meter.



6.37.1. Hazards

During excavation, whether or not below ground, the particular hazards are:-

- Production of sparks in hazardous areas when using power driven or un-wetted tools, or when breaking concrete.
- Damage to buried electric cables.
- Damage to instrument cables.
- Damage to buried pipes or equipment containing hazardous materials.
- Damage to structures of foundations.
- Any noise produced which might drown the sound of emergency alarms.
- Injury to personnel from shock burns etc.

Additionally when working below ground, hazards can arise from:-

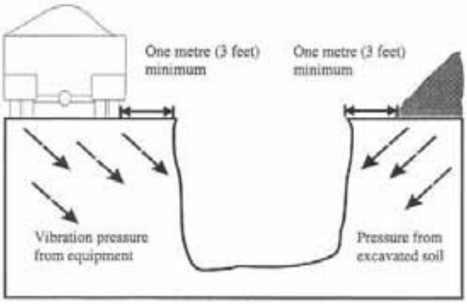
- Accumulation of liquids or vapors, which might lead to explosion, asphyxiation or harm to the health of personnel.
- Collapse of the walls due to inadequate shoring or to over loading around the edges of the excavation. (By close proximity of materials or vehicles)
- Subsidence to adjacent areas.
- Flooding the excavated pit.
- Objects falling into the workings/excavation.

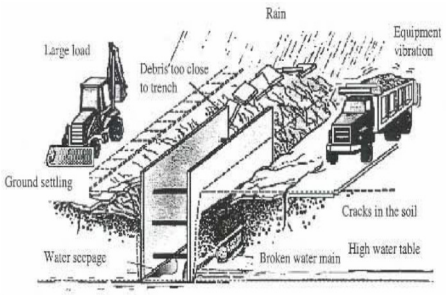
6.37.2. Safety Precautions during Excavation

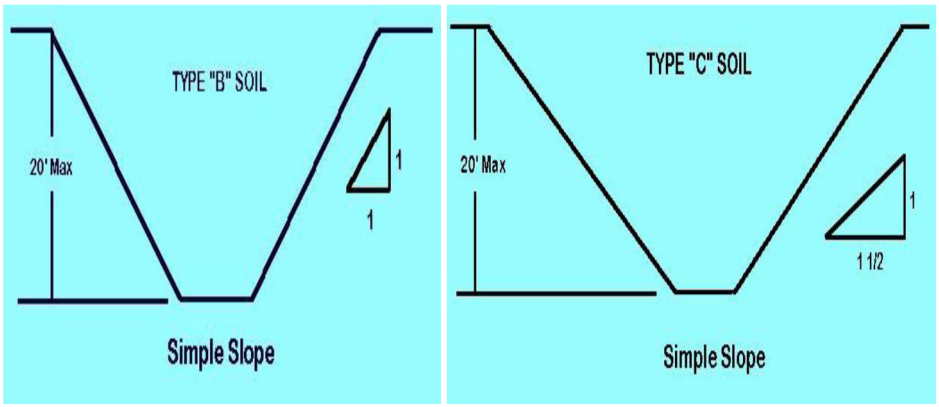
Following precaution must be taken during the excavation work. These must include provision for:-

- Obtain excavation work permit before starting the work.
- Constraints on the types of tools and the equipment allowed.
- Limitation of the extent of the excavation.
- Action in the unexpected discovery of a cable, cable covers to process pipe.
- Any excavation more than 1.5m deep shall have an excavation protection system. Excavations more than 1.2m deep designated for main access shall have atmospheric monitoring. Excavations more than 6m deep shall have a protection system designed by a Professional Engineer.

- Protection of persons below ground from caving in and falling objects, particularly where excavations are deeper than 1.2 meters.
- Safe access and egress for personnel and vehicles to, and around the excavation.
- Temporary crossing over excavations. These should be constructed at least 0.7 meters wide and be sufficiently strong for the span. There must be a railing on one side it there could be a fall of more than one meter or if the trench is more than 0.7 meters wide.
- Adequate shoring of the sides of the earthworks.
- Avoidance of excessive super loading on the sides of earthworks. A minimum distance between the toe of any earth pile and the edge of the trench is required. This should be at least 1.5 times the depth of the trench.
- Dewatering and avoidance of flooding
- Adequate gas testing and ventilation.
- Daily inspection of earthworks.
- Clearance of unauthorized personnel from the area and the erection of suitable warning signs and barriers.
- Personal protective clothing (including head protection)
- All service crossing the excavation must be supported. Underground service detectors or metal detectors may also be used, giving due regard to the appropriate electrical certification. At points where vehicles may approach the excavation, stop logs must be placed at a safe distance.







6.38. Mechanical Equipment/Machinery Safety

All drivers and operators of mobile plant/mechanical equipment shall be in possession of the appropriate license for the class of vehicle/equipment.

The only safe way of using mechanical equipment is to have properly trained operators, running equipment that is well maintained and carrying out the work for which it was designed.

Training and retraining program of safety for Equipment operator shall be developed.

6.38.1. General Requirements

Maintenance schedule shall be established for each piece of equipment and strictly followed.

At the start of each shift, the operator must check oil, water, fuel, hydraulic levels, that all gauges are operating and that the machine is functioning smoothly. Safety equipment (e.g. guards, limit switches, governors) must be checked daily. Checking log sheets shall be maintained and may be reviewed by Owner.

A competent and trained attendant must be in a position to direct and assist the operator and also mobile heavy equipment such as concrete mixture trucks, dumpers and dump trucks, excavators, graders, dozers, scrapers, and loaders must be installed back-up alarm audible for a distance of 60 meters.

A register shall be maintained for all the mechanical equipment, inspection / test certificates at site.

6.38.2. Compressors

Never use compressed air to dust off clothing or machinery. Horseplay with compressed air must be strictly forbidden. When compressed air is used in special cleaning/purging tasks, goggles and full face shield must be worn.

Before start up, a daily check should be made of the compressor's pressure relief valve, fuel, oil and water levels and the air reservoir should be drained of trapped water. The operating manual for the particular type of compressor used should be strictly followed.

Pressure relief valve shall be tested regularly be an independent examiner.

6.38.3. Excavators

Operators of excavator must possess a valid license for the machine.

Outriggers must be fully extended when operating a mechanical excavator so fitted. A competent and trained attendant must be appointed and be available at all times during excavation to assist and guide any fixed object.

6.38.4. Generators

A competent electrician shall be made available to ensure that electrical connections are properly made. The operator should be responsible only for the mechanical function of the machine. All pulleys, belts, and fans must be totally enclosed or otherwise guarded.

The side panels to the engine cover are designed to give access to the machinery for maintenance or repair. They must be closed at all times when the engine is running. The machine must be properly grounded before each use.

Generator and compressors shall to fully maintained and noise insulated to Best Practical Means. All such equipment shall be carefully sited to reduce noise and fume nuisances, and be regularly maintained. Drip trays shall be used to contain spillages

6.38.5. Fire Prevention Guide for Portable Generators

The following is a typical check list of the major items to look for. There may be other potential fire hazard not listed, therefore a thorough inspection must be made.

