



RAILTEL CORPORATION OF INDIA LIMITED
(A Govt. of India Undertaking, Ministry of Railways)

Expression of Interest for Selection of Partner from Empaneled Business Associate

for participation in IOCL Tender No. WRCC/PT/2022-23/PT/56 for

“Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office.”

**EOI No: RailTel/WR/MUM/IOCL_MH/EOI/2022-23 dated 28th September
2022**

**Western Railway Microwave Complex, Senapati Bapat Marg, Mahalaxmi,
Mumbai-400013**

EOI NOTICE

RailTel Corporation of India Limited, Western Railway Microwave Complex, Senapati Bapat Marg, Mahalaxmi, Mumbai-400013

EOI Notice No: RailTel/WR/MUM/IOCL_MH/EOI/2022-23 dated 28th September 2022

RailTel Corporation of India Ltd., (here after referred to as "RailTel") invites EOIs from RailTel's Empaneled Partners for the selection of suitable partner for participation in IOCL Tender No. WRCC/PT/2022-23/PT/56 for **"Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office."**

The details are as under:

1	Last date for submission of Bid response Packet against EOIs by bidders	30 th September 2022 at 15:00 Hours
2	Opening of Bid response packet of EOIs	30 th September 2022 at 15:15 Hours
3	Number of copies to be submitted for scope of work	One
4	PART A: Token EOI-EMD	Rs. 5,00,000/-
5	Final EMD (PART B: 50% of Final EMD amount minus the already submitted token EOI-EMD needs to be submitted before submission of bid to end customer. PART C: Balance amount from already submitted EMD (including token EOI EMD) needs to be submitted after award of contract to RailTel.)	Rs. 78,73,550/-

The EMD should be in the favor of RailTel Corporation of India Limited payable at Mumbai through online bank transfer. Partner needs to share the online payment transfer details like UTR No. date and Bank along with the proposal.

RailTel Bank Details: Union Bank of India, Account No.317801010036605, IFSC Code - UBIN0531782, Branch name – Mahalaxmi Branch

Eligible Business Associates are required to direct all communications related to this Invitation for EOI document, through the following Nominated Point of Contact persons:

Level:1 Contact: Richa Ratna
Position: Sr. Manager/Marketing
Email: richa_ratna@railtelindia.com
Contact: +91-9004444163

Level:2 Contact: Anand Kumar
Position: Dy. General Manager/Marketing
Email: anandnkn@railtelindia.com

Level:3 Contact: Sharad Sharma
Position: General Manager
Email : sharad.sharma@railtelindia.com

Note:

1. Empaneled partners are required to submit soft copy (password protected PDF) of bid response packet through an e-mail at eoι.wr@railtelindia.com, duly signed by Authorized Signatories with Company seal and stamp. **The size of file should not exceed 20 Mb.**
2. The password will be sought at the time of opening of the bid response packet.
3. The EOI response is invited from eligible **Empaneled Partners of RailTel only.**
4. All the documents must be submitted with proper indexing and page no.
5. This is an **exclusive arrangement with empaneled business associate of RailTel for participating in the end customer RFP.** Selected partner's authorized signatory has to give an undertaking they will not submit directly or indirectly their bids and techno-commercial solution/association with any other organization once selected through this EOI (before and after submission of bid to prospective organization by RailTel). This undertaking has to be given with this EOI Response.
6. **Transfer and Sub-letting.** The Business Associate has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.

1. Introduction about RailTel

RailTel Corporation of India Limited (RailTel), an ISO-9001:2000 organization is a Class-A Mini-Ratna Government of India undertaking under the Ministry of Railways. The Corporation was formed in Sept 2000 with the objectives to create nationwide Broadband Telecom and Multimedia Network in all parts of the country, to modernize Train Control Operation and Safety System of Indian Railways and to contribute to realization of goals and objective of national telecom policy 1999. RailTel is a wholly owned subsidiary of Indian Railways.

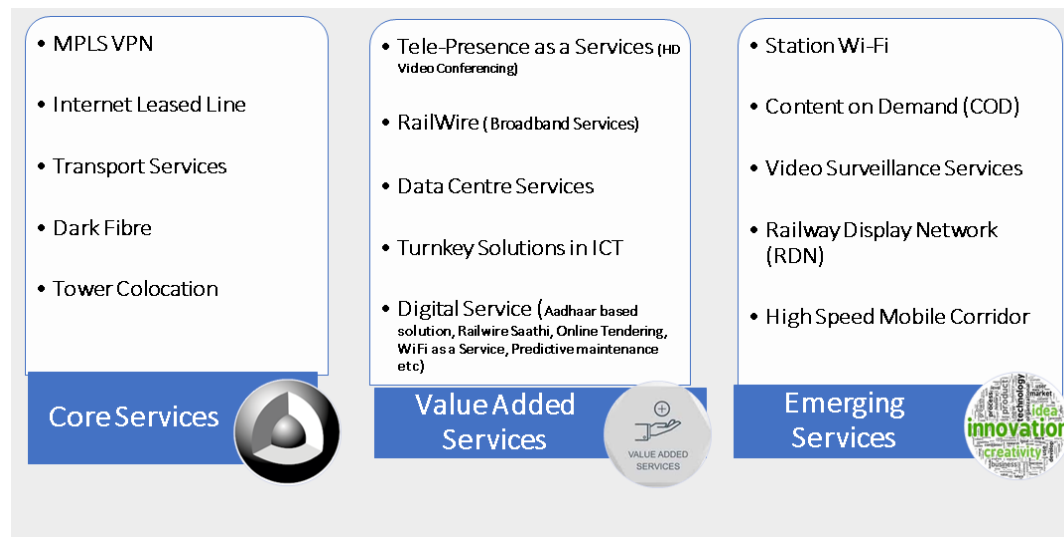
RailTel has approximately 60000 kms of OFC along the protected Railway tracks. The transport network is built on high capacity DWDM and an IP/ MPLS network over it to support mission critical communication requirements of Indian Railways and other customers. RailTel has Tier-III Data Center in Gurgaon and Secunderabad hosting / collocating critical applications. RailTel is also providing Telepresence as a Service (TPaaS), where a High-Definition Video Conference facility bundled with required BW is provided as a Service.

For ensuring efficient administration across India, country has been divided into four regions namely, Eastern, Northern, Southern & Western each headed by Executive Director and Headquartered at Kolkata, New Delhi, Secunderabad & Mumbai respectively. These regions are further divided into territories for efficient working. RailTel has territorial offices at Guwahati, & Bhubaneswar in East, Chandigarh, Jaipur, Lucknow in North, Chennai & Bangalore in South, Bhopal, and Pune & Ahmedabad in West. Various other territorial offices across the country are proposed to be created shortly.

RailTel's business service lines can be categorized into three heads namely B2G/B2B (Business to Government and Business to Business) and B2C (Business to customers):

Licenses & Service portfolio:

Presently, RailTel holds Infrastructure Provider -1, National Long-Distance Operator, International Long Distance Operator and Internet Service Provider (Class-A) licenses underwhich the following services are being offered to various customers:



a) Carrier Services

- National Long Distance: Carriage of Inter & Intra -circle Voice Traffic across India using state of the art NGN based network through its Interconnection with all leading Telecom Operators
- Lease Line Services: Available for granularities from E1 to multiple of Gigabit bandwidth & above
- Dark Fiber/Lambda: Leasing to MSOs/Telco's along secured Right of Way of Railway tracks
- Co-location Services: Leasing of Space and 1000+ Towers for collocation of MSC/BSC/BTS of Telco's

b) Enterprise Services

- Managed Lease Line Services: Available for granularities from E1, DS-3, STM-1 & above
- MPLS VPN: Layer-2 & Layer-3 VPN available for granularities from 2 Mbps & above
- Dedicated Internet Bandwidth: Experience the "Always ON" internet connectivity at your fingertips in granularities 2 Mbps to several Gbps

c) DATA CENTER Infrastructure as a service (IaaS), Hosting as Services, Security operation Centre as a Service (SOCaaS): RailTel has MeitY empaneled two Tier-III data centres in Gurgaon & Secunderabad. Presently RailTel is hosting critical applications of Indian Railways, Central & State government/ PSUs applications. RailTel will facilitate Government's applications / Hosting services including smooth transition to secured state owned RailTel's Data Centers and Disaster Recovery Centres. RailTel also offers SOC as a Service 'SOCaaS'. In addition, RailTel offers VPN client services so that employees can seamlessly access government's intranet, applications securely from anywhere without compromising security.

- National Long Distance: Carriage of Inter & Intra -circle Voice Traffic across India using state of the art NGN based network through its Interconnection with all leading Telecom Operators
- Lease Line Services: Available for granularities from E1 to multiple of Gigabit bandwidth & above
- Dark Fiber/Lambda: Leasing to MSOs/Telco's along secured Right of Way of Railway tracks
- Co-location Services: Leasing of Space and 1000+ Towers for collocation of MSC/BSC/BTS of Telco's

d) High-Definition Video Conference: RailTel has unique service model of providing high-definition video conference bundled with Video Conference equipment, bandwidth and FMS services to provide end to end seamless services on OPEX model connecting HQ with other critical offices. RailTel also offers application-based video conference solution for employees to be productive specially during this pandemic situation.

e) Retail Services – RailWire

RailWire: Triple Play Broadband Services for the Masses. RailTel has unique model of delivering broadband services, wherein local entrepreneurs are engaged in delivering &

maintaining broadband services and upto 66% of the total revenues earned are shared to these local entrepreneurs in the state, generating jobs and revitalizing local economies. On date RailTel is serving approx 4,00,000 subscribers on PAN Indian basis. RailTel can provide broadband service across—Government PSU or any organization's officers colonies and residences.

2. Project Background and Objective of EOI

RailTel intends to participate in a tender floated (hereinafter referred as RFP/Tender) by **Indian Oil Corporation Limited (IOCL)** for **Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office. (Ref No. WRCC/PT/2022-23/PT/56).**

RailTel invites EOIs from RailTel's Empaneled Partners for the selection of suitable partner for participating in above mentioned work for the agreed scope work. The empaneled partner is expected to have excellent execution capability and good understanding customer local environment.

3. Scope of Work

The scope of work will be as mentioned in the tender floated by **Indian Oil Corporation Limited (IOCL)** for **Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office. (Ref No. WRCC/PT/2022-23/PT/56).** Tender floated by IOCL is attached as Annexure-6 in this EOI document.

The above scope of work is indicative, and the detailed scope of work is given in the end customer tender along with latest amendments and clarifications.

In case of any discrepancy or ambiguity in any clause / specification pertaining to scope of work area, the RFP released by end customer organization shall supersede and will be considered sacrosanct. (All associated clarifications, response to queries, revisions, addendum and corrigendum, associated prime service agreement (PSA)/MSA/SLA also included.)

Special Note: RailTel may retain some portion of the work mentioned in the end organization RFP, where RailTel has competence so that overall proposal becomes most winnable proposal. Scope of Work and payment terms shall be on a back-to-back basis as per the end customer RFP.

4. Response to EOI guidelines

4.1 Language of Proposals

The proposal and all correspondence and documents shall be written in English in password protected PDF file through an email (size of email should not exceed 20Mb) to eoi.wr@railtelindia.com.

4.2 RailTel's Right to Accept/Reject responses

RailTel reserves the right to accept or reject any response and annul the bidding process or even reject all responses at any time prior to selecting the partner, without thereby incurring any liability to the affected bidder or Business Associate or without any obligation to inform the affected bidder or bidders about the grounds for RailTel's action.

4.3 EOI response Document

The bidder is expected to examine all instructions, forms, terms and conditions and technical specifications in the bidding documents. Submission of bids, not substantially responsive to the bidding document in every aspect will be at the bidder's risk and may result in rejection of its bid without any further reference to the bidder.

All pages of the documents shall be signed by the bidder including the closing page in token of his having studied the EOI document and should be submitted along with the bid.

4.4 Period of Validity of bids and Bid Currency

Bids shall remain valid for the period of validity of the Pre-Bid agreement which will be signed with the selected partner.

4.5 Bidding Process

The bidding process as defined in para 9.

4.6 Bid Earnest Money (EMD)

4.6.1 The Business Associate shall furnish a sum as given in EOI Notice via online transfer from any scheduled bank in India in favour of "RailTel Corporation of India Limited" along with the offer. This will be called as **Token EOI EMD**.

4.6.2 Offers not accompanied with valid Token EOI Earnest Money Deposit shall be summarily rejected.

4.6.3 In case of Business Associate's offer is selected for bidding, a BA has to furnish Earnest Money Deposit (for balance amount as mentioned in the customer's Bid as and if applicable) for the bid to RailTel. The selected Business Associate shall have to submit a Bank Guarantee against EMD in proportion to the quoted value/scope of work to RailTel before submission of bid to end customer, as and if applicable.

4.6.4 Non-submission of remaining EMD as applicable will lead to forfeiture of token 'EOI EMD'.

4.6.5 EMD can be received in the form of bank Guarantee/Online Bank Transfer/ Fixed Deposit. Bank guarantee has to be confirmed with the Structural Financial Messaging System (SFMS) confirmation from the issuing Bank in favor of RailTel. In case of Fixed Deposit, lien in favor of RailTel is to be ensured. However, EMD amount equal or less than Rs. 5 Lakhs shall be sought only in Online Bank transfer.

4.6.6 The validity of such EMD shall be maintained till the finalization of end Customer RFP/Tender i.e. award of order and till submission of Performance Guarantee of requisite value required by end customer on back to back basis.

4.6.7 **Return of EMD for unsuccessful Business Associates:** Final EMD of the unsuccessful Business Associate shall be returned without interest after completion of EOI process (i.e. after pre-bid agreement is signed with the selected partner)

4.6.8 **Return of EMD for successful Business Associate:** Final Earnest Money Deposit (balance proportionate EMD) if applicable of the successful bidder will be discharged / returned as promptly as possible after the receipt of RailTel's EMD/BG from the Customer and or on receipt of Security Deposit Performance Bank Guarantee as applicable (clause no. 4.7) from Business Associate whichever is later.

4.6.9 **Forfeiture of Token EOI EMD or EMD (balance proportionate EMD) and or Penal action as per EMD Declaration:**

4.6.9.1 The EOI EMD may be forfeited and or penal action shall be initiated if a Business Associate withdraws his offer or modifies the terms and conditions of the offer during validity period.

4.7 Security Deposit / Performance Bank Guarantee (PBG)

4.7.1 In case the bid is successful, the PBG of requisite amount proportionate to the agreed scope of the work will have to be submitted to RailTel.

4.7.2 As per work share arrangements agreed between RailTel and Business Associate the PBG will be proportionately decided and submitted by the selected Business Associate.

4.8 Last date & time for Submission of EOI response

EOI response must be submitted to RailTel at the email address specified in the preamble not later than the specified date and time mentioned in the preamble.

4.9 Modification and/or Withdrawal of EOI response

EOI response once submitted will be treated, as final and no modification will be permitted except with the consent of the RailTel.

No Business Associate shall be allowed to withdraw the response after the last date and time for submission.

The successful Business Associate will not be allowed to withdraw or back out from the response commitments. In case of withdrawal or back out by the successful business associate, the Earnest Money Deposit shall be forfeited, and all interests/claims of such Business Associate shall be deemed as foreclosed.

4.10 Clarification of EOI Response

To assist in the examination, evaluation and comparison of bids the purchaser may, at its discretion, ask the Business Associate for clarification. The response should be in writing and no change in the price or substance of the EOI response shall be sought, offered or permitted.

4.11 Period of Association/Validity of Agreement

RailTel will enter into agreement with selected bidder with detailed Terms and conditions.

5. Pre-Qualification Criteria for Bidding Business Partner of RailTel

S No.	Particulars	Criteria for Tender Package
		(Mandatory Compliance & Document Submission)
A)	Financial Conditions	
i)	BA should be registered under Companies Act, 1956 or Companies Act 2013 or as amended and should have at least 3 years of operations in India as on bid submission date.	<ol style="list-style-type: none"> 1. Certificate of Incorporation 2. GST Registration 3. PAN Card 4. Documentary evidence in the form of Order/Agreement/ MOU etc
ii)	BA individually should have an annual financial turnover (Total revenue as per annual financial closure period of the company) during any of the preceding 3 financial years i.e. FY 2019-20, FY 20-21, FY 2021-22 should be atleast Rs. 1514.70 Lakhs.	Turnover Certificate issued by the Chartered Accountant. Certificate should contain UDIN no. issued by ICAI and extracts from the audited balance sheet and profit & loss for last three financial year.
iii)	BA should also have a positive net worth in the last FY i.e. FY 2021-22	Positive Net Worth Certificate issued by the CA.
iv)	The participating bidder should be a currently active empaneled partner of RailTel.	Documentary proof of empanelment along with proof of empanelment Fee to be submitted.
B)	Technical Conditions	
v)	Bidder should have similar* experience in India related to supply, as on bid submission date. <i>Similar* experience: "Supply, installation and commissioning of CCTV System with allied works" or</i>	Work Orders / Letter of Intent / Signed Contract along with Go-live Certificate / Client Completion Certificate / Self declaration of work-in-progress or completion

S No.	Particulars	Criteria for Tender Package
		(Mandatory Compliance & Document Submission)
	<i>"Installation, commissioning, testing of Telecom or ICT Network".</i>	
vi)	The supplier should be Class 1 or Class 2 Local supplier.	Documentary proof to be submitted. AS per the end customer RFP, purchase preference benefit shall be given only to Class 1 local supplier.
C)	Annexures	
vii)	Annexure 1	Covering Letter: Self-certification duly signed by authorized signatory on company letter head.
viii)	Annexure 2	The Bidder should agree to abide by all the technical, commercial & financial conditions of the end customer RFP for which EOI is submitted.
		Self-certification duly signed by authorized signatory on company letter head.
ix)	Annexure 3	An undertaking signed by the Authorized Signatory of the company to be provided on letter head. The Bidder should not have been blacklisted/debarred by any Governmental /Non-Governmental Organization in India as on bid submission date.
x)	Annexure-4	Format for Affidavit to be uploaded by BA along with the tender documents.
xi)	Annexure-5	Non-disclosure agreement with RailTel.
xii)	Power of Attorney	Power of Attorney and Board Resolution in favor of one of its employees who will sign the Bid Documents.
xiii)	Additional Documents to be Submitted	Technical Proposal with overview of the project with strength of the Partner.

6. Bidder's Profile

The bidder shall provide the information in the below table:

S. No.	ITEM	Details
1.	Full name of bidder's firm	
2.	Full address, telephone numbers, fax numbers, and email address of the primary office of the organization / main / head / corporate office	
3.	Name, designation and full address of the Chief Executive Officer of the bidder's organization as a whole, including contact numbers and email Address	
4.	Full address, telephone and fax numbers, and email addresses of the office of the organization dealing with this tender	
5.	Name, designation and full address of the person dealing with the tender to whom all reference shall be made regarding the tender enquiry. His/her telephone, mobile, Fax and email address	
6.	Bank Details (Bank Branch Name, IFSC Code, Account number)	
7.	GST Registration number	

7. Evaluation Criteria

- 7.1 The Business Associates are first evaluated on the basis of the Pre-Qualification Criteria as per clause 5 above.
- 7.2 The Business Associate who meets all the Pre-qualification criteria, their price bid will be evaluated. The Lowest (L1) price bidder will be selected and entered into agreement with for delivery of the work on back-to-back basis for the agreed scope of work if RailTel is awarded contract from end customer.
- 7.3 RailTel reserves the right to further negotiate the prices with eligible L1 bidder during further reverse auction process of end customer. Selected bidder must ensure the best commercial offer to RailTel to offer the most winnable cost to customer.
- 7.4 RailTel also reserves the right to accept or reject the response against this EOI, without assigning any reasons. The decision of RailTel is final and binding on the participants. The RailTel evaluation committee will determine whether the proposal/ information is complete in all respects and the decision of the evaluation committee shall be final. RailTel may at its discretion assign lead factor to the Business associate as per RailTel policy for shortlisting partner against this EOI.
- 7.5 All General requirement mentioned in the Technical Specifications are required to be complied. The solution proposed should be robust and scalable.

8. Payment terms

- 8.1 RailTel shall make payment to selected Business Associate after receiving payment from

Customer for the agreed scope of work. In case of any penalty or deduction made by customer for the portion of work to be done by BA, same shall be passed on to Business Associate.

8.2 All payments by RailTel to the Partner will be made after the receipt of payment by RailTel from end Customer organization.

9. SLA

The selected bidder will be required to adhere to the SLA matrix if/as defined by the end Customer. SLA breach penalty will be applicable proportionately on the selected bidder, as specified by the end Customer. The SLA scoring and penalty deduction mechanism for in-scope of work area shall be followed as specified by the customer. All associated clarifications, responses to queries, revisions, addendum and corrigendum, associated Prime Services Agreement (PSA)/ MSA/ SLA also included. Any deduction by Customer from RailTel payments on account of SLA breach which is attributable to Partner will be passed on to the Partner proportionately based on its scope of work.

10. Other Terms and Conditions

Any other terms and conditions in relation to SLA, Payments, PBG etc. will be as per the RFP of the end customer.

Note: Depending on RailTel's business strategy RailTel may choose to work with Partner who is most likely to support in submitting a winning bid.

Annexure 1: Format for COVERING LETTER

COVERING LETTER (To be on company letter head)

Eol Reference No:

Date :

To,

RailTel Corporation of India Ltd.
Western Railway Microwave
complex, Senapati Bapat Marg,
Mahalaxmi, Mumbai 400013

Dear Sir,

SUB: Participation in the Eol process

Having examined the Invitation for Eol document bearing the reference number _____ released by your esteemed organization, we, undersigned, hereby acknowledge the receipt of the same and offer to participate in conformity with the said Invitation for Eol document.

If our application is accepted, we undertake to abide by all the terms and conditions mentioned in the said Invitation for Eol document.

We hereby declare that all the information and supporting documents furnished as a part of our response to the said Invitation for Eol document, are true to the best of our knowledge. We understand that in case any discrepancy is found in the information submitted by us, our Eol is liable to be rejected.

We hereby Submit EMD amount of Rs. _____ issued vide _____ from Bank _____.

Authorized Signatory

Name

Designation

Annexure 2: Format for Self-Certificate & Undertaking

Self-Certificate (To be on company letter head)

EoI Reference No:

Date:

To,

RailTel Corporation of India Ltd.
Western Railway Microwave
complex, Senapati Bapat Marg,
Mahalaxmi, Mumbai 400013

Dear Sir,

Sub: Self Certificate for Tender, Technical & other compliances

- 1) Having examined the Technical specifications mentioned in this EOI & end customer tender, we hereby confirm that we meet all specification.
- 2) We_____agree to abide by all the technical, commercial & financial conditions of the end customer RFP for which EOI is submitted (except pricing, termination & risk purchase rights of the RailTel). We understand and agree that RailTel shall release the payment to selected BA after the receipt of corresponding payment from end customer by RailTel. Further we understand that in case selected BA fails to execute assigned portion of work, then the same shall be executed by RailTel through third party or departmentally at the risk and cost of selected BA.
- 3) We agree to abide by all the technical, commercial & financial conditions of the end customer's RFP for the agreed scope of work for which this EOI is submitted.
- 4) We hereby agree to comply with all OEM technical & Financial documentation including MAF, Technical certificates/others as per end to end requirement mentioned in the end customer's RFP. We are hereby enclosing the arrangement of OEMs against each of the BOQ item quoted as mentioned end customer's RFP. We also undertake to submit MAF and other documents required in the end Customer organization tender in favour of RailTel against the proposed products.
- 5) We hereby undertake to work with RailTel as per end customer's RFP terms and conditions. We confirm to submit all the supporting documents constituting/ in compliance with the Criteria as required in the end customer's RFP terms and conditions like technical certificates, OEM compliance documents.

- 6) We understand and agree that RailTel is intending to select a BA who is willing to accept all terms & conditions of end customer organization's RFP for the agreed scope of work. RailTel will strategies to retain scope of work where RailTel has competence.
- 7) We hereby agree to submit that in case of being selected by RailTel as BA for the proposed project (for which EOI is submitted), we will submit all the forms, appendix, relevant documents etc. to RailTel that is required and desired by end Customer well before the bid submission date by end customer and as and when required.
- 8) We hereby undertake to sign Pre Bid Agreement and Non-Disclosure Agreement with RailTel on a non-judicial stamp paper of Rs. 100/- in the prescribed Format.

Authorized Signatory

Name & Designation

Annexure 3: Undertaking for not Being Blacklisted/Debarred

<On Company Letter Head>

To,

RailTel Corporation of
India Ltd. Western Railway
Microwave complex,
Senapati Bapat Marg,
Mahalaxmi, Mumbai
400013

Subject: Undertaking for not Being

Blacklisted/Debarred

We, Company Name, having its registered office at Address

hereby declares that that the Company has not been blacklisted/debarred by any

Governmental/ Non-Governmental organization in India for past 3 Years as on bid submission date.

Date and Place

Authorized Signatory's Signature:

Authorized Signatory's Name and Designation:

Bidder's Company Seal:

Annexure 4: Format of Affidavit

FORMAT FOR AFFIDAVIT TO BE UPLOADED BY BA ALONGWITH THE EOI DOCUMENTS

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs. 100/-. The paper has to be in the name of the BA) **

I..... (Name and designation)** appointed as the attorney/authorized signatory of the BA (including its constituents),
M/s.....(hereinafter called the BA) for the purpose of the EOI documents for the work of as per the EOI No. of (RailTel Corporation of India Ltd.), do hereby solemnly affirm and state on the behalf of the BA including its constituents as under:

1. I/we the BA (s), am/are signing this document after carefully reading the contents.
2. I/we the BA(s) also accept all the conditions of the EOI and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the EOI documents from RailTel website www.railtelindia.com. I/we have verified the content of the document from the website and there is no addition, no deletion or no alternation to be content of the EOI document. In case of any discrepancy noticed at any stage i.e. evaluation of EOI, execution of work or final payment of the contract, the master copy available with the RailTel Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.
6. I/we declare that the information and documents submitted along with the EOI by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.
7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of EOI, it shall lead to forfeiture of the EOI EMD besides banning of business for five years on entire RailTel. Further, I/we (insert name of the BA)**.....and all my/our constituents understand that my/our constituents understand that my/our offer shall be summarily rejected.
8. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for five years on entire RailTel.

DEPONENT
SEAL AND SIGNATURE
OF THE BA

VERIFICATION

I/We above named EOI do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

SEAL AND SIGNATURE
OF THE BA

Place:

Dated:

****The contents in Italics are only for guidance purpose. Details as appropriate, are to be filled in suitably by BA. Attestation before Magistrate/Notary Public.**

Annexure-5: Non-Disclosure Agreement (NDA) Format

NON-DISCLOSURE AGREEMENT

This Non-Disclosure Agreement (this "**Agreement**") is made and entered into on this ____ day of ____, 2021 (the "**Effective Date**") at _____.

By and between

RailTel Corporation of India Limited, (CIN: L64202DL2000GOI107905), a Public Sector Undertaking under Ministry of Railways, Govt. of India, having its registered and corporate office at Plate-A, 6th Floor, Office Block, Tower -2, East Kidwai Nagar, New Delhi-110023, (hereinafter referred to as '**RailTel**'), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of the ONE PART,

And

_____) (CIN: _____), a company duly incorporated under the provisions of Companies Act, _____ having its registered office at _____, (hereinafter referred to as '**_____**'), which expression shall unless repugnant to the context or meaning thereof, deem to mean and include its successors and its permitted assignees of OTHER PART

RailTel and _____ shall be individually referred to as "Party" and jointly as "Parties"

WHEREAS, RailTel and _____, each possesses confidential and proprietary information related to its business activities, including, but not limited to, that information designated as confidential or proprietary under Section 2 of this Agreement, as well as technical and non-technical information, patents, copyrights, trade secrets, know-how, financial data, design details and specifications, engineering, business and marketing strategies and plans, forecasts or plans, pricing strategies, formulas, procurement requirements, vendor and customer lists, inventions, techniques, sketches, drawings, models, processes, apparatus, equipment, algorithms, software programs, software source documents, product designs and the like, and third party confidential information (collectively, the "**Information**");

WHEREAS, the Parties have initiated discussions regarding a possible business relationship for _____.

WHEREAS, each Party accordingly desires to disclose certain Information (each Party, in such disclosing capacity, the "**Disclosing Party**") to the other Party (each Party, in such receiving capacity, the "**Receiving Party**") subject to the terms and conditions of this Agreement.

NOW THEREFORE, in consideration of the receipt of certain Information, and the mutual promises made in this Agreement, the Parties, intending to be legally bound, hereby agree as follows:

Permitted Use.

Receiving Party shall:

hold all Information received from Disclosing Party in confidence;

use such Information for the purpose of evaluating the possibility of entering into a commercial arrangement between the Parties concerning such Information; and

restrict disclosure of such Information to those of Receiving Party's officers, directors, employees, affiliates, advisors, agents and consultants (collectively, the "**Representatives**") who the Receiving Party, in its reasonable discretion, deems need to know such Information, and are bound by the terms and conditions of (1) this Agreement, or (2) an agreement with terms and conditions substantially similar to those set forth in this Agreement.

The restrictions on Receiving Party's use and disclosure of Information as set forth above shall not apply to any Information that Receiving Party can demonstrate:

is wholly and independently developed by Receiving Party without the use of Information of Disclosing Party;

at the time of disclosure to Receiving Party, was either (A) in the public domain, or (B) known to Receiving Party;

is approved for release by written authorization of Disclosing Party; or

is disclosed in response to a valid order of a court or other governmental body in the India or any political subdivision thereof, but only to the extent of, and for the purposes set forth in, such order; **provided, however**, that Receiving Party shall first and immediately notify Disclosing Party in writing of the order and

permit Disclosing Party to seek an appropriate protective order.

(c) Both parties further agree to exercise the same degree of care that it exercises to protect its own Confidential Information of a like nature from unauthorised disclosure, but in no event shall a less than reasonable degree of care be exercised by either party.

Designation.

Information shall be deemed confidential and proprietary and subject to the restrictions of this Agreement if, when provided in:

written or other tangible form, such Information is clearly marked as proprietary or confidential when disclosed to Receiving Party; or

oral or other intangible form, such Information is identified as confidential or proprietary at the time of disclosure.

Cooperation. Receiving Party will immediately give notice to Disclosing Party of any unauthorized use or disclosure of the Information of Disclosing Party.

Ownership of Information. All Information remains the property of Disclosing Party and no license or other rights to such Information is granted or implied hereby. Notwithstanding the foregoing, Disclosing Party understands that Receiving Party may currently or in the future be developing information internally, or receiving information from other parties that may be similar to Information of the Disclosing Party. Notwithstanding anything to the contrary, nothing in this Agreement will be construed as a representation or inference that Receiving Party will not develop products, or have products developed for it, that, without violation of this Agreement, compete with the products or systems contemplated by Disclosing Party's Information.

No Obligation. Neither this Agreement nor the disclosure or receipt of Information hereunder shall be construed as creating any obligation of a Party to furnish Information to the other Party or to enter into any agreement, venture or relationship with the other Party.

Return or Destruction of Information.

All Information shall remain the sole property of Disclosing Party and all materials containing any such Information (including all copies made by Receiving Party) and its Representatives shall be returned or destroyed by Receiving Party immediately upon the earlier of:

termination of this Agreement;

expiration of this Agreement; or

Receiving Party's determination that it no longer has a need for such Information.

Upon request of Disclosing Party, Receiving Party shall certify in writing that all Information received by Receiving Party (including all copies thereof) and all materials containing such Information (including all copies thereof) have been destroyed.

Injunctive Relief: Without prejudice to any other rights or remedies that a party may have, each party acknowledges and agrees that damages alone may not be an adequate remedy for any breach of this Agreement, and that a party shall be entitled to seek the remedies of injunction, specific performance and/or any other equitable relief for any threatened or actual breach of this Agreement

Notice.

Any notice required or permitted by this Agreement shall be in writing and shall be delivered as follows, with notice deemed given as indicated:

by personal delivery, when delivered personally;

by overnight courier, upon written verification of receipt; or

by certified or registered mail with return receipt requested, upon verification of receipt.

Notice shall be sent to the following addresses or such other address as either Party specifies in writing.

RailTel Corporation of India limited:

Attn: _____

Address: _____

Phone: _____

Email: _____

_____:

Attn: _____

Address: _____

Phone: _____

Email: _____

Term, Termination and Survivability.

Unless terminated earlier in accordance with the provisions of this agreement, this Agreement shall be in full force and effect for a period of _____ years from the effective date hereof.

Each party reserves the right in its sole and absolute discretion to terminate this Agreement by giving the other party not less than 30 days' written notice of such termination.

Notwithstanding the foregoing clause 9(a) and 9 (b) , Receiving Party agrees that its obligations, shall:

In respect to Information provided to it during the Term of this agreement, shall survive and continue even after the expiry of the term or termination of this agreement; and

not apply to any materials or information disclosed to it thereafter.

Governing Law and Jurisdiction. This Agreement shall be governed in all respects solely and exclusively by the laws of India without regard to its conflicts of law principles. The Parties hereto expressly consent and submit themselves to the jurisdiction of the courts of New Delhi.

Counterparts. This agreement is executed in duplicate, each of which shall be deemed to be the original and both when taken together shall be deemed to form a single agreement

No Definitive Transaction. The Parties hereto understand and agree that no contract or agreement with respect to any aspect of a potential transaction between the Parties shall be deemed to exist unless and until a definitive written agreement providing for such aspect of the transaction has been executed by a duly authorized representative of each Party and duly delivered to the other Party (a "**Final Agreement**"), and the Parties hereby waive, in advance, any claims in connection with a possible transaction unless and until the Parties have entered into a Final Agreement.

Settlement of Disputes:

The parties shall, at the first instance, attempt to resolve through good faith negotiation and consultation, any difference, conflict or question arising between the parties hereto relating to or concerning or arising out of or in connection with this agreement, and such negotiation or consultation shall begin promptly after a Party has delivered to another Party a written request for such consultation.

In the event of any dispute, difference, conflict or question arising between the parties hereto, relating to or concerning or arising out of or in connection with this agreement, is not settled through good faith negotiation or consultation, the same shall be referred to arbitration by a sole arbitrator.

The sole arbitrator shall be appointed by CMD/RailTel out of the panel of independent arbitrators maintained by RailTel, having expertise in their respective domains. The seat and the venue of arbitration shall be New Delhi. The arbitration proceedings shall be in accordance with the provision of the Arbitration and Conciliation Act 1996 and any other statutory amendments or modifications thereof. The decision of arbitrator shall be final and binding on both parties. The arbitration proceedings shall be conducted in English Language. The fees and cost of arbitration shall be borne equally between the parties.

CONFIDENTIALITY OF NEGOTIATIONS

Without the Disclosing Party's prior written consent, the Receiving Party shall not disclose to any Person who is not a Representative of the Receiving Party the fact that Confidential Information has been made available to the Receiving Party or that it has inspected any portion of the Confidential Information or that discussions between the Parties may be taking place.

REPRESENTATION

The Receiving Party acknowledges that the Disclosing Party makes no representation or warranty as to the accuracy or completeness of any of the Confidential Information furnished by or on its behalf. Nothing in this clause operates to limit or exclude any liability for fraudulent misrepresentation.

ASSIGNMENT

Neither this Agreement nor any of the rights, interests or obligations under this Agreement shall be assigned, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of each of the other Parties. Any purported assignment without such consent shall be void. Subject to the preceding sentences, this Agreement will be binding upon, inure to the benefit of, and be enforceable by, the Parties and their respective successors and assigns.

EMPLOYEES AND OTHERS

Each Party shall advise its Representatives, contractors, subcontractors and licensees, and shall require

its Affiliates to advise their Representatives, contractors, subcontractors and licensees, of the obligations of confidentiality and non-use under this Agreement, and shall be responsible for ensuring compliance by its and its Affiliates' Representatives, contractors, subcontractors and licensees with such obligations. In addition, each Party shall require all persons and entities who are not employees of a Party and who are provided access to the Confidential Information, to execute confidentiality or non-disclosure agreements containing provisions no less stringent than those set forth in this Agreement. Each Party shall promptly notify the other Party in writing upon learning of any unauthorized disclosure or use of the Confidential Information by such persons or entities.

NO LICENSE

Nothing in this Agreement is intended to grant any rights to under any patent, copyright, or other intellectual property right of the Disclosing Party, nor will this Agreement grant the Receiving Party any rights in or to the Confidential Information of the Disclosing Party, except as expressly set forth in this Agreement.

RELATIONSHIP BETWEEN PARTIES:

Nothing in this Agreement or in any matter or any arrangement contemplated by it is intended to constitute a partnership, association, joint venture, fiduciary relationship or other cooperative entity between the parties for any purpose whatsoever. Neither party has any power or authority to bind the other party or impose any obligations on it and neither party shall purport to do so or hold itself out as capable of doing so.

20: UNPUBLISHED PRICE SENSITIVE INFORMATION (UPSI)

_____ agrees and acknowledges that _____, its Partners, employees, representatives etc., by virtue of being associated with RailTel and being in frequent communication with RailTel and its employees, shall be deemed to be "Connected Persons" within the meaning of SEBI (Prohibition of Insider Trading) Regulations, 2015 and shall be bound by the said regulations while dealing with any confidential and/ or price sensitive information of RailTel. _____ shall always and at all times comply with the obligations and restrictions contained in the said regulations. In terms of the said regulations, _____ shall abide by the restriction on communication, providing or allowing access to any Unpublished Price Sensitive Information (UPSI) relating to RailTel as well as restriction on trading of its stock while holding such Unpublished Price Sensitive Information relating to RailTel

MISCELLANEOUS. This Agreement constitutes the entire understanding among the Parties as to the Information and supersedes all prior discussions between them relating thereto. No amendment or modification of this Agreement shall be valid or binding on the Parties unless made in writing and signed on behalf of each Party by its authorized representative. The failure or delay of any Party to enforce at any time any provision of this Agreement shall not constitute a waiver of such Party's right thereafter to enforce each and every provision of this Agreement. In the event that any of the terms, conditions or provisions of this Agreement are held to be illegal, unenforceable or invalid by any court of competent jurisdiction, the remaining terms, conditions or provisions hereof shall remain in full force and effect. The rights, remedies and obligations set forth herein are in addition to, and not in substitution of, any rights, remedies or obligations which may be granted or imposed under law or in equity.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date set forth above.

_____:

By _____

Name:

Title:

RailTel Corporation of India
Limited:

By _____

Name:

Title:

Witnesses

Annexure-6 Tender floated by IOCL



IndianOil

A Maharatna
Company

INDIAN OIL CORPORATION LIMITED (MD)

WESTERN REGION OFFICE

REGIONAL CONTRACT CELL

MAHARASHTRA STATE OFFICE,

INDIAN OIL BHAWAN

Plot No. C-33, G – Block,

Bandra Kurla Complex,

BANDRA (EAST), MUMBAI,

Maharashtra– 400051

NAME OF WORK: Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office.

COMPLETION TIME: 5 months from the 10th day of commencement order (LOA) or handing over of site whichever is earlier.

TENDER NO: WRCC/PT/2022-23/PT/56

LAST DATE OF TENDER SUBMISSION: AS PER NIT



TENDER NO: WRCC/PT/2022-23/PT/56

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

COVERING LETTER

REF: -----

DATE: 23.08.2022

M/s _____

Dear Sirs,

SUB: Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Tender No: WRCC/PT/2022-23/PT/56

- 1) We propose to invite Public Tender in TWO BID System WITH REVERSE AUCTION for the subject work.
- 2) Tender documents can be accessed through our e-tender portal <https://iocletenders.nic.in> from the date of publishing to end date of sale.
- 3) Before downloading the tender documents from the website, the Bidders should register at the website <https://iocletenders.nic.in> giving their correct name, address and other details as required. It shall be the responsibility of the Bidders to ensure that they register with the website well in advance and download the documents before the date and time of close of sale.
- 4) Only the registered party, who has downloaded the document, can submit the bid using their Digital Signature Certificate in e-portal.
- 5) We request you to submit your lowest quotation for the work contained in the tender.
- 6) Your offer complete in all respects must be uploaded in the prescribed manner on our e-tendering portal "<https://iocletenders.nic.in>" on or before as per NIT [REDACTED]
- 7) Reserve auction will be conducted for finalizing this tender. Latest quote either of reverse auction or of the tender (in case bidder does not participate in reverse auction) shall be considered for evaluating bidders as L1, L2, L3 and so on.
- 8) Bidders are requested to go through the "Bidders Manual Kit" available in the homepage of the e-tendering portal i.e. <https://iocletenders.nic.in> to have a clear understanding of the steps to be followed for bid submission. The "Bidders Manual kit" is for general reference only and the Bidders have to abide by the terms and conditions of this tender.
- 9) Bidders must also note that before the bid is uploaded, the bid comprising of all attached documents should be digitally signed using digital signatures as specified in the tender.
- 10) Any query with regard to non-issuance of the tender documents or rejection of the tender may be forwarded to ykshahore@indianoil.in
- 11) Bidders to please note that Pre-Bid Conference shall be held as per details given in NIT

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

12) Bidders also may note that after the clarifications are given in Pre Bid conference, no further deviation shall be permitted and all decisions taken by IOCL in the pre-bid conference shall be binding on all bidders. All prospective bidders are requested to attend the Pre Bid conference.

NOTE:

- a) Bidders are advised to visit the e-Tender portal regularly for updates. In case of any corrigendum or sale date extension, the same shall be issued in the E Tender portal only. No separate publication shall be done in newspapers/print media.
- b) All Bidders are requested to start the submission process of bids at least 4 hours prior to the due date & time of bid submission to avoid problem in submitting documents due to last minute rush.

Thanking you,

Yours faithfully

For Indian Oil Corporation Limited

Dy. General Manager (Contracts)

Note: All Pages/Documents to be signed with Digital Signature with E- Tender Submission

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum’s etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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CCTV DOCUMENTATION 323

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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COMMERCIAL DOCUMENT

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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NOTICE INVITING E-TENDER – WEBSITE

Indian Oil Corporation Limited invites electronic bids through its website <https://iocletenders.nic.in> under two bid systems (Part A - Technical / Commercial Bid and Part B - Price Bid) with **Reverse Auction** from reputed technically competent, quality conscious, experienced and financially sound contractors having experience of similar works and fulfilling the qualifying requirements as stated hereunder:

1.0	E-TENDER NO.	:	Tender No: WRCC/2022-23/PT/56 E-Tender Ref:2022 WRO 155271 1	
2.0	NAME OF WORK	:	Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	
3.0	TENDER FEE	:	Nil Bidders are required to download the tender documents free of cost from IOCL e-tender website (https://iocletenders.nic.in)	
4.0	ESTIMATED COST Inclusive of all taxes and Duties	:	Rs. 78,73,55,016.63/- (Rupees Seventy Eight Crores Seventy Three Lakhs Fifty Five Thousand Sixteen and paisa Sixty Three Only) including GST as per location wise lot wise details mentioned below:	
SN	Location	Supplies, Installation and Commissioning (Inclusive of all taxes and Duties) (Rs.)	CAMC works for 6 Yrs after warranty (Inclusive of all taxes and Duties) (Rs.)	Total (Inclusive of all taxes and Duties) (Rs.)
1	AKOLA DEPOT	49467224.55	12366810.64	61834035.20
2	DHULE DEPOT	46074296.41	11518577.08	57592873.49
3	JNPT TERMINAL	34119820.59	8529960.40	42649781.00
4	MIRAJ DEPOT	32638171.31	8159546.60	40797717.91
5	PUNE TERMINAL	40053866.14	10013469.38	50067335.52
6	VASHI TERMINAL	27136741.86	6784188.16	33920930.02
7	AURANGABAD AFS	7685818.01	1921460.08	9607278.09
8	DABOLIM (GOA) AFS	15273066.85	3818271.14	19091337.99
Lot-II Total (40.08%):		252449005.72	63112283.48	315561289.22
1	CHANDRAPUR DEPOT	32210946.17	8052740.08	40263686.25

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

2	SEWREE-I TERMINAL	27627929.55	6906983.68	34534913.23
3	SEWREE - II TERMINAL	23264071.27	5816021.76	29080093.03
4	VASCO TERMINAL	36844330.87	9211087.08	46055417.95
5	WADALA TERMINAL	25078197.92	6269552.40	31347750.32
6	SHRIDI AFS	7685818.01	1921460.08	9607278.09
7	LBP TALOJA	27535008.23	6883755.38	34418763.61
Lot-II Total (28.62%):		180246302.02	45061600.46	225307902.48
1	MANMAD BP	43623770.76	10905944.68	54529715.44
2	DHANAJ BP	42124292.94	10531076.38	52655369.32
3	PUNE BP	43263258.58	43263258.58	54079077.22
Lot-III Total (20.48%):		129011322.28	64700279.64	161264161.98
1	LBP TROMBAY	18657487.19	4664375.98	23321863.17
2	SCFP KHAPRI	22985978.99	5746499.70	28732478.69
3	SCFP TROMBAY	26533855.17	6633466.76	33167321.93
Lot-IV Total (10.82%):		68177321.35	17044342.44	85221663.79
TOTAL FOR ALL LOTS		629883951.46	157471066.08	787355016.63

The quantum of works given in Tender Document is only indicative based on tentative estimates and is not the right of contractor. Indian Oil does not guarantee any minimum or maximum quantum of works, during the currency of contract

CONTACT DETAILS OF THE LOCATION

S.No	Name of the location	Location in-charge name and Contact number
1	Akola Depot	Dhawal Nagrale - 9422804666
2	Chandrapur Depot	S.M. Bandhe - 7440937432
3	Dhule Depot	N. S. Bhalerao - 9423965306
4	JNPT Terminal	Sajid Ahmed - 7544018606
5	Miraj Depot	Pankaj Sakharkar - 9689113839
6	Pune Terminal	Subhas Rakshit - 9800141714
7	Sewree – I Terminal	P.P. Lokhande - 7219556090
8	Sewree – II Terminal	P.P. Lokhande - 7219556090
9	Vasco Terminal	I. Ravi Sharma - 7898363822
10	Vashi Terminal	Bidhan Chandra Biswas - 9831504668
11	Wadala Terminal	Kiran M. Dekate - 8698555540
12	Aurangabad AFS	Shrikant Giradkar - 8983251114
13	Dabolim (GOA) AFS	J P Sinha - 7703005530
14	Shirdi AFS	Vipul - 9049994489
15	LBP Taloja	Shri Sumit Sarkar - 02220871296

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

16	LBP Trombay	Shri B K Roy - 9820918096
17	SCFP Khapri	R.M.Pimprikar - 9833310492
18	SCFP Trombay	R D Beck - 9830918018
19	Manmad BP	Shri. Dhiraj Kumar - 8800465132
20	Dhanaj BP	Shri, Nareshkumar Dhongadi - 9975155829
21	Pune BP	Shri. Patro Debmeet - 9064046647

5.0	EARNEST MONEY DEPOSIT	:	<p>Bidders to note that there shall be no requirement of paying EMD against this e-tender. However, all bidders shall be required to mandatorily submit the Bid Security Declaration in lieu of EMD as per the standard format attached.</p> <p>The requirement of submission of Bid Security Declaration shall also be applicable on bidders who are exempted from payment of EMD (MSEs as per PPP, Startups, CPSE & JVs).</p> <p>The bid shall be summarily rejected if Bid Security Declaration in lieu of EMD is not uploaded in e-tender portal on or before tender submission date and time.</p> <p>It may be noted that this is a works contract and therefore purchase/price preference for MSEs will not be applicable for this tender.</p>
6.0	SECURITY DEPOSIT		<p>The successful tenderer, upon placement of work order, shall pay security deposit, an amount equivalent to 3% of CAPEX value of the work order (s) (excluding taxes). The security deposit shall be paid by Bank Guarantee/ NEFT/RTGS.</p> <ul style="list-style-type: none"> ➤ If the contractor desires to pay Security Deposit by way of Bank Guarantee, then they should pay the same for the entire amount of the Security Deposit work out based on work order value before commencement of work. (The Bank Guarantee should be of Nationalized / Scheduled Banks sent directly by the Banker under their covering letter to the office of the Corporation by Regd. Post/Courier). ➤ However, BG will not be accepted if the total amount of the security deposit is less than Rs. 1,00,000/- <p>Against requirement of total security deposit, successful bidder can also pay Initial Security deposit of 1% of the work order / contract value (excluding taxes) within 10 days from the date of issuance of LOA and balance security deposit amount shall be deducted from each running account bill @ 2% of the Running Account Bills (excluding taxes).</p> <p>All the works carried out by the Contractor shall be covered under defect liability period for a period of 12 (Twelve)</p>

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			<p>months from the date of handing over of completed work to IOCL ie Successful completion of SAT.</p> <p>Security Deposit shall not carry any interest.</p>
7.0	TENDER DOWNLOAD PERIOD FROM e-TENDER PORTAL:		
a	Starts on	:	24-08-2022 15:00 HRS
b	Ends on	:	17-09-2022 15:00 HRS
8.0	PRE-BID MEETING/ CONFERENCE	:	<p>05-09-2022 11:00 HRS</p> <p>Indian Oil Corporation Limited (Marketing Division) WESTERN REGION CONTRACT CELL Indian Oil Bhavan, Plot C-33 G-Block, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051. India</p> <p>Bidders to please note that Pre Bid conference will be held in our office on DATE MENTIONED ABOVE wherein all the clarifications, if any, with regard to Technical/ Commercial conditions shall be given. Bidders are advised to ensure that the queries must reach office of the Corporation at least two working days in advance for this purpose.</p> <p>The editable soft copy of the queries may also be sent on email address (rajasekharb@indianoil.in) given in press release / tender documents. Bidders also to note that after the clarifications are given in Pre Bid conference, no further deviation shall be permitted and all decisions taken by IOCL in the pre-bid conference shall be binding on all bidders. All are requested to attend the Pre Bid conference.</p>
9.0	SUBMISSION OF TENDER IN e-TENDER PORTAL:		
a	Starts on	:	07-09-2022 15 00 HRS
b	Ends on	:	17-09-2022 15:00 HRS
	<p>Note: The Corporation reserves the right to revise/extend any Date/Time from scheduled timelines of Published Tender.</p>		
10.0	DUE DATE FOR OPENING OF TENDER:		
a.	Opening of Tender (Technical Bid Only)		19-09-2022 11:00 HRS
11.0	TENDER VALIDITY	:	Offer shall be valid for 120 Days from date of opening of

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			technical bid. In case of requirement, IOCL may seek further extension of the validity of the offer from the bidders.
12.0	COMPLETION PERIOD	:	5 months from the 10th day from the date of issue of commencement order (LOA) or actual handing over of the site whichever is earlier irrespective of nos. of LOTs / LOT size being awarded
13.0	REVERSE AUCTION	:	Reverse Auction shall be conducted in this Tender. To know the above process, Bidders are requested to read the document on Reverse Auction which is uploaded in e-tender Portal under Bidders Manual Kit.
14.0	PRICE ADJUSTMENT TOWARDS DELAY IN COMPLETION	:	In case the work is not completed within the prescribed period of completion, price adjustment @ ½ % of contract value per week or part thereof for delay beyond the scheduled completion period, subject to maximum of 10% of value of work actually executed. In partial modification of clause 4.4.0.0 of GCC, Price adjustment for delay in completion shall be deducted at applicable percentage from RA Bills, on cumulative value of works done up to the concerned RA Bill. However, in case of abandonment of site/termination, price adjustment for delay shall be applied in line with GCC clause 7.0.9.0 on total contract value as specified in Acceptance of tender
15.0	MODE OF TENDER SUBMISSION	:	It may please be noted that this is an e-Tender and can only be downloaded and submitted in the manner specified in 'Special Instructions to bidders for participating in e-tender' attached separately in this tender.
16.0	CONTACT PERSON	:	Chief Manger (Contracts) 022 2672 2447 E mail -rajasekharb@indianoil.in Indian Oil Corporation Limited (Marketing Division) WESTERN REGION CONTRACT CELL Indian Oil Bhavan, Plot C-33 G-Block, Bandra Kurla Complex, Bandra (East), Mumbai - 400 051. India
17.0	Names of IEMs	:	Details of IEMs are available in URL: https://www.iocl.com/Integrity%20Pact
18.0	PRE-QUALIFICATION CRITERIA (PQC)-		
A.	SIMILAR WORKS EXPERIENCE: The vendor should have the experience of having successfully completed similar woks (defined below) during the last five years up to the last day of the month previous to the one in which tenders are being invited <ie. Up to 30.07.2022>, should be either of the		

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following:-

Three similar completed works each costing not less than the amount equal to Rs **Rs. 757.35 Lakhs** including taxes and duties. **OR**

Two similar completed works each costing not less than the amount equal to Rs **1009.80 Lakhs** including taxes and duties. **OR**

One similar completed works costing not less than the amount equal to Rs **1262.25 Lakhs** including taxes and duties.

Note:

- a. The value of completed job to be submitted by prospective bidders shall be compared with values as prescribed above. There shall be no deduction against Taxes.
- b. The completed job value shall be exclusive of AMC / CAMC value.

DEFINITION OF SIMILAR WORKS:

Experience in successful completion of :

(a) Supply, Installation and Commissioning of CCTV System with allied works in any Petroleum Installation (including LPG/ Bitumen/Aviation)/ Petrochemical/ Chemical/ Fertilizer/ Steel/ Power Plant/ Defence/Police/SMART city projects/Airports.

OR

(b) Terminal Automation works which include Supply, Installation, commissioning with CCTV system and allied works in any Petroleum (including LPG/ Bitumen)/ Petrochemical/ Chemical industries.

Note:

- The work shall be carried out by the party directly in their name from the Principal Employer where work has been carried out.
- The experience of the tenderer for work completed as per above requirement must be of their own and not with the support of another party/ parent company/ subsidiary/ partner firm/ group firm/ backup firm or as a consortium etc. The credentials of the parent company, JV Partner Company, subsidiary company etc shall not be considered.
- Consultants or their subsidiary company or companies under the management of consultant, are not eligible to quote for the execution of the same job for which they are working as consultants.
- Date of completion of work and the final value of works completed in the qualifying work order(s) shall be the criteria for evaluation. However, for any work where only final bill settlement is pending, then, copies of MOM/ certificates towards completion of Site Acceptance Tests/handing over, with/without attending to punch points if any including proof of payment received up to **< 30.07.2022 >** to the tune of qualifying amount shall be submitted by the bidders towards meeting qualifying

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	<p>norms.</p> <ul style="list-style-type: none"> ➤ For the same project, if separate orders are placed for supplies and services or variation orders or amendment orders are issued in continuation of the original purchase/work order , then the total value of works completed against the original work orders and/or subsequent variation / amendment orders shall be accepted as one single work completed against single work order. ➤ Work carried out at multiple locations through a single Purchase order will be considered as one similar work of value equal to the cumulative value of the locations included in the purchase order. ➤ Works carried out by the vendor in India or abroad shall be considered. For works carried out abroad and payments received by the vendor thru' foreign currency, exchange rate as per SBI TT Selling rate as on the last date of the month previous to the one in which the tender was invited. i.e. as on < 30.07.2022 > ➤ Purchase preference for MSE's will not be applicable since the tender is a works contract type. ➤ There shall be no Relaxation to MSEs / Startups for PQ criteria for this Tender as the work is related to Safety and security of the Oil Installation. ➤ Purchase Preference linked with local content (PP-LC) shall be applicable for this tender. ➤ Additionally, any bidder from a country which shares a land border with India will be eligible to bid in this tender (as per definition specific to the Clause and Annex attached), only if the bidder is registered with the Competent Authority. Copy of the registration certificate is to be submitted along with the bid. ➤ The Work Order / Purchase order/ Agreement, corresponding completion certificate and final bill/s with payment proof should be uploaded in support of the proof of similar work.
	<p>DOCUMENTS REQUIRED AGAINST PROOF OF COMPLETION OF WORKS:-</p> <ul style="list-style-type: none"> ➤ In case of work order from Government Bodies / PSUs – Copies of Contract Document along with either completion certificates OR duly Certified copy of bill / Invoice. In case completion certificate / Bill / Invoice copy specifies details required like Date of PO/ contract agreement, Contract Value, Executed value, date of Completion, details of job execute etc, then submission of contract document shall not be mandatory. ➤ In case of work orders from Private Parties – Certificate from CA certifying value of work done with TDS certificates (wherever applicable) / bank Statement shall be required in addition to that specified in (i). TDS certificates / Bank Statements shall be used as corroborative evidence only.
B.	<p>Annual Turnover:</p> <p>The annual financial turnover (Total Revenue as per annual financial closure period of the company)during any of the preceding 3 financial years i.e. 2019-20, 2020-21, 2021-22 should be at least Rs. 1514.70 Lakhs</p>

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Note:

- Annual turnover for this purpose should be as per Audited Balance Sheet including P&L Statement / Published Account / Profit & Loss Account Statement of the tenderer. However, if the tenderer is not required to get its accounts audited under Section 44AB of The Income Tax Act, 1961, certificate from a Practicing Chartered Accountant towards the turnover of the tenderer along with copies of its Income Tax Return to be submitted.
- Audited Balance sheet (P&L Statement)/ Published accounts on a calendar year basis shall also be acceptable.
- In case of non-availability of audited balance sheets (Profit & Loss Account Statement)/published accounts of the immediate preceding year, the audited balance sheet (P&L Statement/ published account of 4th preceding financial year shall also be acceptable.

Definition of Turnover:Total Revenue as per Schedule III of Companies act, 2013 (Earlier revised Schedule VI of Companies Act, 1956) shall be considered as turnover.

C. **Financial Net worth** of the Bidding Company should be positive in the last financial year i.e. 2021-22.

19.0

Other Commercial Criteria:

Following other criteria shall also be considered to commercial Evaluation:

Sr No	Other Commercial Criteria	Documents to be Submitted
i.	PAN	Scanned copy to be submitted.
ii.	PF Registration Certificate	Scan copy of Valid PF registration no. copy to be submitted. In case a bidder is not covered under the PF Registration Rule due to the number of employees working under him being less than the threshold limit of 20 then, then Contractor should submit INDEMNITY BOND UNDERTAKINGS PERFORMA 'B' (FOR PF) as per given format, giving the reference of tender no.
iii.	GST Registration Certificate (GSTIN no.)	The party should submit valid GSTIN number. In case GSTIN no is not available, an undertaking (on letter head) must be uploaded along with the bid as per format given in the tender.
iv.	Partnership Deed or Certificate of Incorporation with Memorandum & articles of Association	Scan copy to be submitted. In case the bidder is sole proprietor, he will upload undertaking certifying that he is sole proprietor as per given format.
v.	Power of Attorney (POA) (on non-judicial stamp paper of	Authority of the person uploading the bids with his DSC (Digital Signature Certificate) shall be

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		appropriate value duly notarized) /Board Resolution in favour of tender signing Authority	required to be submitted in the bids. Document required showing the authority of the person uploading & submitting the bid with his Digital Signature Certificate shall be as given in the following table.	
			In case of Proprietary Concern	<ul style="list-style-type: none">• If the bid is submitted by the proprietor, no POA is required. However, he will have to upload undertaking certifying that he is sole proprietor, as per format given in the tender.• If the bid is submitted by person other than proprietor, POA authorising the person to submit bid on behalf of the concern is to be submitted.
			In case of Company	<ul style="list-style-type: none">• Certified copy of Board Resolution authorising the person submitting the bid on behalf of the company. OR <ul style="list-style-type: none">• POA and the supporting Board Resolution authorising the person submitting the bid on behalf of the company.
			In case of Partnership Firm/LLP	POA along with Deed of Partnership / LLP Agreement.
			In case of Co-Operative Society	Copy of resolution passed as per Society Rules authorizing the person submitting the bid on behalf of the Society.
			vi.	Integrity Pact Agreement

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	vii.	Standard Declarations	
	a	Undertaking by Tenderers in lieu of tender documents	Bidders shall upload this document instead of complete set of technical bid documents as a token of their acceptance. To be provided in Excel Template given in the tender
	b	Declaration of black listing / holiday listing	To be provided in Excel Template given in the tender
<p>Note:</p> <p>a. The Integrity Pact Agreement consists of (1) Covering letter from the bidder to IOCL and (2) Integrity Agreement consisting of 10 (Ten) articles. Bidders should mandatorily sign and submit the complete Integrity Pact Agreement consisting of both the Covering letter as well as the Integrity Agreement consisting of 10 articles in order to be eligible for further evaluation in this tender. The signed IP should be complete in all respect and is required to be uploaded in the e-tender portal along with the Bid. Bid not having the duly signed IP agreement attached with it will be given one opportunity before summarily rejected. Partial submission of IP document will also not be considered.</p> <p>b. POA shall be submitted on non-judicial stamp paper of appropriate value and duly notarized.</p> <p>c. All the above credentials shall be in the name of the bidder.</p>			
20.0	Sr No	OTHER MANDATORY DOCUMENTS:	DOCUMENTS TO BE SUBMITTED
	i.	Bid Security Declaration in lieu of EMD	To be given on Letterhead as per format given in the tender and should be signed by the bidder's authorized representative on their firm's letterhead who is signing the Bid and scanned copy to be uploaded
	ii.	Declaration on NCLT/NCLAT/DRT/DRAT/Court Receivership/ Liquidation	To be provided in Excel Template given in the tender
	iii.	Certificate for bidders from a country which shares a land border with India	To be provided in Excel Template given in the tender
	iv.	Undertakings and declarations for non tampering of data	To be provided in Excel Template given in the tender
	v.	Declaration "A", "B", "C" & "D"	To be provided in Excel Template given in the tender
	vi.	Undertaking for business transaction status of bidders	To be provided in Excel Template given in the tender
	vii.	Particulars Of Bidder Firm	To be provided in Excel Template given in the tender
	viii.	Undertaking On No Multiple Bidding	To be provided in Excel Template given in the tender

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	<p>ix. Declaration On Purchase Preference (Linked With Local Content) (PP-LC) Policy.</p>	<p>To be provided in Excel Template given in the tender</p>
	<p>a. Any bidder from a country which shares a land border with India will be eligible to bid in this tender (as per definition specific to the Clause and Annex attached), only if the bidder is registered with the Competent Authority. Copy of the registration certificate is to be submitted along with the bid.</p> <p>b. Declaration on purchase preference (linked with local content) (PP-LC) policy. The declaration consists of 2 parts. Bidders are requested to submit scanned copy of both the parts, Complete as per ANNEXURE (Part -1 & Part-2) duly signed stamped by Authorised signatory of bidder and relevant part of format certified by independent Chartered Accountant / Statutory auditors as applicable.</p> <p>c. All the above credentials shall be in the name of the bidder</p>	
	<p>“Notwithstanding any other condition/ provision in the tender documents, bidders are required to submit complete documents pertaining to PQC along with their offer. Failure to meet the PQC will render the bid to be summarily rejected. IOC reverses the right to complete the evaluation based on the details furnished by the bidder, with or without seeking any additional supporting documents/ clarifications”.</p>	
21.0	ADDITIONAL DOCUMENTS REQUIRED IN SUPPORT OF QUALIFYING NORMS	
	<p>a. Submission of EMD / EMD exemption document as stated above.</p> <p>b. If any of the above-mentioned documents are in language other than English, the same needs to be translated in English, duly notarized (if in India)/ notarized or authenticated (if in foreign).</p> <p>c. If the copies of work orders/contracts/agreements cannot be provided due to Non-Disclosure Agreement (NDA), between the vendor and customer, then the letter from the customer addressed to IOCL (in original) specifying all relevant details of work executed, along with copy of NDA is to be submitted.</p> <p>d. Certificate from the Bidder as well as certificate from the auditor firm or CA in regard to the Net Positive Worth of the bidding company wrt Last Financial Year to be submitted.</p> <p>e. In case the contractor is not permitted to issue Tax Invoice, the same should be clearly mentioned in the Technical Bid and a Certificate should be enclosed that he has opted for Composition Scheme under the Law.</p> <p>All required documents are to be submitted only with technical/commercial bid. No documents / conditions should be attached with the price bid. In case any essential information given by a bidder is found to be incorrect or a misrepresentation, the bid is likely to be rejected as not responsive, and if the bid has resulted in a contract, the contract is liable to be terminated pursuant to the provisions of Clause 7.0.1.0 of the General Conditions of Contract with consequences of termination as provided in Section 7 of the General Conditions of Contract.</p>	

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22.0 PURCHASE PREFERENCE (LINKED WITH LOCAL CONTENT) & EVALUATION CRITERIA**a****PURCHASE PREFERENCE (LINKED WITH LOCAL CONTENT):**

- Bidders shall note that guidelines issued to provide Purchase Preference (linked with Local Content) (PP-LC) in all Public Sector Undertakings under the MOP&NG (Ref: No. FP-20013/2/2017-FP-PNG dated 17.11.2020 & Amended Policy Ref. No. FP-20013/2/2017-FP-PNG-Part (1) (E-36682) dated 23.02.2022) shall be applicable for this Tender.
- Preferential bidding guidelines: To avail preferential treatment (Purchase Preference for Local Content) as per the above-mentioned guideline, the Bidder claiming preference shall update necessary details in their profile in "My Account Menu" of e-tender portal. Bidder shall select "Yes" in response to "Avail Preferential Bidder" option, else, such Bids bid shall not be considered for preferential benefits.
- The classification & Margin of Purchase preference shall be as follows:

SN	Description	Details
1	Supplier Classification:	
a.	Class-I Local supplier	LC >= 50%
b.	Class-II Local supplier	LC >=20% < 50%
c.	Non-Local supplier	LC < 20%
2	Margin of Purchase preference (PP-LC)	20% (i.e L1+20%)

- As this is a Domestic Tender, only Class I and Class II Local suppliers are eligible to bid.
- All Bidders participating in the tender shall submit LC declaration against qualifying as Class I or Class II. For this purpose, the details shall be submitted as per attached Annexure. If the bidder does not provide declaration against being a Class I or Class II Local Supplier (even after opportunity(s)), the bid shall be rejected as being from a non - eligible bidder.
- Bids from Bidders who claim Preferential Bidding benefits as Class I Local Supplier, if found as being non-compliant with requirements for Class I local supplier shall be rejected.
- Purchase preference benefit shall be given only to Class-I local supplier.
- The undertaking against local content in the subject case shall be furnished by the authorized signatory of bidder having the power of Attorney for the tender on the basis of self-assessment and certification
- All the eligible Class I Local Suppliers eligible for Purchase Preference i.e. with their bids within L1 +20% shall be ranked in the order of their bid value and shall be provided with opportunity to match L1 rates in the same order. In case of tie of rates post reverse auction (within price band of L1+20%) among Class I PP-LC bidders, bidder with the higher annual turnover in any of the last three years, as submitted against Turnover criteria of this tender, shall be given priority for offering of matching L1 Rate.

