TO: Prospective Applicants

SUBJECT: SOLICITATION NO. DE-SC02-01EE50657 FOR COOPERATIVE AUTOMOTIVE RESEARCH FOR ADVANCED TECHNOLOGY (CARAT) PROGRAM

EXECUTIVE SUMMARY LETTER

This letter is a summary of the salient elements of the financial assistance solicitation, but is not an integral part of the solicitation. Should there be any conflict between this Executive Summary Letter and the solicitation, the data and information in the solicitation shall prevail.

The Department of Energy (DOE) invites applications from U.S small businesses and U.S. institutions of higher education for federal assistance for Cooperative Automotive Research for Advanced Technology (CARAT) Program. The Appendix A of the solicitation identifies 7 topics for which applications are being sought.

Significant items of interest concerning the solicitation are:

1. **Qualification Criteria**

   a. **Eligibility -** only U.S. small business and U.S. institutions of higher education are eligible to apply.
   b. **Cost Participation -** Minimum cost share of 20 percent is required for Phase 1 and 2 participants and a minimum cost share of 50 percent is required for Phase 3 participants.
   c. **Choice of Topic Area -** DOE will not assign a topic area to applications; this must be done by the applicant. When an application has relevance to more than one topic or subtopic, the applicant must decide which topic is the most relevant and submit the application under that topic only. This must be annotated on the application Face Page DOE F 4650.2, Block No. 4, or the Statement of Work (Appendix C). If no topic is designated, the application will not be reviewed or returned.
   d. **Multiple Applications -**There is no limitation on the number of different applications an applicant may submit. However, each application shall cover only one topic area (Topics 1-7 are described in Appendix A.). An application that addresses more than one topic area will be eliminated from further consideration, and will not be technically evaluated.

2. **Section 2306 of the Energy Policy Act, (EPAct)**- Company applicants other than an organization of the type of those described in section 501 (c) of the Internal Revenue Code of 1954[26 U.S.C. Section 501(c)(3)] seeking financial assistance under this CARAT Program are subject to the eligibility requirements of the Energy Policy Act.

3. **Technology Transfer** - The CARAT Program and this solicitation have a restriction on the transfer of CARAT technology to foreign entities, as described in Section 4.3 of the solicitation.

4. **Restriction on Indirect Costs** - Applicant's indirect costs applied to subcontracts shall not exceed 5 percent of the subcontract total costs (see Section 2.5.4.6 of the solicitation).

5. **Three-Phase Program** - Carat's three-phase program is aimed at developing vehicle technologies that can be validated to meet the auto industry's technical and cost requirements. Phases 1 and 2 focus on research and development of the advanced technologies. Phase 3 will refine the technology to a level that will expedite its adoption in light vehicles and validate attainment of performance targets and manufacturing and market potential. **Only those Phase 1 participants selected through this solicitation will be eligible for the subsequent phases.**

6. **Preapplications** - DOE encourages the submission of a preapplication before the preparation of a full application. The preapplication shall consist of no more than two pages covering the areas identified in Section 2.1. The preapplication must not include any confidential or proprietary information and must be received in accordance with Section 5.2.

7. **Applicable Regulations** - The applicable regulations governing cooperative agreements are the DOE FINANCIAL ASSISTANCE RULES, 10 CFR PART 600, which may be downloaded from the following Internet and address: http://www.pr.doe.gov/f600toc.html#a

Participants are solely responsible for checking the Internet address of this solicitation on a regular basis to ensure that schedule, terms and conditions have not been changed due to an amendment to this solicitation.

Please Note: All Topics under this solicitation will require at least the submission of a Final Report. Some topics will also require other deliverables.

All correspondence or questions concerning the solicitation must cite the solicitation number and be addressed in writing to the DOE Point of Contact:

Ms. Earlette Robinson
Procurement Member
Solicitation No. DE-SC02-01EE50657
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Building 201, Room 3E-10
Argonne, Illinois 60439

Telephone No.: (630) 252-2667
FAX No.: (630) 252-5045
E-Mail: Earlette.Robinson@ch.doe.gov

Applications are due no later than July 16, 2001 by 3:00 p.m. local prevailing time, at the Department of Energy, Chicago Operations Office, Bldg. 201, Room 3N-20 (mail Center) 9800 South Cass Avenue, Argonne, Illinois, 60439, ATTN: Ms. Earlette Robinson, Procurement Member.

The Preapplications are due no later than May 30, 2001 and the full Applications are due no later than July 16, 2001.

Sincerely,

Donna Lee Ho
Chairman

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COOPERATIVE AUTOMOTIVE RESEARCH FOR ADVANCED TECHNOLOGIES

CARAT PROGRAM

SOLICITATION NO. DE-SC02-01EE50657

1. PROGRAM DESCRIPTION

1.1 INTRODUCTION

The Department of Energy (DOE) invites U.S. small businesses and U.S. institutions of higher education to submit applications for financial assistance for research and development (R&D) for advanced vehicle technologies compatible with the Office of Advanced Automotive Technologies (OAAT) R&D Program. Entities with strong research capabilities in science or engineering in any of the topic areas described in Appendix A are encouraged to participate.

The purpose of the Cooperative Automotive Research for Advanced Technologies (CARAT) Program is to provide U.S. small businesses, and U. S. institutions of higher education with means to research, develop, and validate advanced automotive technologies. These technologies will enable the production of cars and light trucks that are extremely fuel-efficient and have low emissions. The CARAT Program is a mechanism for U.S. small businesses, and U.S. institutions of higher education to participate in the OAAT R&D Program under the Assistant Secretary for Energy Efficiency and Renewable Energy (EERE).

The objectives of this program are to: Offer U.S. small businesses and U.S. institutions of higher learning the opportunity to advance technology and reduce costs in direct support of OAAT programs; to accelerate the progress on inventions needed for advanced vehicle systems; enhance productive working relationships between U.S. small businesses, U.S. institutions of higher education, automotive manufacturers, and automotive suppliers; enhance U.S. industrial competitiveness; and increase private sector commercialization of technology development through DOE supported R&D. As a result of this solicitation, DOE expects to award six (6) cooperative agreements with an anticipated $900,000.00 in government funding for FY 2002. OAAT intends to publish an annual CARAT solicitation of proposals that focus on specific technical issues. The CARAT Program Home Page Address is located at http://www.ipd.anl.gov/carat.

The CARAT topics for this solicitation are:

Energy Management

Topic 1. Alternative (Non-Lithium) Insertion Electrode Battery Technology

Topic 2. Non-Carbon Anodes for Lithium-ion Batteries

Energy Conversion

Topic 3. Fuel Cells for Auxiliary and Portable Power

Topic 4. Homogeneous-Charge Compression-Ignition (HCCI) Enabling Technology

Vehicle Systems

Topic 5. Cost-Effective, High-Efficiency Porous Media Heat Transfer

Topic 6. Cost-Effective, High-Efficiency Material for Thermoelectric Devices

Topic 7. Cost-Effective, High-Efficiency Integrated Systems Approach to Auxiliary Electric Motors

1.2 PROGRAM INTENT

The CARAT program consists of three phases to develop advanced technologies for light vehicle applications that can be validated to meet industry's technical and cost requirements. Phases 1 and 2 focus on research and development of advanced technologies for energy efficient vehicles. Phase 3 refines the technology to a level that will expedite its adoption into light vehicles by validating attainment of performance targets, and capability for low-cost, high-volume manufacturing.

Phase 1 is the laboratory scale research phase and its main objective is to validate the basic technical concept through test data and/or modeling. In Phase 2 technology development efforts are focused on moving the technology from laboratory scale to near-vehicle scale, and on establishing the potential to meet competitive cost and manufacturing objectives.

An important feature of CARAT is its Phase 3 activity, where the component or system is further developed and moves to a vehicle-scale validation stage. During a successful validation phase, the technology is installed in a vehicle or other appropriate platform and shown to have near-term potential to satisfy the automotive industry's performance and cost targets. **This solicitation seeks applications for Phase 1 only.**

It is imperative that the small businesses or academic institutions responding to this CARAT solicitation either have a broad knowledge of automotive industry practices and economics, or team with firms or organization that do. There are restrictions with regards to teaming/subcontracting firms or organizations remaining in compliance with Section 1.3, Eligibility and Limitations. Such teaming becomes essential as the effort moves into the third phase. The actual content of the Phases 2 and 3 will be determined by the specific needs of the technology being developed and defined during the follow-on research negotiation process.

Phase 1 - Technology Validation of Bench Scale Prototype

DOE anticipates making awards from this solicitation to U.S. small business and/or U.S. institutions of higher education in an amount up to $150,000.00 (maximum Government share) for a project period of up to 12 months. Cost sharing of at least 20% is required in Phase 1. Financial assistance applications for this phase should propose a technical approach that contributes to the achievement of the following outcomes.

- Design, fabrication, and delivery to DOE of a fully functional bench scale prototype at the conclusion of Phase 1.
- Testing and/or evaluation of the component or system to assess its performance and identify potential for improvement.
- A preliminary analysis of cost and manufacturing issues to identify potential barriers.

The following CARAT phases are described for informational purpose only. This solicitation requests applications for Phase 1 only. The successful completion of Phase 1 will be a prerequisite to a Phase 2 application, and the Phase 2 studies must be a follow on to the same technical topic as the Phase 1 studies. Only those Phase 1 participants selected through this solicitation will be eligible for the subsequent Phase 2.

Phase 2- Technology Development

A Phase 2 award may be made to those firms whose project appears sufficiently promising as a result of Phase 1. Phase 2 awards will not exceed $750,00.00 (maximum Government share) for a project period of up to 24 months. Cost sharing of 20 percent is required for Phase 2 applicants.

Financial Assistance Applications for Phase 2 should propose a technical approach that contributes to the achievement of the following outcomes:

- Design, and development and delivery to DOE of an engineering prototype (near-vehicle scale) that meets specified performance targets.
- Test and/or evaluate (not necessarily in a vehicle) the component or system to assess whether the near-vehicle scale prototype meets performance specification sought in this solicitation;
- Deliver a near-vehicle scale component or system suitable for evaluation by an objective third party evaluator to determine its potential for success; and
- Perform a preliminary economic analysis of the component or system to assess its potential for meeting high volume and low-cost fabrication targets.

Phase 2 Evaluations

Phase 2 applications will be evaluated for the proposed technology and technical approach contributing to and achieving the above listed outcomes together with the following criteria:

1. Cost share of no less that 20% of the total cost of the project as reflected on the Budget Page.
2. The degree to which the Phase 1 objectives were accomplished.
3. The scientific and technical merit of the proposal and its feasibility to accomplish the desired outcomes.
4. The likelihood that the proposed component or system will significantly improve vehicle energy efficiency.

5. The potential for near-term commercialization of the proposed component or system.

Phase 2 application instructions will be provided to the participant after the award of Phase 1.