- Repair all fuel leaks.
- Check hose and pipe connections for wear and cracks.
- Clean up all fuel spills and place clean sand around area when required.
- Clean up all combustible trash around the generator.
- Sheds constructed of combustible materials placed around generators and wooden base frames are prohibited.
- Exhaust piping system shall be kept away from work areas and combustible materials.
- Generator sets shall be located at least 50 feet from building or materials that may catch fire.
- Inspect all wiring for damage or improper splices/repairs.
- Electrically ground all generator sets (system and frame ground).
- Fire extinguishers must be readily accessible.
- Conduct daily inspections of all generator sets using this guide.
- Two adequate type of fire extinguisher shall be provided.

6.39. Gas Cylinders (Compressed Gas Cylinders)

The transportation, storage, handling and use of compressed gas cylinders should be done with due care. Strictly follow the rules and regulations mentioned in “The Gas Cylinders Rules, 2004”

6.39.1. Safe work practices: General

- Gas cylinders should only be used for the purpose for which they are intended and not as rollers or work supports.
- The cylinders should be stored and handled in such a way that their mechanical strength is not reduced (e.g., by severe corrosion, sharp dents, cuts and so on).
- Only the necessary number of gas cylinders should be kept in working areas or occupied buildings. It is preferable for them to be kept near doors and not in emergency escape routes or difficult-to-reach areas.
- Any cylinders that have been exposed to fires should be clearly marked and returned to the filler, since the cylinders’ may have become brittle or lost their strength.
- All cylinders should be stored in cool, dry, well-ventilated surroundings and away from all flammable materials including oil and greases.

- Cylinders should not be stored in damp areas, or near salt corrosive chemicals, fumes, heat or direct sunlight.
- All cylinders should be properly fastened and supported by chains to prevent them from falling.
- Gas content should be positively identified before use.
- Cylinders should only be connected to equipment meant for the particular service
- Connection should be kept clean and in good order; their condition should be checked at regular intervals.
- Valves should be kept closed when cylinders are not in use.
- Do not repair damaged cylinders yourself.
- Cylinders or connected equipment should be removed from confined spaces when not in use (even during short breaks).
- Each regulator valve should be inspected periodically.
- Cylinders should be protected against contamination from pressurized equipment, since backflow of other gases may lead to serious accidents. Proper non-return valves should be used.
- Empty cylinders should be returned to the filler with the valves closed and the caps in place. A little residual pressure should always be left in the cylinder to prevent contamination with air and moisture.
- Acetylene should only be used at a correctly reduced pressure.
- Flame arrestors should only be used in acetylene lines where acetylene is used with compressed air oxygen.
- Fire extinguishers and heat-protecting gloves should be available with gas welding equipment.
- Liquid gas cylinders should be stored and used in an upright position.
- Poisonous and irritating gases, such as chlorine, should be, handled only by well-trained operators with personal safety equipment.
- Unidentified cylinders should not be kept in stock.

6.39.2. Storage

Valid test certificate of Gas cylinders prior to use must be obtained. The Cylinders, whether empty or full, shall be stored under cover for protection against the elements. The storage place shall be detached from any other building and constructed of non-combustible material.

The building shall be fenced-off and signs shall be displayed both in English and Hindi language: “No Smoking-Naked Lights Prohibited within This Area”, and relevant symbols, e.g. “Flammable Gas”.

Natural ventilation points should be positioned at both high and low levels. Lighting fixtures shall be of an explosion-proof type.

6.39.3. Handling of Cylinders

Cylinders should not be dropped or allowed to come into violent contact with each other. They should be stored and used in an upright position, thus preventing the liquid passing through the regulator and into the equipment. They should not be placed near excavations or any low level areas. They should be placed on level ground and secured to prevent accidental tipping over. Care should be taken that the valve assemblies are not damaged. The main valve should be closed and the valve cap in position when the cylinder is not in use. Smoking should not be permitted when handling cylinders. Compressed gas cylinders must be kept on the trolley when it is in use.

6.39.4. Leakages

Cylinders, valves, connections, hoses, and piping should be regularly inspected for damage or leakage. Small leaks may be confirmed by using soapy water. Leaking cylinder should be immediately removed to an open space, clear of all buildings and people or any potential source of ignition. The cylinder should be placed with the leak uppermost. Supplier should be notified immediately. A detailed emergency response procedure shall be in place for in case of LPG leakage. Employees shall be trained in LPG storage, handling and the emergency response procedures, and drills.

6.39.5. Transportation

Full or empty cylinders which are loaded on vehicles must be placed in an upright position, be adequately secured to prevent movement, and have valve cap in place. The vehicle shall have fire fighting and first aid equipment. The vehicle must also display all the necessary warning notices.

6.39.6. Action in Case of fire

When cylinders are exposed to severe fire conditions and are engulfed in flames, no attempt should be made to extinguish the fire. In such condition, cylinders are likely to explode immediately.

The action to be taken in such an instance is to evacuate the area immediately and call the fire Station. Cylinders which have been exposed to fire conditions must be adequately cooled with water before any attempt is made to remove them. If cylinders are equipped with automatic relief valves and the fire exposure is severe, ignited jets of gas from these valves can extend as far as 6 meters.

In the case of small fire arising from gas leakage, it is possible to extinguish the fire by immediately turning off the cylinder valve. The cylinder should be approached from the opposite direction to the source of fire.

If a fire does not directly involve other cylinders in the vicinity, reserved water in a water tank placed in the vicinity played on those cylinders will prevent increased internal pressure and minimize the risk of explosion. All cylinders which have been involved in a fire must be returned immediately to the supplier.

6.39.7. First Aid

If LPG has inhaled, the affected person must be removed from the area, kept warm and rested, and not allowed to move about. If the affected person is not breathing, mouth-to mouth or mouth-to-nose resuscitation should be applied.

No attempt should be made to give an unconscious person anything to drink. If the person is breathing, oxygen must be administered by a competent person. If liquid has gone to the eyes, they must be thoroughly washed out with water. Medical aid must be obtained as soon as possible.

6.39.8. Proper Handling of Fuels

- Never use gasoline to start a fire.
- Do not wash clothing or rags in gasoline.
- Gasoline should be handled and transported only in closed cans. It should never be stored inside a closed building.
- Never refuel an engine while it is running or while it is still hot.
- Always use a funnel when refuelling to prevent spilling.

- Never smoke in the vicinity of fuels.
- Always use an electric light or flask light when handling fuels.
- Never use an open flame for lighting purposes.
- Never use a fire when thawing lines or heating engines before starting.
- Keep all flammable materials away from exhausts and repair all fuel lines as soon as any leak is discovered.

6.40. Removal and reinstallation of coating

To perform the safe execution of the work on charged pipeline the following precaution shall be taken:

- Permit to work shall be taken to work on charged line.
- Hazard and risk associated with this activity shall be communicated among the working crew.
- Emergency response shall be explained and periodic mock drill shall be conducted to ensure the preparedness.
- Pipeline depth shall be assessed through pipe locator and maximum 1/3 of the depth can be excavated mechanically. Rest 2/3 of depth shall be excavated manually.
- Emergency response team of Owner as well as contractor shall be well informed in advance prior to execute the work so that necessary isolation and other precaution can be taken in case of sudden release of Gas/Oil.
- Work area must be barricaded to prevent unauthorised entry. Information of activity and potential risk must be communicated to the nearby habitat/community.
- Emergency evacuation provision shall be ensured in case of Gas/Oil release.
- Tools and equipment must be checked prior to start the work and also on periodical basis.
- Work shall be done on exposed pipe line only, not under the hanging or suspended pipeline.
- Removed coating shall be collected and stored separately in storage area to make the work area free from any obstruction.
- Leakage test or leakage monitoring shall be done while doing the recoating of pipeline.