Notes:

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- PP-LC bidder mentioned above means Class-I Local supplier as defined in the policy.
- Only preferential bidders - PP-LC (Class I) quoting within the applicable purchase preference margins and agreeing to match L-1 price shall be considered. Further bidders who do not claim preferential benefit at the designated section of the portal while participating in the tender, will not be considered for any preferential benefit in that tender.
- Preference to MSEs is not applicable for current tender, hence MSE bidder shall be treated as a Non preferential bidder.

Sanctions:

- IOCL shall impose sanction on manufacturers / Service providers not fulfilling LC of Goods / Services in accordance with value mentioned in the certificate of LC.
- The sanctions may be in the form of written warning, financial penalty and blacklisting.
- In the event that a manufacturer or supplier of goods and/or provider of services does not fulfill his obligation after the expiration of the period specified in such warning, IOCL can initiate action for blacklisting such manufacturer/supplier/service provider.

A manufacturer and/or supplier of Goods and/or provider of services who has been awarded the contract after availing the Purchase Preference is found to have violated the LC provision, in the execution of the procurement contract of goods and/or services shall be subject to financial penalty. The financial penalty shall be over and above the PBG value prescribed in the contract and shall not be more than an amount equal to 10% of the contract price.

b

EVALUATION CRITERIA:

- 1.1. Upon receipt of the bids, the documents submitted by all the bidders shall be scrutinized with respect to submission of Bid Security Declaration in lieu of EMD, PQC, other mandatory documents, acceptance to all terms & conditions as per the tender.
The offers shall be scrutinized only on the basis of the uploaded documents by Bidder in e-tender portal.
- 1.2. Notwithstanding any other condition/provision in the tender documents, bidders are required to submit complete documents pertaining to PQC along with their offer. Failure to meet the PQC will render the bid to be summarily rejected. IOC reserves the right to complete the evaluation based on the details furnished by the bidder, with or without seeking any additional supporting documents/clarifications.
- 1.3. Price bids of only those parties who satisfy the above-mentioned requirements shall be considered for opening. Prior intimation will be uploaded on e-tender portal regarding due date and time of opening of Price Bid.
- 1.4. Bidders are informed that Reverse Auction shall be conducted for finalizing this Tender.
- 1.5. The selection of L1 bidder shall be based on Lowest Acceptable Net Delivered Price for

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all items in the price Bid BoQ put together post reverse auction.

- 1.6. Net Delivered Price (inclusive of GST) = Quoted Price (including GST) minus Input Tax Credit (ITC) as available to IOCL

ITC available to IOCL for each item is indicated in the Price bid BoQ.

SL No	Location Code	Name of Location	ITC	Remarks
1	3233	JNPT TERMINAL	0 %	NIL
2	3224	PUNE TERMINAL	0 %	NIL
3	3231	SEWREE-I TERMINAL	23.91 %	Proportionate
4	3243	SEWREE - II TERMINAL	0 %	NIL
5	3229	WADALA TERMINAL	0 %	NIL
6	3230	VASCO TERMINAL	5.47 %	Proportionate
7	3227	VASHI TERMINAL	0 %	NIL
8	3241	AKOLA DEPOT	0 %	NIL
9	3246	CHANDRAPUR DEPOT	0 %	NIL
10	3247	DHULE DEPOT	23.90 %	Proportionate
11	3254	MIRAJ DEPOT	0 %	NIL
12	3271	MANMAD BP	100 %	Full
13	3272	DHANAJ BP	100 %	Full
14	3273	PUNE BP	100 %	Full
15	3017	DABOLIM (GOA) AFS	0 %	NIL
16	3040	SHRIDHI AFS	0 %	NIL
17	3015	AURANGABAD AFS	0 %	NIL
18	3236	LBP TROMBEY	100 %	Full
19	3240	LBP TALOJA	100 %	Full
20	3266	SCFP KHAPRI	100 %	Full
21	3267	SCFP TROMBAY	100 %	Full

- 1.7. Class-I Local Supplier, in line with guidelines issued to provide Purchase Preference (linked with Local Content) (PP-LC) in all Public Sector Undertakings under the MOP&NG (Ref: No. FP-20013/2/2017-FP-PNG dated 17.11.2020) & Amended Policy Ref. No. FP-20013/2/2017-FP-PNG-Part (1) (E-36682) dated 23.02.2022 shall be the preferential category of bidder for the purpose of Reverse Auction.

1.8. Qualifying Criteria for Reverse Auction:

If there are more than three (3) techno-commercially acceptable bidders:

- Bidder having highest quote (H1 bidder) will be rejected if he is a non-preferential bidder.
- In case if H1 bidder is a preferential bidder, H1 bidder will be rejected if his quote is beyond 20% of L1 price as per the bidder's preferential category.
- In case of more than one H1 bidders (H1 tie), latest bid received (bidder whose bid is received at the last) out of all H1 bidders will be rejected as per provisions mentioned above.



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	<p>d) An Intimation by mail/SMS shall be provided to the eligible bidders for Reverse Auction.</p>
1.9.	<p>Quoted Price for the Reverse Auction shall be calculated as per following:</p> <p>Price Bid BOQ Basic Cost after Discount (-) or premium (+) or at par over the estimate value + applicable GST- Input Tax Credit as available to IOCL.</p>
1.10.	<p>The Lowest Price as well as bidder's Latest Price shall be available on the Reverse Auction screen at any point of time during the Auction process. The Lowest Price is the evaluated price based on which the lowest bid is determined as per evaluation criteria of BoQ / Tender Terms & conditions. Accordingly, the bidder will put his quote in the Auction window if bidder wants to offer the reduced price considering the evaluation criteria as per Price Bid (BOQ) / Tender Terms & Conditions.</p>
1.11.	<p>The bidder shall calculate his final evaluated price as per BoQ or evaluation criteria mentioned in the tender document and quote accordingly.</p>
1.12.	<p>The lowest quote (L1) after end of Reverse Auction shall be the Lowest Net Delivered Price and shall be considered further for processing.</p>
1.13.	<p>In case of tie between two or more bidders at L1 position, all the L1 bidders shall be asked to submit discount bid in terms of percentage discount over previous quoted amount in a sealed envelope.</p>
1.14.	<p>In case there is a tie again (identical discount bids), the bidder with the highest turnover in any of the last five years as submitted against Turnover Criteria shall be considered as L1 Bidder. In case of non-availability of turnover documents for the immediate preceding year, turnover documents of 6th preceding financial year shall also be acceptable as submitted against Turnover Criteria. In the event of bidders submitting turnover documents for only one or two years, L1 bidder shall be decided on the basis of turnover documents submitted.</p>
1.15.	<p>IOCL reserves the right to conduct price negotiation with overall L1 bidder based on price quoted in BoQ, Reverse Auction and subsequent discount bid (if any) in sealed envelope.</p>
1.16.	<p>The final offer of L1 bidder subsequent to negotiations (if required) shall be the Lowest Acceptable Net Delivered Price and the bidder shall be L1 bidder.</p>
1.17.	<p>The above Lowest Acceptable Net Delivered Price shall be worked out as percentage of IOCL's Estimated Net Delivered Price given in Price Bid BoQ.</p>
1.18.	<p>The percentage so worked out (up to maximum 3 decimals) shall be applied to all items of Price Bid BoQ. This worked out percentage shall be applied to IOCL's Estimated Net Delivered Price given in Price Bid BoQ for determining the Awarded Contract Value inclusive of GST & exclusive of ITC.</p>
1.19.	<p>Since the tendered works is in the nature of works contract, no price or purchase preference shall be applicable to PSUs (State & Central), JVs of IOCL & MSEs/NSICs/Startups. However Purchase Preference as per PP-LC guidelines shall be applicable as detailed below.</p>

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1.20. PREFERENCE TO PP-LC BIDDER:

In view of applicability of Purchase preference as per PP-LC guidelines, 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' for award of work as per following procedures:

- 1.20.1. In case, L1 bidder after Reverse Auction and negotiation (if applicable) is 'Class-I local supplier', the contract for **LOT1** will be awarded to L1.
- 1.20.2. In case, of L1 bidder after Reverse Auction and negotiation (if applicable) is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier' will be invited to match L1 price subject to Class-I local supplier's quoted price falling within 20% of the L1 price and the contract for **LOT1** shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.
- 1.20.3. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within 20% of the L1 price shall be invited to match the L1 price and so on and contract for **LOT1** shall be awarded accordingly.
- 1.20.4. In case none of the 'Class-I local supplier' who have quoted within 20% of the L1 price match their rates with the L1 price, the contract for **LOT1** shall be awarded to the L1 bidder.
- 1.20.5. For balance LOTs, the lowest acceptable rate shall be offered to the remaining bidders (excluding the assigned LOT1 bidder) in the ascending order of their position/merit (after reverse auction irrespective of PP-LC status) to match the L1 rate. On getting willingness from the parties to match the L-1 rate as above, order for LOT2, LOT3 & LOT4 shall be placed to first three bidders respectively in the order of merit list who have match their rate with L1's price.

However, incase both LOT2 & LOT3 are being allocated to Class II Suppliers, then for LOT4, the lowest un-allocated bidder among the 'Class-I local supplier' will be invited to match L1 price subject to Class-I local supplier's quoted price falling within 20% of the L1 price and the contract for **LOT4** shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.

- 1.20.6. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within 20% of the L1 price shall be invited to match the L1 price and so on and contract for **LOT4** shall be awarded accordingly.
- 1.20.7. In case none of the un allocated 'Class-I local supplier' who have quoted within 20% of the L1 price match their rates with the L1 price, the contract for **LOT4** shall be awarded to the third bidder who have accepted to match L1 rate as stated in point no. 1.20.5 above.
- 1.20.8. In case, required number of parties is not available/ do not agree to match L1 price, the Corporation reserves the right to allocate the balance quantity of works to the parties eligible and accepting the L-1 rate. The modalities shall be as follows:
 - Party to submit their consent to deliver the additional quantity also within the scheduled completion period at L-1 rate.
 - Party must meet the minimum turn over criteria of 60% of the cumulative value (ie



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	<p>originally allocated LOT amount (x) + additional offered LOT amount (a)) ie. The turn over of the party must be atleast 60% of (x+a). Where x & a are the CAPEX amount including GST and excluding CAMC value of respective LOTs.</p> <p>➤ On meeting the above two criteria, balance unallocated LOT shall be offered to party for acceptance at L1 rate and the LOT (s) shall be re-distributed as follows:</p> <p>Case – I: LOT1 allocate and none other party agreed to match L1 rates : Balance quantity of LOT2/LOT3 & LOT4 shall be offered to L1 bidder to the extend meeting the Turn over requirement and their acceptance.</p> <p>Case II: LOT1 & LOT2 allocated, and none other party agreed to match L1 rates: Balance quantity of LOT3 shall be offered to LOT1 bidder and LOT 4 shall be offered to LOT2 bidder subject to meeting the Turn over requirement and their acceptance. In case of refusal / not meeting the turnover criteria by any one of the vendor, the balance qty shall be allocated to other vendor as per credential and acceptance of the party.</p> <p>Case III: LOT1, LOT2 & LOT3 allocated, and none other party agreed to match L1 rates: Balance quantity of LOT4 shall be offered to LOT1/LOT2/LOT3 bidders as applicable subject to meeting the Turnover requirement and their acceptance.</p> <p>Note:The methodology mentioned above is indicative and may change as per the condition prevail during allocation of LOTs.</p> <p>1.20.9. LOA will be awarded Lot-wise and Work order will be awarded location wise.</p> <p>1.20.10. The evaluation of bids by IOCL shall be carried out manually outside the system for aforesaid purchase preference required to be provided to techno commercially qualified Class-I local supplier(s), subject to matching the price which gets finalized with or without negotiations with lowest (L1) bidder, if such bidders are available and L1 bidder is not a Class-I local supplier.</p> <p>1.20.11. Tender may be liable for rejection is case of non-submission of all required document(s) or incomplete submission of any document(s).</p>
23.0	<p>BUYBACK OF EXISTING CCTV CAMERAS ALONG WITH ACCESSORIES</p> <p>➤ All old CCTV cameras, Servers and accessories must be compulsorily brought back by the incumbent / successful vendor at Reserve Price fixed by IOCL as detailed in tender document. It is obligatory on the part of the vendor to clear the work site of all the old equipment as listed above no sooner the old equipment has been replaced by new one. Statutory taxes as applicable shall be borne by the vendor over and above the Reserve price.</p> <p>➤ IOCL shall raise GST invoice on the bidder along with applicable GST for buy back of old equipment.</p> <p>➤ Vendors need to pay the buyback amount along with applicable taxes or the same shall be deducted from the bill of vendors undertaking the CCTV job.</p>

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24.0	<p>BIDDING ENTITY:</p> <p>Only Class-I local supplier and Class-II local supplier, as defined under the guidelines issued to provide Purchase Preference (linked with Local Content) (PP-LC) in all Public Sector Undertakings under the MOP&NG (Ref: No. FP-20013/2/2017-FP-PNG dated 17.11.2020) & Amended Policy Ref. No. FP-20013/2/2017-FP-PNG-Part (1) (E-36682) dated 23.02.2022 shall be eligible to bid in this Tender. Bids to be submitted by:</p> <p>a) A Sole Bidder: Individual (Proprietary)/ Partnership/ LLP/ Limited Company;</p> <p>b) JVs registered under the Indian Companies Act as on date of submission of bid</p>
25.0	<p>Undertaking related to Insolvency & Bankruptcy code 2016 is applicable for which all bidders to upload the Declaration as enclosed in the Technical Bid.</p>
	<p>Offers from the following type of bidders shall not be considered:</p> <p>a) If the bidder is undergoing insolvency resolution process or liquidation or bankruptcy proceeding under insolvency and bankruptcy code,2016(code) or any other applicable law (in case where code is not applicable),</p> <p>b) Insolvency resolution process or liquidation or bankruptcy proceeding is initiated under the code or any other applicable law (in case where code is not applicable) against/by the bidder at any stage of evaluation of the bid</p> <p>i) In the event, insolvency resolution process or liquidation or bankruptcy proceeding is initiated under the code or any other applicable law(in cases where code is not applicable) against/by the bidder, after submission of its bid but any stage of evaluation of the bid, it will be the responsibility of the bidder to inform IOCL within 15 days from the date of order of insolvency resolution process or liquidation or bankruptcy proceeding passed by the adjudicating authority namely, National Company Law Tribunal(NCLT) OR Debt recovery tribunal(DRT) under the code or any other applicable law(in cases where code is not applicable).</p> <p>ii) If bidder refuses or fails to share the information regarding their status of insolvency resolution process or liquidation or bankruptcy proceeding as sought here in above, in their bid or at any later stage, as applicable, their offer is liable to be rejected by IOCL and without prejudice to any other remedy or action available with IOCL including forfeiture of the earnest money deposit, if any, provided by the bidder.</p> <p>iii) IOCL reserves the right to cancel/terminate the contract without any liability on the part of IOCL immediately on the commencement of insolvency resolution process or liquidation or bankruptcy proceeding of any party under the contract.</p> <p>iv) In case where the bid of the L-1 bidder is rejected on the aforesaid grounds during the period between price bid opening and award of contract, then the bid of the next higher eligible bidder will be considered for further processing.</p> <p>v) If bidder fails to share or misrepresents the information regarding their status of insolvency resolution process or liquidation or bankruptcy proceeding as sought hereinabove and the bidder's bid result in a contract, IOCL, without prejudice to any other remedy or action available with IOCL, shall be within its rights to terminate the resultant contract.</p>

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	vi) A declaration/undertaking shall be submitted by the bidder in the format given in Tender document.
26.0	<p>Any Bidder from a country which shares a land border with India will be eligible to bid in this tender as per clause given below only if the bidder is registered with the competent authority. Copy of the registration certificate & declaration as in enclosed in the Technical Bid are to be submitted along with the bid.</p> <p>a) Any bidder from a country which shares a land border with india will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. Copy of the registration certificate is to be submitted along with the bid.</p> <p>b) The Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIT).</p> <p>c) Registration should be valid at the time of submission of bids and at the time of acceptance of bids. If the bidder was validly registered at the time of acceptance/ placement of order, registration shall not be a relevant consideration during contract execution.</p> <p>d) However, the bidders from those countries (even if sharing the land border with India) to which the Government of Indian has extended lines of credit or in which the Government of India is engaged in developmental projects may participate in this tender and they shall not require any separate registration for the participation.</p> <p>e) "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person of firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in this tender.</p> <p>f) Bidder from a country which shares a land border with India for the purpose of this Order means</p> <ol style="list-style-type: none"> Any entity incorporated, established, or registered in such a country; or A subsidiary of an entity incorporated, established, or registered in such a country; or An entity substantially controlled through entities incorporated, established or registered in such a country; or An entity whose "beneficial owner" is situated in such a country; or An Indian (or other) agent of such an entity; or A natural person who is a citizen of such a country; or A consortium or joint venture where any member of the consortium or joint venture falls under any of the above <p>g) "Beneficial Owner" in the above paragraph will be as under:</p> <ol style="list-style-type: none"> In case of a Company or Limited Liability Partnership, the beneficial owner is the

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	<p>natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means</p> <p>Explanation –</p> <ul style="list-style-type: none"> ✓ “Controlling ownership interest” means ownership of, or entitlement to, more than twenty five percent of shares or capital or profits of the company; ✓ “Control” shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements. <p>ii) In case of partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;</p> <p>iii) In case of unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;</p> <p>iv) Whether no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;</p> <p>v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.</p> <p>h) An “Agent” is a person employed to do any act for another, or to represent another in dealings with third persons.</p> <p>i) The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.</p> <p>j) Bidders shall submit a certificate as per the format given in Tender documents regarding their compliance to the above conditions. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.</p>
27.0	Business Transaction status of Bidders:
	<p>Tenderers who have transferred their ownership rights either in whole or in part to another entity or under process of transfer shall intimate the same to IOCL in their letter head while submitting the bid. IOCL reserves its right to reject the tender of any entity, which has transferred its ownership rights in whole or in part or which is in process of transfer without</p>

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	<p>assigning any reason for such rejection.</p> <p>If the tenderer refuses or fails to share the information regarding their status of any kind of business transfer process/restructuring etc, in their tender or at any later stage, as applicable, their tender is liable to be rejected by IOCL and without prejudice to any other remedy or action available with IOCL, IOCL shall forfeit the Earnest Money Deposit if provided by the tenderer, in any form whatsoever.</p>
28.0	<p>The TENDER SHALL STAND SUMMARILY REJECTED inter-alia on following grounds:</p> <ol style="list-style-type: none"> Non-submission of bid security declaration in lieu of EMD Bidder not meeting Pre-Qualifying Criteria(s). Non-withdrawal of unacceptable conditions to IOCL, imposed in tender document & during negotiations subsequent to Price Bid opening by Bidder. Bidder submitting fabricated/false/ forged documents along with tender documents. The bidder has to give declaration in a prescribed format that he / it / they is / are not under any Holiday List / Blacklist declared by the OWNER or by any Department of the State or Central Government or by any other Public Sector Organization and that there is no inquiry in respect of any corrupt or fraudulent practice pending against him / it / them. In case he/ it / they are under any such list, or any inquiry is pending he/ it / they shall in the declaration give full details thereof. Such Declaration in respect of a partnership firm or association of persons shall cover every partner or member of the association, and in the case of Company shall cover every Director and Principal shareholders of the company and any Holding Company and/or Subsidiary Company(ies) if any. <p>The tenders of such vendors who are under the holiday / black list of Indian Oil will be summarily rejected.</p> <ol style="list-style-type: none"> For vendors who are under the holiday list of any Department of the State or Central Government or by any other Public Sector Organization, if a communication is received from the Administrative Ministry of IOCL to ban a party from dealing with IOCL, the party shall be automatically put on Holiday list and their tender will be summarily rejected. Holiday listing by other PSUs / Government Departments shall not automatically extend to IOCL unless the Administrative Ministry of IOCL advised for the same after undertaking due diligence and process. Bids from Consortium or MOU parties shall not be accepted. Also credentials of Consortium or MoU Parties submitted by one of the Consortium partners shall not be accepted.
29.0	<p>MISCELLANEOUS:</p> <ol style="list-style-type: none"> Affiliates of a firm are not permitted to make separate bids directly or indirectly. 2

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	<p>(Two) or more Parties who are affiliates of one another can decide which affiliate will make a bid. Only one affiliate may submit a bid. If two or more affiliates submit a bid, then all of them are liable for disqualification.</p> <p>ii. It will be treated that a person shall be deemed to have submitted more than one bid if a person bids in an individual or proprietorship format and/or in a partnership or association of person's format and/or in a Company format.</p> <p>a. A company shall for this purpose include any artificial person whether constituted under the laws of Indian or of any other country.</p> <p>b. A person shall be deemed to have bid in a partnership format or in association of persons format if he is a partner of the firm which as submitted the bid or is a member of any association of persons which has submitted a bid.</p> <p>c. A person shall be deemed to have bid in a Company format if, the person holds more than 10% (ten percent) of the voting share capital of the company which has submitted a bid, or is a Director of the Company which has submitted a bid, or holds more than 10% (ten percent) of voting share capital and/or is a Director of a holding Company which has submitted the bid.</p> <p>iii. The EPCM Consultant for the subject Project is M/s Tata Consulting Engineers, Mumbai. Bids from Consultants or their subsidiary company or companies under the Management of Consultant involved in this project are not eligible to quote for the subject works.</p> <p>iv. JVs registered under the Indian Companies Act as on date of submission of bid are permitted. In such cases, all credentials to be submitted for qualification in the tender shall be in the name of JV.</p> <p>v. Experience of works executed as part of JV/Consortium/MoU parties shall not be accepted, even if single involved partner/party bids for the tender.</p>
30.0	<p>Bidder has to commit adoption of the Integrity Pact Program of IOCL through executing an Integrity Agreement and declarations.</p> <p>The Bidders shall upload legible scanned copy of necessary documents in support of required qualification and experience along with their offer as per instruction given in the Tender.</p> <p>All the four successful bidders as applicable who have accepted L1 will have to present original documents for verification to the tender inviting authority, within 7 days from date of intimation.</p>
31.0	<p>Declaration for e-tender.</p> <p>The bidder shall upload an undertaking for acceptance of all Terms & Conditions of Tender including all corrigendum/addendum issued, pre bid meeting minutes (if any) etc. as a token of their acceptance. The Format of undertaking is given in the tender documents. The undertaking needs to be printed on the letter head of the bidder and scanned copy of the undertaking duly filled up and signed by the bidder's authorized representative with seal needs to be uploaded online. However, documents which necessarily have to be submitted in originals (if any) and any other documents specifically mentioned in the tender documents have to be submitted offline.</p>
32.0	<p>Original document verification **:</p> <p>Document verification with originals shall be carried out after reverse auction & negotiation</p>

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(if any) for the short-listed bidder(s) for respective LOTs only. Since documents are submitted by the bidder in the tender, the responsibility of authenticity of documents shall be with the bidder.

Shortlisted bidders shall be required to present his original documents to the tender inviting authority within a period of 7 days or as communicated by IOCL from the date of intimation by IOCL. In the event of failure of such bidder to get the documents verified as per the specified time schedule, the EMD of the bidder if any shall be forfeited and action in line with Bid Security declaration shall be taken. In case it is observed that if any bidder(s) submitted forged documents / credentials, necessary action for holiday listing of the bidder shall be carried out including forfeiture of EMD if any.

It must be noted that notarized copy in lieu of producing original documents will not be acceptable to the Corporation.

Only documents against pre-qualification criteria shall be verified with originals.

In case any original document is preserved outside India and the bidder is unable to produce the originals for verification, certification of such documents from concerned embassy / Consulate should be submitted within a period of 7 days from the date of opening of price bids or date of intimation as specified in Tender.

Recommendations for award of contract shall be made only after verification of documents with originals of the successful bidder(s).

33.0

OTHER POINTS:

- 1) Any addendum/ Corrigendum/ submission Date Extension in respect of the tender shall be issued on our website <https://iocletenders.gov.in> only & no separate notification shall be issued in the press. Bidders are therefore requested to regularly visit our website to keep themselves updated.

All bidders must login and visit their DASHBOARD on regular basis to get the timely updates related to any communication sent in the form of e-mail/SMS by system.

- 2) Bidders are advised to refer the document 'Troubleshooting.pdf' under the option of 'Troubleshooting' in 'Bidders manual kit' section of IOCL e-tendering portal for display issues during Live Reverse Auction, or Online Bidder Enrolment or Generate Forgot Password links are not available in home page of IOCL e-Tendering Portal.

- 3) Please visit our website <https://iocletenders.nic.in> for further details of this tender.

- 4) Legal dispute, if any, arising during the evaluation of the tender and up to placement of LOA shall be within the jurisdiction of local courts situated at <Mumbai> and after placement of LOA, the jurisdiction of local courts will be at <Mumbai>.

- 5) Bidders may note that the following are attached separately and uploaded in the e-tendering portal:

- a) Special Instructions to bidders for participating in e-tendering
- b) FAQ's –online EMD facility in IOCL e-tendering and
- c) Format for Acceptance of Tender Terms and Conditions

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Note:

All the uploaded documents need to be digitally signed by the representative of the bidder duly authorized by notarized power of attorney/ Board Resolution/ authorized in Company letter Head under Company Seal by rank not less than Board Member. The person whose DSC is used to upload the tender also need to be duly authorised in similar way as desired for Authorised Signatory.

Indian Oil Corporation Limited shall not be responsible in any way for failure on the part of the bidder to follow the instructions.

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CHECK LIST FOR BIDDER

Sl. No	Particulars	Requirements
1	Party's General Information	To be updated in attached excel sheet (Comparative chart)
2	Authority of the person uploading the bids with his DSC.	Upload the POA / Board Resolution (as applicable)
3	Company details	To be updated in attached excel sheet (Comparative chart)
4	Affidavit for Sole proprietorship / Partnership deed / Certificate of Incorporation/ MOA as applicable	To be uploaded
5	Company Registration Certificates (CIN no, Registration no, PAN, GST, PF & ESIC	To be updated in attached excel sheet (Comparative chart) and upload the certificates
6	EMD details/ Bid Security Declaration	To be uploaded
7	Qualifying Work orders, completion certificates, etc as per NIT	To be updated in attached excel sheet (Comparative chart) and upload the required documents as per NIT
9	Self Certificate that the CCTV System software is available with the bidder with further development, customization and maintenance	To be uploaded
10	Non Disclosure Agreement (NDA)- Letter from the customer addressed to IOCL specifying all relevant details of works executed as per NIT.	To be uploaded (if applicable)
11	Annual Turnover for last three financial years as per details mentioned in the NIT	To be updated in attached excel sheet (Comparative chart) and upload the required documents as per NIT
12	Acknowledgment copies of IT returns for last three assessment years	To be uploaded
13	Net Positive Worth of the bidding company wrt Last Financial Year (2020-21)	Certificate to be uploaded
14	Composition Scheme under the Law	Certificate to be enclosed that the bidder has opted for Composition Scheme under the law (if applicable)
15	Covering letter of Integrity Pact duly filled signed and stamped.	To be uploaded
16	Integrity Pact Agreement duly filled, signed & stamped. Note: The signed IP should be complete in all respect. Partial submission of IP document will also not to be considered	To be uploaded

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No	Particulars	Requirements
17	Form of Tender duly filled signed and stamped	To be uploaded
18	Duly filled, signed & stamped copy of the company Bank Mandate as per attached format along with Cancelled cheque.	To be uploaded
19	Duly filled, signed & stamped copies of Declaration A/B/C/D for relationship with Directors of IOCL.	To be uploaded
20	Duly filled, signed & stamped copies of Declaration of Holiday listing/ Blacklisting as per attached format. <i>(Bidder MUST mentioned NIL, if not on Holiday list)</i>	To be uploaded
21	Duly filled, signed & stamped copies of attached Format for acceptance of tender terms and conditions.	To be uploaded
22	Duly filled, signed & stamped copies of attached Declaration of non-tampering of documents.	To be uploaded
24	Any Other documents / declarations etc as per tender requirement (if any)	To be updated in attached excel sheet (Comparative chart) and upload the said document (if applicable).
25	Declarations against NCLT / NCLAT /DRT /DRAT/ COURT RECEIVERSHIP/ LIQUIDATION	To be uploaded
26	Declaration against bidders having origin in countries sharing land border with India.	To be uploaded
27	Declarations against compliance with PP-LC Policy of MoPNG	To be uploaded
28	Undertaking for business transaction of bidders	To be uploaded
29	Remarks or any other information by the bidder (Bidder to note that conditional offer shall not be accepted)	To be updated in attached excel sheet (Comparative chart)

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

STATEMENT OF CREDENTIAL COMPARATIVE CHART

STATEMENT OF CREDENTIAL COMPARATIVE CHART - Excel sheet attached separately

1. Statement of Credential Comparative chart in Microsoft Excel Format has been attached separately.
2. Bidders are required to update the attached Excel Sheet and upload the same along with Technical Bid.
3. Please state "NOT APPLICABLE" in the Excel Sheet in case you have no positive answer.
4. Non-updation of any details may mean incomplete tender.
5. Necessary supporting documents to be uploaded.
6. Responsibility of correctness of details lies with the Tenderer.
7. Corporation reserves the right to assess the tenderer's capacity and capability if necessary by visiting/ inspecting recently executed / under execution of works

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

FORM OF TENDER (TECHNO-COMMERCIAL BID)

(To be filled up by the Tenderer)

From

Date:

To

GM (Contracts)

Indian Oil Corporation Ltd. (Marketing Division)

Tender No.:

Dear Sirs,

Having examined the Tender Documents consisting of the Notice Inviting tender, Statement of Credentials, Instructions to Tenderers – Particular conditions of contract, Special Terms and conditions, General Conditions of Contract, QAP, Specifications, Drawings, Time Schedule, Form of Contract, Price Bid, and Addendum, if any, to the Tender Documents, and having understood the provisions of the said Tender Documents and having thoroughly studied the requirements of Indian Oil Corporation Ltd. relative to the work tendered of Indian Oil Corporation Ltd (Mktg. Divn.) and having conducted a thorough study of the job involved and things whatsoever necessary for or relative to the formulation of the tender or the performance of work, I/we hereby submit my/our tender offer for the performance of proposed work in accordance with the terms and conditions and within the time mentioned in the Tender Documents.

In consideration of the sum of Rupee 1/- (Rupee one) only paid to me/us by Indian Oil Corporation Ltd., by adjustment in the price/EMD of Tender Documents, I/We further undertake to keep my/our this tender offer open for a period of not less than 4 (four) months from the scheduled date of opening of Tenders as specified in the General Instructions to Tenderers forming part of the Tender Documents.

I/We hereby further state that I/We/None of us (in the case of partnership firm) and none of our Directors (in the case of a Company) was/were employed as Directors of Indian Oil Corporation Ltd., during the period of 2 (two) years immediately preceding the date hereof OR I/We hereby declare that I/Shri _____ one of our partners (in the case of partnership firm/Directors (in the case of a Company) was employed as a Director in Indian Oil Corporation Ltd., during the period of 2 (two) years immediately.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Preceding the date hereof and that I/Shri _____ have/has obtained previous permission of Indian Oil Corporation Ltd. to make this tender.

I/We have annexed to this Bid the following documents:

- (i) Schedule of Rates in the prescribed form.
- (ii) Original Power of Attorney or other proof of authority of the person who has digitally signed the Tender OR copy of Power of Attorney attested by a Gazetted Officer or a Notary Public in proof of the authority of the person who has digitally signed the Tender.
- (iii) Information regarding Tenderer in the form annexed to the Form of Tender.
- (iv) Information regarding experience of the Tenderer in the performance of work of a comparable nature in the form annexed to the Form of Tender.
- (v) Information regarding Organization structure.
- (vi) Set of Tender Documents, as issued duly signed.
- (vii) Additional Documents as listed below:
 - a.
 - b.
 - c.

I/We hereby undertake that the statements made herein/information given in the Annexures referred to above are true in all respects and that in the event of any such statement or information being found to be incorrect in any particular, the same may be construed to be a misrepresentation entitling Indian Oil Corporation Ltd. to avoid any resultant contract.

I/We further undertake as and when called upon by Indian Oil Corporation Ltd. to produce, for its inspection, original(s) of the document(s) of which copies have been annexed hereto.

I/We confirm having deposited Earnest Money of Rs. _____ (Rupees _____) as detailed hereunder (Strike off whichever is not applicable)

(Signature(s) of the Tenderer(s))

Name & Designation of
Authorized person
Signing the Tender on behalf of
the Tenderer(s)

Full Name and address of the Tenderer(s)

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

FORM OF TENDER (PRICE BID)

(To be filled up by the Tenderer)

Date:

From

To

GM (Contracts),
Indian Oil Corporation Ltd (Marketing Division),

Tender No.

Dear Sirs,

Having examined the Tender Documents consisting of the Short Tender Notice, General Instructions to Tenderers, General Conditions of Contract, Special Instructions to tenderers, Additional Instructions to Tenderers, Special Conditions of Contract, Specifications, Plans, Drawings, Time Schedule, Form of Contract, Form of Tender, Form of Schedule of Rates, and Addendum (a) to the Tender Documents, and having understood the provisions of the said Tender Documents and having thoroughly studied the requirements of Indian Oil Corporation Ltd. relative to the work tendered of Indian Oil Corporation Ltd (Mktg. Divn.) and having conducted a thorough study of the job site(s) involved, nature of inspections, quantum of works involved, the climatic conditions, labour, power, water, material and equipment availability, the transport and communication facilities, the availability and suitability of borrow areas, and things whatsoever necessary for or relative to the formulation of the tender of the performance of work, I/we hereby submit my/our tender offer for the performance of proposed work in accordance with the terms and conditions and within the time mentioned in the Bid Documents at the rate(s) quoted by me/us in the accompanying Schedule of Rates based on the Form of Schedule(s) of Rates included within the Tender.

If the work or any part thereof is awarded to me/us, I/We undertake to perform the work in accordance with the Contract Documents as defined in the Form of Contract forming part of the Tender Documents and accept the terms and conditions of Contract as laid down therein and undertake within 10 (ten) days of receipt of acceptance of Tender to pay to and/or deposit with Head Office, Marketing Division, Indian Oil Corporation Ltd. the Security Deposit, by any one or more of the modes of payments specified in this behalf in the General Conditions of Contract, and to commence work for each job site(s) as soon as the relevant Call Up Orders are placed on us or any part thereof to me/us, and to sign the formal Contract in the terms of the form of contract forming part of Tender Documents, within 10 (ten) days of receipt of Letter of Acceptance from and on behalf of Indian Oil Corporation Ltd, in this behalf failing which Indian Oil Corporation Ltd., shall be at liberty, without reference to me/us and without prejudice to any of its rights or remedies, to terminate the Contract and/or to forfeit the earnest money deposited in terms hereof.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



TENDER NO: WRCC/PT/2022-23/PT/56

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

In consideration of the sum of Rupee.1/- (Rupee one) only paid to me/us by Indian Oil Corporation Ltd., by adjustment in the price of Tender Documents/EMD, I/We further undertake to keep my/our this tender offer open for a period of not less than 4 (four) months from the scheduled date of opening of Tenders as specified in the General Instructions to Tenderer forming part of the Tender Documents.

I/We have annexed to this Bid the following documents:

- (i) **Schedule of Rates in the prescribed Form.**
- (ii) **Original Power of Attorney or other proof of authority of the person who has digitally signed the Tender OR copy of Power of Attorney or other authority duly certified by a Gazetted Officer or a Notary Public in proof of authority of the person who has digitally signed the Tender.**

I/We hereby undertake that the statements made herein/information given in the Annexures referred to above are true in all respects and that in the event of any such statement or information being found to be incorrect in any particular, the same may be construed to be a misrepresentation entitling Indian Oil Corporation Ltd. to avoid any resultant contract.

I/We further undertake as and when called upon by Indian Oil Corporation Ltd. to produce, for its inspection, original(s) of the document(s) of which copies have been annexed hereto.

[Signature(s) of the Tenderer(s)]
Name & Designation of authorized person
Signing the Tender on behalf of the Tenderer (s)
Full Name and address of the Bidder(s)

Witness:

Signature :
Name :
Occupation :

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

LIST OF DIRECTORS OF INDIAN OIL CORPORATION LIMITED

List of Board of Directors will be available in the link given below:

<https://www.iocl.com/aboutus/management.aspx>

Bidders may give the Declaration "A" "B" "C" & "D" based on the list of Board of Directors mentioned as per the link.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date



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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

PROFORMA OF DECLARATIONS A/B/C/D FOR RELATIONSHIP WITH DIRECTORS OF IOCL

DECLARATION - 'A'

We declare that we have complied with the conditions of Agreement.

Date :

Place : **Tenderer's Signature & Seal**

DECLARATION - 'B'

We declare that we do not have any employee who is related to any officer of the Corporation/ Central/ State Governments.

We have the following employees working with us who are near relatives of the Officer/ Director of the Corporation/Central/State Government.

Name of the employee
of the Tenderer

Name & designation of the Officer of the
Corporation/Central/State Governments

Date :

Place : **Tenderer's Signature & Seal**

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

DECLARATION - 'C'

The Tenderer is required to state whether he is a relative of any Director of our Corporation or the Tenderer is a firm in which any Director of our Corporation or his relative is a partner or any other partners of such a firm or alternately the Tenderer is a private company in which Director of our Corporation is a member or Director .

1. Name of the Tenderer
and his relations with the
Director in our Corporation.
2. Name of the Director of the
Corporation who is related to
the Tenderer.
3. Name of the Director of the
Corporation who is a member or
a Director of the firm.

Date :

Place :

Tenderer's Signature & Seal

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

DECLARATION – ‘D’

Tenderer is required to state whether they have employed any retired Director and above rank officer of Indian Oil Corporation Limited in their firm. If so, details hereunder to be submitted.

1. Name of the person :
2. Post last held in IOC :
3. Date of retirement :
4. Date of employment in the firm :

Date :


Place : Tenderer's Signature & Seal

N.B.

1. A separate sheet may be attached, if the above is not sufficient.
2. Strike out whichever is not applicable. If the Tenderer employs any person subsequent to signing the above declaration and the employee/s so appointed happens to be the near relatives of the Officer/Director of the Corporation/Central/State Governments, the Tenderer should submit another declaration furnishing the name/s of such employee/s who is/are related to the officer/s of the Corporation/Central/State Governments.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date

 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/2022-23/PT/56 Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	Page No. 43
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PROFORMA OF DECLARATION OF BLACKLISTING / HOLIDAY LISTING

IN THE CASE OF PROPRIETARY CONCERN:

I hereby declare that neither I, in my personal name nor in the name of my Proprietary concern, M/s _____ which is submitting the accompanying Bid/ Tender nor any other concern in which I am proprietor nor in any partnership firm in which I am involved as a Partner are presently on any blacklist or holiday list declared by Indian Oil Corporation Ltd. or by Ministry of Petroleum & Natural Gas (MOPNG), nor any inquiry is pending by Indian Oil Corporation Ltd. or MOPNG, in respect of any corrupt or fraudulent practice(s) against me or any other of my proprietorship concern(s) or against any partnership firm(s) in which I am or was at the relevant time involved as a partner, except as indicated below:

(Here give particulars of blacklisting or holiday listing, and/or inquiry and in absence thereof state "NIL").

IN THE CASE OF A PARTNERSHIP FIRM:

We hereby declare that neither we, M/s. _____, which is submitting the accompanying Bid/Tender, nor any partner involved in the said firm either in his individual capacity or as proprietor or partner of any other firm or concern presently, are placed on any blacklist or holiday list declared by Indian Oil Corporation Ltd. or by Ministry of Petroleum & Natural Gas (MOPNG), nor any inquiry is pending by Indian Oil Corporation Ltd. or MOPNG, in respect of any corrupt or fraudulent practice(s) against us or any partner or any other concern or firm of which he is proprietor or partner, except as indicated below:


(Here give particulars of blacklisting or holiday listing and/or inquiry and in the absence thereof state "NIL")

IN THE CASE OF COMPANY:

We hereby declare that we are presently neither placed on any holiday list or blacklist declared by Indian Oil Corporation Ltd. or by Ministry of Petroleum & Natural Gas (MOPNG), nor any inquiry is pending by Indian Oil Corporation Ltd. or MOPNG, in respect of any corrupt or fraudulent practice(s), except as indicated below:

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Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date

 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/2022-23/PT/56 Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	Page No. 44
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(Here give particulars of blacklisting or holiday listing and / or inquiry and in the absence thereof state "NIL")

IN THE CASE OF CONSORTIUM:

We hereby declare that none of the members of the Consortium are presently placed on any holiday list or blacklist declared by Indian Oil Corporation Ltd. or by Ministry of Petroleum & Natural Gas (MOPNG), nor any inquiry is pending by Indian Oil Corporation Ltd. or MOPNG, in respect of any corrupt or fraudulent practice(s), except as indicated below:

(Here give particulars of blacklisting or holiday listing and / or inquiry and in the absence thereof state "NIL")

It is understood that if this declaration is found to be false in any particular, Indian Oil Corporation Ltd. shall have the right to reject my/our bid, and if the bid has resulted in a contract, the contract is liable to be terminated without prejudice to any other right or remedy (including blacklisting or holiday listing) available to Indian Oil Corporation Ltd.

Place:

Signature of Bidder _____

Date:

Name of Signatory _____

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

PROFORMA OF TENDER NOT TAMPERED

(TO BE SUBMITTED ON LETTER HEAD OF THE BIDDER DULY SIGNED)

Note: Copy to be uploaded along with tender and original to be submitted during documents verification.

Subject: Tender No:WRCC/2022-23/PT/56

I/We _____ (Name of Bidder), hereby declare that:

- I/We have not tampered or modified the subject tender document in any manner and before uploading, same has been cross-checked with documents hosted on your e-portal <https://iocletenders.nic.in>. In case, if same is found to be tampered/modified, I/We understand that my/our tender will be summarily rejected and EMD/SD may be forfeited and I am/We are liable to be banned from doing business with and/or prosecuted.
- I/We, hereby confirm that if any discrepancy observed in the submitted tender even at a future date, I/We will abide by all the terms and conditions as per all the documents hosted including Addendums/Changes/Corrigendum, on your e-portal related with subject tender. I/We further assure that we agree to all the decisions confirmed in Pre-Bid Conference of the subject tender.

Tenderer's Signature & Seal

Date:

Place:

Witness:

1) Name & Address: _____

2) Name & Address: _____

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

UNDERTAKING FOR ACCEPTANCE OF TENDER TERMS & CONDITIONS

NAME OF WORK:

Tender No. :

We confirm that we have quoted the rates in the tender considering Inter-alia the

1. Tender Document(pages)
2. Additional Document(s) (if any pages)
3. BOQ Document (Price Bid Format)
4. Corrigendum (if any pages)
5. Pre Bid Meeting Minutes (if any pages)

We _____ (Name of the Tenderer) hereby certify that we have fully read and thoroughly understood the tender requirements and accept all terms and conditions of the tender including all corrigendum/addendum issued, if any. Our offer is in confirmation to all the terms and conditions of the tender including all corrigendum/addendum, if any and minutes of the pre-bid meeting. In the event our offer is found acceptable and contract is awarded to us, the complete tender document shall be considered for constitution of Contract Agreement.

SIGNED FOR AND ON BEHALF OF TENDERER(S)

Name of Tenderer(s)

Date : __/__/____


Place :

Seal & Signature of Tenderer

NOTE: This declaration should be signed by the Tenderer's authorized representative on COMPANY LETTERHEAD who is signing the Bid and scanned copy to be uploaded.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/2022-23/PT/56 Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	Page No. 47
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INTEGRITY AGREEMENT
(COVERING LETTER)
(APPLICABLE FOR TENDER VALUE > Rs 10 CRORE ONLY)

Covering Letter required be signing and submitting by the tenderer

Ref:

Dated:

To,

Indian Oil Corporation Limited

Sub: Submission of Offer for Tender no. _____ for _____

Dear Sir,

The Bidder acknowledges that Indian Oil Corporation Limited (IOCL) has signed the MOU with Transparency International India for the adoption of the Integrity Pact Program and stands committed to following the principles thereof as enumerated in the Integrity Agreement enclosed with the tender document.

The Bidder agrees that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the enclosed Integrity Agreement, which is an integral part of tender documents, failing which the tenderer will stand disqualified from the tendering process. The Bidder acknowledges that the Bid would be kept open in its original form without variation or modification for a period of _____ days (state the number of days from the last date for the receipt of tenders stated in the NIT) AND THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

Bidder confirms acceptance and compliance with the Integrity Agreement in letter and spirit and further agrees that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when bid is finally accepted by IOCL. The Bidder acknowledges and accepts the duration of the Integrity Agreement, which shall be in line with Article 8 of the enclosed Integrity Agreement.

Bidder acknowledges that in the event of Bidder's failure to sign and accept the Integrity Agreement, while submitting the Bid, IOCL shall have unqualified, absolute and unfettered right to disqualify the tenderer and reject the Bid in accordance with the terms and conditions of the tender.


Yours faithfully,

(Duly authorized Signatory of the Bidder)

(Note - One copy of this letter along with the Integrity Agreement duly signed must be returned along with the offer).

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date

 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/2022-23/PT/56 Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	Page No. 48
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(To be executed on plain paper and submitted along with Technical Bid for tenders having a value of Rs.10 Crore or more. For IOCL, to be signed by the same signatory who is competent/authorized to sign the relevant Contract)

(Division)
Tender no. :

INTEGRITY AGREEMENT

This Integrity Agreement is made at on this day of 2021

BETWEEN

Indian Oil Corporation Limited, a company duly incorporated and validly existing under the provisions of Companies Act, 1956 and having its registered office at Indian Oil Bhavan, 9, Ali Yavar Jung Marg, Bandra (East), Mumbai 400051 (hereinafter referred as the 'Principal/Owner', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

And

..... (name and address of the Individual/firm/Company/consortium members through(mention details of duly authorized signatory).hereinafter referred as the "Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal/Owner has floated a tender (Tender No.:) (hereinafter referred to as "Tender") and intends to award, under laid down organizational procedures, contract/s purchase order/work order for (name of contract/order) or items covered under the tender hereinafter referred to as the "Contract".


AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS, in order to achieve these goals, the Principal/Owner has appointed Independent External Monitors (IEMs), to monitor the Tender process and the execution of the Contract for compliance with the principles as laid down in this Agreement.

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and Contract between the parties.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesseth as under:

Article 1: Commitment of the Principal/Owner

The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b) The Principal/Owner will, during the Tender process treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

c) The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal Code (IPC) /Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitments of the Bidder(s)/Contractor(s)

The Bidder(s)/Contractor(s) commit himself 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:


The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/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.

The Bidder(s)/Contractor(s) will not enter with other Bidder(s) 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 cartelize in the bidding process.

The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on

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to others, any information or document provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. Further, if an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product. Copy of CVC guidelines dated 13/01/2012 is annexed hereto as Annexure.

The Bidder(s)/Contractor(s) will, when presenting his bid, disclose (with each tender as per Proforma enclosed) 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.

The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Article 3: Disqualification from Tender Process and Exclusion from Future Contracts

If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner is entitled to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate the Contract, if already executed or exclude the Bidder/ Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner.

Such exclusion may be for a period of 1 year to 3 years as per the procedure prescribed in the guidelines for holiday listing of the Principal/Owner.

The Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right to resort to and impose such exclusion.

Apart from the above, the Principal/Owner may take action for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.


Article 4-Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(/Contractor(s):

Forfeiture of EMD/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated the Contract or has accrued the right to terminate

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the Contract according to Article 3, the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the Earnest Money Deposit/ Bid-Security amount of the Bidder/Contractor.

Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of PC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to the Chief Vigilance Officer.

Article 5- Previous Transgression

The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any country confirming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the Tender process.

If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.

If the Bidder/Contractor can prove that he has resorted \recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, as per laid down organizational procedures, revoke the exclusion prematurely.

Article 6- Equal Treatment of all Bidders/Contractors/Subcontractors

The Bidder(s)/Contractor(s) has to undertake from all Subcontractors a commitment in conformity with this Integrity Pact. It shall be the responsibility of the Principal Contractor to ensure adoption of/conformity to IP by the Sub-Contractor. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/ Sub-vendors.

The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact, between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.


Article 7 -Independent External Monitors (IEMs)

The Principal/Owner has appointed competent and credible Independent External Monitor(s) (IEMs) for this Pact. The task of the Monitors is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

The IEMs are not subject to instructions by the representatives of the parties and perform their functions neutrally and independently. They report to the Chairman, Indian Oil Corporation Limited.

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The Bidder(s)/Contractor(s) accepts that the IEMs have the right to access, without restriction, to all Project documentation of the Principal/Owner including that provided by the Contractor, as and when required. The Contractor will also grant the IEMs, upon their request and demonstration of valid interest, unrestricted and unconditional access to his or any of his sub-Contractor's project documentation. The IEMs are under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality. For this purpose, IEMs are required to sign Non-Disclosure Agreement along with Declaration of No Conflict of Interest at the time of appointment as IEMs. However, the documents/records/information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.

As soon as the IEMs notice, or believe to notice, a violation of this Pact, they will so inform the Management of the Principal/Owner and request the Management to discontinue or take corrective action, or to take other relevant action. The IEMs can in this regard submit non-binding recommendations.

The IEMs will submit a written report to the Chairman, Indian Oil Corporation Limited within thirty days from the date of reference or intimation to them by the Principal/Owner and, should the occasion arise, submit proposals for correcting problematic situations.

If the IEMs have reported to the Chairman, Indian Oil Corporation Limited a substantiated suspicion of an offence under the relevant IPC/PC Act, and the Chairman, IOCL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the IEMs may also transmit the information directly to the Central Vigilance Commissioner

Article 8- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor 12 months after the completion of work under the Contract, or till the continuation of defect liability period, whichever is more and for all other Bidders, till the Contract has been awarded.

If any claim is made/lodged during the 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 the Chairman, IOCL.

Article 9-Other Provisions


This Pact is subject to Indian law, place of performance and jurisdiction is the Head Office/Head Quarters of the Division of the Principal/Owner, who has floated the Tender.

Changes and supplements need to be made in writing. Side agreements have not been made.

If the Bidder is a Partnership Firm, IP is required to be signed by all the Partners. If the Bidder is a Consortium/ Unincorporated Joint Venture/Association of Persons, formed solely for the purpose of executing the tendered project, this Pact must be signed by all the Partners/ members of such Consortium/Unincorporated Joint Ventures/Association of Persons. In case Bidder is a Company, including Joint Venture Company, the Pact must be signed by a representative of the Company duly authorized by board resolution.

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Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

Any dispute or difference arising between the parties with regard to the terms of this Agreement/Pact, any action taken by the Owner/Principal in accordance with this Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 10- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Pact will have precedence over the Tender/Contract documents with regard to any of the provisions covered under this Pact.

IN WITNESS WHEREOF the parties have signed and executed this Pact at the place and date first above mentioned in the presence of following witnesses:

(For and on behalf of Principal/Owner)

(For and on behalf of Bidder/Contractor) WITNESSES:

1.

(signature, name and address)

2.

(signature, name and address)

Note: In case of Purchase Orders wherein formal agreements are not signed references to witnesses may be deleted from the last part of the Agreement.

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SPECIAL TERMS AND CONDITIONS OF CONTRACT**(FOR CCTV SURVEILLANCE SYSTEM)****1.0 NATURE AND SCOPE OF WORK**

Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Bidders are advised to inspect the site and ascertain the conditions including leads/ lifts involved/ approach to vehicles, power, water geo-political scenario etc prior to quoting the amount.

The work descriptions and specifications are as per enclosed documents.

2.0 Location of site: As per NIT (Order shall be placed on LOT basis as defined in NIT)

S.No	Name of the location	Location in-charge name and Contact number
1	Akola Depot	Dhawal Nagrale - 9422804666
2	Chandrapur Depot	S.M. Bandhe - 7440937432
3	Dhule Depot	N. S. Bhalerao - 9423965306
4	JNPT Terminal	Sajid Ahmed - 7544018606
5	Miraj Depot	Pankaj Sakharkar - 9689113839
6	Pune Terminal	Subhas Rakshit - 9800141714
7	Sewree – I Terminal	P.P. Lokhande - 7219556090
8	Sewree – II Terminal	P.P. Lokhande - 7219556090
9	Vasco Terminal	I. Ravi Sharma - 7898363822
10	Vashi Terminal	Bidhan Chandra Biswas - 9831504668
11	Wadala Terminal	Kiran M. Dekate - 8698555540
12	Aurangabad AFS	Shrikant Giradkar - 8983251114
13	Dabolim (GOA) AFS	J P Sinha - 7703005530
14	Shirdi AFS	Vipul - 9049994489
15	LBP Taloja	Shri. Sumit Sarkar - 02220871296
16	LBP Trombay	Shri. B K Roy - 9820918096
17	SCFP Khapri	R.M.Pimprikar - 9833310492
18	SCFP Trombay	R D Beck - 9830918018
19	Manmad BP	Shri. Dhiraj Kumar - 8800465132
20	Dhanaj BP	Shri. Nareshkumar Dhongadi - 9975155829
21	Pune BP	Shri. Patro Debmeet - 9064046647

3.0 EARNEST MONEY DEPOSIT :Refer NIT for details**4.0 COMPLETION PERIOD:**

- 4.1 Entire work should be completed in a duration **as per NIT**, failing which price adjustment for delay in completion shall be made as per clause 4.4.0.0, section 4 of GCC which is partially modified as **“price adjustment for delay in completion shall be deducted at applicable percentage from RA bills, on cumulative value of works done upto the concerned RA bill.**

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However, in cases of abandonment of site/termination, price adjustment for delay shall be applied in line with GCC clause 7.0.9.0 on the total contract value as specified in the acceptance of tender” This will be in addition to and without prejudice to the other rights available to the Corporation under the said GCC. Time for all the facilities covered in the schedule of works will commence concurrently.

- 4.2 In case the contractor fails to adhere to the time limit specified above or if the rate of progress is considered not satisfactory, the Corporation will be at liberty to terminate the contract and get the same executed by any other agency entirely at the risk and cost of the original contractor and in line with provisions available under the GCC.
- 4.3 Site Acceptance Test: SAT report shall be submitted by the vendor, in the prescribed format, after due self verification.SAT essentially covers the scope of work of the contract, including any additional items advised by IOC & accepted by the vendor for execution.On receipt of the SAT report from the vendor,IOC shall observe the performance for one month.If,during the one month period, no major contrary observations are found,the Acceptance date i.e SAT report date plus 30 days shall be considered as date of completion of job.
- 4.4 In case, there are finding/observation contrary to the SAT document by functional dept brought to the notice of vendor within 30 days of submission of SAT checklist in prescribed format, the date of completion will be determined based on the tabulation given below:

Scenario	Nature of Observation Recorded	Rectification action taken	Date of completion
1	No shortcoming/fault/contrary observation within 30 days of SAT Report submission	NA	Date of Acceptance of SAT report i.e. date of submission of SAT report plus 30 days
2	Complete breakdown* witnessed within 30 days of SAT Report submission	System integrator rectified it within 24 hrs	Date of Acceptance of SAT report i.e. date of submission of SAT report plus 30 days
3	Complete breakdown* witnessed within 30 days of SAT Report submission	System integrator rectified it beyond 24 hrs	Date of problemresolution plus 30 days of hassle free operation wrt such core activities
4	Some Equipment failure recorded within 30 days of SAT Report submission	System integrator rectified it within 48 hrs	Date of Acceptance of SAT report i.e. date of submission of SAT report plus 30 days
5	Some Equipment failure recorded within 30 days of SAT Report acceptance	System integrator rectified it beyond 48 hrs	Date of Acceptance of SAT report i.e. date of submission of SAT report plus 30 days Or Date of Rectification of the problem, whichever is later
6	Complete breakdown*witnessed as well as some equipment failure	In either of the above combinations	Shall be the later date out of scenario no 2, 3, 4 or 5 given above, depending on the

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Scenario	Nature of Observation Recorded	Rectification action taken	Date of completion
	recorded within 30 days of SAT Report submission		problem resolution date of the respective Core activities as well as non core activities.

* Complete breakdown here denotes breakdown of central server system or break down of more than 25% of total cameras of the entire CCTV system.

In order to verify the availability of data storage for 90 days, the location shall check the same after 30 days, 60 days & 90 days of SAT. If at any stage it is observed that data for requisite number of days is not available in the system, the matter shall be referred to vendor who shall rectify the same within 30 days. The same needs to be verified in similar manner again till continuous cumulative data storage of 90 days is well established.

4.5 In the event, there being a hindrance in conducting the SAT or dispute regarding the SAT Report and observations of the Location In Charge, the vendor shall refer the matter in writing to the concerned Engineering in charge for resolution. The decision of such authority shall be final.

4.6 In partial modification of GCC Clause No. 5.5.0.0, the completion Certificate shall be issued by Engineer-in-Charge on written request by the CONTRACTOR on successful completion of the works and after completion of documentation, including release of final bills as listed in clause 5.5.2.0 of GCC. Such certificate may be issued within 15 days from the date of receipt of written request for completion certificate by the CONTRACTOR.

4.7 These special terms and conditions shall be read in conjunction with the technical specifications, drawings, instructions to tenderers and particular conditions of contract and any other document forming a part of the tender, wherever the tender so requires. This supersedes clause 1.7.0.0, 2.1.1.2 and 4.0.3.0 of GCC.

5.0 **VALIDITY OF TENDER:** The tender will be valid for a period of 120 days (One Hundred and Twenty days) as per clause 4 of Instructions to Tenderers of GCC from the date of opening the tender which will be taken as the date of opening of techno-commercial bid in case of two bid system of tenders.

6.0 The vendor is required to prepare detailed activity wise PERT/CPM chart with pre-requisite for every activity wrt IOCL deliverables/fronts for entire job of Design, engineering, material procurement, installation/erection, execution, commissioning of system, trial, SAT within the stipulated time period. The same shall be discussed and finalized by IOCL Site Engineer/ Engineer-in-charge during Kick Off Meeting before commencement of work. IOCL will furnish site project schedule and shutdown schedule to enable the vendor during KOM for preparing the PERT / CPM chart.

7.0 **SECURITY DEPOSIT:**

7.1 The successful tenderer, upon placement of work order, shall pay security deposit, an amount equivalent to 3% of work order/ Contract value (excluding taxes). The security deposit shall be paid by Bank Guarantee/ NEFT/RTGS.

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- 7.1.1 If the contractor desires to pay Security Deposit by way of Bank Guarantee, then they should pay the same for the entire amount of the Security Deposit work out based on work order value before commencement of work. (The Bank Guarantee should be of Nationalized / Scheduled Banks sent directly by the Banker under their covering letter to the office of the Corporation by Regd. Post/Courier).
- 7.1.2 However, BG will not be accepted if the total amount of the security deposit is less than Rs. 1,00,000/-
- 7.1.3 IOCL bank details for issuance of BG:
Bank Name: **State Bank of India (SBI)**
IFSC Code: **SBIN0016376**
Branch Name: **Corporate Accounts Group, Branch – II, Mumbai (16376)**
- 7.2 Out of the total Security Deposit, contractor can pay Initial Security deposit of 1% of the work order value (excluding taxes) within 10 days from the date of issuance of LOA and balance amount shall be deducted @ 2% of the Running Account Bills (excluding taxes).
- 7.3 All the works carried out by the Contractor shall be covered under defect liability period for a period of **12 (Twelve) months** from the date of handing over of completed work to IOCL.
- 7.4 Security Deposit shall not carry any interest.
- 7.5 Security Deposit as deposited shall be released on completion of the warranty period of 12 months from the date of handing over of the system and submission of performance BG 10% of the CAMC value of 6 years. At the end of every year of CAMC, the BG in lieu of the respective year's CAMC will be returned on receipt of revised BG equivalent to 10% of the remaining years' cumulative Comprehensive AMC value. In case of delay on the part of the vendor in submission of the BG during the CAMC period, IOCL may encash the earlier BG.
Note: The above clause of security deposit shall supersede security deposit clause mentioned elsewhere in the tender document including Clause 2.1.1.0, Section- 2 of the GCC.
- i. The BG value upto Rs 2 (Two) Crore will be accepted if it is issued by an Indian Branch of any Scheduled Bank appearing in the Second schedule to the RBI Act, 1934.
- ii. BG for value above Rs 2 (Two) Crore will be accepted if it is issued by an Indian Branch of:
- Any Nationalised/ PSU Bank appearing in the Second schedule to the RBI Act, 1934
 - Any Scheduled Bank (Other than a nationalized/ PSU bank) having a Credit rating of at least "A" of Moody's or equivalent, in case of foreign banks and credit rating at least "AA" of CRISIL or equivalent (SEBI approved rating agencies), in case of Indian Banks, at the time of acceptance of BG.
- 7.6 The tenderer should clearly indicate in his offer one of the modes of payment towards the security Deposit. Options once exercised by bidder shall be final & can only be changed as per approval of Engineer in charge.
- 7.7 Security Deposit shall not carry any interest.

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8.0 RATES

8.1 Parties should visit the site to assess the working area and also to assess the local conditions prior to quoting to ensure smooth working during the period of construction.

9.0 WORK ORDER RATES: ORDER WILL BE PLACED AS UNDER-

9.1.1 PROJECT WORK ORDER

Project work order shall be placed on the successful L1 bidder / PPLC Class I bidder accepting L1 rate of respective LOTs(Technically qualified bidder quoting lowest acceptable rate, after reverse auction procedure (with or without negotiations as the case may be) & based on Overall Bid amount for all Supply and Installation & Commissioning Services at finalized rate.

For the purpose of placement of work order, item wise base rate shall be derived based on tendered estimated rate and the applicable GST rate as indicated by the L1 bidder.

Work order for all Supply and Installation & Commissioning Services items shall be placed at their base rate so derived after applying net offered premium/discount and applicable GST rate as indicated by L1 bidder in the Price Bid.

9.1.2 CAMC Order

CAMC work order shall be placed after the completion of the warranty period of 12 months at finalized rate.

For the purpose of placement of work order, year wise base rate shall be derived based on Project executed amount as detailed in special terms and conditions of the contract.

Work order for CAMC items year-wise shall be placed at their base rate so derived after applying net offered premium/discount and applicable **GST rate as indicated by L1 bidder** in the Price Bid.

9.2 SPECIAL CLAUSES OF TAXATION:

Clause No.	Description
	DEFINITIONS
1	Contractual period / Work Completion Period /Contractual Delivery Date / Contractual Completion Period shall mean the Scheduled Delivery / Completion Period as mentioned in the LOA (Letter of Acceptance) or Purchase Order or Work Order and shall also include approved extensions, if any.
	GENERAL
1	Where any portion of the GCC/any other section of tender, is repugnant to or at variance with any provision of the Standard Taxation Condition (STC), then the provision of the STC shall be deemed to override the provisions of the GCC and shall, to the extent of such repugnance or variations, prevail.
2	For the purpose of this STC, the term "tax" in addition to tax imposed under CGST (Central Tax)/SGST (State Tax)/IGST (Integrated Tax)/UTGST (Union Territory Tax)/ GST Compensation Cess Acts, also includes any duties, cess or statutory levies levied by central or state authorities.

