



31 December, 2019

Expression of Interest (EOI)

Inviting technical proposals for enlistment of Consultants for Pipeline Integrity Assessment Services

Interested reputed Consultants experienced in similar jobs are invited to submit application in prescribed format along with necessary documents in support of their technical and financial capabilities in order to get enlisted for the proposed job.

The completed Application form along with attachments in a sealed envelope super-scribed with **“Application for enlistment of Consultants for Pipeline Integrity Assessment Services”** may be forwarded to the address mentioned below within 45 days of publication of this EOI i.e. latest by 14.02.2020. **Electronic submission of the EOI (PDF documents via email as mentioned below) will also be acceptable.** Application received after 14.02.2020 will not be entertained.

Consultants applying against the EOI will be screened based on the technical proposals submitted by them in the attached template along with supporting documents. Shortlisted Consultants will only be eligible to participate in the subsequent Request for Proposal (RFP) process for engagement of Consultant(s) for such type of studies by GAIL.

Brief Scope of work and terms of engagement are indicated in the following sections. Detailed Scope of Work, Schedule of Rates, Evaluation Methodology, Bid Evaluation Criteria etc. will be intimated during the subsequent RFP process.

Address for Submission of Proposal & Documents

General Manager (CIMG)
Central Integrity Management Group, CO-(O&M)
GAIL (India) Ltd
20th Floor, GAIL Jubilee Tower
B- 35 & 36, Sector-1
Noida-201301
Uttar Pradesh, India
e-mail: cmggroup@gail.co.in; selvan@gail.co.in; ssverma@gail.co.in;
unbhaskar@gail.co.in

Mobile No.: +91-9868525289 or +91-9414039545
Contact No.: +91-(120) 2446400/4862400 Extn. 12003/12006



Scope of Work and Special Conditions

1.0 Background

GAIL (India) Limited is a Central Public Sector Undertaking (PSU) under the Ministry of Petroleum & Natural Gas (MoPNG), Government of India. GAIL operates network of Natural Gas Pipelines covering more than 12000 Km & LPG Pipelines covering 2040 Km.

2.0 Objective

GAIL intends to hire the services of reputed Consultants for pipeline integrity assessment including engineering critical assessment (ECA) of pipeline sections(s) or of whole network for establishing/confirming maximum allowable operating (MAOP), assessment of structural integrity of pipeline subjected to external forces and assessment of pipeline defects identified through In-Line Inspection or direct examination. By this Expression of Interest (EOI) application process, Consultants possessing requisite experience and expertise shall be enlisted initially for a period of 2 (two) years. Subsequently, the actual study work will be taken up on case to case basis or as when required for pipelines and for the same, separate Request for Proposal (RFP) will be issued by GAIL from time to time during the validity of the enlistment.

3.0 Scope of Work

- (a) Through this EOI, reputed Integrity Assessment Consultants are proposed to be enlisted, who will be engaged to provide services under three categories at **Section 3.1, 3.2 & 3.3** on case to case basis or as when required. The list of jobs in each category is indicative.
- (b) It is not expected that Consultants will do any physical site survey of their own. GAIL shall engage the agencies for carrying out any specific filed survey to collect the data if required. However technical requirements for engaging such survey agency along with the required deliverables shall be prepared by the Consultant.
- (c) Engaged Consultants may include additional/external expertise such as expert for Finite Element Analysis (FEA), corrosion experts, pipeline Integrity expert, integration of collated data on ArcGIS platform etc. if required to complete the job, under a specific RFP and it will be deemed part of Consultant scope of work.

3.1 Engineering Critical Assessment for establishing / confirming MAOP

The objective is to establish / confirm the MAOP of a pipeline section(s) or fitness for purpose of a pipeline network through engineering critical assessment (ECA). ECA involves determination of defects remaining in pipe, determination of predicted failure pressure and remaining life of defects. ECA must integrate, analyze and account for following-

- A. The material properties
- B. Pipeline design and operational parameters
- C. The results of all tests, direct examinations and destructive tests
- D. Prior pressure test leaks and failures
- E. Prior integrity assessments and surveys such as In-Line Inspection, Direct Assessment, Fitness for Purpose reports, UT surveys
- F. Change in pipeline Location Class
- G. Corrosion probes and coupon data, corrosion rate based on last ILI and UT surveys



- H. Other pertinent information related to pipeline integrity, including close interval surveys, coating surveys, interference surveys etc.
- I. Cause analyses of prior incidents
- J. Other leaks
- K. Pipe inspections & maintenance practices

A pipeline network consists of several Piggable and Non-piggable pipeline sections of various size, length, grade and thickness.

