



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

CMB2

September 12, 2000

Advanced Technologies and Laboratories
International, Inc.
ATTN.: Ms. Ray-way Hwang
20251 Century Boulevard, Suite 200
Germantown, Maryland 20874

**SUBJECT: TASK ORDER NO. 6 ENTITLED "TECHNICAL ASSISTANCE ON THE
EVALUATION OF RESIN POLYMERS USED IN STORAGE AND
TRANSPORTATION CASK SHIELD DESIGNS" UNDER CONTRACT
NO. NRC-02-00-010**

Dear Ms. Hwang:

In accordance with Section G.5(c) entitled "Task Order Award," of the subject contract, this letter definitizes the subject Task Order. This effort shall be performed in accordance with the enclosed Statement of Work .

Task Order No. 6 shall be in effect from September 13, 2000 through November 30, 2000. The total cost ceiling for performance of Sub-tasks A, B, C, and D is \$34,908.81, of which the sum of \$32,625.06 represents the reimbursable costs and the sum of \$2,283.75 represents the fixed fee. The following cost ceilings are established for each period specified:

Period	Cost Ceiling	Cost	Fee
9/12/00 - 9/30/00	\$ 13,643.01	\$ 12,750.48	\$ 892.53
10/1/00 - 9/30/01	\$ 21,265.80	\$ 19,874.58	\$ 1,391.22

The total cost ceiling for performance of Optional Sub-tasks E, F, and G is \$42,113.35, of which the sum of \$39,358.28 represents the reimbursable costs and the sum of \$2,755.07 represents the fixed fee. The following cost ceilings are established for each period specified:

10/1/00 - 9/30/01	\$ 42,113.35	\$ 39,358.28	\$ 2,755.07
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The Contractor shall not commence the performance of work required under Sub-tasks E, F, and G, without prior receipt of a formal modification to this Task Order No. 6 from the Contracting Officer.

The Contractor shall not exceed the established cost ceiling, during the specified period, without prior written authorization by the Contracting Officer. Any work undertaken by the Contractor in excess of the cost ceiling specified above, for the associated period, is done so at the Contractor's sole risk.

NRC-02-00-010 - Task Order No. 6

This Task Order No. 6 obligates funds in the amount of \$37,591.00.

The obligated amount shall, at no time, exceed the task order ceiling. When and if the amount(s) paid and payable to the Contractor hereunder shall equal the obligated amount, the Contractor shall not be obligated to continue performance of the work unless and until the Contracting Officer shall increase the amount obligated with respect to this task order. Any work undertaken by the Contractor in excess of the obligated amount specified above is done so at the Contractor's sole risk.

Accounting data for this task order is as follows:

B&R No.: 05015202105
Job Code No.: J5281
BOC: 252A
APPN No.: 31X0200
FFS No. : 5000R058
Obligated Amount: \$37,591.00 (Amount Previously Obligated Under the Basic Contract)

The following individuals are considered essential to the successful performance of the work hereunder: 

The Contractor agrees that such personnel shall not be removed from the effort under the task order without compliance with Contract Clause H.5, Key Personnel.

Your contacts during the course of this task are:

Technical Matters: Kim Gruss, Technical Monitor
(301) 415-8586

Penelope Kinney, Project Officer
(301) 415-7805

Contractual Matters: Joyce Fields, Contracting Officer
(301) 415-6564

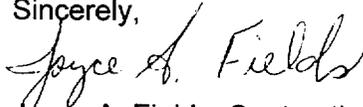
The issuance of this task order does not amend any terms or conditions of the subject contract.

Please indicate your acceptance of this task order by having an official, authorized to bind your organization, execute three (3) copies of this document in the space provided below and return two (2) copies to the U.S. Nuclear Regulatory Commission, ATTN: Ms. Joyce Fields, Division

NRC-02-00-010 - Task Order No. 6

of Contracts and Property Management, T-712, ADM/DCPM/CMB2, Washington, D.C. 20555.
You should retain the third copy for your records.

