ASME Standards Technology, LLC
REQUEST FOR PROPOSALS
RFP No. 19-02

Project Number:	**0156**
Project Title:	**Development of B31.8 Code Content to Address Mechanically- and Acoustically-derived Vibration in Compressor Station Piping Systems**
Solicitation Date:	**31 January 2019**
Proposal Due Date:	**~~28 February 2019~~ 15 March 2019**

1 Summary

Through this request-for-proposal ("RFP"), ASME Standards Technology, LLC (ASME ST-LLC) is soliciting proposals for the referenced project. This project will provide the technical basis for incorporation into ASME's B31.8 Gas Transmission and Distribution Piping Systems code (B31.8) requirements that can be used to identify and mitigate design and operational issues that if not addressed can lead to catastrophic failure of compressor station piping systems. The work resulting from this project will provide the basis for anticipated substantive technical improvement to B31.8 that address compressor station design, specifically fatigue issues in compressor station piping as well as capture current industry practices so that B31.8 can remain relevant.

This RFP is posted on the ASME ST-LLC webpage: (http://asmestllc.org/ST-LLC_RequestsProposals.html).

2 Background

Currently B31.8 does not specifically address criteria for the design and analysis of piping systems subject to mechanical and acoustic shaking forces that can result in deleterious vibration in compressor station piping. An action item (Record Number 10-974) had been opened by ASME to address this concern on the basis of the following rationale:

> *The current text of this Paragraph [843.4.1] does not address current practice regarding acoustic analysis, mechanical studies, and fatigue/cyclic loading limitations in reciprocating compressor station piping. These design considerations are essential to quantify and evaluate the performance of a piping system that will be connected to a reciprocating machine.*

While B31.8 does provide stated stress limits related to cyclic loadings of piping systems, useful guidance or criteria that relate these stress limits to practical applications in the design and operation of these piping systems are lacking.

3 Scope of Work

Section 3 of this RFP summarizes the scope of work that the respondent shall perform (Scope of Work).

3.1 Summary

The Independent Consultant shall develop suggested "ballot-ready" B31.8 Code language and a supporting report as follows.

1. The Independent Consultant shall develop criteria for determining the required extent of analysis of piping systems to be performed during the design phase to address predicted acoustic and mechanical vibratory forces and the mechanical response of the connected piping system. The Independent Consultant shall consider the appropriate references to the levels of analysis defined in other relevant industry standards for inclusion by reference.
2. The Independent Consultant shall provide a correlation of B31.8 allowable stresses to field measurable data such as displacement, velocity, and acceleration of vibrating piping systems. The Independent Consultant shall provide a set of graphs depicting these limits that can be included in B31.8. The Independent Consultant shall provide a comparison of ASME OM-S/G (Standards and Guides for Operation and Maintenance of Nuclear Power Plants) requirements with the proposed criteria and consider incorporation by reference of this document.
3. The Independent Consultant shall provide a quantitative basis for a range of actions to be required by an operator based on the magnitude and frequency of field measured vibration data (i.e., "no action required", "continuous monitoring required", "danger – immediate action required"). The Independent Consultant shall provide a depiction of these ranges on the graphs described in item 2 preceding. The Independent Consultant shall provide support requirements and spacing needed to restrict adverse displacements.
4. The Independent Consultant shall provide proposed B31.8 content and references to existing standards that address the effect that acoustic vibration in piping systems has on gas measurement accuracy.
5. The Independent Consultant shall provide proposed B31.8 content that addresses critical best practices related to piping design, particularly natural frequency and resonance of piping systems, in the presence of mechanically- and acoustically-derived shaking forces.
6. The Independent Consultant shall provide proposed B31.8 content that provides guidance to the user regarding methods of treatment of shaking forces including pulsation bottle design, modification of piping natural frequencies, and piping restraint (pipe support).

It is anticipated that the majority of B31.8 content proposed by the Independent Consultant would be incorporated in B31.8 paragraph 843.4, Compressor Station Piping.

3.2 Deliverables

The Independent Consultant shall prepare a comprehensive report providing B31.8-ready content available for balloting by the applicable ASME code committee. The Independent Consultant shall provide this report initially as a draft report and subsequently as a final report that incorporates the comments of

ASME ST-LLC, ASME and its review committees, such as the ASME Peer Review Group (PRG) assigned to this project, and one review cycle is anticipated.