6.41. Holiday detection

- Ensure appropriate PPEs are worn by operator.
- Effective earthing shall be provided to pipe.
- Walking on, Cross over or holding of the pipe by hand during the holiday test is not allowed.
- Keep safe distance from pipe layers while carrying holiday test during lowering.
- Don't pass under suspended pipe for holiday test / set up

7. WORK ENVIRONMENT

7.1. Illumination

To perform the work during night / late evening hours; it shall ensure that the work shall not be carried out unless adequate lighting provided for safe work. Working place, access and stairways must be well illuminated.

Prior approval must be taken from the Owner for working at night or late evening hours.

7.2. Drinking Water

The Contractor shall make in every place where building or other construction work is in progress, effective arrangements to provide and maintain at suitable points conveniently situated for all persons employed there in, a sufficient supply of wholesome drinking water. All Such points shall be legible marked "Drinking Water" in a language understood by a majority of the person employed in such place and no such point shall be situated within six metres of any washing place, Urinal or latrine. Portable containers used for dispensing of drinking water shall have tight fitting lids and be equipped with a tap. These shall be kept clean and free from contamination.

The Water at various locations shall undergo periodic test as per IS: 10500.

7.3. Latrines & Urinals

- Suitable nos. of latrines & urinal shall be provided at site.
- Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
- The latrines and urinals shall be adequately lit and shall be maintained in a clean and sanitary condition at all times.
- Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Statutory Authorities.
- Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

7.4. Sanitation-Disposal of excreta

Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta at the work place shall be ensured by the contractor.

7.5. Medical Facility

7.5.1. First Aid and Medical Provision and Treatment

Adequate first aid facilities, equipment and qualified paramedics/Site Medic for work site shall be provided. A medical room shall be established as per the following specs.

7.5.2. Specifications for field medical Porta-cabin

- Dimension: 20 ft X 8 ft (W) X 10 ft. (H).
- A partition separating doctor's examination chamber and patient treatment section.
- Two fowler beds.
- One examination couch
- A hand washbasin in doctor's chamber.
- A sink in treatment section with a toilet (WC and shower).
- Patient waiting area with chairs / bench.
- Sufficient locker space and shelves for storing medicines, equipment, oxygen cylinder, stretcher etc.

- Covered /shaded ambulance parking area (Separate from the porta cabin).

1.1.1.1.1. Contents of First Aid Box

Sl. No.	ITEMS	Quantity
01	Small size roller Bandage, 1Inch Wide	06 pc.
02	Medium size roller Bandage, 2 inch Wide	06 pc
03	Large size roller Bandage 4 inch Wide	04 pkt.
04	Large size burn dressing	04 pkt.
05	Cotton Wool	04 pkt.
06	Antiseptic Solution Dettol / Savlon	01 Bottle
07	Mecurichrome Solution	01 Bottle
08	Sal Ammonia	01 Bottle
09	Scissors	01 pc
10	Adhesive Plaster	01 spool
11	Eye Pad	04 nos.
12	Tourniquet	01 no.
13	Safety Pins	01 Dozen
14	Tin. Iodine	01 Bottle
15	Burnol	01 No.
16	Wash cup for washing eyes	01 No.
17	Potassium Per magnate	01 pkt.
18	Tine Benzoine	01 Bottle
19	Triangular bandages	02 Nos.
20	Band aid Dressing	06 pc
21	Iodex 25grm.	01 Bottle
22	Tongue Depressor	01 No.
23	Boric Acid Powder 20 grm.	01 pkt.
24	Sodium bicarbonate	01 pkt.
25	Dressing Powder	01 Bottle
26	Medicinal Glass	01 No.
27	Duster	01 No.
28	Soap	01 No.
29	Toothache Solution	01 Bottle
30	Eye Ointment	01 Bottle

31	Vicks 22grm.	01 Bottle
32	Forceps	01 No.
33	Cotton Buds	01 pkt.
34	Note Book (Hindi & English)	01 No.
35	Splints	04 Nos.
36	Lock	01 No.
37	Life saving /Emergency/over-the counter	

7.5.3. Emergency Vehicle

One fully equipped Advanced Life Support ambulance shall be available at site with PARAMEDICS/SITE MEDIC. A mutual tie-up with local hospital shall be established.

7.5.4. First Aid Treatment

Facilities shall be readily available to all personnel and at all times at site. First Aid training shall be considered for some of the supervisory personnel. Regardless of work situations, personnel who are trained and designated for first aid shall be made responsible for taking care of the situation and respond to extend first aid treatment. Contractor and their Subcontractor shall ensure that the adequate no. of first Aider must be available at site.

7.5.5. Medical Examination

Every worker employed in the company shall be produced for medical examination by a qualified medical practitioner in the following manner:

- Once before employment, to ascertain his physical fitness to do the job
- Once in a period of twelve months to ascertain his health status in respect on the occupational health hazards to which he is exposed or at a shorter interval
- The details of pre-employment and periodical medical examination carried out as aforesaid shall be recorded by the concern person in the health register or format.

8. HAZARD WARNING SIGNS, BARRICADES AND SIGNALS

Hazard warnings come in different forms, which include signs, tags, permits, barriers etc. and are primarily meant to caution/educate all personnel and visitors. Explain these with proper narration of SIGNS.

Appropriate and adequate quantity of signs; barricades and signaling supplies are shall be made available by the Contractor and their Sub contractor.

Site supervisor shall make sure that signs, barricades and signals are used, erected and maintained as required to ensure the safety and health of site personnel.

9. STOP WORK ORDER

Contractor shall ensure that any HSE non-compliance observed which may lead to an incident/accident, Stop work order must be issued and work will resume after taking the corrective action.

If contractor fails to ensure, Owner and his representative has the right to issue the Stop Work order. Owner and his representative will not be responsible for the delay in work.

10. DRIVING AND TRANSPORTATION

The Contractor and their Sub-contractors and suppliers shall implement a comprehensive transport plan. The plan shall minimize as far as reasonably practical the potential of vehicular accidents.

Contractors are directly responsible for Road Transport Safety management within their businesses. A road transport policy directive and Journey Management Plan (JMP) shall be a part of the contract for operating vehicles.

Contractors shall perform their activities in a safe manner, adhering to all the points contained in Indian Government Legislation plus the Road Transport Safety and HSE requirements specified in the contract. The Contractor shall communicate the road transport policy directive and JMP requirements to all their drivers. The policy is applicable to the following:

- Contractor owned vehicle, contracted passenger vehicles and drivers or personal vehicle operating on company roads and premises, Public road and in public area or for project work purpose.
- All company contracted heavy vehicle transport on a long term contract i.e. > 3 months.

In the event of a conflict between these guidelines and a relevant law or regulation of the government, the relevant law or regulation shall be followed. If the Standard creates a higher obligation, it should be followed as long as full compliance with the law or regulation is also achieved.

10.1. Evaluation and Risk Management of Land Transport

A systematic and comprehensive hazard identification and risk assessment of land transport operations covering all routes used for normal business travel should be performed at the earliest opportunity and at suitable intervals thereafter, by experienced and suitably qualified personnel and/or agency.

10.1.1. Vehicle Life-cycle

Light vehicles older than 4 years (from the date of its first registration) or have completed a running distance of more than 200,000 km shall be taken out of service. Heavy vehicles older than 10 years shall not be used.

