UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

APR 14 2003

Information Systems Laboratories, Inc.
ATTN: James Meyer
11140 Rockville Pike, Suite 500
Rockville, MD 20852

SUBJECT: TASK ORDER NO. 9 ENTITLED, "REVIEW OF GE TOPICAL REPORT - ESBWR SCALING" UNDER CONTRACT NO. NRC-04-02-054

Dear Mr. Meyer:

This letter definitizes Task Order No 9 in accordance with the enclosed statement of work. The period of performance for Task Order No 9 is April 14, 2003 through December 31, 2003 The task order estimated cost and fixed fee is set forth as follows: Estimated Costs:$103,828 Fixed Fee:$6586 CPFF Total $110,414. $110,414 in funds is hereby allotted to this task order. The accounting data for this task order is set forth as follows: RES ID: RES-C03-041 APPN 31X0200 B&R 36015115107 JCN:Y6806 BOC: 252A Amount Obligated This Action:$110,414.

Please indicate your acceptance of Task Order No. 9 by having an official authorized to bind your organization execute three copies of this document, by signing in the space provided, and return two copies to me You should retain the third copy for your records. All other terms and conditions of this task order remain unchanged.

Should you have any questions, regarding this task order, please contact me on (301) 415-8168.

Sincerely,

Stephen M. Pool, Contracting Officer
Division of Contracts
Office of Administration

ACCEPTED:

NAME

VP

TITLE

4/17/03

DATE

TEMPLATE - ADM001

ADM002

STATEMENT OF WORK
TASK ORDER NO. 9
Review of GE's Topical Report, NEDC - 33082P, "ESBWR Scaling Report"

BACKGROUND

General Electric Company (GE) has requested NRC pre-application review of their proposed ESBWR design. As part of the pre-application review, GE has submitted the topical report, NEDC-33082P, "ESBWR Scaling Report."

Major SBWR test programs were conducted at the GIST, GIRAFFE, PANTHERS, and PANDA test facilities. GIST, GIRAFFE, and PANDA were integral systems facilities focusing on different aspects of the SBWR response to LOCAs. These facilities also simulated the SBWR at different system scales (1:500 for GIST, 1:400 for GIRAFFE and 1:25 for PANDA). PANTHERS tests were full-scale component tests of prototypical Isolation Condenser System (ICS) and Passive Containment Cooling System (PCCS) condensers.

The ESBWR is in general a first principle scale-up of the SBWR. However, there are a few configuration changes to enhance the safety performance of the design. GE states that the testing done for the SBWR is still representative of the ESBWR but at a smaller scale (1:1000 for GIST, 1:800 for GIRAFFE and 1:50 for PANDA). To expand the experimental database, additional tests were run in the PANDA facility representative of the ESBWR, at a scale of 1:50.

OBJECTIVE

The objective of this task order is to obtain technical expertise from Information Systems Laboratory (ISL) to assist the staff in reviewing the subject topical report submitted by GE, which documents the following:

- Describe the scaling philosophy and strategy used in designing the various tests.
- Provide the applicable scaling laws.
- Identify important phenomena to ESBWR behavior and provide information for PIRT validation.
- Show that the test facilities properly "scale" the important phenomena and processes identified in the ESBWR PIRT and/or provide assurance that the experimental observations from the test programs are representative of ESBWR behavior.
- Identify scaling distortions and discuss their importance; in particular, identify the ways by which scaling distortions should be considered when the experimental data are used for code qualification.
- Provide the basis for showing that the experimental data cover the correct phenomena and ranges for qualifying TRACG for application to ESBWR accident analysis.

The contractor shall deliver a technical evaluation report (TER) addressing the technical acceptability of the scaling basis for passive safety systems test programs to support

Emergency Core Cooling System (ECCS) and PCCS performance of the ESBWR design. As part of the pre-application review, GE has also submitted the ESBWR test and analysis program description (TAPD), and the ESBWR/SBWR test reports. These reports are being reviewed by RES personnel. The contractor's review will require coordination with the RES review.

TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

ISL shall provide personnel that are experienced in scaling methodologies for tests performed in support of SBWR/ESBWR design.

It is the responsibility of the contractor to assign technical staff, employees, subcontractors, or specialists who have the required educational background, experience, or combination thereof to meet both the technical and regulatory objectives of the work specified in this SOW. The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this task order including assurance that all information contained in the technical and cost proposal, including resumes, is accurate and truthful. In addition, the contractor and personnel assigned to this work must be approved for handling and working with proprietary information.

The use of key personnel and any proposed change to key personnel on this contract is subject to the NRC Project Manager's approval. This includes proposed use of principal persons (i.e., key contributors) during the life of the contract.

For any work to be subcontracted or performed by consultants ISL shall obtain the NRC Project Manager's written approval of the subcontractor or consultant prior to initiation of the subcontract effort. Conflict of interest considerations shall apply to any subcontracted effort.

WORK REQUIREMENTS

An example of the work scope envisioned under this task order is detailed below for general information only. This task order may consist of only some of the tasks or even parts of the tasks defined below, depending on the support the staff requires. On an "as needed"/"when needed" tasking basis, ISL shall provide personnel with SBWR/ESBWR related test scaling and other required expertise necessary to perform work in the following tasks:

Task 1: Review and Evaluate Topical Report

Review and technically evaluate GE Topical Report NEDC-33082P to assess the technical adequacy of the ESBWR test scaling basis. Coordinate the review with the ESBWR testing and with the ESBWR TAPD review being performed in RES. If necessary prepare a request for additional information (RAI).

Task 2: Review and Evaluate RAI Responses

Review and technically evaluate GE's responses to the RAIs identified inTask 1. If necessary prepare a list of open items and document their bases.

Task 3: Assist NRC Staff

Assist the NRC staff in resolving open issues identified in Task 2, including the participation in telephone conference calls with GE staff. If necessary prepare for and attend a meeting with GE/ACRS. Prepare a trip report.

Task 4: Review and Evaluate Additional RAI Responses

Review and technically evaluate any additional responses to the RAIs. Prepare a technical evaluation report (TER) addressing the basis for technical acceptance of scaling of passive safety systems test programs to support ESBWR design, and TRACG qualification plan. The TER should also identify any remaining open issues, limitations, and/or the necessity to perform additional tests by GE in support of TRACG qualification and ESBWR design certification plans.

a. Draft TER.

b. Incorporate NRC comments, and prepare a final TER. The TER is to be of sufficient quality to be used by the NRC staff as part of its Safety Evaluation Report on the ESBWR design.

ESTIMATED COMPLETION DATES:

The RAIs are to be prepared and provided to the staff by May 15, 2003.

A draft TER is to be completed by August 1,2003.

The final TER is to be completed August 15, 2003.

The staff support task in meeting with the ACRS is to be completed by November 31, 2003.

ESTIMATED LEVEL OF EFFORT

The total level of effort is estimated at 24 professional staff weeks (PSW) at the Senior Engineer level or higher.

DELIVERABLES

The RAIs are to be prepared and provided to the staff by May 15, 2003. A draft TER is to be prepared and delivered to the staff by August 1,2003. A final TER is to be prepared and delivered to the staff by August 15, 2003.

Monthly letter progress reports are to be provided to the staff.

MEETINGS AND TRAVEL

Four trips for two persons for one day each to NRC Headquarters. Meetings are to take place with the NRC staff, applicant, and ACRS at the NRC headquarters facilities.

NRC FURNISHED MATERIALS

No materials are to be furnished by the NRC during the performance of this work.

OTHER APPLICABLE INFORMATION

Proprietary submitted documentation will be provided by the NRC in the form of CD-ROMs.

License Fee Recovery

The work specified in this SOW is license fee recoverable. See NRC's billing instructions attachment no. 2 for format for reporting license fee recoverable cost.