The Independent Consultant shall provide all written deliverables as an MS Word file that is formatted in accordance with the ASME Style Guide.

3.3 Schedule

The Independent Consultant shall complete the Scope of Work and provide the final deliverable within ten (10) months of notice-to-proceed.

3.4 Progress Reporting

The Independent Consultant shall provide via email a monthly status report to the ASME ST-LLC project manager identified herein that identifies activities underway, planned, and completed, and that identifies any anticipated delays to project schedule. The Independent Consultant shall provide the initial status report within 30 days of notice-to-proceed.

4 Respondent Eligibility Requirements

Respondents must be specialized in the field of compressor station piping vibration analysis. Respondents may be engineering firms, independent consultants, academic institutions, or federally-funded technology research and development institutions. In addition to relevant technical qualifications and experience, respondents must possess an understanding of relevant ASME codes and standards.

5 Basis for Selection and Award

ASME ST-LLC will select the winning proposal by evaluating and comparing the merits of each respondent's complete proposal based on its potential to achieve program objectives, rather than solely on evaluated technical merit or cost. Evaluation criteria include, but are not limited to, the following:

- Respondent's technical capabilities, including that of its subcontractors.
- Respondent's applicable experience, including that of its subcontractors.
- Proposal's technical completeness
- Proposal price.
- Proposal schedule.
- Any technical or commercial exceptions, including exceptions to ASME ST-LLC's standard agreement.

Selection of the winning proposal may be made after few or no exchanges, discussions, or negotiations; therefore, respondents are advised to submit its most favorable application to ASME ST-LLC. ASME ST-LLC reserves the right, without qualification, to reject any or all proposals received in response to this solicitation and to select any proposal, in whole or in part, as a basis for negotiation and award. ASME ST-LLC reserves the right to modify or cancel this solicitation.

ASME ST-LLC may form a committee of subject matter experts to evaluate the technical qualifications of respondents.

6 Contract Terms and Conditions

The selected respondent(s) will be expected to perform its Scope of Work pursuant to a fixed-price contract. A form of ASME ST-LLC's standard agreement (contract) applicable to this Scope of Work is attached as Attachment 1 to this RFP.

7 Submission Requirements

7.1 Proposal Due Date

Proposals must be received by ~~28 February 2019~~ 15 March 2019. Respondents are encouraged to transmit its proposal well before this deadline. ~~Requests for extra time must be sent by 15 February 2019 to the contact listed in Section 8 of this RFP.~~

ASME ST-LLC intends to select the winning proposal within three weeks of the proposal deadline.

7.2 Proposal Preparation Costs

All costs to prepare and submit proposal shall be borne by the respondent. This RFP does not obligate ASME ST-LLC to pay any costs incurred in the preparation and submission of the proposal, in making necessary studies or designs for the preparation thereof, or to acquire or contract for any services.

7.3 Proposal Clarification

ASME ST-LLC reserves the right to request clarification of any proposal and supplemental information. All questions relating to this solicitation must be submitted to the contact listed in Section 8 of this RFP. Any amendments to this solicitation will be posted at the ASME ST-LLC website previously referenced.

7.4 Treatment of Proprietary Information

A proposal may include technical and other data, including trade secrets and privileged, confidential commercial, or financial information that the respondent does not want disclosed to the public or used by ASME ST-LLC for any purpose other than proposal evaluation. To protect such data, the respondent should specifically identify the data or information to be protected.

7.5 Proposal Preparation and Submittal Instructions

Proposals shall be separated into two separate documents: (i) a Technical Proposal; and (ii) a Financial Proposal.

7.5.1 Technical Proposal contents shall include:

- Organization name and contact information.
- Evidence of technical capabilities: credentials, qualifications, capabilities, and experience of individuals and the organization.
- An approach to accomplish the Scope of Work.
- Demonstrate agreement with the Scope of Work.

7.5.2 Financial Proposal contents shall include:

- A fixed-price quotation to complete the Scope of Work.
- Confirm agreement with the form of agreement attached herein or state any requested exceptions to same.

7.5.3 The respondent shall submit the Technical and Financial Proposals files via e-mail to the ASME ST-LLC contact identified in Section 8 of this RFP. Responses must be received no later than the proposal due date identified in Section 7 of this RFP.