Phase 3 - Advanced Technology Development and Validation

Awards will be made to applicants that produce sufficiently promising results from Phase 2, subject to availability of funds. This phase will move the component or system from an engineering prototype stage to one where the technology can be shown to satisfy the automotive industry's performance and cost targets. The validation process requires that a refined engineering prototype be designed, fabricated, and installed into a vehicle or system, as appropriate, for testing and evaluation. To ensure confidence in the validation effort and encourage technology transfer to production capable firms, this phase should include a partnership with an existing company with the financial and technical resources to bring the technology into the automotive market.

Phase 3 awards will be for a project period of up to 24 months. Cost sharing of 50 percent or more for Phase 3 participants is required. Financial assistance applications for Phase 3 should propose a technical approach that contributes to the achievement of the following outcomes:

- Redesign and further develop the component or system to improve performance, meet vehicle packaging requirements, and enhance its potential for high volume, low cost production;
- Perform a rigorous manufacturability and cost analysis to identify possible production processes and characterize high-volume production costs; and
- Test and evaluate the component or system to validate that: (a) it performs as required; (b) it is suitable for vehicle use; and (c) that it has the potential to result in cost competitiveness and high volume production.

1.3 ELIGIBILITY AND LIMITATIONS

Any U. S. small business concern or U. S. institution of higher education is eligible to apply.

DOE National Laboratories are prohibited from responding to this solicitation and may not participate as a teaming member or subcontractor under any proposal. Applications from DOE Laboratories, or applications that include a DOE National Laboratory as a team member or subcontractor, will not be evaluated, and will not be returned.

TEAMING

- Awardee team arrangement means an arrangement in which a potential awardee agrees with one or more other companies or institutions act as its subcontractors under the cooperative agreement.
- Teaming arrangements are encouraged, especially those that include universities, small businesses, automotive manufacturers, and automotive suppliers. Teaming arrangements ensure timely technology transfer to the private sector and enhance U.S. industrial competitiveness.
- The companies involved normally form an Awardee team arrangement before submitting an application.
- Significant participation of the applicant is expected, i.e., it is anticipated that the applicant will perform at least 50 percent of the professional effort with its own personnel force.

In addition to the conditions and instructions contained in Section 2 of this solicitation, the following eligibility conditions and limitations apply:

FEE OR PROFIT - Fee or profit **will not** be paid to any participant or subawardee under this solicitation, and foregone fee or profit will not be considered in establishing the extent of cost sharing.

RESPONSIVENESS - To be considered responsive, an application must fall within the description of one of the topic areas described in Appendix A, and also satisfy any conditions contained in the applicable topic area descriptions of the Appendix A. Furthermore, applications must follow and conform to the instructions, conditions and notices contained in Sections 1, 2 and 4 of this solicitation.

SECTION 2306 OF THE ENERGY POLICY ACT (EPAct) - Applicants, other than those described in Section 501 (c)(3) of the Internal Revenue Code, that are seeking financial assistance under this solicitation are subject to the eligibility requirements of EPAct.

TECHNOLOGY TRANSFER - The CARAT Program and this solicitation have a restriction on transfer of CARAT Program technology to foreign entities. (See Section 4.3, Restrictions on Transfer of Cooperative Automotive Research for Advanced Technology (CARAT)

Program Technology to Foreign Entities and Attachment No. 1, Sample of the Cooperative Agreement, Additional Special Provision, Clause No. 4.)

DOMESTIC WORK EFFORT - In order to foster U.S. competitiveness in these technologies, it is desired that more than90% of the total work effort be conducted in the United States. The total work effort includes work performed by subcontractors and consultants.

APPLICATIONS BEING CONSIDERED FOR OTHER FUNDING - If an application submitted in response to this solicitation contains a significant amount of essentially equivalent work as one that has been previously funded, or is pending at, or about to be submitted to another federal agency, or to other DOE programs as a separate action, the applicant must so indicate and provide the information required by Section 2.5.3. If an award is made pursuant to an application submitted under this solicitation, the applicant will be required to certify that neither the applicant nor any of its employees have previously been or are currently being paid for essentially equivalent work by any agency of the Federal Government.

1.4 QUALIFICATION CRITERIA

1. U. S. Small business concerns or U. S. institutions of higher education are the only entities eligible to apply. These terms are defined as:

   INSTITUTIONS OF HIGHER EDUCATION - See the Higher Education Act of 1965 at 20 USCS 1085(b) which defines "Institution of Higher Education."

   SMALL BUSINESS CONCERNS **-** For the purpose of this solicitation, an applicant must not exceed the size standard for the industry (13 CFR § 121.201) in which: (1) the applicant combined with its affiliates is primarily engaged; and (2) the applicant alone is primarily engaged. See INTERNET address http://www.sba.gov/regulations/part.121.txt. Once at this location, enter 13 CFR 121.201 to access the small business size standards.

2. Cost Sharing - In accordance with Section 3002 of the Energy Policy Act, a minimum cost share of 20% is required for Phase 1. Applications not meeting the minimum cost sharing percentage and the requirements specified in the Appendix N and the Attachment No. 2, will be eliminated from further consideration and will not be technically evaluated. For the purpose of this solicitation, cost sharing shall be a percentage of the total cost of the project. Prior costs incurred (i.e. costs to conduct prior research, development patents, or to develop technical reports under previous research efforts) should not be proposed and will not be considered as cost share.

   For example:

TOTAL COST OF PROJECT	$180,000.00
PARTICIPANTS SHARE - 20%	$ 36,000.00
GOVERNMENT SHARE - 80%	$144,000.00

   Applicants are encouraged to check budgeting information to ensure that accounting system software has not rounded up costs which are actually less than 20%. If 20 percent cost sharing is required, the applicant may not offer 19.99 percent. See Attachment No.2, Cost Sharing or Matching, for the Federal Regulations addressing and specifying which items can be cost shared, and concerning cost sharing allowability.

3. Applications from DOE Laboratories, or applications which include a DOE National Laboratory as a team member or subcontractor, **will not** be evaluated.

Applications not conforming to these three Qualification Criteria will not be eligible for award, and will not be evaluated.

1.5 DEFINITIONS

SUBCONTRACT - "Subcontract," as used in this solicitation, means purchasing, renting, leasing, or otherwise obtaining supplies or services from nonfederal sources entered into by a subcontractor to furnish supplies or services for performance of the participant's cooperative agreement or a lower tier sub-recipient. It includes but is not limited to purchase orders, and changes and modifications to purchase orders.

RESEARCH OR RESEARCH AND DEVELOPMENT- Research or research and development is any scientific or engineering activity which is (1) a systematic, intensive study directed toward greater knowledge or understanding of the subject; (2) a systematic study directed specifically toward applying new knowledge to meet a recognized need; and/or (3) a systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

1.6 REGULATORY INFORMATION

No funding will be available under the DOE Minority Economic Impact (MEI) loan program, 10 CFR Part 800, to finance the cost of preparing a financial assistance application.

Review under E.O. 12372, "Intergovernmental Review of Federal Programs," is not required.

The statutory authority for this program is the Energy Policy Act of 1992 (Public Law 102-486, as amended by Public Law 103-437) and the U.S. Department of Energy Organization Act (P.L. 95-91).

The Catalog of Federal Domestic Assistance (CFDA) number is 81.087.

The applicable DOE Financial Assistance Regulations are 10 CFR Part 600. These regulations and guidance documents can be accessed on the DOE Financial Assistance Home Page at:http //www.pr.doe.gov/f600toc.htm#a

NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

COMPLIANCE WITH BUY AMERICAN ACT

In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1993 (41 U.S.C. l0a - 10c, popularly known as the "Buy American Act"). The recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

LOBBYING RESTRICTIONS (INTERIOR ACT, 2001)

The contractor or awardee agrees that none of the funds obligated on the award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

SIMPSON-CRAIG AMENDMENT

Applicant organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995 shall not be eligible for the receipt of Federal funds constituting an award, grant, or loan. Section 501(c)(4) of the Internal Revenue Code of 1986 covers:

"Civic leagues or organizations not organized for profit but operated exclusively for the promotion of social welfare, or local associations of employees, the membership of which is limited to the employees of a designated person or persons in a particular municipality, and the net earnings of which are devoted exclusively to charitable, educational, or recreational purposes."

As set forth in Section 3 of the Lobbying Disclosure Act of 1995, as amended, (2 U.S.C. 1602), lobbying activities are defined broadly to include, among other things, contacts on behalf of an organization with specified employees of the Executive Branch and Congress with regard to Federal legislative, regulatory, and program administrative matters. Applicants qualifying as described in Section 501(c)(4) of the Internal Revenue Code of 1986 must fill out the representation in the AA-47.

1.7 AWARD OR SUPPORT

While only those applications which best advance the objectives of the program, as specified in this solicitation, will be considered for award or support, DOE reserves the right to fund in whole or in part, any, all, or none of the applications submitted. Further, DOE reserves the right to find in whole or in part, any, all, as required by 10 CFR Part 600.8(c)(20).

DOE anticipates making at least one federal assistance award under each topic from this solicitation to U.S. small businesses and/or U.S. institutions of higher education in amounts up to $150,000.00 (maximum Government share) for a project period of up to 12 months. The Government intends to select applications based upon initial submission of applications, without revisions, discussions or negotiation of such applications. Therefore, it is critical that initial applications contain the applicant's best terms from a Technical, Business Management, and Budget/Cost standpoint. DOE is under no obligation to apply for any costs associated with preparation or submission of applications if an award is not made. If an award is made, such costs may be allowable as provided in the applicable cost principles (See 10 CFR Part 600.127 and 600.222)

2 PREAPPLICATION AND APPLICATION PREPARATION INSTRUCTIONS AND FORMAT

2.1 PREAPPLICATION REQUIREMENTS LIMITATIONS AND FORMAT

DOE encourages the submission of a preapplication before expending extensive effort to prepare a detailed application or submit any proprietary information to DOE. However, failure to submit a preapplication does not preclude anyone from submitting a full application. The preapplication should consist of no more than two pages covering the following areas:

1. Project Title
2. Principal Investigator, Company, Contact Information
3. Subcontractors/Team Members
4. Solicitation Project/Topic number
5. Project Summary
6. Objectives
7. General Approach
8. Approximate Schedule
9. Approximate Cost
10. Deliverables
11. Name, title, and signature of Offeror's Certifying Representative

Do not include any confidential or proprietary information in the pre-application. An original and two copies of the preapplication should be submitted to the address specified in Section 5.2, May 30, 2001 3:00 p.m. Local Time. See Appendix L for the preapplication format.(Facsimile and E-mail versions of the preapplication are not acceptable)

After completion of the preapplication review, DOE will issue a letter, approximately two weeks after receipt of the preapplication, to each applicant indicating either a favorable or an unfavorable response. A favorable response indicates that the proposed technology is within program scope and a subsequent application would warrant further technical review. Please note that a favorable response does not obligate DOE to fund the subsequent application. An unfavorable response indicates that DOE support for the project would be highly unlikely. However, an unfavorable response does not preclude anyone from submitting a full application. DOE will not provide any further information, e. g., advice or guidance, to an applicant on a subsequent application in connection with the pre-application. Information contained in the preapplication will not be used in the evaluation of applications. All necessary information to fulfill the requirements of this solicitation must be enclosed with your application.

