



**ASME Standards Technology, LLC
(ASME ST-LLC)
Request for Proposals (RFP)
RFP-ASMEST-09-05
Task Investigator – Gen IV / NGNP Materials Project
NDE and ISI Technology for HTRs**

Date Posted: October 10, 2008

Proposal Due Date: October 31, 2008 by 1:00 PM EDT

1. Summary

ASME Standards Technology, LLC is soliciting proposals for services as Task Investigators for Task 12 for the Generation IV Materials project.

Task 12 is sponsored through a Cooperative Agreement between ASME Standards Technology, LLC and The U.S. Nuclear Regulatory Commission (NRC). The task is to provide rapid turn-around support in the development of scientific information to establish independent technical bases for regulatory safety decisions on inservice inspection and monitoring for use in high temperature gas reactors (HTGRs) and very high temperature reactors (VHTRs). The scope includes development of technical basis documents necessary to update and expand codes and standards for application in next generation reactor systems that operate at elevated temperatures. A project structure is already in place that includes a Steering Committee, and subcontracted Task Investigators and Technical Advisors.

2. Scope of Work

a. Statement of Work

Please see Appendix A for the “Statement of Work”.

b. Task Investigator Scope Description

Task Investigators (TI’s) perform the work on each of the individual tasks described in the Statement of Work. A close collaboration between the Task Investigator and the Technical Advisor (TA) is expected given that the TA’s responsibilities include ensuring that all technical aspects are properly addressed for example: Has the Task Investigator identified the critical issues (has he/she dug out the relevant background information)?. Multiple Investigators may be assigned to each task. Task Investigators will report to the Project Manager.

c. Deliverable

All deliverables are clearly identified for each task. The deliverable shall be a technical report provided as an electronic file in MS Word format. Recommendations regarding R&D and specific testing that should be conducted (if any) to further strengthen the technical validity of the report must be included. Report outline to follow ASME ST-LLC’s Style Guide & Template (a copy will be provided contract recipients). One 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

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See Appendix A for the schedule. Investigators shall submit a schedule with their proposal describing the major milestones and reporting schedule.

e. Reporting:

Quarterly, Yearly and Final reports are due as within 30 days after the reporting period.

f. Travel Requirements

Current travel is anticipated to be twice per year with the possibility for an overnight stay. Travel expenses will be reimbursed, per the project Travel Policy: See link: [Travel Policy](#).

g. Task 12 Budget

The budget will not exceed \$84,000.

3. Applicant Eligibility Requirements

ASME ST-LLC is seeking proposals from qualified engineering firms, individuals, or consultants. In addition to relevant technical qualifications and experience, applicants must have an understanding of Very High Temperature Reactor (VHTR) design concepts. Applicants may not serve as both the Task Investigator and Technical Advisor for the same task.

Federally Funded Research and Development Centers (FFRDC's) are not eligible for funding under this award.

4. Basis for Selection and Award

Selection of a proposal by ASME ST-LLC will be achieved through a process of evaluating and comparing the relative merits of the applicant's complete applications. This process reflects ASME ST-LLC's desire to accept an application based on its potential in best achieving program objectives, rather than solely on evaluated technical merit or cost. Evaluation criteria includes, but is not limited to, the following:

- Technical capabilities
- Access to the data require to perform the task
- Experience
- Price
- Agreement with Terms and Conditions

It is anticipated that there may be multiple awards resulting from this solicitation. However, 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 labor hour and expenses type contract shall be used. The project sponsor, U.S. Department of Energy (DOE), must also approve the selected applicant. Draft terms and conditions are included: See links for ASME ST-LLC T&C; [1600.5 form](#); [10cfr Subpart C 1-1-05 Edition](#); [Disclosure of Lobbying Activities \(Standard Form LLL\)](#).

The final contractual terms and conditions will be negotiated between ASME ST-LLC and the selected applicant(s) following award.

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ASME ST-LLC shall provide required access to codes and standards and other technical references necessary for performance of the work.

6. Submission Requirements

- a. Proposal Due Date: Proposals and amendments of proposals must be received by October 31, 2008 by 1:00 PM EDT. Applicants are encouraged to transmit their proposal well before the deadline.
- b. Anticipated Selection and Award Date: It is anticipated that selection and award will be made within 2 weeks of the proposal due date.
- c. Application Preparation Costs: This solicitation does not obligate ASME ST-LLC to pay any costs incurred in the preparation and submission of proposals or 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 require proposals to be clarified or supplemented to the extent considered necessary. 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://www.stllc.asme.org/>).

- e. Treatment of Proprietary Information: A proposal may include technical data and other data, including trade secrets and/or privileged or 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:

Response 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: the credentials, qualifications, capabilities, and experience of individuals and the organization.
- c. Identify the specific task(s) to be investigated.
- d. Confirm agreement with the Scope of Work for the specified task(s)

2. Financial Proposal

- a. Provide an hourly billing rate quotation and estimated project maximum.

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- b. Confirm agreement with the draft Terms and Conditions, or state any specific exceptions.
3. Submit Technical and Financial responses 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:

Name: Anthony Amato

Project Specialist

ASME Standards Technology, LLC

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New York, NY 10016 USA

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Statement of Work

TASK 12: NDE & ISI Technology

Summary:

The task is to provide rapid turn-around support to the US Nuclear Regulatory Commission (USNRC) in developing scientific information to establish independent technical bases for regulatory safety decisions on in-service inspection and monitoring for use in high temperature gas reactors (HTGRs) and very high temperature reactors (VHTRs).

Scope of Work:

- (1) Conduct technology assessment for advanced monitoring, diagnostics, and prognostics. A key part of the review would involve an assessment of what technology and capabilities can be leveraged from past advanced and test reactor experience, laboratory studies and migration from current nuclear LWR industry experience. The technology assessment will provide guidelines for designers and developers of codes and standards and assist in defining where and what upgrades are needed. It will assist in identifying technology that can be used to support regulatory needs, identifying technology gaps and providing a technical foundation for defining a research agenda.
- (2) Identify appropriate new construction and in-service NDE methods for examination of metallic materials (e.g. acoustic emission, ultrasonic). Studies will be based upon NGNP-relevant considerations, such as conclusions of the Nuclear Energy Research Initiative (NERI) group that developed Load and Resistance Factor Design (LRFD) -based ASME Section III design equations. Subtasks are as follows:
 - a. Define maximum acceptable flaw types and sizes based on the LRFD approach that is developed and the material properties of candidate materials have been obtained.
 - b. Define nondestructive examination methods needed to detect sub critical flaws of the size and type defined in a) above in pressure equipment during initial construction and for periodic examination during the life of the equipment. It is anticipated that new methods will be needed to reliably detect smaller discontinuities than those of concern for the current generation of pressure equipment. The methods will include the characterization of uncertainties in a manner that is suitable for reliability-based LRFD development. Some methods to be considered include:
 - i. Ultrasonic Time-of-Flight-Diffraction – provide detailed guidance for application.
 - ii. Ultrasonic Phased Arrays – define requirements.

Deliverables and Deliverable Due Date:

- (1) Report containing technical information and background to address concerns and assist codes & standards committees and jurisdictional authorities in adopting improved NDE methods into codes and standards, on or before February 28, 2009.
- (2) Report on NDE methods for new construction and in-service inspection for use in providing technical information and background to address concerns and assist codes & standards committees and jurisdictional authorities in adopting improved NDE methods into codes and standards, on or before February 28, 2009.

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