8 ASME Standards Technology, LLC Contact Information

All correspondence regarding this RFP is to be directed to the following person:

Dan Andrei, PMP
Senior Project Manager
ASME Standards Technology, LLC
Two Park Avenue
New York, NY 10016
email: andreid@asme.org

ATTACHMENT 1: FORM OF AGREEMENT

ASME Standards Technology, LLC
Nonexclusive Independent Consultant Agreement
Standard Terms and Conditions
[Insert Title]

This Agreement, dated as of [_____], is made between ASME Standards Technology, LLC ("ASME ST-LLC"), a New York not-for-profit corporation with its principal office at Two Park Avenue, New York, New York 10016 and [Insert Consultant Name and Address, spelled out completely without zip code] (the "Independent Consultant").

W I T N E S S E T H:

WHEREAS ASME ST-LLC desires to engage the Independent Consultant to perform [insert scope description] for [Project name]; and

WHEREAS the Independent Consultant agrees to accept such engagement and to perform the services hereinafter specified;

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements of the parties contained in this Agreement, it is agreed as follows:

1. Engagement. ASME ST-LLC hereby engages the Independent Consultant, on an as needed and nonexclusive basis, to perform the services defined in Annex 1 to this Agreement (the "Work").

2. Performance. The Independent Consultant agrees to perform the services set forth above. The Independent Consultant agrees to perform such services professionally and to the best of its ability, to provide the services in an ethical manner, and to avoid conflicts of interest and any appearance thereof. It is understood that the Independent Consultant may obtain other consulting work and, as a result, may be unavailable, from time to time, to perform consulting services for ASME ST-LLC, but the Independent Consultant agrees to adhere to the ASME Policies on Conflicts of Interest and Ethics. ASME ST-LLC will not set specific daily schedules. ASME ST-LLC will not provide tools, materials, supplies or equipment necessary for the Independent Consultant to perform the Work except for the necessary codes, standards, and procedures. Neither will ASME ST-LLC reimburse the Independent Consultant for the use of its tools, materials, supplies or equipment. The Independent Consultant shall not engage

subcontractors to perform any portion of the Work without the written approval of ASME ST-LLC. If Independent Consultant services require access to ASME ST-LLC or ASME systems or their internal networks, that access must conform with ASME and ASME ST-LLC use policies.

3. Fees. For all services to be rendered by the Independent Consultant to ASME ST-LLC, as required by ASME ST-LLC, the Independent Consultant will receive fees as specified in Annex 2 to this Agreement. It is understood and agreed that the Independent Consultant is performing services as an independent contractor. As a result, ASME ST-LLC will not withhold any tax, of whatever nature, from payments made by ASME ST-LLC to the Independent Consultant. The Independent Consultant is solely responsible for meeting federal, state, or local income tax liabilities. The total charges for all fees and expenses shall not exceed the contract value specified in Annex 2 to this Agreement.

4. Expenses. Expenses incurred by the Independent Consultant in connection with the Work shall be borne by the Independent Consultant as part of the total compensation for the Work.

5. Terms of Payment. The Independent Consultant shall submit associated invoices for acceptance by ASME ST-LLC prior to payment. Invoices shall be submitted following achievement of milestones specified in Annex 2 to this Agreement. Payment shall be 100 percent net due 30 days after receipt of an acceptable invoice from the Independent Consultant.

6. Benefits. The Independent Consultant is not eligible for, and will not receive, any benefits from ASME ST-LLC based on services performed under this Agreement.

7. Copyright and Ownership. The Independent Consultant agrees that ASME ST-LLC specially ordered and commissioned the Work as "work made for hire" as that term is defined in the United States Copyright Act (17 U.S.C. §101), and that for purposes of the copyright laws, ASME ST-LLC shall be deemed the "author" of the Work. If it is determined that the Work is not a work made for hire under the U.S. Copyright laws, then, as of the creation of the Work, the Independent Consultant hereby assigns exclusively and irrevocably to ASME ST-LLC all worldwide, present and future right, title and interest in the Work, including the copyrights and other proprietary rights existing in the Work (including all United States and

foreign copyrights, all copyrights under any treaties, conventions, proclamations, or the like, and all extensions of such copyrights; all artistic and literary property rights; all moral rights; all rights to apply for or obtain any registrations for copyright in the Independent Consultant's name; and the right to sue and recover for any infringement of the Work). The Independent Consultant may not reproduce the Work in any form without ASME ST-LLC's prior written permission.