10.1.2. Equipment required in light Vehicles

Vehicles shall be fit for purpose based on an assessment of usage, and be maintained in a safe working order in line with the manufacturers' specifications and local legal requirements. All vehicles must meet the emission specifications as per Motor Vehicle Act, 2008.

All Vehicles shall be fitted / provided with following equipment:

- Head restraints for all seats (may not be available in rear middle seat).
- An electric horn capable of giving audible and sufficient warning (No multi-toned horn giving succession of different notes, harsh, shrill, loud or alarming noise).
- Seat belts.
- Fire extinguisher.
- First aid kit.
- Driver & passenger side mirrors.
- Reversing alarm.
- Suitable spare wheel.
- Fog lamps (In case of hilly terrain or notified by the State Government or prevalence of foggy conditions).
- Flash light/torch.
- Disabled vehicle marker (warning triangle).

Air bags should be fitted for the front seat occupants wherever possible. It is recognized that some utility vehicles or passenger vehicles designated as Commercial vehicles may not have air bags. These vehicles should only be used for operations within the Company operated area only. Vehicles used for intercity travel shall have air bags fitted.

Wherever the risk assessment indicates that vehicle rollover is probable, appropriate roll-over protection shall be installed. Vehicles shall not have any non-original equipment added on for crash protection i.e. Bull bar, additional bumpers or other equipment that changes the front profile of a vehicle. These items create a danger to vehicle occupants, other road users and pedestrians. Items i.e. Perfume bottles, photo frames etc shall not be fixed on dashboards as they can come loose in case of an accident with the potential to cause serious injury to passengers.

10.1.3. Heavy Vehicles

In addition to the above, the following equipment shall be installed / provided in heavy vehicles:

- Side and rear under-run protection.
- Single-piece rims (as available).
- Wheel chocks.

- All bulk liquid HGVs shall be fitted with hatches and fittings that are secure and do not leak in the event of a rollover.
- All vehicles shall be fitted with mudguards and mud flaps.
- All electrical systems shall be in sound condition, securely fastened and with connections in appropriate junction boxes.
- Retread tyres shall not be used on steer axles.
- All delivery vehicles shall be fitted with securing points installed as per the manufacturer's specification so that loads can be secured.

10.1.4. Documents required in the vehicle

All vehicles shall have minimum following documents:

- Certificate of registration.
- Certificate of Insurance.
- Certificate of taxation.
- Driving license.
- Certificate of fitness and permit.
- Pollution under control certificate.
- Emergency contact numbers.
- Route map.
- VHF radio operating instructions (If fitted).

10.1.5. First Aid kit

The Content of the First Aid kit shall be;

- 10 adhesive dressings (Band-Aids) in assorted sizes.
- Six medium sterile dressing.
- Two large sterile dressing.
- One extra large sterile dressing.
- Two sterile eye pads.
- 05 Triangular bandages.
- 05 safety pins.
- One Pair of disposable gloves.
- One elastic crepe bandage 4" size.
- Two roller bandages each of 2.5 cms, 5 cms, 7.5 cms, 10 cms size.
- Six sterilized gauge- each of medium & large size.

- One small bottle of antiseptic solution i.e. Savelon / Dettol etc.
- One small tube of Soframycine antiseptic cream.
- One Pain relieve spray canister e.g. Moov, Rally etc.

10.1.6. Load Arrangements

Loose items shall not be carried in the passenger compartment of any vehicle. Vehicles with non-segregated storage shall be equipped with a cargo net or equivalent to separate the storage area from the passenger area.

Any heavy article carried inside the cabin of a pick-up truck or cargo vehicle, such as, jacks, fire extinguishers, etc shall be firmly secured (e.g. clamped behind the seat).

All loads transported in a pick-up (or utility) truck or other cargo vehicle shall be securely fastened, and shall not exceed the manufacturer's specifications and legal limits of the vehicle.

10.1.7. Condition of Tyres

The Non-Skid Depth (NSD), of all tyres including the spare shall not be less than 1.6 mm, below the Tread Wear Indicator (TWI) embedded in tyres at the time of manufacturing. This applies to the whole area of the tyre.

10.1.8. Seat Belts

Occupants of any vehicle shall use seatbelts at all times

All vehicles (Owned, Contracted, Hired or leased), shall be fitted with seat belts for all seats. Passengers should not occupy such seats if seatbelts are not fitted or functional.

Drivers with passengers shall not move their vehicle without ensuring all occupants of the vehicle are wearing their individual seat belts and continue to wear the seat belt while the vehicle is in motion.

Seat belts for front seat occupants and rear seat outboard passengers shall be of 3-point configuration inertia reels (viz., automatic retraction and deceleration activated emergency locking mechanism). Where there are more than two seats in a row (with exception of front seats), lap belts are acceptable for centre seat passengers.

Use of spot-hire vehicles not properly fitted with seat belts for all passengers shall be avoided when alternatives are available.

The specifications of Safety Belt Assemblies and Safety Belt Anchorages in motor vehicles shall conform to AIS: 005-2000 and AIS: 015-2000 specifications, respectively as amended from time to time.

10.1.9. Side Facing Seats

Side facing seats in the rear of vehicles are not be used for passengers.

10.1.10. Cellular Telephones and Two-way Communications Devices

Drivers shall neither initiate nor answer a mobile telephone call, while driving a vehicle. This includes the sending and reading of text messages. Hands-free devices shall also not be used.

The driver should safely leave the road and bring the vehicle to a complete and safe stop before answering any mobile telephone call.

10.1.11. Speed Limits

Speed limits will be observed in all cases. In exercise of the powers conferred by Motor Vehicles Act, 1988, the Central Government fixed the maximum speed limits in respect of class of motor vehicles. For vehicles registered as a commercial light/medium/heavy motor transport vehicle the maximum speed limit is 65 kph or lesser speed where indicated by road signage and for articulated vehicles (viz., trailers) the limit is 50 kph or lesser speed where indicated by road signage. Leased passenger cars are classified as commercial vehicles and are therefore restricted to the 65 kph limit or lesser speed where indicated by road signage. The speed limit while driving in villages is 30 kph or lesser speed where indicated by road signage and near schools is 15 kph or lesser speed where indicated by road signage. Driving speed shall be reduced when driving in hilly areas or during rainy / foggy conditions and negotiating blind spots as appropriate for the conditions such that the driver is able to maintain full control of the vehicle at all times.

10.1.12. Maintenance of Vehicle

Periodical maintenance of vehicle shall be ensured as follows:

- Daily Routine Inspection.

- Regular Servicing.

The aforesaid maintenance shall be ensured by the vendor if provided by them and by the employee themselves if company leased vehicle provided to them.

10.1.13. Self Driving

Employee must possess valid driving license issued by the relevant public authority for the class of vehicle being operated. It is the employees' responsibility to keep her/his license up-to-date.

10.1.14. Drivers (Contractor/Vendor)

All drivers must possess valid driving license issued by the relevant public authority for the class of vehicle being operated. It is the drivers' responsibility to keep her/his license up-to-date. The driving license should be routinely checked to ensure their status and validity.

