



ASME Standards Technology, LLC

Request for Proposals

RFP-ASMEST-10-05

BPV #7 – Degradation of Toughness by PWHT

Date Posted: June 3, 2009

Proposal Due Date: June 30, 2009

1. Summary

ASME Standards Technology, LLC is soliciting proposals to identify materials whose toughness is degraded by Post-Weld Heat Treatment (PWHT). The project shall limit itself to material that require PWHT in accordance with the Construction Codes, but that already have sufficiently high intrinsic toughness that PWHT adds little to the reliability of components.

This project resulted from ASME Pressure Technology Codes and Standards (PTCS) Standards Committee requests to identify, prioritize, and address technology gaps in PTCS Codes, Standards, and Guidelines. This project is one of several included for ASME FY2010 funding and is intended to establish and maintain the technical relevance of ASME codes and standards products. An overview of the annual ASME PTCS project selection process is provided at <http://files.asme.org/STLLC/10192.pdf>.

2. Scope of Work

a. Background

For many years, the default position of ASME relative to PWHT has been that it is a universal good, and that PWHT always improved weld properties. While that was largely true when materials were solid-solution strengthened materials, the introduction of vanadium-containing materials and other microalloys gave the industry classes of materials whose toughness degraded with PWHT, invalidating that presupposition. The second class of materials that have entered ASME construction are the low-carbon microalloyed, quenched and tempered materials and thermomechanically processed steels which are exceedingly tough at ambient temperatures and widely used in steel construction without PWHT. These changes will correct a standing error in ASME code rules in the first case and provide an upgrade to the rules in the second since it will eliminate unnecessary, expensive and energy-consuming operations and permit users to take advantage of modern steelmaking technology. Eliminating PWHT requirements for these materials will reduce manufacturing costs for users, and to ASME since reduced manufacturing cost will make construction to ASME codes less expensive.

b. Description

This project shall identify materials whose toughness is degraded by PWHT. The project shall limit itself to material that the Construction Codes require PWHT, but that already have sufficiently high intrinsic toughness that PWHT adds little to the reliability of components. The report shall provide justification for removing Code-required PWHT from these materials and service conditions under which PWHT may be removed.

Tasks:

- 1) Gather data to determine which materials are subject to loss of toughness when given PWHT and those that are designed to be used in the as-welded condition.
- 2) Assemble and analyze the data, determine the loss of toughness for materials that degrade when heat treated. Gather data on high-toughness materials to determine toughness curves characteristic of each material.
- 3) Develop Fracture mechanics analysis for the relevant materials using API 579/ASME FSS-1 approach to determine what minimum threshold temperatures, toughness levels, etc. will be required to avoid PWHT with these materials.
- 4) Prepare appropriate changes to ASME Codes to eliminate PWHT of identified materials and shepherd those changes through the adoption process.

c. Deliverable

The project deliverable shall be a technical report provided as a MS Word .doc file that is formatted in accordance with the ASME ST-LLC template, located here: <http://files.asme.org/STLLC/18396.doc>. One peer review cycle is anticipated and modifications required to the report, as a result of the review cycle, are the responsibility of the contractor awarded the contract.

d. Schedule

Investigators shall submit a schedule with their proposal that provides major milestones and a reporting schedule. ASME ST-LLC desires that the final deliverable be provided no later than June 30, 2010.

e. Reporting

A brief status report shall be provided monthly, via email, to the ASME ST-LLC project manager. Progress reports shall be presented at ASME BPVC Code Week meetings

f. Travel Requirements

Travel requirements are to present project results to ASME C&S committees during ASME BPVC Code Week meetings. Travel expenses shall be reimbursed, within the project budget, per the project Travel Policy.

3. Applicant Eligibility Requirements

ASME ST-LLC is seeking proposals from all qualified organizations including, but not limited to, engineering firms, consultants, academic institutions, and Federally Funded Research and Development Centers. In addition to relevant technical qualifications and experience, applicants must possess an understanding of relevant ASME codes and standards.

4. Basis for Selection and Award

ASME ST-LLC will select the winning proposal by evaluating and comparing the merits of each applicant's complete proposal. This process reflects ASME ST-LLC's desire to select an application 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:

- Technical capabilities

- Experience
- Price
- Schedule
- Agreement with Terms and Conditions

ASME ST-LLC reserves the right to award, in whole or in part, any, all, or none of the applications submitted in response to this solicitation.

5. Contract Terms and Conditions

A fixed-price contract is preferred, but labor hour and expenses-type proposals will also be considered. Draft terms and conditions are located here <http://files.asme.org/STLLC/13937.pdf>. The final contractual terms and conditions will be negotiated between ASME ST-LLC and the winning applicant.

ASME ST-LLC will provide access to the required codes, standards, and other technical references.

6. Submission Requirements

a. Proposal Due Date

Proposals and amendments of proposals must be received by June 30, 2009. Applicants are encouraged to transmit their proposal well before this deadline.

b. Anticipated Selection and Award Date

ASME ST-LLC plans to select the winning proposal within two weeks of the proposal deadline.

c. Application Preparation Costs

This solicitation does not obligate ASME ST-LLC to pay any costs incurred in the preparation and submission of proposals, in making necessary studies or designs for the preparation thereof, or to acquire, or contract for any services.

d. Application Clarification

ASME ST-LLC reserves the right to request clarification of proposals and/or supplemental information. The award may be made after few or no exchanges, discussions, or negotiations. Therefore, all applicants are advised to submit their 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/or award. ASME ST-LLC reserves the right to modify or cancel this solicitation. All questions relating to the solicitation must be submitted to the contact below. Any amendments to the solicitation will be posted on the ASME ST-LLC web site (http://stllc.asme.org/Requests_Proposals_RFPs.cfm).

e. Treatment of Proprietary Information

A proposal may include technical and/or other data, including trade secrets and/or privileged, confidential commercial or financial information, which the applicant 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 applicant should specifically identify the data to be protected.

f. Proposal Preparation and Submittal Instructions

ASME ST-LLC may form a committee of subject matter experts to evaluate the technical qualifications of applicants. To help facilitate this evaluation, responses should include two separate documents, a Technical Proposal, and a Financial Proposal.

(1) Technical Proposal

- (a) Provide organization name and contact information.
- (b) Provide evidence of technical capabilities: credentials, qualifications, capabilities, and experience of individuals and the organization.
- (c) Describe approach to accomplish the Scope of Work.
- (d) Confirm agreement with the Scope of Work for the specified task(s)

(2) Financial Proposal

- (a) Provide a fixed price quotation or an hourly billing rate quotation and estimated project maximum.
- (b) Confirm agreement with the draft Terms and Conditions, or state any specific exceptions.

(3) Submit Technical and Financial Proposals via e-mail to the ASME ST-LLC contact below.

(4) Responses must be received on or before the deadline.

7. ASME Standards Technology, LLC Contact Information

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