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Clause No.	Description
3	<p>Rate variation in Taxes and any new promulgated taxes after last date of the submission of price bid only on the final product and/or services (applicable to invoices raised on IOCL) within the contractual delivery date /period (including extension approved if any) shall be on IOCL's Account against submission of documentary evidence.</p> <p>Further , in case of delay in delivery of goods and/or services, any upward rate variation in Taxes and any new promulgated taxes imposed after the contractual delivery date shall be to the Seller's / Contractor's Account.</p> <p>Similarly in case of any reduction in the rate(s) of the Taxes between last date of submission of price bid relevant to the Contract and the date of execution of activities under the contract, the Contractor shall pass on the benefit of such reduction to IOCL with the view that IOCL shall pay reduced duty/Tax to Govt.</p>
5	<p>It would be the responsibility of the contractor to get the registration with the respective Tax authorities. Any taxes being charged by the Contractors would be claimed by issuing proper TAX Invoice indicating details /elements of all taxes charged and necessary requirements as prescribed under the respective tax laws and also to mention his correct and valid registration number(s) along with IOCL's registration number as applicable for particular supply on all invoices raised on IOCL.</p> <p>Contractor to provide the GSTIN number from where the supply is proposed to be under taken. Further the HSN Code / Service Accounting Code (SAC) as applicable for the subject tender needs to be provided in the columns provided in the technical / Price bid.</p> <p>In case the contractor is opting for Composition scheme under the GST laws (i.e Section 10 of the CGST Act, 2017 and similar provisions under the respective State / UT law), the contractor should confirm the same. Further the contractor to confirm the issuance of Bill of Supply while submission of tender documents and no GST will be charged on IOCL.</p> <p>In case the contractor is falling under Unregistered category, the contractor should confirm the same.</p>
6	<p>The contractor would be liable to reimburse or make good of any loss/claim by IOCL towards tax credit rejected /disallowed by any tax authorities due to non deposit of taxes or non updation of the data in GSTIN network or non filling of returns or non compliance of tax laws by the Contractor by issuance of suitable credit note to IOCL. In case, contractor does not issues credit note to IOCL, IOCL would be constrained to recover the amount including interest payable alongwith Statutory levy/Tax, if any, payable on such recovery.</p>
7	<p>Tax element on any Debit Note / Supplementary invoice, raised by the contractor will be reimbursed by IOCL as long as the same is within the permissible time limit as per the respective taxation laws and also permissible under the Contract terms and conditions. Contractors to ensure that such debit Notes are uploaded while filing the Statutory returns as may be prescribed from time to time.</p>

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Clause No.	Description
8	The contractor will be under obligation for quoting/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/benefits/waiver or any other benefits of similar nature or kind available under the Tax Laws. In no case, differential Tax Claims due to wrong classification of goods and/or services or understanding of law or rules or regulations or any other reasons of similar nature shall be entertained by IOCL.
9	In case, IOCL's Input Tax Credit (ITC) is rejected on account of wrong levy of tax i.e. payment of Integrated Tax in place of Central Tax+ State/Union Territory Tax or vice versa, the contractor is liable to make good the loss suffered by IOCL by issuance of suitable credit note to IOCL. In case, contractor does not issue credit note to IOCL, IOCL would be constrained to recover the amount including interest payable alongwith Statutory levy, if any, payable on such recovery.
10	In case the contractor is opting for Composition scheme under the GST laws, in such event the evaluation of his bid will be based on the Quoted Price. In case the contractor is falling under Unregistered category, then GST liability, if any, on IOCL will be included for the purpose of evaluation.
11	In case, IOCL is eligible to avail Input TAX Credit (ITC), the same shall be reduced from the delivered price to arrive at the net landed cost.
12	IOCL shall reimburse GST levied as per invoice issued by the Contractor as prescribed under section 31 of the CGST Act and respective states and Rules.
13	To enable IOCL to avail ITC, the contractor/supplier shall furnish/submit any and all certificates, documents and declarations as are required by IOCL to avail of the ITC with respect to GST reimbursed by IOCL on materials sold to IOCL.
14	Invoice should be raised as per Tax Rates mentioned in the BIDs and in case at the time of raising Invoice if the invoices raised are not as per Tax rates mentioned in the bid, payment will be limited to the rate quoted as per BID subject to increase /decrease in Rates after last date of submission of Price Bid provided delivery is within the Contractual period.
16	ROAD PERMIT /WAY BILL- IOCL shall not issue any Road Permit / Way bill.
17	Works Contract / Composite Supply / Mixed Supply
17.1	<p>Works contracts as defined under the GST law includes Contracts for Building, Construction, Fabrication, Completion, Erection, Installation, Fitting out, Improvement, Modification, Repair, Maintenance, Renovation, Alteration or Commissioning of any immovable property wherein transfer of goods is involved in the execution of such contracts.</p> <p>Composite Supply has been defined as supply in which two or more supply of goods or service or both or any combination are naturally bundled and supplied in conjunction with each other in the ordinary course of Business, and then the rate as applicable for principal supply will be applicable on the entire transaction.</p> <p>Mixed supply has been defined as supplies of goods or service or both which are made in conjunction with each other for a single price and which does not constitute a composite supply then the rate as applicable for the highest rate will be applicable.</p> <p>In view of the above various definitions under GST law, bidders are required to evaluate the jobs</p>

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Clause No.	Description
	to be undertaken covered under the tender and quote accordingly by taking in to account the nature of Job read with the legal provision. The place of supply in relation to an immovable property shall be the location at which the immovable property is located or intended to be located.
17.3	In case, IOCL is eligible to avail Input TAX Credit (ITC), the same shall be reduced from the delivered price to arrive at the net landed cost. IOCL shall reimburse GST levied as per TAX invoice issued by the Contractor as prescribed under respective GST Acts and Rules. In case the contractor is not permitted to issue Tax Invoice the same should be clearly mentioned in the price Bid.
17.4	To enable IOCL to avail ITC, the contractor/supplier shall furnish/submit any and all certificates, documents and declarations as are required by IOCL to avail of the ITC with respect to VAT reimbursed by IOCL on materials sold to IOCL
17.5	Invoice should be raised as per Tax Rates mentioned in the BIDs and in case at the time of raising Invoice if the invoices raised are not as per Tax rates mentioned in the bid, payment will be limited to the rate quoted as per BID subject to increase /decrease in Rates after last date of submission of Price Bid provided delivery is within the Contractual period.
18	INCOME TAX
18.1	<p>Resident Bidders:</p> <ol style="list-style-type: none"> The contractor shall be exclusively responsible and liable to pay Taxes on Income arising out of payment made out of the contract. Wherever withholding tax i.e. Tax deduction at source (TDS) is applicable under the Income tax Act, 1961 the same will be deducted from the Invoices raised and TDS Certificate as per provision of the Income tax Act and Rules shall be issued to the contractor. PAN is mandatory. If PAN is not provided TDS would be deducted at higher rate as per the provisions of Income Tax Act. <p>Non Resident Bidder:</p> <ol style="list-style-type: none"> Notwithstanding anything mentioned in the contract, Letter of Acceptance, BID Documents or any correspondences, following clauses shall be applicable with respect to Indian Income Tax including withholding tax. The CONTRACTOR shall be exclusively responsible and liable to pay all income taxes on any payments arising out of the Contract, whether payable in India or outside India. Any payment to non-resident or its permanent establishment (PE) in India which is chargeable to tax in India attracts withholding tax in India under Income Tax Act, 1961 shall be subject to provisions of Double Taxation Avoidance Agreement (DTAA) wherever applicable, for withholding tax purposes only. Contractor shall not include withholding tax / tax deductible at source in its quoted price. Withholding tax as applicable as per Indian Income Tax Act read with respective Double Taxation Avoidance Agreements (DTAA) will be borne by IOCL. Notwithstanding Clause "3" above, where Contractor intends to obtain a Certificate of Lower or NIL Withholding Tax/Tax deductible at source in terms of provisions of Indian

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Clause No.	Description
	<p>Income Tax Act, 1961 and rules made thereunder, Withholding tax/Tax deductible at source will be deducted from amount payable under the contract as per Certificate issued by tax authorities under Income Tax Act, 1961 and rules made thereunder.</p> <p>f) In all cases whether Withholding tax/Tax deductible at source is borne by IOCL as described in Clause "4" above or deducted from amount payable as per contract as described in Clause "5" above, Certificate of Withholding tax/Tax deducted at source will be provided by IOCL enabling contractor to claim credit of the same in their country of residence.</p> <p>g) To facilitate benefits of DTAA, Contractor shall provide copy of:</p> <ul style="list-style-type: none">(a) Tax Residence Certificate (TRC),(b) Form 10F as described in Rule 21AB of Income Tax Rules, 1962,(c) NO PERMANENT ESTABLISHMENT CERTIFICATE (NO PE) as may be required,(d) Permanent Account Number (PAN), if available or(e) Declaration in lieu of PAN as per Rule 37BC of Income Tax Rules, 1962. <p>Any other document(s) which might be required to enable IOCL to apply Lower OR NIL rate of withholding tax.</p>

- 9.3 The Bidders must note that the rates and amount indicated in the schedule of works shall be applicable for all leads and lifts and reach involved. The Corporation also reserves the right to operate or not operate or partly operate any item mentioned in the schedule. The rates quoted for all items below the ground level shall be inclusive of adequate shoring, shuttering, bailing out sub soil water (if found necessary) etc complete. The successful tenderer shall be responsible for implementation of all precautionary measures for ensuring safety for all materials and labor till such time the work is completed in all respects and handed over to the Corporation.
- 9.4 Rate shall include cost towards Liaisoning with concerned local authorities required for the job.
- 9.5 Rate shall also exclude cost towards exhaustive training to IOCL personnel as per Scope of Work. Separate line item in the SOR will be there for that.
- 9.6 No Negotiation will be conducted with the bidders as a matter of routine. However, Corporation reserves the right to conduct negotiations.
- 10.0 The Corporation reserves the right to accept any tender in whole or in part and reject any or all tenders without assigning any reasons. The Corporation reserves the right to accept more tenders in part. Decision of the Corporation in this regard will be final.
- 11.0 No price escalation shall be given. No extra payments other than the rate quoted shall be entertained. No extra payments shall be made for working on extended hours, Saturdays, Sundays and Holidays to meet the committed time schedule. Forms C will not be issued by IOCL.
- 12.0 Once the tender is accepted and the contract is placed on the successful tenderer, the rates for the different components in Schedule of Rates shall remain valid till the respective components in Schedule of rates and the Job is 100% completed and SAT is accepted. No escalation whatsoever will be entertained on any ground.

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13.0 Progress report wrt activity plan finalized in the contract/ kick off meeting must be submitted to IOCL by the vendor every month. IOCL will provide realistic dates for pending front availability and shutdown planning to enable the vendor to update/ modify the PERT/CPM accordingly.

14.0 Court of Jurisdiction: Court of Jurisdiction in case of any dispute shall be **<Mumbai>** after award of LOA and **<Mumbai>** before award of LOA*

15.0 Corporation reserve the right to revise/extend any Date/Time from scheduled timelines of published tender.

16.0 PROJECT MANAGEMENT TEAM

16.1 The successful bidder shall be required to position an effective project management team including designated Project Manager, site engineer and dedicated HSE engineer of appropriate qualifications. Positioning of safety engineer and site engineer (with 3 years of experience*) is a pre-requisite during project execution at site. During kick off meeting the date of deployment of these engineers shall be agreed upon & shall be binding upon the vendor.

Note: In case the Engineer concerned is holding diploma qualification against engineering graduation, the requirement of site experience shall be increased by 2 years.

16.2 In case of non deployment of any of the required engineers by the required dates, a recovery of Rs 30,000/- per month per Engineer shall be made.

16.3 Vendor will submit the deliverables requirement to IOCL well in advance. IOCL will in turn ensure assigning desired responsibility matrix for facilitating the genuine requirements and execution of the project.

16.4 Vendor should deploy qualified engineers having experience in similar type of jobs to execute/supervise the critical jobs like CCTV works, system integration, PLC integration, DCS integration etc other than the regular project jobs.

17.0 PAYMENT TERMS - PROCEDURE FOR RELEASE OF PAYMENT:

17.1 CAPITAL WORKS – PROJECT (For respective Supplies Items)

17.1.1 Step 1: Against Receipt of Materials at Site

80% of the Basic Supply Value of the Materials received at site in good condition, along with submission of test/inspection, statutory certificates along with invoice. Additionally GST amount as reflected in vendor's tax invoice shall be paid in full i.e. 100%(% GST reimbursed shall be limited to percentage quoted by vendor at the time of tender or actual, whichever is lower).

Step 2: After commissioning of System -10% of the rates quoted against each item.

17.1.2 Step 3: On Successful completion of SAT: Balance 10 % on successful completion of SAT and successful operation of system for one month trial period.

In case, the net delay in conducting SAT for reasons not attributable to Vendors wrt the scheduled SAT date as per Activity Planning schedule finalised during Kick of Meeting, crosses 2

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months, above 10 % payment of the respective supply component shall be released against a BG of equivalent amount valid upto a period equivalent to expected SAT date. In case of any further delay in SAT, BG validity shall be extended till actual SAT completion.

The IOCL location in-charge will extend all necessary assistance in conducting SAT. The bidder will not delay the SAT report and its submission for non availability of/ presence of IOCL representative at the place where SAT is being conducted, apart from the issues/areas where location's facilitation/operational assistance are necessarily required. The bidder will communicate in writing any hindrance/ problems in conducting SAT to the Engineering in-charge. The oral request / communication regarding the hindrances/ problems in conducting SAT report will not be entertained.

The Location in-Charge or his authorised representative to check the system operation and efficacy of SAT document within a period of 30 days and comment on the SAT document within 25 days from the submission of SAT document.

In the event, there being a hindrance in conducting the SAT or dispute regarding the SAT Report and observations of the Location in-Charge, the vendor shall refer the matter in writing to the concerned Engineering in-charge for resolution. The decision of such authority shall be final.

In case nothing contrary to the SAT document is received within max 30 days, it will be presumed as successful completion and payment will be released.

17.2 CAPITAL WORKS – PROJECT (For respective Installation/Commissioning Services Items)

17.2.1 Step 1 : On successful completion of Power on of individual equipments :

60 % of the rates quoted against Installation and Commissioning items will be released after successful power on of the corresponding sub systems.

17.2.2 Step 2: On Successful completion of SAT without any contrary observations (within the contractual scope of work of vendor and except any issues pertaining to stabilization) by IOCL within 30 days of its submission (As explained in Clause No.3.0):

40% of the rates quoted against Installation and Commissioning items will be released after successful completion of SAT within contractual scope of work and except any issues pertaining to stabilisation (with active involvement of the location, specially wrt making required fronts / facilities available in timely manner to conduct the SAT within the intended timeframe and submission of SAT document (format of SAT attached with tender document) by the vendor, and operation of error/breakdown free system for a period of 30 days (The successful completion of SAT will be determined based on Tabulation in clause no. 3.0).

NOTE:

- i) In case, SAT cannot be conducted within scheduled time frame (as per Contract/Kick Off meeting) to comply with Contractual completion period, due to reasons not attributable to vendor, time extension will be given by IOCL accordingly.

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- ii) Materials positioning at site should be planned and signed jointly by Vendor and IOCL during Kick Of Meeting in such a manner (considering contractual completion period vis a vis facilities/front readiness anticipated), so that materials/equipments idling at site without provision for installation/power on / commissioning are minimised and unnecessary ageing of equipments at site without installation and commissioning do not take place. Due time extension approval in this regard shall be given by IOCL to the vendor well in advance. In case, vendor position the materials notwithstanding the above referred understanding, then onus of warranty/equipment warranty etc will remain with the vendor and IOCL would not be responsible in any way for any payment against such early supply(without power on).This is in conjunction with clause no 4.3.5.0 and 4.3.6.0 of GCC.
- iii) Delay analysis along with copy of "Hindrance register" updates to be prepared and submitted by the vendor to IOCL with due acknowledgement from the concerned IOCL representative, on monthly basis.
- iv) For any extra quantities and/or additional items executed thru amendment of the original PO or new PO (thru Single tender) in connection with the ongoing works, the same shall be governed by the same terms and conditions of the original PO.
- v) The above referred trials and acceptance tests and their modus operandi shall be read in conjunction with GCC clause no 5.3.1.0, 5.3.1.1, 5.3.2.0, 5.4.7.0, 5.4.9.1 and shall supersede these GCC clauses in case of any contradiction.

17.3 COMPREHENSIVE AMC

Comprehensive Annual Maintenance Contract (CAMC) Charges will be paid on completion of each quarter (which will be ¼th of the CAMC value for that particular year) on submission of bills by the vendor. CAMC charges shall be paid thru direct transfer to the bank account within 30 days of submission of the GST invoice and due adjustment of the penalty amount from the bill, if any.

18.0 SUPPLY,INSTALLATION AND COMMISSIONING OF EQUIPMENTS :

18.1 Supply of all equipment shall be from the original manufacturers as per Recommended OEM/Vendor list (or from OEM's authorised distributors/ licensee) or equivalent OEMs (except those makes for which equipment quality and/or performance and/or service has been below satisfactory level as per IOCL experience) meeting the criteria as given below. The purchase order copies shall be raised in the name of original manufacturer (or from OEM's authorised distributor/ licensee) and entire test certificates, spares/ service support, statutory approvals like ATEX/PESO/API/TUV/EXIDA etc (as applicable) shall be made available from the original equipment manufacturer.

18.2 EQUIVALENT OEM CRITERIA :

18.2.1 Must comply with minimum technical specification and functional requirements given in the tender. Better specifications are always acceptable. **Bidder needs to submit supporting documentary proof that the offered make is better than or atleast at par with any one of the recommended make specified in this tender and are also meeting the tender criteria as staed below.**

18.2.2 Availability of all statutory certificates for the respective equipment make/model

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18.2.3 Availability of PAN India service network to meet the desired level of quality , uptime and service level requirement during project and maintenance as specified in the tender

18.3 Vendor needs to submit required substantiating documents and undertaking in this regard to IOCL, before finalising the OEM by him for procurement of concerned bought out items. This sharing of information with substantiating documents and undertaking will not absolve the CCTV vendor from his responsibility with respect to appropriate and preferably best OEM selection, successful Project implementation and successful CAMC completion including desired performance level and uptime of the equipment/s during commissioning, SAT as well as CAMC period.

18.4 Notwithstanding the above, following clauses shall also apply in such cases :

18.4.1 IOCL will have the liberty to select any of the items of such make / model at random basis , before dispatch and/or on receipt at site and/or after installation and commissioning, for testing in reputed laboratory in India/ Country of origin as decided by IOCL to verify the conformity wrt technical specifications and statutory approvals. In case the sample is drawn after installation/commissioning, during the period of drawal of sample and till the time the said equipment is put back in operation the vendor shall have to provide suitable replacement for uninterrupted operation of CCTV system at no additional cost to IOCL. The cost towards transportation of the sample to the specified laboratory, cost towards testing and any other associated cost shall have to be borne by the vendor. If it is found that the test result is not in conformity of the minimum technical specification mentioned in the tender and/or statutory approvals are not in order, vendor shall be liable to replace all the equipments of such make and model immediately at his own cost.

18.4.2 In case of poor performance of the equipment wrt repetitive hardware or software failure and/or failure in terms of non compliance to performance parameters and/or not meeting the desired service level requirement as specified in the tender during Project or during CAMC, the CCTV vendor has to replace all the equipments of the same make/model at his own cost. This may lead to contractual action against CCTV vendor including holiday listing, as deemed fit.

18.4.3 Supply of all the cables must be **IS standard / BS standard / EN standard complied as per specification** and wherever only a single standard (like **IS**) is followed, IS code/ISI should be marked/embossed on outer sheath of the cables. One set of each type of cable sample must be drawn by the vendor during pre dispatch stage and get it tested from Govt. approved independent Laboratory/NABL accredited lab for ensuring compliance to the specifications and the same test report should be a part of the dispatch clearance from the vendor's side (other than OEM's own factory/QA test reports) subject to Cables test reports (in house as well as 3rd party laboratory) meeting the Specification and test criteria successfully.

Another two samples of each type of the cables should be drawn from the field. One set should be handed over to IOCL, who will have the sole discretion to get the sample tested at any laboratory before acceptance. The 2nd set of sample to be retained by the CCTV vendor at least till SAT.

18.4.4 The make of equipment shall mean the make/brand of equipment as indicated. Further, all the materials/ equipment for works proposed shall be new and bought fresh for the works. Necessary proof of documents shall also be submitted.

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19.0 INSURANCE

19.1 All goods supplied under the contract shall be fully insured by the vendor against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery and erection. The vendor shall take comprehensive insurance policy in favour of IOCL before any payment is released to the vendor by IOCL, for the value of CAPEX amount to the above effect without any cost implication to IOCL. The insurance shall be valid till final bill for the CAPEX works is released. IOCL won't be responsible for any theft, damage or loss of equipment/s during the pendency of the project. Insurance premium needs to be paid by the vendor.

20.0 CONDITION DURING COMPREHENSIVE AMC

21.0 COMPREHENSIVE AMC

A. DURING WARRANTY PERIOD

- i. Post acceptance of Site acceptance test (SAT), there shall be a warranty period of one year.
- ii. Vendor shall be responsible for Design, Engineering, Quality, Workmanship, Operation & Maintenance of all equipment, accessories, etc. supplied by the vendor.
- iii. It shall be obligatory on the part of the Vendor that during the defect liability/warranty period, Vendor will take complete responsibility for any defect observed in the system (i.e. in instrumentation , software, hardware, communication & networking media's/protocol interfacing with ERP etc.), any modification and/or replacement of any hardware from the supplied equipment, modification the operating system software, CCTV software, and any other software, and attend to the maintenance of the system, free of cost, during start-up and on-line operation of CCTV.
- iv. Cost of all spares, equipment's, instruments & services (Preventive & Breakdown) support to take care of maintenance, shall be borne by the Vendor during warranty period.

B. POST WARRANTY PERIOD :

- i. Comprehensive AMC (CAMC) shall be for a period of 6 (Six) years after completion of warranty period subject to **supply of minimum spare as per list provided in tender** at respective location where order is placed/ to be placed.
- ii. The cost of these spares shall be borne by vendor within overall project cost & no line item for the same shall be provided in SOR. Posting of Resident Engineer is not mandatory; however in order to maintain the system and keep the required uptime, successful bidder may deploy resident Engineer at site at no additional cost to IOCL.
- iii. IOCL officers positioned at locations shall run & maintain the CCTV system during CAMC period. However, the cost of all spares, equipment, instruments, service support required to take care of maintenance, shall be borne by the Vendor during CAMC.

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- iv. Before the end of warranty, vendor shall be required to supply minimum spares as per list attached in tender. **In case minimum spares are not supplied by vendor, the CAMC shall not commence & system shall continue to be in warranty period.** Vendor to maintain inventory of minimum spares at the site by replenishment as & when required and maintain any additional spare over and above the list mention in tender for maintaining the system in operating condition. The vendor shall always promptly replenish the spares as & where the same are used. IOCL officer at location shall send a communication to the vendor on usage of spares as and when used, thru mail/SRMS portal. The vendor should do proper spares management by carrying out periodical testing of the spares, safeguards against obsolescence, any up gradation, timely replenishment, etc
- v. These Spares at the end of CAMC shall be handed over to IOCL & property of IOCL. The vendor shall always ensure availability of spares (at minimum) at the site and in the custody of IOCL-in-charge.
- vi. The vendor shall be required to maintain the system as in warranty period & failure to do so shall attract penalty as applicable during warranty period. IOCL also reserves the right to purchase the spares directly from OEM at risk & cost of the vendor.
- vii. During CAMC, vendor shall send his engineers/OEM engineers to assist IOCL in maintaining the system. There shall be 12 visits per year to take care of preventive /breakdown requirements. Each visit shall be of one man-days of min. 8 Hours each at location & shall conclude only after the deliverables are achieved as per the **check list attached separately.** The frequency & timing of visits shall be decided by vendor in consultation with IOCL concerned officer. The cost of these visits shall be included in CAMC charges & no extra charges shall be borne by IOCL on account of these 12 visits. Beyond 12 visits in a year, in case of any extra visit requirement for carrying out breakdown services, Charges of Rs 20,000/- per day shall be paid and separate PO shall be placed by location for the same as and when required. **The above requirement is not mandatory incase trained resident Engineer has been deployed by the successful bidder at site throughout the warrant and CAMC period.**

C. WARRANTY & CAMC CLAUSES

- i. It may be noted that during warranty & CAMC period, Vendor will take complete responsibility for any defect observed in any system/sub system/equipment/instrument supplied by or taken over by them. Cost of all spares (other than any items distinctly mentioned as consumables and under scope of IOCL), equipment, instruments & services (be preventive & breakdown) to take care of the entire CCTV has to be borne by the Vendor during entire CAMC period.
- ii. Following replacement schedule (limited to the scope of items supplied vide original work) at the minimum are mandatory during entire CAMC period. However, this is minimum and any component of any equipment or the equipment itself which needs to be replaced as per OEM recommendation/ field experience, must be replaced well in advance intended to ensure zero downtime and avoid any possibility of failure, and frequency of such component replacement must be intimated to the location in charge and maintained accordingly.

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Year of CAMC	Mandatory Hardware to be replaced
4 th year of CAMC(During 1 st Quarter)	Computer hardware including servers, work stations& any other equipment as needed depending upon performance of the machines and the system. The old equipment shall be vendor's property.

Any other hardware/ spares which are required to be replaced for smooth operations during CAMC period needs to be done at no additional cost to IOCL.

- iii. The software at running location will be replaced/ upgraded with upgraded version of CCTV software in case the same is required to take care of any bugs and latest functional features at vendor's cost.
- iv. It may be noted that during the Warranty /CAMC period, Vendor will take complete responsibility for any defect observed in any system/equipment/instrument supplied by or taken over by them.If any additional hardware is required during CAMC period , the same shall be paid as per the rates finalised for original work order plus escalation in rate (wrt the original rate). Rates applicable during Warranty Period and from 1st year of CAMC till 6th year of CAMC shall be as tabulated below:

Year	SOR rates AS PER WO + % increase over SOR rates
1st Year of WARRANTY	SOR rates + 08% increase over original SOR rates
1 ST Year of CAMC	SOR rates + 08% increase over original SOR rates
2nd Year of CAMC	SOR rates + 16% increase over original SOR rates
3rd Year of CAMC	SOR rates + 16% increase over original SOR rates
4th Year of CAMC	SOR rates + 24% increase over original SOR rates
5th Year of CAMC	SOR rates + 24% increase over original SOR rates
6th Year of CAMC	SOR rates + 32% increase over original SOR rates

- v. During the CAMC, Vendor will hold at least the inventory of minimum spares at the site required for maintaining the system in uninterrupted operating condition. **Preventive maintenance schedule (including servicing as well as component/parts/complete replacement schedule) for all equipment and the entire TA system to meet the service level requirements shall be developed by the vendor in line with respective OEM recommendation and vendor's own domain expertise/experience and the same shall be submitted to the location in the beginning of every year of CAMC.**
- vi. Vendor must enter into back to back agreement with OEMs to cover entire period of CAMC to get required service support for preventive and breakdown maintenance, so that (a) all the preventive maintenance schedule is maintained as per OEM's recommendation or in better manner befitting the uptime requirement, (b) only original spares of the OEM are used for all kinds of maintenance and (c) only OEM own engineers / OEM trained and certified engineers do the preventive / breakdown maintenance for the CCTV equipment (which can be done in the field). However, back-to-back agreement/ CAMC from OEM is not envisaged for commodity items like Cables, trays, TBs, JB, Glands, MCTs etc.
- vii. The unskilled labour for any preventive/ breakdown maintenance jobs during WARRANTY and CAMC period would be supplied by the Location. However, providing all semi-skilled, skilled and

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technical labours for various jobs shall be in vendor's scope and the entire jobs during the period would be carried out under direct supervision of vendor representative. The vendor should either arrange ladder required for maintenance of CCTV system or CCTV Pole should itself have arrangement for maintenance.

22.0 PAYMENT DURING WARRANTY AND CAMC PERIOD

22.1 PAYMENT DURING WARRANTY PERIOD:

No payment shall be made on account of maintenance of the system. Cost of all spares, equipment's, instruments & services (Preventive & Breakdown) to take care of maintenance, shall be borne by the Vendor during warranty period.

Price adjustment towards delay in services shall be applicable.

22.2 PAYMENT POST WARRANTY PERIOD (CAMC PERIOD):

- i. CAMC value for 6 years would be 25% of the base price of Supplies plus Installation/ commissioning Services (i.e., 25% of the **executed CAPEX amount**). The applicable GST as per quoted rate shall be paid extra.
- ii. The breakup of CAMC charges payable wrt base price of Supplies plus Installation/ commissioning Services (i.e., excluding GST) for 6 (Six) years are as tabulated below:

Year of CAMC	1st	2nd	3rd	4th	5th	6th
Payable amount wrt base price of the Supplies and Installation & Commissioning as mentioned above	1.5%	2.5%	3%	7%	4%	7%

- 22.3 In case of a brown field job, existing cameras/ equipments are of two categories. 1st Category is which do not meet the specifications & hence are to be necessarily replaced and these numbers are already included in the Tender SOR. The old equipments that are being replaced need to be necessarily bought back by the vendor at Book Value plus GST, as given in the Tender. Invoice will be raised by IOCL for all such equipments at book value as mentioned below and GST will be charged extra as applicable at the time of invoice generation. Bidder has to account for the same & quote accordingly.

For 2nd category of the existing cameras / equipments that meet the latest standard specification & IOC has not proposed to replace them. However, the vendor has the option to replace these equipments also. In such a scenario, it will be compulsory for the vendor to buy back such equipment also at book value plus GST as explained in para above. IOCL shall make payment for this category of equipment also at SOR rate. In such an event, the old equipments that incumbent vendor proposes to replace will become the property of the vendor. The vendor can also continue with the existing equipments.

In either case, it shall be vendor's responsibility to maintain the system entirely till end of CAMC. The system shall have provision for sufficient number of licenses & storage so as to take care of total number of cameras plus 20% spare capacity.

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The entire system on revamping will be maintained by incumbent vendor for the entire life of CAMC. It is to further clarify that in case any retained equipment is to be replaced during CAMC, it will be at vendors cost. CAMC is for entire system and there will be no distinction whatsoever of old or new.

For retained equipments and for the purpose of arriving at total CAMC value, the supply value as per SOR of this tender shall be added to arrive at gross project value. The CAMC value shall be percentage of such calculated project value.

- i. It is the basic responsibility of the prospective bidders to carry out thorough survey of the existing equipment's in case of a brown field project before bidding and seek clarification during Pre bid to understand which are the equipment's IOCL will get rectified within IOCL scope and what all the successful bidder is supposed to take over on as is where is basis and rectify on their account.

Illustration:

Executed Project Value (Without GST) = P

Supply value of old retained equipments, as per SOR (Without GST) = X

Gross Project Value (Without GST) = G=P+X

- ii. The CAMC value shall be 25 % of 'G' distributed over six years. GST on this shall be payable extra. GST percentage shall be lower of actual GST percentage or percentage quoted by bidder in tender.

A. PRICE ADJUSTMENT TOWARDS DELAY IN SERVICE DURING WARRANTY & CAMC PERIOD:

- a) Price Adjustment shall be done during warranty and CAMC period as per below mentioned clauses. Although there is no payment to be made during warranty period, CAMC amount of 1st year shall be used for calculation of price adjustment during warranty period. Price Adjustment amount shall be calculated quarter wise, during warranty and CAMC period. Recovery of price adjustment amount (if any) to be done in the same quarter during CAMC. However, price Adjustment amount (if any) accumulated during warranty period shall be adjusted against payment of 1st and subsequent quarters of the 1st year of CAMC Bill.
- b) For any failure resulting into COMPLETE BREAK DOWN OF THE CCTV SYSTEM for more than 2hrs(Two hours) on every occasion, deduction@ **[20 times overall CAMC value for the running quarter/ (90 x 24)], per hour** will be made for down time of system beyond 2 hours.
- c) In case of failure of equipments resulting in partial down time of system equipment /complete malfunction in any functional areas for more than 48 hrs (FortyEight hours) on every occasion, deduction @ **[0.5 % of finalized SOR value (as per WO) of the concerned equipment/s], per hour of equipment downtime** will be made, for down time of the equipment/s beyond 48 hours. For failure of more than one equipment, deduction for each equipment shall be separately calculated.
- d) In case of partial down time/ complete malfunction of equipment/s, if the defective equipment/ instrument is/are not repaired/ replaced within 15 days beyond the initial 48 hrs grace period,

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deductions shall be applicable for full operational down time/malfunction for the entire period wef immediately after initial 48 hrs of downtime/malfunction upto the time of repair/rectification **@ 20 times overall CAMC value for the running quarter/ (90 x 24)], per hour of equipment downtime.** For failure of more than one equipment, deduction for each equipment shall be separately calculated.

- e) The time hence calculated out of any system/ subsystem running on redundant/ non redundant mode beyond the stipulated allowable period will be treated as partial downtime and Price adjustment rate will be guided by this clause. Similarly, for any down time resulted due to established event of Force Majeure (including lightning, floods), physical damages, and permissible lead time for repair as referred above would not be applicable under the purview of calculation of Price Adjustment.
- f) Such price adjustments applicable in line with the above shall be done by the vendor in the Tax invoice itself, and then only the same has to be submitted to IOCL as per payment terms.
- g) The cumulative amount with respect to delay in services on account of the above over a quarter shall be adjusted against the comprehensive CAMC payment for the quarter, subject to maximum deductible amount restricted up to total CAMC amount payable for that particular quarter.
- h) If the financial implication on account of deduction charges against downtime as mentioned above equals Quarterly CAMC value in any two quarters during this period, in such case other than the price adjustment against CAMC amount payable, prevailing SD BG shall be en-cashed and vendor needs to submit a fresh SD BG @ 20% of the CAMC value for the remaining period.
- i) For any breakdown in the system, IOCL officer at location shall send a written communication by means of an e mail/auto generated mails to the vendor. The commencement time for any breakdown in the system shall begin from time of this email,.
- j) The CAMC bills must be supported by Preventive maintenance and breakdown maintenance service reports duly certified by designated officer of location. Force Majeure clause is applicable here also. Also it shall be binding upon the contractor to submit CAMC bill along with supporting reports of any quarter before the end of next quarter.
- k) Notwithstanding anything to the contrary contained in the post work order Agreement, during CAMC the Company shall always have the right to terminate this Agreement by giving to the Contractor a three months written notice in this regard. Upon such termination the Company shall only be required to pay the Contractor a maximum rupee amount equivalent to the balance outstanding CAMC Price and/or return the BG deposited with IOCL, as proved by the Contractor to be due and payable by the Company to the Contractor after adjustment of any amounts that may be due by the Contractor to the Company. For avoidance of doubt it is clarified that in such circumstances, no other sum of money whatsoever shall be payable or paid by the Company to the Contractor and correspondingly the Contractor shall have no claim whatsoever against the Company.
- l) Also, notwithstanding anything to the contrary contained in the post work order agreement, during warranty and CAMC, in case of delay in services, Corporation (IOCL) shall always have the

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right to get the work executed by any other agency at the cost and risk of the original contractor and debit/recover the amount from his CAMC bills and/or SD BG. Moreover, in case of such delay in services as per the terms of the tender and/or non-adherence to the terms and conditions of warranty and CAMC and/or suspending, aborting the services within CAMC period, necessary actions as per the contractual provision as deemed fit shall be taken by IOCL including Holiday listing of the vendor.

- m) **Substitution of Contractor** : If the company finds it necessary to employ a person or persons for the purpose provided above, then the company may deduct and retain from out of the sums due to the contractor all such amounts as they may require to pay or to reimburse themselves there from in respect of the costs and expenses which they have incurred in completing the work and or in removing defective work and rebuilding or replacing the same in a manner satisfactory to the company and if such amounts be more than the sums due or thereafter becoming due to the contractor, then the balance shall be a debt recoverable from the contractor by the company. The contractor shall not in any manner do or cause to be done any act, matter or things whatsoever to prevent the person or persons so employed by the company from removing defective work and re-building or replacing the same in a manner satisfactory to the company and / or from, completing the work in the manner aforesaid.
- n) At the end of CAMC period, IOCL shall have a binding option to extend the comprehensive annual maintenance contract up to additional 3 years at last year's rates at 7% per year for next three years. For extension of CAMC, IOCL shall intimate vendor before end of CAMC with an advance intimation of 3 months.

23.0 To ensure best performance of the system as a whole & each individual equipment/Instrument in terms of performance parameters like accuracy, repeatability, reliability, sustenance of communication etc& ensure Zero down time of any individual equipment/ instrument or the system as a whole during project, commissioning, trial run, SAT, stabilization period, warranty& CAMC period, the onus of selecting Best quality of equipments lies with the Vendor.

It is presumed that the selected Vendor being the domain expert in the field of CCTV system is capable enough to select the best equipments& can provide best of detailed Engineering in all respect in line with the contractual scope & specification. Hence, there is no need to submit datasheets/designs for approval. However, all the documents (viz makes/brands/models/datasheets/detail engineering/ SW logic/ System configuration / certificates / supporting documents as desired in the tender document, along with WO compliance undertaking etc) in line with the Work Order need to be submitted to IOCL/TPI for information only unless IOCL comes out with specific recommendations /requirements under the purview of the contractual scope.

The input wrt Facility data like position of Earth pits, location of cameras , Cable route layout, etc (which are location specific and necessarily needs user input) shall be provided by the HO/State/Location, as applicable.

In case, bidder has any contradiction, anticipated deviation, recommendation regarding any specification, datasheets, makes, scope, terms & conditions, drawings etc, the same must be raised during the Pre-bid meeting. Any point beyond the clarification given thru pre-bid MoM shall

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be deemed to be in the vendor's scope in line with techno-commercial as well as price bid of the tender document.

24.0 Water Supply

- 24.1 The contractor shall arrange water/procure water required for the work at his own cost for all leads and lifts. IOCL shall not be responsible for supplying water and Contractor shall ensure timely and adequate supply of water to meet the schedule.

25.0 Power Supply

- 25.1 The contractor shall make his own arrangement for power required for the work at his cost. DG set of suitable capacity may be installed and operated by the contractor at his cost. IOCL shall not be responsible for power supply and contractor shall ensure proper supply of electricity to meet the schedule.
The electrical works shall be carried out through Licensed Electrical personnel only.
- 25.2 In case, electrical power is given by the Corporation at its discretion then, the electrical charges incurred on monthly basis shall be deducted from the bills payable to the contractors as per the prevailing tariff indicated in the electricity bills. Taxes and duties on such recoveries would be chargeable separately by IOCL. The successful contractor shall make all arrangements to draw power from a single point in the depot as per directions at site including all necessary electrical cables, panel boards, energy meters etc. In such an event, the Corporation shall not be responsible for any power outages occurring during the contract period.
However, the Bidders may note that there is no commitment on part of the Corporation to provide electrical power at site.

26.0 Contractor's Scope of Supply

- 26.1 All materials including DG Sets, switchgears, cables, lighting towers and fixtures, structural steel, consumables, testing appliances, tools and tackles necessary for completing the work shall be procured & supplied by the Contractor at his own cost unless otherwise specified in the schedule. No claim/ delay on this account will be entertained by the Corporation.

27.0 Firm price

Bidders shall ensure the various applicable tax structures are included in the quoted price. The quoted rate shall be firm throughout the contract except rate variation in Taxes and any new promulgated taxes after last date of the submission of price bid only on the final product and/or services (applicable to invoices raised on IOCL) within the contractual delivery date /period (including extension approved if any) shall be on IOCL's Account against submission of documentary evidence.

28.0 Labour Agreement

- 28.1 The Contractors who are working in the establishments through Contract Labour shall be fully responsible for observance of all rules and regulations as per the Contract Labour (Regulation and Abolition) Act 1971 and obtain a licence from the Assistant Labour Commissioner concerned and produce the same to IOCL. In this connection, Bidders shall abide by all the conditions of Appendix I and Appendix II enclosed with the GCC. The Principal Employer certificate shall be given on written request from contractor by IOCL.

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28.2 Minimum Wages: The Contractor, his executors and administrators (and in the case of a Limited Company, its successors and assigns) shall hold the company harmless and indemnified from and against all claims, costs and charges, for which the company shall be liable under the Minimum Wages Act, 1948, the Contract Labour (Regulation and Abolition) Act, 1970 and any amendments or modifications thereof, and all expenses it shall be put there under through the acts or omissions whether willful or not on the part of the contractor. This indemnity shall be in addition to and not in lieu of, any indemnity to which the company shall be entitled in law.

28.3 Employees State Insurance: This contractor hereby admits that he is fully aware of his responsibilities under the Employees State Insurance Act, 1948, as an immediate employer of the employees engaged by him for the execution of this contract which he agrees to discharge. The Contractor acknowledge the statutory right of the company (as a principle Employer) to recover the amount of the contributions, paid by it in the first instance in respect of the employees employed by or through him (the Contractor), as well as the employee's contribution, if any, either by deduction from any amount payable to him by the company under any contract or as debt payable by him to the company.

29.0 PF regulations: The Bidders shall indicate his/ their PF code number in the Statement of Credentials enclosed with the tender along with PF registration certificate failing which the tender shall be liable to be rejected. The successful Bidders shall abide by all the requirements and submit copies of all registers/ returns etc filed by them before the Corporation releases final dues.

As per statutory regulations, necessary exemption certificate/gazette notification to be provided, if the above is not applicable.

30.0 Force Majeure: The Term Force Majeure, as employed in this contract, shall mean wars (declared or undeclared) or revolutions, civil wars, riot, terrorism, act of God typhoon /tempest, transporter's strikes affecting the country as a whole, freight embargos, quarantine restrictions, tidal waves, major floods, earthquakes, epidemics, and fire explosion /implosion, storm, other natural calamities affecting the project location i.e. Project Site and strike /lock out at contractor's place or Project Site.

31.0 Statutory approvals: Vendor is required to obtain all the requisite approvals from statutory bodies viz CMRI, CCOE (PESO), ATEX, API, EXIDA, TUV etc as applicable as per tender scope/terms/conditions/specifications/datasheet and as applicable during award of contract; wherever required at no extra cost to IOCL. CCTV vendor need to submit PESO certificate for all instrument, Junction boxes, electrical equipment supplied by them that are installed in licensed area in order to enable IOC to get PESO license for their installation. This includes necessary support to IOC to brief / explain CCOE about the CCTV system.

32.0 The vendor shall execute the work in compliance with the requirements of the relevant regulation or acts in force in the area together with design specification with respect to:

- i. Indian electricity rules
- ii. Indian factories act
- iii. Regulation laid down by Chief Electrical Inspector
- iv. Regulation laid down by Factory Inspector of State
- v. Indian standard specifications
- vi. Various rules of safety and installation published by T.A.C., C.M.R.S., Fire Insurance etc.

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- vii. OISD requirements
- viii. Electro Magnetic Compatibility (EMC)
- ix. Chief controller of Explosives (PESO)
- x. any other statutory regulation as applicable

33.0 Inspection

- 33.1 The vendor shall ensure that the manufacturer carries out adequate and all the necessary tests for each equipment for compliance with the specifications as well as overall operational performance/accuracy, without any additional financial implication to IOCL. Also, any tests either on the field or at outside laboratories concerning the execution of the work shall be carried out by the vendor at his own cost. Vendor should forward the certified copies of works test reports for the same to the IOCL.
- 33.2 Vendor is required to submit its Quality Assurance Plan (Q.A.P.) to be observed during execution of work for IOCL's information.
- 33.3 IOCL has discretion to engage third party inspection agency for inspection of all items for CCTV system, although it's not mandatory as because the onus of supplying the best quality equipments and maintaining the equipments in the most efficient manner with intended zero downtime remains with the vendor only, and any kind of inspection by IOCL or IOCL appointed agency shall not absolve vendor from its' responsibility.

34.0 Documnetation to be submitted– Indicative only

Sr. No.	Description
1.0	GENERAL
1.1	Project & Service team along with escalation matrix
2.0	ENGINEERING DOCUMENTS
2.1	Functional Design Specification
2.2	System Architecture ,GAD and other drawings
2.3	Detailed list of components
2.4	Datasheet and catalogues of equipment offered
2.5	Bandwidth and storage calculation vis-à-vis supply vs requirement
2.6	Bill of Material
2.7	FAT Procedure
3.0	As Built Drawings
3.1	Electrical power supply distribution Diagram, Distribution diagram for UPS power supply System
3.2	System drawings
3.3	Loop diagram for CCTV
3.4	Wiring diagram
3.5	Cable route, cable schedule, cable termination schedules for power, signal , LAN, FO cable, Junction box details & cable trays

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Sr. No.	Description
3.6	Interconnection diagram
3.7	Earthing System & scheme
3.8	General installation of all the equipment's along with dimensions to be provided.
4.0	SPARE PARTS
4.1	Commissioning spares
4.2	Comprehensive AMC spares
5.0	INSPECTION AND TEST CERTIFICATES
5.1	Quality Assurance Plan
5.2	Material test reports and certificates along with weatherproof and explosive license of equipments wherever applicable
5.3	Vendor's guarantee /warranty
5.5	Software Licensee
5.6	FAT and SAT report
5.7	Training on system operation and maintenance for IOCL's staff at the site to be provided
6.0	MANUALS (BOTH FOR VENDOR'S & SUB –VENDORS SUPPLY)
6.1	Installation, Operation & Maintenance manual for hardware & Software
6.2	All the Software along with OS and driver to be submitted with license
6.3	All configurations back up, integration/mapping details if any to be submitted
6.4	Software installation along with configuration manual to be provided to site specific.
6.5	Password details if any
6.6	CCTV vendor shall provide two sets of Hard copy of documents along with soft copy in a hard Disk/Pen drive

NOTE:

- The above documents are indicative and as applicable considering scope of equipments/material delivery under the Contract. However, the above documents cover the minimum requirements and shall be supplemented with other requirements listed in the specifications, if any. Any other documents required to understand and maintain the system, as felt necessary till handing over of the project, shall be supplied by the vendor.
- All these documents have to be handed over to the Location in-charge under proper receipt in soft form in an external storage device (Hard disk/ Pen drive) over and above the hard copies.

35.0 Notwithstanding the sub divisions of the tender document into several sections and volumes, every part of each shall be deemed to be supplementary of every other part and shall be read with and into the contract so far as it may be practicable to do so.

36.0 Measurements for Works/Record Measurements/ Bills:

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- 36.1 All the payment for quantities certified in the running account/ final bill shall be as per the details recorded in the standard measurement book of the Corporation and jointly signed by the Contractor/ site engineer of IOC.
- 36.2 Method of measurement shall be strictly in accordance with the technical specification for this work.
- 36.3 The payment shall be as per the details entered in the standard Measurement Certificate bills of the Corporation.

37.0 On Account Payments: On Account Bills shall be paid for the work done, measured and certified.

38.0 **Price Adjustment For Delay In Completion:** If the vendor fails on the performance of the contract within stipulated time period for reasons attributable to vendors, the Corporation shall be entitled to recover and the vendor agrees to pay to the Corporation as and by way of price adjustment for delay in completion .

38.1 The contractual price payable shall be subject to adjustment by way of discount @ ½ % of CAPEX cost per week of delay up to a maximum of 10% of CAPEX Cost as mentioned in the prevailing GCC clause no. 4.4.0.0, if the works are not completed including SAT and its acceptance as per completion schedule as described in clause no 3.0 of Special Terms and Conditions of Contract.

38.2 However, in partial modification of clause no 4.4.0.0. of GCC wrt the subject matter, the **“Mechanical Completion” milestone as referred in GCC clause no 4.4.2.0 , 5.5.2.0 shall be referred as “SAT of the units followed by 30 days hassle free trial run”**. Also, the above price adjustment for delay in completion shall be deducted at applicable percentage from RA bills, on cumulative value of works done up to the concerned Running Account (RA) bill. However, in cases of abandonment of site/termination, price adjustment for delay shall be applied in line with GCC clause 7.0.9.0 on the total Contract Value as specified in the Acceptance of Tender.

38.3 Such price adjustment applicable in line with the above shall be done by the vendor in the Tax invoice itself, and then only the same has to be submitted to IOCL as per payment terms.

39.0 Special Clause :

- 39.1 The contractor is required to take necessary care to protect the existing nearby structure while carrying out his scope of work. Any damage caused to other property shall be rectified at his own cost.
- 39.2 Any amendment / Change in the PO shall be incorporated with proper SAP documentation whenever additional requirement is finalised along with appropriate time schedule.
- 39.3 Stage wise release of work front based on prevailing site conditions to be considered and party should be ready with men/machineries to complete the said job within the given contract period for mobilizing machineries & manpower.

40.0 Testing Of Materials/ Works :

- 40.1 The work is subject to inspection at all times by the Site Engineer/ Engineer-in-Charge/ representatives nominated by IOCL. The Contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical

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documents and the relevant codes of practice furnished to him during the performance of the work.

- 40.2 Any work not conforming to the execution drawings, specifications or codes shall be rejected forthwith and the contractor shall carry out the rectifications at his own cost.
- 40.3 All results of inspection & tests will be recorded in the inspection reports, proforma, which will be approved by the Site Engineer/ Engineer-in-Charge. These reports shall form part of the completion documents.
- 40.4 Inspection & acceptance of works shall not absolve the Contractor from any of his responsibilities under this Contract.

41.0 Co-operation with Other Contractors:

Entire package will be executed along with execution of other parallel jobs at the same area. Therefore understanding scope of execution in various phases is an important essence of this contract. Moreover, the job is required to be executed in close co-ordination with other agencies so that smooth execution of various jobs at the construction area can be ensured.

42.0 Bill Of Quantities:

- 42.1 Bill of quantities is approximate and payment shall be made in line with rates given in original work order as per actual certified measurements.
- 42.2 After the placement of the order the successful tenderer shall not be allowed to sublet or assign any part of the work order without Corporation's prior written consent.

43.0 Authorised Representative :

The successful tenderer within 10 days of receipt of acceptance of tender, name an engineer responsible for the job at site on behalf of the contractor as per clause 4.0.3.0 and 4.0.3.1, Performance of work, section 4, of GCC. For this purpose, the selection of the Engineer(s) / supervisors is the sole prerogative of the selected CONTRACTOR and he need not to furnish the bio-data of the Engineer(s) / supervisors proposed to be appointed by him for the work to the Engineer-in-charge for owner's approval. In this regard this term supersedes the Clauses **4.0.3.0, 4.0.3.1 & 4.7.1.1** of GCC. However, bidder should give in writing, on his company letterhead with company seal, to the Corporation, the name of his authorised and qualified engineer who will supervise the work and shall remain at the site during execution of the job.

44.0 Site Cleaning:

- 44.1 The Contractor shall take care for cleaning the working site from time to time for easy access to work site and also from safety point of view.
- 44.2 Working site should be always kept cleared to the entire satisfaction of the Engineer-in Charge. Before handing over any work to owner, the contractor in addition to other formalities to be observed as detailed in the document, shall clear the site to the entire satisfaction of Engineer-in-Charge.

45.0 Miscellaneous Requirements:

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- 45.1 It shall be contractor's responsibility to inform/obtain approval for any revision and/or modifications (for overall improvement) decided by the vendor with necessary justification, with respect to the engineering/functional design philosophy given in the tender from the Owner/Engineer-in-Charge before implementation. Also such revisions and/or modification if accepted / approved by the Owner/Engineer-in-Charge shall be carried out at no extra cost to the owner.
- 45.2 Any changes required for efficient running of system keeping the basic parameters unchanged and which has not been indicated by the Contractor in the data / drawings furnished along with the offer, will be carried out by the contractor at no extra cost to the owner.
- 45.3 All expenses towards mobilization & demobilization including bringing in equipment, clearing the site etc. shall be deemed to be included in the prices quoted and no separate payments on account of such expenses shall be entertained.
- 45.4 It shall be entirely Contractor's responsibility to provide, operate & maintain necessary construction equipments, scaffoldings and safety gadgets, cranes and other lifting tackles, tools and appliances to perform the work in a workman like and efficient manner & complete all jobs as per time schedules.
- 45.5 Preparing approaches and working area for movement and operation of the cranes, levelling the areas for assembly and erection shall also be the responsibility of the Contractor. The Contractor shall acquaint himself with access availability, facilities such as railway siding, local labour etc. to provide suitable allowances in his quotation. The Contractor, at his own cost, may have to build temporary access roads to aid his own work which shall also be taken care while quoting for the work.
- 45.6 The procurement and supply in sequence and at the appropriate time of all materials & consumables shall be entirely the Contractor's responsibility. Rates for execution of work will be inclusive of supply of all these items.
- 45.7 No covered space shall be provided by IOCL for stacking /storage of Vendors materials, Vendor has to make their own arrangement for storage.
- 45.8 Vendor is fully responsible for the equipment/material issued by IOCL for execution of work. In case these are mishandled or lost, the vendor has to arrange the same entirely at his own cost to the satisfaction of the site engineer.
- 45.9 Acceptance of facility/ facilities by the Corporation does not constitute final completion of the contract. The contract shall be deemed to be executed in full and final measurement shall be certified only when the vendor has fully discharged all his obligations in terms of all the contract documents.
- 45.10 All the associated materials/equipmentssupplyand installation, commissioning works in connection with schedule of works (SOW) with billable items given in the SOW , which are not explicitly mentioned in the SOW or in the techno-commercial bid but are essential for the successful commissioning and completion of the project and efficient operation/maintenance of the system, are in vendor's scope. Unless vendor raises any specific query wrt any specific item/s in this regard during Pre Bid meeting itself and get him clarified with IOCL response, the above will be presumed to have understood by the vendor in its content and spirit.
- 45.11 Any material (Indigenous or outsourced) supplied by the vendor at any point of time during contract execution or warranty or CAMC period is found deviating from

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makes/brands/specifications or relevant codes/ standards during the entire contractual period till culmination of CAMC contract, suitable commercial deductions shall be imposed on the vendor in line with Corporation policy and other provisions of the contract notwithstanding other legal rights and remedies available with IOCL as per contract agreement.

46.0 SAFETY:

- a. Since works have to be carried out in petroleum storage and distribution establishment, the contractor should ensure that day to day operations, safety and security of the location are not affected in any way on account of the works being carried out. In case of any damage to our properties due to the negligence on the part of the contractor or their workmen, the contractor will be held responsible and liquidated damages as assessed by the corporation would be recovered from them.
- b. When hot works are involved, the following safety precautions have to be strictly observed before commencement of works.
 - a) All hot works operations should be carried out under the supervision of IOCL representative and also under the supervision of responsible representative of the contractor.
 - b) All hot work operations should be undertaken only after issue of hot work permits by the location in charge on day to day basis.
 - c) It should be ensured that the tanks, pipes, containers where the hot work is required are Hydrocarbon Vapour freed and properly checked to this effect with explosive meters.
 - d) It should be ensured that the surrounding area is free from oil, rags, oil spillage and other sources of ignition and the area is cleaned/ sprinkled with sand or dry earth. It should also be ensured that metallic trays filled with DCP powder are kept for collecting the welding arc/ hot metal cutting.
 - e) Hot work should commence only after positioning the portable fire extinguishers and sand/ dry powder in readiness at site and hydrant system made available at the nearest point.
 - f) Match boxes, lighters etc used for hot work should be kept in the custody of the supervisor only.
 - g) If hot work has to be carried out in a place close to storage tanks or any other facility under operation, it is necessary to provide fire screen wall to segregate the area to prevent sparks traveling to the hazardous area.
 - h) All equipments / fittings / machineries / lifting tools & tackles required to be used by the contractor during the job execution of various job vide this contract shall be conforming to the safety norms prevailing at the location. All JB's/light fittings required to be used near hazardous area by the contractor shall be FLP type with a valid test certificate. Use of suitable capacity armoured cable without joint with

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valid megger test report, fitness certificate for welding transformers, guard for grinding wheels etc. are also required to be ensured.

- i) It should be ensured that no workmen carry match boxes or any other source of ignition with them while entering the premises or inside the premises. After the hot work operation of the day, the following precaution should be taken.
 - I. Welding sets should be switched off and power mains disconnected. If the connection is taken from a temporary switch board the fuse carriers should be removed and handed over to the supervisor.
 - II. Gas cylinder and the cutting sets should be properly closed and the equipment removed to a safe place.
 - III. The site of work should be examined to ensure that it is free from hot splatters and any other source of ignition.

47.0 SAFETY PRECAUTIONS & HOT WORK :-

- 47.1 Contractor shall have to take all safety precaution for carrying out hot work in the premises after obtaining hot work permit from location in charge at his own cost as directed by the Engineer-In-Charge. Necessary safety equipment such as safety belts, helmets and other equipments are to be positioned by the contractor and use as per requirement.
- 47.2 Safety distance as per CCOE/PESO Rules and Oil Industry Safety Directorate shall be maintained strictly.
- 47.3 Any casualty or damage caused to property or person by any untoward incidents while executing this contract will be at the contractor's risk and cost.
- 47.4 The successful tenderer shall be responsible for observance of all conditions as per Appendix III furnished along with GCC with regard to safety.
- 47.5 During excavation of earth, party should be equipped with FLP pump/motor to bail out water as per direction of site in charge.

48.0 SECRECY AGREEMENT:

- 48.1 CONTRACTOR shall as a part of his obligation sign an agreement for secrecy of the drawings / documents with IOC. CONTRACTOR, hereby, expressly undertake to keep all the drawings/documents as well as other Technical information given in the CONTRACTDOCUMENT secret and shall not divulge or leak or otherwise cause to be known to the competitors or others having any interest in such process in anyway the contents in any form, shape or method. This confidentiality obligation of vendor will be for the entire tenure of CAMC.

IOCL on the other hand will have similar confidentiality obligation for the patented items of the CCTV vendors unless it is necessary to share with third party for the smooth running / operation / integration of the CCTV system in the concerned location.

- 48.2 Following clauses forming part of the GCC issued along with the tender are deleted :

- i. Clause 2.6.1.0 and 2.6.2.0 – General, section 2 of GCC.
- ii. Clause no. 3.0 – Instruction to tenderers of GCC.

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- iii. Clause 4.5.1.1 – In partial modification of the clause, LOA and SAP PO shall be synonymous.

49.0 PENALTY CLAUSE :

49.1 The penalty for breach of safety during execution of works shall be levied by the Corporation as below:

- a. Violation of applicable safety, health and environment related norm, a penalty of Rs 5000/- per occasion plus GST at prevailing rate.
- b. Violation as above resulting in
 - i. Any physical injury, a penalty of 0.5% of the contract value (max. of Rs 2 lacs) plus GST at prevailing rate per injury in addition to Rs5000/- plus GST at prevailing rate as mentioned above.
 - ii. Fatal accident, a penalty of 1% of the contract value (max. of Rs 10 lacs) plus GST at prevailing rate per fatality in addition to Rs 5000/- plus GST at prevailing rate as mentioned above.

49.2 In case sub contractors are engaged by the successful tenderer with prior permission from IOCL on award of works, it will be mandatory on part of the main contractor to furnish a **NO DUE UNDERTAKING** from the sub contractor (on their letter heads) to IOCL before final payments are cleared by the Corporation

50.0 Vendor is advised to submit construction execution plan for completion of the works as per completion time indicated in the tender during kick off meeting. Site organization chart for works proposed shall also be submitted.

51.0 At all places in the GCC enclosed with the tender document, OWNER shall mean

INDIAN OIL CORPORATION LIMITED, MARKETING DIVISION, HEAD OFFICE, with its office at G-9, Ali Yavar Jung Marg, Bandra (East) - 400051 The court of jurisdiction for all matters under the tender shall be at **Mumbai.**

52.0 The successful bidder (L1) / bidders (after matching L1 rates) shall be required to present their original documents (pertaining to PQC) to the tender inviting authority through their authorized representative within a period of 7 days from the date of opening of price bids or date of intimation as specified in Tender. Only documents against pre-qualification criteria shall be verified with originals.

52.1 In case any original document is preserved outside India and the bidder is unable to produce the originals for verification, certification of such documents from concerned embassy/ Consulate should be submitted within a period of 7 days from the date of opening of price bids or date of intimation as specified in Tender.

52.2 In the event of failure of the bidder to get the documents verified as per the specified time schedule, the EMD of the party is liable to be forfeited.

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52.3 In case it is observed that the L1 party has submitted forged documents, besides cancellation of Tender, necessary action for Holiday listing of the party in line with guidelines shall be carried out including forfeiture of EMD.

53.0 Integrity Pact(Applicable for tenders having value > 10 crores)

Submission of duly signed Integrity Pact agreement, along with Tender is a mandatory prerequisite for Bids to be eligible for further evaluation. The Integrity Pact Agreement consists of (1) Covering letter from the bidder to IOCL and (2) Integrity Agreement consisting of 10 (Ten) articles. Bidders should mandatorily sign and submit the complete Integrity Pact Agreement consisting of both the Covering letter as well as the Integrity Agreement consisting of 10 articles in order to be eligible for further evaluation in this tender. The signed IP should be complete in all respect and is required to be uploaded in the e-tender portal along with the Bid. Bid not having the duly signed IP agreement attached with it will be given one opportunity before summarily rejected. Partial submission of IP document will also not be considered

54.0 **In case the contractor** fails to adhere to the time limit specified above or if the rate of progress is considered not satisfactory, the Corporation will be at liberty to terminate the contract and get the same executed by any other agency entirely at the cost and risk of the original contractor and in line with provisions available under the GCC.

55.0 Training:

The vendor shall undertake to train officers / staff nominated from IOCL concerned State Office/location /Head Office in following areas in two phases so as to make the participants fully familiar with the system and its operation. Organising and conducting such initial trainings program in following two phases needs to be done by the vendor in the location.

- a. Phase 1: Induction Training-Prior to Commencement of Pre SAT Trial Run
 - i. System Operation details
 - ii. Operational aspects of the application software and major sub systems
 - iii. Basic understanding of the checkpoints for CCTV wrt various performance parameters
- b. Phase 2: During handing over of the System after successful completion of SAT:
 - i. Operational & maintenance of individual equipment & overall system
 - ii. Dos and Don'ts
 - iii. Trouble Shooting
 - iv. General design & system Engineering.
 - v. Operating system software, application software, GUI
 - vi. Computer system hardware used.
 - vii. Design criterion, specification, testing, functional aspects, Safety aspects & installation of all other control room mounted & field mounted equipment.

The above training shall be conducted at the site for duration of 3 days at a time in two different phases. The first training i.e., "Induction training" shall be held before starting the

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Trial/Observation period/SAT, so that effective participation takes place during the aforesaid period. The next training should take place before handing over of the system to IOCL by the vendor. While all the participants shall be issued Training certificate by the vendor, based on performance in quiz/written test/viva/hands on test taken by the vendor just after the second training, 3 best performing candidates would be shortlisted and be issued certificate of commendation/merit by the vendor and IOCL. These 3 candidates would be eligible for advanced training at HO/vendor's works etc.

56.0 Intellectual Property

- a. No intellectual property rights, patents, copyrights of any nature shall be transferred from one party to the other in the course of performing any obligations or otherwise under this Agreement. The Contractor may use certain tools, processes or methodologies of its own, in performing the services. Ownership of all intellectual property rights and any other rights in these and any materials/deliverables created shall vest with the Contractor, and no rights shall be deemed to have accrued to the Customer.
- b. Similarly, IOCL may allow the Contractor to use some of its own tools, processes, methodologies, documents, designs or protocols of its own, in enabling the Contractor performing the services. Ownership of all intellectual property rights, patents, copyrights and any other rights in these and any materials/deliverables created shall vest with IOCL, and no rights shall be deemed to have accrued to the Contractor.

57.0 Indemnity against Intellectual Property Infringement

Contractor will indemnify the Corporation (IOCL) fully and effectively indemnified against each and every claim made against Corporation (IOCL) as a result of the Contractor's knowing infringement of any third party's Intellectual Property, provided that IOCL must:

- promptly notify the Contractor of details of the claim;
- not make any admission in relation to the claim;
- allow the Contractor to have the conduct and authority of the defence or settlement of the claim
- Give the Contractor all reasonable assistance (at Contractor's expense) in disposition of the claim.

57.1 The Confidentiality clause shall be applicable from the commencement of Works pertaining to a Contract till expiry of 6 years Comprehensive Annual Maintenance Contract (CAMC) period for all documentation pertaining to the Contract.

57.2 After the expiry of 6 years AMC period, Contractor should submit a Non Disclosure undertaking for not divulging the specific document details as advised by and marked by IOCL. In case of a demand by an authorized statutory/Legal/Govt institution to the vendor about sharing some information covered under Confidentiality clause / Non Disclosure undertaking, vendor shall seek IOCL's permission / views regarding the same and shall be guided accordingly.

58.0 Liability and Indemnification

58.1 Liability of CONTRACTOR

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Notwithstanding anything to the contrary contained in this Contract,

- (a) In addition to the CONTRACTOR's liability and obligations and the OWNER's remedies provided elsewhere in this Contract, the CONTRACTOR shall be solely responsible for any loss of or damage to the Project Facilities, Project Assets, damage to environment, death or injury to person, and any other liabilities, damages, losses (excluding consequential losses) and reasonable cost and expenses (including legal costs) suffered by OWNER during the Period of Contract:
 - (i) Resulting from any act, omission or negligence of the CONTRACTOR or any other Person claiming through or under it, including CONTRACTORS, and their respective employees, agents, sub-contractors and representatives.
 - (ii) In connection with, arising out of, or resulting from any breach of warranty, material misrepresentation by the CONTRACTOR or any other Person claiming through or under it, or non-performance of any term, condition, covenant or obligation to be performed by the CONTRACTOR under this Contract.
- (b) The CONTRACTOR shall also be liable for any loss or damage which occurs as a result of any act, event, omission, negligence or default (including but not limited to property circumstances, quality of materials used, workmanship, structural, design or other defects, latent or patent, non-compliance with building bye laws, other Applicable Laws, regulatory requirements of Competent Authorities, Specifications and Standards, Performance Standards, terms and conditions of clearances and / or approvals or any other matter) for which the CONTRACTOR is liable or which is attributable to the CONTRACTOR and, in turn, the Persons claiming through or under the CONTRACTOR.
- (c) The CONTRACTOR shall be fully and solely liable for all works, contracts, dealings and activities in relation to the development, design, financing, construction, Operation & Maintenance and implementation of the Project / Project Facilities, as the case may be.