In addition, drivers should:

- Have at least 3 years driving experience for the type of vehicle to be driven
- Possess good driving skills, with knowledge of defensive driving skills. These should be evaluated by a test drive of at least 90 minutes duration.
- A comprehensive understanding of road traffic signs which will be tested.
- A driving record free of serious offences i.e. there should be no record of rash or negligent driving etc.
- Knowledge of the major road network in areas to be operated and be able to read a map
- Background will be verified through:
  - Interview.
  - Reference checks.
- Be completely free from drugs and alcohol dependency.
- Be able to read and write.

10.1.15. Drivers Training

Contractor shall ensure that all his employees opt for self driving and Vendor's driver either regular or hired shall complete defensive driving training conducted by a competent agency within one month of commencing driving on Company business. Those drivers not demonstrating adequate knowledge will be re-trained and re-assessed at the Owner/Company discretion and shall not be permitted to drive the vehicle until adequate knowledge is shown. Spot-hire drivers shall have a minimum understanding of defensive driving techniques which shall be ensured by the person responsible for road transport operations

The refresher training and assessment shall be held every year following initial training.

Defensive driving instructions should include the following:

- Defensive driving techniques.
- Tiredness and fatigue management.
- Effects of medication and substance abuse.
- Vehicle restraint systems and safety equipment.
- Pre-journey checks and proper seating position.
- Local driving hazards, regulations and culture.
- Assessment of driving skills and behaviour.

Vendor shall ensure that the special training shall be provided to all drivers who are required to operate specialized vehicles or in the mountains, desert terrain and in high risk environments.

10.1.16. Training Records

Training records of employees/drivers on roll shall be maintained by HR department and Admin to procure training record of drivers provided by vendor/contractors and shall include the following:

- The drivers name.
- Name and duration of the training done.
- Details of the subjects covered and training material used to conduct the training.
- The name and address of the person / organization providing the training.
- Result of the learning measurement exercise.

Contractors will give Owner full access to all records of training conducted.

10.1.17. Driver Fitness and Alertness

Vendor shall ensure the pre-hire medical examination. It shall be carried out to ascertain fitness to work. Vendor shall also ensure that the all regular drivers shall have a medical assessment every two years for those below 40 years of age and every year for those above 40 years.

A driver who has suffered serious illness or injury shall undergo a medical checkup to ascertain fitness before resuming duties.

Prior to a journey the driver fitness shall be checked for the following:

- Hours rested.
- Hours worked.
- No alcohol consumed (Breath analyzer test may be conducted in case of doubt).
- Any ailment or illness or any medication being used.

Drivers must not operate vehicles unless appropriately rested and alert. Drivers must inform management if they have a disability or condition that could prevent them from driving safely

Drivers shall have the absolute right to refuse to drive when they feel that they are not fully rested or alert. Drivers shall have right to pull over at a safe location when they feel sleepy; a minimum15 minute nap should be allowed. If the driver is still feeling tired, further rest should be given or an alternative driver requested.

Employees shall themselves responsible for medical assessment every two years for those below 40 years of age and every year for those above 40 years

10.1.18. Driver's duty hours and rest breaks

It must be ensured that the drivers have sufficient rest hours and off periods to enable safe driving. Drivers should have a minimum rest period of 8 hours per day.

Drivers shall have a 15 minutes break for every 2 hours of driving.

10.1.19. Alcohol, drugs, narcotics or medications

Drivers shall not operate a vehicle while under the influence of alcohol, drugs, narcotics or medication that could impair the driver's ability to safely drive the vehicle. Testing may be carried out randomly for alcohol and drugs.

10.1.20. Briefings

A safety briefing should be conducted by the Contractor's supervisor or Road Safety Officer on a regular basis. Some of the issues recommended to be covered in the briefing are:

- Lapses noticed.
- Any road safety related incidents.
- Speed limits.
- Communication procedures.
- Use of fire extinguisher.
- First aid.
- Emergency procedure.
- Any local government orders or road safety drives.
- Weather conditions and precautions to be taken.

10.1.21. Journey Management Plan

Any practical and effective alternatives to the journey should be examined beforehand, such as the use of mail, e-mail, audio equipment or video-conferencing.

If the employee's journey is really necessary, the choice of transport and itinerary must take into account an assessment of the risks involved. Generally speaking, public transport (whether on the ground or by air) is preferable to car travel.

The use of motorized two-wheelers (mopeds and motorcycles, including those with three wheels) for work purposes should be prohibited. However, an Owner may authorize it for operational reasons, provided it prescribes appropriate preventive measures.

Managers at every level are empowered to question the need for journeys, always searching to eliminate the journey or find an alternative means to achieving the journey objective. Where a journey is necessary, all risks will be assessed and a journey management plan (JMP) implemented. Journeys within city boundaries (anywhere in India) do not require a JMP.

In Field locations, all journeys shall be managed by following the Journey Management Plan and Procedure. Periodic audits shall be conducted on the system to assess effectiveness.

The JMP form to be issued to all vehicles in local language and English prior to commencement of the journey.

10.1.22. Night Driving

Night driving outside of city limits is prohibited. In emergency situations, permission for night driving may be granted by the Contractor designated authority:

In situations where night working is essential e.g. projects or operations with 24 hours activities, night driving shall be allowed where necessary with the appropriate JMP in place.

10.1.23. Hitch-hikers

Hitch-hikers are not allowed to travel in company hired vehicles and self –driven vehicle. The Policy explicitly prohibits drivers on Company business from providing lifts for hitch-hikers.

10.1.24. Smoking

Smoking inside vehicles is strictly prohibited.

10.1.25. Spot Hire Vehicles

Use of spot-hire vehicles not meeting the above requirements is to be avoided. Spot hire vehicles are only to be used as a last resort when all other options have been eliminated. Approval for exemption from the policy shall be obtained from the respective Head of Department of Contractor. To minimize travel risk when travelling in spot hire vehicles it is recommended that the front passenger seats are not used, and that passengers are requested to stay seated throughout the journey and to sit well back in their seat

10.1.26. Use of Personal Vehicles

Contractor shall ensure that the personal vehicles used on company business should be consistent with the above specifications. All people working for the Company and commuting to offices on two wheelers shall (including pillion) wear crash helmets. Helmets should be replaced when damaged.

10.1.27. Movement of Vehicles within Plant Premises

Vehicles meeting the above requirements shall be permitted to enter Company controlled sites and shall follow the site specific vehicle safety regulations.

10.1.28. Site Traffic Plan

Every site where there is a risk of collision between pedestrians and vehicles or between different vehicles must have a formalized traffic plan. This traffic plan must include at least the following:

- A description of, and measures to organise, the flows of pedestrians and different types of vehicle using the site, either regularly or occasionally
- If necessary, a site zoning plan showing zones for loading, unloading, driving, parking, vehicle operations, etc is produced.
- A description of how the zones are indicated on the ground and the signage that is in place (including signs relating to local road traffic regulations)
- Safety instructions for people moving around the site, including speed limits and instructions for pedestrians.
- The name of the person responsible for the traffic plan.

The traffic plan must be displayed at the entrance to the site and explained to new employees, visitors and staff from outside companies.

10.1.29. Incidents / Accidents

Accidents or Incidents shall be reported immediately in accordance with Owner procedures. Road safety and procedure for reporting near miss and accident shall be discussed in the project meeting periodically. Drivers shall be trained in the emergency response procedures associated with travel.

10.1.30. Monitor, Audit and Review

Contractor and their sub-contractor admin department will continue to monitor the compliance of Road Safety Norms. A system of planned and systematic audits of land transport operations together with management reviews of performance should be established and maintained as an integral part of road transport operations.