3.2 Pipeline Structural Integrity Assessment

Assessment of structural integrity of pipeline subjected to external forces such as bending movement, wave & current load, vehicular dynamic load and forces due to nearby construction activities etc. is required in following areas-

3.2.1 Bending Strain and Pipe Movement

Detection and listing of bending strain events by measurements of curvature and associated bending strain and pipe movement (changes in curvature) using data from in-line inspection (ILI) equipped with an on-board Inertial Measurement Unit (IMU) and matching of ILI data with geographic data sources. Assessment also includes the identification of limit strain values for pipelines for tensile fracture and compressive local buckling.

3.2.2 Pipelines Running parallel / across / beneath Rail /Road

Assessment of adequacy of pipeline section with or without casing to withstand various loads such as internal pressure, earth load and dynamic loads due to railroads and highways running parallel, across or just above the pipeline.

3.2.3 Pipeline Lowering

Assessment and development of lowering procedure for already laid in-service pipeline in the event of loss of earth cover or requirement of providing extra earth cover.

3.2.4 Free Spanning

Assessment of pipeline free spans subjected to combined wave and current loading. The assessment may also involve designing of mitigation plan for free span.

3.2.5 Impact of Nearby Activity

Assessment of impact of nearby construction activities involving blasting and/or piling etc. on the structural integrity of pipeline and accordingly development of mitigation plan for minimize the effect of nearby activities.

3.3 Pipeline Defect Assessment

(a) Assessment of defects on body, weld or heat affected zone (HAZ) of pipeline is required to ensure the integrity and safe operation of pipeline. Generally three levels of assessments are required-

1. **Level-1 Assessment** is intended to provide conservative screening criteria that can be utilized with a minimum amount of inspection or component information. A Level 1 assessment may be performed either by plant inspection or engineering personnel.
2. **Level 2 Assessment** is intended to provide a more detailed calculation and evaluation that produce results that are more precise than those from a Level 1 assessment.



Level 2 assessments would typically be conducted by plant engineers, or engineering specialists' experienced and knowledgeable in performing FFS assessments.

3. **Level 3 Assessment** is intended to provide the most detailed evaluation that produces results that are more precise than those from a Level 2 assessment. In a Level 3 Assessment the most detailed inspection and component information is typically required, and the recommended analysis is based on numerical techniques such as the finite element method or experimental techniques when appropriate. A Level 3 assessment is primarily intended for use by engineering specialists experienced and knowledgeable in performing FFS assessments.

(b) The assessment shall be based on well-established methods for pipeline defect assessment such API 579, BS 7910, ASME B31G, DNV-RP-F101, NG-18 equations and Kastner collapse solutions etc.

3.3.1 Assessment of Simple Defects

Assessment of defects like metal loss (e.g. corrosion, mill defects, gouge), mill defects (e.g. lamination), geometric (e.g. dents, buckle ovality) etc. The assessment may include remaining life assessment of time dependent defects subjected to static or dynamic (fatigue) loads. Assessment up to Level-II is required.

3.3.2 Assessment of Complex Defects

Assessment of complex defects such as dents with metal loss and multiple planar girth weld defects in a complex piping system subjected to multiple loads, interacting with stress risers and at threat from failure modes that are not clear. Assessment up to Level-III using powerful analytical tools such as finite element analysis may be required.

Expert Consultants in materials, fracture, fatigue and stress analysis are needed to understand how to assess such defects correctly and therefore safely.