58.2 Indemnification by CONTRACTOR

- (a) Without prejudice to and in addition to the indemnification provisions elsewhere in this Contract, the CONTRACTOR agrees to indemnify and hold harmless OWNER and its shareholders, managers, officers, directors, employees and advisors (each a "OWNER Indemnified Party") promptly upon demand at any time and from time to time, from and against any and all losses (excluding consequential losses), claims, damages, liabilities, costs, penalties, litigation, proceedings (including reasonable attorneys' fees and disbursements) and expenses of any nature whatsoever (collectively, "Losses") to which OWNER Indemnified Party may become subject, insofar as such Losses directly arise out of, in any way relate to, or result from
 - (i) any mis-statement or any breach of any representation or warranty made by CONTRACTOR or
 - (ii) the failure by CONTRACTOR to fulfil any agreement, covenant or condition contained in this Contract, including without limitation the breach of any terms and conditions of this Contract by any employee or agent of the CONTRACTOR or Person claiming through or under the CONTRACTOR or

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- (iii) any claim or proceeding by any Third Party against OWNER arising out of any act, deed or omission by the CONTRACTOR and / or persons claiming through or under the CONTRACTOR or
- (iv) Design, engineering, construction, procurement, Operation & Maintenance of the Project Facilities.

For the avoidance of doubt, indemnification of losses pursuant to this Clause shall be made in an amount or amounts sufficient to restore OWNER Indemnified Party to the financial position it would have been in, had the losses not occurred.

(b) Without limiting the generality of Article 57.2 (a) :

- (i) The CONTRACTOR shall fully indemnify, save harmless and defend OWNER Indemnified Party from and against any and all loss (excluding consequential losses) and damages arising out of or with respect to
 - (a) failure of the CONTRACTOR / and or the person claiming through or under the CONTRACTOR to comply with Applicable Laws and Applicable Permits,
 - (b) payments of taxes, duties, levies, fees etc. relating to the CONTRACTOR including contractors, suppliers and representatives, income or other taxes required to be paid by the CONTRACTOR without reimbursement hereunder, or
 - (c) Non-payment of amounts due as a result of materials or services supplied/furnished/provided to the CONTRACTOR or any of its Contractors which are payable by the CONTRACTOR or any of its contractors.
- (ii) The CONTRACTOR shall fully indemnify and defend OWNER from any and all damages which OWNER may suffer due to this Contract or become liable to pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by the CONTRACTOR in performing the obligations. If in any such suit, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the CONTRACTOR shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraint order. If, in any such suit claim or proceedings, the Project, or any part, thereof or comprised therein is held to constitute an infringement and its use is permanently enjoined, the CONTRACTOR shall promptly make every reasonable effort to secure for OWNER a license, at no cost to OWNER, authoring continued use of the infringing work. If the CONTRACTOR is unable to secure such license within a reasonable time, at its own expense and without impairing the specifications and standards, shall either replace the affected work, or part, or process thereof with non-infringing work or parts or process, or modify the same, in 30 days time.
- (iii) The CONTRACTOR further indemnify, that it will defend and hold harmless OWNER from any and all Third Party claims for loss of or physical damage to property or for death or injury and against all losses for personal injury and for damage to or loss of any property arising out of or in any way connected with the CONTRACTOR's performance of this Contract or arising out of any act or omission of the CONTRACTOR, and in turn of the persons claiming through or under the CONTRACTOR.

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- (iv) The CONTRACTOR shall further keep indemnified the OWNER, its employees or Consultant against all actions, suits, claims, demands and proceedings and any loss or damage or cost or expense that may arise in any manner and / or be suffered by them on account of anything done or omitted to be done by the CONTRACTOR in connection with the performance of its obligations under the Contract and / or implementation of the Project;

58.3 Limitation of Liability of CONTRACTOR:

The aggregate liability of the CONTRACTOR to OWNER (whether based on contract or that including negligence and strict or absolute liability) arising out of or under this contract shall not exceed 100% of the Contract value provided that no such limit shall apply in respect of

- (i) Any loss resulting from fraud , intentional or wilful misconduct or illegal or unlawful acts or omissions of CONTRACTOR, its affiliates or any sub-contractor or any supplier or any of its or their respective officers, directors, employees, servants or agents, or
- (ii) Any damage or loss to have occurred to a Third Party/ies and decided by a Court of Law that the loss or damage has occurred due to any fault or erroneous test report of any plant or machinery installed by the CONTRACTOR, or
- (iii) Any Liability on the part of CONTRACTOR which becomes payable on account of any Taxes, Duties, Levies etc. to any Govt Body or statute

AND provided always that such limitation shall exclude any amounts recovered under any policy/ies of insurance taken out and / or maintained by the CONTRACTOR pursuant to the provisions of the Contract except insurance, if any, taken for the purpose of insuring liability under this clause.

58.4 Liability of and Indemnification by OWNER

58.4.1 OWNER shall fully indemnify, defend and hold harmless CONTRACTOR, any direct or indirect parent corporation or shareholder thereof and its and their respective officers and employees, against any and all claims made and losses incurred by any third party or Regulatory Entity which arises out of any breach on the part of OWNER.

58.4.2 OWNER will, indemnify, defend and hold harmless the CONTRACTOR against any and all proceedings, actions, third party claims for loss, damage and expense of whatever kind and nature arising out of defect in title and/or the rights of OWNER in the land comprised in the Site adversely affecting the performance of the CONTRACTOR's obligations under the Contract and/or arising out of acts done in discharge of their lawful functions by OWNER Indemnified Party including OWNER Events of Default except to the extent that any such claim has arisen due to a negligent act or omission, breach of contract or breach of statutory duty on the part of the CONTRACTOR, its Subsidiaries, affiliates, contractors, servants or agents including due to CONTRACTOR Event of Default.

58.4.3 The aggregate liability of OWNER to the CONTRACTOR (whether based on contract or that including negligence and strict or absolute liability) arising out of or under this Contract shall not exceed 100% of the contract value provided that no such limit shall apply in respect of

- (i) Any loss resulting from fraud, intentional or wilful misconduct or illegal or unlawful acts or omissions of OWNER or any of its officers, directors, employees, servants or agents, or
- (ii) Any Liability on the part of OWNER which becomes payable under the Contract.

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58.5 Payment pursuant to Indemnification

58.5.1 Any payment made under this Contract pursuant to an indemnity or claim for breach of any provision of this Contract shall be net of applicable Taxes. For removal of doubts it is clarified that all the payments pursuant to an indemnity or claim for breach of any provisions of this Contract shall be borne and paid by the Defaulting Party.

58.6 Defense of Claims

58.6.1 In the event that either Party receives a claim from a Third Party in respect of which it is entitled to the benefit of an indemnity under this Clause 1 (the 'Indemnified Party') it shall notify the other Party ("Defaulting Party") within 14 (fourteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Defaulting Party, such approval not to be unreasonably withheld or delayed. In the event that the Defaulting Party wishes to contest or dispute the claim it may conduct the proceedings in the name of the Indemnified Party provided that the Indemnified Party is secured against any costs involved to its reasonable satisfaction.

58.6.2 The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any Third Party alleged or asserted against such party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder and their reasonable costs and expenses shall be indemnified by the Defaulting Party. If the Defaulting Party acknowledges in writing its obligation to indemnify the person indemnified in respect of loss to the full extent provided by this Clause 1, the Indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding liabilities, payments and obligations at its expense and through counsel of its choice provided it gives prompt notice of its intention to do so to the Indemnified Party and reimburses the Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Defaulting Party of such defence. The Defaulting Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Indemnified Party unless the Defaulting Party provides such security to the Indemnified Party as shall be reasonably required by the Indemnified Party to secure, the loss to be indemnified hereunder to the extent so compromised or settled.

58.6.3 If the Defaulting Party has exercised its rights under Article 1.6.2, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior written consent of the Defaulting Party (which consent shall not be unreasonably withheld or delayed).

58.6.4 If the Defaulting Party exercises its rights under Article 1.6.2 then the Indemnified Party shall nevertheless have the right to employ its own counsel and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party, when and as incurred, unless:

- (i) the employment of counsel by such party has been authorised in writing by the Defaulting Party; or
- (ii) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Defaulting Party and the Indemnified Party in the conduct of the defence of such action; or

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- (iii) the Defaulting Party shall not in fact have employed independent counsel reasonably satisfactory to the Indemnified Party to assume the defence of such action and shall have been so notified by the Indemnified Party; or
- (iv) the Indemnified Party shall have reasonably concluded and specifically notified the Defaulting Party either:
- (v) that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or
- (vi) that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of the Contract; provided that if clauses (ii), (iii) or (iv) shall be applicable, counsel for the Indemnified Party shall have the right to direct the defence of such claim, action, suit or proceeding on behalf of the Indemnified Party and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder.

58.7 Consequential Losses

Notwithstanding anything to the contrary contained in this Contract, the indemnities herein provided shall not include any claim or recovery in respect of consequential nature except as expressly provided in this Contract.

59.0 The purpose of putting a Party on holiday list is to protect the Corporation from dealing with an undesirable party. Party may be put on holiday list due to any one or more of the following:

If a Party

- a. Has indulged in malpractices such as bribery, corruption, fraud and pilferage, bid rigging, price rigging
- b. Is bankrupt or insolvent or is being dissolved or has resolved to be wound up or proceedings for winding up or dissolution has been instituted.
- c. Has submitted fake, false or forged documents/ certificates.
- d. Has substituted materials in lieu of materials supplied by IOCL or has not returned or has short returned or has unauthorisedly disposed off materials/ documents/ drawings/ tools or plants or equipment supplied by IOCL.
- e. Has obtained official company information or copies of documents, in relation to the tender/ contract, by questionable methods/ means.
- f. Has deliberately violated and circumvented the provisions of labour laws/ regulations/ rules, safety norms or other statutory requirements.
- g. Has deliberately indulged in construction and erection of defective works or supply of defective materials.
- h. Has not cleared IOCL's previous dues.
- i. Has committed breach of Contract or has failed to perform a contract or has abandoned the contract.
- j. Has refused to accept Fax of Acceptance/ Letter of Acceptance/Purchase Order/ Work Order after the same are issued by IOCL within the validity period and as per agreed terms and conditions.

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- k. After opening of Price Bid, on becoming L1 withdraws/ revises his bid upwards within the validity period.
- l. Has parted with, leaked or provided confidential/ proprietary information of IOCL given to the party only for his use (in discharge of his obligations against an order) to any third party without prior consent of IOCL.
- m. Any other ground for which in the opinion of the Corporation makes it undesirable to deal with the party including the followings:
 - i. If the security consideration, including questions of loyalty of the party to the state so warrants
 - ii. If the Director/ Owner of the party, proprietor or any partner of the party is convicted by a Court of Law under normal process of law for offences involving moral turpitude in relation to its business dealings during last 5 years.
Moral turpitude means to be a conduct contrary to justice, honesty, modesty or good morals and contrary to what a man owes to a fellowman or to society in general.
 - iii. If the party uses intimidation/ threatening or brings undue outside pressure on IOCL or its official in acceptance/ performances of the job under the contract.
 - iv. Poor performance of the party in one or several contracts.
 - v. Transgression of Integrity Pact for which in the opinion of IOCL makes it undesirable to deal with the party.
 - vi. Based on the findings of the investigation report of any investigative agency, Government Audit, any law enforcement agency or Government regulator against the party for malafide/ unlawful acts or improper conduct on his part in matters relating to IOCL or even otherwise.

60.0 In the event conciliation fails, it is agreed between the parties that there will not be any arbitration between the parties and the parties will approach the Competent Court in city where IOCL's State Office/Head Office, which issued the contract agreement is located , alone shall have jurisdiction to entertain any application or other proceedings in respect of any dispute arising under this contract.

61.0 The content of this chapter named "Special Terms and Conditions of Contract" needs to be read in conjunction with the General Conditions of Contract, Price schedule annexed to Letter of Acceptance, Formal Contract, Acceptance of Tender, any variation or amendment issued after the execution of the formal contract, Pre bid MoMs/Agreed variations annexed to the Letter of Acceptance, Addenda to the Tender documents, Special Instructions / Instructions to Bidders. Where any portion of the GCC/any other section of tender, is repugnant to or at variance with any provision of the SCC, then the provision of the SCC and NIT shall be deemed to override the provisions of the GCC and shall, to the extent of such repugnance or variations, prevail.

61.1 Buy back of old equipments at Book Value by Vendor for existing Brownfield location:

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All old equipment(s) proposed to be replaced have to be compulsorily bought back by the incumbent/successful vendor at book value (WDV) derived as per Company Act 2013 plus GST at prevailing rate. WDV of the equipment(s) to be bought back as per the list attached (State office shall give WDV amount as per the preceding quarter ending from the month of tender release). It is obligatory on the part of the vendor to clear the work site of all old equipment no sooner old equipments have been replaced by the new one.

62.0 Mobilization Advance: In partial modification of Clause 6.4.5.0 of GCC, the CONTRACTOR may (if specified by him in his bid and accepted by the OWNER) be allowed a Mobilization advance/advance for an amount equivalent to up to 10% (Ten per cent) of the Total Contract Value (CAPEX amount) excluding Tax component. Such advance shall be released in 2 installments as per the following :

- ✓ Mobilization advance up to 5 % of the Total Contract value (CAPEX amount) excluding Tax component
- ✓ Advance up to 5% after full recovery of previous instalment of mobilization advance paid including interest.

The payment of Mobilization Advance / advance shall be subject to the fulfilment of the following conditions:

- a) The CONTRACTOR shall have signed and sent back a copy (or copies if so required) of the Acceptance of Tender issued by the OWNER in token of unqualified acceptance thereof.
- b) The CONTRACTOR shall have furnished the Initial Security Deposit as stipulated in Clause 2.1.1.0 of GCC and associated clauses hereof.
- c) The CONTRACTOR shall have executed the formal contract in terms of the Form of Contract.
- d) The contractor shall have made a formal application for the release of the Mobilization Advance /Advance and shall have furnished a Bank Guarantee of an amount equivalent to 110% of the Advance from a Bank in a format approved by the OWNER.
- e) The outstanding balance of the Mobilization Advance / Advance shall carry interest at 1% (one percent) above the State Bank of India declared rate of cash credit advances prevailing on the date of opening of price bids.
- f) Without prejudice to any other mode of recovery available to the OWNER, the Mobilization advance /Advance, together with interest thereon calculated on the reducing balance, shall be recovered at the rate of 10% (ten percent) of the gross certified amount of each Running Account Bill, till the advance, together with the interest accrued thereon, is recovered in full. The unrecovered balance if any, and interest may be recovered from the Final Bill of the CONTRACTOR and/or from any other amount due to the CONTRACTOR under any other contract or otherwise.
- g) (i) If the OWNER is satisfied that 25% (twenty five per cent) of the Mobilization Advance / Advance and interest accrued till then on the Mobilization Advance has been repaid to or recovered by the OWNER, the OWNER may on the application of the CONTRACTOR, if the Bank Guarantee submitted by the CONTRACTOR covers and secures only the Mobilization Advance / Advance, permit the CONTRACTOR to substitute the Bank Guarantee by a Bank Guarantee acceptable to OWNER for an amount reduced by 25% (twenty five per cent).

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- (ii) The provisions of paragraph (i) hereof above, shall mutatis mutandis apply to the OWNER's satisfaction that the CONTRACTOR has repaid 50% (fifty per cent) and/or 75% (seventy five per cent), as the case may be, of the Mobilization Advance/ advance, and interest accrued till then on the Mobilization Advance / Advance.
- h) All other conditions stipulated in Clause 2.1.2.0 of GCC hereof shall be applicable to the advance(s).



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GUIDELINES FOR EVALUATION OF VENDORS' PERFORMANCE

1.0 GENERAL

A system for evaluation of Contractors' Performance is a key process and important to support an effective Contracting and Project execution function of an organization.

2.0 RECOMMENDATION

The purpose of the proposed guideline is to put in place a system to monitor performance of Contractors associated with the subject tender/works so as to support the contracting and project management function in a manner to make it more effective and ensure timely completion of various projects. **Contractor's Performance Evaluation Methodology is an integral part of this tender and the job to be awarded.**

3.0 METHODOLOGY

- a. Standard Format for Vendor's Performance Review Worksheet (enclosed) shall be used for evaluating Contractors' Performance.
- b. The performance evaluation of the Contractor shall be done (a) by the Site Engineer/ Site-in-charge (at Site/SO) and the same shall be reviewed by SEH at State level (for SO based projects) and (b) by the Site Engineer/Site in Charge at site/HO and the same shall be reviewed by minimum DGM ranked officer at HO (for Greenfield projects). The Contractor performance shall be rated based on the marks obtained as per Format.
- c. Based on the performance rating obtained by the contractor, show cause notice shall be given to the contractors having fair or unsatisfactory rating to represent his / their case by Site Engineer/Site in Charge
- d. After considering the representation from the Contractor, the performance rating of the Contractor shall be finalized after due moderations (if applicable) with justifications.
- e. Based on the Final Performance Rating of the Contractor, applicable actions as prescribed in these guidelines shall be taken.

4.0 EXCLUSIONS

None

5.0 PROCESS OF EVALUATION OF CONTRACTORS' PERFORMANCE

- a. The contractors' actual performance vis-à-vis the Overall Progress finalized during Ordering stage (* can be supplemented by the schedule finalised by IOCL during Kick Off Meeting, considering various readiness) shall form the basis for the evaluation of performance of contractor.
- b. Stages of Evaluation:

For all CCTV jobs performance evaluation shall be done in two stages (SL no i and ii given below).

- i) First performance evaluation shall be done at 50% schedule timeline stage, with adjustment for the delays not attributable to the contractor considering actual achievement vs scheduled achievement at this timeline.

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- ii) Last and Final performance evaluation shall be done after job completion, with adjustment for the delays not attributable to the contractor considering actual achievement vs scheduled achievement at this timeline.

Note:

- 1) Performance evaluation for stages against SN (i) shall be completed within a period of 02 (two) months after achieving the designated schedule milestone stage. It would be necessary and pre requisite to complete and conclude the delay analysis for the period of evaluation prior to performance evaluation of the Contractor for the same period.
- 2) Performance evaluation for stages against SN (ii) shall be completed within a period of 03 (three) months after achieving the designated schedule milestone stage. It would be necessary and pre requisite to complete and conclude the delay analysis and time extension (if applicable) for the period of evaluation prior to performance evaluation of the Contractor for the overall works.

c. Allocation of Marks

- vii. At each stage, marks shall be allocated on proportionate basis for actual physical progress achieved w.r.t. schedule physical progress considering schedule progress and delays on IOCL account (at evaluation stage).
- viii. In order to take care of delays not attributable to the Contractor delay analysis shall be carried out in detail and effect of delays not attributable to the Contractor on the overall progress and schedule progress shall be worked out accordingly for the purpose of calculating marks.

d. Performance Rating:

Depending upon the Total Marks obtained by the contractor, the performance rating of the contractor shall be finalized as under:

SN	% age of Marks obtained	Performance Rating
1	>= 80%	Very good
2	>= 60% but < 80%	Good
3	>= 50% but < 60%	Fair
4	< 50%	Unsatisfactory

e. Evaluation Methodology and Action wrt each performance Review/Rating at any stage :

Performance Rating	Recommended Action
Very Good	No further action; Letter of appreciation may be issued , motivating the contractor to maintain the same level of Work or even do better
Good	Letter to the contractor for improving the performance in future

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Performance Rating	Recommended Action
Fair/Unsatisfactory	<p>Show cause notice shall be given to the contractors having fair or unsatisfactory rating to represent his / their case.</p> <p>After considering the representation from the Contractor, the performance rating of the Contractor shall be finalized after due moderations (if applicable) with justifications.</p> <p>After the Final Performance Rating of the Contractor is worked out and the same still works out to be either Fair or unsatisfactory, the following modus operandi to be adopted :</p> <p>a) In case performance rating comes out to be Fair, SHOW-CAUSE NOTICE cum Warning letter for poor performance in Project level to be issued to the Contractor, with clear warning for immediate & time bound improvement of performance.</p> <p>b) In case performance rating comes out to be Unsatisfactory , SHOW-CAUSE NOTICE cum Warning letter for poor performance in Project level to be issued to the Contractor, with clear warning for immediate & time bound improvement of performance. Also a letter to be written to HO for initiating actions in line with the Corporation's laid down procedure for putting the party in the Holiday list. If three successive ratings of vendor for different work orders are reported to be Unsatisfactory within a span of one year, HO to initiate action against the party in line with the Corporation's laid down procedure for putting the party in the Holiday list</p> <p>NOTE :</p> <p>1) Terms and Conditions of the Tender/Contract and IOCL's all extant policy guidelines for actions wrt poor performance, safety and/or any other defaults on Contractor's part shall in any case prevail and remain in force. The actions mentioned above wrt the various performance rating are going to be supplementary to the same.</p>

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CCTV Contractor's Performance Review Worksheet

Contractor Name: _____

Contractor SAP Code: _____

Work Order No & Date: _____

Work Order Amount: Rs. _____

Scheduled Completion period: _____

Date of Start: _____

Evaluation Stage 1 – If Applicable: Yes/No

Scheduled Date of Completion at 50% scheduled timeline (without considering any delay adjustment not attributable to the contractor):

Scheduled Date of Completion at 50% scheduled timeline (considering delay adjustments not attributable to the contractor):

Executed job value at 50% scheduled timeline (considering delay adjustments not attributable to the contractor), which is due for payment:

Payments released at 50% scheduled timeline (considering delay adjustments not attributable to the contractor):

Evaluation Stage 2 – If Applicable: Yes/No

Scheduled Date of Completion at 100% scheduled timeline (without considering any delay adjustment not attributable to the contractor)

Scheduled Date of Completion at 100% scheduled timeline (considering delay adjustments not attributable to the contractor)

Actual Date of Completion: _____

Final executed works and bill value after job completion:

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S N	DESCRIPTION	MAX MARKS	COMPUTATION PHILOSOPHY					SCORE
1	Safe Work Practises	15	No instances of Safety Lapses, availability of PPE – Full Marks (15)	Violation of applicable safety, health and environment related norm with penalty of Rs. 5000/- per occasion : 3 marks deduction for each instance of penalty	Violation leading to Physical Injury : 5 marks deduction for each instance of penalty	Violation leading to Fatal accident : Full (15) Marks deduction		
2	Timely completion of Works	25						
a	Mobilisation Time (Actual handing over at Site)	3	Within Time as per WO (* can be supplemented by the schedule finalised by IOCL during Kick Off Meeting, considering various readiness) - Full Marks (3)	delay ≤ 30 days : 2 Marks	delay > 30 days & ≤ 60 days : 1 Mark	delay > 60 days : Nil Marks		
b	Detail Engineering	3	Within Time as per WO (* can be supplemented by the schedule finalised by IOCL during Kick Off Meeting, considering various readiness) – Full marks (3)	delay ≤ 15 days : 2 Marks	delay > 15 days & ≤ 30 days : 1 Mark	delay > 30 days : Nil Marks		
c	Timely ordering and procurement of bought out equipment	3	Within Time as per WO (* can be supplemented by the schedule finalised by IOCL during Kick Off Meeting, considering various	delay ≤ 30 days : 2 Marks	delay > 30 days & ≤ 60 days : 1 Mark	delay > 60 days : Nil Marks		

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S N	DESCRIPTION	MAX MARKS	COMPUTATION PHILOSOPHY					SCORE
			readiness) – Full marks (3)					
d	Timely submission (preferably by Kick Off meeting/ Detail Engg timeline) of comprehensive list of required IOCL deliverables/readiness	3	Within Time as per WO (* can be supplemented by the schedule finalised by IOCL during Kick Off Meeting, considering various readiness) – Full marks (3)	delay <= 15 days : 2 Marks	delay > 15 days & <=30 days : 1 Mark	delay > 30 days : Nil Marks		
e	Percentage cash flow against WO Value till original CDD	3	> 60% - Full Marks (3)	> 50% & <=60% : 2 marks	>= 30% & <= 50% : 1 mark	< 30 % : Nil marks		
f	Material supply - delivery made on time	3	Deliveries made as per Construction programme prepared during commencement / Kick Off Meeting – Full marks (3)	delay by 1 -15 days -2 Marks	delay by 16 -30 days -1 Marks	delay beyond 30 days –Nil Marks		
g	Completion Time – Complete Commissioning	3	Within time including acceptable delay on IOCL's part or Extensions granted (wherever approved) - Full marks (3)	Price Adjustment for delay <= 2.5 % or Delay <= 35 days on Contractor's part : 2 marks	Price Adjustment for > 2.5% & <= 5 % or Delay >35 days & <= 70 days on Contractor's part : 1.5 marks	Price Adjustment for > 5% & <= 7.5 % or Delay > 70 days & <=105 days on Contractor's part : 1 mark	Price Adjustment > 7.5% or Delay > 105 days on Contractor's part : Nil Marks	
h	Completion Time – Stabilisation (Excluding delay not attributable to Vendor)	4	System gets stabilised <= 60 days from date of SAT – Full marks (4)	System gets stabilised by > 60 days & <= 75 days from date of SAT : 3 marks	System gets stabilised by > 75 days & <= 90 days from date of SAT : 2 marks	System gets stabilised by > 90 days & <= 105 days from date of SAT : 1 marks	System gets stabilised > 105 days from date of SAT : Nil marks	
3	Quality of Work	25						
a	Recoveries due to deficiency in work	3	Nil recoveries; Nil with hold for	Recoveries / Amount with held for	Recoveries / Amount withheld for	Recoveries / Amount withheld for		

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S N	DESCRIPTION	MAX MARKS	COMPUTATION PHILOSOPHY					SCORE
			rectification : Full (3) marks	rectification in Final Bill is =< 2 % of Executed value : 2 marks	rectification in Final Bill is > 2 % & =<5 % of Executed value : 1 mark	rectification in Final Bill is > 5 % of Executed Value : Nil marks		
b	Punch points prior to project takeover (post SAT) within contractual scope of work and as per available front	3	NIL punch points : - Full (3) Marks	=<10 punch points : 2 marks	> 10 & =< 20 punch points : 1 mark	> 20 punch points – Nil marks		
c	Availability and implementation of of QAP Documentation for Procurement / Installation & Commissioning	3	Achievement => 90% level, Full Marks (3)	Achievement :>= 75 % &< 90% level, Full Marks (2)	Achievement :>= 60 % &< 75% level, Full Marks (1)	Achievement :< 60% level, NIL Marks		
d	Quality of Products/System provided wrt brand reputation and performance	3	SIC as per recommended vendor list (most reputed makes) and without any inferior performance record in IOCL in the past : Full Marks (3)	SIC as per recommended vendor list (Not the best reputed makes) ; however without any inferior performance record in IOCL in the past : 2 marks	SIC as per recommended vendor list : not the best reputed makes and/or equivalent makes ; with inferior performance record in IOCL (which could be eventually resolved) in the past : 1 mark	SIC in some cases not as per recommended vendor list or equivalent makes with inferior performance record in IOCL : Nil marks		
e	Quality of workmanship	3	Achievement => 90% level, Full Marks (3)	Achievement :>= 75 % &< 90% level, Full Marks (2)	Achievement :>= 60 % &< 75% level, Full Marks (1)	Achievement :< 60% level, NIL Marks		
f	Availability of as built drawings, documents, statutory certificates, user manuals, protocol documents	3	Achievement => 90% level, Full Marks (3)	Achievement :>= 75 % &< 90% level, Full Marks (2)	Achievement :>= 60 % &< 75% level, Full Marks (1)	Achievement :< 60% level, NIL Marks		
g	Compliance to performance parameters	3	Achievement => 90% level, Full Marks (3)	Achievement :>= 75 % &< 90% level, Full Marks (2)	Achievement :>= 60 % &< 75% level, Full Marks (1)	Achievement :< 60% level : NIL Marks		
h	Stability and uptime of the system	4	Cumulative down time of Critical equipments and or Major breakdowns : NIL – 4 marks	Cumulative down time of Critical equipments and or Major breakdowns : upto 24 hours – 3 marks	Cumulative down time of Critical equipments and or Major breakdowns : for > 24 hours and =<36	Cumulative down time of Critical equipments and or Major breakdowns : for > 36 hours and =<48	Cumulative down time of Critical equipments and or Major breakdowns : for > 48 hours : Nil marks	

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S N	DESCRIPTION	MAX MARKS	COMPUTATION PHILOSOPHY					SCORE
					marks – 2 marks	marks – 1 mark		
4	Relationship/ Work Interface Management	10						
a	With sub vendor / sub-contractors / Other vendors or OEMs	4	No major complaint/dispute received affecting the Works – Full marks(4)	1 no. major complaint/dispute received affecting the Works – 3 marks	2 no. major complaint/dispute received affecting the Works – 2 marks	3 no. major complaint/dispute received affecting the Works – 1 mark	More than 3 nos major complaint/dispute received affecting the Works – NIL marks	
b	With Statutory authorities	3	No major complaint/dispute received affecting the Works – Full marks(3)	1 no. major complaint/dispute received affecting the Works – 2 marks	2 no. major complaint/dispute received affecting the Works – 1 marks	More than 2 nos major complaint/dispute received affecting the Works – NIL marks		
c	With Location	3	No major complaint/dispute received affecting the Works – Full marks(3)	1 no. major complaint/dispute received affecting the Works – 2 marks	2 no. major complaint/dispute received affecting the Works – 1 marks	More than 2 nos major complaint/dispute received affecting the Works – NIL marks		
5	Project Management	10						
a	Qualification and experience of site representative	4	Site engineers/in charges profile (a) as per contract requirement , or (b) qualified engineer with domain expertise and experience - Full Marks (4)	Site engineers/in charges profile : Either not qualified engineer Or not having domain expertise and experience - 2 Marks	Site engineers/in charges profile : Neither qualified engineer Nor having domain expertise and experience - Nil Marks			
b	Submission of monthly progress reports and submission of hindrance register duly filled up and certified	2	Timely submission of all the desired reports along with hindrance register duly filled up and certified : Full Marks (2)	Submission of all the desired reports along with hindrance register duly filled up and certified , with cumulative delay ≤ 15 days wrt desired schedule during evaluation period : One Mark (1)	Submission of all the desired reports along with hindrance register duly filled up and certified , with cumulative delay > 15 days wrt desired schedule during evaluation period : Nil Marks			
c	Responsiveness to attend the pending	4	Pending tasks/punch points/issues	Pending tasks/punch points/issues	Pending tasks/punch points/issues	Pending tasks/punch points/issues	Pending tasks/punch points/issues	

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S N	DESCRIPTION	MAX MAR KS	COMPUTATION PHILOSOPHY					SCO RE
	tasks/punch points/issues		resolved in =< 1 month – Full marks (4)	resolved in > 1 month & =<1.5 months – 3 marks	resolved in > 1.5 month & =<2 months – 2 marks	resolved in > 2 month & =<2.5 months – 1 marks	resolved after 2.5 months – Nil marks	
6	Capacity for resource deployment / Financing	15						
a	Adequate manpower / machinery deployed	8	Achievement >= 90% level, Full Marks (8) Achievement >= 85% & < 90% level, 7 Marks Achievement >= 80% & < 85% level, 6 Marks Achievement >= 75% & < 80% level, 5 Marks Achievement >= 70 % & < 75 % level, 4 Marks Achievement >= 65% & < 70% level, 3 Marks Achievement >= 60% & < 65% level, 2 Marks Achievement >= 55% & < 60% level, 1 Mark Achievement < 55 % level, NIL Marks					
b	Instances of work slowdown / stoppage due to site finance	7	Nil slowdown / stoppages - Full Marks (7)	Cumulative affected period =< 20 days - 5 marks	Cumulative affected period > 20 days & =< 40 days - 3 marks	Cumulative affected period > 40 days & =< 60 days - 1 marks	Cumulative affected period > 60 days - Nil marks	
	Total	100						

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(Self Adhesive non-judicial stamp of Rs. 100/- to be affixed)

DECLARATION (ON AWARD OF WORK ORDER)

Sub. : Contract/ Work Order No. Dated.....

1. We shall
- a. Deploy trained and competent employees who are physically fit and are not suffering from any chronic or contagious diseases.
- b. Be responsible for and arrange and bear costs of such equipment, cleaning materials, uniforms and other paraphernalia necessary to render effectively the service required by the Corporation.
- c. Be responsible and liable for payment of salaries, wages and other legal dues of our employees for the purpose of rendering the services required by the Corporation under the above contract and shall maintain proper books of account, records and documents. We shall however as the employer, have the exclusive right to terminate the services of any of our employees and to substitute any person instead.
- d. Comply in all respects with the provisions of all statues, rules and regulations applicable to us and/ or to our employees and in particular we shall obtain the requisite license under the Contract Labour (Regulation and abolition) Act 1970 and the rules made there under.
- e. Ensure that our employees while on the premises of the Corporation or while carrying out their obligations under the contract, observe the standards of cleanliness, decorum, safety and general discipline laid down by the Corporation or its authorized agents and the Corporation shall be the sole judge as to whether or not we and/or our employees have observed the same.
- f. Personally and exclusively employ sufficient supervisory personnel exclusively to supervise the work of our employees so as to ensure that the services rendered under this contract are carried out to the satisfaction of the Corporation.
- g. Ensure that our employees will not enter or remain on the Corporation's premises unless absolutely necessary for fulfilling our obligations under the contact.
- h. Not do or suffer to be done in or about the premises of the Corporation anything whatsoever which in the opinion of the Corporation may be or become a nuisance or annoyance or danger or which may adversely affect the property, reputation or interest of the Corporation.
- i. Not do so or suffer to be done in or about the premises of the Corporation anything whereby any policy of insurance taken out by the Corporation against loss or damage by fire or otherwise may become void or voidable.
- j. Be liable for and make good any damage caused to the Corporation's properties or premises or any part thereof or to any fixtures or fittings thereof or therein by any act, omission, default or negligence on our part or on the part of our employees or our agents.
- k. Indemnify and keep indemnified the Corporation, its officers and employees from and against all claims, demands, actions, suits and proceedings, whatsoever that may be brought or made against the Corporation by or on behalf of any person, body, authority and whatsoever and all duties, penalties, levies, taxes, losses, damages, costs, charges and expenses and all other liabilities of whatsoever nature which the Corporation may now or hereinafter be liable to pay, incur or sustain by virtue of or as a result of the performance or non-performance or observance or non-observance

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by us of the terms and conditions of the contract. Without prejudice to the Corporation's other rights, the Corporation will be entitled to deduct from any compensation or other dues to us, the amount payable by the Corporation as a consequence of any such claims, demands, costs, responsible for death, injury or accidents to our employees which may arise out of or in the course of their duties on or about the Corporation's property is made liable to pay any damages or compensation in respect of such employees, we hereby agree to pay to Corporation such damages or compensation upon demand. The Corporation shall also not be responsible or liable for any theft, loss, damages or destruction of any property that belongs to us or our employees lying in the Corporation's premises from any cause whatsoever.

2. It is hereby declared that we are, for the purpose of this contract independent CONTRACTORS and all persons employed or engaged by us in connection with our obligations under the contract shall be our employees and not of the Corporation.
3. On the expiration of the contract or any earlier termination thereof, we shall forthwith remove our employees who are on the Corporation's premises or any part thereof failing which, our employees, agents, servants etc. shall be deemed to be trespassers and no their failure to leave the Corporation's premises, the Corporation shall be entitled to remove all persons concerned (if necessary by use of force) from the Corporation's premises and also to prevent them (if necessary by use of force) from entering upon the Corporation's premises.
4. We hereby undertake and declare that, in the event the workmen/ employees/ person engaged by us ("the CONTRACTORS' employees") to carry out the purpose hereof, attempt to claim employment with the Corporation or attempt to be declared as employees of the Corporation or attempt to become so placed, then in all such cases, we shall assist the Corporation in defending all such attempts of the CONTRACTOR's employees AND we shall bear and pay solely and absolutely all costs, charges and expenses including legal charges incurred or which may be incurred in defending all such attempt and in any appeal or appeals filed by the Corporation therein or relating thereto AND we hereby indemnify for ever the Corporation against all such costs, charges and expenses including legal charges and against all and any loss, expenses or damages, whether recurring or not, financial or otherwise, caused to or incurred by the Corporation, as a result of such attempt by the CONTRACTORS' employees.
5. It is hereby agreed that the Corporation shall be entitled to set off any debt or sum payable by us either directly or as a result of vicarious liability to the Corporation against any money payable or due from the Corporation to us against any money lying or remaining with the Corporation and belonging to us or any our partners or directors.

CONTRACTOR's Signature or Authorized Attorney

To be witnessed by Notary.

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**INDIAN OIL CORPORATION LIMITED
(MARKETING DIVISION)**

PROFORMA INDEMNITY BOND FOR LOST DEPOSIT RECEIPT

HERE AS DEPOSIT RECEIPT NO. dated for Rs. issued by Indian Oil Corporation Limited in favour of the undersigned as Earnest Money Deposit for the fulfillment of our obligations under the Tender No in respect of has been misled or lost by us and the same is not traceable in spite of due and diligent search made by us for the same AND WHEREAS Indian Oil Corporation Limited have at our request and entreaty agreed to refund to us the amount covered by the said DEPOSIT RECEIPT on our executing these presents in the manner herein after appearing NOW KNOW BE AND THESE PRESENTS WITNESS that we, the undersigned (name and address) for ourselves and our heirs executors and administrators and our successors and assigns do hereby agree conenvet and undertake to Indian Oil Corporation Limited and its successor's and assigns fully and effectively indemnity and keep Indian Oil Corporation Limited and its successor's and assigns fully and expenses respectively that they and their successors and assigns might suffer and be put to by reason of refunding to us the under signed the sum covered by the said DEPOSIT RECEIPT and we out heirs executors and administrators and our successors and assigns hereby record having agreed to reimburse Indian oil Corporation Ltd. the amount of all claims, losses, damages costs charges and expenses suffered by them in the premises aforesaid.

IN WITNESS WHEREOF we the undersigned have hereunto set and subscribed our signature the day and year first herein above written.

SIGNATURE OF THE EXECUTOR

Witness:

1. NAME & ADDRESS:

2. NAME & ADDRESS:

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INDEMNITY BOND UNDERTAKINGS (ON AWARD OF WORK ORDER)

PERFORMA 'A'

(On Rs. 100/-Stamp Paper - to be typed in double spacing)

From :

M/s.
(Contractors)

To.

M/S. INDIAN OIL CORPORATION LIMITED

Sub: (1) Work Order No. _____, dt. _____

(2) Agreement No. _____, dt. _____

THIS INDEMNITY BOND / UNDERTAKING executed at -----this -----
----- day of ----- 20__ by M/s -----

----- hereinafter called the "Contractors" (which expression shall mean and include if the context so admits, the partners or partner for the time being of the Firm and their or his respective heirs, executors and administrators; its successors and assigns in law) in favour of INDIAN OIL CORPORATION LIMITED a Company incorporated under the Companies Act I of 1956 and having its Registered Office at G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai 400 051, herein after called "the Corporation" (which expression shall include its successors and assigns in law).

WHEREAS the Corporation, desirous of having executed certain work specified in the work order No. _____ dated _____ issued by the Corporation on the Contractors, has caused drawings, specifications and bill of quantity showing and describing the work to be done prepared and the same have been signed by or on behalf of the parties hereto

AND WHEREAS the Contractors have agreed with the Corporation to execute and perform the said work specified in the said Work Order upon certain terms and conditions provided in the Agreement executed between the Contractors and the Corporation and also contained in the General Conditions of contract attached thereto AND WHEREAS the Contractors are bound by law to comply with the provisions of various Labour Laws like Minimum Wages Act 1948, Equal Remuneration Act 1976, Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act 1979, Contract labour (Regulation and Abolition) Act 1970, Workmen's Compensation Act 1923, Employees State Insurance Act as also the Provident Fund Act providing for Provident Fund Scheme for labourers engaged by the Contractors but in the event of violation of the provisions of various amenities and facilities to the workers under the different labour laws, not only the Contractors but also the Corporation as the principal employer becomes liable for the acts of omission and commission by the Contractors.

IT IS THEREFORE THE INTENT OF THIS INDEMNITY BOND UNDERTAKING BY THE CONTRACTORS to indemnify and keep indemnified the Corporation as stated hereinafter.

1. The Contractors hereby undertake to furnish a certificate with regard to the number of labourers

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employed by them in the Corporation in other organisation throughout the country to the Location in-charge of the Corporation where the work is undertaken by the Contractors.

2. The Contractors hereby confirm and state that they are duly registered under Contract Labour (Regulation and Abolition) Act 1979 as amended from time to time and that they undertake to furnish a certified copy of the requisite Licence obtained by Contractors from the competent authority to the Corporation's representative.
3. The Contractors hereby undertake to keep proper record of attendance of his labourers and will give opportunity to the officers of the Corporation to supervise the same and confer upon the Corporation's representative the right to countersign the said register. The Contractors shall provide a copy of pay sheets to the Location in-charge of the Corporation nominated by the Corporation for supervision of the payment of wages made to the labourers by the Contractor and also confer the right on the Corporation's representative to supervise the payment of wages to the labourers on the spot whenever required by the Corporation.
4. The Contractors state that they are fully aware of the provisions of the Provident Fund Act, particularly with regard to the enrolment of labourers as a member of Provident Fund. The Contractors further confirm that they are aware of the provisions and that they are obliged to recover Provident Fund contribution from the eligible labourers engaged by them and after adding their own contribution, remit the same to RPFC. The contractors state and confirm that they are fully aware of their obligation to remit the said amounts on account of Provident Fund to the RPFC within the prescribed period and that they have obtained a separate code number from the Regional Provident Fund Commissioner which is bearing Sanction No. _____ dated _____ from RPFC.
5. The Contractors will afford all opportunities to the officers of the Corporation whenever required to verify that the Provident Fund is actually deducted by the Contractors from the wages of the labourers and the same together with the Contractors' contribution has been duly remitted by the Contractors to the concerned P.F. Commissioners. The Contractors also undertake to provide photocopy of the receipt issued by the concerned P.F. Commissioner for having received the P.F. contribution from the Contractors.
6. In the event the Location in-charge of the Corporation is not satisfied about the payment of wages made and the recovery of P.F. etc. from the labourers employed by the Contractors, the Contractors hereby agree and authorised the Corporation to withhold the payment of their bills till the contractors complete all their obligations.
7. Notwithstanding the provisions contained in clause 6 above, the Contractors hereby undertake and authorised the Corporation to recover dues payable by the Contractors to the labourers employed by them as also amounts on account of P.F. contributions (including the Contractors' contribution) as also all losses, damages, costs, charges, expenses, penalties from their bills and other dues including the security amounts.
8. The Contractors hereby agree, confirm and declare that they have fully complied and will comply with the provisions of various labour laws, particularly those referred to here in above and that no violation of the provisions of various amenities and facilities to the workers under different laws has been done by them and in the event of any past or future violation of the various labour laws, the contractors shall indemnify and keep the Corporation duly indemnified against all losses, damages, costs, charges, expenses, penalties, suits or proceedings which the Corporation may incur, suffer or be put to.

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9. The contractors hereby agree that the aforesaid indemnity undertakings are in addition to and not in substitution of the terms and conditions contained in the tender documents and the work order and also the Agreement executed by the Contractors with the Corporation.
10. The Contractors hereby confirm, agree and record that these terms of undertaking and indemnity shall be irrevocable and unconditional and shall be binding on their heirs, executors, administrators and legal representatives and shall ensure for the Corporation's benefit and for the benefit of its successors and assigns.
11. That all questions, issues, disputes and differences between the contractor and the Corporation arising under this indemnity bond undertaking shall be referred to arbitration in the same meaning as indicated in the contract executed between the contractors and the Corporation.

Yours faithfully,

Date

Contractor's Name and Signature

Witness:

(1) (Full Address)

(2) (Full Address)

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(On Non-Judicial stamp paper of proper value)

AMENDATORY AGREEMENT (ON AWARD OF WORK ORDER)

This Amendatory Agreement made at _____ the _____ day of _____ 2____ by and between INDIAN OIL CORPORATION LIMITED, a Company incorporated in India under the Indian Companies Act, 1956 and having its Registered Office at _____ (hereinafter called "the Corporation" which expression shall unless inconsistent with the context include its successors and assigns) of the first PART and M/s. _____ having its Office at _____ (hereinafter called "the CONTRACTOR") of the Other PART and collectively referred to as "the Parties".

WHEREAS:

- 1) The parties referred to above have executed an Agreement dated _____ in pursuance of Work Order No. _____ dated _____ for _____ work (hereinafter referred to as "Main Agreement").
- 2) The aforesaid Main Agreement contains provisions requiring both the parties to refer any dispute or differences arising under the Main Agreement to arbitration.
- 3) The Main Agreement permits the parties to amend or modify any of the terms of the Main Agreement

NOW THEREFORE by virtue of this Amendatory Agreement the parties to the Main Agreement agree as under:-

- a. That the provisions relating to Arbitration in the event of dispute or difference or any other issue arising under the Main Agreement stand deleted from the Main Agreement.
- b. That the reference to the Arbitration Clause contained in the Main Agreement in any other term or condition which may be general or special in nature shall also stand deleted to the extent the said contents are applicable to Arbitration provisions.
- c. Save as above, all other conditions whether general or special in nature relating to the Main Agreement shall continue to be in force unless modified or amended by the parties hereto.

Authorised Signatory for Indian Oil Corp. Ltd.

Authorised Signatory for M/s. _____

WITNESSES:

(1) Name & Address

(2) Name & Address

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FORM OF CONTRACT (ON AWARD OF WORK ORDER)

(On Rs. 500/- Non-Judicial Stamp Paper)

THIS CONTRACT made at **Mumbai** this _____ day of _____ 2022 BETWEEN INDIAN OIL CORPORATION LTD., a Government of India Undertaking registered in India under the Indian Companies Act 1956, having its registered office at G-9, Ali Yavar Jung Marg, Bandra (East), Bombay- 400 051 and the Headquarters at G-9, Ali Yavar Jung Marg, Bandra (East), Bombay- 400 051 Mumbai (hereinafter referred to as the "OWNER" which expression shall include its successors and assigns) of the One Part; AND _____ carrying on business in sole proprietorship/ carrying on business in partnership under the name and style of _____ a Company registered in India under the Indian Companies Act, 1913/ 1956 having its registered office at _____ (hereinafter referred to/ as collectively referred to as the "CONTRACTOR" which expression shall include his/ their/ its executors, administrators, representatives and permitted assigns/ successors and permitted assign) of the other part:

WHEREAS

The OWNER desires to have executed the work of _____ more specifically mentioned and described in the contract documents (hereinafter called the 'work' which expression shall include all amendments therein and/ or modifications thereof) and has accepted the tender of the CONTRACTOR for the said work.

NOW, THEREFORE THIS CONTRACT WITNESSETH as follows:

ARTICLE – 1

Contract Documents

- 1.1 The following documents shall constitute the Contract documents, namely
 - (a) This contract;
 - (b) Tender documents as defined in the General Instructions to Tenderers;
 - (c) Letter of Acceptance of Tender along with Fax/ Telegram of Intent.
- 1.2 A copy of each of the Tender Documents is annexed hereto and the said copies have been collectively marked Annexure 'A' while a copy of the letter of Acceptance of Tender along with annexures thereto and a copy of Fax/Telegram of Intent dated _____ are annexed hereto and said copies have been collectively marked as Annexure 'B'.

ARTICLE – 2

Work to Be Performed

- 2.1 The CONTRACTOR shall perform the work upon the terms and conditions and within the item specified in the Contract documents.

ARTICLE – 3

- 3.1 Compensation

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Subject to and upon the terms and conditions contained in the Contract documents, the OWNER shall pay CONTRACTOR compensation as specified in the Contract documents upon the satisfactory completion of the work and/ or otherwise as may be specified in the Contract documents.

ARTICLE – 4

4.1 Jurisdiction

Notwithstanding any other court or courts having jurisdiction to decide the question(s) forming the subject matter of the reference if the same had been the subject matter of a suit, any and all actions and proceedings arising out of or relative to the contract (including any arbitration in terms thereof) shall lie only in the court of competent civil jurisdiction in this behalf at _____ (where this Contract has been signed on behalf of the OWNER) and only the said Court(s) shall have jurisdiction to entertain and try any such action(s) and/ or proceeding(s) to the exclusion of all other Courts.

ARTICLE – 5

5.1 Entire Contract

The Contract documents mentioned in Article - I hereof embody the entire Contract between the parties hereto, and the parties declare that in entering into this Contract they do not rely upon any previous representation, whether express or implied and whether written or oral, or any inducement, understanding or agreements of any kind not included within the Contract documents and all prior negotiations, representations, contacts and/ or agreements and understandings relative to the work are hereby cancelled.

ARTICLE – 6

Notices

- 6.1 Subject to any provisions in the Contract documents to the contrary, any notice, order or communication sought to be served by the CONTRACTOR on the OWNER with reference to the Contract shall be deemed to have been sufficiently served upon the OWNER (notwithstanding any enabling provisions under any law to the contrary) only if delivered by hand or by Registered Acknowledgment Due Post to the Engineer in- Charge as defined in the General Conditions of Contract.
- 6.2 Without prejudice to any other mode of service provided for in the Contract Documents or otherwise available to the OWNER, any notice, order or other communication sought to be served by the OWNER on the CONTRACTOR with reference to the Contract, shall be deemed to have been sufficiently served if delivered by hand or through Registered Post Acknowledgment Due to the principal office of the CONTRACTOR at _____ or to the CONTRACTOR's representatives as referred to in the General Conditions of Contract forming part of the Contract Documents.

ARTICLE-7

7.1 Waiver

No failure or delay by the OWNER in enforcing any right or remedy of the OWNER in terms of the Contract or any obligation or liability of the CONTRACTOR in terms thereof shall be deemed to be a waiver of such right, remedy, obligation or liability, as the case may be, by the OWNER and notwithstanding such failure or delay, the OWNER shall be entitled at any time to enforce such right, remedy, obligation or liability, as the case may be.

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ARTICLE-8

8.1 Non-Assignability

The Contract and benefits and obligations thereof shall be strictly personal to the CONTRACTOR and shall not on any account be assignable or transferable by the CONTRACTOR.

IN WITNESS WHEREOF the parties hereto have executed this Contract in duplicate the place, day and year first above written

SIGNED AND DELIVERED for and on behalf of INDIAN OIL CORPORATION LTD.
by.....

in the presence of

- 1.
- 2.

SIGNED AND DELIVERED for and on behalf of
..... (CONTRACTOR)

by
(this day of _____ 20__)
in the presence of

- 1.
- 2.

(Strike off which is not applicable)

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FORM OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

1. In consideration of the Indian Oil Corporation Limited (hereinafter called 'The Corporation') having agreed to accept from _____ (name of the tenderer) (hereinafter called 'the said tenderer') Earnest money in the form of Bank Guarantee, under the terms and conditions of tender No. _____ dated _____ in connection with _____ (mention the details of the tender) (hereinafter called "the said tender"), for the due observance by the said tenderer of the stipulation to keep the offer open for acceptance for a period of _____ days from the date of the opening of the tender and other stipulations of the tender we, _____ (indicate the name of the bank) hereinafter referred to as 'the Bank' at the request of _____ (mention the name of the tenderer) do hereby undertake to pay on demand to the Indian Oil Corporation Limited an amount not exceeding Rs. _____ in the event of the said tenderer having incurred forfeiture of earnest money as aforesaid or for the breach of any of the terms or conditions or the stipulations of the said tender and/ or the contract if awarded including but not limited to non performance of the contract caused due to revision in price/ pricing basis after close of the pricing part of the tender under an order of the Indian Oil Corporation limited.
2. We _____ (indicate the name of the bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Indian Oil Corporation Limited stating that the amount claimed is due by way of forfeiture of earnest money or any loss or damage caused to or suffered or would be caused to or suffered by the Indian Oil Corporation Limited by reason of breach by the said tenderer any of the terms or conditions or stipulations 3contained in the said tender or by reason of the tenderer's failure to perform the stipulations of the said tender. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.
3. We _____ (indicate the name of the bank) undertake to pay to the Indian Oil Corporation Limited any money so demanded notwithstanding any dispute or disputes raised by the tenderer in any suit or proceeding pending before any court or Tribunal or arbitrator relating thereto our liability under this present being absolute and unequivocal. The payment so made by the bank under this bond shall be a valid discharge of our liability for payment there under and the tenderer shall have no claim against us for making such payment.
4. We _____ (indicate the name of the bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the terms, conditions or stipulation of the said tender and that it shall continue to be enforceable till all the dues of the Indian Oil Corporation Limited under or by virtue of the said tender/ contract have been fully paid and its claims satisfied or discharged or till Indian Oil Corporation Limited certifies that the terms and conditions of the said tender have been fully and properly carried out by the said tender and accordingly discharge this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before _____ we shall be discharged from all liability under this guarantee thereafter.
5. We _____ (indicate the name of the bank) further agree with the Indian Oil Corporation Limited that the Indian Oil Corporation Limited shall have the fullest liberty without our

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consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said tender or to extend time of performance by the said tenderer from time to time or to postpone for any time or from time to time any of the powers exercisable by the Indian Oil Corporation Limited against the said tenderer and to forbear or enforce any of the terms and conditions relating to the said tender and shall not be relieved from our liability by reason of any such variation, or extension being granted to the said tenderer or for any forbearance, act or omission on the part of Indian Oil Corporation Limited or any indulgence by the Indian Oil Corporation Limited to the said tenderer or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provisions have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the bank or the tenderer.
7. We, _____(indicate the name of the bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Indian Oil Corporation Limited in writing.

Dated the ____ day of ____ 20__

For _____

(indicate the name of bank)

Place :

Date :

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BANK GUARANTEE PROFORMA IN LIEU OF SECURITY DEPOSIT

1. 1. In consideration of the Indian Oil Corporation Limited having its Registered Office at _____ (hereinafter called "The Corporation") having agreed to exempt _____ (hereinafter called "The said Contractor(s) / Supplier(s) / -Seller(s)") from the demand under the terms and conditions of an Agreement dated _____ made between _____ and _____ for _____ (hereinafter called "The said Agreement"), of Security Deposit for the due fulfillment by the said Contractor(s) / Supplier(s) / - Seller(s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. _____ (Rupees _____ only), we _____ (hereinafter referred to as "The Bank" at the request of _____ Contractor(s) /Supplier(s) / - Seller(s) do hereby undertake to pay to the Corporation an amount not exceeding Rs. _____ against any loss or damage caused to or suffered or would be caused to or suffered by the Corporation by reason of any breach by the said Contractor(s) /Supplier(s) / - Seller(s), of any of the terms or conditions contained in the said Agreement.

2. We _____ (indicate the name of the bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Corporation stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Corporation by reason of breach by the said Contractor(s) / Supplier(s) / - Seller(s) of any of the terms or conditions contained in the said Agreement or by reason of the Contractor(s) / Supplier(s) ' failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding _____

3. We undertake to pay to the Corporation any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Supplier(s) / - Seller(s) in any suit or proceeding pending before any court or Tribunal or Arbitrator relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Supplier(s) / - Seller(s) shall have no claim against us for making such payment.

4. We, _____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Corporation under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till _____ office / department at _____ certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) / Supplier(s) / - Seller(s) and accordingly discharge this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before _____ we shall be discharged from all liability under this guarantee thereafter.

5. We, _____ (indicate the name of Bank) further agree with the corporation that the corporation shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) / Supplier(s) / - Seller(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the corporation against the said Contractor(s) / Supplier(s) / - Seller(s) and to forbear or enforce any of the terms and conditions

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relating to the said agreement and shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor(s) / Supplier(s) / - Seller(s) or forbearance, act or omission on the part of the corporation or any indulgence by the corporation to the said Contractor(s) / Supplier(s) / - Seller(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provisions have affect of so relieving us.

6. This guarantee will not be discharged due to change in the constitution of the Bank or the Contractor(s) / Supplier(s) / - Seller(s).
7. We, _____(indicate the name of Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the corporation in writing.

Dated the _____ day of _____ 20__

For _____

(Indicate the name of Bank)

PLACE :

DATE :

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BANK MANDATE FORMAT

Payment system to Vendors through Electronic Modes such as EFT, RTGS etc has been introduced by the Corporation. For availing this facility, a consent letter from the Vendor as also the Bank Account details of the Vendor is required. Bidders are requested to submit their Consent Letter as per the format given below along with the enclosures as required:-

To,
M/s Indian Oil Corporation Ltd.
Address

Dated:

Dear Sir,

With reference to your advice, we hereby agree to accept the payment of our bills through "RTGS/NEFT/Electronic Mode". The desired bank account details are given below:

1.	Vendor Code allotted by IOCL in SAP	
2.	Name of Beneficiary (i.e. IOCL Vendor)	
3.	Name of the Beneficiary's Bank	
4.	Address of the Beneficiary's Bank Branch	
5.	Contact details of Branch with STD Code	
6.	Beneficiary's Bank Account No. (as per cheque copy)	
7.	Beneficiary's Account Type (SB/CC/CA)	
8.	Beneficiary's Bank IFSC Code (11 Digit)	
9.	Mobile No of Beneficiary (One Number only)	
10.	E-Mail Id of Beneficiary (One Mail Id only)	

A blank cancelled cheque leaf relating to the above bank account is enclosed for verifying the accuracy of the bank account details.

I hereby declare that the particulars given above are correct and complete. I agree to receive transactional SMS / E-Mail Alerts from IOCL with regard to my bill payments.

(Signature of Account Holder)
Seal of the Vendor

Encl.: Cancelled Cheque

**** We hereby confirm that the above bank account details of beneficiary are correct in all respects and the account of Beneficiary (IOCL vendor) is maintained at our bank branch.

(Name of Bank & Branch)
Authorized Signatory

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**** Verification required only in case vendors name is not printed/appearing on the cancelled cheque leaf being submitted to IOCL office.

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**PROFORMA FOR DECLARATION ON NCLT / NCLAT /DRT /DRAT/ COURT RECEIVERSHIP/ LIQUIDATION
{to submitted in Bid_Documents}**

Tender No:

Bidder Name:

I/ We hereby declare that I/We /M/s_____, declare that :

- (i) I / We am/are not undergoing insolvency resolution process or liquidation or bankruptcy proceeding as on date.

Or,

- (ii) I / We am/are undergoing insolvency resolution process or liquidation or bankruptcy proceeding as on date as per details mentioned below. (Attached detail with technical bid)

Note: - Strike out which is not applicable.

It is understood that if this declaration is found to be false, Indian Oil Corporation Ltd. shall have the right to reject my/our bid, and forfeit the EMD. If the bid has resulted in a contract, the contract will be liable for termination without prejudice to any other right or remedy (including black listing or holiday listing) available to Indian Oil Corporation Ltd.

Place:

Signature of Bidder

Date:

Name of Signatory

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FORMAT OF BID SECURITY DECLARATION FROM BIDDERS IN LIEU OF EMD

(On Company Letterhead)

Format of Bid Security Declaration from bidders in lieu of Earnest Money Deposit / Bid Security (On Bidders Letter Head)

I/We, the authorized signatory of M/s _____, participating in the subject Tender No.: _____, for the job of _____, do hereby declare that in the event:

I/ We withdraw / modify our bid during the period of bid validity

OR

I/We commit any other breach of tender conditions / contract which would have otherwise attracted forfeiture of EMD

OR

I/ We fail to / refuse to initiate the execution of the awarded Contract as per the terms of the Contract

then I/We could be debarred from being eligible for bidding/ award of all future tender(s) of Indian Oil Corporation Limited for a period of SIX Months from the date of communication of such debarment.

Signature and seal of authorized signatory of bidder

Name of authorized signatory:

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UNDERTAKING FOR BUSINESS TRANSACTION STATUS OF BIDDERS

(To be submitted on Letterhead of bidder, duly signed)

Tender No: _____

Name of Work: _____

Bidder Name: _____

I/We, _____ hereby declare that:

- a) We hereby confirm that we have not transferred our ownership rights either in whole or in part to another entity or under process of transfer.
- b) I/We have transferred my/our ownership rights in M/s _____ in whole / part to other entity/ entities as per details below:

S. No.	Name of Entity/Entities	% of Ownership Transferred

- c) I/We are in process of transferring my/ our ownership rights in M/s _____ whole/part to other entity/ entities as per details below:

S. No.	Name of Entity/Entities	% of Ownership Transferred

I/We understand that IOCL reserves the right to reject the tender of any entity, which has transferred its ownership rights in whole or in part or which is in process of transfer without assigning any reason for such rejection.

I/ We also understand that failure or refusal to share the information regarding their status of any kind of business transfer process/restructuring etc, in this tender or at any later stage, as applicable, my/our tender is liable to be rejected by IOCL and without prejudice to any other remedy or action available with IOCL, IOCL shall suspend the bidder from being eligible for bidding / award of all future contract(s) of Indian Oil Corporation Limited for a period of one year from the date of committing this breach under this clause.

Place:

Signature of bidder

Date:

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CLAUSE WITH RESPECT TO BIDDERS FROM COUNTRIES SHARING LAND BORDER WITH INDIA

1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. Copy of the registration certificate is to be submitted along with the bid.
2. The Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
3. Registration should be valid at the time of submission of bids and at the time of acceptance of bids. If the bidder was validly registered at the time of acceptance/ placement of order, registration shall not be a relevant consideration during contract execution.
4. However, the bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in developmental projects may participate in this tender and they shall not require any separate registration for the participation.
5. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in this tender.
6. Bidder from a country which shares a land border with India for the purpose of this Order means
 - i. Any entity incorporated, established or registered in such a country; or
 - ii. A subsidiary of an entity incorporated, established or registered in such a country; or
 - iii. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - iv. An entity whose "beneficial owner" is situated in such a country; or
 - v. An Indian (or other) agent of such an entity; or
 - vi. A natural person who is a citizen of such a country; or
 - vii. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
7. "Beneficial Owner" in the above paragraph will be as under:
 - i. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means

Explanation –

- a) "Controlling ownership interest" means ownership of, or entitlement to, more than twenty five percent of shares or capital or profits of the company;

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- b) "Control" shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
- ii. In case of partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
 - iii. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
 - iv. Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 - v. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
8. "Agent" is a person employed to do any act for another, or to represent another in dealings with third persons.
9. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

Bidders shall submit a certificate as per the Annexure regarding their compliance to the above conditions. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.



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COMPLIANCE CERTIFICATE REGARDING BIDDERS FROM COUNTRIES WHICH SHARE A LAND BORDER WITH INDIA

- a. The bidder, _____ (Name of the bidder) is not from a country which shares a land border with India.

(or)

The bidder, _____ (Name of the bidder) is from a country, _____ (Name of the Country) which shares a land border with India and are registered with the Competent Authority. Certificate of registration is attached with the bid; (or) The bidder, _____ (Name of the bidder) is from a country, _____ (Name of the Country) which shares a land border with India and Government of India has extended lines of credit or is engaged in developmental projects in this country, _____ (Name of the Country) and hence do not require any separate registration for participation in this tender.

- b. I have read the Clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the Competent Authority shall be attached).
- c. I have read the Clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached].

Details of Vendor's authorized representative

Signature:

Name:

Stamp:

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**UNDERTAKING FOR LOCAL CONTENT (TO BE SUBMITTED ON BIDDER'S LETTER HEAD) – BID STAGE
(TO BE SUBMITTED ALONG WITH BID DOCUMENTS ON LETTER HEAD OF THE
BIDDER DULY SIGNED)**

(Where the total quoted value is less than INR 10 Crore)

I....., Son/ Daughter of....., do solemnly affirm and state as under:

1. That I am the..... «Designation of the authorized signatory of..... and I am duly authorized to furnish this undertaking declaration on behalf of.....
2. That has submitted its bid against bidding document of Tender ref:
3. That the Company is fully aware of the provisions of Purchase Preference (Linked with Local Content) (PP-LC) Policy, enclosed in the above bidding document.
4. We hereby confirm that our offer is achieving the minimum local content target of **>=50% as Class I Local Supplier / >= 20% and < 50% as Class II Local supplier** (Specify what is applicable) as per PP-LC Policy.
5. I confirm that I am aware of the implication of the above undertaking and our liability on account of wrong declaration.

(Authorized signatory of Bidder)

Note: This undertaking shall be certified by the authorized signatory of the bidder, signing the bid.

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**UNDERTAKING FOR LOCAL CONTENT (TO BE SUBMITTED ON BIDDER'S LETTER HEAD) – BID STAGE (Part – 1)
(TO BE SUBMITTED ALONG WITH BID DOCUMENTS ON LETTER HEAD OF THE
BIDDER DULY SIGNED)**

(Where the total quoted value is **INR 10 Crore or above**)

Certification by the bidder

I -----, Son/ Daughter of ----- do solemnly affirm and state as under:

- 1) That I am the ----- (Designation of the authorized signatory) of ----- and I am duly authorized to furnish this undertaking declaration on behalf of -----.
- 2) That ----- has submitted its bid against bidding document of Tender Ref. -----.

1. That the Company is fully aware of the provisions of Purchase Preference (Preference to Make in India) (PP-MII), Order 2017 dated 16.09.2020, enclosed in the above bidding document.
2. We hereby confirm that our offer is achieving the minimum local content of:

- a. Minimum **50% (>=50%)** : _____
- b. **20% <= LC < 50%** : _____
- c. **LC < 20%** : _____

(Tick only one – whichever is applicable.)

- 3) I confirm that I am aware of the implication of the above undertaking and our liability on account of wrong declaration.

(Authorised Signatory of Bidder)

Certification by the statutory auditor/ Cost auditor /Practicing Chartered Accountant

We-----, having our registered office address-----
-----and certificate number -----certify that we are statutory auditor / cost auditor / practicing CA not being an employee / Director and not having any interest of the company M/s -----having its registered office at -----.

We understood the provisions of Purchase Preference (linked with Local Content) 2020 (PPLC) Policy, enclosed in the above bidding document.