2.2 APPLICATION REQUIREMENTS

The financial assistance application submitted to DOE under this solicitation must provide sufficient information to convince DOE, and members of the research community who review the application, that it is responsive to the topic under which it is submitted and that the proposed work represents a sound approach to the investigation of an important scientific or engineering question. In preparing assistance applications, applicants should present sufficient evidence to ensure that each criterion is well addressed. Technical reviewers will base their evaluations only on information contained in the application. It cannot be assumed that reviewers are acquainted with the firm or key individuals or any experiments referenced. The application should concentrate on research that will contribute to proving scientific or technical feasibility of the approach or concept and would be a prerequisite to DOE funding. The quality of the scientific or technical content of the application will be the principal basis on which applications will be evaluated. A financial assistance application should be self-contained and written with the care and thoroughness accorded papers for publication. Each application should be reviewed carefully by the applicant to ensure inclusion of data essential for evaluation using the checklist provided in Appendix K.

Appendix A lists the technical topics. An application must respond to only one technical topic. (See the limitations given in Section 1.3.)

The research must be responsive to the DOE program objectives, specifications, qualifications, and should also serve as the basis for technological innovation and alternative commercial products or processes.

All consultants, instrumentation, equipment, and physical facilities identified in the application must be available for the research or R&D project. If consultants are identified in the application there must be a letter of commitment from the consultant to serve in the manner and to the extent described in the application, and the application must contain a specific statement to that effect (see Section 2.5.4.1.). If the instrumentation, equipment, and physical facilities to be used are not the property of the applicant, and are not to be purchased or leased for this project, their source must be identified and their availability specifically confirmed in the application (see Section 2.5.2.3.b.). Statements certifying to consultant availability and salary, (or other source) facilities or instrumentation and rental terms, must be signed and submitted with the application. If the application is selected for an award, the cooperative agreement shall not be awarded unless all of the above are available. Therefore applicants should review applications to ensure all of the information requested is enclosed with the application and submitted by the closing date of July 16, 2001 at 3:00 p.m. local time.

2.3 PROTECTION OF APPLICATION INFORMATION

DOE's policy is to use data included in applications for evaluation purposes only and to protect such information from unauthorized use or disclosure. Protection of trade secrets or other information that is commercial or financial and confidential or privileged is discussed in Section 4.2 of this solicitation.

In addition to government personnel, scientists and engineers from outside the Government may be used in the application evaluation process. The decision to obtain outside evaluation will take into consideration requirements for the avoidance of organizational conflicts of interest and the competitive relationship, if any, between the applicant and the prospective outside evaluator. The evaluation will be performed under an agreement with the evaluator that the data contained in the application will be used only for application evaluation and will not be further disclosed. Applicants are cautioned, however, that application material may become subject to requests under the Freedom of Information Act, as amended. The use and disclosure of such data may be restricted provided the applicant marks the cover sheet of the application and each page containing restricted data with the term "Proprietary Information" (see Section 4.2 of the solicitation).

2.4 GENERAL CONTENT

The application should be direct, concise, and informative. Promotional and non-project related discussion is discouraged. To meet DOE requirements, all items listed in Section 2.5 are to be covered fully and in the order set forth, but the space allocated to each will depend on the research project chosen and the Principal Investigator's approach.

2.5 APPLICATION FORMAT

The application should be separated into three distinct Sections. Section I will be the Technical Content and is limited to 20 pages; Section II, Business Management, does not have a page limitation; and Section III, Budget/Cost will consist of budget/cost information does not have a page limitation. The pages must be of standard 8 1/2" x 11" size (21.6 cm x 27.9 cm). For proportionally spaced fonts, the type can be no smaller than 12 point, and for non-proportionally-spaced fonts, the type can be no smaller than 12 characters per inch (elite). The Technical Content, Section 2.5.2, is limited to 20 pages and may be typed on both sides. (If typed on both sides, one sheet of paper will constitute 2 pages.

2.5.1 INTRODUCTORY PAGES

Face Page, DOE Form 4650.2, - Complete the form identified as Appendix B in the solicitation. This is to be the cover page on each of the required 7 copies of your application. No other cover page is permitted. For multiple applications, photocopy the Face Page form prior to use. The Topic Number is to be annotated on the application in item # 4, or the Statement of Work (Appendix C). If the Application is not annotated in either area, it will not be reviewed or returned.

2.5.2 TECHNICAL CONTENT - Section I (20 page limit)

The below listed required information is to be limited to 20 pages.

1. Technical Approach and Potential Uses

    a. Project Description - Indicate the overall background, technical approach to the problem, and the part that the research plays in providing needed results. This should be linked with the objectives and the questions that the effort is designed to answer for the selected topic. The methods planned to achieve each objective or task should be discussed explicitly and in detail. Provide verifiable evidence that the technology offered has the potential to produce the benefit sought in the solicitation; and discuss the feasibility of the proposed technical project to accomplish the stated objectives.

    b. Current Technology - Discuss the current state of the proposed technology and characterize the technological deficiencies related to the investigation, the key risk elements and the planned approach to resolve identified issues.

c. Relevance to Topic - Discuss the anticipated results of the project, with special emphasis on commercial potential, if the project is successful. This section should indicate the overall merit of the technology to be utilized toward the development of a marketable product, what procedures will be used to produce the product to meet production objectives, and the economical benefit of the product for the automotive industry. This section will also describe how the project could attract potential auto suppliers. Identify any specific groups in the commercial sector, the Federal Government, or other individuals that might be expected to use the projected results.

d. Statement of Work Page - Complete a Statement of Work page that will be the cover page for the Technical Content Section of your application. A detailed format and example is provided as Appendix C. The Statement of Work page must not contain proprietary information. The Statement of Work must convey an understanding of the proposed research and thoroughly summarize the items above by briefly stating the principal project objective(s), identifying the tasks to be performed, and listing the performance schedule. It also should identify and schedule the reporting requirements contained in this solicitation.

2. Key Personnel and Bibliography of Directly Related Work

a. Identify the Principal Investigator (PI) and other key personnel involved and provide a brief description of their responsibilities as related to the proposed project. Provide information regarding their education and experience related to the proposed project and bibliographic information. When resumes are extensive, summaries that focus on the most relevant experience or publications are desired. Brevity is necessary due to the application's size limitation. The PI should be knowledgeable in all technical aspects of the application and be capable of leading the research effort. Indicate the amount of time that the PI will spend on the project.

b. Provide a staff listing with position titles of personnel expected to support your research under the proposed application.

3. Company/Entity

a. Qualifications - Discuss the applicant's experience, state of development, and current technology as applied to the proposed project. Further, discuss the percentage of work effort to be conducted in the United States. This information should also be provided for any proposed team member.

b. Facilities/Equipment - Describe available instrumentation and physical facilities necessary to carry out the effort. Items of equipment to be purchased or leased (as detailed in Appendix D.2) must be justified under this Section. If the equipment, instrumentation, and facilities are not the property of the applicant and are not to be purchased or leased, the source must be identified and there availability specifically confirmed in this Section. A principal of the organization, such as a university, that owns or operates the facilities/equipment must certify regarding the availability and cost of facilities/equipment and any associated technician cost; a copy of this certification must be submitted as part of the application. Facilities and/or property for accomplishing the research and development will not be provided directly by the Department of Energy. Applicants are expected to provide all necessary personnel, facilities, special test equipment, and materials to complete the project. Applicants are encouraged to utilize existing facilities to the maximum extent possible.

b. Consultants, Subcontractors, and Teaming Partners - Describe the experience of the teaming partners and how the team will provide a timely and successful technology transfer to the private sector.

2.5.3 BUSINESS MANAGEMENT- SECTION II (No page limit)

1. Accounting Systems - Provide a description of the accounting system that will be utilized to control and accumulate costs for the proposed effort.

2. Financial Capability - The applicant is to submit the latest certified annual report, Form 10K, financial statements, and any other evidence of the company's financial status sufficient to demonstrate capability to carry out the proposed work, including sources for cost sharing funds. Also, state what percentage this proposed project would represent of the applicant's total business during the period of performance.

3. Similar Financial Assistance Applications, Proposals or Awards - While it is permissible, with notification in the financial assistance applications, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under numerous federal program solicitations, it is unlawful to enter into contracts or financial assistance requiring essentially the same work as contemplated by this award.

If there is any question concerning this, it must be disclosed to the soliciting agency or agencies with submission of the application and before award. If such a proposal has been previously funded or is either funded, pending, or

about to be submitted to another federal agency or to the DOE in a separate action, the applicant must provide the following information in the application:

- The name, address, and telephone number of the agency(s) point of contact to which a proposal or financial assistance application was submitted, or will be submitted, or from which an award is expected or has been received;
- The date of submission or the date of award;
- The title of the application;
- The name and title of the project manager or Principal Investigator for each proposal or application submitted or award received;
- The title of the specific research topic to which the application or award was submitted.

2.5.4 BUDGET/COST- SECTION III (No page limit)

1. Complete the Budget Page, DOE F 4620.1, provided as Appendix D.1 for multiple applications photocopy the budget form prior to use. This solicitation is for Phase I and should have a summary budget page. The items listed in Appendix D.2, Budget Explanation Page, are to be submitted with the Budget Page for support and justification of the application budget. Teaming partners/subcontractors and consultants are also required to complete the Budget Page and the Budget Explanation Page. If consultants or subcontractors are to be used and are identified, this section must contain a specific statement that they have agreed to serve in the manner and the extent described in the financial assistance application. Also a statement signed by the consultant certifying his/her availability and salary must be submitted as part of the application (See Item G of Appendix D.2)

2. In calculating the percentage of the total professional effort performed by the applicant organization own force, the professional effort consists of the sum of the total professional direct labor costs from the applicant, inclusive of labor overhead and/or fringe benefits.

3. Model Overhead Submission, provided as Appendix D.3, is to be submitted when the applicant does not have federally established indirect billing rates. This also applies to teaming partners who do not have federally established indirect billing rates. It should be noted that since Appendix D.3 is an example only, it is not necessary to adhere to the format and schedules as long as the intent is accomplished. If available, provide a copy of the most recent Government indirect rate agreement that reflects rates covering the proposed period of performance.

4. List and explain cost share arrangements. In accordance with 10 CFR 600.123(b), unrecovered indirect costs may be included as part of cost sharing. For this CARAT Program, proposed cost sharing shall be limited to current fiscal year costs and future costs. Past-unrecovered costs shall be unallowable.