3.3.3 Assessment of Crack & Crack like Flaws

Assessment of crack like flaws based on the Failure Assessment Diagram (FAD) using the chosen assessment method such as API 579, BS 7910, MAT-8, In-sec, CorLASTM etc. Crack-like flaws may either be surface breaking, embedded, or through-wall. Examples of crack-like flaws include planar cracks, lack of fusion and lack of penetration in welds, sharp groove-like localized corrosion, and branch type cracks associated with environmental cracking etc. Level-III assessment may be required to determine remaining life of crack like flaw if flaw is expected to grow in service.

4.0 Deliverables

The typical deliverables of consultancy works shall include but not limited to the following:

- (a) Detailed report at the end of the assessment containing the approach, methodology and engineering basis for adopted methodology, assessment carried out, observations, conclusions and recommendations.
- (b) Recommendations for Monitoring and Mitigation of potential threats identified during assessment

5.0 Completion Schedule



Detailed completion schedule shall be provided in subsequent Request for Proposal (RFP) documents for hiring of Consultants as when required after enlistment of Consultants after EOI. This enlistment of Consultants shall be valid for 2 (two) years from the date of finalization of enlistment.

6.0 Terms of Payment

Detailed payment terms shall be provided during Request for Proposal (RFP) document.

7.0 Conflict of Interest

GAIL policy requires that Consultants provide professional, objective, and impartial advice and at all times hold the client's interests paramount, without any consideration for future work, and that in providing advice they avoid conflicts with other assignments and their own corporate interests. Consultants to be engaged for this assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of being unable to carry out the assignment in the best interest of GAIL, shall not be eligible to participate in this process of engagement. Without limitation on the generality of the foregoing, Consultants shall not be hired under the circumstances set forth below:

- (a) Conflict between consulting activities and procurement of goods, works or services (other than consulting services covered in the scope of present engagement): A firm that has been engaged by GAIL to provide goods, works, or services (other than consulting services covered by these Guidelines) for a project, and each of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services for the Project. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and each of its affiliates, shall be disqualified from subsequently providing goods, works or services (other than consulting services covered by these Guidelines) resulting from or directly related to the firm's consulting services for such preparation or implementation.
- (b) Conflict among consulting assignments: Neither Consultants (including their personnel and sub-Consultants) nor any of their affiliates shall be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultants. As an example, Consultants hired to prepare engineering design for an infrastructure project shall not be engaged to prepare an independent environmental assessment for the same project, and Consultants assisting a client in the privatization of public assets shall neither purchase, nor advise purchasers of, such assets. Similarly, Consultants hired to prepare Terms of Reference (TOR) for an assignment shall not be hired for the assignment in question.
- (c) Relationship with Employer's staff: Consultants (including their personnel and sub-Consultants) that have a business or family relationship with a member of the Employer's staff (or of the project implementing agency's staff) who are directly or indirectly involved in any part of: (i) the preparation of the TOR of the contract (ii) the selection process for such contract or (iii) supervision of such contract may not be awarded a contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the contract.
- (d) A Consultant, who prepares Detailed Feasibility Report (DFR) of a Project, is not debarred from participating as Project Management Consultant (PMC) for the same Project as both are services in nature.



8.0 Confidentiality of Information and Data

All information obtained by bidder/Consultant/expert during the project and all information / data / maps etc. provided by the Company to the bidder / Consultant / expert must be considered confidential and must not be divulged by the bidder / Consultant / expert or its personnel to any-one other than the Company's personnel. This obligation of bidder/Consultant/expert shall be in force even after the termination of the contract. No part of the consultancy work shall be permitted to be presented and / or published in scientific / technical papers / journals etc. without prior approval of the Company in this regard.

9.0 Pre-Qualification Requirements

The financial and technical requirements for pre-qualification are outlined at Section 9.1 & 9.2. While applying against his EOI, the following shall be kept in mind

- (a) Only companies (not individual) having technical capabilities, pool of experts, necessary software and financial capabilities are eligible.
- (b) A bidder shall have financial capability in its own capacity.
- (c) A bidder can submit the bid on the basis of...
 - (1) its own technical experience **[OR]**
 - (2) technical experience of foreign based another company (Supporting Company) which holds more than fifty percent of paid up share capital of the bidder company or vice versa. **[OR]**
 - (3) technical experience of any of the group companies which are controlled by a parent/holding company either directly or through intermediate subsidiaries or vice-versa.
- (d) Any canvassing on the part of the applicant will make the application liable for rejection.