We hereby certify that our offer is achieving the minimum local content of

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- a. Minimum **50% ($\geq 50\%$)** : _____
- b. **20% \leq LC < 50%** : _____
- c. LC < 20% : _____

(Tick only one – whichever is applicable.)

(Statutory Auditor / Cost Auditor / Practicing Chartered Accountant of the Bidder)

Note: This undertaking shall be certified by

- a) The Proprietor and an independent Chartered Accountant, not being an employee of the firm, in case of a proprietorship firm.
- b) Any one of the partners and an independent Chartered Accountant, not being an employee of the firm, in case of partnership firm
- c) Statutory Auditors in case of a company. However, where statutory auditors are not mandatory as per laws of the country where bidder is registered, an independent chartered accountant, not being an Employee of the bidder's organization.

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DECLARATION FORM FOR AVAILING PURCHASE PREFERENCE – BID STAGE (Part – 2)
(TO BE SUBMITTED ALONG WITH BID DOCUMENTS ON LETTER HEAD OF THE BIDDER DULY SIGNED)

Sr. no.	Parameter	Bidder to declare (Yes/ No)	Remarks
1	We confirm that our offer is achieving the minimum local content target of $\geq 50\%$ as Class-I Local Supplier.		
2	We confirm that our offer is achieving the minimum local content target of $\geq 20\%$ & $< 50\%$ as Class-II Local Supplier.		
3	Whether bidder wants to avail Purchase Preference Linked with Local Content. (PP-LC)		If Yes: Bidder to comply the requirement of PP-LC policy as per LC requirement. (Annexure 'J' as applicable)

Note:

The bidder claiming the PP-LC benefit shall be required to furnish an undertaking from the authorised signatory of bidder having the power of Attorney along with the bid stating the bidder meets the mandatory minimum LC requirement and such undertaking shall become a part of the contract.

i) Where the total quoted value is less than INR 10 Crore: (Not applicable for this tender , tender value > 10 Crore)

The LC content shall be self-assessed and certified by the authorized signatory of the bidder, signing the bid.

ii) Where the total quoted value is INR 10 Crore or above:

The undertaking submitted by the bidder shall be supported by a certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practising chartered accountant (in respect of other than companies) giving the percentage of local content.

Note: Authorised signatory shall mean:

- (i) The Proprietor and an independent Chartered Accountant, not being an employee of the firm, in case of a proprietorship firm.

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- (ii) Any one of the partners and an independent Chartered Accountant, not being an employee of the firm, in case of a partnership firm.
- (iii) Statutory auditors in case of a company. However, where statutory auditors are not mandatory as per laws of the country where bidder is registered, an independent chartered accountant, not being an Employee of the bidder's organization.
- (iv) However, in case of foreign bidder, certificate from the statutory auditor or cost auditor of their own office or subsidiary in India giving the percentage of local content is also acceptable. In case office or subsidiary in India does not exist or Indian office/ subsidiary is not required to appoint statutory auditor or cost auditor, certificate from practising cost accountant or practising chartered accountant giving the percentage of local content is also acceptable.

Bidder's signature:

(With Seal/ Stamp)

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GENERAL CONDITIONS OF CONTRACT ALONG WITH APPENDIX III - Attached Separately

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TECHNICAL DOCUMENT

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ABBREVIATIONS & NOTATIONS

Unless otherwise specified following notations / abbreviations shall be applicable to document.

NOTATIONS/ ABBREVIATIONS	DESCRIPTION
API	AMERICAN PETROLEUM INSTITUTE
ATEX	ATMOSPHERES EXPLOSIBLES
BG	BANK GUARANTEE
CCTV	CLOSED CIRCUIT TELEVISION
CENELEC	EUROPEAN COMMITTEE FOR ELECTRO TECHNICAL STANDARDIZATION
CI	CAST IRON
CM/cm	CENTIMETER
CPU	CENTRAL PROCESSING UNIT
CR	COTROL ROOM
DCS	DISTRIBUTED CONTROL SYSTEM
E-I-C/EIC	ENGINEER IN CHARGE
EMC	ELECTRO-MAGNETIC COMPATIBILITY
EMD	EARNEST MONEY DEPOSIT
EN	EUROPEAN NATION
ESD	EMERGENCY SHUTDOWN SYSTEM
EWS	ENGINEER'S WORKING STATION
EXD	EXPLOSION PROOF
EXP	EXPLOSION PROOF
FAT	FACTORY ACCEPTANCE TEST
FLP	FLAME PROOF
FM	FACTORY MUTUAL
FO	FIBER OPTIC
FRLS	FIRE RETARDANT LOW SMOKE
FS	FIRE SURVIVAL
GI	GALVANISED IRON
HDPE	HIGH DENSITY POLYETHYLENE
I/O	INPUT/ OUTPUT
IEC	INTERNATIONAL ELECTRO-TECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS
IR	INFRA RED
IS	INTRINSICALLY SAFE
IS/BIS	INDIAN STANDARD
ISD	INITIAL SECURITY DEPOSIT
JOB	JOB LUMPSUM

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NOTATIONS/ ABBREVIATIONS	DESCRIPTION
KG/kg	KILOGRAM
LAN	LOCAL AREA NETWORK
LED	LIGHT EMITTING DIODE
LIU	LIGHT INTERCONNECT UNIT
LS	LUMPSUM
M/m/rm/RM	METRE / RUNNING METRE
MM/mm	MILLIMETER
MS	MILD STEEL
MT	METRIC TONNE
MTBF	MEAN TIME BETWEEN FAILURE
MTRR	MEAN TIME TO REPAIR
NAS	NETWORK ATTACHED STORAGE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
PA	PUBLIC ADDRESS
PC	PERSONAL COMPUTER (WORK STATION)
PCC	PLAIN CEMENT CONCRETE
PTZ	PAN TILT ZOOM
RCC	REINFORCED CEMENT CONCRETE
RS-232/422	STANDARDS ON SERIAL COMMUNICATION PROTOCOL
S&D	SUPPLY & DISTRIBUTION
SAN	STORAGE AREA NETWORK
SAP	SYSTEMS APPLICATION PRODUCT (IOCL ERP SYSTEM)
SAT	SITE ACCEPTANCE TEST
SFT/sft	SQUARE FEET
SPD	SURGE PROTECTION DEVICE
Sqcm	SQUARE CENTIMETER
SQM/sqm/m2/SM	SQUARE METRE
SQMM/sqmm/mm2	SQUARE MILLIMETER
SS	STAINLESS STEEL
TAS	TERMINAL AUTOMATION SYSTEM
TFMS	TANK FARM MANAGEMENT SYSTEM
TLF	TANK LORRY FILLING
TM	TERMINAL MANAGER
TT	TANK TRUCK
TUV	TECHNISCHE UBERWARCHUNGS VEREIN
TWD	TANK WAGON DECONTAMINATION
TWF/ TWL	TANK WAGON FILLING/ TANK WAGON LOADING

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NOTATIONS/ ABBREVIATIONS	DESCRIPTION
U/G	UNDER GROUND
UL	UNDERWRITERS LABORATORY INC
UPS	UN-INTERRUPTED POWER SUPPLY
VMS	VIDEO MANAGEMENT SOFTWARE

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

CODES AND STANDARDS

- 1.0 The components of Instrumentation and Control system shall conform in design, materials and performance with the appropriate sections of the latest editions and revisions of the standards. The equipment & installation shall also conform to the latest Indian Electricity Rules as regards safety, earthing and other essential provisions specified there in for the installation and operation of electrical plants.
- 2.0 The equipment in the hazardous area shall have CMRI/ATEX/BIS & CCOE/PESO approvals. The equipment & installation shall also conform to the latest standards below.

SN	CODE / STANDARDS	DESCRIPTION
1	OISD 244	Storage and handling of Petroleum products in depots and terminals
2	IEC 68	Environment testing
3	IEEE 802.3, IEC, CSA	International Standards
4	IEC 801/EN 50081/82	Electromagnetic compatibility
5	IEC-529/ NEMA /IS 2147/ IS 13947:1992	For execution of Instrument Enclosures
6	IEC-85	Thermal Evaluation and classification of electrical insulation
7	IS 1271	Specification for thermal evaluation and classification of electrical insulation.
8	IS 3043	Code of practice for earthing
9	CENELEC EN 50014-50039	European norms for Hazardous area equipment and accessories
10	EN 60950-1992	Power supply
11	IS-13314	Solid state invertors run from storage batteries
12	IS-11260	Stabilized power supplies AC output
13	IEC	Solid state invertors
14	IS 10918	Vented type Nickel cadmium batteries
15	IS 1554/ IS 5831	PVC insulated cables
16	TIA/EIA 568A ISO/IEC 11801	Telecommunication cable standard

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SN	CODE / STANDARDS	DESCRIPTION
17	BASEEFA/PTB/KEMA/ FM/ATEX/ TUV/ CCE/ CMRS/ERTL/CPRI/ IBR/ RDSO/W&M /EXIDA	Statutory standards
18	BS 5308 Part-I	Instrumentation Cable
46	IS 2148/IEC 60079 PESO(CCOE)	Flame proof , enclosure for electrical apparatus
50	IEC 61511	Safety of an industrial process through the use of instrumentation
51	NFPA 731	Standard for the Installation of Electronic Premises Security Systems
52	IEC 61643-11:2011	Surge protective devices connected to low-voltage power systems - Requirements and test methods

3.0 Applicable Regulations/ Policies

- Regulations relevant to explosion hazardous areas
- Oil Industries safety directorate norms (OISD)
- Petroleum & Explosive Safety Organization norms & regulations
- IOCL Security policy

Note: Other applicable Codes and standards are mentioned at respective equipment specification

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SITE DATA

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1. SITE DATA - AKOLA DEPOT**Site details**

Sl. No.	Description	Details
1	Site Location	Vill. - Gaigaon, Akola
2	Nearest Railway station	Gaigaon
3	Nearest Airport	Nagpur
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Wagon
6	Product dispatch mode	Tank Truck
7	Maximum ambient temperature	45 degree C
8	Minimum ambient Temperature	10 degree C
9	Design operating temperature of field equipments	Upto 65 degree C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree C
11	Relative Humidity	57%
12	Wind velocity (Indicative)	17 KMPH
13	Annual rainfall (Indicative)	988 mm
14	Maximum rainfall in 24 hours (Indicative)	20 mm
15	Seismic Zone	Zone I
16	Altitude	282 m

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2. SITE DATA - CHANDRAPUR DEPOT

Site details

Sl. No.	Description	Details
1	Site Location	At village-Tadali, Near Tadali Railway station Chandrapur-442406
2	Nearest Railway station	Tadali Railway Station
3	Nearest Airport	Nagpur
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Wagon
6	Product dispatch mode	Tank Truck
7	Maximum ambient temperature	46 degree C
8	Minimum ambient Temperature	46 degree C
9	Design operating temperature of field equipments	Upto 70 degree C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree C
11	Relative Humidity	53%
12	Wind velocity (Indicative)	16 kmp
13	Annual rainfall (Indicative)	1250 mm
14	Maximum rainfall in 24 hours (Indicative)	361 mm
15	Seismic Zone	Zone III
16	Altitude	189 m

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3. SITE DATA - DHULE DEPOT

Site details

Sl. No.	Description	Details
1	Site Location	Indian Oil Corporation Limited, Bulk Petroleum Depot Near Shirud Railway Station, Arvi Parola Road, Shirud Dist.- Dhule -424308
2	Nearest Railway station	Shirud Railway Station (Chalishgaon Junction.)
3	Nearest Airport	Aurangabad Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Wagon
6	Product dispatch mode	Tank Truck
7	Maximum ambient temperature	45 degree C
8	Minimum ambient Temperature	10 degree C
9	Design operating temperature of field equipments	Upto 70 degree C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree C
11	Relative Humidity	70%
12	Wind velocity (Indicative)	13 KMPH
13	Annual rainfall (Indicative)	469 mm
14	Maximum rainfall in 24 hours (Indicative)	356.5 mm
15	Seismic Zone	Zone III
16	Altitude	319 M

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4. SITE DATA - JNPT TERMINAL

Site details

Sl. No.	Description	Details
1	Site Location	Indian Oil Corporation Ltd., JNPT Bulk Oil Terminal, JNPT Road, Plot No. 8, Opp. Port Users Bldg., Village Jashkar Tal. Uran, Dist. Raigad, Navi Mumbai 400707
2	Nearest Railway station	Uran
3	Nearest Airport	Mumbai
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	PIPELINE/ TANKER
6	Product dispatch mode	TT/ TANKER
7	Maximum ambient temperature	42
8	Minimum ambient Temperature	13.4
9	Design operating temperature of field equipments	Upto 70 degree C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree C
11	Relative Humidity	75%
12	Wind velocity (Indicative)	16 kmph
13	Annual rainfall (Indicative)	3.5 mm
14	Maximum rainfall in 24 hours (Indicative)	98.4 mm
15	Seismic Zone	Zone 3
16	Altitude	5 mtr above sea level

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5. SITE DATA - MIRAJ DEPOT

Site details

Sl. No.	Description	Details
1	Site Location	Miraj Depot, Chandanwadi, Miraj-Sangli road, Miraj-416410
2	Nearest Railway station	Miraj Junction
3	Nearest Airport	Kolhapur Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Wagon from GRI, IOTL, Manmad
6	Product dispatch mode	Tank Truck
7	Maximum ambient temperature	40 degree
8	Minimum ambient Temperature	22 degree
9	Design operating temperature of field equipments	upto 70 degree
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	upto 26 degree
11	Relative Humidity	70%
12	Wind velocity (Indicative)	21.7 kmph
13	Annual rainfall (Indicative)	496 mm
14	Maximum rainfall in 24 hours (Indicative)	9.6 mm
15	Seismic Zone	Zone III
16	Altitude	549 m

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6. SITE DATA - PUNE TERMINAL

Site details

Sl. No.	Description	Details
1	Site Location	Pune Terminal, Loni Kalbhor, Taluka Haveli, Pune - 412201
2	Nearest Railway station	Loni Station
3	Nearest Airport	Pune
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Local Pipeline from HPCL, Loni for MS & HSD.
6	Product dispatch mode	Thru Tank Truck
7	Maximum ambient temperature	31 deg c
8	Minimum ambient Temperature	21 deg c
9	Design operating temperature of field equipments	-40 to 60 deg C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	50 Deg c
11	Relative Humidity	74%
12	Wind velocity (Indicative)	10 km/h
13	Annual rainfall (Indicative)	735 mm
14	Maximum rainfall in 24 hours (Indicative)	20.17 mm
15	Seismic Zone	Zone III
16	Altitude	544 meters

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145****7. SITE DATA - SEWREE – I TERMINAL****Site details**

Sl. No.	Description	Details
1	Site Location	Sewree-I Terminal, Opp. Sewree Railway Station, Sewree (E), Mumbai-400015
2	Nearest Railway station	Sewree Suburban Station/ Dadar Railway Station
3	Nearest Airport	Mumbai Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Coastal Vessels and Pipeline
6	Product dispatch mode	TT & Pipeline
7	Maximum ambient temperature	37 Degree
8	Minimum ambient Temperature	18 Degree
9	Design operating temperature of field equipments	-40 to 60 deg C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	50 Deg c
11	Relative Humidity	74%
12	Wind velocity (Indicative)	15 km/hour
13	Annual rainfall (Indicative)	167 mm
14	Maximum rainfall in 24 hours (Indicative)	376.2 mm
15	Seismic Zone	Zone III
16	Altitude	5 mtr above sea level

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146****8. SITE DATA - SEWREE – II TERMINAL****Site details**

Sl. No.	Description	Details
1	Site Location	Sewree-II Terminal, "K" Oil Installation, Sewree (E), Mumbai-400015
2	Nearest Railway station	Sewree & Wadala
3	Nearest Airport	Mumbai Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Coastal Vessels
6	Product dispatch mode	TT & Pipeline
7	Maximum ambient temperature	32 Degree
8	Minimum ambient Temperature	27 Degree
9	Design operating temperature of field equipments	Upto 70 degree
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 24 degree
11	Relative Humidity	75%
12	Wind velocity (Indicative)	15 km/hour
13	Annual rainfall (Indicative)	3 mm
14	Maximum rainfall in 24 hours (Indicative)	98.4 mm
15	Seismic Zone	Zone III
16	Altitude	5 mtr above sea level

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9. SITE DATA - VASCO TERMINAL

Site details

Sl. No.	Description	Details
1	Site Location	INDIAN OIL CORPORATION FL Gomes Road, Vasco Terminal, Vasco-Da-Gama, Mormugao, South Goa, 403803.
2	Nearest Railway station	Vasco da Gama train station
3	Nearest Airport	Goa International Airport
4	IOCL GSTIN no for XXXXXX	30AAACI1681G1Z2
5	Product receipt mode	Coastal Vessels
6	Product dispatch mode	TT & Pipeline
7	Maximum ambient temperature	38 Degree
8	Minimum ambient Temperature	29 Degree
9	Design operating temperature of field equipments	Upto 70 Degree
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 24 Degree
11	Relative Humidity	96%
12	Wind velocity (Indicative)	19 km/hour
13	Annual rainfall (Indicative)	3.5 mm
14	Maximum rainfall in 24 hours (Indicative)	169.7mm
15	Seismic Zone	Zone III
16	Altitude	2 mtr above sea level

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10. SITE DATA - VASHI TERMINAL**Site details**

Sl. No.	Description	Details
1	Site Location	Indian Oil Corp. Ltd. D-502, T.T.C Industrial Area, Vashi Terminal
2	Nearest Railway station	Juinagar
3	Nearest Airport	Mumbai Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Pipeline, Tank Truck (Ethanol)
6	Product dispatch mode	Tank Truck
7	Maximum ambient temperature	27 Degree
8	Minimum ambient Temperature	27 Degree
9	Design operating temperature of field equipments	Upto 70 degree
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree
11	Relative Humidity	75%
12	Wind velocity (Indicative)	15 km/hour
13	Annual rainfall (Indicative)	3 mm
14	Maximum rainfall in 24 hours (Indicative)	98.4 mm
15	Seismic Zone	Zone III
16	Altitude	5 mtr above sea level

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**Page No.
149****11. SITE DATA - WADALA TERMINAL****Site details**

Sl. No.	Description	Details
1	Site Location	Wadala Terminal, Opp. Godrej Veg Oil, Wadala (E), Mumbai-400037
2	Nearest Railway station	Wadala & Sewree
3	Nearest Airport	Mumbai Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Coastal Vessels and Pipeline
6	Product dispatch mode	TT
7	Maximum ambient temperature	32 Degree
8	Minimum ambient Temperature	27 Degree
9	Design operating temperature of field equipments	Upto 70 degree
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	Upto 25 degree
11	Relative Humidity	75%
12	Wind velocity (Indicative)	15 km/hour
13	Annual rainfall (Indicative)	3 mm
14	Maximum rainfall in 24 hours (Indicative)	98.4 mm
15	Seismic Zone	Zone III
16	Altitude	5 mtr above sea level

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150****12. SITE DATA - AURANGABAD AFS****Site details**

Sl. No.	Description	Details
1	Site Location	Inside Aurangabad Airport
2	Nearest Railway station	Aurangabad Railway Station
3	Nearest Airport	Aurangabad Airport (200 m)
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Through Tank Trucks (By road)
6	Product dispatch mode	Through Aviation Refuellers and barrel dispatch
7	Maximum ambient temperature	40 deg c
8	Minimum ambient Temperature	12.22 deg c
9	Design operating temperature of field equipments	32.2 deg c
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	19.4 deg c
11	Relative Humidity	50 %
12	Wind velocity (Indicative)	5.9 Km/hr
13	Annual rainfall (Indicative)	777 mm
14	Maximum rainfall in 24 hours (Indicative)	92.7 mm
15	Seismic Zone	Zone II
16	Altitude	579 Meter

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**Page No.
151****13. SITE DATA - DABOLIM (GOA) AFS****Site details**

Sl. No.	Description	Details
1	Site Location	Indian Oil Corp. Ltd. ,Aviation Fuel Station, (Site A & Site B) Inside INS,Hansa,Dabolim,Goa-403801
2	Nearest Railway station	VASCO-DA-GAMA
3	Nearest Airport	DABOLIM AIRPORT,GOA
4	IOCL GSTIN no for XXXXXX	30AAACI1681G1Z2(GOA)
5	Product receipt mode	TT
6	Product dispatch mode	NA
7	Maximum ambient temperature	40°C
8	Minimum ambient Temperature	20°C
9	Design operating temperature of field equipments	50°C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	35°C
11	Relative Humidity	88%
12	Wind velocity (Indicative)	35 KMPH
13	Annual rainfall (Indicative)	875 mm
14	Maximum rainfall in 24 hours (Indicative)	45 mm
15	Seismic Zone	NO
16	Altitude	43 M

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14. SITE DATA - SHIRDI AFS**Site details**

Sl. No.	Description	Details
1	Site Location	Shirdi AFS.
2	Nearest Railway station	Sai nagar Railway station , Shirdi
3	Nearest Airport	Shirdi International Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Trucks
6	Product dispatch mode	Refuellers
7	Maximum ambient temperature	43°C
8	Minimum ambient Temperature	28°C
9	Design operating temperature of field equipments	25-40 °C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	22-33 °C
11	Relative Humidity	44%
12	Wind velocity (Indicative)	40m/s
13	Annual rainfall (Indicative)	742mm
14	Maximum rainfall in 24 hours (Indicative)	5.2mm
15	Seismic Zone	Zone III
16	Altitude	504 M

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15. SITE DATA - LBP TALOJA

Site details

Sl. No.	Description	Details
1	Site Location	LBP Taloja
2	Nearest Railway station	Kharghar railway station
3	Nearest Airport	Mumbai
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Trucks
6	Product dispatch mode	Tank Trucks
7	Maximum ambient temperature	44 °C
8	Minimum ambient Temperature	11°C
9	Design operating temperature of field equipments	0-50°C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	0-50°C
11	Relative Humidity	Varies from 96% to 17%
12	Wind velocity (Indicative)	20.0 km/h – 24.0 Km/h
13	Annual rainfall (Indicative)	2000-2500 mm per year
14	Maximum rainfall in 24 hours (Indicative)	225mm
15	Seismic Zone	Seismic Zone III
16	Altitude	11 m

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16. SITE DATA - LBP TROMBAY**Site details**

Sl. No.	Description	Details
1	Site Location	Lube Blending Plant
2	Nearest Railway station	Chembur
3	Nearest Airport	Mumabi air port
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Jetty
6	Product dispatch mode	Tank truck
7	Maximum ambient temperature	34°C
8	Minimum ambient Temperature	26°C
9	Design operating temperature of field equipments	29°C
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	24 °C
11	Relative Humidity	90%
12	Wind velocity (Indicative)	14 km/h WSW
13	Annual rainfall (Indicative)	288.1MM
14	Maximum rainfall in 24 hours (Indicative)	241MM
15	Seismic Zone	zone III
16	Altitude	20-40 m above ground

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17. SITE DATA - SCFP KHAPRI**Site details**

Sl. No.	Description	Details
1	Site Location	Small Can filling Plant, Khapri Nagpur -441108
2	Nearest Railway station	Nagpur Junction (Station code-NGP), Sitabuldi ,Nagpur-44000
3	Nearest Airport	Dr. Babasheb Ambedkar International Airport , Nagpur,Sonegaon-440005
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Tank Truck by Road
6	Product dispatch mode	Tank Truck By Road
7	Maximum ambient temperature	48 degrees Celsius
8	Minimum ambient Temperature	8 degrees Celsius
9	Design operating temperature of field equipments	(-) 40 Degree celsius to + 50 degree celsius
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	18 to 24 degree Celsius
11	Relative Humidity	Average 60%
12	Wind velocity (Indicative)	6.3 Km/h
13	Annual rainfall (Indicative)	1064.1 mm
14	Maximum rainfall in 24 hours (Indicative)	304 mm
15	Seismic Zone	Zone II
16	Altitude	

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18. SITE DATA - SCFP TROMBAY**Site details**

Sl. No.	Description	Details
1	Site Location	LBP Mumbai (3267) (SCFP Trombay)
2	Nearest Railway station	Chembur, Mumbai
3	Nearest Airport	Mumbai Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	For Lubricating Products - Pipeline Transfer, Bulk Tank Trucks, Barrels & Small Packs.
6	Product dispatch mode	For Lubricating Products - Bulk Tank Trucks, Barrels & Small Packs.
7	Maximum ambient temperature	42.2 degrees Celsius
8	Minimum ambient Temperature	13.4 degrees Celsius
9	Design operating temperature of field equipments	10 to 50 degrees Celsius
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	10 to 50 degrees Celsius
11	Relative Humidity	Average 75-89%
12	Wind velocity (Indicative)	20.0 km/h – 24.0 Km/h
13	Annual rainfall (Indicative)	242.2 cm (95.35 inches).
14	Maximum rainfall in 24 hours (Indicative)	944 mm
15	Seismic Zone	Zone III
16	Altitude	14 m (46 ft).

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157****19. SITE DATA - MANMAD BP****Site details**

Sl. No.	Description	Details
1	Site Location	IndianOil corporation Limited, Indane Bottling Plant, Manamd, Vill-Dhotane (BK), Tal-Nandagaon, Manmad-Nandgaon Road, Manmad , Nashik, Pin-423104
2	Nearest Railway station	Manmad Junction
3	Nearest Airport	Shirdi Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Bulk LPG from BPCL URAN & AEGIS by Road through Bulk Tank Trucks.
6	Product dispatch mode	Packed Truck
7	Maximum ambient temperature	42 degree cen
8	Minimum ambient Temperature	10 degree cen
9	Design operating temperature of field equipments	45 degree cen
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	25 degree cen
11	Relative Humidity	69%
12	Wind velocity (Indicative)	10.8 miles / hour (average)
13	Annual rainfall (Indicative)	52.2 Cm
14	Maximum rainfall in 24 hours (Indicative)	16.4 Cm in month of July
15	Seismic Zone	Zone - III
16	Altitude	576 meter above sea level

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158****20. SITE DATA - DHANAJ BP****Site details**

Sl. No.	Description	Details
1	Site Location	Dhanaj LPG Bottling Plant At & PO- Karanja Village Dhanaj Tal : Karanja, Dist : Washim- 444110 Maharashtra
2	Nearest Railway station	Badnera, which is 25 km from plant
3	Nearest Airport	Nagpur Airport
4	IOCL GSTIN no for XXXXXX	27AAACI1681G1ZP
5	Product receipt mode	Bulk LPG from AEGIS & Dhumad by Road through Bulk Tank Trucks.
6	Product dispatch mode	Packed Truck
7	Maximum ambient temperature	48 degree cen
8	Minimum ambient Temperature	16 degree cen
9	Design operating temperature of field equipments	48 degree cen
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	48 degree cen
11	Relative Humidity	69%
12	Wind velocity (Indicative)	10.8 miles / hour (average)
13	Annual rainfall (Indicative)	76.3 Cm
14	Maximum rainfall in 24 hours (Indicative)	18.4 Cm in month of July
15	Seismic Zone	Zone - III
16	Altitude	560 meter above sea level

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21. SITE DATA - PUNE BP**Site details**

Sl. No.	Description	Details
1	Site Location	Pune LPG Bottling Plant At &PO-Bhose, Chakan – Shikarapur Road, SH-55 Tal : Khed, Dist : Pune-410501 Maharastra
2	Nearest Railway station	Telegaon, which is 25 km from plant
3	Nearest Airport	Pune International Airport, Lohegaon via Alandi is 27.1 kms
4	IOCL GSTIN no for XXXXXX	27AAAC1681G1ZP
5	Product receipt mode	Bulk LPG from BPCL URAN & AEGIS by Road through Bulk Tank Trucks.
6	Product dispatch mode	Packed Truck
7	Maximum ambient temperature	33 degree cen
8	Minimum ambient Temperature	19 degree cen
9	Design operating temperature of field equipments	25 degree cen
10	Design operating temperature of indoor equipments (Control Room, Admin Building, S&D, Security Room etc)	25 degree cen
11	Relative Humidity	69%
12	Wind velocity (Indicative)	10.8 miles / hour (average)
13	Annual rainfall (Indicative)	76.3 Cm
14	Maximum rainfall in 24 hours (Indicative)	18.4 Cm in month of July
15	Seismic Zone	Zone - III
16	Altitude	560 meter above sea level

1) Area Classification

- Hazardous area classification : Zone 1 Gas Group IIA IIB T3/T4/T6
- Ingress protection to NEMA 4X or equivalent
- Intrinsically Safe (IS) certification is preferred, and shall be used wherever possible for all analogue devices

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- d) Explosion Proof (Exd) certification shall be used wherever possible for all electrical and electronic equipments used in hazardous area.
- e) Certifying authority : UL/FM/ATEX /BASSEFA/CENLEC and PESO / CCOE

2) Layout plan and facility details mappings:

- a) The layout plan along with facility details mappings attached with this tender is only indicative and may change during actual execution of the job. No additional payment on this account shall be made except for additional cables, JB's and cable trays.
- b) In case the vendor has installed and laid the cables prior to intimation by IOCL, IOCL shall not paid extra for the re-work done.

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IOCL SCOPE OF WORK

1.0 IOCL shall provide the following details (if available) to the successful vendor:

a. Drawings and documents

(a) Plan Layout

(b) Control room and any other room layout where CCTV work is to be performed.

(c) Cable trench, pedestal, bridge layout drawing

b. Indicative cable route diagram, positioning of CCTV camera.

c. Feeder for raw power 415 V +10% AC in Emergency panel at PMCC room for taking supply to UPS. Subsequent power distribution to CCTV equipments along with power distribution board shall be in the scope of the successful bidder.

d. Feeder for Supply of LED light for CCTV system is to be provided by IOCL however PDB for the same is in scope of vendor.

e. Air-conditioning system for Control room equipments with proper lighting arrangement.



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VENDOR'S SCOPE OF WORK

1.0 GENERAL

The scope of work to be read in conjunction with BOQ, special terms and conditions, specifications, statutory norms and relevant clauses of the tender document.

- 1.1 All the offered equipments and systems must have proven track record (PTR) of operating satisfactory in India and needs to be submitted if sought by IOCL.
- 1.2 The vendor shall be fully responsible for proper selection of equipments, design engineering, performance and successful operation of the complete system meeting the Functional & Technical requirements of the tender document.
- 1.3 Data sheets indicate the minimum requirements of camera, video encoders, video management system, video recorders etc., however, this does not absolve the vendor of the responsibility for proper selection with respect to the following:
 - 1.3.1 Selection of lens focal length, camera, encoding techniques, selection of hardware and appropriate software for video management, selection of video recorder and its sizing to meet the storage requirements mentioned in the datasheets, accessories etc for proper monitoring and control.
 - 1.3.2 Selection of equipment suitable for the environmental conditions
 - 1.3.3 All the devices and equipments provided by vendor shall be suitable for 24x7 operations.
- 1.4 It is presumed that the Vendor being the domain expert in the field of CCTV Systems is capable enough to select the best equipments & can provide best of detailed Engineering in all respect in line with the contractual scope & specification. Hence, there is no need to submit datasheets/designs for approval. However, all the documents (viz datasheets / detail engg / SW logic / System configuration etc) in compliance with the Work Order need to be submitted to IOCL/TPI for information only unless IOCL comes out with specific recommendations /requirements under the purview of the contractual scope. A copy of submitted drawings can be acknowledged by the IOCL/TPI site representative. For finalization of drawings, detailed 3D models indicating proper co-ordinates to be submitted.
- 1.5 The operational requirements as specified in the tender might undergo revisions during detailed Design Engineering. The vendor must ensure that the offered system software has the capability and flexibility to take care of these.
- 1.6 Vendor will submit the deliverables requirement to IOCL well in advance during kick off meeting. IOCL will in turn ensure assigning desired responsibility matrix for facilitating the genuine requirements and execution of the project.
- 1.7 Vendor to carry out the detailed survey and submit the detailed mounting drawings, cable schedule, earthpits and indicative BOM well in advanced within one month from the date of placement of LOA, so that advance action (if required) with respect to deviation / re-Engineering can be taken.

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- 1.8 Vendor to propose and submit the complete cable route diagram along with structural support, interspacing of the pedestals, earthing of cable trays and other details prior to physical execution of the cabling works at site.
- 1.9 Vendor has to necessary buy back existing CCTV cameras along with accessories at resale price as fixed by IOCL. The cost of decommissioning, dismantling and shifting of old CCTV equipments shall be borne by the vendor and no separate payment for the same shall be made.
- 1.10 **Structural Steel (Mild Steel) required for mounting of equipments, JB's etc are included in the item rate of individual equipment and no separate payment for the same shall be made.**
- 1.11 **All Steel structure needs to be painted after surface preparation including shot blasting, primer etc as per IOCL Standard i.e :**
Surface Preparation - Blast clean to SA 2½,
Painting: One coat of P1 (70-80 Micron) + One coat of U1 (120 Micron) + Two coats of F1 (40-45 micron each)
Total thickness of Paint: 275 micro metres
- 1.12 The cost of painting is included in the structure cost and no separate payment for the same shall be made
- 1.13 All special tools & test equipments, spares, consumables required for installation, testing, calibration and commissioning of the system is to be arranged by the vendor.
- 1.14 All materials including DG Sets, switchgears, cables, lighting towers and fixtures, structural steel, consumables, testing appliances, tools and tackles necessary for completing the work shall be procured/ arranged & supplied by the Contractor at his own cost unless otherwise specified in the tender document. No claim/ delay on this account will be entertained by the Corporation.
- 1.15 All commissioning and start-up spares required up to commissioning, system acceptance and handing over of the system to the owner shall be in the vendor's scope.
- 1.16 Packing, forwarding, transportation, custom clearance, insurance, storage etc. of the CCTV system/equipments.
- 1.17 Completion of As-built drawings/documents as per the execution of work at site and submission to IOCL before handing over of the complete system to IOCL.
- 1.18 Maintenance of all the CCTV equipments, hardware & software as supplied by the vendor shall be in the scope of the vendor throughout the commissioning including warranty and CAMC period.

2.0 CCTV SURVEILLANCE SYSTEM

- 2.1 Supply, installation, testing and commissioning of CCTV System comprising of cameras, redundant servers, client workstations, storage devices (NAS/SAN), networking components, Display monitors, poles, LED flood lights, VMS and analytic software etc as detailed in tender document and BOQ.
- 2.2 The CCTV system shall be interfaced with TAS for critical inputs from TAS like ESD, product Tank HiHi and HiHiHi alarms etc. On receipt of such alarms from TAS, CCTV system shall position the respective PTZ cameras to pre-defined positions.

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- 2.3 **CCTV software shall have the capability to read the TT number using Automatic number-plate recognition (ANPR) technology that uses optical character recognition on images to read vehicle registration plate's and share the TT number with TAS system.**
- 2.4 Integration of CCTV system shall be possible over TCP IP/ MODBUS/open protocol with existing Terminal Automation System (TAS).CCTV system integration with TAS system feasibility to be demonstrated by CCTV vendor thru any third party tool.
- 2.5 Ladders if required for installation, maintenance, testing and commissioning of the system are to be arranged by the vendor.
- 2.6 The operator in the control room shall be able to get an indication of the faults occurring in any of the devices connected over the network. This includes faults occurring in the cameras, video encoders, computers, and video recorders. Faults occurring in each of these devices shall generate an alarm in the operator console.
- 2.7 The operator shall be able to view the chronology of events by device, date, time and description.The system shall support logging of events for reviewing and analysis in the future.
- 2.8 Supply, laying, glanding, ferruling and termination of power, OFC and CAT 6 cables, OFC components, media converters, LIUs, patch cords, pigtailed, connectors etc along with accessories like FLP JB's, Explosion proof housing for mounting of field components, glands, plugs, cable trays, HDPE pipes, mounting structure, civil and mechanical work etc for complete CCTV system.
- 2.9 The offered VMS software should be able to integrate all the make and models of the cameras as listed in 'Annexure-C' if applicable as per BOQ.

3.0 CONTROL ROOM EQUIPMENTS

- 3.1 Supply, installation, configuration, integration, testing and commissioning of control room equipments like CCTV Servers, CCTV client workstations, CCTV Display screens mounting panels, consoles, stands, structural supports, associated hardware and software complete as per Design Engineering, System Architecture, FDR, BOQ and tender document.
- 3.2 Supply, installation, integration, testing and commissioning of redundant UPS of suitable capacity for powering the entire CCTV System and its equipments. The offered UPS must have additional **30% spare capacity for future load connection. The scope also includes supply of Semi-Maintenance free Ni-Cd battery bank (2x50%) for ½ hour back up time** at rated load along with structural supports for mounting of the UPS and batteries complete as per specification and tender document.New redundant UPS of suitable capacity for powering the entire CCTV System and its equipments to be provided only if the existing UPS already installed at the location is not able to cater the upcoming IP Based CCTV Surveillance System. Detailed engineering on already installed UPS should have been carried out for integration of upcoming IP Based CCTV Surveillance System prior to floating of tender.
- 3.3 Supply and laying of power cable for UPS from MCC/PMCC room to Control Room. Individual Power cable shall be laid to each of the parallel redundant UPS through separate feeder provided by IOCL in MCC/PMCC room thru EPMCC.
- 3.4 Supply and installation of System cabinet/Panel (42 U) with 19" rack size, along with accessories like Biometric fingerprint cum contactless smart card reader with locking arrangement, earthing arrangements, limit switches, breaker, fuses, terminal blocks and wiring etc complete as per specification and tender document for mounting of CCTV Servers, Analytics Servers, NAS/SAN

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along with associated rack mounted monitors, keyboards, mouse, 4 port industrial grade KVM switches, power adapters, layer 3 Ethernet switch etc.

- 3.5 The rack enclosure can be opened only by authorized person and the details of the person who has opened the panel to be logged in the system. Biometric reader to be provided on front and rear side of door separately. Reader should have provision of connectivity over Modbus serial or TCP/IP. Magnetic locks should have the capability to provide door feedback thru software.
- 3.6 Supply, installation, integration, testing and commissioning of CCTV client PC with LED Display along with networking components, Furniture for client work station, networking rack, software, OS, antivirus etc complete as per specification and tender document at Terminal Manager's Room and security room.
- 3.7 Supply and installation of Multi Cable Transit (MCT) Blocks at the CCTV cable Entry point to control room, security room and Terminal manager room for proper sealing of the cable entry point. All works relating to the sizing, designing and installation of MCT Blocks is within the scope of the vendor.
- 3.8 Supply, installation, testing and commissioning of external / inbuilt lightening and surge protection devices as detailed in BOQ and tender document.
- 3.9 Arranging UPS power supply for CCTV equipment in TM room and security room is in scope of vendor.
- 3.10 Complete CCTV system time should be in synchronization with TAS system all the time.

4.0 Cabling and Earthing

- 4.1 Supply, laying, glanding, ferruling, termination of all types of FRLS cables (Signal, Power, Control, CAT 6, communication, OFC, UTP, earthing cables, GI Strips etc) along with associated hardwares like FLP Junction Boxes, certified Exd. double compression cable glands, PVC shrouds, Exd plugs for unused cable entries of JB's & instruments, FLP isolator switch, cable trays with covers, OFC components (like 12/24 port LIU, splice trays, loaded adaptor and blank plates, UTP and optical patch cords, pigtails, media converters etc), splicing, jointing, testing optical fiber cables, SS 316 engraved tag plate, mounting clamps & SS 316 fasteners, conduits, hume pipes, making trenches, pedestal for mounting cable tray, cable route makers, structure steel for making supports for mounting of cable trays, JB's etc, anchor fasteners, nuts, bolts, screws, foundation, Earthing bus bar, Al clamp for clamping of cables inside cable tray, connectors etc required complete as per specification and tender document for complete installation and commissioning of CCTV Surveillance System. The job also include supply, laying, glanding, ferruling and termination of power cable from nearest power JB to respective LED lights supplied and installed against current tender.
- 4.2 Complete CCTV system along with powercabling, JB's, Power Distribution panel, miscellaneous instrumentation comprising of suitable MCCBs, MCB, isolators, indication lamps, control wiring, voltmeters, ammeters, Terminal blocks, structural support etc with 20% spare power points to be made available for future use.
- 4.3 All the CCTV equipments, JB's etc supplied by the vendor are to be properly earthed as per OEM's recommendations and tender specification.
- 4.4 All earthing cables shall be of minimum 1C x 6 sqmm FRLS unarmoured copper cable (Green Colour).

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- 4.5 Supply, fabrication & erection of all the structural & other materials for installation of CCTV equipments.
- 4.6 Cable tray pedestal with structural support for cable tray, RCC trenches with structural support for cable tray, hume pipes, TLF Gantry & overhead pipeline/cable bridge without structural support for cable tray as shown in the cable layout drawing shall be provided by IOCL. Subsequent/ any additional requirement of cable pedestals, RCC trenches, hume pipes, etc as per site requirement shall be in the scope of the successful bidder and no separate payment for the same shall be made except for overhead cable bridge (if required to be constructed at road crossing or on driveway) shall be paid extra as per SOR line item.
- 4.7 Vendor to consider the supply and laying of entire cable trays with cover, structural support, trenches, HDPE pipe, required civil & mechanical work etc in the quoted price. No separate payment for the same shall be made.
- 4.8 The cable trench, pedestal, bridge layout drawing attached herewith are only indicative and may undergo some change during execution of the job.
- 4.9 Vendor to propose and submit the complete cable route diagram along with structural support, interspacing of the pedestals, earthing of cable trays and other details prior to physical execution of the cabling works at site.
- 4.10 Supply, installation, testing and commissioning of complete Earthing system for CCTV system as detailed in tender document.
- 4.11 All the earthpits are to be interconnected to existing earthing grid or separate earthing grid using GI Strips. Lightning and Surge protectors of required rating as per tender are to be provided wherever CCTV earthing grids are connected to existing earthing grid.
- 4.12 GI strip wherever laid must be atleast 500mm below ground level. The cost of excavation and back filling is included in the GI Strip laying and no separate payment for the same shall be made. At road crossing or wherever RCC/PCC has been encountered while laying of GI Strip / Cable, the cost of dismantling of RCC/PCC including making of RCC/PCC after laying of GI Strip / Cable is included in the SOR line item in RM. Vendor to ensure required depth is maintained.
- 4.13 Jointing of two GI Strips should be done by welding and not by bolting and the welded portion should be painted with zinc rich paint (EPI LUX-4) or black butimen paint to avoid rusting.
- 4.14 Vendor to measure the resistance of all earthpits installed and submit the test certificate. Resistance value and date to be painted on the earthpit cover plate.
- 4.15 Minor civil works like chipping / grouting of pavement for the instrument panels/supports stand, and chipping and refilling of the pavement for conduits.
- 4.16 Supply & installation of CCTV poles including required foundations for mounting of CCTV cameras. All the cameras are to be mounted on poles / wall using structural support as detailed in the tender document.
- 4.17 Vendor to note, for perimeter cameras, LED light of minimum 350 watts is to be provided along with CCTV camera on the same pole wherever required lux level of 7 lux is not available atleast 20m on either side of the boundary wall.
- 4.18 Wherever existing yard light poles / tower are available, vendor to use the same (if suitable) for mounting of CCTV cameras using proper structural support. The cost of structural support

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upto arm length of 0.5m is included in the cost of respective camera. For higher arm length, separate payment for the same shall be made as per SOR line item.

- 4.19 Telescopic / Safety Ladders required for installation, maintenance, testing and commissioning of the CCTV cameras installed/ to be installed on poles/ heights is to be arranged by the vendor throughout the execution and CAMC period and no separate payment for the same shall be made by IOCL.
- 4.20 Civil works associated grouting and fixing of equipment and entry/ exit of cables at the control equipment room, all masonry work associated with entry and ingress of equipment or cable inside the control room including making goods, painting and finishing, all masonry work associated with erection of cabinets, junction boxes, within the control rooms, security room & Terminal Manager's room etc.
- 4.21 Painting of all structural supports for trays, panels, junction boxes, instruments, ducts, supporting structural etc.

5.0 FACTORY ACCEPTANCE TEST: -

- 5.1 Factory acceptance test shall be carried out at Vendor's premises and the required setup for demonstration of the functional and technical requirements has to be arranged by the vendor at no cost to IOCL.
- 5.2 Vendor shall initially perform tests at his works to ensure that all components are in accordance with tender specification and functional requirements.
- 5.3 All equipments and sub-systems shall undergo minimum of 72 hours burn in period prior to start of the test.
- 5.4 During testing period, if there is a malfunction, the test shall terminate and Vendor shall replace the failed component/ module.
- 5.5 Thereafter the test shall commence all over again. If even after this replacement, the any equipment fails to meet the requirements, vendor shall replace the same to meeting the requirements and the system shall get tested again.
- 5.6 If equipment fail during the test and is not made successfully operational within two hours of active repair time after the failure, the test shall be suspended and restarted all over again only after the Vendor has replaced the device into the acceptable operation.
- 5.7 A test report shall be submitted to the purchaser for review within two weeks of completion of tests by the vendor.
- 5.8 Once all the tests are successfully carried out by the vendor upto their satisfaction level and in line with tender requirement, vendor shall give FAT call to IOCL along with FAT procedure and test result against each of the parameters of the FAT procedure.
- 5.9 On receipt of call and test result, IOCL representatives shall attend the FAT.
- 5.10 During Factory Acceptance Test, vendor shall test and demonstrate the functional integrity of the offered system hardware and software to IOCL. No FAT material or equipment shall be transported until all required tests are successfully completed and certified ready for Shipment by IOCL.
- 5.11 IOCL reserves the right to be involved and satisfy himself at each and every stage of inspection. IOCL shall be free to request any specific test on any equipment considered necessary by him

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although not listed in this specification. The cost of performing all tests shall be borne by the Vendor.

- 5.12 Vendor shall note that acceptance of any equipment or the exemption of inspection or testing shall in no way absolve the Vendor of the responsibility for delivering the equipment meeting all the requirements specified in the Tender.
- 5.13 It shall be Vendor's responsibility to modify and/or replace any hardware and modify the software, if the specified functions are not completely achieved satisfactorily during testing and factory acceptance or in field during actual operation / functioning.
- 5.14 Vendor shall submit the following test certificate and test reports for purchaser's review:
- Performance test certificate
 - Minimum light intensity testing
 - Certificate from Statutory Body for flame proof and weather proof enclosure
 - Witness Inspection

6.0 FAT SETUP & TEST GUIDELINES:

- 6.1 The FAT setup shall consist of following hardware as minimum to demonstrate the complete functionality of the offered system as per tender requirements:

Sl No	Hardware/ Equipment's Description	Min. Qty (As applicable)
1	HD IP FIXED DOME CAMERA	1
2	IP FIXED BULLET CAMERAS-4K	1
3	EXPLOSION PROOF HD IP FIXED CAM	1
4	IP FIXED BOX CAMERAS (4K)	1
5	BOX CAMERA (2 MP)	1
6	HD IP PTZ CAMERA (2MP)	1
7	Fixed Ultra High Definition Panoramic 360 deg camera (4K)	1
8	HD IP Explosion Proof PTZ Camera (2MP)	1
9	Layer 3 LAN Switches	2
10	Layer 2 LAN Switches	2
11	CCTV Client work station	1
12	Redundant Server	1
13	Storage	1
14	LED TV	One each size

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6.2 Factory acceptance tests shall be carried out as per FAT procedure submitted by the vendor. However IOCL shall have rights to ask the vendor to demonstrate any other tests not mentioned in the FAT procedure but are covered in tendered scope of work.

6.3 The FAT procedure shall cover following tests as minimum.

SL no	Area	Tests
1	Hardware checks	Check the complete setup of the FAT, including offered hardware and software are as per tender specification and requirements.
2	Visual Check	Physical checking
3	Power ON/ System login checks	Verification of power up and login procedure (including different level password and user ID verification).
4	Camera function checks	PTZ function, sensitivity, image setting, Video recording, etc.
5	Video Management Software and analytics	Multiple camera display, Intrusion detection, Analytics, Alarm recording etc.
6	Storage capacity	To be physically verified against requirement as per calculation
7	RAID configuration	RAID functionality to be demonstrated
8	Redundancy checks	Redundancy checks L-3 switches & server etc.
11	System Restart after power failure	Simulation of power failure and system restart self-booting up of system configuration and program after power restoration
12	Alarms and Event Logs	Check for generation of alarms and event log report

6.4 Any deficiency / problem identified during testing or any changes required in data/ configuration etc shall be clearly brought out during FAT and the same have to be incorporated/ corrected by the vendor.

7.0 Training & Documentation:

7.1 The vendor shall undertake to train officers / staff nominated by the Corporation as per clause of Refer to SPECIAL TERMS AND CONDITIONS OF CONTRACT

7.2 Documentation to be submitted shall include but not be limited to:-

Sr. No.	Description
1.0	GENERAL
1.1	Project & Service team along with escalation matrix
2.0	ENGINEERING DOCUMENTS
2.1	Functional Design Specification
2.2	System Architecture ,GAD and other drawings
2.3	Detailed list of components
2.4	Datasheet and catalogues of equipment offered

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Sr. No.	Description
2.5	Bandwidth and storage calculation vis-à-vis supply vs requirement
2.6	Bill of Material
2.7	FAT Procedure
3.0	As Built Drawings
3.1	Electrical power supply distribution Diagram, Distribution diagram for UPS power supply System
3.2	System drawings
3.3	Loop diagram for CCTV
3.4	Wiring diagram
3.5	Cable route, cable schedule, cable termination schedules for power, signal , LAN, FO cable, Junction box details & cable trays
3.6	Interconnection diagram
3.7	Earthing System & scheme
3.8	General installation of all the equipment's along with dimensions to be provided.
4.0	SPARE PARTS
4.1	Commissioning spares
4.2	Comprehensive AMC spares
5.0	INSPECTION AND TEST CERTIFICATES
5.1	Quality Assurance Plan
5.2	Material test reports and certificates along with weatherproof and explosive license of equipments wherever applicable
5.3	Vendor's guarantee /warranty
5.5	Software Licensee
5.6	FAT and SAT report
5.7	Training on system operation and maintenance for IOCL's staff at the site to be provided
6.0	MANUALS (BOTH FOR VENDOR'S & SUB –VENDORS SUPPLY)
6.1	Installation, Operation & Maintenance manual for hardware & Software
6.2	All the Software along with OS and driver to be submitted with license
6.3	All configurations back up, integration/mapping details if any to be submitted
6.4	Software installation along with configuration manual to be provided to site specific.
6.5	Password details if any
6.6	CCTV vendor shall provide two sets of Hard copy of documents along with soft copy in a hard Disk/Pen drive

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8.0 SITE ACCEPTANCE TEST: TEST RUN / TRIAL RUN: **Refer to SPECIAL TERMS AND CONDITIONS OF CONTRACT**

9.0 OTHERS

Any other work not specifically mentioned above but is included in the BOQ/ Tender document and facility for the same is available at site, the same also need to be covered in the scope of work of the vendor.

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FUNCTION SPECIFICATION AND SOFTWARE TESTING

This specification defines the minimum requirements of CCTV System designed for reliable, effective and optimum control & monitoring of a Petroleum Marketing Terminal / Terminal Operations.

1.0 GENERAL

- 1.1 The CCTV system software shall be governed by the operating system running in a real time mode and shall be able to meet all functional requirements as specified minimum.
- 1.2 The system shall have an extensive set of self-diagnostic routines, which shall locate and identify the system failure at least up to module level including redundant components. Failure of a module in a sub-system shall appear on the Operator Consoles irrespective of the display selected.

2.0 SYSTEM EXPANDABILITY

- 2.1 The system design shall permit the on-line addition of new devices with no disruption to either the operation of existing devices or system communications for future expansion. The offered software should have in-built capability / provision to take care for future expansion.

3.0 UPGRADABILITY

- 3.1 The system architecture shall provide a logical planned implementation of evolving technologies and provision for up-gradation of existing equipment.

4.0 NETWORK REQUIREMENTS

- 4.1 The system communication shall be on the high-speed modern local area network (LAN) conforming to IEEE 802.3, token ring topology IEEE 802.5/ FDDI (Fiber distributed data interface), ANSI & ISO standards and the same is also conforming to OSI functional layer and utilize industry standard protocols with 100 MBPS speed and physical connection utilizing 100 base2, 100 base 5, 100 base FO design. FO design preferred as the speed is high upto gigabits, bandwidth is high, and resistant to electromagnetic noise is high.
- 4.2 To ensure maximum reliability, communications shall be dual redundant. The communications system shall be capable of sustaining loss of one media channel without loss of data or performance degradation.
- 4.3 Managed Ethernet Switches 100 MBPS port should be used for establishing LAN inter-connectivity in dual redundant configuration. All the cabling within Ethernet network should have 100% redundancy or better.
- 4.4 30 % spare ports are to be provided on each of the Ethernet Switches.
- 4.5 Type of communication cable to be used for dual LAN system
 - (a) Inside control room/security room/terminal manager room: STP / UTP
 - (b) Between Control room and security room: Fiber optic
 - (c) Between Control room and Terminal Manager Room: Fiber optic
- 4.6 Loss of communications shall not cause loss of control at the local subsystem.

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4.7 The communication software should employ a peer-to-peer / Master-Slave communications protocol between all sub-systems wherever applicable.

4.8 Loss of a subsystem or module shall not disrupt communications to other subsystems or result in performance degradation. Loss of a subsystem or module or module channel shall generate a diagnostic message to be displayed at the operator stations and logged; identifying location / type of fault.

5.0 SYSTEM ACCESS SECURITY:

5.1 The Operating system of client work station must be password protected. Minimum two different levels of user ids should exist – One of monitoring purpose (User) and other for configuration purpose (Administrator). The user id to be used for monitoring must not have administrative/configuration rights.

5.2 For accessing to VMS software, there should not be any mandatory requirement to login into the Windows/ operating System through administrative user id and password.

5.3 For individual user, separate VMS login to be created with administrative / configuration rights.

5.4 For VMS software login following level of security to be provided (Administrative level, Supervisory level and Operator level).

5.5 Validity checks shall be automatically performed by the system to ensure that control parameters entered by the operator are within the defined limits.

5.6 Access to all system functions shall be protected by a multi-level password system.

6.0 NETWORK SECURITY TOWARDS CYBER THREATS:

6.1 Following cyber –security measures to be implemented in CCTV network for securing to cyber threat from the external world.

- a. Restriction of access to CCTV network from any network (IOC or outside).
- b. Blocking of internet access directly from CCTV network through internet dongles.
- c. Availability of logs to determine the access of the CCTV network from outside network if any.
- d. All CCTV machine's USB port access to be blocked.

6.2 Switches and routers connecting to CCTV network need to follow the following security guidelines:

6.2.1 Any configuration change in switches must be done with the permission from Location in-charge/ competent authority.

6.2.2 Disable the unnecessary services like finger, http, identd, tcp-small-servers, udp-small-servers or any other service not required.

6.2.3 Unused interfaces must also be disabled.

6.2.4 Only the required services for required IP addresses should be permitted, rest of the traffic should be blocked through Access Control Lists (ACLs) during firewall configuration.

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- 6.2.5 Password must not be visible in configuration and must always be encrypted.
- 6.2.6 Configure banners for the switches
- 6.2.7 Network Time Protocol (NTP) configuration must be done in switches/routers.
- 6.2.8 Backup of configuration of router and switches needs to be taken by the location on regular basis (six monthly) and also whenever any configuration is changed.
- 6.2.9 A designated machine with controlled internet access through IOCL internet gateway identified at each location which would act as the interface between outside world and CCTV servers. Access allowed only to pre-defined users and only through Teamviewer/ Remote access software application. Auto-invoicing desktop PC at each location is to be used for this purpose.

7.0 CCTV SERVERS SECURITY :

In order to ensure the uptime of Servers following guidelines need to be followed:

- 7.1 Security features provided with CCTV systems should be enabled. This should be done with caution to ensure minimum downtime.
- 7.2 Any network services /daemons / ports not required should be stopped and disabled.
- 7.3 Remote access for vendors to CCTV systems to be strictly prohibited. Also any kind of pen drive / external disk should not be allowed to be used by vendor on CCTV systems. If any patch upgrade needs to be done, then the same can be downloaded from Corporate LAN from the OEM website, the software checked for viruses and then deployed on CCTV servers.
- 7.4 Any software upgrade / patch deployment should first be done on one server or preferably test server (in the OEM lab). After the successful deployment of patch/upgrade, the system should be under observation for few days; If no issues are observed, then only the patch should be deployed on all CCTV servers.
- 7.5 Detailed and comprehensive documentation must exist for installation of CCTV servers along with the original OS / Application software Images and installation keys.
- 7.6 Disaster Recovery Kit should exist containing all the necessary documents, software, configuration backups, keys, passwords for installation of CCTV server.
- 7.7 Minimum two different levels of user ids should exist – One of monitoring purpose and other for configuration purpose. The user ID used for monitoring purpose must not have administrative/configuration rights.
- 7.8 User ID and the password should never be same. The passwords should be complex consisting of minimum six alphanumeric characters in length and also allow use of special characters. The password shall be encrypted.
- 7.9 Audit trails must be enabled for the configuration changes and logging and the same should be reviewed on regular basis.
- 7.10 Approval must be taken from the required authority before making any configuration changes in CCTV servers.
- 7.11 No internet access to be allowed in CCTV servers.

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7.12 The logs and audit trails of the servers must be configured and stored for at least 2 years as per the Government Guidelines.

8.0 **The vendor shall be fully responsible for maintaining updated antivirus throughout warranty and CAMC period at no extra cost to Indian Oil Corporation Ltd.**

9.0 User ID & Password Authentication

9.1 The operator can login to the system by entering correct user ID and password. The User ID and password must be of minimum six (6) alpha-numeric characters in length and also allow use of special characters. The password shall be encrypted.

9.2 After a series of three (3) unsuccessful attempts to login, the operator shall be locked for a configurable period. The time-out period shall be set via system configuration displays. During operator station lockout, the other windows functions of the computer running the operator station software shall not be affected.

9.3 Each operator shall be assigned a password and a set of authorized areas / group.

9.4 The system shall provide a facility to allow all operators to change their password at any time.

9.5 All passwords stored in the system shall be encrypted. Administrator can define the user account validity. Provision for automatic timed out/ sign off from the operator station should be available.

9.6 System shall not allow to copy or paste passwords. The same has to be mandatorily typed.

10.0 Capability of the system for remote view of CCTV display from any system beyond CCTV network (viz, different network in Location or any other remote location with or without installation of client software over secured network). Successful bidder is required to demonstrate the said feature.

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TECHNICAL SPECIFICATION

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REDUNDANT UPS SPECIFICATIONS

1.0 Scope

- 1.1 The scope of this specification is to define technical requirements of design, manufacture, testing, packing and dispatch of static Uninterrupted Power Supply (UPS) System, which shall be installed in the Petroleum Storage Terminal Project of Indian Oil Corporation Ltd. (IOCL),

2.0 Codes and standards

- 2.1 The equipment shall comply with the requirements of latest revision of following standards issued by BIS (Bureau of Indian Standards) unless otherwise specified

Codes	Description
IS 5	Colors for ready mixed paints & enamels
IS 1248	Direct acting indication analogue electrical measuring (Part 1, 2, 4 and 9) instruments and their accessories
IS 2147	Degree of protection provided by enclosures for low voltage switchgear and control gear
IS 3700	Essential rating and characteristics of semi-conductor devices Part (1 to 11)
IS 3715	Letter symbols for semi-conducting devices (Part 1 to 4)
IS 4411	Code of designation of semi-conductor devices
IS 5001	Guide for preparation of drawings of semi-conductor devices Part (1 & 2) and integrated circuits
IS 5469	Code of practice for the use of semi-conductor junction devices Part (1 to 3)
IS 7204	Stabilised power supplies D.C. output Part (1 to 4)
IS 12021	Control transformers for switchgear and control gear for voltages not exceeding 1000V dc
IS 13314	Solid state inverters run from storage batteries
IS 13703	Low voltage fuses for voltage not exceeding Part (1 to 4) 1000V AC or 1500V DC
IS 13947	Specification for low voltage switchgear and control gear(Part-4 / Sec-1)
IS-1652	Lead Acid type Batteries with Plante positive plates
IS- 11171	Dry type transformers
IEEE-485	Battery Sizing
IEC 62040	Uninterruptible power system (All Parts)

- 2.2 In case of imported equipments, standards of the country of the origin shall be applicable if these standards are equivalent or stringent than the applicable Indian Standards.
- 2.3 The equipments shall conform to the provisions of the Indian Electricity Rules and other regulations in force in the country.
- 2.4 In case Indian Standards are not available, standards issued by IEC/ BS/ VDE/ IEEE / NEMA or equivalent agency shall be applicable.

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3.0 Operating Conditions

3.1 Design temperature for Electrical Equipments/Devices :Refer Site Data

3.2 Relative Humidity : max 95 % (non –condensing)

4.0 Design and Operational Requirements

4.1 General

4.1.1 The UPS system shall be an integrated system comprising several components of equipment with major items as listed below (Refer attached SLD)

- Static rectifiers (SCR based)
- Static Inverters (IGBT based)
- Storage battery (1.2 V NiCd Battery) with MS racks, (PVC lining stool or wooden stool)
- Battery bank (2x50% for ½ hour back up time at rated load)
- Static Switches (at Inverter Output & Static Bypass line)
- Manual Bypass Switch 2 Nos, 1 for each UPS to avoid single point failure
- AC Distribution Board
- Servo Controlled voltage stabilizer in bypass
- Isolation Transformer: 3 nos: At input, built-in inverter at output & Bypass line before SCVS.
- Protection devices
- Lightning and Surge protection devices as input ends as per IEC 61643-11
- Interconnecting cabling between various units of UPS

Any other equipment/accessories required for completeness of the system whether specifically mentioned herein or not, but necessary for completeness and satisfactory performance of the system.

4.1.2 The UPS system shall be suitable to feed all loads connected to the output which are primarily instruments, PLC, DCS, computers, disc drives and other SMPS equipment leading to high crest factor of the load.

4.1.3 The inverter shall be transistorized (IGBT) type or with the latest proven technology. All components shall be a high quality and reliability that satisfy with the requirements of a secure AC power to vital equipment with respect to performance, controlling, monitoring and safeguarding function in continuously operating CCTV System. Components shall be capable of withstanding the thermal and dynamic stresses resulting from internal and external short circuits and switching surges etc.

4.1.4 The design of UPS shall be such as to minimize the risk of short circuits and shall ensure human and operational safety.

4.1.5 The UPS unit and its associated equipments shall be suitable for operating at the specified rating continuously with the specified voltage and frequency variations under the ambient conditions without exceeding the temperature more than 15 deg. C above ambient around PCBs inside the cubicle and without any detrimental effect on any part.

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- 4.1.6 The UPS system shall be based on latest generation of S-pulse width modulated (PWM) design with proven performance. IGBT based design is required.

4.2 Input power Supply

- 4.2.1 The UPS shall be suitable for input power supply as defined in data sheet. If not specified therein the UPS shall be suitable for the following input power supply.

Voltage 415V $\pm 10\%$ 3 Phase
Frequency 50Hz $\pm 5\%$

- 4.2.2 In addition to above variations, input voltage may be subject to transient variations comprising voltage dip to 80% of normal voltage during motor start-up and voltage interruption during short circuit as well as frequency variation due to large motor startup. UPS system shall be designed to operate satisfactorily while deriving the input power from an emergency diesel generator set.

- 4.2.3 UPS system shall also operate satisfactorily on input power supply having
- The ratio of negative to the positive sequence components not exceeding 5% and total harmonic disorder of not more than 5%.

- 4.2.4 The incoming power supply to the UPS will be provided by 3 nos. feeders as per SLD. Two feeders shall feed the rectifiers while one feeder shall supply power to stabilized bypass supply.

- 4.2.5 The manufacturer shall specify the current rating of the input feeder to UPS from client switchboard based on 150% overload at minimum battery voltage and including the UPS efficiency.

- 4.3 Configuration and operation requirements Parallel Redundant UPS scheme with bypass (with 2x50% batteries)

- 4.3.1 In UPS system having this configuration, two sets of rectifiers and inverters shall be provided. Under normal operating conditions, When AC mains power is available both the rectifiers shall operate in parallel and supply DC power for float/rapid charging of the batteries and simultaneously to inverters. In case failure of one rectifier, the other rectifier shall feed the complete load and the battery without any interruption.

In case of incoming supply failure or failure of both the rectifiers the batteries shall feed the inverters without any interruption. Each rectifier shall be designed for simultaneously feeding complete inverter load and float/rapid charging of the batteries to its rated capacity. Each rectifier shall be equipped with "On Line" automatic as well as manual charging facility.

Normally both inverters will be synchronised with each other and with bypass supply. Both inverters shall operate in parallel and share the load equally.

The load sharing controls shall not be subject to common mode failure and any failure of the load sharing controls shall not result in the loss of vital power.

When a disturbance/fault occurs in any one of the inverter, the faulty unit should get automatically disconnected and entire load shall be fed from the other inverter. In case both the inverters develop fault, the complete load shall be transferred to stabilized bypass supply through static switches and retransfer of load from the stabilized bypass supply to the inverter shall be possible in auto as well as in manual mode.