5. Use Item G.5., Subcontracts, of Appendix D.l to identify teaming members' costs. A separate Budget Page and budget explanation is to be provided for each application teaming member or subcontractor.

6. If it is the applicant's normal practice is to burden subcontract costs with indirect expenses, then the applicant's indirect costs applied to subcontract costs shall not exceed 5% of total subcontract costs .

7. Equipment budgets may be included; however, equipment will be carefully reviewed relative to need and appropriateness for the proposed research or R&D. Title to equipment acquired by a recipient with federal funds shall vest in the recipient, subject to conditions of 10 CFR §600.134, Equipment.

2.5.5 APPLICATION AND CERTIFICATIONS

The below listed required information will not be counted toward the application limitation of 20 pages.

1. DOE Office of Science (SC), (DOE F 4650.2), is to be completed by the applicant and submitted with the application. (Appendix B)

2. Assurance of Compliance, (DOE F 1600.5), is to be completed by the applicant and any teaming company and submitted with the application. (Appendix E)

3. Certifications Regarding Lobbying; Debarment, Suspension and Other Responsibility Matters; and Drug-Free Workplace Requirements, FA-CERTS, is to be completed by the applicant and any teaming company and submitted with the application. (Appendix F)

4. Disclosure of Lobbying Activities is to be completed, as applicable, by the applicant and any teaming company and submitted with the application. (Appendix G.1 & G.2)

5. Financial Assistance Pre-Award Information Sheet, AA-47, is to be completed by the applicant and any teaming partner, and submitted with the application. (Appendix H)

6. EPAct Representation is to be completed by the applicant only and submitted with the application. (Appendix I)

7. Chicago Operations Office National Environmental Policy Act Environmental Evaluation Notification Form, is to be completed by the applicant only and submitted with the application. (Appendix J)

8. Checklist is to be completed by the applicant and submitted with the application.(Appendix K)

9. ACH Vendor/Miscellaneous Payment Enrollment Form, is to be completed by the applicant only and submitted with the application. (Appendix M)

10. Representations - is to be submitted regarding Cost-Sharing, Financial Management System. (Appendix N and O).

3 METHOD OF SELECTION AND EVALUATION CRITERIA

3.1 GENERAL CONDITIONS FOR EVALUATIONS

Applications will undergo a comprehensive technical evaluation in accordance with the criteria listed below. The technical content section will be numerically point-scored. All work proposed for the total project period will be evaluated in accordance with those criteria. The business management will be evaluated and adjectivally rated. The budget/cost proposal submitted by the applicant will not be point scored or adjectivally rated, but will be evaluated to determine if the total proposed amount is commensurate with the effort proposed. Also, the budget/cost proposal will be evaluated to ascertain that the applicant has met the cost sharing (20%) requirement of the solicitation. The Source Selection Official (SSO) will also consider the Program Policy Factors identified in Section 3.4 below.

In preparing assistance applications, applicants should present sufficient evidence to ensure that each criterion is well addressed. Technical reviewers will base their evaluations only on information contained in the application and cannot consider their familiarity (if any) with the firm, its subcontractors (if any), or key individuals.

3.2. EVALUATION CRITERIA WEIGHTING

Technical Content Section will be point scored and weightings are as follows:

Technical Approach, and Potential Uses	60%
Key Personnel Qualifications	20%
Company/Entity Qualification	20%
Total	100%

The Business Management Section **will not** be point scored, but will be adjectivally evaluated.

The Budget/Cost Section **will not** be point scored but evaluated with respect to adequacy, realism and reasonableness.

3.3 EVALUATION CRITERIA

Subject to availability of funds, DOE plans to select for award those cooperative agreement applications judged to be of the highest overall merit, with consideration given to the scientific and technical quality of the application; key personnel qualifications; the company/entity qualification; the business management; and cost factors. The evaluation criteria are as follows:

3.3.1 TECHNICAL CONTENT EVALUATION (Section I)

1. **Technical Approach and Potential Uses - The following will be evaluated:**

   a. Project Description - The degree to which the applicant has identified the background, technical approach and verifiable evidence of the proposed technology success. The level of detail of description of the proposed research and the feasibility of how the research will fulfill the objectives of the topic area selected;

   b. Knowledge of Current Technology Knowledge of the current state of the proposed technology. Characterization of the technological deficiencies related to the investigation and the key risk elements, and planned approach to resolve identified issues.

   c. Relevance to Topic-Overall adequacy, appropriateness, and relevance of the application's topic to the solicitation/program objectives will be evaluated as follows:

      i. Verifiable evidence that the technology offered has the potential to produce; the commercial benefit sought in the solicitation;

      ii. Overall technical merit of the application; relevance to the production and economic objectives of the topic area;

      iii. Likelihood of the proposed project to attract potential auto suppliers. Identify specific users of proposed technology.

   d. Statement of Work - The statement of work regarding the thoroughness and understanding of the proposed research.

2. **Key Personnel Qualifications - The following will be evaluated:**

   a. The experience, capabilities, and responsibilities of the Principal Investigator, Program Managers, and other key personnel (including education, professional background, professional registration and affiliations, honors, patents) in a scientific discipline related to the proposed topic area. and indicate the amount of time the principal investigator will devote to the project.

   b. The adequacy and appropriateness of proposed staffing of the personnel identified to accomplish the proposed project.

3. **Company/Entity Qualifications - The following will be evaluated:**

   a. Qualifications - The state-of-development of the applicant's current technology as applied to the proposed topic area; the extent of the entities previously demonstrated experience and success in similar projects; and the state of-development of related technology of any proposed subcontractor or team member.

   c. Facilities/Equipment - The adequacy of facilities/equipment proposed to carry out the project and the commitment to use these facilities/equipment on this project. The reasonableness of any new facility/equipment proposed for the project.

   c. Consultants, Subcontractors, and Teaming Partners - Teaming arrangements based upon the experience of the team and likelihood of transfer of the applicant's technology to the automotive industry.

   d. Corporate Commitment - Provide the name of the top corporate official who will be responsible for this effort. Describe the commitment, availability to the project, and assistance they will provide in any specialty areas required solving specific problems.

3.3.2 BUSINESS MANAGEMENT EVALUATION (SECTION II)

1. **Accounting System** - Information submitted will be used to evaluate the accounting system to insure that the applicant's financial management system meets the requirements of 10 CFR 600.121, Standards for Financial Management Systems.

2. **Financial Capability** - Information submitted will be used to evaluate the applicant's financial strength, demonstrated ability to carry out the proposed work and ability to provide required cost share.

3.3.3 BUDGET/COST EVALUATION (Section III)

The applications will be evaluated with respect to adequacy, realism, and reasonableness. The evaluation will include consideration of the probable cost to the Government of doing business with the applicant.

3.4 PROGRAM POLICY FACTORS

Program policy factors, while not appropriate indicators of an application's individual technical merit, are relevant and essential to the process of choosing which of the applications received will best achieve the key objectives of this solicitation (See Section 1.1). Upon completion of the technical, business, and cost evaluations, those applications which are potential candidates for award will be reviewed and further evaluated based upon the following program policy factors:

1. Selection of those technologies that have the greatest potential to achieve large scale application in the U.S. automotive industry;

2. Supporting complementary efforts or projects that, taken together, will best achieve the Cooperative Automotive Research for Advanced Technology Program (CARAT) mission;

3. Selection of those projects that will have the greatest potential to enhance the economy of the United States; and

4. Selection of projects involving teams that will result in the highest probability to achieve topical area results.

4 CONSIDERATIONS

4.1 AWARDS

This solicitation does not obligate DOE to make any awards. Awards under the program are subject to the availability of funds.

4.2 PROPRIETARY INFORMATION

If proprietary information is provided in an application that constitutes a trade secret or confidential commercial or financial information, it will be treated in confidence, to the extent permitted by law. The applicant should clearly mark each page that contains such information with the term "Proprietary Information." The Government will limit dissemination of such information to individuals within official channels who have a need to know.

Proprietary Information - Information contained in unsuccessful applications will remain the property of the applicant. The Government will retain one file copy of each application and destroy the remainder. Copies will not be returned to the applicant. Public release of information in any application submitted will be subject to existing statutory and regulatory requirements.

4.3 RESTRICTION ON TRANSFER OF COOPERATIVE AUTOMOTIVE RESEARCH FOR ADVANCED TECHNOLOGY (CARAT) PROGRAM TECHNOLOGY TO FOREIGN ENTITIES

With respect to participants and their subcontractors eligible to elect title to inventions pursuant to 35 U.S.C. 200 et seq.,it is agreed that such parties shall obtain adequate recognition of the United States support for the technology developed under this Program in any contracts, assistance, licenses, or other agreements which involve the transfer to foreign entities of the CARAT Program technology developed in whole or in part at Government expense. The parties, regardless of tier, agree to notify the Department of Energy Patent Counsel in writing of the adequate recognition obtained prior to entering into any such contracts, assistance, licenses, or other agreements. The parties shall not enter into any such contracts, assistance, licenses, or other agreements without the concurrence of the Department of Energy. The determination of whether to grant such concurrence shall be at the sole discretion of the Department of Energy and is not subject to the Disputes and Appeals Provision 10 CFR 600.22 or otherwise subject to litigation under the Contract Disputes Act of 1978 (41 U.S.C.601 e1 seq.). The determination shall be in writing and shall be furnished to the subcontractor by the Contracting Officer or designee. Examples of such an adequate recognition could include: (1) a commitment to manufacture in the U.S.A.; (2) a requirement to reimburse the U.S. Government for its R&D costs; and/or (3) a commitment to jointly sponsor the R&D program.

4.4 NONDISCRIMINATION IN FEDERALLY ASSISTED PROGRAMS

In accordance with Title VI of the Civil Rights Act of 1964, P.L. 88-352, the applicant organization responding to this solicitation must agree to ensure that no person in the United States shall, on the grounds of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the applicant receives federal assistance from the Department of Energy.

4.5 ADDITIONAL INFORMATION

This solicitation is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting assistance award, the terms of the award shall control. If there is any inconsistency

between the terms and conditions of any resulting assistance award, and 10 CFR Part 600, 10 CFR Part 600 shall prevail. 10 CFR Part 600 may be viewed or downloaded from the Internet at :http:/www.pr.doc.gov/f600toc.html#a

Before issuing an award, the Government may request the applicant to submit certain organizational, management, personnel, and financial information to assure responsibility of the applicant.

4.6 SUBSTITITION FOR PRINCIPAL INVESTIGATOR

Since the qualifications of the PI play an important role in the evaluation criteria, the following rules shall apply to any substitution in PI after the closing date of this solicitation: (1) after the closing date but prior to the award selection, no substitution in PI will be considered; (2) for financial assistance applications selected for funding, but prior to award, any substitution in PI will be viewed as a substantial change in the original application, and no award will be issued unless DOE expressly approves the substitution; (3) during the term of the cooperative agreement, any change in the PI will require prior written approval by DOE.