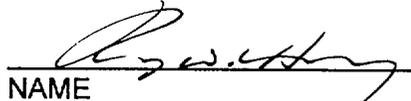
Sincerely,



Joyce A. Fields, Contracting Officer
Contract Management Branch No. 2
Division of Contracts and
Property
Office of Administration

Enclosure:
As stated

ACCEPTED:


NAME

Chief Financial Officer
TITLE

September 13, 2000
DATE

STATEMENT OF WORK

PROJECT TITLE: Technical Assistance on the Evaluation of Resin Polymers Used in Storage and Transportation Cask Shield Designs

JOB CODE NO.: J5281

TASK ORDER NUMBER: TBD

B&R: 05015202105

CONTRACT NUMBER: NRC-02-00-010

NRC TECHNICAL PROJECT MANAGER (TPM): Kim Gruss, (301) 415-8586

NRC TECHNICAL ASSISTANCE PROJECT MANAGER (TAPM): Penelope Kinney, (301) 415-7805

FEE RECOVERABLE: No

1.0 Background

This Statement of Work (SOW) describes technical assistance activities to be performed in support of the Spent Fuel Project Office (SFPO) evaluation of the characteristics of materials, including resin polymers that are used in transportation and storage casks. Some storage and transportation cask designs utilize poured in place resin polymers to attenuate neutron radiation. The resin matrix may contain B_4C to enhance attenuation. The resin formulation, mixing, and pouring processes effect the physical integrity of the final poured-in-place shield. The resin polymers also experience a significant radiation flux and heat load during use which may impact the shielding effectiveness of the cask.

The staff is evaluating the material characteristics of these resin polymers, which include long-term degradation mechanisms from radiation and heat. As part of the evaluation, the staff is examining the adequacy of formulation, mixing, pouring, and a qualification procedure for specific resins that are used in specific transportation and storage cask designs. The staff plans to develop evaluation criteria for adequately qualifying resin polymers as an acceptable neutron shielding material in storage and transportation cask designs.

Based on the above, the SFPO staff requires assistance with the development of evaluation criteria for qualifying resin polymers and with the evaluation of these resin polymers.

2.0 Objective

The objectives of this task are for the contractor to: (1) review technical information, test reports, licensee evaluations, and other relevant materials associated with the use and effectiveness of resin polymers; (2) prepare questions in the form of requests for additional information (RAI) that are needed to determine the adequacy of specific resin polymers used in cask designs; (3) assist the staff in evaluating responses to the RAIs; and (4) prepare reports containing safety evaluation findings regarding material characteristics and recommendations for appropriate evaluation criteria to qualify resin polymers. Additional objectives, on an as-needed basis, are to: (5) assist staff in inspections of cask vendor facilities that use resin polymers; (6) assist the staff with the development of guidance on the specification, evaluation

criteria, and other safety aspects of these materials for use in cask designs; and (7) prepare for depositions in any litigation or legal actions related to these issues regarding resin qualification.

3.0 Technical Qualifications Requirements

The personnel performing this work shall have detailed and broad knowledge of the formulation, mixing, curing, performance, and degradation of neutron shield materials, such as resin polymers and concrete. The personnel conducting this work shall also have knowledge of the effects of radiation and temperature on the long term performance of these materials. The personnel should also have a general understanding of storage and transportation cask designs and the requirements of 10 CFR Part 71 and 72.

4.0 Level of Effort

The estimated level of effort required to complete this work described in Section 6.0 are:

Subtask A: 5 staff-days
Subtask B: 5 staff-days
Subtask C: 5 staff-days
Subtask D: 10 staff-days

and as necessary:

Subtask E: 5 staff-days
Subtask F: 15 staff-days
Subtask G: 20 staff-days

5.0 Period of Performance

The period of performance for the work specified shall begin on the date of execution of this task and proceed through November 30, 2000.

6.0 Scope of Work

Contractor personnel shall perform the subtasks identified below.

- Subtask A: Review technical documents, vendor test reports and procedures, correspondences, and other relevant materials associated with the effectiveness of neutron shield materials.
- Subtask B: Prepare a request for additional information (RAI) which will be used by the NRC to determine the adequacy of specific resin polymers used in cask designs. The RAI shall be based on the findings obtained after performing Subtask A.
- Subtask C: Evaluate the responses to the RAIs of Subtask B.
- Subtask D: Based on the work identified in Subtask A, B, and C, prepare a letter report

which includes (1) the material characteristics of specific resin polymers, (2) the acceptance or safety evaluation findings for these polymers, and (3) recommendations for appropriate staff evaluation criteria to qualify resin polymers for use in transportation and storage casks in the future.