The requirements of the Road transport safety policy guidance will form part of the basis of the audits protocols to be used by the Safety Audit. Noncompliance of the policy guidance may be subject to the disciplinary action/penalty procedure.

11. EMERGENCY MANAGEMENT

General

Emergency Management Plan during the construction and commissioning phase will be prepared by contractor in line with the Owner Emergency Plan and approved by Owner comprising

- An Emergency Response Plan and
- An Emergency Evacuation Plan

Emergency Response Plan

The Emergency Response Plan must cover different types of incidents that may endanger human life, material or the environment and where immediate action is required.

Especially in case of:

- Fire / Explosion
- Sudden release of Gas/oil
- Collapse of trenching
- Strikes
- Mob attack by villagers
- Severe weather/flood and other natural disasters.
- Customer operation hazardous events (existing line)
- Bomb attack/ Bomb threat

The plan must cover procedures regarding to the above mentioned subjects.

The Emergency Telephone List must be provided at Site and must be kept updated at any time.

Emergency escape route shall be marked and assembly point shall be fixed as site locations are changed and this is explained to workers during toolbox talks.

The CONTRACTOR shall ensure that their personnel are familiar with the essential emergency equipment, such as breathing apparatus, fire extinguishers etc., the use of which shall be demonstrated and practiced in drills.

The CONTRACTOR shall monitor & review Emergency Management Plan continuously including the location and condition of the emergency equipment. If it found to be unsatisfactory or not fully for the services, it shall take steps to immediately improve them

11.1. Site Emergency Preparedness and Response

Personnel must be instructed of the actions to take in the event of serious personal injury, gas or toxic release, fire, explosion, heavy rains, wind storms, flooding, chemical spillage, land slide, scaffolding or structure collapse, critical damage to operating equipment, etc. and other emergency situations during the induction training and other ongoing training sessions.

These situations may demand adequate rescue and relief measure to handle such events quickly and effectively.

In an emergency or on hearing the alarm, ensure the following;

- All work is stopped at once.
- All equipment vehicles and tools are shut down (all sources of ignition).
- All men are evacuated to a pre-determined Muster point.
- A roll call is taken and every man is accounted for.
- No one is permitted to return to work until notification has been received from the OWNER representative that it is safe to do so.

11.2. Emergency Preparedness

The basic and essential features of any emergency Preparedness are to analyses and plan for the potential risk. This includes;

- Establishing and maintaining effective communications.
- Liaison with local emergency services and authorities.
- Action Procedure (evacuation routes and assembly points etc.)
- Appoint of key personnel and specifying their duties and responsibility.
- Emergency Response Drills.

11.3. Emergency Response Drills

Effectiveness and comprehensiveness of Emergency Response Plan must be tested on a min quarterly basis. Drills which reflect the conditions induced from the more likely emergency occurrences must be conducted.

This shall include:

- Plan, coordinate and execute emergency drills which effectively test existing emergency response procedures.
- Basic drills for fire evacuation form site support facilities and offices shall be conducted.
- Specific Emergency drills (confined space rescue, weather etc.) should be conducted. All emergency drills, exercises and responses to actual incidents shall be fully documented and followed by a complete review and when necessary, procedure revision process.
- Initiate any required procedural changes, and initiate the dissemination of any lessons learned through the Site HSE&S communication system.

12. ENVIRONMENTAL PROTECTION AND MANAGEMENT

Environmental issues shall be highlighted in Contractor's Construction Environment Management Plan. Pollution, contamination and environmental damage is a major focus area and every effort shall be made, to have effective control measures in place to avoid pollution of Air, Water, and Land and associated life. Waste disposal shall be in accordance with the statutory requirements.

Any chemical including solvents and paints, required for construction shall be stored in designated areas at the site and records of hazardous waste shall be registered in accordance with the Hazardous Waste procedure.

The main objectives are: -

- To assess the environmental condition of the area where the construction is carried out.
- To provide timely indication if any environmental control measure fails.
- To achieve laid down/acceptable standards.
- To monitor effectiveness of environmental mitigation measures.
- Ensure compliance with regulatory requirements, Pollution Control Act and similar laws and codes as applicable for control of environment pollutants (such as dusty air, noise, dirty water as applicable).

Plant and Equipment

Plant and equipment are potential sources of pollutants, so it is important to be concerned of the location and role of the plant equipped. Potential source of the air pollution

The main pollutants, which will come out from different construction activities would be suspended particulate matter (SPM). The main sources of air pollution are:-

- Exhaust coming out from different equipment.
- Dust generated as the result of different construction activities.
- Dust and suspended particles during transportation of material.

12.1. Mitigation measures including contingency plans

Transportation of material from one place to another generates air pollution, which degrades the atmosphere of the area. To minimize the pollution, precaution will be taken to minimize visible particulate matter from being generated by restricting speed of vehicles on off road.

Dust Control

Water spraying shall be undertaken to control dust in case heavy transportation over non-mettle roads generate dust in the camp or pipe yard. Restricted speed of vehicles on off road shall be maintained to minimize dust generation. Dust mask shall be provided to workmen working in dusty zone.

Contingency Plan

If any emission or discharge into the environment exceeds the limiting value (either accidental or through inadequate implementation of mitigation measures), the cause will be quickly identified and remedial action shall be taken immediately.

Noise Monitoring & Control Plan (NMCP)

The noise monitoring and control plan shall contain the source of noise pollution on construction site. It also contain the mitigation measures to be taken.

Source of Noise Pollution

The noise generated during the running of the different equipment.

- Noise generated during truck loading and unloading and hauling operations.
- Noise generated due to generator.
- Noise generated at site during operation of crane, dozer, welding, grinding etc.
- Noise generated due to vehicular movement.

Noise Control Measures (PPE): Earplug / Ear muff shall be provided to personnel working in noisy area.

Mitigation Measures

To the extent required, meeting the noise limits, efforts will be made to reduce the noise pollution. The following steps will be taken to minimize construction noise emission level.

- Scheduling truck/trailer loading, unloading and hauling operation so as to minimize noise impact near noise sensitive location and surrounding communities.
- Locating stationary equipment so as to minimize noise impact on the community.
- Equipment and plant are stopped when not in use.
- Use of only well maintained machinery at site, all equipment & vehicles will be serviced as per the maintenance schedule.
- Silencers and mufflers on all noise generating equipment shall be properly fitted and maintained.
- Schedule the work to avoid simultaneous activities that would generate high noise levels.
- Construction of temporary physical noise barriers wherever required.
- Diesel Generator sets will be provided with acoustic enclosures.

Water pollution control

- Discharged wastewater arising from site offices, canteens, etc. shall be discharged into sewer after obtaining permission from concerned authorities.
- Wastewater from the residential blocks in the camp will be treated in a Sewage Treatment Plant prior to disposal. The STP would have a tertiary treatment so that the treated wastewater could be reused for toilet flushing, thus reducing wastewater generation.
- All drains shall be cleaned daily & settlement tanks shall be cleaned every week or earlier as per site requirements.

Cesspool collection of all site toilets/office/workshop toilets will be transferred to STP collection of camp. Treated discharge is either to a sub surface absorption system or to a surface absorption system and performed in a manner that avoids erosion. The STP in the camp would be equipped with a treatment facility such that the treated wastewater can be recycled and reused for toilet flushing within the camp.