5 SUBMISSION OF APPLICATION

5.1 NUMBER OF COPIES

The following must be submitted with the stated number of copies:

Copies	Item Description
1	Original application which includes: a. Face Page (Appendix B) b. Statement of Work (Appendix C) c. Main Text as required in Section 2.5 d. Budget Page (Appendix D.1 through D.3)
6	Additional copies of the application
1	Budget Explanation (Appendix D.2)
2	Assurance of Compliance (Appendix E)
1	FA-CERTS (Appendix F)
1	Disclosure of Lobbying (Appendix G)
2	Pre-Award Info Sheet (Appendix H)
2	ACH Vendor/Miscellaneous Payment Enrollment Form (Appendix M)
2	EPAct Representation (Appendix I)
2	NEPA Forms (Appendix J)
1	Completed Checklist (Appendix K)
1	Representation Concerning Financial Management System
1	Representation Concerning Proposed Cost Sharing

5.2 DUE DATE FOR PREAPPLICATIONS

PREAPPLICATION DUE: 3:OO p.m. Local Time - May 30, 2001

MAIL TO:

US. Department of Energy
Chicago Operations Office
Building 201, Room 3N-20 (Mail Center)
9800 South Cass Avenue
Argonne, Illinois 60439

ATTN: Ms. Earlette Robinson, Acquisition and Assistance

MARK THE OUTSIDE OF ENVELOPE AS FOLLOWS: THIS DOCUMENT IS SUBMITTED UNDER SOLICITATION NO: DE-SC02-01EE50657 AND IS TO BE OPENED ONLY BY THE INDIVIDUAL ABOVE

5.3 DATE FOR APPLICATIONS DUE

Applications shall be submitted in sealed envelopes or packages addressed as specified below. Facsimile applications, modifications to applications will not be considered.

Applications must be received by **3:00 p.m. Local Time on,July 16, 2001** Applications not received by the deadline will be considered late, will not be evaluated, and will be returned to applicant. If the applicant elects to forward the application by means other than the U.S. Mail, it assumes the full responsibility of ensuring that the application is received by the date and time specified above:

MAIL TO:

US. Department of Energy
Chicago Operations Office
Building 201, Room 3N-20 (Mail Center)
9800 South Cass Avenue
Argonne, Illinois 60439

ATTN: Ms. Earlette Robinson, Acquisition and Assistance

5.4 LATE APPLICATIONS

Subject to the provisions of Section 5.4 (i) through (vi) below, an application received after the above - specified due date and time will not be evaluated. The application will be opened only if necessary for purposes of identification and then retained with other unsuccessful submissions.

(i) Any application received at the office designated in Section 5.3 after the exact time specified for receipt of applications will not be considered unless it has been received before award is made and

- it was sent by registered or certified U.S. or Canadian mail not later than the fifth calendar day before the date specified for receipt of applications (e.g., an application submitted in response to a solicitation requiring receipt of applications by the 20th of the month must have been mailed by the 15th); or
- it is determined by the Government that the late receipt was due primarily to Government mishandling after receipt at the Government installation; or
- it was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of applications. The term "working days'" excludes weekends and U.S. Federal holidays; or
- There is acceptable evidence to establish that it was received at the activity designated for receipt of applications and was under the Government's control prior to the time set for receipt of applications, and the Contracting Officer determines that accepting the late application would not unduly delay the solicitation; or
- it is the only application received.

(ii) The only acceptable evidence to establish the date of mailing of a late application sent by either registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or

Canadian Postal Service. Both postmarks must show a legible date, or the application shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, applicants should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the application wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) The only acceptable evidence to establish the date of mailing of a late application sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the Post Office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee "label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (ii) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, applicants should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope wrapper.

(v) Applications may be withdrawn by written notice or telegram (including mailgram) received at any time before award. Applications may be withdrawn in person by an applicant or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the application before award.

(vi) If an emergency or unanticipated event interrupts normal Government processes so that applications cannot be received at the office designated for receipt of applications by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation or other notice of an extension of the closing date, the time specified for receipt of applications will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

5.5 HANDCARRIED APPLICATIONS

Handcarried applications are those submitted by means other than through the U.S. or Canadian mail. If an applicant submits it application by means other than the U.S. Mail (including via common carrier or any other means of delivery), it assumes the full responsibility of ensuring that the application is received at the address specified, by the date and time specified in Section 5.3. External markings on applications shall include substantially the same information provided when submitting the application through the U.S. Mail.

Applicants are advised that the U.S. Department of Energy, Chicago Operations Office, is located on the site of Argonne National Laboratory (ANL), but is a separate and distinct facility from ANL. Delivery to and/or acceptance of an application at any other location, including the ANL Visitor's Reception center, the ANL Loading Dock at Building 5 , the Building 201 Loading Dock, or to any other ANL or DOE receiving point **does not constitute delivery of the application in accordance with the terms of this solicitation**

ANL is a contractor-operated, controlled-access facility, which may require advance clearance arrangements, particularly for non-U.S. citizens. Sufficient time should be allotted for normal admittance procedures, which may be coordinated with Ms. Earlette Robinson, at (630) 252-2667.

Delivery to a location other than the address specified in Section 5.3 will cause delays due to normal mail handling procedures on site and may result in the application not being received by DOE by the date and time specified in Section 5.3 above. Signs outside of ANL advising that the Argonne Shipping and Receiving area is located at 9700 South Cass Avenue are not applicable to deliveries to the DOE Address specified in Section 5.3

Applicants are urged to allow sufficient time for the delivery of any handcarried application.

5.6 DEBRIEFINGS

If a written request for a debriefing is received by Ms. Earlette Robinson, Procurement Member for the solicitation, within 10 days after the announcement of the final selections, a verbal debriefing will be provided with information pertinent to DOE's evaluation of the application. Neither the identity of the reviewers nor their verbatim comments will be disclosed. Debriefings will be scheduled at a time mutually convenient to DOE and the applicant.

APPENDIX A

Energy Management

Topic 1. Alternative (Non-Lithium) Insertion Electrode Battery Technology

Topic 2. Non-Carbon Anodes for Lithium-ion Batteries

Energy Conversion

Topic 3. Fuel Cells for Auxiliary and Portable Power

Topic 4. Homogeneous-Charge Compression-Ignition (HCCI) Enabling Technology

Vehicle Systems

Topic 5. Cost-Effective, High-Efficiency Porous Media Heat Transfer

Topic 6. Cost-Effective, High-Efficiency Materials for Thermoelectric Devices

Topic 7. Cost-Effective, High-Efficiency Integrated Systems Approach to Auxiliary Electric Motors

Topic 1. Alternative (Non-Lithium) Insertion Electrode Battery Technology

Energy Management

Introduction - Leading edge research in advanced automotive batteries is currently focused on nickel metal hydride or lithium-based batteries. The lithium batteries are based on one or both electrodes operating by reversible lithium ion insertion.

Task - This CARAT topic seeks non-lithium battery technology based on the use of alternative insertion electrodes. Alternative electrochemical systems based on these alternative insertion electrodes are sought which can address the goals developed by the Partnership for a New Generation of Vehicles and the United States Advanced Battery Consortium for high power energy storage and electric vehicle batteries. These goals are presented in Tables 1 and 2, respectively. Table 1 indicates the goals for high power energy storage for hybrid vehicles. Table 2 indicates the goals for electric vehicle (energy storage) batteries.

Work Statement - The applicants should indicate the basic nature of the alternative battery system that they are proposing to develop, clearly stating its automotive application. The current status of the technology should be described, along with the basis for estimating its capabilities with regard to the stated development goals. The applicant should indicate the nature of the prototype cells, modules, or batteries that they intend to develop in the course of their proposed work. They should also describe and document the evaluations of this hardware that they intend to conduct. The basis for all evaluations should be the methods used by the Partnership for a New Generation of Vehicles and the United States Advanced Battery Consortium as described in the references below.

Deliverables - The applicant should deliver five prototype cells or modules. DOE will independently evaluate the delivered cells and modules at one or more National Laboratories. If no cells or modules can be developed, up to 500 grams of advanced electrode material must be delivered. The Final Report should contain performance data on the cells/ modules/material and preliminary plans for further development.

References:

PNGV Battery Test Manual Rev. 2, DOE/ID-10597, August 1999.

USABC Electric Vehicle Battery Test Procedures Manual, Rev. 2, DOE/ID-10479, January 1996.

Table 1 Energy Storage Requirements for Hybrid Vehicles

Characteristics	Units	Power-assist hybrid	Dual-mode hybrid
Pulse discharge power[a] (at minimum operating SOC)	kW	25 (constant for 18-second pulse)	45 (constant for 12-second pulse)
Peak regenerative pulse power[a] (2-second pulse at maximum operating SOC)	kW	30 (50-Wh pulse)	35 (97-Wh pulse)
Total available energy[a] (within operating SOC range)	kWh	0.3 (at C/1 rate)	1.5 (at 6kW continuous power)
Minimum round-trip efficiency[a] on reference cycle	%	>90	>88
Cycle life,[a] for specified SOC increments:	cycles	200K power-assist cycles[a] (5 MWh)	2,500 dual-mode cycles[a] (15 MWh)
Cold-cranking power[a] at -30°C (Three 2-second pulses, 10-second rest between pulses)	kW	5	5
Calendar life	year	10	10
Maximum weight	kg	40	100
Maximum volume	l	32	75
Production cost,[b] at 100,000 units per year	$	300	500
Maximum operating voltage	Vdc	? 440	? 440
Minimum operating voltage	Vdc	? 0.55 x V_{max}	? 0.5 x V_{max}
Maximum dc current	A	? 217	? 217
Maximum allowable self-discharge rate[a]	Wh/day	50	50
Temperature range:	°C		
Equipment operation		-40 to +52	-40 to +52
Equipment survival		-46 to +66	-46 to +66

[a]Specifics on characteristics and cycle life protocols can be found in *PNGV Battery Test Manual Rev.* 3, DOE/ID-10597, November, 2000.
[b]Selling price to the vehicle manufacturers.

Note: The energy storage subsystem is recharged only by the on-board prime power source and regenerative power from braking. Nominal state-of-charge must permit discharge or regenerative recharge without degradation in the performance of the energy storage subsystem. Power and energy values are as delivered/received at the dc terminals of the subsystem. Discharge pulse energy and power requirements are sufficient for the vehicle to reach top speed in 18 seconds for the power-assist hybrid and 12 seconds for the dual-mode hybrid.