Optional Services

Contractor personnel shall also, on an as-needed basis, perform the optional Subtasks identified below. If any of services noted below are required, the work will be initiated by modifying this task and extending the period of performance. The NRC TPM will notify the contractor with the NRC's intent to proceed with any of these subtasks at least two weeks before the services are required and will discuss deliverables and the anticipated submittal date. No work shall begin prior to receipt of a formal modification to this task from the contracting officer. Costs for each of these subtasks should be proposed separately.

Subtask E: Provide technical expertise on inspections of cask vendor facilities and review cask vendor data, analyses, procedures, and other documentation to evaluate the effectiveness of neutron shield materials;

Subtask F: Provide technical expertise in the development of guidance on the specification, evaluation criteria, and other safety aspects of these materials for use in cask designs; and/or

Subtask G: Prepare depositions in any litigation or legal actions related to these issues regarding evaluation of resin polymers.

7.0 Deliverables/Milestones and Schedules

The project deliverables for Items A through D in Section 6.0 shall be prepared according to the following schedule (calendar days):

Subtask A:	Complete the review of technical literature and relevant licensing documents via teleconference call with the staff	7 days after start of Subtask A
Subtask B:	Letter report containing a set of RAI questions	7 days after completion of Subtask A
Subtask C:	Letter report containing the evaluation of response to RAIs	7 days after completion of Subtask B
Subtask D:	Letter report containing safety evaluation and recommendations	14 days after completion of Subtask C

The deliverables and schedules for Subtasks E through G, in Section 6.0 will be determined if any of these services are required and will be incorporated into this task by a formal modification.

8.0 Meetings and Travel

Meetings and/or teleconference calls between contractor personnel, staff and management will be requested by the TPM or the contractor on an as-needed basis. Approximately six meetings are anticipated over the course of the task order. These meetings include an initial meeting to outline the scope of work and to identify documents for contractor review, meetings to discuss the content and format of the RAI questions, meetings following any inspections, and two additional meetings to resolve any outstanding issues. At the discretion of the TPM, meetings may be held at NRC Headquarters in Rockville, Maryland, or at the contractor's office. It is anticipated that there will be up to 6 person trips between the contractor's office and NRC headquarters and up to 2 person 4-day trips for inspections, if necessary. For proposal preparation purposes, assume trips to Marlton, New Jersey and Atlanta, Georgia. NRC will only fund those trips approved by the NRC Contracting Officer in advance, which are within the scope of this SOW.

9.0 NRC Furnished Material

The NRC will furnish to the contractor copies of necessary documents, copies of NRC's current regulations, guidance documents, storage and transportation casks documents, and other documents identified by the TPM or the contractor as pertinent to performing the required work.

10.0 Financial and Technical Status Reports

The contractor shall submit a monthly technical report in accordance with section F.# - Technical Progress Report and a monthly Financial Status Reports (FSR) each month in accordance with the requirements specified in Section F.4 of the basic contract with distribution to the: (1) NMSS TAPM, (2) NMSS/SFPO TPM [2 copies], (3) NMSS/SFPO Program Coordinator, and (4) Contracting Officer.

11.0 Technical Direction

Penny Kinney is the NMSS Technical Assistance Project Manager (TAPM) and is the focal point for all contract related activities. All work assignments and program funding actions are initiated by the NMSS TAPM who submits all requests to the Division of Contracts and Property Management (DCPM) for processing. All proposed work scope or schedule changes must be submitted through the NMSS TAPM for DCPM.

Kim Gruss is designated the NMSS/SFPO Technical Project Manager (TPM) and is responsible for providing technical guidance to the contractor regarding staff interpretations of the technical aspects of regulatory requirements, along with copies of relevant documents when requested by the contractor. All products must be reviewed and approved by the TPM before they are submitted as final documents. All technical directions given to the contractor must be consistent with the work scope and schedule. The NMSS TPM is not authorized to unilaterally make changes to the approved work scope or schedule, or give the contractor any directions that would increase costs over approved levels. The Contracting Officer is the only individual authorized to make changes to this task.