9.1 Financial

- (a) The agencies to be enlisted through this EOI process shall be of sound financial standing. The minimum annual turnover of the Consultant as per their financial results in any one of the immediate three preceding financial years shall be **Rs. 100 Lakhs (USD 140 Thousands)**.
- (b) Documentary evidence (Annual report, Balance sheet, P&L account) in support of the same shall be provided along with the proposal.
- (c) Financial Pre-qualification requirements will be exempted for Academic and Research Institutions funded wholly or partly by Government of India.

9.2 Technical

- (a) The agencies to be enlisted by GAIL for this EOI, shall be a Pipeline Integrity Consultant who must have completed execution of at least one consultancy or study work in the field of Fitness for Purpose/Service Analysis/ Structural Integrity Assessment/ Defect Assessment for Hydrocarbon Pipelines in preceding five (05) years to be reckoned from EOI submission date.
- (b) Documentary evidence (WO copy/completion certificate/final payment receipt etc.) in support of the same shall be provided along with the proposal. In case bidder is not able to submit the above documents due to confidentiality agreements with clients, such texts/values can be made to hide in the documents and to be submitted with the details of



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jobs executed as per given format (Format for Executed List of Jobs) in EOI along with the application.

(c) Document establishing the relationship of the bidder with their group company possessing the qualifying technical experience, shall be submitted along with other documents required under this EOI.

(d) Applicants with qualification / experience / certifications not relevant to the current requirement of enlistment shall be excluded in the screening process. Decision of GAIL in this regard shall be final and binding and no representation or correspondences will be entertained.



Application for Pre-Qualification

A	Bidders Details	
1	Name of the Agency/Organization	
2	Address (HQ)	
3	Address (Consultant Bidding Unit)	
B	Designated Person for Communication	
1	Name with Job Title	
2	Address of Designated Person	
3	e-mail address	
4	Mobile Number	
5	Landline Number	
6	Fax Number	
C	Technical Capability of Consultant Consultant should select one or more of areas given below. Based on the experience and capability enlistment will be done for selected area(s).	
1	ECA of pipeline sections(s) or of whole network based on pipeline attributes, operating and maintenance history and integrity inspections for establishing MAOP and Fitness for Purpose (FFP). Refer section 3.1 of the Scope of work & special conditions for details.	<input type="checkbox"/>
2	Assessment of structural integrity of pipeline subjected to external forces such as bending movement, wave & current load, vehicular dynamic load and forces due to nearby construction activities. Refer section 3.2 of the Scope of work & special conditions for details.	<input type="checkbox"/>
3	Pipeline Defect Assessment up to Level-3 for defects such as metal loss, mill defects, geometric defects & crack etc. Refer section 3.3 of the Scope of work & special conditions for details.	<input type="checkbox"/>



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Application for Pre-Qualification

D	Pre-Qualifying Technical Requirements (Attach documents)	
1	Detail of at least one consultancy or study work in the field of Fitness for Purpose/Service Analysis/ Structural Integrity Assessment/ Defect Assessment for Hydrocarbon Pipelines in preceding five (05) years to be reckoned from EOI submission date.	As per Annexure-II
2	Documentary evidence (WO copy/completion certificate/final payment receipt etc.) in support of the above along with the proposal.	
3	Other information demonstrating bidder's competence (attach documents such as list of key personnel with CVs)	
E*	Pre-Qualifying Financial Requirements (Indicate Currency)	
1	Turnover in last 3 years (Value)	
2	Attach Audited Balance Sheet – last 3 years	

*Financial Pre-qualification requirements will be exempted for Academic and Research Institutions funded wholly or partly by Government of India.

Place :

Date :

(Authorized Signatory)

Note: Documents in Language other than English shall have self-certified English translated copies.



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Annexure - II

Format for Executed List of Jobs

Sr. No.	Client Name	Contact person Name, Email ID, Mob No.	Title of the engagement	Nature of Engagement (Describe in 50 to 100 words)	Location	Period of Assignment		Documentary evidence provided
						From	To	

I certify that the above information is true to the best of my knowledge.

Place :

Date :

(Authorized Signatory)