4.4 UPS Design and Performance Requirements

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- 4.4.1 Incoming AC supply shall be converted to DC through 3 phase full wave controlled rectifiers. The rectifiers shall operate according to the constant voltage current limiting principle and shall incorporate a "Soft Start" feature to gradually accept load on initial energizing.
- 4.4.2 The rectifier section of the UPS shall be capable of precise regulation to prevent damage to the battery. The output voltage of the rectifier's DC bus without the battery shall be stabilized to within +/- 1% of the set value during load variation between 0 to 100% of the rectifiers and specified mains input voltage variation.
- 4.4.3 Suitable protection shall be provided in the control circuits to guard against instability of phase controlled rectifiers due to electrical oscillations which may be present in the input supply as caused by emergency DG set.
- 4.4.4 The UPS system including the stabilized by-pass shall be galvanically isolated from the input power supply system by providing double wound transformers. All transformers shall be natural air cooled, dry type suitable for location inside the panel. All rectifiers shall also have a double wound transformer at its input.
- 4.4.5 An RFI filter shall be provided. The production of radio frequency interference voltage shall not exceed the value of suppression grade "N" as defined in VDE-0875. The performance of the UPS system shall not be affected or in any way degraded by use of portable radio transmitter receiver in the vicinity of the UPS system and or UPS room.
- 4.4.6 **Surge & Lightening Protection:**
- The UPS needs to be protected against lightning impulse current (10/ 350 μ s) and switching surges (8/20 μ s) as well. Device should have separate plug having Spark Gap & separate plug having MOV on a common base to get protection against lightning and switching surge. The device shall be able to handle continuous over voltage 350 V.
 - The Incomers (3 ϕ , 4 wires – 3 nos.) of the UPS in Main Control Room need to be installed with spark gap based Type1 + Type 2 or T1+T2 with separate N and PE (L1, L2, L3, PE, N) as per IEC 61643-11
 - The device shall be capable to discharge lightening current of 100 KA (10/350 μ s, lightning current) (25 KA L-N and 100 KA N-E) and transient surges of 12 KA (10/350 μ s, lightning current) between N-PE and 40 KA (8/20 μ s switching surges).
- 4.4.7 The UPS unit shall be suitable for 0.7 lagging to unity power factor. The overall power factor may be taken as 0.8 lagging unless indicated otherwise. The overall efficiency of the UPS system shall not be less than 80% at rated load and 0.8 pf.
- 4.4.8 The UPS shall be provided with automatic sequence and power walk circuit(s) with time delay of up to 15 sec. such that the rectifiers and inverters can start operating automatically when incoming AC power is restored allowing the UPS to be loaded automatically.

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- 4.4.9 Facility for initial charging of batteries shall also be provided at a voltage level recommended by the battery manufacturer. The inverter may be disconnected during initial charging of the battery.
- 4.4.10 Battery bank shall be 1.2 V NiCd Battery. Battery capacity shall be decided considering load power factor as 0.8 and as per IEEE 485, 1.25 ageing factor, 10% design margin and temperature compensation at 5°C. Each UPS shall be provided with dedicated Battery. Each Battery bank capacity in AH shall be adequate for ½ hour backup, specified load and site conditions. The end cell voltage after discharge shall be limited to 1.1 volt per cell
- 4.4.11 On failure of the main supply, inverter unit shall continue to supply rated load from the battery bank for ½ hour duration.
- 4.4.12 The rectifiers/chargers shall be designed to completely charge the Lead acid and Nickel cadmium batteries in a maximum time of 10 hours after complete discharge and at the same time meeting the inverter requirements when the inverter is delivering its rated output at 0.8 pf. Facilities shall be provided to initiate battery rapid charge operation by manual & automatic means. An auto charging sequence should be provided for the rapid and float charging based on current sensing. Battery charger for NiCd battery shall be sized to provide boost charging of the battery up to 90% of rated Ampere hours within duration of 24 hours and up to 100% within 4 days.
- 4.4.13 In addition to above, the charging shall be transferred from rapid to float mode after a preset time adjustable through 0-24 hours timer as back up protection against overcharging. Necessary alarms to indicate battery deep discharged and D.C. over-voltage conditions shall be provided. Selector switch shall be provided for selecting the float charge or boost charge mode. Facility shall be provided for boost charging of batteries either in auto or manual mode.
- 4.4.14 The rectifiers shall be sized based on the maximum inverter input load when inverter is delivering its rated output at 0.8 rated pf and recharge the battery to nominal rated capacity of the battery. The DC load imposed by the inverters shall be considered under the most severe operating conditions where only one rectifier is operating but the UPS load is equally shared by all the inverters. Each Rectifier should be 12-pulse (fully controlled)
- 4.4.15 The DC rectifiers shall sense the battery charging current and adjust the DC bus voltage to maintain the charging current to preset level. A separate current limit circuit shall also be provided for adjustment of battery current. The rectifiers shall be protected against reverse battery connection at DC link voltage bus. Subsequent to a discharge cycle when battery is connected to rectifier, the battery current shall be monitored, controlled and limited to set value automatically irrespective of the inverter input current.
- 4.4.16 The battery maybe taken out of service for maintenance, during which period it shall be possible for the inverter to continue operation by drawing power from the rectifier. Ripple content at the DC link shall not exceed 2% even with battery disconnected.
- 4.4.17 Battery/DC link shall be provided with sensitive earth leak detection.
- 4.4.18 Bidder shall provide the battery sizing (AH) calculation along with the bid for purchaser's review. The C10 capacity test certificate shall be submitted to the purchaser before dispatch to site.

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- 4.4.19 The UPS output voltage shall be sinusoidal with a relative harmonic content not exceeding 5% for both linear and non linear loads.
- 4.4.20 The inverter shall control the output voltage of the UPS such as to maintain synchronism with the mains bypass voltage during variations in mains frequency up to the limit specified. During variation in mains frequency exceeding these limits, the inverter shall revert to internal frequency control.
- 4.4.21 It shall be possible to vary the output voltage steplessly within + 5% of the specified output voltage. This adjustment shall be possible to be made when UPS is in operation
- 4.4.22 The inverter steady state output voltage and frequency (free running) variation shall not exceed $\pm 1\%$ for specified input power supply condition and no-load to full load condition.
- 4.4.23 UPS shall be designed for overload of 125% for 10 min. and 150% for 1 min. after which drooping characteristic shall come into operation. UPS shall be provided with current limiting circuit to avoid excessive loading beyond its permissible overload withstand capability.
- 4.4.24 Output frequency of the inverters must remain synchronized to one another which in turn shall be synchronized to the standby power supply frequency provided the latter does not vary by more than 50Hz $\pm 5\%$ in asymmetrical steps of $\pm 1.0\%$. It should be possible to change the setting of frequency range of synchronism between above limits by frequency selector switch. Outside these limits inverter should be desynchronize with the bypass and run at its own frequency. When running at its own frequency, frequency variation shall be maintained less than $\pm 1.0\%$.
- 4.4.25 Re synchronization with bypass power supply must take place automatically with some time delay when frequency comes back to $\pm 5\%$ ranges. Changeover from inverter to bypass shall be possible in desynchronized mode of operation. Change over time in both synchronized and desynchronized mode operation shall be indicated.
- 4.4.26 UPS system shall be suitable for both floating output and earthing of one leg in case of single-phase system / star-point in case of three-phase system
- 4.4.27 Output voltage shall be single phase 230VAC. The maximum waveform distortion of the output voltage shall not exceed 3% RMS for linear loads and 5% RMS for non-linear loads. The UPS unit shall be suitable for operation for non-linear loads having crest factor of 3.
- 4.4.28 Voltage dip / rise on sudden application / throw of 100% load or on changeover from inverter to bypass or vice versa shall not exceed 15% and shall be recovered within 20 msec. to 98% of the rated voltage
- 4.4.29 The stabilized bypass supply shall be designed to regulate the output voltage within $\pm 2\%$ of the rated voltage over complete range of load from no load to full load and for specified input supply voltage variation. Voltage stabilizer shall be Servo Controlled type (SCVS).
- 4.4.30 The stabilized bypass supply shall have a continuous current rating equivalent to the rated output of the UPS unit and be capable of conducting a current ten times the rated output for the duration more than the fault clearing time of the type of fuse provided. The load transfer devices

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shall comprise of continuously rated static elements in both inverter and stabilized bypass supply.

- 4.4.31 Adequately rated static switches in required number & configuration shall be provided in the inverter(s) output and stabilized bypass supply to ensure positive isolation of faulty inverter section such that the other inverter and bypass circuits do not feed into the fault leading to under voltage/ trip. The short time rating of all the static switches shall be at least 10 times the rated output for the duration more than the fault clearing time of the type of fuse provided.
- 4.4.32 Facility shall be provided to manually and automatically initiate transfer of the load from inverters to the stabilized bypass supply and from stabilized bypass supply to the inverters. Under voltage and overvoltage sensing levels to initiate transfer shall be adjustable. The maximum transfer time between inverters and bypass supply shall not exceed 4 msec and 20 msec in synchronous and asynchronous mode respectively.
- 4.4.33 All breakers shall be adequately rated for continuous rating as well as breaking capacity as applicable. Paralleling of breaker/switch/contractor poles to achieve the required current rating is not acceptable. All output isolating device shall be double pole type.
- 4.4.34 All electronic power devices including thyristors, transistors (IGBTs), diodes etc shall be rated under operating conditions for approximately 200% of the maximum current carried by the device. All other electrical components such as transformers, reactors, breakers, contractors, switches, bus bar etc shall be rated at least 125% of the maximum required rating. No electronic device shall be subjected to PIV greater than 50% of its rated value.
- 4.4.35 All the thyristors, power transistors, diodes and other electronic devices of the UPS shall be protected with high speed semiconductor fuses, which shall also take care of protecting these devices from excess heat.
- 4.4.36 The outgoing circuits of ACDB shall be protected by semiconductor fuses. Each inverter shall be designed to clear a fault in any of the branch circuits upto maximum rating of 25% of the system capacity without the assistance of the stabilized bypass supply. In case of any fault clearing time shall be less than 4 msec.
- 4.4.37 All PCBs shall be provided with a transparent epoxy coating for environmental protection and tropicalisation. They shall be suitably away from heat sources.
- 4.4.38 All electronic control and monitoring printed circuit cards shall be installed in standardized electronic equipment frames and shall be fitted with suitable means for easy removal. The frames shall incorporate guides for PCB's to facilitate correct insertion of PCB's and shall allow access to the wiring side of the connectors. All PCBs shall be placed in a manner to avoid replacement of a PCB by a wrong spare PCB. Monitoring points shall be provided on each of the PCB's and the PCB shall be firmly clamped in position so that vibration or long usage do not result in loose contacts. Failure of each PCB shall be indicated by visual alarms. Visual fault diagnostics shall preferably identify faults up to various sections in the card.
- 4.4.39 Forced ventilation of panel, if provided, shall be supplemented by 100% redundant fan. In normal operation, normal & redundant fans shall run together. The power supply for the fans

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shall be tapped from the inverter output. However, the rating of the UPS as specified in the data sheet shall be net of the output of UPS after deducting power consumption for fans etc. However in case of non operation of 50% of running fans, UPS output shall not be affected. The fans shall be arranged to facilitate removal of fan for maintenance without requiring system shutdown. All fans shall be equipped with monitoring facilities to provide an alarm in the event of fan failure.

- 4.4.40 Maximum noise level from the UPS system at 1 metre distance, under rated load with all normal cooling fans shall not exceed 75dBA.
- 4.4.41 Potential free contact, min 5 Nos. to be provided in addition to Ethernet port for remote monitoring.
- 4.4.42 The UPS shall be provided with fault diagnostic feeders. Each UPS systems shall be provided with input and output isolation transformer (Refer attached SLD) of adequate capacity having CMMR of 100db minimum with coupling capacitance of 0.01pf. All UPS systems shall be provided with a facility for online discharge of battery bank on load, without any risk to load

5.0 Constructional Details

- 5.1 The equipment shall preferably be supplied in enclosed, dust & vermin proof, floor mounted, sheet steel enclosure. In case, it is necessary to provide opening for ventilation, this should be closed by fine mesh. Minimum degree of protection for enclosure shall be IP-31 as per IS13997.
- 5.2 Enclosures shall be fabricated with cold rolled sheet annealed steel of minimum thickness 1.6 mm.
- 5.3 The door hinges shall be as per OEM standard.
- 5.4 All external hardware shall be cadmium / Zinc plated steel. Hardware for fixing the removable parts shall be provided with retaining devices.
- 5.5 UPS unit shall have panel for accommodating rectifier/charger, inverter and static switch shall be housed in single cabinet, static stabilizer, isolation transformer, bypass supply, and distribution boards shall be individually housed separately.
- 5.6 Power Distribution boards shall be of fixed type; floor mounted, single front execution in fully compartmentalized design and divided into distinct panels each comprising of bus-bar chambers, individual feeder modules and vertical cable alley. Bus bar shall be color coded and live parts shall be shrouded to ensure complete safety to personnel intending routine inspection by opening panel doors. It shall be possible to operate the switches without opening the doors. Vertical cable alley of minimum 200mm width with suitable supports shall be provided for the termination of outgoing cables. Suitable supports shall be provided for supporting incoming and outgoing cables. All outgoing switches shall be air insulated load break type. Fuses on outgoing feeders shall be fast acting semiconductor type and cable entry shall be from bottom. The gland plate of the distribution board shall be non-magnetic type where single core cables are used. Cable glands shall be of brass and single compression type and cable lugs shall be of tinned copper.
- 5.7 Biometric fingerprint cum smart card reader along with accessories (electromagnetic door locks for front & Rear doors etc) to be provided on the Power Distribution panel for restricting un-authorized opening of the panel.
- 5.8 Mounting height of components requiring operation and observations shall not be lower than 300 mm and higher than 1800 mm.

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- 5.9 Power cables shall have Aluminium conductor, XLPE insulation and FRLS PVC outer sheath and Control cables shall have copper conductor, XLPE insulation and FRLS PVC outer sheath. Control cables shall have minimum cross section of 1.5 sqmm.
- 5.10 All control wiring shall preferably be enclosed in plastic channels or otherwise neatly bunched together. Each wire shall be identified at both ends by PVC ferrules.
- 5.11 All solid state power devices shall be protected through current limiting fuses having micro switches for operation indication. All power and control switches shall be mounted on the door operable externally and shall be of rotary type. Space heaters with adjustable setting thermostat and 100W incandescent lamps with Edison screw shall be provided in each panel. Test plugs shall be provided for electronic circuits. All control circuits shall be protected by miniature circuit breakers.
- 5.12 A 25mm x 8 mm copper earth bus shall be provided at the bottom of the panels with provision for earth connection at both ends to the main earth grid. Suitable earthing of non-current carrying metallic parts of various equipment shall be done to ensure safety.
- 5.13 All metal parts shall be treated (Seven tank process) so as to ensure efficient anticorrosive protection. Hardware shall be zinc passivated or electro galvanized. Panel enclosure and structure supports shall be thoroughly cleaned and degreased to remove mill scale and rust etc.
- 5.14 Bidder shall provide indicating lamps for Normal and bypass supply, ON, OFF, TRIP. Acknowledge and reset buttons

6.0 Transformers and Chokes

All transformers and chokes shall be of dry type and air-cooled. This shall be class 'F' insulated, vacuum impregnated.

7.0 Electrolytic Capacitors

These may be polarized aluminum type 1, suitable for long life and category 1, as per IS-4317 or equivalent IEC. The capacitor shall preferably be self-healing type. These shall be so located in inverter panels that the operating temperature does not exceed 65 degree C maximum.

8.0 Instruments

Digital Multi function meter shall be provided for voltage, current, frequency, Power etc.

These shall be flush mounting type.

Separate Digital Multi function meter shall be provided for UPS and Auxilliary power supply.

9.0 Static Switches

Static switches shall be naturally commutated type with parallel inverse connected thyristors. These shall be rated for continuous duty for 100% load. Short time rated static switches are not acceptable.

10.0 Battery

Battery along with accessories shall conform to Engineering Standard ES-8142.

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11.0 Indication Lamps

All indication lamps (if applicable) shall be of LED type suitable for the specified control voltage, having minimum illumination of 40 milli candela.

12.0 Moulded case Circuit Breakers

For isolated devices of various equipment, moulded case circuit breakers shall be used. These shall be provided with overload and short circuit protective devices and shall conform to IS-2516.

13.0 Painting

The enclosures after suitable pre-treatment shall be painted with two coats of anti-corrosion paint followed by two coats of anticorrosive paint.

All paints shall be carefully selected to withstand tropical heat and extremes of weather. The paint shall not scale off, crinkle or be removed by abrasion due to normal handling.

Electrostatic power paint shall be preferred.

14.0 INSTRUMENTS, INDICATION AND ANNUNCIATION

14.1 An illuminated one line diagram indicating operational status shall be provided at front of the panel.

14.2 Following measuring instruments shall be provided on the system

Charger Panel

- AC Line Voltage (with a selector switch).
- AC Line current (with a selector switch)
- Charger output voltage (each).
- Battery Charging current.
- Battery current (charging/discharging current).

Inverter panel

- Bypass Voltage.
- UPS Output voltage
- UPS AC Output Current.
- Frequency Meter at each inverter output.

14.3 Following indications lamps shall be provided

All indicating lamp shall be LED type. LEDs provided for indication shall be cluster type with adequate brightness and minimum 2 nos. LED chips per light

Charger Panel

- AC mains ON (3 lamps).
- Battery - On float.
- Battery on boost.

Inverter Panel

- Battery Output on.
- Inverter - I feeding.

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- Inverter - II feeding.
- Bypass Supply ON.
- Load on bypass.
- Mains Synchronized/ frequency out of limit.

14.4 Audio - Visual alarm shall be provided for the following complete with "ACCEPT", "RESET" and "TEST" facilities.

Charger Panel

- Mains failure
- Battery Charger failure / SCR fuse failure
- Battery Low
- Inverter temperature high
- Low voltage from inverter
- Load on Bypass
- All power fuse failures
- DC earth fault/ DC over - Voltage
- Main under voltage
- Cooling fan tripped (Common for all fans)

Inverter Panel

- Inverter temperature high
- Low voltage from inverter
- Load on Bypass
- Inverter overloaded
- DC input failure/ under voltage.
- Inverter - I : Over voltage/ Under voltage.
- Inverter - II : Over voltage/ Under voltage

15.0 Remote communication with host system:

15.1 UPS shall have facility to remotely display below mentioned data:-

- a. Running Status / Load on inverter
- b. Load on bypass
- c. Incomer Fail alarm / Load on battery
- d. Over Load
- e. Battery Low
- f. Spike / Surge Voltage beyond range (if available)
- g. Output Frequency beyond range (if available)

16.0 Documents

16.1 Data/drawings after the order (3 copy each)

- a. Specification Sheet
- b. Technical Particulars/datasheet
- c. Block Diagram
- d. General Arrangement drawings and Foundation plan
- e. Calculation for Battery capacity Sizing
- f. C10 capacity test certificate

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- g. Feeder details for distribution boards
- h. Quality assurance plan (QAP) for purchaser's approval prior to dispatch at supplier's works and during commissioning at site
- i. Descriptive literature and catalogues
- j. Bill of Materials
- k. Schematic & Wiring Diagram
- l. Installation, operation and maintenance manual
- m. Spare parts list with identification
- n. Test Certificates and Test reports (not older than 5 years)
- o. Guarantee Certificates

17.0 Testing and Inspection(As per IEC 62040-3)

- 17.1 In addition to the standard tests carried out by the Vendor in accordance with IEEE and IS standards, the following operational tests shall be performed to indicate compliance with the specifications. The entire functional test as required in this specification shall be carried out. All the routine tests shall be carried out as per relevant Standards. Type test reports not more than five years old from date of purchaser shall be reviewed for acceptance. Otherwise tests shall be carried out by bidder without any implication to purchaser.

The UPS units shall be subjected to test as per relevant standards. The test shall include, but not limited to the following.

- a. Insulation tests
- b. Interconnection cable check
- c. AC input failure test.
- d. AC input return test.
- e. Simulation of parallel redundant UPS fault
- f. Transfer Test
- g. Regulation test
- h. UPS efficiency
- i. Current division in parallel UPS
- j. Light load test
- k. Continuous full load test at 0.8 pf with temperature rise measurement
- l. Auxiliary equipment and control circuit tests
- m. Synchronization test
- n. Over load capability test
- o. Short circuit fuse test
- p. Restart
- q. Output over voltage
- r. Dynamic response test
- s. Harmonic components
- t. Earth fault test
- u. Audible noise test

18.0 Brief Specification of Isolation transformer

- a. Power rating 230V AC
- b. Input voltage range $\pm 10\%$
- c. Voltage transformation ratio 11
- d. Load regulation 4% or less from no load to full load
- e. Frequency 50 Hz $\pm 5\%$

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- f. Insulation resistance 100 MΩ from winding to core measured at 500V dc
- g. Common mode rejection ratio Min 100 db
- h. Coupling capacitance 0.01 Pf
- i. Class of insulation Class F
- j. Construction as per IS 2026

Stage Inspection of the isolation transformer will be carried out at different phases of assembly and fabrication.

19.0 Conflict

19.1 In the event of conflict between this specification and other documents listed herein, the following order of priority shall govern-

- Design criteria, drawings and data sheet (whichever applicable)
- This specification
- General specifications
- Codes & Standards

20.0 Packing and Transportation

20.1 The offered UPS systems along with their accessories shall ship to site packed in wooden crates. They shall be wrapped with polythene sheets, before being placed in the crates to prevent damage to finish. Crates shall have skid bottom for handling. Crates shall be clearly indicating the top position of transportation and symbol of fragile, if applicable. Insurance amount for the entire system shall be included in the quotation by the bidder. Electrolyte is not allowed for transportation with battery.

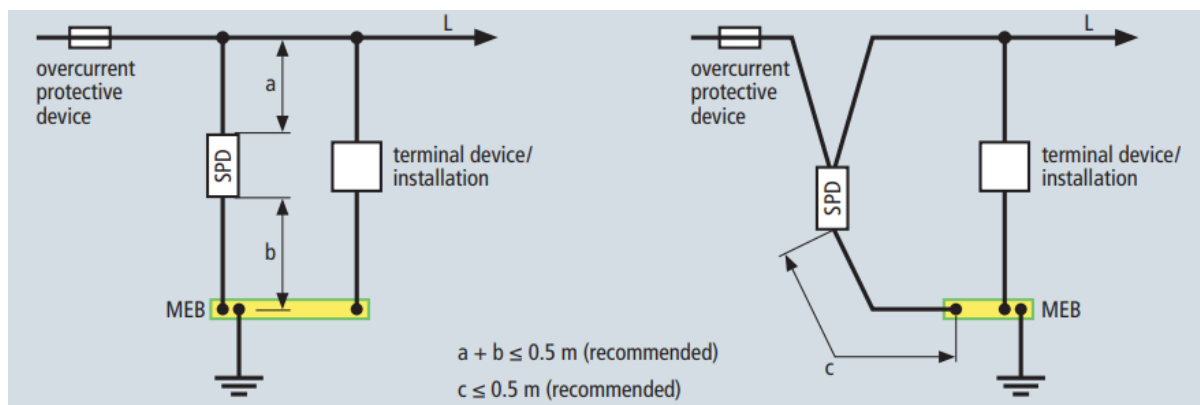
SURGE PROTECTION DEVICES

SPD to be provided in CCTV system as per guidelines. The following standards & publications as referred in the various parts of this specification shall apply:

- IEC 61643-11:2011/EN61643-11 (2012)
- IEC 61643-12
- IEC 60364-5-53
- IEC 62305-4

The SPDs shall have to be tested as per IEC 61643-11:2011.

Installation of SPD is very important aspect and due care to be taken in installation. Recommended maximum cable length of surge protective devices in the cable branch should be as per IEC 60364-5-53 standard.



To achieve the high system availability of SPD system provided by vendor, CCTV vendor has to carry out regularly inspection and maintain surge protection device system intact in accordance **IEC 62305-3 table-1**. Every year visual check is to be done and Comprehensive testing is to be done once in two years. Electrical testing is to be carried out on SPD during comprehensive testing and stimulate a real surge voltage to have an idea of functional efficiency of SPD. If efficiency is $\leq 50\%$ SPD needs to be replaced by vendor at no cost to IOCL. Test voltage is selected such that the SPD works, that is, becomes conductive. The measurement results are then compared to reference values. The test record with test results are needs be maintained.

Minimum technical specification for SPD system is as under:-

Type 1+2 SPD for UPS

The SPD should be installed close to the input of the UPS system.

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Sr. NO.	Description	Minimum Specification
1	Mounting	Wall / Panel / Backboard Mount
2	Outlets / Connectors	Electrical Outlets
3	Type Designation	Type 1+2 SPD; Metal encapsulated, spark gap based technology
4	Mode of Protection	SPD can be used in ten modes of protection: three L-N, three L-G, three L-L, and one N-G as per NEMA LS-1 section 2.13
5	Nominal Discharge Current (I_N)	(8/20) μ s between each L-N 25 KA & N-E 100 k
6	Short circuit withstand capability	Shall be more than 50 KA rms
7	Follow current extinguishing capability	L-N:-25 KArms; N-E:-100 KArms
8	Maximum Continuous over voltage (U_c)	N-E :- 255 V & L-N :- 264 V
9	Temporary Overvoltage (U_t)	Should withstand > 442 V for 120 min as per Test requirement of IEC 61643-11
10	Maximum Surge Current	The device shall be capable to discharge 100 KA (10/350 μ s, lightning current) (25 KA between each L-N and 100 KA between N-E)
11	Voltage Protection Rating (VPR)	Voltage protection level of device shall be \leq 1.5 KV
12	Operating Temperature	As per site Data
13	Applicable Standards	IEC 61643-2011/ EN 61643-11
14	Features	Visual Indicator Remote Alarm Contacts Pluggable
15	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
16	Ingress Protection	IP20

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**Page No.
193****Type 1+2 SPD for L-2 Switch**

Sr. NO.	Description	Minimum Specification
1	TVSS Signal Protection	Single phase with operating parameters of 230 V AC between L-N ;TT system
2	Mounting	Inside FLP JB
3	Outlets / Connectors	Electrical Outlets
4	Type Designation	Type 1+2 SPD; Metal encapsulated, spark gap based technology
5	Nominal Discharge Current (IN) (8/20μs)	Each L-N 25 KA and N-E 50 KA
6	Max. Discharge current (Imax) (8/20μs)	50 KA
7	Impulse current (Iimp) (10/350 μs)	50 KA, by pole(25 KA between each L-N and 50 KA between N-E)
8	Admissible short-circuit current	50 KA
9	Voltage Protection Rating (VPR)	≤ 1.5 KV
10	Maximum Continuous over voltage (Uc)	N-E :- 255 V & L-N :- 264 V
11	Temporary Overvoltage (Ut)	Should withstand > 442 V for 120 min as per Test requirement of IEC 61643-11
12	Operating Temperature	As per site Data
13	Applicable Standards	IEC 61643-11, EN 61643-11
14	Features	Visual Indicators Remote Alarm Contacts Pluggable
15	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
16	Ingress Protection	IP20

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Type 1 SPD (Isolation Spark Gap for indirect equipotential/bonding)

Sr. NO.	Description	Minimum Specification
1	Rated power frequency withstand voltage	250 V
2	Mounting	Between Two separate earth Pits.
3	Outlets / Connectors	Electrical Outlets
4	Type Designation	Type 1 SPD; Metal encapsulated, spark gap-based technology
5	Nominal Discharge Current (I_N) (8/20) μ s	100 kA
6	Impulse current (I_{imp}) (10/350) μ s	100 kA
8	Voltage Protection Rating (VPR)	Voltage protection level of device shall be ≤ 1.5 KV
9	Operating Temperature	As per site Data
10	Applicable Standards	IEC 62561-3 2012; EN 62561-3 2012.
11	Features	Visual Indicators / LEDs Remote Alarm Contacts Suitable for class H lightning current
12	Certification	KEMA or VDE (independent lab) as per IEC 61643-11-2011 or latest.
13	Ingress Protection	IP67

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Ethernet SPD for POE Camera Protection

Sr. NO.	Description	Minimum Specification
1	IEC test Classification	B2 C1 C2 C3 D1
2	Standards/Specification	IEC 61643-21//EN 61643-21
3	Discharge Current	The device shall be able to Total discharge current 10kA (8/20 μ s) switching current. Lightning Discharge Current 0.5 KA (10/350 μ s)
4	Compatibility	The Device Should be CAT 6 compatible.
5	Data Transmission Speed	The Device shall have transmission speed of 10 Gbps
6	Voltage Protection Level	The device shall have voltage protection level core to core must be less than 9 V and core to earth must be less than 900 V
7	Nominal Voltage	For CAT 6 POE+ application nominal voltage should be greater than 48 V.
8	Response Time	The desired response time is less than 1 nS.
9	Insertion loss	The device shall be suitable for communication upto 10 Gbps and the insertion loss should not be more than 3dB.
10	Approvals	EAC, UL Listed.

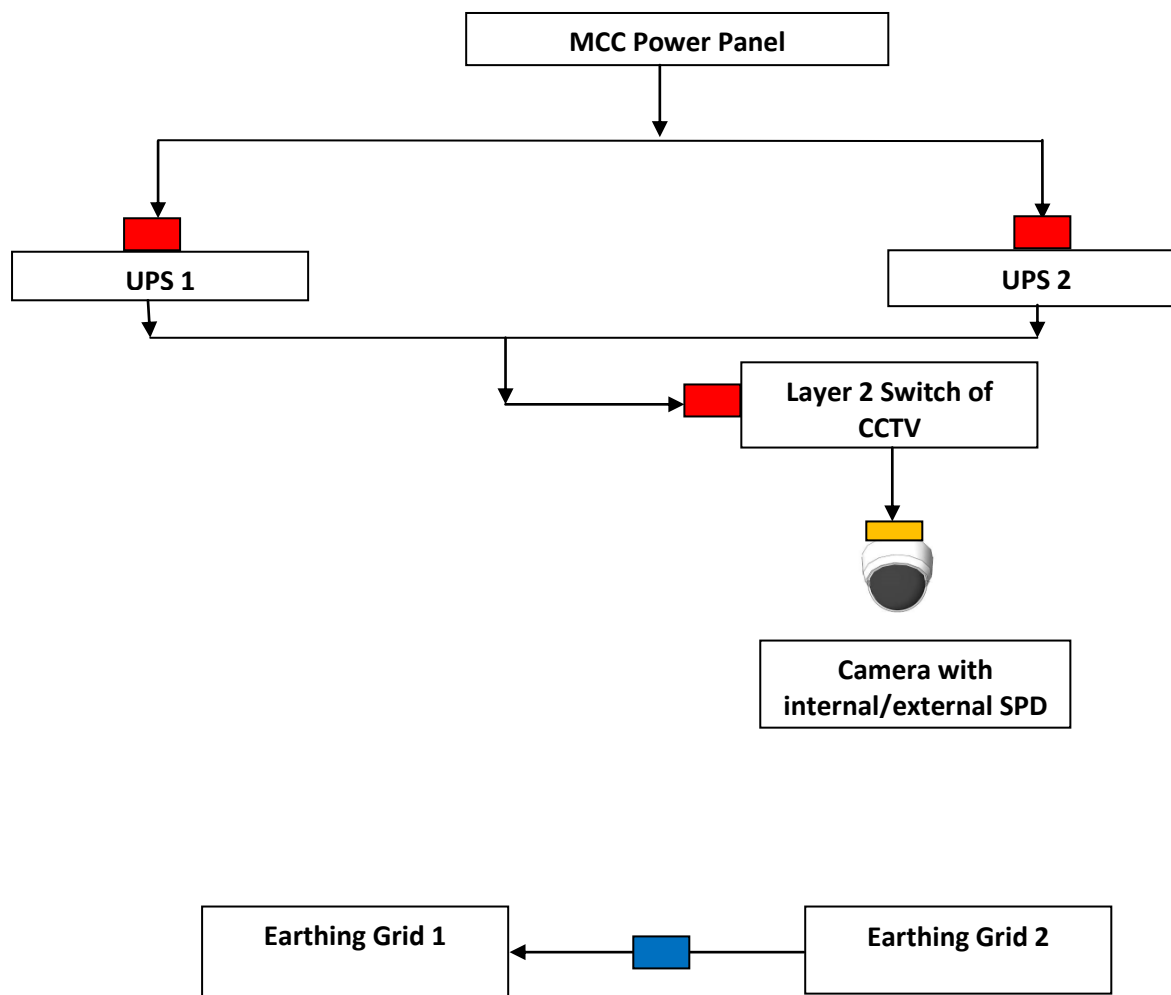
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Schematic drawing for positioning of different types of Lightning and Surge protection devices for CCTV System

Type 1+2 SPD

Type 1 SPD (isolation spark gap)

RJ 45 Type SPD





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CCTV SURVEILLANCE SYSTEM

1.0 GENERAL

- a. Bidder shall engineer, supply, install, test and commission the Closed circuit television (CCTV) Surveillance System at the Operating Locations. The purpose of the CCTV System is to monitor the facility operations & security surveillance from control room, security room & Terminal Manager's room to keep eye on facility covering gantry loading operation area of importance to the daily running of the terminal by installing cameras to monitor resulting to enhancement in the Operational & Safety needs.
- b. It is intended to install CCTV system to track the Material movement, Recognition of persons and objects including vehicles through high quality images in and outside the IOCL campus by Security. The recording of the scene can be used in investigation, recreating the scene and establishing the truth.

2.0 CCTV Requirements

- a. The requirement calls for a complete working system and not components thereof. Bids must be completed with all equipment and required accessories along with necessary power systems including standard Un-interrupted Power Supply units for the entire system & equipments, video connectors, patch connectors, patch leads, mounting and fitting hardware, plugs, sockets, and any hardware/software, supply of cables, network components, etc. as required for complete installation of the System under this contract.
- b. The proposed IP CCTV surveillance system must be of open architecture type and should be OPCDA compliant (Object Linking and Embedding for Process Control Data Access) protocol version 2.05 (or latest). Seam less interoperability for integration with TAS (Terminal Automation System) is mandatory. The above compliance is under the scope of Design, Supply, and Installation, Testing and Commissioning of the current Tender and no additional payment whatsoever shall be made by IOCL for the same. Bidders may consider and include the cost of the same as all inclusive while bidding the tender. However the integration is in scope of TAS vendor but it is mandatory on part of CCTV vendor to provide necessary protocols, technical support & also positioning of technical experts during actual time of integration at no additional cost to IOCL.
- c. The CCTV system shall consist of outdoor weatherproof high speed day night dome cameras with integrated pan-tilt-zoom, fixed cameras, client workstation with colour LED monitors and control keyboard located in control room (CR), Terminal Manager's Office and Security Room. It shall be possible to prioritize the keyboards to allow the CR Operator to override Terminal Manager & the Security operator. The cameras shall have Day/Night operation facility and automatic switching from color to black & white mode during night.
- d. The CCTV Surveillance System shall include CCTV Cabinet with Network Recording Servers, External array of hard disks, Workstations with Displays Monitors, control keyboard, Fiber Optic cables, OFC components, CAT6 cable, patch cords, Networking components, FLP JB's, Software for operation, control, utility software for

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infrastructure management, like network & security management, Video Analytics Application Software, Remote Monitoring software with necessary accessories and fitting hardware, poles with mounting brackets etc complete as per design requirement.

- e. The system shall also support analogue cameras incorporating video encoders, industrial grade Ethernet switches for outdoor use.
- f. The CCTV System shall be based on a digital network solution that enables video, data and/or audio streaming over an IP network. The proposed system should capture, store and analyze Video images.
- g. The cameras shall be provided with ID date/time stamp generators & create a tamperproof records for post event analysis. System should facilitate multiple viewing of live and recorded images and controlling of all cameras by the authorized users present in the CCTV LAN.
- h. The selection weather proof or flameproof /Exd cameras shall be as per the hazardous area classification. The cameras shall be designed to withstand all weather conditions, including storm. The IP 66 or better rating and mounting details shall therefore taken into consideration. Other details shall be as per data sheets.
- i. Cameras locations shall be finalized based on site conditions like line of sight, maximum area coverage & no blind spot/area etc. IOCL shall confirm areas of terminal to be monitored during detail engineering. However tentative area of surveillance and type of cameras/light/poles to be considered shall be as follows

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SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
1	TLF	<ul style="list-style-type: none"> ✓ 1 no. of non-FLP PTZ Camera in front of each sheds to have a surveillance of the loading operations. Camera to be mounted on pole of suitable height to have a view of the front of the sheds. ✓ 2 nos. of Fixed FLP camera (with motorized zoom) inside each TLF shed at the top to have over view of activities on the loading platforms. It should be positioned such that all the bays are covered.
2	Tank Farm	<ul style="list-style-type: none"> ✓ 1-2 nos. of PTZ cameras per tank dyke depending upon the size & orientation of tank nozzles in the dyke, for effective surveillance. ✓ Cameras to be positioned so as to cover manifolds of all tanks in the dyke. ✓ Positioning of cameras to be such that adjacent dykes may also be covered with the same camera, if feasible.
3	Railway Siding - Unloading	<ul style="list-style-type: none"> ✓ For locations with 2 spur unloading gantry with headers in between the spurs <ul style="list-style-type: none"> • 2 nos. of varifocal box cameras at each end of the gantry/ siding. ✓ For locations with single spur unloading gantry <ul style="list-style-type: none"> • To be covered with 2 nos. of PTZ cameras through presets. Camera to be positioned on the side of the gantry.
4	Railway Siding - Loading	<ul style="list-style-type: none"> ✓ <u>In case of single spur siding</u> <ul style="list-style-type: none"> • 2 nos. of PTZ in order to cover full length of the gantry through presets. ✓ <u>In case of two spur siding</u> <ul style="list-style-type: none"> • 1 no. of PTZ camera on the side of each spur.
5	Product Pump House & Manifold	<p><u>For each Pump House (Including TW)</u></p> <ul style="list-style-type: none"> ✓ 1 no. of Fixed FLP bullet camera (with motorized zoom) inside Pump house shed - to be fixed at a place such that all the pumps are covered ✓ In case of large pump house or layered Pump House, more than 1 camera may be used as per design requirement. ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to be positioned such that complete manifold is covered.
6	Licensed Area	<ul style="list-style-type: none"> ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to cover both

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SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
	Entry / Exit Gate	<p>gates OR</p> <ul style="list-style-type: none"> ✓ 2 nos. of fixed bullet cameras (with motorized zoom)- 4K, one for each gate where both gates cannot be covered by single camera. ✓ Cameras to be fitted outside the Hazardous area. ✓ Camera should be fitted such that Number plate of the vehicle entering Plant is clearly captured.
7	Exchange Manifold – OMC / PLR	<ul style="list-style-type: none"> ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K
8	OWS	<ul style="list-style-type: none"> ✓ To be covered by other cameras.
9	Oil Jetty	<ul style="list-style-type: none"> ✓ 1 - 2 nos. of varifocal box cameras depending upon the jetty length to cover the complete Jetty and its manifold. In case 2 cameras are required to be provided, second can be a PTZ.
10	Control Room	<ul style="list-style-type: none"> ✓ 1 no. fixed dome camera (with motorized zoom) in the operating area. ✓ 1 no. of fixed dome camera (with motorized zoom) in the Panel room.
11	Fire Engine Pump House	<ul style="list-style-type: none"> ✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
12	PMCC	<ul style="list-style-type: none"> ✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) in panel area.
13	TT Parking Area	<ul style="list-style-type: none"> ✓ 1-2 nos. of PTZ to cover the complete parking area.
14	TT crew rest room	<ul style="list-style-type: none"> ✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) inside TT crew rest room to keep vigil on crew activities.
15	Main Entry/Exit gate	<ul style="list-style-type: none"> ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles before the main entry gate for effective surveillance of movement of vehicles outside on the public road parallel to main entry gate. ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles after/facing the main entry gate for effective surveillance of the movement of vehicles inside while entry/exit. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be provided at checking and frisking path. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be positioned at exit gate, in case the exit gate is far away from main gate.

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SN	Activity Area(POL/ AFS)	Type of IP Cameras/light/poles
17	Security Cabin	✓ 1 no. fixed dome/ bullet type camera (with motorized zoom)
18	Perimeter	<ul style="list-style-type: none"> ✓ Full perimeter of the location should be under CCTV surveillance. ✓ CCTV surveillance system using latest fixed 8MP (4k) or better box bullet type varifocal network cameras with provision for video analytics in weather proof housing to be provided. ✓ Inter distance between the cameras should be 65 meters positioned uni-directionally so as to meet the requirements of intrusion detection and intrusion alarms even in the event of malfunctioning of one camera in a row. ✓ In case the perimeter is not in straight line, having curves, turns, zigzag profile the distance may be decided based on the desired coverage of entire perimeter on either side. ✓ Orientation of the fixed camera on perimeter should be uni directional and not facing each other. ✓ Coverage of Cameras to be 20 m on each side of the Boundary wall. Cameras to be installed on specially designed poles of 8 meters height with cantilever of 3 meter for mounting of CCTV camera for erecting at a distance of 3 meter from inside the perimeter with proper CC/RCC platform for maintenance space and use of hydraulic telescopic ladder. ✓ In case the CCTV pole is falling in the vicinity of the hazardous area then the height of the pole should be fixed as per OISD distance norms for non FLP fittings/fixtures i.e. the zone 2 area shall extend 16 m horizontally from the source of hazard and 8m vertically from the ground. ✓ Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole design for mounting of CCTV camera shall also be used for mounting of LED lights of appropriate wattage capacity to ascertain the desired lux level throughout along the perimeter. ✓ Perimeter security system should have intrusion detection and automatic warning system through video analytics. ✓ In addition to fixed cameras, adequate sets of PTZ cameras in combination of one on auto and other in manual mode on the same pole for coverage of the same perimeter area to be provided to cover the entire perimeter for tracking the intruders movements on triggered by fixed camera on intrusion automatically as well as operating the manual one by security control supervisor 24x7. ✓ Audio alarm in Security Room, Control Room and location – incharge room to be provided for intrusion detection, and the audio alarm shall continue till the same has been acknowledged in the system.

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SN	Activity Area(LPG)	Type of IP Cameras/light/poles
1	TLF/TLD	<ul style="list-style-type: none"> ✓ 2 Nos. Non FLP 4K / FLP 2 MP Fixed Cameras (each covering 4 no. TLD bays) in front of each TLD sheds to have a surveillance of the loading / unloading operations. Camera to be mounted on pole of suitable height (preferably above 1.2 M) to have a view of the front side of the sheds.
2	Bulk Storage Area	<ul style="list-style-type: none"> ✓ 1-2 nos. of non FLP Full HD PTZ cameras depending upon the Bulk Storage Area, for effective surveillance. ✓ Cameras to be positioned so as to cover manifolds of all tanks. ✓ Positioning of cameras to be such that adjacent group of vesels may also be covered with the same camera, if feasible.
3	Railway Siding - Unloading	<p>For locations with 2 spur unloading gantry with headers in between the spurs</p> <ul style="list-style-type: none"> ✓ 2 nos. Non- FLP 4K / FLP 2 MP Varifocal box cameras at each end of the gantry. <p>For locations with single spur unloading gantry</p> <ul style="list-style-type: none"> ✓ 2 nos. Non- FLP 4K / FLP 2 MP Varifocal box cameras at each end of the gantry.
4	Railway Siding - Loading	<ul style="list-style-type: none"> ✓ <u>In case of single spur siding</u> <ul style="list-style-type: none"> • 2 nos. of non FLP PTZ in order to cover full length of the gantry through presets. ✓ <u>In case of two spur siding</u> <ul style="list-style-type: none"> • 1 no. non FLP full HD PTZ camera on the side of each spur.
5	Product Pump House & Manifold	<p><u>For each Pump House (Including TW)</u></p> <ul style="list-style-type: none"> ✓ 1 -2 no. Fixed FLP bullet camera (with motorized zoom)/ Single FLP Panaroniccamera inside Pump house shed - to be fixed at a place such that all the pumps are covered ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K / FLP 2 MP Fixed camera to be positioned such that complete manifold is covered.
6	Licensed Area Entry / Exit Gate	<ul style="list-style-type: none"> ✓ 1 no. of fixed bullet camera (with motorized zoom)- 4K to cover both gates OR ✓ 2 nos. of fixed bullet cameras (with motorized zoom)- 4K, one for each gate where both gates cannot be covered by single camera. ✓ Cameras to be fitted outside the Hazardous area.

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SN	Activity Area(LPG)	Type of IP Cameras/light/poles
		✓ Camera should be fitted such that Number plate of the vehicle entering Plant is clearly captured.
7	Exchange Manifold Pipeline Receipt	✓ 1 no. of Non FLP fixed bullet camera (with motorized zoom)- 4K / FLP 2 MP Camera with provision to provide parallel viewing signal to supplier, if required by supplier in future thru separate cabling.
9	Jetty	✓ 1 - 2 nos. of non FLP varifocal box cameras depending upon the jetty length to cover the complete Jetty and its manifold. In case 2 cameras are required to be provided, second can be a non FLP PTZ camera.
	S&D	✓ Not Required
10	Control Room	✓ 1 no. fixed dome camera (with motorized zoom) in the operating area. ✓ 1 no. of fixed dome camera (with motorized zoom) in the Panel room.
	Complete Location	✓ 1-2 nos. of non FLP PTZ cameras depending upon area of the locations, to be installed at height of 15-30 m to cover the complete location and adjoining area thru preset on continuous basis. ✓ Requirement shall be frozen based on the design.
11	Fire Engine Pump House	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
	DG Room	✓ Not Required
12	PMCC	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) in panel area.
	Air Compressor Room	✓ Not Required
	Admin Office	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) at the entrance
	Canteen	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)
	CarParking	✓ Not required
13	TT Parking Area	✓ 1-2 nos. 4k 360 Degree Panoromic camera, positioned at suitable height to cover the entire TT parking area.
14	TT crew rest room	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) inside TT crew rest room to keep vigil on crew activities.
	Store	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom)

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SN	Activity Area(LPG)	Type of IP Cameras/light/poles
	Scrap Yard	✓ 1 no. of fixed dome/ bullet camera (with motorized zoom) near De-shaping unit
15	Main Entry/Exit gate	<ul style="list-style-type: none"> ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles before the main entry gate for effective surveillance of movement of vehicles outside on the public road parallel to main entry gate. ✓ 2 nos. of fixed bullet type (with motorized zoom)- 4k cameras to be positioned at cross angles after/facing the main entry gate for effective surveillance of the movement of vehicles inside while entry/exit. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be provided at checking and frisking path. ✓ 1 no. of fixed bullet type (with motorized zoom)- 4k camera to be positioned at exit gate, in case the exit gate is far away from main gate.
17	Security Cabin	✓ 1 no. fixed dome camera
	Location In-charge's room	✓ 1 no. fixed dome camera
	Training Hall	✓ 1 no. fixed dome camera
	Truck Checking Platform at Gate 1/2	✓ 1 fixed FLP/ Non FLP dome camera suitable to view number of cylinders in stack trucks (empty/ loaded) and SRV / Top mounted appurtenances of bullet/ bulk trucks. Security shall view the dedicated monitor sitting inside the security cabin. Number of cameras will depend on number of Gates/ ramps where the TT/ST checking is done at Plant based on the layout.
18	Perimeter	<ul style="list-style-type: none"> ✓ Full perimeter of the location should be under CCTV surveillance. ✓ CCTV surveillance system using latest fixed 8MP (4k) or better box bullet type varifocal network cameras with provision for video analytics in weather proof housing to be provided. ✓ Inter distance between the cameras should be 65 meters positioned uni-directionally so as to meet the requirements of intrusion detection and intrusion alarms even in the event of malfunctioning of one camera in a row. ✓ In case the perimeter is not in straight line, having curves, turns, zigzag profile the distance may be decided based on the desired coverage of entire perimeter on either side. ✓ Orientation of the fixed camera on perimeter should be uni directional and not facing each other. ✓ Coverage of Cameras to be 20 m on each side of the Boundary wall. Cameras to be installed on specially designed poles of 8 meters height

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SN	Activity Area(LPG)	Type of IP Cameras/light/poles
		<p>with cantilever of 3 meter for mounting of CCTV camera for erecting at a distance of 3 meter from inside the perimeter with proper CC/RCC platform for maintenance space and use of hydraulic telescopic ladder.</p> <p>✓ In case the CCTV pole is falling in the vicinity of the hazardous area then the height of the pole should be fixed as per OISD distance norms for non FLP fittings/fixtures i.e. the zone 2 area shall extend 16 m horizontally from the source of hazard and 8m vertically from the ground.</p> <p>✓ Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole design for mounting of CCTV camera shall also be used for mounting of LED lights of appropriate wattage capacity to ascertain the desired lux level throughout along the perimeter.</p> <p>✓ Perimeter security system should have intrusion detection and automatic warning system through video analytics.</p> <p>✓ In addition to fixed cameras, adequate sets of PTZ cameras in combination of one on auto and other in manual mode on the same pole for coverage of the same perimeter area to be provided to cover the entire perimeter for tracking the intruders movements on triggered by fixed camera on intrusion automatically as well as operating the manual one by security control supervisor 24x7.</p> <p>✓ Audio alarm in Security Room, Control Room and location – incharge room to be provided for intrusion detection, and the audio alarm shall continue till the same has been acknowledged in the system.</p>

- Tentative location of the cameras at various areas within the Depot/ Terminal/LPG/AFS is listed above. Positioning of layer 2 Network switches is to be made such that maximum nos. of cameras at nearby locations depending upon port availability is connected to the switches in hybrid model.
- Zone identification of the perimeter cameras has to be done sequential for easy monitoring. Automatic intrusion warning shall be integrated with audio alert at all work stations i.e Control Room, Security room and location in-charge room.
- All Security Surveillance cameras & operational area cameras shall be connected with CCTV system on two separate OFC /CAT 6 backbones i.e. there shall be two separate Loop – one for security surveillance and other for operational area cameras. Based on the bandwidth requirement per camera, the no. of cameras per loop shall be finalized including consideration of 20% bandwidth for future addition of cameras by the vendor.
- Bandwidth calculation to be provided by the vendor for Network designed (available vs required) for following Network during engineering from OEM:-
 - Input sub-network – which includes cameras and servers.
 - Storage sub-network – which includes servers and storage device(s).
 - Output sub-network – which includes servers and client workstations.

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- e. The overall Video system shall be connected via a dedicated and secured LAN network and shall be built using fiber optic & CAT6 communication cables utilizing standard TCP/IP protocols.
- f. CCTV Server shall be installed at Control Room. System shall allow the storage of time-lapse and time stamped digital video images from all connected cameras. Video images shall be stored on a RAID-6 or better hard-drive array unit with full watermarking and guarantees against tampered images.
- g. A further RAID hard-drive unit shall be installed on the CCTV LAN network at Control Room so that a regular backup can be accomplished at pre-determined times. Provision shall be there to take backup of data, event etc over external portable storage device.
- h. The system storage should support continuous recording for all cameras at least for a period of 90 days at a resolution of 1080p @ 15 fps (for 2MP cameras), 2160p @ 15 fps (for 4k cameras) with H.265+/H.265/H.264/MPEG-4 compression format or better with video quality **High**. The system should automatically overwrite the previously recorded video when it exceeds 90 days without any human intervention. The system shall always have recorded video of last 90 days at any given point of time.
- i. The cameras should support dual streaming with two simultaneous programmable streams used one for viewing and other for recording. Viewing shall be at 25 fps (min) and recording at 15 fps at maximum resolution or as per direction of Engineer in-charge.
- j. The video output from the NVR/Server shall be viewed through a dedicated LED Monitor provided for the CCTV System. There should be DVD-R/W for memory back-up. A DVD library has to be maintained for taking the back up of recorded video. The recorded DVD can be played back in any location with the supported media player.
- k. All interfaces within CCTV shall be based on TCP/IP network protocol connectivity over the Intranet/LAN/WAN. The software shall facilitate viewing of live and recorded images and controlling all cameras for 24 hours a day and 7 days per week local and/or remote monitoring.
- l. The system shall be able to select any cameras to any monitors. However, the system administrator shall be able to control the viewing rights of individual users.
- m. CCTV Monitor Size (LED) to be provided as per below:-
 - a) In control room:-Windows for all cameras should be available of single screen of 300-400 cm².
 - b) In location incharge room:-viewing window size should be preferably be between 250-300 cm².
 - c) In security cabin:-viewing window size should be preferably be between 150-200 cm².
- n. System should provide inter-operability of hardware, OS, software, networking, printing, database connectivity, reporting, and communication protocols. System expansion should be possible through off-the-shelf available hardware. The system shall include a scalable architecture with hardware expansion capability to support the selection, monitoring and control of system devices possibly using simple user friendly GUI based maps, menus and left/right mouse click commands.
- o. The System's server and its operating system shall be from the off the shelf available servers and shall not be Proprietary Hardware.

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- p. The System shall ensure that the video once recorded, can't be altered, ensuring the audit trail is intact for evidential purposes.
- q. The System shall have facility of camera recording in real-time mode (25 FPS)/15/12.5/10 or lower FPS as well as in any desired combination and system shall allow recording resolution and frame rate for each camera be user programmable.
- r. All cameras are to be connected in hybrid of ring and star topology. For the perimeter boundary, all devices deemed necessary for implementing the Ring topology should be considered. The ring should start from control room and should return back to control room so that single point cable cut will not affect the system. Overall IOCL intends to have a hybrid network topology for its CCTV system.
- s. The System shall be designed such that any failure in the system shall not affect the normal operation of the entire integrated system, the remaining system components shall continue to operate with full functionality that is, no single – point of failure (SPOF).
- t. The System shall have facility to send auto e-mail / SMS facility on predefined address/ number in case of specific user defined Alarms generated in alarm Audit file/Events file.
- u. The System shall have original License copy of Operating System (OS), VMS and analytic softwares and shall have lifetime license in favour of IOCL.
- v. All software and firmware upgrades shall be free of charge. Vendor should upgrade the software, free of cost in case new versions are released during the warranty and CAMC period including Antivirus updation. Vendor should ensure backward compatibility with all the hardware and other software at least for one generation, even if new versions of software are released.
- w. Offer CCTV system should have the capability of reading the number plate of Vehicle entering in to the terminal without any alternation in number plate. These vehicle number needs to be shared with TAS system for future requirement. CCTV vendor have to supply the software without any additional cost if same is not part of VMS/Analytic software.

3.0 CCTV System Description

a. CCTV Equipment

- a) The CCTV central control equipment and video LAN server shall be installed in a standard cabinet located in the Control/Panel Room. This cabinet shall also house all the termination equipment required for the CCTV monitor and the interface equipment.
- b) At each location, video signals and camera control signals from each camera shall be routed directly onto a local Ethernet to a video unit via OFC/ CAT 6 backbone for video signals & data. All cameras on each location shall utilize this Ethernet. This video unit shall also control the zoom and alarm functions for each local camera. It shall also control the video compression rates for recording and for transmission of the video data onto the LAN network back to the central server at the Panel Room.
- c) All equipments in field and with in office building shall be powered through UPS. Complete cabling & cabling accessories are in the scope of bidder.

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- d) All the equipment offered shall be suitable for operation on (230V +/- 10%), 50 Hz +/- 5% single phase power supply. Power for all the equipment will be made available through UPS. If any equipment operates on any voltage other than the supply voltage and supply frequency, necessary conversion/correction device for supply shall be included in the respective item rates.
- e) UPS power distribution system shall be provided with suitable isolators for isolation of each equipment. The power distribution JB's shall be supplied and installed by the Bidder. Cabinets shall have one point connection for incoming UPS supply, with isolation in cabinet. Further distribution inside the cabinet, other power supply units like 24 VDC and to the field instruments related to the individual system shall be in Bidder's scope.
- f) UPS power distribution network shall be designed such that a single power fault in any sub distribution system shall not cause a trip of the entire system. The power distribution system shall contain the necessary isolation and auto switching and other measures to maintain the system integrity if one feeder fails or develops a ground fault.
- g) Surge protection devices shall be provided in input power distribution of UPS system. The system shall be internally protected against system errors and hardware damage resulting from electrical transient on power wiring, signal wiring.
- h) CCTV cabling/JBs should not be laid/fixed on the boundary and should be laid above ground for ease of maintenance, wherever there is a road crossover the cabling be done either through culvert or above ground crossover structure.
- i) All cables entries into the control room and Terminal manager room after laying and testing of all boxes of cables etc. to be sealed by installing Multi Cable Transit (MCT) Blocks. All works relating to the sizing, designing and installation of MCT Blocks is within the scope of the vendor.
- j) The scope is deemed to include all components, accessories and equipment required to implement a fully functional CCTV system regardless of whether they are explicitly mentioned or not.
- k) All the equipment of CCTV should be of reputed make & on open platform and the software should conform to ONVIF Profile S (Open Network Video Interface Forum) specification guaranteeing interoperability between network video products regardless of manufacturer which ensures exchange of live video, audio, metadata and control information and that they are automatically discovered and connected to network applications such as video management systems.
- l) Bidder shall provide a CCTV cabinet of standard size to house the control room equipment, Network Switches, Servers with Monitors, plug points etc. Bidder shall provide all the interfacing hardware and software necessary with this equipment to enable control room operators and maintenance personnel to monitor and control all cameras of the facility.
- m) The CCTV cameras with video analytics installed at perimeter, PTZ cameras installed at strategic locations, gate and access control and other installed at bay operating areas must be done with suitable hardware/software compatibility duly integrated to pass online information to the common command and control centre of the location.

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b. Mounting

- a) For fixed cameras for perimeter surveillance, poles of 10 m with cantilever arrangement of 3 m shall be provided. The LED lights to be provided at 8 m height at the end of cantilever. The fixed cameras to be installed at height of 6m of the same pole with cantilever of 3m.
- b) Fixed cameras in balance open areas to be mounted on 8 m pole.
- c) PTZ cameras to be installed on 10-15 m pole as per BOQ.
- d) The civil works shall also be part of the works involved and as per the descriptions under respective items of work. The scope includes supply and installation of required mounting arrangement / brackets/ stands, poles with required foundation & accessories etc complete in all respective.
- e) Design, Supply, installation of poles as per site requirement to cover the entire area of surveillance as envisaged / required from that particular camera. Actual height shall vary as per the site-specific requirement as proposed by IOCL. The pole and foundation should be designed for the wind and soil bearing capacity of site (self supporting type only). The design of pole must be through Govt. Engineering College / NIT / IIT Approved. The successful tenderer will submit the design for the super structure/ foundation, design calculation duly certified by structural consultant.
- f) CCTV Camera shall be mounted on pole with stand/wall mounted/ceiling mounted with suitable brackets including sun-shroud/canopy etc as per site requirement and direction of IOCL.

c. Earthing

- a) Each cabinet shall be provided with segregated earthing systems. Segregation shall be as follows :-
 - Electronic or Instrument earth - The instrument signal cable shields shall be connected to the instrument signal ground earth bar.
 - Electrical safety and cabinet steelwork earth - The safety-grounding from all doors, racks, gland plates, poles and other metallic devices shall be connected to safety earth bar.

d. Documentation

- a. Documentation to be submitted shall include but not be limited to schematic drawings of the CCTV system with all the components shown, data sheets and catalogues of equipment offered, and operation and maintenance manuals.
- b. Submission of following Drawings, data and Manuals
 - a) Detailed literature/ catalogues giving full particulars. Principle of operation, range and setting whether settings adjusting at site, colour, materials of equipment enclosures, degree of protection and mounting details for all types of equipment offered.
 - b) Detailed internal schematics and wiring diagram for

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- Control and viewing room setup
 - IP camera network
 - Cable layouts
 - Server set up
- c) Functional design specification explaining principle and operations of the complete CCTV surveillance system.
- d) Material test and inspection reports and certificates.
- e) Approved certificates obtained from competent authorities for use in hazardous atmospheres (wherever applicable).
- f) Certificate of weatherproof and explosive license of equipments wherever applicable.
- g) Training on system operation and maintenance for IOCL's staff at the site to be provided.
- c. **Testing and commissioning**
- a. Successful bidder shall submit the testing & commissioning format to IOCL for approval. Any amendment made by IOCL at any point of the contract shall be binding on the vendor.
- b. The testing and commissioning document has to cover the following minimum points.
- i. Format for Verification of QTY measurement as per BOQ.
 - ii. Format for checking Installation of Equipment location wise as per approved layout, cabling scheme etc.
 - iii. Format for Functional checking of System performance & software functional checks as per Tender document.
 - iv. Format for verification of
 - Video Frame @ 25 FPS/25 IPS.
 - Picture resolution during day and night for single camera individually and all cameras simultaneously.
 - Various camera settings
 - Video Loss alarm, Motion detection etc as per WO
 - On line and Off Line Video Storage
 - In case of VMS/Recording server fails, client will be able to see live, playback of the videos.
 - Camera shall support minimum 128GB SD memory card with Automatic Network replenishment feature

Note:

Prior to giving testing call to IOCL, Vendor needs to test the system in totality and satisfy itself of its functionality to meet IOCL requirement. System will be accepted to have been commissioned by IOCL on its satisfactory performance as brought out in special terms and conditions of the tender.

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Till the system is commissioned & handover to IOCL, vendor shall be the custodian of all the materials at site, and in case of any theft or damages of any equipment / system before the handing over for any reason whatsoever, vendor shall be solely responsible to replenish/repair/reconfigure the same in good condition to the entire satisfaction of the Corporation.

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212****TECHNICAL SPECIFICATIONS**

Specification for Server, NAS/SAN, OIC, Network components are minimum. Bidder to get the same vetted from the CCTV OEM for proper functionality prior to dispatch. In case any up gradation required making it compatible with the offered system, bidder needs to provide the upgraded hardware at no additional cost to IOCL.

HD IP PTZ CAMERA (2MP) - OUTDOOR APPLICATION

S. NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixel	1,920 x 1,080, ie Min. 2 MP (megapixel)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Minimum Illumination (Black and White)	Normal mode – 0.3 Lux Night mode – 0.01 Lux
6	White Balance	Automatic/ Manual
7	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, White Balance ,WDR ,BLC, Mirror, Flip, 3D NR
8	Shutter Speed	1/30, 1/100, 1/500, 1/1000, 1/10000, Auto
9	AGC	On(Low / Mid / High)/ Off
10	Day & Night	True Day & Night (Auto ICR / Color / B/W)
11	Signal to Noise ratio	More than 50dB
12	Noise Reduction	High / Low
13	Video Motion Detection	Minimum 3 areas
14	Privacy Zone	Up to 5 zones
15	Focal Length	4.3 mm ~129.0 mm or better, Motorized Zoom lens
16	Zoom Ratio	Min Optical zoom 30 X , Min 10X Digital
17	Automatic Lens Control	Auto focus, Auto Iris

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S. NO.	PARAMETER	MINIMUM REQUIREMENT
18	Auto Image Stabilization	Required (ON/OFF), selectable
19	Panning Range	Complete 360 degrees endless
20	Tilting Range	-90° to 90° with auto flip
21	Pan Speed	1 to 80 Deg/Sec
22	Tilting Speed	1 to 45 Deg/sec
23	No of presets	Min. 250 nos.
24	Television System	PAL
25	Wide Dynamic Range	Min 120 dB
26	Frame Rate	Minimum 25 FPS or better
27	ONVIF S profile compliance	Required
28	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR
29	SD Memory Card Feature	64 GB SDXC/SDHC/SD memory recording
30	Alarm Terminals	Minimum 1 input, 1 output
31	Image compression	H.265/ H.264 high profile, M-JPEG or better
32a	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
32b	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
33	Network IF	10Base-T / 100Base-TX, RJ-45 connector
34	Supported Protocol	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP, RTSP, SNMP, IGMP, HTTPS protocols
35	No. of Simultaneous Users	Up to 3 users
36	Weather protection, Outdoor Use	IP66 or better, Camera and housing should be of same

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S. NO.	PARAMETER	MINIMUM REQUIREMENT
		make and integrated at factory.
37	View Material	Vandalproof (IK-10)
38	Design & Operating Temperature	Refer Site Data
39	Operating Humidity	Up to 95%
40	Power Source	POE based (with or without POE injector)
41	Surge/Lightening Protection	Required (Internal/External) as per Note
42	Certifications	CE/FCC/UL or equivalent BIS
43	Security	Password Protected access, IP address filtering & user access log facility.

Tentative Locations- In front of TLF/ TW shed, Tank farm area, Covering entire locations and adjoining areas, Jetty etc, TT parking, Oil Jetty, Around perimeter for tracking of intruders.

Note: All PTZ cameras shall have inbuilt / Server based Video Analytics for Auto tracking feature for intruder based on alarm inputs.

Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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215****HD IP FIXED DOME CAMERA WITH IR AND MFZ LENS (2MP)**

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Lens	MFZ Lens 3.5-8 mm/3-9 mm/ 4.6-12 mm (Motorized Focus & zoom) or better, Min 10X Digital Zoom and 3 X Optical Zoom
6	Day & Night	T (Auto ICR / Color / B/W)
7	Min. Illumination	Day – 0.3lux Night – 0.05 lux 0 lux when IR LED ON
8	White Balance	Automatic/ Manual
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, White Balance, WDR, BLC, Mirror, Flip, 3D NR
10	AGC	On / Off
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection with included or excluded options
13	Wide Dynamic Range	Min 120 dB
14	Television System	PAL
15	Frame Rate	Minimum 25 FPS or better
16	ONVIF S profile compliance	Required
17	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
18	On-board storage	64 GB SDXC/SDHC/SD Memory recording
19	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Trigger	Motion detection, masking, external alarm, Video Tampering
21	Alarm Events	Upload to FTP, send email, local recording, snapshot, relay activation, upload to SD card
22	Video Compression	H.265/H.264 (Main Profile /High Profile) and M-JPEG or better
23a	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
23b	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
24	Ethernet	10 Base-T / 100 Base-TX, RJ-45 connector
26	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP, RTSP, SNMP, IGMP, HTTPS protocols
27	Users	Atleast 5 users
28	Weather protection	IP66 or better
29	View Material	Vandalproof (IK-10)
30	Design & Operating Temperature	Refer Site Data
31	Operating Humidity	Up to 95%
32	Power supply	POE based
35	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as per Note
36	Regulatory	CE/FCC/UL or equivalent BIS

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
37	Security	Authentication, IP Filter, User access log
38	IR Range	Min-25 Meter

Tentative locations- Control Room, FE pump house, PMCC, Security cabin, TT crew rest room.