In the event of any spillage, the principle is to recover as much material as possible before it enters a drainage system and to take all possible action to prevent spilled materials from running off the site. Contractor shall use appropriate clean-up techniques.

12.2. WASTE MANAGEMENT PLAN

The contractor shall identify and record wastes that will be generated during construction and shall arrange for their disposal in compliance with applicable regulations and best practices.

The impact of waste shall be reduced through segregated collection. During mobilization, construction, demobilization, the subcontractor shall minimize the waste through material selection.

Waste handling shall be in compliance with applicable Legislation and clients requirements. All waste shall be stored in such a way that it is not accessible to unauthorized persons. Contractors shall register all chemicals on stock at the Construction site. Waste registration shall include as a minimum:

- The type (e.g. chemical waste)
- The amount
- The composition
- The source of origin
- The destination
- The method of transport
- Hazardous to health.

WASTE COLLECTION

- Waste shall be categorized as follows: wood, metal, chemicals, coating scrap, paper, plastic and household garbage.
- Chemical waste disposed off during the construction site activities shall be registered in Waste log
- No waste, regardless of composition, shall be drained to process sewers, trenches, ditches or channels.
- A sufficient number of containers shall be provided on site to store trash and debris resulting from any construction operations
- Any uncontrolled emission shall be reported immediately.

WASTE SEGREGATION

Waste segregation exercise shall involve sorting and separating waste on the basis of its characteristics. Waste materials shall be segregated at source by providing colour and marked bins for storing the waste.

Special plastic lined corrugated box type containers shall be used for medical waste

WASTE DISPOSAL

- Sufficient containers and scrap disposal area should be allocated.

- All scrap bin and containers should be conveniently located.
- Provide self-closing containers for flammable/spontaneously combustible material.
- Keep drainage channels free from choking.
- Make schedule for collection and disposal of waste.
- No toxic, corrosive or flammable substance discarded into public sewage system.
- Waste disposal shall be in accordance with best practice.

Where reuse or recycling is not possible for non-hazardous waste streams, disposal of non-hazardous waste will be at the recognised Landfill, which is a designated by legal authority.

All hazardous waste generated at the site will be transferred to government approved waste disposal party.

WARNING AND SIGNS

All waste bin / containers shall be properly labelled in local and English language. Containers for hazardous waste and medical waste would have the proper warning signage on it.

WASTE TRANSPORTATION

Solid waste shall be collected in specially marked containers, as previously identified. Solid waste shall be collected regularly by collection trucks and transported to the disposal site. Sanitary waste will be transported to the sewage plant by an under ground sewer collection system where possible. Contaminated soils shall be collected by earth moving equipment loaded on to trucks, and transported to disposal site.

WASTE WATER DISPOSAL

Wastewater shall be treated to render it acceptable for discharge. Sanitary wastes generated within site office area may be transported by vacuum cars or diverted through the sanitary sewer. It shall be ensured that the effluent from the toilets and other wastes are treated in the Sewerage treatment Plant at the camp to meet the local municipal effluent criteria. A portion of treated wastewater shall be recycled and reused for toilet flushing within the camp.

Raw sewage and other wastewater shall not be discharged into soil or surface water without treatment.

12.3. Spill Response

The Contractor shall have a spill prevention programme and provide spill kits to deal with any spill. Should spills of chemicals, hydrocarbons or other potentially damaging materials occur or be observed by Contractor or Subcontractors staff, the following actions must be taken: -

- Attempt to contain spills to minimise potential pollution where practicable.
- Spillage response kits shall be positioned at strategic locations around the project, dependent upon the potential risk.
- Inform Owner Project Management / Supervision / HSE Management.
- Where necessary, report the spill to the Emergency Services, local authorities, Environmental Agency etc.
- Once the incident is under control, the Supervisor shall complete an incident report, with the assistance of the Contractor HSE Manager, which will be copied to the Project Manager.
- The Contractor shall fully comply with all statutory and Company requirements relating to the environment. The Contractor shall comply with all legislation regarding the disposal of waste materials such as Hazardous waste management and handling rules 1998; Manufacture, storage, and import of hazardous chemical rules 1998; Bio Medical waste rules 1998; Municipal solid waste rules 1998; Batteries rules 2001; Ozone depleting substances rules 2000.

13. CHECKING

13.1. Performance measurement and monitoring

13.1.1. Evaluation of Vendor /Sub Contractor HSE Performance

Vendor/Sub contractor HSE performance shall be evaluated during bid evaluation process as well as after completion of the work awarded.

13.1.2. HSE Performance Monitoring and Reporting

Contractor shall be responsible to provide the HSE data based on the Objective and Target to the Owner on Monthly Basis.

13.1.3. Implement, Monitor and Control

The Contractor HSE Management System shall follow the Plan-Do-Check-Act cycle as an integral mechanism in the implementation of management system control. This forms the first level of continuous performance improvement and should be affected directly by the personnel who operate the process. The effectiveness of the HSE controls within the management system should be evaluated by the use of:

- Active monitoring which measures compliance with standards and achievement of objectives.
- Reactive monitoring which measures accidents, incidents, ill health, hazard and non-conformance reports.
- Continuous improvement.
- Measures used for both active and reactive monitoring shall be supported by formal procedures which ensure that suitable corrective and as necessary preventative actions are identified.

13.1.4. Active Monitoring

Active Monitoring carried out shall include:

- Pre-use inspection of plant equipment and tools.
- Inspection of premises / sites, plant and equipment by supervisors, and other employees to ensure the continued operation of hardware controls.
- Materials and workmanship inspection.
- Inspections and examinations carried out by external organizations as legally required arrangements for the preventative maintenance of plant and equipment e.g. pressure vessels, lifting equipment, scaffolds, local exhaust ventilation etc.
- Conducting task based risk assessment and periodic review of same.
- Observation of work and behavior by first line supervisors to assess compliance with procedure rules and systems.

- Assessment of employee's attitudes to safety.
- Assessment of individual performance by means of employee workplace assessments as part of a competence assurance system.
- Monitoring of compliance with defined procedures - standards and targets e.g. Tool Box Talks, Safety Meetings, Inspections.

1.1.1.1.2. Reactive Monitoring

Reactive monitoring includes recognition, consideration and reporting of:

- Injuries and cases of ill health.
- Other loss events e.g. property damage, fire.
- Incidents including "near misses" with the potential to cause injury, ill health, damage, loss or harm to the environment.
- Hazards.
- Weakness or omissions in the company arrangements.
- Complaints.

Formal procedures shall exist to ensure the systematic recording of accidents, incidents, defects and hazards so that causes and potential loses may be analysed, corrective actions identified and implemented. Investigation to determine underlying causes should also highlight negative aspects of the operation of the Management System; however, these should be viewed as "learning opportunities" allowing improvements to be made and the direction or resources and attention towards safety and environmental priorities thus strengthening the Management System

13.2. Site HSE Inspection/ Audit

13.2.1. Audit

The Site HSE Inspections/Audit shall be planned and conducted by the Contractor HSE Manager / Officer and follow up shall be done in their area of operation. HSE audits shall be conducted to an agreed audit schedule by a combined Contractor and Owner audit team to evaluate compliance with the HSE Management System and Project Health, Safety & Environmental Plan. This audit shall be conducted by the Contractor HSE and Owner Personnel. The aim is to perform the audits as the relevant activities are being carried out in order to maximize the benefit of the audit and have the opportunity to implement corrective actions when the function is taking place.