Table 2 – U.S. Advanced Battery Consortium Goals for Electric Vehicle Batteries

Primary criteria	Long-term goals[a] (Beyond 2002)
Power density[b] W/L	460
Specific power[b] W/kg (80% DOD/30 sec)	300
Energy density[b] Wh/L (C/3 discharge rate)	230
Specific energy[b] Wh/kg (C/3 discharge rate)	150
Life (years)	10
Cycle life[b] (cycles) (80% DOD)	1000 1600 (@ 50% DOD) 2670 (@ 30% DOD)
Power and capacity degradation[b] (% of rated spec)	20%
Ultimate price[c] ($/kWh) (10,000 units @ 40 kWh)	<$150 (desired to 75)
Operating environment	B30 to 65? C
Recharge time[b]	< 6 hours
Continuous discharge in 1 hour (no failure)	75% (of rated energy capacity)

Secondary criteria	Goals
Efficiency[b] (C/3 discharge and C/6 charge)[d]	80%
Self-discharge[b]	< 20% in 12 days
Maintenance	No maintenance. Service by qualified personnel only.
Thermal loss[b]	Covered by self-discharge
Abuse resistance[b]	Tolerant Minimized by on-board controls
Specified by contractor Packaging constraints Environmental impact Safety Recyclability Reliability Overcharge/over-discharge tolerance	

[a]For interim commercialization (reflects USABC revisions of September 1996).
[b]Specifics on criteria can be found in *USABC Electric Vehicle Battery Test Procedures Manual, Rev. 2*, DOE/ID-10479, January 1996.
[c]Cost to the original equipment manufacturers.
[d]Roundtrip charge/discharge efficiency.

Topic 2. Non-Carbon Anodes for Lithium-ion Batteries

Energy Management

Introduction - The carbonaceous negative electrodes (anodes) used in lithium-ion batteries can present serious safety problems, particularly when battery cells are overcharged. Proposals are sought to develop non-carbonaceous anode materials to reduce concerns about the safety of rechargeable lithium batteries used in electric vehicles or hybrid electric vehicles. The objective is to identify materials that are inherently safer and less expensive than carbon-based electrodes, but exhibit comparable capacity, rate capability and cycle life. Various alloy electrodes have been studied [1]. An advantage of such alloys is that their reversible potentials are positive of Li/Li*, therefore they are more chemically stable than Li. However, they tend to disintegrate or aggregate upon cycling due to volume changes during alloying/de-alloying. Another approach is to employ Li insertion compounds as negative electrodes. So far, such insertion electrodes have exhibited low capacity (due to a small extent of Li insertion) and/or high costs.

Task - Develop non-carbonaceous anode materials to reduce concerns about the safety of rechargeable lithium batteries used in electric vehicles or hybrid electric vehicles.

Work Statement - The proposal should identify electrode materials which will be studied, describe in detail the methods that will be used to prepare and characterize the materials. The applicant should fabricate electrodes, test the electrodes in model cells, and assess their performance characteristics and costs. Related research activities are described in http://berc.lbl.gov/BATT/BATT.html

Deliverables - The applicant should deliver five prototype cells. If no electrodes are able to be developed, advanced electrode material up to 500 grams must be delivered for DOE for independent evaluation. The Final Report should contain performance data on the cells or electrode materials and preliminary plans for further development.

References

[1.] See, for example A. Anani, S. Crouch-Baker and R.A. Huggins, “Kinetic and Thermodynamic Properties of Several Binary Lithium Alloy Negative Electrode Materials and Ambient Temperature,"*J. Electrochem. Society,* 134, 3098 (1987) and references therein.

Topic 3. Fuel Cells for Auxiliary and Portable Power

Energy Conversion

Introduction **-** Auxiliary power units (APUs) and portable power (cell phones, etc.) are emerging applications for fuel cells. The APU application is of interest, particularly for Solid Oxide Fuel Cells (SOFCs), because of the trend toward electrification of vehicle accessories. Many automotive systems are being converted to electric power to support cost, weight, and packaging objectives. Higher power and higher efficiency electrical machines are being introduced at 42V. Fuel cells could allow completion of the transition to electric accessories as well as independence of the engine for accessory operation - an important feature for mild hybrid vehicles and for large trucks. Fuel cells for portable power are of interest because the consumer electronics industry could be the first widespread market for fuel cells. Polymer electrolyte membrane fuel cells (PEMFCs) and PEM-based direct methanol fuel cells (DMFCs) are being developed to operate cellular phones and laptop computers, considered "premium power" markets where battery costs are high, and performance has failed to keep up with consumer demand. Development of fuel cells for portable power applications will lead to development of high-volume manufacturing processes, and therefore lower cost, for automotive and stationary fuel cells. In addition, as consumers begin to use fuel cells on a daily basis in devices like cellular phones, laptops, lawn mowers, and portable generators, they will become more educated about the benefits of fuel cells and more likely to welcome the use of fuel cells for automotive and stationary power applications

Task 1 - Develop SOFCs with rapid start-up capability

Work Statement - Improve the thermal stress tolerance of the SOFC materials and/or develop cell configurations that mitigate thermal stress with the objective of allowing the fuel cell stack temperature to be raised from ambient to operating temperature in 5 minutes. Ambient temperature in the context of this solicitation is the temperature of the ambient air surrounding a parked vehicle and not a fuel cell "stand-by" temperature that would require combusting fuel to maintain. Improved thermal stress tolerance can be demonstrated initially by property measurements or laboratory scale demonstrations, but must ultimately be applicable in 5 kW_e systems. Demonstrations should be carried out using reformate fuel. For transportation applications, the fuel cell stack must have a power density of about 1000 watts per liter. Proposed technologies should also have the potential to achieve system (includes fuel cell stack, fuel processor, and auxiliaries) cost and performance targets of $600/$kW_e$, 40% efficiency (based on lower heating value), and 1500 hours steady state durability. Proposals should demonstrate familiarity with the start-of-the-art SOFC technology, discuss the basis of the proposed approach, and specify the anticipated results.

Deliverables A single cell demonstrating the performance improvement described above and a Final Report. The Final Report should contain: 1) a complete description of the Phase 1 development activities, including computer simulations and/or test results and data; 2) conclusions regarding the readiness of the technology; and 3) preliminary data and projections on manufacturing feasibility and cost.

Task 2 - Develop reforming process for diesel fuel

Work Statement - Develop critical components for fuel processors that can generate a hydrogen-rich gas from liquid diesel fuel. The first challenge in such processors is to form a very fine mist of diesel fuel in steam, air, or mixtures of the two. In principle, fuel injectors used in today's diesel engines could be used but would need to be scaled down for this application because the power rating of engines is much higher than that of auxiliary power units. Other methods for forming fine mists will be considered. The second challenge is to find catalysts supporting the partial oxidation chemistry of diesel/air/steam mixtures. The catalysts must be active enough for the fuel processor to meet the volume and weight constraints of automotive applications, and must be resistant to carbon formation under the operating conditions of the reformer using actual diesel fuels. It must also be tolerant to sulfur at 15 ppm. Resistance to coking and sulfur needs to be demonstrated in a 100-hour test. Complete fuel conversion must take place at 50,000 L/hr. The injection device must be able to generate homogeneous fuel/steam or fuel/air mixtures, and must have adjustable rates and dispersion ratios. As with the catalysts, the dispersion technology must ultimately meet the volume and weight constraints of automotive systems. Current DOE 2004 automotive fuel processor targets are 700W_e/L and 700 W_e/kg.

Deliverables- A catalyst, which demonstrates performance criteria and characteristics, describe above and/or an injection device meeting the characteristics and targets described above. The Final Report should contain: 1) a complete description of the Phase 1 development activities, including computer simulations and/or test results and data; 2) conclusions regarding the readiness of the technology; and 3) preliminary data and projections on manufacturing.

Task 3 - Develop DMFC systems having higher power density and lower cost

Work Statement - Proposals should address one or more of the following areas:

(A) Improve the power density of DMFCs by developing methanol oxidation catalysts or anode structures having higher activity. Proposed approaches must show potential to achieve a peak power density of 0.45 W/cm^2 with a maximum total (anode + cathode) loading of platinum of 8 mg/cm^2.

(B) Increase the efficiency of DMFCs by improving fuel utilization and developing membranes with lower methanol crossover. Membranes should have potential to reduce crossover by a factor of four (80%) relative to Nafion 117 with no loss in DMFC

performance in the entire range of cell current densities achievable with the state-of-the-art membrane/electrode assemblies based on Nafion 117.

(C) Reduce the cost of DMFCs by lowering the precious metal loading while achieving current performance. The present-day limit of power density achieved with DMFCs for low power applications is approximately 0.30 W_e/cm^2, requiring a total platinum loading of 8 mg/cm^2. Proposed approaches must show potential to achieve 0.30 W_e/cm^2 using no more than 1 mg Pt/cm^2 and sustaining that performance for at least 200 hours of uninterrupted cell operation.

Deliverables:-A single cell demonstrating the proposed performance improvement and a Final Report. The Final Report should contain: 1) complete description of the Phase 1 development activities, including computer simulations and/or test results and data; 2) conclusions regarding the readiness of the technology; and 3) preliminary data and projections on manufacturing feasibility and cost.

Topic 4. Homogeneous-Charge Compression-Ignition (HCCI) Enabling Technology

Energy Conversion

Introduction -The Homogeneous-Charge Compression-Ignition (HCCI) engine has been identified as a potential back up candidate in the event that emission control challenges for the CIDI engine (i.e., NO_X emissions, particulate emissions, and cost) prove to be too difficult to overcome. HCCI is an advanced engine combustion process that can provide high, diesel-like efficiencies, and because it operates with a completely different combustion process, it has the potential to nearly eliminate NO_X and particulate emissions at their source, resulting in ultra-low, engine-out NO_X and particulate levels. HCCI engines also should be relatively inexpensive due to their use of relatively low pressure fuel injection equipment.

Task **-**Using advanced engine control techniques such as supercharging, variable compression ratio, variable valve timing, partial fuel oxidation, etc., demonstrate HCCI operation using gasoline as fuel across a wide range of speeds and loads representative of those encountered during light-duty vehicle operation.

Work Statement - Develop novel concepts or technologies that will enable the operation of an HCCI engine over a wide range of engine speeds and loads representative of those encountered during light-duty vehicle operation, while using gasoline as fuel. *The goal would be to achieve HCCI combustion using gasoline and demonstrate operation at 2000, 3000, and 4000 rpm at 25, 50, and 75 percent of full torque output (for each speed) based on an existing port fuel injected spark-ignited gasoline engine of similar cylinder displacement.* This goal could be achieved by using mechanical, electrical, chemical, or electro-thermal devices that are simple and cost effective.

There are additional challenges to implementing HCCI in a practical engine beyond achieving operation over the speed/load range of the engine most used during light-duty vehicle operation. These challenges include handling transients, cold-start capability, and reducing unburned hydrocarbon emissions. Applicants may address the following areas:

> Development of an engine control system that would adjust parameters such as in-cylinder temperature, injection timing, and amount of Exhaust Gas Recirculation (EGR), to allow the HCCI engine to operate over a wide range of operating conditions representative of vehicle operation. Precise control over most of the entire speed/load map is required before HCCI engine concepts can be made a reality. Applicants should include development of control strategies to enable the effective transition from HCCI mode to other potential modes of operation (e.g., direct-injection stratified charge) if non-HCCI operation is needed.
>
> Investigation of enabling technologies such as variable compression ratio, flexible valve timing, variable boost, sensors, and emission control devices, in order to determine the best combination of technologies resulting in an HCCI engine-powered vehicle that meets all the performance requirements and maximizes fuel economy benefits.