8. Indemnification and Hold Harmless.

a. Obligation of the Independent Consultant – The Independent Consultant shall indemnify, defend and hold harmless ASME ST-LLC and its officers, directors, employees and agents and each of them from any and all claims, actions, causes of action, demands, liabilities of whatsoever kind and nature including judgments, interest, attorney's fees, and all other costs, fees, expenses and charges which ASME ST-LLC, its officers, directors, employees, agents and each of them, may incur arising out of the negligence, gross negligence or willful or wanton misconduct of the Independent Consultant, its officers, directors, employees or agents.

b. Obligation of ASME ST-LLC – ASME ST-LLC shall indemnify, defend and hold harmless the Independent Consultant and its officers, directors, employees and agents and each of them from any and all claims, actions, causes of action, demands, liabilities of whatsoever kind and nature including judgments, interest, attorney's fees, and all other costs, fees, expenses and charges which the Independent Consultant, its officers, directors, employees, agents and each of them, may incur arising out of the negligence, gross negligence or willful or wanton misconduct of ASME ST-LLC, its officers, directors, employees or agents.

9. Term. It is mutually agreed that the Independent Consultant will commence work on this project immediately upon execution of this Agreement, and continue until completion, estimated as on or about [Contract End Date]. This termination date may be extended by mutual agreement, which must be confirmed in writing.

10. Termination. ASME ST-LLC shall have the right to terminate this agreement upon 14 days notice in writing to the Independent Consultant at any time that ASME ST-LLC shall in its judgment decide that such termination is in the best interests of ASME ST-LLC. Conversely, the Independent Consultant shall have the right to terminate this agreement upon 14 days' notice in writing to ASME ST-LLC at any time that the Independent

Consultant shall in its judgment decide that such termination is in the best interests of the engineering profession. In the event of such termination, ASME ST-LLC shall pay the Independent Consultant on a pro rata basis for percent of work completed as determined by mutual agreement subject to the provisions of Sections 3 and 4 of this Agreement.

11. Force Majeure. The parties' performance under this contract is subject to acts of God, war, government regulation, terrorism, disaster, strikes, civil disorder, curtailment of transportation facilities, or any other emergency beyond the parties' control, making it inadvisable, illegal or which materially affects a party's ability to perform its obligations under this contract. Either party may terminate this contract for any one or more of such reasons upon written notice to the other party.

12. Trademark Usage. Independent Consultant may not use any of ASME ST-LLC's trademarks or other identifiers (including the ASME ST-LLC logo) in any manner without ASME ST-LLC's prior written approval or consent. ASME ST-LLC reserves the right to review any approved use of its trademarks and to require changes in any further use, and Independent Consultant agrees to comply with those requirements.

13. Publicity Release and Public Affairs. The Independent Consultant shall not make without prior review and approval of ASME ST-LLC, any publicity release of any nature of general, non-technical information in connection with this Agreement. For purposes of this Agreement, general, non-technical information means any information concerning the existence of the Agreement, the identity of the parties, and the scope and general character of the research or technical activity**.**

14. Entire Agreement. This Agreement entirely supersedes, terminates, and replaces any and all prior agreements between the parties relating to the subject matter hereof and may not be amended except by an instrument in writing signed by both parties to this Agreement.

15. Notices. Any notices hereunder shall be given to the parties at their respective addresses set forth above by registered mail until a new and different address shall be established for either party on the basis of notice given to the other party.

16. Governing Law. This Agreement shall be subject to and governed by the substantive laws of the State of New York (without regard to its conflict of laws rules).

IN WITNESS WHEREOF, ASME ST-LLC has caused this Agreement to be executed on its behalf by its officer thereunto duly authorized and the Independent Consultant has executed this Agreement as of the day and year first above written.

ASME STANDARDS TECHNOLOGY, LLC

By: _____
Name:
Title:

INDEPENDENT CONSULTANT

By: _____
Name:
Title:
[Social Security] or [Federal Tax ID number]: [_____]

Annex 1 – Statement of Work

Scope Description

[TBD]

Annex 2 – Financial Terms

Reporting

Fees and Expenses

Technical services rate: [_____].
Travel rate (if applicable): [_____].
Travel expenses: [_____].

Contract Maximum: [_____].