13.2.2. Inspection

Supervisors and HSE Officer shall be responsible for carrying out daily inspections of the workplace where fabrication and construction activities are being undertaken.

Comprehensive inspection of the site shall be conducted on the Monthly basis and compliance status shall be discussed with the party concern.

All operators must check their equipment before starting the work. They should carry out a thorough visual check, recording all defects in equipment daily operation check list. On completion of the check they must report his deficiencies to their immediate supervisor and record.

At the start of his work period the supervisors must inspect the area for which he is responsible. He should conduct a thorough visual check of all tools, equipment and site. On completion of the inspection the defects must be corrected immediately.

13.2.3. Evaluation of compliance

The applicable legal and other requirement shall be evaluated periodically for their compliance. HSE Manager/ Officer of the contractor and their subcontractor shall evaluate in their area of operation.

14. INCIDENT INVESTIGATION, NONCONFORMITY, CORRECTIVE ACTION AND PREVENTIVE ACTION

14.1. Accident / Incident Prevention

To prevent injury and damage, it is necessary to recognize potential hazards and take action to control or eliminate them. This involve systems of control, which shall include safe methods of work, adequate supervision, planned maintenance, machinery guarding, personal protection and personal HSE awareness.

14.2. Accident / Incident Reporting & Investigation

The Contractor shall immediately notify the OWNER of all accidents or near-miss incidents after getting the information from the subcontractor or witnessing directly with grave potential resulting in: -

- Fatality and other lost time injury.
- Comparable injury to third party.
- Damage to plant or equipment.
- Loss of containment.
- Actual or potential damage to the environment and outbreak of fire

Contractor shall follow the timelines for notification as mentioned below based on the severity of the incident.

Incident Severity	Report by	Report to	Report within	Report via
Fatality Recordable Illness or Injury	Const. Manager or Site Rep.	Project Director/ Head of Project / PM Construction	ASAP 6 hrs	Phone Initial Incident Notification Report
Serious Accident	Project Director	Owner General Management	12 hrs	Initial Incident Notification Report
High Potential Incident	Const. Manager or Site Rep.	Project Director / Head of Project / PM Construction	ASAP 6 hrs	Phone Initial Incident

				Notification Report
	Project Director	OIL General Management	12 hrs	Initial Incident Notification Report
All other incidents & Near Miss	All personnel	Line Supervisor	ASAP	Verbal, followed by appropriate report

The Contractor shall develop the Incident Reporting and Investigation Procedure. All injuries must be reported to the Medical Centre. In addition all accidents and incidents, whether or not they cause injury, loss or damage shall be reported to the person's immediate supervisor in accordance with the Incident Reporting and Investigation Procedure. The Project HSE Adviser/Manager and the Construction Engineers will carry out a preliminary investigation into the accident / incident and will use the "Potential Matrix" system to determine the level of investigation required.

The Potential Matrix system has been developed to ensure all accident /incidents are investigated to determine what the full potential of an accident / incident in terms of injury to personnel, loss / damage to equipment / assets and harm to the environment.

The potential of an accident / incident will determine the level of investigation required and the members of the Investigation Team. The teams will typically include, but not be limited to:-

Investigation level	Investigation Team
Level 1	Project HSE Adviser/Manager
Level 2	Line Supervisor / Construction Engineers / Safety Representative / Project HSE Adviser
Level 3	Line Supervisor / Construction Engineers / Safety Representative / Project HSE Adviser / Project Manager / HSE Manager
Level 4	Line Supervisor / Construction Engineers / Safety Representative / Project HSE Adviser / Project Manager / HSE Manager / General Manager

The Contractor Project Manager shall ensure that all accidents / incidents are fully investigated in accordance with the above procedure and corrective actions to prevent recurrence implemented immediately. Investigation findings shall be reported back to the workforce via Safety Representatives and Supervisors.

All accidents involving Contractor and Sub-contractors personnel shall be reported to the Medical Centre and shall be recorded by the Medical Attendant in the daily accident log, the Accident Book and Accident / Incident and Occupational Illness Report form.

14.2.1. Accident / Incident Reports

The Contractor Health, Safety and Environmental Department shall collate information and statistics which shall be used in the preparation of reports and which shall be submitted to the Project Manager and other interested parties. Reports shall be produced on a monthly basis and shall include details of all accidents / incidents and near misses that have occurred during the last month.

Any accident, incident or hazardous situation linked to failure to comply with Life-Saving Rules shall be analysed by level 4 team and documented.

The Contractor must, as soon as possible, implement the relevant corrective measures. Specifically, if necessary, the safety guidelines and health and Interference Prevention Plans in question shall be revised. In case of any fatality contractor shall inform to local police immediately and other govt. Officials like labour commissioner etc. within 24 hours with consultation with the Owner

All the incident/accident shall be investigated and analyzed to identify the underlying causes and provide opportunity for the corrective and preventive action and communicate the result of such investigation.

Actual and potential non-conformity of the process shall be identified and corrective and preventive action shall be taken to mitigate their HSE consequences. Corrective and preventive action taken shall be communicated.

15. CONTROL OF RECORDS

Contractor shall follow the Owner procedure for the identification, storage, protection, retrieval, retention and disposal of records.

Records shall remain legible, identifiable and traceable.

16. MANAGEMENT REVIEW

Reviews shall include assessing opportunities for improvement and the need for changes to the HSE Management system (if required). Records of the management reviews shall be retained.

Input to management reviews shall include:

- HSE Plan.
- Results of internal audits and evaluations of compliance with applicable legal requirements and with other requirements to which the organization subscribes;
- The results of participation and consultation.
- Relevant communication(s) from external interested parties, including complaints;
- HSE performance;
- The extent to which objectives have been met;
- Status of incident investigations, corrective actions and preventive actions;
- Follow-up actions from previous management reviews;
- Changing circumstances, including developments in legal and other requirements related to HSE; and
- Recommendations for improvement.

The outputs from management reviews shall be consistent with the organization's commitment to continual improvement and shall include any decisions and actions related to possible changes to:

- HSE performance;
- HSE policy and objectives;
- Resources; and

- Other elements of the HSE management systems;

Relevant outputs from management review shall be made available for communication and consultation

Site has to conduct monthly HSE committee meeting. Record of the MOM shall be made and signed off by the chairman of the committee.

The Company reporting procedure shall be used to provide the basis for monitoring HSE performance and the assessment of improvement measures. Contractor shall report near miss incidents and property damage as a significant contributing factor to a pro-active HSE program.

17. PENALTIES

All contractors / subcontractors and contractor employees working in this project shall comply with HSE procedures, guidelines and safe work practice. Warning shall be given in case of violation followed by penalties which may be from Rs.10000 to Rs. 50000 as per owner discretion.

18. FORMATS

Contractor shall develop the project specific formats to ensure the various inspection, auditing and monitoring process. Contractor shall also develop the various formats for HSE performance, first aid, incident/accident, mock drill, training, induction, tool box talks etc.

All the forms and formats developed for this project shall be duly reviewed and approved by the owner.

At the helm of the Energy Transition, Tractebel provides a full range of engineering and advisory services throughout the life cycle of its clients' projects, including design and project management. As one of the world's leading engineering and advisory companies and with more than 150 years of experience, it's our mission to actively shape the world of tomorrow. With about 5,000 experts and presence in more than 70 countries, we are able to offer our customers multidisciplinary solutions in energy, water and urban.

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