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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218****INTEGRAL HD IP FIXED OUTDOOR BOX CAMERA (2MP)**

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Min Illumination	Day – 0.3 lux Night – 0.05 lux
6	White Balance	Automatic/ Manual
7	Backlight Compensation	ON/OFF
8	Colour, Brightness, Contrast	Functionality Required
9	High Light Compensation	Required
10	Electronic Shutter	1/30 to 1 / 8000 s or better
11	Automatic Gain Control	Auto / Manual
12	Day and Night functionality	Automatic, Color, Mono
13	Signal-to-Noise Ratio	More than 50dB
14	IRIS Control	DC or Automatic
15	Focus	Automatic / Manual
16	Varifocal Lens	9-42/9-50mm IR Corrected or better, Min 10X Digital Zoom and 10X Optical Zoom
17	Wide Dynamic Range	Min 120 dB
18	Television System	PAL
19	Frame Rate	25 FPS/ IPS for 1920 x 1080 at H.265/H.264 Compression or better
20	ONVIF S profile compliance	Required

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
21	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR
22	On-board storage	64 GB SDXC/SDHC/SD Memory recording
23	Alarm Terminals	Minimum 1 input, 1 output
24	Alarm Event	Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
25	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
26	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
27	Intelligent Video	Motion detection, Tampering Alert
28	Interface	10Base-T / 100Base-TX, RJ-45 connector
29	Network Protocols support	IPv6, TCP/IP, HTTP, , DHCP, UDP, S, SMTP, RTP, RTSP, SNMP protocols/Should meet all functional requirement of the project
30	Upgrade	Through web browser, online, firmware upgrade
31	Weather protection, Outdoor Use	IP66 or better; Camera and housing should be of same make and integrated at factory
32	Housing	Weather and dust resistance with an aesthetic appeal (Metallic). Camera and housing should be of same make and integrated at factory.
33	View Material/Housing	Vandalproof (IK-10)
34	Operating Humidity	Up to 95%
35	Power Source	POE based
36	Power Consumption	As per POE Standard
37	Surge/Lightening Protection	Required (Internal/External) Industrial grade as

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		per Note
38	Certifications	CE/FCC/UL or equivalent BIS
39	Security	Password Protection, HTTPS encryption, IEEE 802.1X
40	Sabotage detection	Required

Tentative locations: Railway Siding (Unloading), Oil Jetty

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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IP FIXED BULLET CAMERAS (8MP – 4K RESOLUTION) WITH MOTORISED ZOOM

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Image Sensor	1/1.7" or better type CCD/CMOS/MOS Sensor
2	Image Resolution	3,840 x 2,160 at 25/30 fps (8MP at 25/30 FPS or better)
3	Scanning System	Progressive scan
4	WDR	Min 120 dB
5	Lens	MFZ Lens 3.5-8 mm/ 4.6-12 mm/2.8-8.5 mm/ (Motorized Focus & zoom) or better, Min 10X Digital Zoom and minimum 2.2X Optical Zoom
6	Day & Night	True Day & Night with IR Cut Filter
7	Min. Illumination	Day –1.4 lux
		Night-0.3 lux
8A	White Balance	Automatic/ Manual
8B	Shutter Speed	1/3-1/30000sec, Auto
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, BLC, 3D NR
10	AGC	ON/OFF
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection
13	Television System	PAL
14	Frame Rate	25 Fps or better
15	ONVIF S profile compliance	Required
16	Bit Rate	Up to 12 Mbps or better continuously adjustment CBR/VBR
17	On-board storage	128 GB SDXC/SDHC/SD Memory recording

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
18	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Events	Alarm image transmission, FTP Periodic transmission
21	Video Compression	H.265/H.264 and M-JPEG or better
22	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
23	Streaming	Primary Stream at resolution (3840x2160) @ 25/30fps Secondary Stream at resolution 1080P @ 25/30fps Third stream shall be MJPEG. However the VMS Software should have the Capability to Record at the resolution of 4K UHD (16:9) @ 15 fps as well as Live Streaming at the resolution of 4K UHD (16:9) @ 25 fps simultaneously.
24	Ethernet	10Base-T / 100Base-TX, RJ45 connector
25	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP, RTSP, SNMP, IGMP, NTP, HTTPS protocols
26	Users	Min 10 users
27	Weather protection	IP 66 or better
28	View Material	Vandalproof (IK-10)
30	Operating Humidity	Up to 95%
31	Power supply	POE based
32	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as per Note
33	Regulatory	CE/FCC/UL or equivalent BIS
34	Security	Authentication, IP Filter, User access log

Tentative locations Product PH manifold, Entry/Exit Gates, Exchange pit Manifold

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Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.



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IP FIXED BOX CAMERAS (8MP – 4K RESOLUTION)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Image Sensor	1/1.7" or better type CCD/CMOS/MOS Sensor
2	Image Resolution	3,840 x 2,160 at 25/30 fps (8MP at 25/30 FPS or better)
3	Scanning System	Progressive scan
4	WDR	Min 120 dB
5	Lens	Varifocal Lens 3.5-8 mm/ 4.6-12mm/ 2.8-8.5 mm or better, Min 10X Digital Zoom and minimum 2.2X Optical Zoom
6	Day & Night	True Day & Night with IR Cut Filter
7	Min. Illumination	Day –1.4 lux
		Night-0.3 lux
8	White Balance	Automatic/ Manual
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure, BLC, 3D NR
10	AGC	ON/OFF
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection
13	Television System	PAL
14	Frame Rate	25 Fps or better
15	ONVIF S profile compliance	Required
16	Bit Rate	Up to 16 Mbps or better continuously adjustment CBR/VBR
17	On-board storage	128 GB SDXC/SDHC/SD Memory recording
18	Alarm Terminals	Minimum 1 input, 1 output

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
20	Alarm Events	Alarm image transmission, FTP Periodic transmission
21	Video Compression	H.265/H.264 and M-JPEG or better
22	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
23	Streaming	Primary Stream at resolution (3840x2160) @ 25/30fps Secondary Stream at resolution 1080P @ 25/30fps Third stream shall be MJPEG. However the VMS Software should have the Capability to Record at the resolution of 4K UHD (16:9) @ 15 fps as well as Live Streaming at the resolution of 4K UHD (16:9) @ 25 fps simultaneously.
24	Ethernet	10Base-T / 100Base-TX, RJ45 connector
25	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP, RTSP, SNMP, IGMP, NTP, HTTPS protocols
26	Users	Min 15 users
27	Weather protection	IP 66 or better
28	View Material	Vandalproof (IK-10)
31	Power supply	POE based
34	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as per Note
35	Regulatory	CE/FCC/UL or equivalent BIS
36	Security	Authentication, IP Filter, User access log

Tentative locations – Perimeter

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Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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227****INTEGRAL EXPLOSION PROOF HD IP FIXED CAMERAS (2MP) WITH MOTORIZED ZOOM**

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Min Illumination	Day – 0.3lux Night – 0.01 lux
6	Lens	MFZ Lens 3-9 mm/ 4.6-12 mm/4.3-129 mm/6.36-138 (Motorized Focus & zoom) or better, Min 10X Digital Zoom & 20X Optical Zoom
7	White Balance	Automatic/ Manual
8	Backlight Compensation	ON/OFF
9	Colour, Brightness, Contrast	Functionality Required
10	Electronic Shutter	1/25 to 1 / 8000 s or better
11	Automatic Gain Control	Auto / Manual
12	Day and Night functionality	Automatic, Color, Mono
13	Signal-to-Noise Ratio	More than 50dB
14	Digital Noise Reduction	ON/OFF
15	Automatic Lens Control	DC or Automatic Iris
16	Focus	Automatic / Manual
17	Wide Dynamic Range	Required
18	Television System	PAL
19	Frame Rate	25 FPS for 1920 x 1080 at H.265/H.264 Compression

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
20	ONVIF S profile compliance	Required
21	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR
22	Alarm Trigger	Intelligent video motion detection and external input
23	Motion Detection	4 zones
24	Alarm Event	Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
25	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
26	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
27	Interface	10Base-T / 100Base-TX, RJ-45 connector
28	Network Protocols support	IPv6, TCP/IP, HTTP, , DHCP, UDP, S, SMTP, RTP, RTSP, SNMP protocols/Should meet all functional requirement of the project
29	Weather protection, Outdoor Use	IP66 or better
30	Construction	Stainless steel 316
32	Operating Humidity	Up to 95%
34	Power Source	POE based or through external power supply
36	Mounting	Shall be on TLF structure/ stand/wall mounted/ceiling mounted with suitable brackets
37	Surge/Lightening Protection	Required (Internal/External) Industrial grade as per Note
38	Certifications	Exd IIC T4 and IP66, by IEC Ex/ATEX and PESO(CCOE) or equivalent BIS

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
39	Security	Password protection, IP address filtering, User access log
40	User	2 simultaneous users

Tentative locations: Inside TLF shed, Inside PH shed

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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FIXED ULTRA HIGH DEFINITION PANORAMIC 360 Deg CAMERA (4K)

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Image Sensor	1/2.8" or better type CCD/CMOS/MOS Sensor
2	Image Resolution	4K Megapixel or better
3	Scanning System	Progressive scan
4	WDR	Min 60 dB
5	Lens	1.6 mm or better
6	Day & Night	On/OFF/Automatic
7	Min. Illumination	Day –1.4 lux
		Night-0.3 lux
8	White Balance	Automatic/ Manual
9	Image setting	Brightness, Contrast, Saturation, Sharpness, Anti-flicker, Exposure
10	AGC	ON/OFF
11	Signal-to-Noise Ratio	More than 50dB
12	Motion Detection	4-zone video motion detection
13	Television System	PAL
14	Frame Rate	Minimum 25 FPS at 4K or better
15	ONVIF S profile compliance	Required for offered Make/Model
16	Bit Rate	64 Kbps – 10 Mbps or better continuously adjustment; CBR/VBR
17	On-board storage	64 GB SDXC/SDHC/SD Memory recording
18	Alarm Terminals	Minimum 1 input, 1 output
20	Alarm Events	Alarm image transmission, FTP Periodic transmission

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
21	Video Compression	H.265/H.264High profile and M-JPEG or better
22	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
23	Streaming	Primary Stream at resolution (3840x2160) @ 25/30fps Secondary Stream at resolution 1080P @ 25/30fps Third stream shall be MJPEG. However the VMS Software should have the Capability to Record at the resolution of 4K UHD (16:9) @ 15 fps as well as Live Streaming at the resolution of 4K UHD (16:9) @ 25 fps simultaneously. Simultaneously multi-profile streaming; Controllable frame rate and bandwidth; Constant and Variable bit rate
24	Ethernet	10Base-T / 100Base-TX, RJ45 connector
25	Support Protocols	Compatible with TCP/IP, HTTP, UDP, S, SMTP, RTP, RTSP, SNMP, IGMP,NTP,HTTPS protocols
26	Users	Min 15 users
27	Weather protection	IP 66 or better
28	View Material	Vandalproof (IK-10)
29	Power supply	POE based
30	Power Consumption	POE
31	Ambient Operating Temperature	As per site Data
32	Ambient Operating Humidity	As per site Data
33	Mounting	Shall be on Pole with Stand/ wall mounted/ ceiling mounted with suitable brackets including sun-shroud / canopy.
34	Surge/Lightening Protection	Required (Internal/External) Industrial Grade as per

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		Note
35	Regulatory	CE/FCC/UL or equivalent BIS
36	Security	Authentication, IP Filter, User access log

Tentative locations: TT Parking Area

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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233****INTEGRATED HD IP EXPLOSION PROOF PTZ CAMERA (2MP)**

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Pickup Device	1/3" or better type CCD/CMOS/MOS Sensor
2	Effective Pixels	1920*1080(2MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25 fps
5	Min Illumination	Day – 0.3lux Night – 0.01 lux
6	Lens	MFZ Lens 3-9 mm/ 4.6-12 mm/4.3-129 mm/6.36-138 (Motorized Focus & zoom) or better, Min 10X Digital Zoom & 20X Optical Zoom
7	White Balance	Automatic/ Manual
8	Backlight Compensation	ON/OFF
9	Colour, Brightness, Contrast	Functionality Required
10	Electronic Shutter	1/25 to 1 / 8000 s or better
11	Automatic Gain Control	Auto / Manual
12	Day and Night functionality	Automatic, Color, Mono
13	Signal-to-Noise Ratio	More than 50dB
14	Digital Noise Reduction	ON/OFF
15	Automatic Lens Control	DC or Automatic Iris
16	Focus	Automatic / Manual
17	Wide Dynamic Range	Required
18	Television System	PAL
19	Frame Rate	25 FPS for 1920 x 1080 at H.265/H.264 Compression or better

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
20	ONVIF S profile compliance	Required
21	Bit Rate	Up to 8Mbps or better continuously adjustment CBR/VBR
22	Alarm Trigger	Intelligent video motion detection and external input
23	Motion Detection	4 zones
24	Alarm Event	Events / alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
25	Video profile	2 Streams of H.265/H.264 and 1 Stream of M-JPEG
26	Streaming	Both primary and secondary stream must be at the resolution 1080p @ 25 fps for viewing and @ 15 fps for recording simultaneously. Third stream shall be M-JPEG
27	Interface	10Base-T / 100Base-TX, RJ-45 connector
28	Network Protocols support	IPv6, TCP/IP, HTTP, , DHCP, UDP, S, SMTP, RTP, RTSP, SNMP protocols/Should meet all functional requirement of the project
29	Weather protection, Outdoor Use	IP66 or better
30	Construction	Stainless steel 316
31	Ambient Operating Temperature	As per site data
32	Ambient Operating Humidity	As per site data
33	Cooling Fan/ Heater	Required
34	Power Source	POE based or through external power supply
36	Mounting	Shall be on TLF structure/ stand/wall mounted/ceiling mounted with suitable brackets
37	Surge/Lightening Protection	Required (Internal/External) Industrial grade as

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		per Note
38	Certifications	Exd IIC T4 and IP66, by IEC Ex/ATEX and PESO(CCOE) or equivalent BIS
39	Security	Password protection, IP address filtering, User access log
40	User	2 simultaneous users

Tentative locations: Inside TLF shed, Inside PH shed

Note: Surge/Lightening Protection in camera for POE line should be available internal or external meeting the specification of Ethernet SPD for POE Camera Protection part of SPD specification. If internal is not available then same to be supplied externally without additional cost to IOCL.

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LAYER 3 GIGABIT MANAGED ETHERNET SWITCH

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Port Density	24 x100/1000 BASE-X SFP ports
		Gigabit SFP ports will support any combination of 10/100/1000 BASE-T, 100BASE-X or 1000BASE-X SFPs, 100BASE-FX, 100BASE-BX, 1000BASE -SX, 1000BASE-LX, 1000BASE-ZX or 1000BASE-ZX CWDM SFPs
2	Performance	Forwarding Rate-35.7 Mbps or as per design engg. Switching Fabric- 48 Gbps or as per design engg. Supports 9 KB Jumbo frame size UP to 4K IPv4 routes, UP to 16K MAC addresses, UP to 2K layer 2 multicast groups, 4K VLAN ID, 256 MB DDR SDRAM, Separate packet buffer memory, 32MB Flash Memory, IPv6 routing option
3	Resiliency	Link Aggregation (802.3ad LACP) Dynamic Link Failover, <50 msec ring convergence incase the link failure, optimized for voice & video traffic. Loop Protection- Loop Detection Loop Protection-Threshold Limiting STP Root Guard, IEEE 802.1D Spanning Tree, Protocol (STP)-MAC Bridges, IEEE 802.1s Multiple Spanning, Tree Protocol (MSTP), IEEE 802.1t -2001 802.1D maintenance, IEEE 802.1w -2001 Rapid, spanning Tree protocol (RSTP), RFC 3768 virtual Router Redundancy Protocol (VRRP)
4	VLAN support	Support 1K VLANs, IEEE 802.1ad VLAN double tagging (Q-in-Q) IEEE 802.1Q Virtual LANs IEEE 802.1v VLAN classification by protocol & port. IEEE 802.3ac VLAN tagging
5	Security	Private VLANs, providing security and port isolation of multiple customers using the same VLAN. Dynamic VLAN assignment NAC 802.1x support ACLs Access Control Lists BPDU Protection Guest VLAN support (IEEE 802.1x) IEEE 802.1x port Based Network Access Control IEEE802.1x Authentication protocols (TLS, TTLS, PEAP & MD5) IEEE 802.1x Multi Supplicant authentication MAC-based authentication port Security SSH Remote Login SSLv3 Web-based Authentication RFC 2246 TLS Protocol V1.0 RFC 2865 RADIUS, RFC2866 RADIUS Accounting RFC 3546 Transport Layer Security (TLS) Extensions RFC 3748 PPP Extensible Authentication Protocol

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		(EAP)
6	Quality of Service	TCP-IP bandwidth limiting performance and bandwidth resolution down to 1Kbps IEEE 802.1p Priority Tagging
7	IPv6 Features	IPv4 and IPv6 Dual Stack IPv6 Management via Ping, Trace Route, Telnet and SSH Static Unicast Routes for IPv6 RFC 1886 DNS Extensions to support IPv6 RFC 1887 An Architecture for IPv6 Unicast Address Allocation RFC 2461 Neighbour Discovery for IPv6 RFC 2463 ICMPv6 RFC 2464 Transmission of IPv6 packets over Ethernet Networks RFC 2711 IPv6 Router Alert Option RFC 3056 Connection of IPv6 Domains via IPv4 Clouds RFC 2513 IPv6 Addressing Architecture RFC 4443 Internet Control Message protocol (ICMPv6)
8	General Routing	Broadcast Forwarding ECMP Equal Cost Multi Path routing RFC 768 User Datagram Protocol (UDP) RFC 791 Internet Protocol (IP) RFC 792 Internet Protocol Message Protocol (ICMP) RFC 793 Transmission control Protocol (TCP) Route Maps Route Redistribution (OSPF, RIP) RFC 1058 Routing Information Protocol (RIP) RFC 2080 RIPng for IPv6 RFC 2081 RIPng Protocol Applicability Statement RFC 2082 RIP-2 MD5 Authentication RFC 2453 RIPv2
9	Multicast Support	Bootstrap Router for PIM-SM IGMP Proxy IGMP Snooping MLD Snooping (v1 and v2) RFC 1112 Host extensions for IP multicasting RFC 2236 Internet Group management Protocol v2 (IGMPv2) RFC 2362 PIM-SM RFC 2715 Interoperability Rules for Multicast Routing Protocols RFC 3376 IGMPv3 RFC 3973 PIM-DM RFC 14541 IGMP & MLD snooping switches
10	Management	10/100/1000 console management port, port mirroring SSH and SNMPv3 for secure management RADIUS Authentication RMON (4 groups) SNMP Traps RFC 1157 Simple Network Management Protocol (SNMP) RFC 1212 Concise MIB definitions RFC 2574 User-based Security ioModel (USM) for SNMPv3 RFC 2575 View-based Access Control Model (VACM) for SNMP RFC 2741 Agent Extensibility (Agent X) Protocol Diagnostic Tools 10.1.1 BIST (Built-in Self Test) 10.1.2 Ping Polling User Interface & administrator Features should support multiple firmware on switch flash & so that backup firmware can be used incase main firmware fails Graphical User Interface (GUI) / Web GUI Industry- standard CLI with built-in Help

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
11	Electrical Approvals and Compliances	EMC EN55022 class A, FCC class A, VCCI class A Immunity EN55024, EN61000-3-levels 2 (Harmonics), and 3 (Flicker)
12	Safety Standards	UL60950-1 CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950-1
13	Certification	UL / TUV or Equivalent BIS
14	RoHS compliant	Required
15	Power Characteristics	AC Voltage 100 to 240V (+/- 10% auto ranging) Frequency 47 to 63Hz
16	Power Consumption	VTS
17	Operating & Design Temperature	Refer Site Data
18	Relative Humidity	Up to 95%

No. of Optical/ Copper ports required for CCTV application to be worked out by vendor as per design Engineering with minimum 20% spare ports of each type.

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LAYER 2 MANAGED ETHERNET SWITCH

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1.	Type	Industrial grade layer 2 POE Ethernet switch
2.	Operation	Store & forward, wire speed switching, non-blocking
3.	Modes	Full or half duplex operation with flow control supported on all ports
4.	MAC address	2000
5.	Memory bandwidth	3.2 Gbps
6.	RJ45 ports	
a.	Ports	Minimum 4 nos. 10/100 BASE-TX POE Ethernet, fully IEEE 802.3 compliant.
b.	Speed & direction	Configurable or 10/100 auto detecting for speed and duplex. (full or half)
c.	MDI/MDIX	Auto-MDI/MDIX crossover.
d.	Polarity	Auto-polarity for crossed TxD&RxD pairs
7.	Fibre optic ports	
a.	Ports	2 nos. 1000 Mbps fibre optic ports for distances up to 10km. Single mode links
b.	Single mode	Upto 10km typical
8.	Networking features	
a.	Device support	All IEEE 802.3 compliant devices
b.	Protocols & features	<p>All IEEE 803.2</p> <p>Management Features SNMPv1, v2c and v3, IEEE 802.1AB Link Layer Discovery Protocol (LLDP), Web GUI, sFlow a method for monitoring traffic in switched and Routed networks</p> <p>Multicast Support IGMP query solicitation, IGMP snooping v1, v2 and v3</p> <p>VLAN GVRP, VLAN creation based on protocol, Port and Subnet</p>

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		<p>based, IEEE 802.1Q Virtual LAN (VLAN) bridges, IEEE 802.3ac VLAN tagging.</p> <p>Quality of service IEEE 802.1p, DSCP Prioritization, Strict priority, weighted round robin or mixed scheduling</p> <p>IPv6 Features Path MTU discovery for IPv6, IPv6 specification, Transmission of IPv6 packets over Ethernet networks, Default address selection for IPv6, IPv6 addressing architecture</p>
c.	Resiliency protocol support	Rapid Ring protection / Resiliency technology providing the convergence of Sub 50ms, Loop Detection and Loop protection, RSTP & MSTP, Shall support high-speed ring recovery fibre access and uplink ports and should seamlessly integrate with the core / Aggregation chassis proposed
d.	Standards compliance	<p>IEEE802.3</p> <p>IEEE 802.3u</p> <p>IEEE 802.3x</p> <p>IEEE 802.1p</p>
9.	Power input	Dual redundant power input
10.	Input voltage range	VTS
11.	Power consumption	VTS
12.	Surge & spike protection	Should support EN 61000-4-5 std for surge.
13.	Diagnostics	Self Test and alarm output
14.	Design & Operating Temperature	Refer Site Data
15.	Humidity	Up to 95%
16.	Electrical safety	UL/IEC/EN 60950-1
17.	EMC	<p>EN550222010, EN550242010</p> <p>EN61000-6-4</p> <p>EN61000-4-2 (ESD)</p> <p>EN61000-4-3 (RS)</p>

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		EN61000-4-4 (EFT) EN61000-4-5 Class 3 for DC power, Class 2 for I/O
18.	MTBF	Better than 2,00,000 hours
19.	Ingress protection	IP30 protection minimum
20.	Mounting	DIN rail or direct panel

Note: Power adaptors wherever used for Layer 2 Switches shall be of Industrial Grade.

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**Page No.
242****NETWORK ATTACHED STORAGE (NAS) / STORAGE AREA NETWORK (SAN)**

SL NO.	PARAMETER	MINIMUM REQUIREMENT
1	Controller	Dual Controller in High Availability. In case of one controller failure, the takeover must be seamless and instant without any additional reconfiguration. The controller shall support RAID 0/1/10/5/6. Each processor should have at least dual Core Ivy Bridge Intel Xeon Processor or equivalent
2	Cache	The system should have minimum 16GB usable cache (Read & Write) across the two controllers with an ability to protect data on cache if the system fails and it results into controller failure. The cache on the storage should have battery backup. Cache shall be dynamically managed for both Read and Write operations.
3	Storage Operating System	The Storage should have embedded Operating Systems and there should be only one OS to provide the required Protocols. (It should not be a general purpose OS such as Windows, Linux etc.) The OS should be of the same make as that of storage or as per OEM standard.
4	Protocol	Storage OS should Support iSCSI and/or FC protocol
5	Storage to Host Connectivity	The storage system should have sufficient number of suitable ports to connect the servers, storage network etc. Minimum 1GbE x 4 ports are to be provided. If requirement is more than 4 port then vendor has to provide additional without additional cost.
6	Storage Capacity	As per design calculation for recording and storing of CCTV data for all integrated cameras at full resolutions and 15 FPS at least for a period of 90 days. For minimum storage requirement per camera per day kindly refer to the general requirement of the CCTV specified in the tender document. 20% spare slot for installation of additional disc and disc array for future use to be kept in the system.
7	Form Factor	2U rack-mount system
8	Redundancy	There should not be any single point of failure and should have following Redundant and hot swappable modules

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
		<ul style="list-style-type: none"> ➤ Disk Drive ➤ Power Supply ➤ FANS
9	RAID Support	The solution to be configured with RAID 6 or equivalent protection and for every 30 disks, 1 disk should be configured as Global hot spare. Each RAID group should have 10 or less number of disks.
10	Storage Feature	Storage system (disk shelves) should support 12Gbps SSD/ 12Gbps NL-SAS/ 12Gbps SAS 10K and 15K disks simultaneously with different rpm. Storage back end connectivity should be at least 12Gbps SAS Ports 2 No.
11	Disk Connectivity	The Storage Should be configured with Dual ported Disks and dual IO Module for no single point of failure
12	Usable Storage Capacity	Storage shall be provided with 12 Gbps NL-SAS disks (7.2k RPM, 1/2/3/4/6/8/10/12 TB) on RAID 6. Each RAID group should have 10 or less number of disks.
13	Total Aggregate Storage Bandwidth	The Proposed storage disk should ensure a minimum total aggregate storage bandwidth of 800Mbps of better on a 90% write & 10% read application environment. OEM of storage should confirm the above required aggregate bandwidth on the offered storage by the System Integrator on the VMS application. A certificate or output of a sizing tool should be submitted to support this.
14	Storage Management	Should have Single Graphic Use Interface (GUI) for both File and Block as well as command line interfacing. Must include real time performance monitoring tools giving information on CPU utilization, volume throughput, I/O rate and latency etc.
15	Host / Server OS Support	Linux, MS Windows etc.
16	Storage Validation Test report	Storage OEM should have a test & validation document supporting the bandwidth mentioned with the VMS application supplied by the bidder. Alternately, results of internal sizing tool from OEM supporting the bandwidth mentioned should be submitted.
17	Accessories	Ready Rails Sliding Rails With Cable Management Arm

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SL NO.	PARAMETER	MINIMUM REQUIREMENT
18	Data protection features	Replication (DFS-R), Snapshots (VSS)

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CCTV SERVER

S.NO	PARAMETERS	MINIMUM REQUIREMENTS
1	Processor	2 x Intel® Xeon® processor(10 Cores, 2.40 GHz) or better
2	Cache	25 MB
3	Memory	32 GB (4 x 8GB ECC DDR4 DIMM slots, 2133 MHz) or better
4	RAID & Hard Disk Drive	<ul style="list-style-type: none"> ➤ Server should have 8x2.5" disk bays ➤ 2 Nos 300 GB 15K RPM SAS/NL- SAS for OS – RAID 1 Configuration ➤ 4 Nos 600 GB 15K RPM SAS/NL-SAS– Live database- RAID 10 configuration ➤ Should support SSD for future expansion
5	Hard Disk Controller	Controller with RAID 0,1 & 10 support
6	CD-R/W Drive	SATA-DVD RW Drive
7	Network controller	4*1 Gbit/S
8	Connectivity	1 no. DP port, 1 no. VGA
9	Operating system	Microsoft Windows Latest Version / Edition Including 10 Client Access License. In case OEM's offered software has not been proven tested over the latest operating system, then vendor to provide latest tested operating system. However, vendor needs to upgrade the operating system immediately once the proven CCTV software has been developed on latest operating System at no additional cost to IOCL during entire execution till CAMC period.
10	Power Supply	1100 W redundant power supply
11	Antivirus program	Required
12	Form Factor	Rack
	RACK MOUNTED LED/LCD MONITOR KEYBOARD DRAWER WITH OPTICAL MOUSE AND KVM SWITCH	
A	Monitor specification	
1	Size	Min 18.5" widescreen LCD/LED Monitor (Rack mounted

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S.NO	PARAMETERS	MINIMUM REQUIREMENTS
		Type)
2	Height	1 U (Rack unit)
3	Contrast Ratio	1000:1
4	Color Support	16.7 million colors,
5	Video Input	USB – 2 Nos. Min VGA – 1 no. Min
6	Brightness	250 cd/m2 (typical)
7	Adjustability	Tilt, Swivel and height adjustment
8	Power Supply	100V to 240V~ (+/- 10%) AC, 50/60 MHz
10	Design & Operating Temperature	Refer Site Data
B	Mouse	Optical type
C	Keyboard	Minimum 104 Key Standard Keyboard with 19" rack mounted drawer
D	KVM switch	4 port combo industrial grade KVM switch

Note:

1. In case multiple servers are required to meeting the tender requirement, vendor to provide the same with above minimum configuration at no additional cost to IOCL. This also includes the required software and operating system.
2. Vendor to provide failover server to have redundancy in CCTV server such that failure of one server should not affect the CCTV operation and recording at its full resolution. The cost of failover server required hardware & software shall be included in the cost of CCTV server.

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**Page No.
247****WORK STATION**

(At Terminal Manager Room, Control Room and Security Room)

S.NO	PARAMETER	MINIMUM REQUIREMENTS
1	Processor	Intel Xeon Intel® Xeon® processor (8 Cores, 2.10 GHz, 20 MB) or better
2	Memory	16 GB DDR4
3	Hard Drives	500 GB SATA @ 7200 RPM or better
4	Hard Disk Controller	Integrated SATA CONTROLLER
5	Optical Drive	16x DVD+ RW
6	Keyboards	Minimum 104 keys Standard with Palm Rest (USB)
7	Mouse	USB Laser Scroll Mouse with Mouse Pad
8	Graphic Card	NVIDIA® GEFORCE GTX Series with 4k output or better with Minimum 8-GB Graphic card or as per design requirement whichever is higher. It shall have minimum 2 nos. of onboard 4K display port and 1no. of HDMI port.
9	Built In I/O Ports	USB – 4 nos.
10	Ethernet	Dual integrated 10/100/1000 Mbps Ethernet
11	Operating system	Microsoft Windows Latest Version/ Edition
12	Antivirus program	Required
	MONITOR	LED monitor Suitable for 24 x 7 operations with inbuilt/monitor mounted speaker
1	Size	Min 23" widescreen Full HD LED
2	Resolution	QHD 2560 x 1440 at 60 Hz
3	Aspect Ration	16:9
4	Contrast Ratio	1000:1
5	Color Support	16.7 million colors,

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S.NO	PARAMETER	MINIMUM REQUIREMENTS
6	Connectivity	DisplayPort 1.4, HDCP 1.4, HDMI (HDCP) VGA – 1 no. with audio in and audio out
7	Brightness	350 cd/m2 (typical)
8	Adjustability	Tilt, Swivel and height adjustment
9	Power Supply	100V to 240V~ (+/- 10%) AC, 50/60 MHz
10	USB	2 x USB 3.0 downstream with Battery Charging 1.2

Note:

- 1.0 Work station is to be connected to two number of LED monitors. Required hardware & software is to be provided for the same.
- 2.0 In case OEM's offered software has not been proven tested in latest Windows operating system, then vendor to provide latest operating system which has been tested with the offered software. However vendor needs to upgrade the operating system immediately once the proven CCTV software has been developed on latest/ upgraded version of the operating System at no additional cost to IOCL during entire execution till CAMC period.
- 3.0 Work station for Control room should be rack type (2U) however for security and terminal manager room should be tower type.

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249****LED DISPLAY SCREEN**

S.NO	PARAMETER	MINIMUM REQUIREMENT FOR ULTRA HIGH DEFINITION LED MONITOR
1	Monitor	Minimum 42"/55"/75" , Ultra High Definition LED Monitor (4K)
2	Display Resolution	Ultra HD 3840x2160 pixels
3	Backlight Module	Edge LED
4	Video Signal	HDMI :4096x2160p (24, 50, 60Hz), 3840x2160p (24, 25, 30, 50, 60Hz), 1080p (30, 50, 60Hz), 1080/24p, 1080i (50, 60Hz)
5	MPEG noise reduction	Yes
6	Computer Input	HDMI 2.0 , USB 2.0, Ethernet connection, HD15 PC input (4K input), Wi-Fi Certified 802.11a/b/g/n/ac
7	Video Colour System	NTSC (3.58 MHz, 4.43 MHz), PAL, PAL60, SECAM
8	Power Supply	100V to 240 V AC, 50Hz +/- 5%
9	Remote Control	Infra Red Remote with Control Function
10	High Dynamic Range Compatibility	Yes
11	Mounting	Shall be suitable for rigid support mounting from Wall, Ceiling, column & Table Top

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CCTV RACK

SR NO	FEATURES	PARAMETERS
1	Rack Height	42 U Rack
2	Ingress Protection	IP 42
3	Cable Entry	Bottom
4	Thickness	Side:2 mm Thick CRCA Sheet (Removable) Front Door:1.5 mm Thick CRCA Sheet Rear Door:1.5 mm Thick CRCA Sheet Top:2 mm Thick CRCA Sheet
5	Front Door	Toughened Glass
6	Anti Vibration Pad	15 mm Thick
7	Painting	Epoxy based powder coating, Min Thick 65-75 micron
8	Lifting Hook	4 number
9	Earthing Bus Bar	Copper
10	Earthing Bolt	M8X25 Earth Bolt;1 No. Each Side
11	Utility Socket	One number to be provided
12	PVC Filter	04 Number Minimum with 4 inch FAN
13	Biometric Reader	2 no. of Biometric fingerprint cum smart card reader to be provided along with accessories (Controller, Electromagnetic door locks for front & Rear doors) for restricting un-authorised opening.
14	Illumination	LED light with Motion Sensor
15	Cable management accessories	To be provided for proper dressing of cables
16	Installation	Mounting angles and mounting frames for interior installation for 19"
	Locking	

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251****BIOMETRIC CUM CONTACTLESS SMART CARD READER ALONG WITH DIGITAL CAMERA**

S.No	Descriptions	Minimum Requirements
1	Microcontroller	Onboard
2	Memory	4MB
3	I/O Interface	LAN Interface (10/100 Base T Ethernet)
4	LCD Display	8X 1 char. LCD Display with backlight, alphanumeric
5	LED Indication	LED Indication for Accept & Reject indications
6	Relay for Door lock	Door Lock output relay – 12VDC
7	Alarm Indication	Audible Alarm Indication
8	Cabinet	Plastic / Metal casing
9	Finger print scanner Resolution	Greater than 500DPI
10	Scanner	Optical sensor, Scratch Resistant
11	System Verification Speed	<1 Sec
12	FRR (False Recognition Rate)	0.1%
13	FAR (False Acceptance Rate)	Under 0.0001%
14	Enrollment	5 sec typical
15	Smart Card Reader	Contact less Mifare
16	User Capacity	9000 templates
17	Transaction capacity	12,000
18	Verification Mode / Identification mode	1:1 or 1:N
19	Camera	Embedded
20	Communication	TCP/IP/RS232/RS485
21	Operating Temperature	Refer Site Data
22	Operating Humidity	5% - 95%

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S.No	Descriptions	Minimum Requirements
23	Power Requirement	9 – 12V DC
24	Approval	Conformity to CE or equivalent BIS approval
25	Operation	Standalone or networked
26	Mounting	Flat Surface double gang compatible
27	Ingress protection	IP66

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LIGHT INTERCONNECT UNIT (LIU)

S.N.	Material Description	MINIMUM REQUIREMENT
1	Box	19" rack mountable for indoor application and for outdoor application inside JB with suitable mounting arrangement.
		Complete powder coating and aluminum Housing
2	Splice Trays	Complete Aluminum Body
		Provision for 12/24 Fiber splices
		Cushioned splice holder
3	Cable Spools	Flame retardant plastic
		Two halves spool design
4	Ports	12 /24/ 36 Ports

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**Page No.
254****VIDEO MANAGEMENT SYSTEM SOFTWARE**

S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
1	The video management system shall be client/server based IP video security solution that shall provide seamless management of digital video, audio and data across an IP network. The video management system shall provide full virtual matrix switching and control capability. Video from sites shall be possible to view from single or numerous workstations simultaneously at any time. Cameras, recorders, and viewing stations may be placed across the terminal in the IP network. It shall be ONVIF Compliant and Open Architect.
2	VOCMRPS shall be a highly scalable, enterprise level software solution. It shall offer a complete Video Surveillance solution that shall be scalable. API/SDK support to be provided for seamless integration of third party security infrastructure where possible. The system shall be capable of working on Windows OS and Windows Server platforms.
3	The Software shall supports ONVIF™ compliant cameras and devices
4	The VMS shall provide up to 10 different and independent programmable recording schedules. The schedules may be programmed to provide different record frames rates for day, night, and weekend periods as well as special days. Advanced task schedules may also be programmed that could specify allowed logon times for user groups, when events may trigger alarms, and when data backups should occur
5	The VMS workstations may be connected to up to 4 monitors where each monitor may be configured to display live streaming video, playback video, site maps, or alarms.
6	The VMS shall auto-discover IP devices with their default IP addresses
7	The VMS shall provide a user-dependent bookmark Tree. The bookmark tree shall allow saving a time period or a single point in time for later investigation and export. Bookmarks shall be available both for live mode and for playback mode.
8	The VMS shall be designed in such a way the Central Server downtimes do not affect the functionality of the recording services. Normal recording and Motion recording shall continue during the Central Server downtimes, only Alarm Recording cannot be activated as the Central Server is responsible for evaluating the alarm conditions.
9	The software shall come preferably as one unit and not as multiple loadable units. If it comes as multiple loaded units requiring multiple servers, they shall be as per NVR specification of this tender and the cost shall be included in the quoted price of each software unit.
10	The software shall not have seat-licensing, allowing for any number of user seats/installations on the IP video network to be added for future scalability at no management software cost. If seat licensed software is to be quoted then it shall have licenses for at least 20 PCs/ work station.
11	The manufacturer supplied management software pack shall have a separate file player to

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S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
	authenticate and play exported files.
12	The VOCMRPS shall allow for video to be streamed on a video mosaic wall.
13	The Software shall provide user licenses for at least 5 users (to be included in software cost itself).
14	The system shall allow operation with/without a PC keyboard, Joy stick or mouse. Once system is configured, virtual matrix functions can be carried out using CCTV keyboards
15	Wide compression technology support The Software shall supports a variety of compression methods M-JPEG, H.263, MPEG-4 Part 2, Simple Profile and Advanced Simple Profile, H.265/H.264 /MPEG-4 AVC, and MxPEG.
16	Dual streaming Hardware use is optimized with two independent, configurable video streams, one for live viewing and one for recording.
17	Privacy masking Enables administrators to define privacy masks for individual cameras, to hide areas in the camera view that must not be visible or recorded in order to comply with local legislation
18	<p>The VOCMRPS shall provide the following</p> <p>Automatic search and registration of components of proposed system on the network. They can be Cameras, Monitors, Alarm panels, NVRs.</p> <p>The system shall allow for live view, playback and system configuration of the IP video system.</p> <p>The system shall allow for creation of multiple users and user groups and assign tasks to each.</p> <p>Drag & Drop functions for most functions on the system and also for set up of connection between cameras and monitors</p> <p>Several simultaneous live picture connections of camera in network. It shall be capable of showing video pane layouts including 2x2, 3x3, 4x4, various Hot Spots (1+5, 1+7, 1+9, 1+12, 1+16) and custom layouts.</p> <p>It shall be possible to listen to audio from individual encoder/ cameras or decoders/Receivers.</p> <p>Audio shall be simultaneously transmitted from camera end to Server end.</p> <p>System setup for pre-defined surveillance tasks to be invoked at pre-defined times in the day.</p> <p>Programming of automatic recording events on NVR, maybe based on events such as alarms and video analysis</p> <p>Remote maintenance of IP Video components</p> <p>It shall be possible to show text on screen display (OSD) when video is displayed on a Receiver. The OSD shall detail the camera name, number, date and time.</p>

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S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
	<p>It shall support remote viewing of cameras on Internet / Intranet</p> <p>It shall provide digital zooming facility.</p> <p>It shall support multiple Video Resolutions – CIF, 2 CIF, 4 CIF, HD, UHD</p> <p>It shall have feature of recording at 1920x1080 @ 15,25 FPS (for full HD camera), 3840 x 2160 at 15,25 FPS (for 4K cameras) or better and retrieval of video and Audio.</p> <p>Supports a variety of compression methods M-JPEG, H.263, MPEG-4, H.265/H.264 or better etc</p> <p>The video management system shall support the use of secure Hypertext Transfer Protocol Secure (HTTPS) using Secure Sockets Layer (SSL) to establish a secure connection between supported hardware devices and the software solution.</p>
19	<p>The VOCMRPS shall allow the following</p> <p>Live display of cameras</p> <p>Live display of camera sequences & salvos.</p> <p>Control of PTZ cameras & MFZ Fixed cameras</p> <p>Playback of archived Video at speeds of x1/4 – x8</p> <p>Retrieval of archived Video using normal playback, thumbnails (event or time based)</p> <p>Instant Replay of Live Video</p> <p>Use of site maps</p> <p>Configuration of system settings</p> <p>Execution of Salvos, Guard Tour & sequences using tasks or manually</p> <p>The software solution shall include an email and SMS notifications feature that can inform users about system errors such as archiving failures or camera failures.</p>
20	<p>For each camera set up bit rate, frame rate, and resolution shall be set independent of other cameras in the system. Altering the setting of one shall not affect the settings of other cameras.</p>
21	<p>Video Search Video smart search on the basis of date, time, event, camera, locations and alarm.</p>
22	<p>The video management system shall support digital zoom of any image pane. A dedicated graphical control shall be provided in the user interface for this purpose. In addition, the mouse wheel shall control digital zoom when the mouse cursor is hovering over a selected image pane.</p>
23	<p>PTZ Operations</p> <p>VOCMRPS shall be able to operate with PTZ protocols of the offered cameras.</p> <p>Named presets (up to 64) and custom commands (up to 64) shall be supported per camera, invoked from VOCMRPS.</p>

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S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
	User priority between 1 and 5 shall be allocated for PTZ enabled transmitters. VOCMRPS shall have the ability to slue PTZ cameras to alarm generated areas.
24	Recording technology Continuous recording, motion based recording, event based recording and combination of event and motion based recording
25	Export Formats The VMS shall export video and audio data optionally in ASF/ AVI format to a CD/DVD drive, a network drive, or a USB drive. The exported data in ASF format may be played back using standard software such as Windows Media Player.
26	The software shall allow for using .BMP format area maps.
27	The software system shall be capable of handling camera and alarm icons on area maps. The area map shall be configurable to pop up / highlighted with colour upon the receipt of an alarm received from a camera/ VIDEO Encoder on the map. This can be on the same or other monitors on the PC.
28	The Software system shall allow direct connection of control keyboard to the PC workstation running the VOCMRPS for virtual matrix operations.
29	The software shall be capable of monitoring the status of camera in the network and shall indicate when a device goes offline by suitable red cross across the camera.
30	The system shall be able to carry out a motion search on recorded video and highlight motion in the playback bar and also as motion event based thumbnails to navigate straight to that event in recording.
31	The system shall support automatic failover for recording servers. This functionality must be accomplished by a failover server that shall work as a standby unit, which takes over in the event that one of a group of designated recording servers fails. Recordings shall be synchronized back to the original recording server once it is back online.
32	The system shall support multiple failover servers for a group of recording servers.
33	The system shall provide monitoring of all failover servers from the graphical alarm management module.
34	The system shall provide seamless access to recordings on the failover Server for all clients through the same client views once the services are fully started.
35	The system shall support multicasting of video feeds to client workstations in order to conserve network resources. The system shall automatically switch to unicast, if the client fails to connect to the multicast stream

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S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
36	The system shall be able to restore the data stored on the camera's internal storage to media database once the communication from the cameras is restored.
37	The alarm and map window shall have docking facility on the main screen.
38	The alarm support shall allow for continuous monitoring of the operational status and event-triggered alarms from servers, cameras and other devices.
39	The alarm support shall provide a real-time overview of alarm status, or technical problems, while allowing for immediate visual verification and troubleshooting.
40	<p>The VOCMRPS shall have the following facilities</p> <p>Retrieve data with 'alarm on' with key on live video screen</p> <p>Search of recorded images based on motion, congestions, counter flow, time, date, alarm etc.</p> <p>Shall support 32 Video streams concurrently on a work station</p> <p>Shall allow 3 levels of user and Alarm prioritization</p> <p>Shall allow 64 cameras to be replayed simultaneously from one NVR</p> <p>Auto-protecting of video recording on post and pre 'alarm' images.</p> <p>The hashing function and a bit key shall describe a digital signature of the video images and be watermarked into files of exported images.</p> <p>Shall have facilities for play, forward, rewind, pause along with fast forward and rewind for reviewing the recorded videos.</p> <p>Shall be capable of 4 X 4(max) viewing panes at 16 frames.</p>
41	Recording Manager System Software
i	The video management system shall be capable of managing multiple recording manager systems.
ii	It shall be possible to assign encoders and IP cameras to recording manager
iii	The recording parameters shall be configured in the recording tables of the VMS configuration program. These settings shall be replicated into the devices from the Central Server.
iv	The recording manager shall manage encoders and IP-Cameras, and the Network attached storage systems. It shall offer system wide recording monitoring and management of Network Attached storage, video servers and cameras
v	The recording manager shall support the encoders and cameras to directly stream the data to the Network attached storage.

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S.NO	MINIMUM REQUIREMENT FOR VIDEO OPERATION, CONTROL, MANAGEMENT, RECORDING AND PROCESSING SOFTWARE (VOCMRPS)
vi	The transfer rate of the data from the encoder or IP-Camera is limited by network speed and the Network Attached Storage data throughput rate.
vii	The Recording Manager shall be able to restore a lost recording database from data on the Network attached storages/ VMS server.
viii	The Recording Manager shall provide flexible retrieval of recordings. It shall be able to determine on which network attached disk array data from each camera or encoder has been stored
ix	It shall be possible to secure the access to the Recording Manager software with a password. This shall be done in the Configuration Client
x	The video management system shall allow configuring if playback of recordings is streamed through the Recording Manager or is streamed directly from the Network attached storage.
xi	The video management system shall support to retrieve the playback information, i.e. from which iSCSI storages to retrieve the video, audio and meta-data, either from the Video Recording Manager or directly from the IP encoder or camera. Playback information directly from the IP encoder or camera is limited in time and should be used while the Recording Manager is not available to increase the reliability of the video management system.

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ADVANCED ANALYTICS SOFTWARE

S.NO	MINIMUM REQUIREMENT FOR ADVANCED ANALYTICS SOFTWARE
1	The analytics software shall be server based. Dedicated Analytics Server to be provided in addition to VMS server. The cost of dedicated server shall be part of cost of Analytic software at no extra cost to IOCL.
2	The Software shall be seamlessly integrated with central software.
3	<p>The analytics software shall support all advanced analytics features like Virtual Trip Wire, abandoned object detection, museum mode as "object removal", video loss alarm, scene change detection and motion based detection.</p> <p>The definable and available triggers should be for</p> <p>Vehicle Moving – Should activate alarm if it detects vehicles moving in the scene and passing through the alarm mask. Object Direction may be used to further filter alarms, as well as object speed, object size.</p> <p>Vehicle Parking – Should activate alarm if vehicles are parked in Alarm mask. The length of time field in seconds or minutes may be used to specify how long vehicles are able to park before the alarm.</p> <p>Vehicles Starting to Move – Should activate alarm if it detects a vehicle starting to move, an alarm will sound. Object Direction, Object Speed and Object Size may be used to further filter alarms.</p> <p>People Moving – Similar to the vehicles Moving trigger, but should apply to people.</p> <p>Anything Moving – Similar to the vehicles moving trigger, but should apply to any objects which are moving (people, Vehicles, Unknown)</p> <p>Intrusion detection for perimeter fixed cameras.</p> <p>Tracking of intruder through PTZ camera based on intruder alarm.</p> <p>Camera obstructed/ out of focus – should activate alarm if the field of view is obstructed or goes out of focus.</p> <p>Cord cut - Will sound alarm if the video signal is lost</p> <p>Hardware alarm input – Should be able to receive signals from external devices through alarm I/O and act accordingly.</p> <p>Object left Behind – Should sound alarm if objects are discarded, such as bag on a side walk</p> <p>Object removed – Similar to object left behind trigger, but should apply to objects removed.</p> <p>If alarm during intruder detection is not acknowledged within configurable time, then an auto SMS/Mail to be triggered. The Configurable time to be finalized before detailed design engineering. Auto SMS/Mail to be triggered to designated manpower of IP Based CCTV Surveillance System and Location-in-charge.</p> <p>Note: All PTZ cameras to have inbuilt video analytics for Auto tracking of objects based on alarm</p>

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S.NO	MINIMUM REQUIREMENT FOR ADVANCED ANALYTICS SOFTWARE
	inputs. In case PTZ cameras do not have in built video analytics, the same to be provided in server based advanced analytic software.

Note:

2. Advanced Analytics software licences as stated above are to be taken for the entire fixed camera. For PTZ cameras analytic software licence are to be taken for Auto tracking of objects based on alarm inputs, cord cut, camera obstructed / out of focus, hardware alarm input and any other if required as per design Engineering.
3. The offered Analytic Software shall have provision for future scalability and expandability and shall be compatible with the offered VMS software.
4. All the above mentioned analytics must run simultaneously and not one after another based on configuration done in the system.

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MODULAR COMPRESSION TRANSIT (MCT) BLOCK

1.0 General

- 1.1 MCT shall be used for cable entry to control rooms, Admin Block, and Security room.
- 1.2 MCT shall be sized, supplied and installed at site by the vendor. Multiple MCT blocks of Multidiameter type shall be provided for cable entry, suitable cut out and structural supports for installation of MCT frames on the walls / floor of control rooms shall be in scope of vendor.
- 1.3 The MCT Block system should have only few components for facilitating simple, easy and quick assembly. The Multidiameter based cable transits shall be repeatedly re-openable and re-usable without the need of special tools and discarding the modules in normal operation.
- 1.4 The MCT frame shall be standard type of stainless steel construction. The supply shall be complete with multi diameter blocks with center core in all / stay-plates / single piece compression wedge with stainless steel bolts. Solid blocks and insert blocks should not be used.
- 1.5 Contractor shall size the MCT considering approximate 50% spare for each cable size /O.D. All these spares blocks shall be available on the frame as usable Multidiameter blocks / add blocks with center plug, so that these spares blocks in future can be used for wide range of cables also, solid blocks should not be used at all on frame. Apart from spare if there is any additional uncovered space left on frame then this uncovered space should also be filled only with usable Multidiameter blocks with center plug only.
- 1.6 The Multi Cable & Pipe Transits should have been tested for water tightness-4 Bar pressure, gas tightness-2.5 Bar pressure, Blast Load-3 Psi minimum as per OISD 163, 3 Hrs fire tests as per UL 1479, EI-120 as per BS476 & ASTM E814, IP68 as per IEC60529, and rodents.
- 1.7 Wherever MCT Blocks are to be provided in Hazardous area, necessary ATEX certification should be provided.

2.0 Frames

- 2.1 The frames shall be GH Type with 100/60 mm Flange with holes suitable for bolting installation and sized according to the construction and cables passing through each penetration. Frame material shall be of stainless steel.

3.0 Blocks

- 3.1 Multidiameter type Cable Transits are to be installed wherever the power or control or any other cables are to be routed through concrete floor/roof or the walls or to the kiosks / panels. The Cable Transit needs to be installed in the roof or wall using Multidiameter modules with centre core so as to provide the flexibility using same module for a wider range of cables with different diameters as given below for any future reconfigurations while retaining fire stop, water tight and gas tight requirements. The Multidiameter modules with peelable/tearable layers and central core should be made of super resistant Roxylon/Lycron – Halogen free EPDM with low smoke index-F1 Classification as per NF16-101 & NF16-102, Heat Radiation test in compliance with M2/M1 classification, UV Ageing Test as per ISO-4892-2:2006 & ISO-815-1:2008, Oxygen Index Test as per ASTM D 2863-00, Shock & Vibration Test as per NES 510.
- 3.2 Spare blocks or the blocks used for filling space on frame shall be Multidiameter modules and central core, so that in case of any possible expansion these Multidiameter modules and central core can be used, insert blocks and solid blocks are not required to be provided.

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- 3.2.1 20: Range (Start From 4.0 mm – Min 10 mm range or higher)
- 3.2.2 30: Range (Start From 11.0 mm – Min 10 mm range or higher)
- 3.2.3 40: Range (Start From 21 mm – Min 10 mm range or higher)
- 3.2.4 60: Range (Start From 32 mm – Min 10 mm range or higher)
- 3.2.5 90: Range (Start From 49.5 mm – Min 10 mm range or higher)
- 3.2.6 120: Range (Start From 71.5 mm – Min 10 mm range or higher)

4.0 Single Piece Compression Wedge

- 4.1 The Wedge should be in single piece to be made of super resistant Roxylon/Lycron – halogen free EPDM with low smoke index having stainless steel bolts. It will be used to compress the modules in the frame. The wedge should be such that it should not require any special tool to install / uninstall. The wedge should be such that it can be used at any position within the frame openings.

5.0 Stayplates

- 5.1 Stayplates for separating the module layers. Material of the stay plate should be stainless steel.



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VIDEO WALL

S. No.	Parameters	Description
1.	System/Solution Requirements	- Large overview display - The ability to display any source either on the large overview display or to any other auxiliary displays
2.	Content	In control room:-Windows for all cameras should be available of single screen of 300-400 cm ² for CCTV camera. Additional Two Number (55" each) for Alarm LED display and Fire fighting display. In location in charge room:-viewing window size should be preferably be between 250-300 cm ² . (in two pages) for CCTV camera In security cabin:-viewing window size should be preferably be between 150-200 cm ² . (in two pages) for CCTV camera
3.	Overview Display	
a.		The display wall shall be composed of an array of 55" with configuration of XxY (column x rows)
b.		The display wall size shall be as per site requirement. This dimension cannot vary by more than 2%.
c.		The displays shall utilize direct LED lit LCD panel technology
d.		All panels shall of 55" diagonal size and optimized to work in a multi-screen arrangement with no more than 1.3 mm separation between adjacent screens (gap to be measure between the closest active pixel of two screens ideally placed one next to each other when a pattern able to illuminate each closets pixel to the border applies). Mechanical Gap b/w bezelless screen should be <0.4mm
e.		Each LCD Panel must have Built-in light and colour sensors with feedback loops to keep display performance, such as luminance and colour, uniform in time across the entire display wall. The sensors must measure both brightness and colour. Human intervention should not be involved.
f.		Each LCD panel shall have signal "cropping" capabilities allowing a single image to be displayed across the entire video wall array
g.		Mount should be provided by OEM only with auto-alignment feature
4.	Resolution	In order to achieve acceptable image quality for both video and graphics, and to avoid pixel loss, the LCD panel must be of native resolution of 1920 x 1080 with typical Brightness of be 700 Cd/m ² (nits) or higher and uniformity >98%
5.	Construction	Each "LCD Display" or "Panel" shall be of "industrial" grade quality with metallic-constructed fully enclosed light tight housing. The housing shall be of all-metallic construction with clear and easy access to the source and power

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S. No.	Parameters	Description
		connections. The LCD panel should utilise VA technology.
6.	Wide viewing	Each display shall utilize a high contrast screen (anti-glare) with sizes of 55" diagonal. The screen shall have a H 178°/V 178° viewing angle or greater with a screen "haze" value of 44% or greater for wide viewing angles for operators.
7.	Brightness.	The " Typical " Luminance specification must be 700 Cd/m2 (nits) or higher with a "Typical" Contrast Ratio of 4000:1 or greater in normal operation.
8.	Illumination	Each LCD Panel shall be equipped with Direct LED illumination. The LEDs should have a "Typical" lifetime rating of ≥100K hours in normal operation for cost-effective operation.
9.	Automatic colour and brightness adjustment.	Each LCD panel shall be equipped with two (2) built-in sensors, permitting the brightness level of each LED Backlight to be controlled and adjusted automatically. Light intensity from each panel will be monitored and adjusted automatically during calibration. The brightness target can be changed for the entire display wall via control management software without having to physically interact with each panel separately.
10.	Panel uniformity	When measured at least 25 pixels placed at 99% of the diagonal length the resulting uniformity level shall be equal or above 92%
11.	Remote Power Supply	The LCD panels shall have the option to utilize an external remote AC-DC power supply. The remote power supply must be hot swappable and offer a Redundancy option with Auto-failover capability. The remote power supplies shall support up to 100 metres distances without any image degradation or brightness loss from the LCD panel.
12.	Integrated Power Supply	The LCD panels shall have the option to utilize an internal AC-DC power supply. The resulting system shall support Auto-failover capability in case one of the internal AC-DC fail
13.	Input signal flexibility	The LCD panels shall have digital input connectivity options, including, but not limited to, HDMI, full Display Port and IP inputs supporting up to Quad HD resolutions at 30fps or higher. Each LCD panel shall have the ability to "loop-through" any selected digital input signal via a HDMI connection
14.	Central controller	A dedicated control appliance with a network interface shall constantly monitor and communicate with each LCD panel to adjust its individual colours and brightness to a common value via a network switch and Cat 5/6 cables pulled to the RJ45 connector on each panel.
15.	Remote control	The control of the wall shall be possible via a network. All

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S. No.	Parameters	Description
		LCD panels shall have their own IP address, and the control software can access all of them at the same time. The available features shall be: On/Off, Brightness and Colour, Input control
16.	Display Module Certification	The vendor shall provide the following certifications: EMC-EMI, ISO huppeldepup, CE,CB, UL,CCC, BIS
17.	Service & maintainability	
a.		Manufacturer design for long-term support in terms of spare parts (manufacturer must guarantee availability of parts for 10 years)
b.		Depth of video wall if mounted on concrete/wooden wall should not be more than 18cm
18.	SW	The Software Should be able to
		Switch On & off each Displays on site and remotely
		Switch On & off the entire wall on site and remotely
		Select the input interface on site and remotely
		Automatically switch the to another input if the currently used input is failing
		The SW shall configured with separate IP server
19.	OEMCertification	Display wall and controller should be from same OEM for better warranty support and upgrade

2. Layout Software

- The software shall be able pre configure various display layouts and access them at any time with a simple mouse click or based on the timer.
- The software shall enable the users to see the desktop of the graphics display wall remotely on the any Windows PC connected with the Display Controller over the Ethernet and change the size and position of the various windows being shown.
- The software shall enable various operators to access the display wall from the local keyboard and mouse of their workstation
- The software shall copy the screen content of the workstation/PC connected to the Ethernet, on the large screen display wall in scalable and moveable windows in real time environment.
- The software can be operated wirelessly over iPad/Tab for launch pre-defined of layouts
- All features, functionality, installation and commissioning should be certified by the OEM.

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267****Video Wall**

S. No.	Parameters	Description
1.	Native Resolution per Panel	1920x1080
2.	Aspect Ratio	16:9
3.	Screen Gap	Mechanical Gap Less Than 0.3 mm & Active to active < 1.3mm
4.	Backlight	Direct LED
5.	Brightness	should be 700cd/m2
6.	Contrast ratio	4000:1
7.	Bezel	0.8 mm
8.	Viewing angle	The screen shall have a H 178°/V 178° viewing angle or greater with a screen "haze" value of 44% or greater for wide viewing angles for operators.
9.	Continuous Automatic colour and brightness calibration	Yes
10.	Connectivity	2 DP , 2 HDMI , 2 USB , 2 LAN(10/100/1000 Mbps)
11.	HDCP	Yes
12.	Ethernet ports	2
13.	Redundant Power supply	Yes
14.	Illumination	Each LCD Panel shall be equipped with Direct LED illumination. The LEDs should have a "Typical" lifetime rating of ≥100K hours in normal operation for cost-effective operation.
15.	Redundant wall	Complete wall should be redundant and no downtime to be there in case of power supply failure
16.	Power control	1 AC power ON/OFF switch
17.	Input signal flexibility	The LCD panels shall have digital input connectivity options, including, but not limited to, HDMI, full Display Port and IP inputs supporting up to Quad HD resolutions at 30fps or higher.
18.	Component Life- LCD	≥100,000 Hours
19.	Power consumption	Less than 190 watt in Normal/Typical Mode
20.	Operating Temperature	As per site requirement

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S. No.	Parameters	Description
21.	Brightness Uniformity	>98%
22.	Heat Dissipation	Less than 680 BTU/Hr
23.	OEM Certification	All features and functionality should be certified by the OEM. The Display Modules, Display Controller & Software should be from a single OEM.
24.	Signal cropping	Each LCD panel shall have signal "cropping" capabilities allowing a single image to be displayed across the entire video wall array
25.	Remote Management	The control of the wall shall be possible via a network. All LCD panels shall have their own IP address, and the control software can access all of them at the same time. The available features shall be: On/Off, Brightness and Colour, Input control
26.	Automatic calibration	Each LCD panel shall be equipped with two (2) built-in sensors, permitting the brightness level of each LED Backlight to be controlled and adjusted automatically.

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269****Display Controller Specification**

S. No.	Parameters	Description
1.	Display controller	Controller to be able to control mentioned video wall panels
2.	Redundant Controller	The controller should be based on the latest architecture.
3.	Platform	Vendor to specify
4.	Processor	Minimum Xeon processor Quad core with 3.04 GHz or higher end processor
5.	Hard Disk/CD ROM	RAID1 1000GB HDD/To be provided
6.	Output	4 port each of 4k resolution
7.	Input	2
8.	RAM	Minimum DDR4 ECC 32 GB & expandable up to 64GB
9.	Chassis Type	19" Rack mount industrial chassis
10.	Network	2 Network Ports
11.	Resolution Support For Outputs	Minimum 1920 x 1080 or higher
13.	Streaming video standards	H.264, MPEG2/4, V2D, H.263, H.265
14.	Ticker	There should be a possibility in the controller to create user defined multiple tickers. It should also be possible to place these tickers anywhere on the wall
15.	Scalability	The system should be able to add additional inputs as required in the future
16.	Control	The system should have the capabilities of interacting (Monitoring & Control) with various applications on different network through the single Operator Workstation. It shall be possible to launch layouts, change layouts in real time
17.	Keyboard & Mouse Extension	Keyboard and Mouse along with mechanism to extend them to 20 Mtrs. operator desk from display controller to be provided
18.	24 x 7 operation	The controller shall be designed for 24 x 7 operation
19.	Others	The Video Wall and the Controller should be of the same make to ensure better performance and compatibility
20.	OEM Certification	All certificate to be submitted for information. The Display Modules, Display Controller & Software should be from a single OEM.
21.	Regulation Compliance	BIS

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CABLING, EARTHING, AND OTHER ACCESSORIES SPECIFICATIONS

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FRLS POWER CABLE

SL NO	DESCRIPTION	SPECIFICATION / MINIMUM REQUIREMENT			
1	Type of Cable	3 core, 4 core Copper cable			
2	Voltage Class	1100 VAC grade			
3	Size of Cable	2.5sqmm, 4 sqmm, 6 sqmm, 10 sqmm			
4	Applicable standard	IS 1554 Part-1/1988			
	CONDUCTOR				
5	Material	Multi-stranded Electrolytic annealed bare copper as per conductor class 2 of IS 8130			
6	No of Strand	7			
7	Size (sq mm)	2.5	4	6	10
8	Diameter of Strand (mm)	0.67	0.85	1.02	1.35
	INSULATION				
9	Material	PVC type C as per IS 5831/1984			
10	Type	Extruded			
11	Thickness	As per Table 2 of IS 1554 (Part-1)			
12	Color Scheme	As per IS 1554 (Part-1)			
		3 core Red, Yellow & Blue			
		4 core Red, Yellow, Blue & Black			
	INNER SHEATH				
13	Material	PVC compound type ST2 as per IS 5831/1984			
16	Type	Extruded			
17	Thickness	As per Table 4 of IS 1554 (Part-1)			
	ARMOUR				
18	Material	Galvanised round steel wires over inner sheath where the calculated diameter below armouring < 13 mm OR Galvanised steel strips over inner sheath where the calculated diameter below armouring > 13 mm as per IS 1554 Part 1			
19	Size	As per Table 5 of IS 1554 (Part-1)			
20	Armour Resistance	As per Table 6 of IS 1554 (Part-1)			
21	Galvanisation	Shall be as per IS 3975 and IS 10810 (Part 41)			
	OUTER SHEATH				
22	Material	FRLS PVC compound type ST2 as per IS 5831/1984			
23	Type	Extruded			
24	Thickness	As per Table 7 of IS 1554 (Part-1)			
25	Marking on outer sheath	By embossing/printing Make, Year of Manufacture, Voltage grade and Size of cable			

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SL NO	DESCRIPTION	SPECIFICATION / MINIMUM REQUIREMENT
26	Sequential length marking	At every interval of 1 meter
27	Colour	Black
28	Rodent and Termite attack protection	Yes
29	Oxygen Index	Min 29 at 27 Deg C to ASTM D 2863
30	Temperature Index	Min 250 Deg C to ASTM D 2863
31	HCL Emission	Max 20% by weight to IEC 754-1
32	Smoke Density	Max Smoke Density Rating shall be 60%, tested as per ASTM D 2843.
ELECTRICAL PARAMENTERS		
33	Maximum resistance of the conductor of complete cable at 20 deg.C	As per Table 2 of IS 8130
34	Minimum volume resistivity (for insulation)	1 x 10 e13 @ 27 deg.C 1 x 10 e10 @ 85 deg.C As per IS 5831 - 1984
35	High voltage test	3 KV rms for 5 min between core to core 3 KV rms for 5 min between core to armour

Note:

Cable weight and Conductor weight per meter shall be provided.