Deliverables - A Final Report is to be submitted which contains: 1) a complete description of the Phase 1 development activities, including computer simulations and/or developmental test results; 2) conclusions regarding the readiness of the technology for further development; and 3) preliminary data and projections on manufacturing feasibility and cost potential.

Topic 5. Cost-Effective, High-Efficiency Porous Media Heat Transfer

Vehicle Systems

Introduction -Porous media heat transfer phenomena, involving thermal energy transfer within various metal and ceramic open-cell porous media, has received increased research attention for application in advanced cooling and heating applications over a wide temperature range (from cryogenic to well above room temperature). The technology has potential application in power system thermal management, air conditioning, refrigeration, waste heat recovery, electronic cooling within various vehicle systems. Porous media has demonstrated the capability for producing high liquid and gas heat transfer coefficients that could be exploited to reduce vehicle thermal management system sizes and weights significantly. In addition, there exists a tremendous opportunity for integrating this technology with existing heat pipe technology to create highly-efficient heat exchanger systems to produced additional system size and weight reductions. There are several heat exchanger systems within current and future automotive systems. Therefore, there is tremendous potential for using this technology to significantly reduce vehicle system thermal mass, volumes, and frontal areas, and thereby significantly lowering automotive energy requirements and fuel consumption. Current studies have shown that every 20 pounds of weight reduction in present-day vehicle systems/platforms can increase fuel economy by 0.1 miles per gallon. However, optimizing application of this technology to the vehicle systems has been limited to date by high cost and lack of credible prototype demonstrations to transition this technology from research-level to viable commercial vehicle systems.

Task -Develop advanced porous media / heat pipe systems to demonstrate advanced heat exchange systems for current and future automotive thermal management systems, including revolutionary hybrid electric and fuel cell vehicles.

Work Statement -Develop cost-effective, high-efficiency porous media heat exchanger system solutions for thermal management within current and future automotive / heavy vehicle systems. Applications should address how porous materials, heat pipes, and methods of advanced heat exchanger system fabrication would lower system weight, volume and frontal areas, enhance system reliability, lower system-level vehicle costs, and improve vehicle system thermal management efficiency in order to accelerate the path to commercialization.

Deliverables -The applicant shall deliver a well-conceived system design addressing all the major design challenges/issues of a particular design concept, along with any small-scale laboratory prototypes and laboratory experimental results demonstrating the critical performance aspects of the particular concept. The system should typically involve heat exchange between air and other automotive/heavy vehicle fluids. A Final Report is to be submitted which contains: 1) a complete description of the Phase 1 development activities, including computer simulations and/or developmental test results; 2) conclusions regarding the readiness of the technology for further development; and 3) preliminary data and projections on manufacturing feasibility and cost potential.

Topic 6. Cost-Effective, High-Efficiency Materials for Thermoelectric Devices

Vehicle Systems

Thermoelectric phenomena, involving energy transfers between electric power and thermal gradients, have been employed for cooling and heating over a wide temperature range (from cryogenic to well above room temperature). The technology has not only been used for air conditioning, refrigeration, and various aspects of thermal management but also in generating significant electrical power from waste heat. Recoverable energy from prime movers in the transportation sector exceeds 50% of the total energy supplied from petroleum-based fuels. However, the application of this technology to the harvesting of electrical power from a vehicle's waste heat has been limited by the high cost per watt.

Task - Develop and deliver for testing 1) advanced materials or improved quantum well materials that would produce thermoelectric devices or 2) develop for testing thermoelectric devices having conversion efficiencies greater than 25% in a vehicle application.

Work Statement - Develop and build a cost effective, high-efficiency thermoelectric device for electric power generation based on waste heat recovered from vehicle propulsion engines and/or from air conditioning in electric-powered vehicles. Applications should address how higher efficiency materials and/or methods of device fabrication would enhance device reliability and improve electrical power generation efficiency in order to accelerate the path to commercialization.

Deliverables - The applicant should deliver a prototype thermoelectric device or a sample of the materials developed for such a device. The Final Report should contain: 1) a complete description of the Phase 1 development activities, including computer simulations and/or test results and data; 2) conclusions regarding the readiness of the technology; and 3) preliminary data and projections on manufacturing feasibility and cost.

Topic 7. Cost-Effective, High-Efficiency Integrated Systems Approach to Auxiliary Electric Motors

Vehicle Systems

Introduction - Advancements in electric motor technologies to meet increasing power density while operating in “Under the Hood” conditions have been investigated for DC brushless motors. Conventional methods for increasing motor power density lead to difficult cooling requirements and increased cost due to complexity of manufacturing methods. Conventional cost-reduction methods lead to a reduction in motor performance. A new strategy for increasing power density and reducing cost is by integrating the motor and controls into a single package. A tightly integrated package utilizing a single housing for the power electronics, control electronics, and the motor, will yield a significant reduction in the overall size, weight, and the cost of the system. A 5 to 7 kilowatt (kW) auxiliary motor with an integrated power conditioning and control logic module has a combined cost and power density goal of $12 per kW and 2 kW per kilogram

Task- Develop and deliver for testing an advanced integrated motor system, containing a DC brushless motor and electric modules that will allow optimization of electromagnetic, thermal, structural and control design parameters. It should be amenable to speed requirements, torque requirements, severe temperature changes, and thermal management.

Work Statement - Build a physical model of the concept, and develop a plan for future high-volume manufacturing and production. Applicants should place emphasis on maximizing modular power density and improving overall system efficiency while minimizing cost for high-volume production. This R&D effort will produce electric motors with modules ,leading to reduced power consumption, size, weight, and cost. Targeted automotive usage is on air conditioning compressors, fuel cell compressors, and other automotive auxiliary systems.

Deliverables - The applicant shall deliver a prototype integrated motor system and a Final Report. The Final Report should contain: 1) a complete description of the Phase 1 development activities, including computer simulations and/or test results and data; 2) conclusions regarding the readiness of the technology; and 3) preliminary data and projections on manufacturing feasibility and cost.

APPENDIX B

DOE F 4650.2
(10-99)
(All Other Editions Are Obsolete)

Department of Energy
Office of Science (SC)
Face Page

OMB Control No.
1910-1400
(OMB Burden Disclosure Statement on Back)

TITLE OF PROPOSED RESEARCH:

1. CATALOG OF FEDERAL DOMESTIC ASSISTANCE #: 81.049

2. CONGRESSIONAL DISTRICT:
Applicant Organization's District:
Project Site's District:

3. I.R.S. ENTITY IDENTIFICATION OR SSN:

4. AREA OF RESEARCH OR ANNOUNCEMENT TITLE/#:

5. HAS THIS RESEARCH PROPOSAL BEEN SUBMITTED TO ANY OTHER FEDERAL AGENCY?
Yes _____ No _____

PLEASE LIST:

6. DOE/OER PROGRAM STAFF CONTACT (if known):

7. TYPE OF APPLICATION:
New _____ Renewal
Continuation Revision
Supplement

8. ORGANIZATION TYPE:
Local Govt. ____ State Govt. _____
Non-Profit ____ Hospital _____
Indian Tribal Govt. Individual _____
Other ____ Inst. of Higher Educ.
For-Profit ____
Small Business Disadvan. Business
Women-Owned 8(a) _____

9. CURRENT DOE AWARD # (IF APPLICABLE):

10. WILL THIS RESEARCH INVOLVE:
10 A Human Subjects No ____ If yes, _____
Exemption No. _____ **or**
IRB Approval Date
Assurance of Compliance No:
10 B Vertebrate Animals No If yes, _____
IACUC Approval Date
Animal Welfare Assurance No:

11. AMOUNT REQUESTED FROM DOE FOR ENTIRE PROJECT PERIOD $ _____

12. DURATION OF ENTIRE PROJECT PERIOD:
_____ **to** _____
Mo/day/yr. Mo/day/yr.

13. REQUESTED AWARD START DATE
_____ (Mo/day/yr.)

14. IS APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
Yes (attach an explanation) No

15. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR NAME, TITLE, ADDRESS, AND PHONE NUMBER

16. ORGANIZATION'S NAME, ADDRESS AND CERTIFYING REPRESENTATIVE'S NAME, TITLE, AND PHONE NUMBER

SIGNATURE OF PRINCIPAL INVESTIGATOR/ PROGRAM DIRECTOR _____
Date

PI/PD ASSURANCE: I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if an award is made as a result of this submission. Willful provision of false information is a criminal offense. (U.S. Code, Title 18, Section 1001).

SIGNATURE OF ORGANIZATION'S CERTIFYING REPRESENTATIVE _____
Date

CERTIFICATION & ACCEPTANCE: I certify that the statements herein are true and complete to the best of my knowledge, and accept the obligation to comply with DOE terms and conditions if an award is made as the result of this submission. A willfully false certification is a criminal offense. (U.S. Code, Title 18, Section 1001).

NOTICE FOR HANDLING PROPOSALS
This submission is to be used only for DOE evaluation purposes and this notice shall be affixed to any reproduction or abstract thereof. All Government and non-Government personnel handling this submission shall

exercise extreme care to ensure that the information contained herein is not duplicated, used, or disclosed in whole or in part for any purpose other than evaluation without written permission except that if an
award is made based on this submission, the terms of the award shall control disclosure and use. This notice does not limit the Government's right to use information contained in the submission if it is obtainable
from another source without restriction. This is a Government notice, and shall not itself be construed to impose any liability upon the Government or Government personnel for any disclosure or use of data
contained in this submission.

PRIVACY ACT STATEMENT

If applicable, you are requested, in accordance with 5 U.S.C., Sec. 562A, to voluntarily provide your Social Security Number (SSN). However, you will not be denied any right, benefit, or privilege provided by
law because of a refusal to disclose your SSN. We request your SSN to aid in accurate identification, referral and review of applications for research/training support for efficient management of Office of Science
grant/contract
programs.

APPENDIX C

TOPIC:_____

STATEMENT OF WORK
(Example)

1. Statement of Work

The applicant shall investigate the electrocatalytic production of styrene from ethylbenzene in solid electrolyte fuel cells. The effort is directed toward defining optimal operating conditions for achieving high yields of styrene with simultaneous electric generation.

2. Project Description

The work to be performed consists of the following tasks:

2.1 Construction of tubular zirconia fuel cells with a platinum cathode and an iron oxide or platinum anode. Both anode materials are quite promising and a decision between the two will be made after preliminary runs.