Rip cord to be provided below the inner sheath.

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**Page No.
273****FIBER OPTIC CABLE**

SL NO	DESCRIPTION	SPECIFICATION / MINIMUM REQUIREMENT
1	Type of Fiber	Single Mode
2	Specification	IEC 60793-2-50, ITU G.652
3	Construction	Multi-Fiber loose tube jelly filled
4	No. of fibers	6/ 12
5	No. of loose tube	1
5	Laying	Direct Burial (Underground)/ Inside HDPE conduit/cable tray (Above Ground)
6	Strength member	2 Nos. of steel wires
7	Armour	G.I./ Electrolytic chrome coated steel
8	Overall sheath	Tough weather resistant made High Density Polyethylene compound (HDPE) with anti-termite and anti-rodent properties.
9	Attenuation at 1310 nm	0.38 dB/Km
10	Attenuation at 1550 nm	0.25 dB/Km
11	Fibercutoff wavelength	> 1150 < = 1320 nm
12	Polarization Mode Dispersal (PMD)	≤0.5 /√km
13	Microbending loss at 1550 nm	≤0.05
14	Proof stress level	≥ 0.7 Gpa

Note:

- Optical fibers shall be with buffer loose tube filled with Thixotropic Gel. Cable shall be rodent and termite resistant and designed to protect the fibers from environmental hazards in direct burial use.
- Internal test certificate for attenuation and length shall be available

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**Page No.
274****EARTH CABLE**

S.NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Voltage Grade	1.1 KV
2	Standard Applicable	IS:1554 part-1 with latest Ammendments
3	Conductor	
A	Material	Annealed bare copper of EC Grade as per Class-2 of IS:8130
B	Effective Cross Section Area	4/6/10/16/25/35 Sq. MM
4	Max. DC resistance @ 20 Degree C	As per IS:8130 Table-2
5	Max, Conductor Temperature	
A	Rated	70 Degree C
B	During Short Circuit	160 Degree C
6	Insulation	
A	Material	Extruded PVC Type C as per IS:5831
B	Thickness (Nominal)	As per Table 2 of IS 1554 (Part-1)
C	Rodent and Termite attack protection	Yes
7	Outer Sheath	
A	Material	Extruded FRLS PVC Type ST-2 as per IS:5831
B	Thickness of Outer Sheath	The average thickness of PVC outer sheath shall be not less than the nominal value specified under col 3 of Table 7 and the smallest of the measured values shall not be less than the minimum value specified in co1 4 of Table 7.
C	Outer Sheath Colour	Green
8	FRLS Properties	
A	Oxygen Index	Min 29 at 27 Deg C to ASTM D 2863
B	Temperature Index	Min 250 Deg C to ASTM D 2863

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C	HCL Emission	Max 20% by weight to IEC 754-1
D	Smoke Density	Max Smoke Density Rating shall be 60%, tested as per ASTM D 2843.
E	Flamability Test	As per IEC:332-1

Note: All the instruments, Junction Boxes, cable trays etc are to be earthed using minimum 1C x 6 Sq. mm FRLS Copper un-armoured cable (green colour).

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276****CAT 6 ETHERNET CABLES (ARMOUR)**

S.NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Type of Cable	UTP (unshielded twisted pairs)
2	Conductor	4 unshielded twisted pair , 23 AWG Annealed bare stranded copper
3	Transmission frequencies	Up to 250 MHz
4	Characteristic Impedence	100(+/-3) Ohms 250 MHz
5	Primary insulation	Polyethylene insulation
6	Inner Sheath	HDPE
7	Armour over inner sheath	Required (Galvanized steel wire or Corrugated ECCS Tape)
8	Outer Sheath	HDPE
9	Application standard	ISO/IEC 11801 2nd Ed., EN 50173-1 May 2007 (DIN EN 50173-1), DIN 44332-5, IEC 61156-5 2nd Ed., EN 50288 x-1, 10GBase T in acc. with IEEE 802.3, tested and certified by independent laboratory. TIA/EIA 568.B
10	Application	Indoor / outdoor installation Maximum permissible – 70 mtrs for one point to another.

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CAT 6 ETHERNET CABLES (NON-ARMOUR)

S.NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Type of Cable	Shielded twisted pairs
2	Conductor	4 unshielded twisted pair , 23 AWG Annealed bare stranded copper
3	Transmission frequencies	Up to 250 MHz
4	Characteristic Impedence	100(+/-3) Ohms 250 MHz
5	Primary insulation	Polyethylene insulation
6	Inner Sheath	Extruded FRLS PVC Type ST-2 as per IS:5831
8	Outer Sheath	Extruded FRLS PVC Type ST-2 as per IS:5831
9	Application standard	ISO/IEC 11801 2nd Ed., EN 50173-1 May 2007 (DIN EN 50173-1), DIN 44332-5, IEC 61156-5 2nd Ed., EN 50288 x-1, 10GBase T in acc. with IEEE 802.3, tested and certified by independent laboratory. TIA/EIA 568.B
10	Application	Indoor / outdoor installation Maximum permissible – 70 mtrs for one point to another.

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HDPE PIPE

S.NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Base Density (at 27°C)	940 to 958 Kg/m ³
2	Tensile strength at yield.Speed of testing 50 mm/ minute	Min. 20 N/mm ²
3	Outside Diameter	As per BOQ
4	Wall thickness	Min. 2.90 to Max. 3.10
5	Lubricated layerthickness	Should be min. 10% of wallthickness
6	Inner Layer	The inner layer of solid permanent lubricant shall be continuous all throughand shall not come out during storage, usage andthrough out the life of duct.
8	Visual Apperance	Smooth inside &out side surface, free of blisters, shrink, hole, flaking, scratches& roughness. Duct shall be smooth, clean and round. The end shall be clearly cut and shall be square with axis of duct.

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LED LIGHT FITTINGS

- 1.0 The scope of work includes design, development, manufacturing, testing, supply, installation and commissioning of energy efficient luminaries complete with all accessories, LED lamps with suitable current control driver circuit including mounting arrangement for recessed type fittings, power distribution panel etc. The luminaries shall be suitable for rugged service under the operational and environmental conditions encountered during service. All the luminaries shall be supplied with associated driver circuit compatible with LEDs in all respect as required.
- 2.0 Illumination of minimum 7.0 Lux must be maintained on either side of the perimeter up to a distance of 20m all along; the pole design for mounting of CCTV camera shall also be used for mounting of LED lights of appropriate wattage capacity to ascertain the desired lux level throughout along the perimeter. The LED lights to be provided at 8m height at the end of cantilever.
- 3.0 Technical requirements of LED light fittings:
- 3.1 Technical requirements for LED
- 3.1.1 LED efficacy shall be greater than 110/180 Lumens/Watt @ 350mA drive current. In respect of LEDs of higher power ratings, drive current greater than 350mA can be accepted if the LED's LM 80 / IS: 16105 test reports support the same.
- 3.1.2 LED used should be of SMD type only.
- 3.1.3 LM-80/ IS: 16105 Test Reports of specific LED at the soldering point temperature of 85°C for the driving current at which the LEDs shall be driven, shall be obtained during procurement.
- 3.1.4 Reported life Span of LEDs used in the Luminaire shall be greater than 50,000 Hrs at the soldering point temperature of 85°C and at the luminaire driving current.
- 3.1.5 The LEDs shall comply with Photo biological Safety norms as per IEC 62471 / EN 62471/ IS: 16108.
- 3.1.6 View angle: Typical 60 deg /120 deg meeting the illumination requirements on either side of the perimeter.
- 3.1.7 Color temperature of the proposed white color LED shall be 5700K (i.e. 5665K±355K, as per ANSI standard C78.377A), Color point should fall within the 7 Step MacAdam as per ANSI standard C78.377A.
- 3.1.8 Color Rendering Index (CRI) of minimum 80 (+5%) with cool white light output.
- 3.2 Technical requirements for LED driver
- 3.2.1 The driver shall be of constant voltage and constant current type with internal surge protection device.
- 3.2.2 Min. efficiency of driver: 90%.
- 3.2.3 Power factor of complete fitting: Greater than 0.90

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- 3.2.4 The luminaire should be operable with auto adjustable 140-270V input supply voltage using the same driver.
- 3.2.5 In - built high and low voltage cut - offs : 140V (Low) and 270V (High)
- 3.2.6 Short circuit protection /Over load protection
- 3.2.7 Driver Surge Protection standard: Min 4kV. If a site/ location is prone to lightning and surges, 10 kV surge protection (external to the driver circuit) to be provided with the luminaire. The Surge Protection Device (SPD) should fail safe (i.e. without leading to fire hazard) and its failed status should be clearly visible through a flag/ indication.
- 3.2.8 Total Harmonic Distortion (THD): Less than 20 % at full load
- 3.2.9 Tc (Maximum Driver case temperature) must be declared for the luminaire.
- 3.2.10 Isolated driver should be used.
- 3.2.11 Potting of LED Driver: For driver power output rating < 50W, potted driver shall be preferable (but not mandatory). But for driver power output rating > 50W, potted driver shall be a mandatory requirement.
- 3.2.12 The power supply shall be connected to the LED PCBs through proper connectors.
- 3.2.13 EMI/ EMC compliance: Compliance to the following EMI/ EMC standards:
- i. CISPR15/IS:6573
 - ii. IEC: 61547 (reference standards are listed as follows)
 - IEC 61000 – 4 - 2/ IS: 14700 P art 3: Sec 2
 - IEC 61000 – 4 - 3
 - IEC 61000 - 4 - 4/ IS: 14700 Part 3: Sec 4
 - IEC 61000 - 4 – 5 3 kV (or 4 kV if so offered by the contractor)
 - IEC 61000 – 4 - 6
 - IEC 61000 – 4 -11/ IS: 14700 Part 3: Sec 11
 - iii. IEC: 61000 - 3 - 2 (Class C)/ IS: 1534 Part 1 (d) IEC: 61 000 - 3 - 3 / IS 14700: Part 3: Sec 2
- 3.2.14 Driver shall comply with the safely requirements laid down in IEC: 61347 - 2 - 13/ EN: 61347-2-13/IS: 15885-2-13.
- 3.2.15 Driver shall also comply with the performance requirements as per IEC: 62384/ IS: 16104.
- 3.3 Technical requirements of electronic components used:
- 3.3.1 The circuit boards and electronic components to be used in the luminaries should be of suitable rating/ type so as to provide reliable functioning. Following document needs to be furnished:
- ✓ Junction temperature rating of I. C. shall be obtained for the luminaire.

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- ✓ Capacitor type and temperature rating shall be obtained for the luminaire.
- ✓ Material of resister shall be furnished
- ✓ Junction / channel temperature rating of switching device s like MOSFET and transistor shall be obtained.
- ✓ MCPCB is to be used for mounting of LBDs.
- ✓ FR4 grade PCBs of min. thickness of 1.6 mm shall be used in driver circuits.

3.4 Technical requirements of Luminaries:

- 3.4.1 The luminaire should throw the perfect amount of uniform light with exactly the desired intensity at a given spacing as mentioned in the tender document along with better light control. The bidder should submit the certified photometric report as per IESNA LM-79/ IS: 16106, from a NABL accredited laboratory to validate the photometric claims.
- 3.4.2 Minimum 40 nos. of LED lamps shall be used in each luminaire.
- 3.4.3 The min. system lumen efficacy of the Luminaire shall be 110/ 180 lumens/Watt.
- 3.4.4 The Luminaire must have secondary lens/ optics. Though the secondary lens/ optics do result in minor loss of lumens, it is nevertheless a must to distribute the light output of the LEDs so as to achieve the desired polar curve characteristics for the Luminaire — no exemption shall be permitted on this account. The material of lens should preferably be PMMA.
- 3.4.5 Housing of luminaire: Pressure die - cast LM6/ADC12/LM24 housing
- 3.4.6 Cover type: Heat Resistant Toughened glass of minimum 4 mm thick or UV stabilized polycarbonate cover.
- 3.4.7 Adequate heat sink with proper thermal management shall be provided.
- 3.4.8 The fixture should be able to work properly with humidity range of 10%-95% RH.
- 3.4.9 The fixture should have corrosion resistance polyester powder coating.
- 3.4.10 Housing protection: Minimum IP - 65. If the LEDs and LED Driver are in different compartments, then the two compartments must be individually IP – 65 or better.
- 3.4.11 Impact Resistance: IK - 08
- 3.4.12 Temperature rise test: When the luminaire has stabilized thermally, soldering point temperature of the LEDs must be equal to or less than 85°C. Temperature rise (above ambient) of heat sink should generally remain within 20°C -relaxation on this account can be granted as long as the soldering point temperature limit of 85°C is not violated and there is no unacceptable outcome.
- 3.4.13 During procurement, the photometric data report in respect of the luminaire offered (through DTA Lux, CALCULUX or other simulation software) should be obtained. IES Photometric File is also to be

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supplied and firms to be warned of serious consequences against submission of a tampered/ doctored report.

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283****CABLE TRAYS WITH COVER**

All the power, signal & Control cables laid above ground or under cable trench must be on laid on anodized Aluminium perforated cable trays of minimum thickness of 2.5mm and edge height of minimum 25mm. The cable within cable tray shall be clamped with Al clamp. GI wire or nylon tie are not to be used. All cable trays to be covered with Anodised Aluminium Cable tray cover of minimum thickness of 1.5 mm and edge height of 10 mm and the same to be clamped at an interval of 1m.

Minimum Specifications:

SR NO	FEATURES	PARAMETERS
1	Type	Anodized Aluminium Perforated cable tray with cover
2	Width	50 mm/ 100 mm/ 150 mm/ 300 mm/ 600 mm
3	Edge height	25 mm for 50 mm 25 mm for 100 mm 25 mm for 150 mm 50 mm for 300 mm 50 mm for 600 mm
4	Thickness	2.5 mm
5	Clamps (for cable tray cover with cable tray)	Aluminium C Clamp with SS 304 hardware
6	Tray Material	Aluminium sheet as per IS-737 GR.'40800'
7	Tray cover height	10 mm
8	Tray cover thickness	1.5 mm
9	Single tray unit length	Minimum 2.44 metre
10	Surface Coating	Anodized: 8 to 10 microns as per IS1868
11	Hardware & Fasteners	Coupler plate & SS Nut, Bolt

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**Page No.
284****EXPLOSION PROOF JUNCTION BOX**

SR NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Body & Cover	Cast Al. Alloy (LM-6) minimum 5 mm thick.
2	Gasket	Neoprene rubber
3	Terminals	Clip on type; block locked at both ends suitable for up to 2.5 mm 2 conductors.
4	Tag nameplate	to be provided
5	Paint	Anti corrosive epoxy paint, shade light gray
6	Protection class	Suitable for area classified as zone-I, IIA & IIB, T6 as per IS2148 IP – 65 or better as per IS – 2147
7	Other	<p>Explosion proof junction boxes shall have detachable cover, which is fixed, to the box by means of cadmium plated hexagonal head screws. Terminal shall be spring loaded, vibration proof, clip-on type, mounted on nickel plated steel rails complete with end cover and clamps for each row.</p> <p>Sizing shall be done with due consideration for accessibility and maintenance in accordance with the following guidelines</p> <p>50 to 60 mm between terminals and sides of box parallel to terminals strip for up to 50 terminals and additional 25 mm for each additional 25 terminals.</p> <p>100 to 120 mm between terminals for up to 50 terminals and additional 25 mm for each additional 25 terminals.</p> <p>All junction boxes shall be provided with external earthing lugs</p> <p>All junction boxes shall be provided with 20% spare cable entries and terminals. Each junction box shall have a minimum of 10% or 2 Nos. whichever are higher, spare entries. All spare entries shall be with EXD plugs.</p> <p>All cable glands and plugs shall be of nickel-plated brass material. All the cable glands shall be preferably NPT with PVC hoods unless otherwise specified.</p> <p>Double compression type cable glands shall be used for armoured cable.</p>

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285****WEATHERPROOF JUNCTION BOX**

SR NO	DESCRIPTION	MINIMUM REQUIREMENT
1	Body & Cover	Housing :Carbon steel Door: Carbon steel, all-round foamed-in PU seal
2	Surface finish	Housing and door: Dipcoat primed, powder-coated on the outside, textured paint Mounting plate: Zinc-plated
3	Material thickness	Housing: 1.38 mm (0.05 ") Door: 1.5 mm (0.06 ") Mounting plate: 2.5 mm (0.1 ")
4	Gland Plate	Bottom
5	Terminals	Clip on type; block locked at both ends suitable for up to 2.5/4/6/10 etc. mm 2 conductors as per requirement.
6	Tag name plate	To be provided
7	Color	RAL 7035
8	Protection class	IP 66/Nema 4 or Better
9	IK Code	IK08
10	Other	<p>Terminal shall be spring loaded, vibration proof, clip-on type, mounted on nickel plated steel rails complete with end cover and clamps for each row.</p> <p>Sizing shall be done with due consideration for accessibility and maintenance in accordance with the following guidelines</p> <p>50 to 60 mm between terminals and sides of box parallel to terminals strip for up to 50 terminals and additional 25 mm for each additional 25 terminals.</p> <p>100 to 120 mm between terminals for up to 50 terminals and additional 25 mm for each additional 25 terminals.</p> <p>All junction boxes shall be provided with one number internal and two number external earthing lugs.</p> <p>All junction boxes shall be provided with 20% spare cable entries and terminals. Each junction box shall have a minimum of 10% or 2 Nos. whichever are higher, spare entries. All spare entries shall be plugs.</p> <p>All cable glands and plugs shall be of nickel-plated brass material. All the cable glands shall be preferably NPT with PVC hoods unless otherwise specified.</p> <p>Double compression type cable glands shall be used for cables.</p>
11	Mounting	Wall/Structure

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OCTAGONAL HOT DIP GALVANIZED POLES

S. No	Description	Parameter
1	Octagonal Pole	
a	Over all height of Pole (mtrs)	6, 8, 10,12, 15 Mtrs
b	Sizes	As per BOQ
c	Size of Base Plate & Thickness	As per design
d	Foundation Bolts	As per design
2	Metal Protection Treatment of Pole Sections.	Hot Dip Galvanized as per BSEN ISO 1461
3	Thickness of Galvanization (mm)	Average 70 Microns as per IS 2629
4	Welding	As per AWS D1.1,(Equivalent to BS 5135)-Single longitudinal welding
5	Size of Door opening the Base Section	100x400mm
6	Type of Door construction and locking arrangement	Close fitting door with suitable reinforcement to avoid buckling
7	Material of construction of shaft	As per BSEN 10025/For Shaft, IS 2062 For Base Plate
8	Cross Section of Pole	Octagonal
9	Dynamic Loading	
a	Max. design with speed	50m/sec as per IS 875 (Part-III)
b	Gust Speed time considered	3 Sec
c	Height above ground level at which wind velocity is measured	As per pole Sizes
d	Factor of safety for wind load	1.25
E	Factor of safety for other loads	1.15
f	Applicable Standard for pole design	BSEN-40-3-3

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S. No	Description	Parameter
10	Foundation Details	
a	Type of Foundation	RCC
b	Design safety factor	1.25
c	Considered wind speed (km/hr)	50mm/sec as per IS875 (Part-III)
d	Depth of Foundation (mm)	As per Design
12	Brackets& Accessories	As per requirement

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CABLE LAYING & CABLE SIZING CONSIDERATIONS

1.0 General

- a. Optical fibre cable along with OFC components shall be considered for
 - Inter building network cabling for CCTV if the distance is greater than 50 Meter i.e. from Control room (CR) to Security room, CR to TM room & etc.
 - CCTV communication network
 - Any other interface as per design Engineering.
- b. Power cable shall be designed properly with proper voltage calculation and same shall be submitted to IOCL for review.

2.0 Cable Laying:

- e. All cables are to be laid above ground to the extent possible over cable trays with cover. At road crossing or over driveway, cables are to be laid on overhead MS structure (Bridge). In case overhead cable bridge are required to be constructed at road crossing or on driveway, the drawing of the same to be vetted by structural Engineer or from Govt Engineering College/ IIT/NIT prior to start of fabrication work.
- f. Bending radius of armoured cables shall not be less than 12 times O.D. of cable. Necessary loops to be provided at both ends. There shall be no joints in the cables.
- g. HDPE pipes if used, it shall have dia of minimum 25 mm for single cable and 50 mm for two cables. For more number of cables, suitable size of the pipe is to be considered.
- h. Anodized Aluminium perforated type **cable trays along with cable tray cover** to be provided as per tender scope, fixing at site on steel structure, laying of cable trays over the pedestals, RCC trenches, overhead structures, making pedestal, RCC trenches, overhead structure etc as per site requirement are included in the scope of work.
- i. The perforated trays shall be properly supported at a regular interval of maximum 1000 mm from insert plates or steel structures. Wherever insert plates are not available, supports on concrete structures on ceiling shall be fixed with minimum 10 mm diameter expansion bolts. Angle supports for perforated trays shall be fabricated from 50mm x 50mm x 5mm MS angles minimum size. The cable within cable tray shall be clamped with Al clamp. GI wire or nylon tie are not to be used. All cable trays shall be covered along with clamp at every 1 m.
- j. All cores of cable shall be identified at both ends by means of PVC ferrule. Ferrules shall be of single sleeve type. Ferrule numbering shall be source destination type (cross ferruling). Cable leads shall be terminated at both ends by crimped type soldering.
- k. Cable routing shall be planned to be away from heat sources, Hydrocarbon Vapour, water, oil, drains piping air conditioning duct etc. Cables are identified close to their termination point (Cable tagging are to be punched on aluminium straps of minimum 2 mm thick and securely fastened to the cable, wrapped around it) , bends and every 90 Meter intervals, by cable number tags.
- l. As far as possible, each cable tray shall contain only one layer of cables and minimum required vertical clearance between racks is maintained. All wall openings/pipe sleeves are

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effectively sealed after installation of cables to avoid seepage of water inside building/lined trench. MCT blocks to be provided at cable entry points in every building.

- m. Where cables rise from trenches to Instruments, junction boxes, control station, panels etc, these are to be taken through HDPE/ GI protection pipe sleeves, ends of which should be sealed after cabling. Conduit ends are to be plugged with weather proof sealing plastic compound. Metallic pipe ends if used should be bell mouthed. Equipment earthing is taken from the earth grid and not from the cable rack earthing. Cables are clamped on trays using aluminium clamps at intervals not exceeding 1 meter.

3.0 Cable Termination

- n. Identification number tags of the cable for the equipment are to be provided correctly at both ends of the cable. The tag size is not less than 2 mm thick and 20 mm wide and of enough length to contain all required details. Cable termination is done with proper crimping lug and use of antioxidant paste. Wherever lugs are used for termination, size of lug matches with cable core and material of lug is suitable for application. Proper mechanical protection shall be provided for the cables.
- o. The scope shall include:-
- h) Supply laying and termination of 1C x 6 Sq. mm FRLS Copper un-armoured cable (green colour) for earthing instruments and junction boxes to earth bus bar. Earthing to be done as per OEM's recommendation and preferably double earthing to be provided.
 - i) Supply, laying, jointing 50 x 6 mm GI flat.
 - j) Earth work, excavation for all kinds of soil as per cable trench cross section drawing including shorting, shuttering, dewatering etc as per instruction of engineer in charge (750 mm depth).
 - k) WBM Road, Dyke cutting, concrete breaking for cable trenches including shoring , strutting etc, if required and repairing of the road, dyke to original condition and disposing off excess materials within the work site as per direction of site engineer. Breaking the existing RCC work and disposing off the malba to an unobjectionable place as per the instruction of the site engineer. Job shall be complete in all respect including the cost of all labour, tools, materials, load lift hire charges of equipments if any.
 - l) Supply, erection and installation of cable trays alongwith structural support in trenches already made, on walls, concrete structures etc including supply and installation of all necessary pipe fittings such as bends, sockets, elbows, tees etc. bending threading, binding etc as required for laying of cables in road, station piping crossing and cable rising up to instruments as per direction of site engineer including the cost of all materials, labour, tools etc complete in all respects.

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EARTHING

1.0 General

- a. All junction boxes, local cabinets, field mounted instruments shall be connected to the nearby earth bus bar/earth pit through minimum **6 mm² Insulated** FRLS unarmoured flexible copper conductor.
- b. Cable trays are eartherd at regular interval not beyond 30 Meters.
- c. Earthing network shall be realized with earth electrodes and/or buried bare conductors.
- d. Two types of earthing system shall be envisaged –
 - m) Main earthing system (ME)
 - n) Electronic earthing system (EE)
- e. In general the following rules shall apply for earthing
 - o) The metallic housing of electronic equipment/junction box/panel shall be connected to the main earthing system (ME).
 - p) All armours of armoured cables shall be connected to the earth (ME) at both ends.
 - q) The shield of the shielded cable shall be earthed with electronic earth at one end only i.e. at control room end.
- f. The main Earthing System (ME) and Electronic Earthing system shall be in separate loop and shall form separate grid.
- g. Respective earthpit forming earthing grid shall be done using minimum 50x6 mm² GI strip. All branch earth conductors from each field unit shall be connected to respective earthing grid.
- h. **Minimum Permissible Sizes of the Earthing Conductors:**

Size of the conductor shall be selected based on the fault current that is required to be dissipated during emergencies.

Equipment	Minimum Size of the conductor
Main Earthing Grid	50 mm x 6 mm GI strip
CCTV Pole Structure	50 mm x 6 mm GI strip
UPS Neutral	50 mm x 6 mm GI strip
UPS Body, panels, console etc	50 mm x 6 mm GI strip
Junction Box	1C x 6 sq mm unarmoured FRLS Copper cable

2.0 EARTH PITS

Separate earth pits shall be provided for system earth, IS earth, power earth, and general body earth for instruments, equipments, junction box body etc. These earth pits shall be separate and isolated from electrical earth pits. Individual Earth pits resistance and grid resistance shall be as per standard codes and accordingly nos. of earth pits/electrodes shall be considered. For system earth, redundant earth pits shall be provided and to be connected to



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form ring loop. Earth pit (ME), earth electrodes, Earthing connection etc shall be as per IS – 3043 standards with electrode.

- p. Earth-pit head must be covered properly and clearly visible identification tags indicating earth pit no., Earthing resistance and date of testing etc as per direction of site in-charge.
- q. Redundant earth pits & bus shall be provided for the system earth. Both earth pits shall be connected to form a ring. Suitable distance shall be maintained between various earth pits (minimum 3 meters) as per guidelines of API RP550.
- r. All circuit grounds of electronic instruments, shields and drain wires of signal cables shall be connected to instrument ground bus which is electrically isolated from the AC mains earthing bus. This bus shall be typically 25mm wide and 6 mm thick of copper or 50 x 6 GI strip.

3.0 Earth pit Resistance Value:

- a. The resistance value of an earthing system to general mass of the earth should not exceed.
 - 4 Ohms for electrical systems and metallic structures.
 - 1 Ohm for earth grid, bonding connections between joints in pipelines and associated facilities.
 - 2 Ohms for each electrode to the general mass of the earth.

4.0 Earthing of CCTV instruments:

- b. **Grounding of CCTV poles:** CCTV poles are to be grounded to the nearest Earthing pit if available within a distance of 20-30m using GI strip. The strip has to be connected to earthing pit directly. In case earthing pit is not available, separate earthing pit to be provided for respective poles. Earthing pit to be buried min. 500 mm below the ground.
- c. **Grounding of Control room equipment:** Panels installed in control room buildings are to be grounded to the nearest earthing pit if available, or separate earthing pit to be provided in case of non availability.

Surge Protection device between earthing grids: All the earthing grid of CCTV system and all other earthing grids which have return path to the earthing system of CCTV system, are to be interconnected using lightning and surge protection devices (SPD Type 1) as per specification mentioned in relevant section.



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REPORTING & CO-ORDINATION

CONTRACTOR shall submit the following reports on regular basis for IOCL / EPMC's information / review.

1.0 MONTHLY PROGRESS REPORT

The report shall be submitted on monthly basis within 5 calendar days from cut-off date covering overall scenario of the project.

2.0 WEEKLY PROGRESS REPORT – OVERALL

This report shall be prepared by CONTRACTOR and issued on weekly basis to EPMC / IOCL at site. The report shall include the following as a minimum.

- Executive Summary
- Project highlights with dates of achievements
- Project exception (work programmed but not achieved with reasons for Non achievement) and work programmed for next week
- Critical areas
- Actions taken / to be taken for slippages
- Progress statistics

This shall cover both for CONTRACTOR's Home/Design office activities and construction activities at site.

3.0 WEEKLY PROGRESS REPORT-CONSTRUCTION

This report shall be prepared by CONTRACTOR and submitted on weekly basis within 1 Calendar day from cut-off date. The report shall cover following items, as a minimum.

- Progress statistics
- Work item wise quantity completed against programme for the week including reasons for shortfall.
- Programme for next week
- Work Front available
- Constraints, if any
- Resources deployed against planned with reasons for shortfall in resource deployed
- List of equipment/materials received at site during the week

4.0 EXPEDITING REPORT

Contractor shall submit fortnightly expediting report based on his representative's visit to vendor's work for orders where delivery of materials is critical to project completion. A list of such critical items/vendors shall be specified by OWNER/PMC during the kick-off meeting or at a later date.

In addition to the above, OWENR/PMC may request expediting report based on visit of CONTRACTOR's representative in case of orders which were though not critical at the time of order placement however become subsequently critical during project execution due to any reason.

5.0 HINDRANCE REGISTER:

For any hinderance in front availability, Register to be prepared and signed jointly by IOCL site in charge and vendor on daily basis. Even if there is no hinderance, register has to be jointly signed.

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RECOMMENDED VENDOR/ OEM LIST

SR NO.	EQUIPMENT/INSTRUMENT	RECOMMENDED VENDOR/ OEM
1	FLP JUNCTION BOXES, ENCLOSURES, CABLE GLANDS, PLUGS, PUSHBUTTON STATIONS	BALIGA
		FEPL LTD.
		FCG FLAMEPROOF CONTROL GEAR
		CEAG
		FLEXPRO
2	CONTROL PANELS & CONSOLES	RITTAL
		ENCLOTEK
		LOTUS
		PYROTECH
		HOFFMAN
		SCHNEIDER ELECTRIC
		EVANS
		GE
		ABB
		RTP
3	CABLE- SIGNAL & CONTROL	ASSOCIATED CABLE
		ASSOCIATED FLEXIBLES AND WIRE
		DELTON
		UNIVERSAL
		CORDS CABLES
		RELIANCE ENGG
		NICCO
		BROOKS
		THERMOCABLES
		KEI
		BELDEN
		RADIANT
		LAPP
		UDEY PYRO CABLES
		T C COMMUNICATIONS PVT LTD (TECHNOCAB CABLES)
4	CABLE- POWER & EARTH	CCI
		FORT GLOSTER
		DELTON
		CORDS CABLES
		THERMOCABLE
		ASSOCIATED CABLE
		ASSOCIATED FLEXIBLES AND WIRE
		UNIVERSAL
		NICCO
		KEI
		BELDEN

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SR NO.	EQUIPMENT/INSTRUMENT	RECOMMENDED VENDOR/ OEM
		RADIANT
		LAPP
		UDEY PYRO CABLES
		T C COMMUNICATIONS PVT LTD (TECHNOCAB CABLES)
		POLYCAB
5	CABLE TRAY & TRAY COVERS	GRAM ENGG.
		HOPES METAL
		INDIANA
		GLOBE ELECTRICALS
		MM ENGG.
		CALCUTTA MANUFACTURERS (KOLKATA)
		ELCON CABLE TRAYS PVT. LTD.
		RUKMANI ELECTRICALS
		PARAMOUNT
		IZUME DENKI
		PHOENIX CONTACT
		SIEMENS
		LARSEN & TOUBRO
		GE
		BCH
		ALSTOM INDIA LTD (EE)
6	MCB, ELCB & MCCB	MDS
		INDOKUPP
		SIEMENS
		GE POWER CONTROL
		SCHNEIDER ELECTRIC
		ABB
		L&T
7	AMMETER & VOLMETER	AE
		IMP
		MECO
		RISHABH
8	UPS	EMERSON NETWORK (VERTIV ENERGY PRIVATE LIMITED)
		HITACHI HI-REL
		SCHNEIDER
9	BATTERY - VRLA / Ni-Cd	AMARRAJA
		GLOBAL YUASA
		ROCKET
		HBL NIFE
		EXIDE
		EMCO
		PANASONIC.

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		LARSEN & TOUBRO
		SIEMENS
10	FIBRE OPTIC CABLE	LUCENT – AT & T
		FINOLEX
		D-LINK
		HCLCOMNET (COMMSCOPE)
		SIEMENS
		OPTEL
		ABB
		R & M
		PANDUIT
		SEIMON
		TORRENT
		CORNING
		TYCO
		AMP
11	CAT 6/6A CABLE	R & M
		TYCO
		MOLEX
		AMP
		DIGILINK
		STSTIMAX
		INGERSOLL RAND
12	CAMERA SURVEILLANCE SYSTEM	
A	WEATHER PROOF AND FLAMEPROOF CAMERAS, ENCODER	PELCO
		AMERICAN DYNAMICS
		PANASONIC
		HONEYWELL
		BOSCH
		INFINOVA
		SONY
		AXIS
		INDIGO VISION
B	LENS	TAMRON
C	VMS, ANALYTICS SOFTWARE	PELCO
		AMERICAN DYNAMICS
		PANASONIC
		HONEYWELL
		BOSCH
		INFINOVA
		SONY
		AXIS
		INDIGO VISION
		MILESTONE

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SR NO.	EQUIPMENT/INSTRUMENT	RECOMMENDED VENDOR/ OEM
		GENTEC
		NICE
		IQ VISION (GODREJ)
D	NAS/SAN	NetApp
		EMC
		HP
		FUJITSU
		HITACHI
		DELL
E	LED LAMPS	NICHA
		CREE
		PHILIPHS LUMILED
		OSHRAM
E	LED LIGHT FIXTURES	BAJAJ
		HAVELLS
		PHILIPS
		CROMPTON GREAVES
F	LED TV/MONITORS	PANASONIC
		SONY
		SAMSUNG
		TOSHIBA
		LG
		HITACHI
G	INDUSTRIAL GRADE LAYER 3 GIGABIT ETHERNET SWITCH	HP
		CISCO
		MOXA
		DELL
		PROCURVE
		NORTEL
		GEOEQUIPP
		ALLIED TELESYS
H	LAYER 2 ETHERNET SWITCH	RIUGGEDCOM
		SIXNET
		ELECTRALYSYS
		HONEYWELL
		ROCKWELL
		SIEMENS
		GARRETCOM
		MOXA.
		ALLIED TELESYS
		CISCO
		LANTECH
		GEOEQUIPP
I	FIBRE OPTIC NETWORK COMPONENTS	SIEMON

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		R & M
		PANDUIT
		LUCENT -AT & T
		MODTAP
		OPTEL
		ABB
		HUBER+SUHNER
		SIEMENS
		ALLED TELESYS
		PHOENIX CONTACT
J	VIDEO CABLE	FINOLEX
		FORT GLOSTER
		NICCO
		HAVEL
		UNIVERSAL CABLES
		FINECAB
K	SURGE PROTECTION DEVICE	DEHN
		CITEL
		PHOENIX CONTACT
		MTL
L	DC POWER SUPPLY	VICOR
		LAMBDA
		COSEL
		PHOENIX CONTACT
		SIEMENS
M	CCTV POLE	BAJAJ
		WIPRO
		PHILIPS
		CROMPTON GREAVES
		BOSCH
		CARDAX
		HID
		INGERSOLL RAND
		LENEL
		L-1 INDENTITY
		RBH
		GODREJ
		HONEYWELL
		NOTIFIER
		SYSTEM SENSOR.
		SIEMENS
		BOSCH

Note:

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- 1.0 All the Exproof /Intrinsic items located in hazardous area shall have CMRS/CPRI/ERTL, BIS and CCE no. and certification.
- 2.0 In case of imported items the Exproof /Intrinsic certification from following agency shall be provided. i.e. ATEXFM / BASEEFA / PTB/ KEMA/ TUV etc. CCOE certificate is mandatory for both Indian and imported item. Also CE mark shall be available and complying all EMC directives for imported item.

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EXISTING CAMERAS DETAILS FOR BUYBACK

1. AKOLA DEPOT

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
A	Details of existing old CCTV cameras which are to be necessarily Buy back by new CCTV vendor at Reserved Price/ WDB				
a	PTZ	Pelco	Analog PTZ	4	2013
b	Fixed zoom camera	american dynamic	Analog Fixed	17	2013
c	NVR /Server/ VMS software	MindTree	G3020	1	2013
d	CCTV Switches, JB's, NVR, Storage	Sixnet,baliga,seagate	NA/G3020	6/8/2TB	2013
e	Fixed zoom camera	american dynamic	AnalogFixed	17	2013
h	LED Screen40" & 75"	VIU , LG	lg42"	2	2013
g	UPS 1 KVA	APC	SURT1000XLI	1	2013

2. CHANDRAPUR DEPOT


SN	Equipment	Make	Model	Qty (Nos)	Year of installation
A	Details of existing old CCTV cameras which are to be replaced (Buy back by new CCTV vendor)				
a	PTZ	Pelco	Analog PTZ	3	2005
b	Fixed zoom camera	American dynamic	AnalogFixed	12	2005
c	NVR /Server/ VMS software	Gladius	Gladius	1	2005
d	CCTV Switches, JB's, NVR, Storage	allied/pelesis		6 JB, 2TB	2005
e	LED Screen40" & 75"	LG	LG 40"	1	2005
f	UPS 1 KVA	APC	BackUPS pro1000	1	2005

3. DHULE DEPOT

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
A	Details of existing old CCTV cameras which are to be replaced (Buy back by new CCTV vendor)				
a	PTZ	Pelco	Analog PTZ	4	2013
b	Fixed zoom camera	Pelco	AnalogFixed	14	2013
c	NVR /Server/ VMS software	MindTree	G3020	1	2013
d	CCTV Switches, JB's, NVR, Storage	NA/MindTree /1TB	NA/G3020	8 JB	2013
c	Fixed zoom camera	Pelco	AnalogFixed	14	2013

USE Digital Signature Certificate (DSC) to upload the Tender documents, refer corrigendum's etc., in e-tender website <https://iocletenders.nic.in>

Note- All parties are requested to Complete the submission process at least 4 hours prior to the submission end date

 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/xxxx/MSO/2022-23	Page No. 300
	Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	

d	LED Screen40" & 75"	LG 43"	43LW342C-TA	1	2017
e	Work Station	MindTree	G3020	1	2013
f	UPS 1 KVA	APC	SURT1000XLI	1	2013

4. JNPT TERMINAL


SN	Equipment	Make	Model	Qty (Nos)	Year of installation
A	Details of existing old CCTV cameras which are to be replaced (Buy back by new CCTV vendor)				
a	PTZ	Dahuva(3), Infinova(1)	IP CAMAERAS	4	2014
b	Fixed zoom camera	Infinova(8), Hikvision(20), Ganz Lite (3)	IP CAMAERAS	31	2014
c	NVR /Server/ VMS software	NVR HIKVISION	DS-9664NI-I8	1	2019
d	Monitor	HP 20"	CNC21007G2	1	2014
e	CCTV Switches, JB's, NVR, Storage	NA/Mind Tree/56TB	NA/G3020/6TB Segate, 8TB Segate	NA/12/4+4	2014 / 2018
f	LED Screen40" & 75"	SONY 40"	KLV-40EX430	2	2014
g	Work Station	HP	D7K54PA#ACJ	1	2014
h	UPS 1 KVA	3KVA EMERSON, MICROTEK	GXTMT+SKL, NM72MX3KK11	2	2014

5. MIRAJ DEPOT

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
A	Details of existing old CCTV cameras which are to be replaced (Buy back by new CCTV vendor)				
a	PTZ	Pelco	Analog PTZ	3	2013
b	Fixed zoom camera	american dynamic	ADZC270PT-H	16	2013
c	NVR /Server/ VMS software	MindTree	G3020	1	2013
d	CCTV Switches, JB's, NVR, Storage	NA/MindTree /1TB	NA/G3020	5	2013
e	Fixed zoom camera	Pelco	AnalogFixed	16	2013

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f	LED Screen 40" & 75"	Samsung 40"	40"	1	2013
g	Work Station	MindTree	G3020	1	2013
h	UPS 1 KVA	APC	SURT1000XLI	1	2013

6. PUNE TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	Pelco	Analog PTZ	5	2012
b	Fixed zoom camera	american dynamic	Analog Fixed	13	2012
c	NVR /Server/ VMS software	MindTree	G3020	1	2012
d	Monitor	Lenovo	24"	1	2012
e	CCTV Switches, JB's, NVR, Storage	NA/MindTree /1TB	NA/G3020	5	2012
f	Fixed zoom camera	american dynamic	Analog Fixed	13	2012
g	LED Screen 40" & 75"	Samsung 40"	40"	1	2012
h	Work Station	MindTree	G3020	1	2012
i	UPS 1 KVA	APC	SURT1000XLI	1	2012


Kindly note following camera & CCTV components installed after 2018 are to be retained and to be integrated with proposed CCTV system. In case the same needs to be replaced, then vendor to replace the same at no additional cost to IOCL. No payment for additional camera on this account shall be made. Maintenance of these cameras and CCTV components shall be in the scope of successful bidder after new system is commissioned and the cost for the same is incorporated in CAMC cost.

7. SEWREE – I TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	Pelco	Analog PTZ	3	2012
b	Fixed zoom camera	Pelco	Analog Fixed	11	2012
c	NVR /Server/ VMS software	Mindtree	Gladius Pro	1	2012
d	CCTV Switches, JB's, NVR, Storage	MindTree/ 12TB	Gladius Pro	5 JB	2012
e	Fixed zoom camera	Pelco	Analog Fixed	11	2012
f	LED Screen 40" & 75"	Samsung	32" LED Monitor	1	2021
g	Work Station	MindTree	Gladius Pro	1	2012

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h	UPS 1 KVA	APC	SURT 1000 XLI	2	2012
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8. SEWREE – II TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	Fixed zoom camera	CP Plus		4	2016
b	NVR /Server/ VMS software	PAL/NA/CPPLUS ORANGE	CP-UVR-0801E1-CS	1	2016
c	Monitor	Acer	B206HQL	2	2016
d	CCTV Switches, JBs, NVR, Storage	NA/NA/PAL/2 TB	CP-UVR-0801E1-CS	1	2016
e	FLP Fixed Bullet Camera	CP Plus		2	2016

9. VASCO TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	Pelco	SpectralV SE/DD4CBW35-X	9	2013
b	Fixed zoom camera	American Dynamics	ADZC270PT-EN	8	2013
c	NVR /Server/ VMS software	Lenovo,Mindtree	4157-PQ7 S20,Gladius Client version; 7.2.29 Server version; 7.2.47	1	2013
d	Monitor	Lenovo, Panasonic	VIAA333,Viera THL32C22	2	2013
e	CCTV Switches, JBs, NVR, Storage	Sixnet,Alid Telesis	SLX-8MG-1,X900-24X	8,1	2013
f	Fixed zoom camera	American Dynamics	ADZC270PT-EN	8	2013
g	LED Screen40" & 75"	Lenovo, Panasonic	VIAA333,Viera THL32C22	2	2013
h	Work Station	Mindtree	Gladius	1	2013
i	UPS 1 KVA	APC (800VA)	SURT1000UXI	3	2013

10. VASHI TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
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a	PTZ	Pelco	Spectra 4	3	2012
b	Fixed zoom camera	Americal dynamic camera	Analog fixed	13	2012
c	NVR /Server/ VMS software	Mindtree	Gladius Client version; 7.2.29 Server version; 7.2.47	1	2012
d	CCTV Switches, JB's, NVR, Storage	Mindtree	Gladius pro	-	2012
e	FLP Fixed Bullet Camera	Hikvision	DS-2CD4A24FWD-IZS	3	2012
f	Fixed zoom camera	Americal dynamic camera	Analog fixed	-	2012
g	LED Screen 40" & 75"	Samsung	LH43QBREBGCXXL	1	2021
h	Work Station	LENOVO	4157PQ7	2	2012
i	UPS 1 KVA	APC	SURT 1000 XLI	2	2012

11. WADALA TERMINAL

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	Pelco	Analog PTZ	11	2012
b	Fixed zoom camera	Pelco	Analog Fixed	3	2012
c	NVR /Server/ VMS software	Mindtree	Gladius Pro	1	2012
d	CCTV Switches, JB's, NVR, Storage	MindTree/12TB	Gladius Pro	5 JB	2012
e	Fixed zoom camera	Pelco	Analog Fixed	11	2012
f	LED Screen 40" & 75"	Samsung / Phillips	DC32E	3	2012/2014
g	Work Station	LENOVO,	Think station e-20	1	2012
h	UPS 1 KVA	APC	SURT 1000 XLI	2	2012

12. AURANGABAD AFS


SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	Nil				

Kindly note following cameras installed in 2021 are to be retained and to be integrated with proposed CCTV system. In case the same needs to be replaced, then vendor to replace the same at no additional cost to IOCL. No payment for additional camera on this account shall be made. Maintenance of these cameras shall be in the scope of successful bidder after new system is commissioned and the cost for the same is incorporated in CAMC cost.

Make : ONCAM Cameras (3 nos) installed at Repainting shed, STP shed and TT Parking Rest Room.

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13. DABOLIM (GOA) AFS

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	Nil				

14. SHIRDI AFS

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	Nil				

15. MANMAD BP


SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	INFINOVA	-	7	2015
b	Monitor	ACER, WIPRO	-	2	2015
c	FLP Fixed Bullet Camera	DAHUA	-	5	2015
d	Non FLP Fixed Dome Camera	INFINOVA	-	8	2015
e	LED Screen 40" & 75"	55" LED SCREEN	-	1	2021

16. DHANAJ BP

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	INFINOVA	INFINOVA - V1829A/C16 PTZ CAM	6	2015
b	FLP Fixed zoom camera	INFINOVA	INFINOVA - V1241-26A15 FIX CAM	12	2015
c	NVR /Server/ VMS software	DELL	DELL PowerEdge T440	1	2021
d	Monitor	ACER	ACER, WIPRO	1	2015
e	LED Screen 40" & 75"	INFINOVA	55"/32"	1/1	2021/2015

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17. PUNE BP

SN	Equipment	Make	Model	Qty (Nos)	Year of installation
a	PTZ	DAHUA	-	2	2015
b	Fixed zoom camera	HIKVISION	-	6	2015
c	Ex proof fixed zoom camera	INFINOVA, DAHUA	-	13	2015
d	NVR /Server/ VMS software	HIKVISION	-	2	2021
e	Monitor	ACER, WIPRO	-	3	2015
f	FLP Fixed Bullet Camera	DAHUA	-	8	2015
g	Non FLP Fixed Dome Camera	INFINOVA	-	3	2015
h	LED Screen 40" & 75"	40" LED SCREEN	-	1	2021

BUYBACK VALUE FOR EXISTING CCTV CAMERAS

- All old CCTV cameras, Servers and accessories as listed under existing cameras details have to be compulsorily brought back by the incumbent / successful vendor at below mentioned price fixed by IOCL. It is obligatory on the part of the vendor to clear the work site of all the old equipments as listed above no sooner the old equipment has been replaced by new one. Statutory taxes as applicable shall be borne by the vendor over and above the Reserve price.
- IOCL shall raise GST invoice on the bidder along with applicable GST for buy back of old equipments.
- Vendor need to pay the buyback amount along with applicable taxes or the same shall be deducted from the bill of vendors undertaking the CCTV job.

Buy back Amount of existing CCTV system as per details mentioned under existing cameras details excluding taxex

LOT wise

SN	Name of Locations	Buy Back Value of existing CCTV System excluding applicable taxes.(In Rs.)
1	AKOLA DEPOT	Rs. 54,160.00
2	CHANDRAPUR DEPOT	Rs. 38,984.00
3	DHULE DEPOT	Rs. 43,482.00
4	JNPT TERMINAL	Rs. 7,76,000.00
5	MIRAJ DEPOT	Rs. 41,233.00

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6	PUNE TERMINAL	Rs. 54,036.00
7	SEWREE – I TERMINAL	Rs. 4,598.00
8	SEWREE – II TERMINAL	Rs. 32,092.00
9	VASCO TERMINAL	Rs. 48,242.00
10	VASHI TERMINAL	Rs. 48,705.00
11	WADALA TERMINAL	Rs. 38,477.00
12	AURANGABAD AFS	NIL
13	DABOLIM (GOA) AFS	NIL
14	SHIRDI AFS	NIL
15	MANMAD BP	Rs. 61,819.00
16	DHANAJ BP	Rs. 2,71,263.00
17	PUNE BP	Rs.61,202.00

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TRIAL AND OBSERVATION PERIOD CHECKLIST (SAT FORMAT)**GENERAL:**

Trial and observation period check list as stated below is only indicative and the same to be read and customized in line with Tender scope of work, Technical Specification, Functional Specification and Software Requirement, Functional Design Requirement, Special Terms and conditions of the Contract, drawings, BOQ etc which are forming part of the tender document.

INDEX

Sl. No.	DESCRIPTION
1	Verification
1.1	Verification of Bill of Material
1.2	Verification of Test Certificate/Dispatch clearance
1.3	Verification of punch points
2	CCTV System
3	IT Equipments
4	UPS
5	Redundancy Checks
6	Cable laying
7	Earth pit
8	Access policy
9	GUI
10	Alarm & events
11	Reports
12	CCTV - TAS interface if any
13	Training
14	Readiness for SAT
15	Documentation

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
1	Verification		
1.1	<p>Whether list of all equipment supplied along with make, model and quantity based on original/ Revised BOQ of the work order has been verified?</p> <p>Vendor to submit the excel sheet listing all the equipments, qty as per BOQ, Qty supplied, Make, Model and Serial No for all the billable line items including cables, cable trays, JB, structural steel etc which are on Lump sum basis. (Annexure-C)</p>		
1.2	<p>Whether Test Certificate/ Dispatch clearance of all the equipment supplied as per BOQ has been submitted and is meeting the Tender specifications?</p> <p>Vendor to submit all the required Test Certificate/ Dispatch clearance, PESO approvals and other related documents as stated in the tender for individual equipment along with excel sheet stating document reference nos and date wherever applicable.</p>		
1.3	<p>Whether all the points mentioned in the MOM during FAT or during execution stage which are part of the scope of the main / amended work order has been complied?</p> <p>Vendor to maintain record of all such MOMs/ Emails etc with date and submit the compliance report as per tender scope of work starting from Kick off Meeting date till completion of the project and submit the summary of all such documents.</p>		
2	CCTV System		
a	Whether all PTZ/Fixed cameras are installed properly and are functioning?		
b	Whether all the areas are covered and		

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Sl. No.	Description of work	(Yes/No/NA)	Remarks
	there is no black spot?		
d	Whether provision is there to take back up on external storage devices (DVD)?		
e	Whether video file is transferred through FTP/e-mail/net/video on demand?		
f	Whether Preset positions covering all the critical areas covering pump house, TLF, Tank Farm Area, exchange pits etc has been configured properly so that in case of emergency, nearest PTZ cameras are aligned accordingly? Provision should also be there to orient the PTZ cameras from preset position to any other area of focus manually even in emergency conditions.		
g	Whether PTZ camera returns to normal operation automatically on reset of ESD?		
h	Whether Analytic have been configured for Fixed cameras.		
i	Whether ANPR (Number plate reading system) is functioning and records are available.		
j	Whether CCTV display is available at Control Room, TM room and Security room and configured?		
k	Whether cameras if provided inside TLF gantry & Pump house are with flameproof enclosure?		
m	Whether the capacity of NVR/VMS is as per storage requirement of 90 days and should be expandable?		
n	Whether Antivirus system has been provided and updated?		
o	Whether all the interface network within CCTV are based on TCP/ IP network protocol connectivity over the intranet/		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
	LAN/ WAN?		
3	IT Equipments		
a	Whether CCTVserver,client work stations,Switches,CCTV rack and LED TV are provided as per tender requirement?		
b	Whether all the equipments are connected as per System Architecture?		
c	Whether the clock for all the CCTV server, client work station, camera and switches are synchronized and showing correct date and time?		
d	Whether Biometric provided in CCTV rack are working and logs are available.		
4	UPS		
a	Whether parallel redundancy of UPS system is verified?		
b	Whether auxiliary parameters of CCTV UPS system are available in OIC (either on modbus or hardwired) as per tender is available? i) Running status/ UPS Failure ii) Load on Bypass iii) Incomer Fail alarm iv) Overload v) Battery low vi) Spike/surge voltage beyond range- if available on UPS vii) Output frequency beyond range- if available on UPS		
c	Whether UPS power distribution network is designed in such way that a single power fault in any sub distribution system does not cause a trip of the entire system?		
d	Whether Surge protection devices are installed in input and output of the UPS		

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Sl. No.	Description of work	(Yes/No/NA)	Remarks
	system?		
e	Whether battery backup is available for minimum half an hour at full load for battery bank?		
f	Whether automatic charging takes place in both float and boost mode?		
g	Whether during battery maintenance, inverter continues to operate taking power from the rectifier?		
5	Redundancy Checks		
a	Whether redundancies of following are checked by vendor as per tender?		
i	CCTV server		
ii	Analytic server		
iii	L-3 Switch		
iv	Fiber links		
v	UPS		
6	Cable laying		
a	Whether cable tagging is done at regular interval during long runs, at entry and exit point of building and at termination points?		
b	Whether cable entering control room, admin building and security room through Multi Cable Transit (MCT) Blocks?		
c	Whether FO cable is not bend beyond allowed bending?		
d	Whether cable under road cross is laid with hume pipe/ Cable bridge/ RCC cable trenches?		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
e	Whether all above ground cable and inside RCC trenches is laid through cable trays with proper supports?		
f	Whether AI clamping of cables within cable trays at regular interval is done?		
g	Whether all underground cables on driveway if laid are through RCC trenches/ hume pipes as applicable?		
7	Earth pit		
a	Whether Earth pit is as per IS code 3043 and tender specification?		
b	Whether Earth pit resistance certificate are provided from Class A contractor & the value with date is written on pit cover?		
f	Whether all metallic housing of electronic equipment/junction box/panel is connected to the earth?		
h	Whether proper distance is maintained between various earth pits as per standard and site conditions?		
i	Whether earth-pit head is covered properly and identification tags are clearly visible?		
k	Whether proper earthing of CCTV tower if provided done?		
8	Login		
a	Whether listed users can log on to the CCTV system based on the defined user names, passwords and access levels?		
b	Whether the same user cannot login on different systems at the same time?		
c	Whether passwords can be changed by individual user & manager at any time?		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
d	Whether different levels of security for individual user are configured?		
e	Whether Authorisation for different level has been configured?		
9	GUI		
a	Whether cameras are provided with location name and other details are appearing on GUI?		
10	Alarm and Events		
a	Whether all the alarms and events are configured or activated?		
b	Whether all the events are logged with time stamp?		
11	Reports		
a	Whether reports are available and can be exported in different format like PDF/ Excel etc?		
12	CCTV - TAS interface if any		
a	Whether integration is done as per scope of work or CCTV system is configured as per tender requirement?		
b	Whether functionality is checked and working as per envisaged in tender by vendor?		
13	Training		
a	Whether training has been provided for IOC officers, staff nominated from operation as per areas specified in the work order?		
b	Whether record of person to whom training has been provided are available including date and topic covered as per		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
	tender requirement?		
14	SAT Readiness		
a	Whether the entire cameras are commissioned?		
b	Whether Server and client are commissioned in all area as per WO?		
c	Whether tray, cable dressing & tray cover are provided?		
d	Whether Analytics are activated as per WO requirement?		
e	Whether configuration in VMS is done as per work order requirement. Configuration details to be attached as Annexure-D?		
f	Whether configuration in camera is done as per work order requirement. Configuration details to be attached as Annexure-E?		
g	Whether storage is available as per WO requirement?		
h	Whether license is available as per WO requirement?		
i	Whether the allied job as per work order and front availability has been completed and checked by vendor for its compliance?		
15	Documentation		
i	Whether Documents are provided as per Annexure-F. Final copy to be submitted during SAT and its punch point compliances.		

Note: Conducting SAT does not mean acceptance of the system and Auto start of warranty. Warranty starts only when SAT has been accepted without observations. IOCL to clearly spell out on joint statement of acceptance or rejection of SAT.

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

PREVENTIVE MAINTENANCE CHECKLIST**GENERAL:**

Preventive Maintenance check list as stated below is only indicative and the same to be read and customized in line with Tender scope of work, Technical Specification, Functional Specification and Software Requirement, Functional Design Requirement, Special Terms and conditions of the Contract, drawings, BOQ etc which are forming part of the tender document.

Sl. No.	Description of work	(Yes/No/NA)	Remarks
1	CCTV System		
A	Whether all PTZ/Fixed cameras are free of cobwebs?		
B	Whether all PTZ/Fixed cameras are installed properly and are functioning?		
C	Whether all the areas are covered and there is no blind spot?		
D	Whether Analytics have been configured for Fixed cameras and are working properly.		
E	Whether ANPR (Number plate reading system) is functioning properly and records are available.		
F	Whether CCTV display at Control Room, TM room and Security room is working properly?		
G	Whether the integrity of flameproof enclosure of cameras, JBs inside hazardous area is maintained?		
H	Whether the data recording of past 90 days is available?		
I	Whether Provided Antivirus in the system has been updated?		
2	IT Equipments		
A	Whether the clock for all the CCTV server,		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
	client work station, camera and switches are synchronized and showing correct date and time?		
B	Whether Biometric provided in CCTV rack are working and logs are available.		
3	UPS – If provided by CCTV vendor		
A	Whether parallel redundancy of UPS system is verified?		
B	Whether Surge protection devices installed in input and output of the UPS system are intact?		
C	Whether battery backup is available for minimum half an hour at connected load for battery bank?		
D	Whether during battery maintenance, inverter continues to operate taking power from the rectifier?		
4	Redundancy Checks		
A	Whether redundancies of following are checked by vendor as per tender?		
I	CCTV server		
ii	Analytic server		
iii	L-3 Switch		
iv	Fiber links		
v	UPS, if provided by CCTV vendor		
5	Earth pit		
A	Whether all metallic housing of electronic equipment/junction box/panel connected to the earth is intact?		

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Sl. No.	Description of work	(Yes/No/NA)	Remarks
B	Whether earth-pit head covered properly and identification tags provided are intact?		
C	Whether earthing of CCTV tower/pole is intact?		
6	Login		
A	Whether listed users can log on to the CCTV system based on the defined user names, passwords and access levels?		
B	Whether the same user cannot login on different systems at the same time?		
C	Whether passwords can be changed by individual user & manager at any time?		
D	Whether different levels of security for individual user are configured?		
E	Whether Authorisation for different level has been configured?		
7	GUI		
A	Whether cameras provided are appearing on GUI with location name and other details?		
8	Alarm and Events		
A	Whether all the alarms and events configured and activated are working and records for the past 90 days are available?		
B	Whether the events logged with time stamp are available in the system and records for the past 90 days are available?		

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Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office

Sl. No.	Description of work	(Yes/No/NA)	Remarks
9	Remarks/Recommendations if any		

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LIST OF SPARES

Sr. No.	Description	Spares Quantity(1 year)
1	LAYER 3 GIGABIT MANAGED ETHERNET SWITCH	1
2	LAYER 2 MANAGED ETHERNET SWITCH	1
3	INDUSTRIAL GRADE PSU	1
4	INDUSTRIAL GRADE POE SWITCH	1
5	HD IP PTZ CAMERA (2MP) - OUTDOOR APPLICATION	1
6	HD IP FIXED DOME CAMERA WITH IR AND MFZ LENS (2MP)	1
7	IP FIXED BULLET CAMERAS (8MP – 4K RESOLUTION) WITH MOTORISED ZOOM	1
8	IP FIXED BOX CAMERAS (8MP – 4K RESOLUTION)	1
9	INTEGRAL EXPLOSION PROOF HD IP FIXED CAMERAS (2MP) WITH MOTORIZED ZOOM	1
10	SMPS	1
11	ETHERNET CARD	1

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 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/xxxx/MSO/2022-23 Design, supply, installation, testing and commissioning of IP Based CCTV Surveillance System along with associated works at our Operating Locations, Lubes, AFS and LPG Plants under Maharashtra State Office	Page No. 320
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LIST OF DRAWINGS (Indicative) ATTACHED

Sl.No.	Document description	Document No.	Rev.	No. of pages
1.	Overall CCTV Layout			
2.	CCTV System Architecture			
3.	Schematic drawing of Console Desk/Rack			
4.	Cable layout			
5.	Earthing Layout			
6.	Cable tray layout			
7.	Equipment layout in Control room			

Note: All the above mentioned drawings are indicative and are to be read in line with BOQ, Scope of work and tender document.

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BOM CHECK LIST

S. No.	Description of item	Unit	Make & Model	Sr. number	Final Qty as per WO	Supplied	Installed & commissioned	Handed over

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CAMERA CONFIGURATION IN VMS CHECK LIST

S. No.	Camera Name	Recording			Live		PTZ Control (Y/N/NA)
		Recording stream Resolution	Recording stream FPS	Video Quality	Live stream resolution	Live stream FPS	

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 IndianOil A Maharatna Company	TENDER NO: WRCC/PT/xxxx/MSO/2022-23	Page No. 323
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CAMERA CONFIGURATION CHECK LIST

S. No.	Camera Name	Make & Model	Location	IP Address	Firmware Version	User Name& Password	Resolution	Video Quality	FPS	WDR	video compression	Analytics Activated (Yes/No/NA)

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Annexure-G

CCTV DOCUMENTATION

Documentation to be submitted shall include but not be limited to following:-

Sr. No.	Description
1.0	GENERAL
1.1	Project & Service team along with escalation matrix
2.0	ENGINEERING DOCUMENTS
2.1	Functional Design Specification
2.2	System Architecture ,GAD and other drawings
2.3	Detailed list of components
2.4	Datasheet and catalogues of equipment offered
2.5	Bandwidth and storage calculation vis-à-vis supply vs requirement
2.6	Bill of Material
2.7	FAT Procedure
3.0	As Built Drawings
3.1	Electrical power supply distribution Diagram, Distribution diagram for UPS power supply System
3.2	System drawings
3.3	Loop diagram for CCTV
3.4	Wiring diagram
3.5	Cable route, cable schedule, cable termination schedules for power, signal , LAN, FO cable, Junction box details & cable trays
3.6	Interconnection diagram
3.7	Earthing System & scheme
3.8	General installation of all the equipment's along with dimensions to be provided.
4.0	SPARE PARTS
4.1	Commissioning spares
4.2	Comprehensive AMC spares
5.0	INSPECTION AND TEST CERTIFICATES
5.1	Quality Assurance Plan
5.2	Material test reports and certificates along with weatherproof and explosive license of equipments wherever applicable
5.3	Vendor's guarantee /warranty
5.5	Software Licensee
5.6	FAT and SAT report
5.7	Training on system operation and maintenance for IOCL's staff at the site to be provided

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Sr. No.	Description
6.0	MANUALS (BOTH FOR VENDOR'S & SUB –VENDORS SUPPLY)
6.1	Installation, Operation & Maintenance manual for hardware & Software
6.2	All the Software along with OS and driver to be submitted with license
6.3	All configurations back up, integration/mapping details if any to be submitted
6.4	Software installation along with configuration manual to be provided to site specific.
6.5	Password details if any
6.6	CCTV vendor shall provide two sets of Hard copy of documents along with soft copy in a hard Disk/Pen drive

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Organisation Chain : IndianOil||Marketing||Western Region
Office||Contracts Cell

Tender ID : 2022_WRO_155271_1

Tender Reference Number : WRCC/2022-23/PT/56

Design, supply, installation, testing and
commissioning of IP Based CCTV Surveillance
Tender Title : System along with associated works at our
Operating Locations, Lubes, AFS and LPG Plants
under Maharashtra State Office

Corrigendum Type : Technical Bid

Please find revised definition of similar works

DEFINITION OF SIMILAR WORKS:
<u>Experience in successful completion of :</u>
<p>(a) Supply, Installation and Commissioning of CCTV System with allied works in any Petroleum Installation (including LPG/ Bitumen/Aviation)/ Petrochemical/ Chemical/ Fertilizer/ Steel/ Power Plant/ Defence/Police/SMART city projects/Airports/ Railway Stations</p> <p style="text-align: center;">OR</p> <p>(b) Terminal Automation works which include Supply, Installation, commissioning with CCTV system and allied works in any Petroleum (including LPG/ Bitumen)/ Petrochemical/ Chemical industries.</p>

Tender inviting Authority
IOCL
MUMBAI