2.2 Measurement of the styrene cell activity and yields as a function of velocity, temperature, and inlet concentration of ethylbenzene and external resistive load.

2.3 Measurement of the cell electric power output and overpotential as a function of the operating parameters described in 2.2.

2.4 Preliminary engineering and economic analysis according to the results of 2.2 and 2.3.

2.5 Final Report Preparation.

3. Performance Schedule

Task 2.1 completed two months after start of work
Task 2.2 and 2.3 completed four months after start of work
Task 2.4 completed five months after start of work.
Task 2.5 completed six months after start of work.

4. Reporting Requirement

The applicant shall provide a Final Report containing the data from the experiments performed according to Tasks 2.2 and 2.3 along with analyses and conclusions based on these data.

5. Deliverables

APPENDIX D.1

DOE F 4620.1	**U.S. Department of Energy**	OMB Control No.
(04-93)	**Budget Page**	1910-1400
All Other Editions Are Obsolete	(See reverse for Instructions)	OMB Burden Disclosure Statement on Reverse

ORGANIZATION			Budget Page: _____		
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR			Requested Duration: _____ (months)		
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title; A.6. show number in brackets)	Hrs	$/hr.	DOE SHARE	COST SHARE BY APPLICANT	TOTAL COSTS
1.					
2.					
3.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. ( ) TOTAL SENIOR PERSONNEL (1-6)					
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POST DOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONAL (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL - CLERICAL					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A+B)					
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)					
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM.)					
TOTAL PERMANENT EQUIPMENT					
E. TRAVEL 1. DOMESTIC (INCL. CANADA AND U.S. POSSESSIONS)					
2. FOREIGN					
TOTAL TRAVEL					
F. TRAINEE/PARTICIPANT COSTS					
1. STIPENDS (Itemize levels, types + totals on budget justification page)					
2. TUITION & FEES					
3. TRAINEE TRAVEL					
4. OTHER (fully explain on justification page)					
TOTAL PARTICIPANTS ( ) TOTAL COST					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES					
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE) SERVICES					
5. SUBCONTRACTS					
6. OTHER					
TOTAL OTHER DIRECT COSTS					
H. TOTAL DIRECT COSTS (A THROUGH G)					
I. INDIRECT COSTS (SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS					
J. TOTAL DIRECT AND INDIRECT COSTS (H+I)					
			DOE	APPLICANT	TOTAL

APPENDIX D.2

INSTRUCTIONS FOR COMPLETING BUDGET PAGE (DOE Form 4620.1)

1. General

a. Each new, renewal and supplemental application must contain Budget Pages in this format unless a pertinent program notice guideline specifically provides otherwise. A separate Budget Page must be completed for each year of support requested.

b. Continuation funding will not require a budget page unless the amount proposed for funding is either 25% over or under the original recommended amount of support for that period. A cover letter signed by the applicant organization official and the Principal Investigator (PI) must accompany this budget and should be forwarded to the U.S. Department of Energy (DOE) Project Officer listed in item 11 of the DOE Financial Assistance Award.

c. Duplication of this form and instructions may be done by applicants as DOE will not provide additional copies beyond what is contained in the application kit and guide.

EACH BUDGET ITEM MUST BE JUSTIFIED ON CONTINUATION PAGES FOLLOWING THE BUDGET PAGE.

In addition to a full discussion of the budget items needed to carry out the proposed work the following information is mandatory to be included on the budget justification continuation pages in order to be considered a complete application.

A. "Senior Personnel": List any personnel, funds requested for salary, and the number of person months to be funded. Include any additions in Item A6 on the Budget Page.

B. All "Other Personnel": Must be listed individually, their rate of pay and % as well as length of time working on the project. Also include a written narrative that fully justifies the need for all requested personnel.

C. "Fringe Benefits": Must include the current fringe benefit rate established for the applicant organization as well as the total cost or a list of cost and type for each individual employed on the project. Tuition remission for undergraduate or graduate students working on the project must be included in this category or listed as a separate line item in the "Other Category" depending on the applicant organization's system of reporting.

D. "Equipment": List each item, its cost and reason it is needed for the project.

E. "Travel": List each trip's destination, dates, estimated cost including transportation and subsistence, number of staff traveling and the purpose of the travel and how it relates to the project. This category should include the amounts needed for staff on the project as well as for travel associated with any consultants working on the project.

F. "Trainee/Participant Costs": Educational projects that intend to support trainees (pre-college, college, graduate and post graduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as that needed under the regular travel category, Item E), and costs for any other related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and the breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses.

G. "Other Direct Costs"

1. Materials & Supplies: Indicate type required and estimate costs.

2. Publication Costs/Documentation/Dissemination: Estimate cost of preparing and publishing project results.

3. Consultant Services: Indicate name, daily compensation, number of days service required and justify.

4. Computer (ADP) Services: Include justification based on established computer service rates at the proposing institution. Purchase of equipment is included under D.

5. Subcontracts: Include a budget and justify details.

6. Other: Itemize and justify details. Under this item list tuition remission for students employed to work on this project listed under personnel category. (Do not include tuition remission if this cost is included under the fringe benefit category).

H. Total Direct Costs: (A through G)

APPENDIX D.2

I. Indirect Costs: Specify current rate(s) and base(s). Use current rate(s) negotiated with the cognizant Federal-negotiating Agency.

J. Total Direct and Indirect Costs: (H + I)

K. Amount of any required cost sharing from non-Federal sources.

L. Total Cost of Project (J + K)

The personnel categories listed in Part A and Part B of the Budget Page are defined as follows:

A. Senior Personnel

1-5. (Co) Principal Investigator(s) are individual(s) so designated by the grantee institution. A Faculty Associate (faculty member) is an individual-other than the Principal Investigator-who is considered by the performing institution to be a member of its faculty or who holds an appointment as a faculty member at another institution, and who will participate in the project being supported.

B. Other Personnel

1. A Postdoctoral Associate is an individual who received a Ph.D., M.D., D.Sc. or equivalent degree less than 5 years ago, who is not a member of the faculty of the performing institution, and who is not reported under Senior personnel above.

2. Other Professional is a person who may or may not hold a doctoral degree or its equivalent that is considered professional and is not reported as a Principal Investigator, faculty associate, postdoctoral associate, or student. Examples of persons included in this category are doctoral associates not reported under B1 above, professional technicians, mathematicians, physicians, veterinarians, systems experts, computer programmers, and design engineers.

3. A Graduate Student (Research assistant) is a part-time or full-time student working on the project in research capacity that holds at least a bachelor's degree or its equivalent and is enrolled in a degree program leading to an advanced degree.

4. An Undergraduate Student is a student who is enrolled in a degree program (part-time or full-time) leading to a bachelor's degree.

5&6. These include persons working on the project in a non- research capacity such as secretaries, clerk-typists, draftsmen, animal caretakers, electricians, and custodial personnel, regardless of whether they hold a degree or are involved in degree work.

NOTE: Any personnel category for which funds are requested should indicate the number of persons expected to receive some support and where called for on the budget format, the full-time equivalent (FTE) person-months to the nearest tenth.

OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-4.3, Paperwork Reduction Project (1910-1400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-1400), Washington, DC 20503.

APPENDIX D.2.

SUPPLEMENTAL BUDGET EXPLANATION PAGE

The following information is required for the proposed budgeted costs. In addition, teaming members and consultants are also required to submit the below information with their budgets.

A. Quantities Proposed-All Cost Elements - Provide the basis for the proposed quantities of material and laborhours such as current usage, prior history, engineering estimates, etc.

B. Material & Supplies Costs - Provide an itemized list of material & Supplies by nature and itemized expense. Explain the basis for the proposed prices, such as, written quotes, catalogue prices, prior invoices, shop estimates, etc. Where appropriate, the identity of the source of the data, the date and information on multiple quotes should be given.

C. Direct Labor Rates - Provide the basis for the proposed rates. For example, therates are actual rates or averages for the category shown, paid as of January 1, 1999. If a factor is included to provide for known or anticipated increases, identify the factor and basis. If a factor for fringe benefits is include, e.g. vacations, is should be stated separately.

D. Overhead Rates - If an agreement has been reached with another governmental organization for indirect billing rates, provide a copy of the agreement. If no agreement exists, then an overhead proposal is to be submitted for evaluation and negotiation. The format and content which is to be followed to propose indirect rates, by the applicant and subcontractors, teams members, and consultants is provided as Appendix D.3.

E. Equipment - Provide an itemized list with individual cost for each piece of equipment, together with the basis for the proposed cost as stated in Item B. above.

F. Travel - List the number of travelers, travel origination and destinations, length of trip(s) in terms of days, and the basis for the costs. Separate costs for airfare, lodging, meals, local transportation, and incidentals.

G. Consultants - Provide the hourly/daily rate along with the basis for the rate. Furnish resumes or similar information regarding qualifications or experience together with a Statement of Work the consultant will be performing for the project. If travel or incidental expenses are to be charged, give the basis for these costs. Consultants are to provide at least 2 invoices reflecting hourly/daily rates invoice to customers other than Governmental.

H. Other Direct Costs - Provide an itemized list with costs for each item listed under "Other Direct Costs." Provide the basis for the proposed cost as stated in Item B. above.

I. General and Administrative Costs - Provide the same information for G & A as requested in Item D. above.

APPENDIX D.3

MODEL OVERHEAD SUBMISSION

The formats included in this submission are not required. If the contractor generates internal formal reports that identify the needed information, these internal reports can be submitted in support of the claimed expenses. However, the basic data contained herein is required for the submission to be considered adequate. The use of internal reports as a substitute for the formats shown should first be discussed with your cognizant DCAA office. Note that depending upon the size of your firm, complexity of your accounting systems, and type of business, some of the schedules may not be required. Specific requirements should be coordinated with your cognizant DCAA office.

APPENDIX D.3

OVERHEAD SUBMISSION
FISCAL YEAR ENDED 3/31/90

Schedule A	-	General and Administrative Expenses (G&A)
Schedule B	-	Overhead Expenses
Schedule C	-	Occupancy Expenses
Schedule D	-	Bases Used to Allocate Indirect Expense
Schedule E	-	Claimed Rates for Each Expense Pool
Schedule F	-	Facilities Capital Cost of Money Factors Computation
Schedule G	-	Reconciliation of Books of Account and Claimed Direct Cost
Schedule H	-	Contract Direct Costs Claimed and Not Claimed, IR&D/B&P Direct Costs Incurred (Overhead, G&A and Cost of Money Applied at Claimed Rates)
Schedule H-1	-	Government Participation in Indirect Expense Pools
Schedule H-2	-	Reconciliation of Claimed G&A Pool to G&A Claimed on Contracts
Schedule I	-	Schedule of Cumulative Direct and Indirect Costs Claimed and Billed
Schedule J	-	Computation of Allowable IR&D/B&P Costs
Schedule K	-	Summary of Hours and Amounts on T&M/Labor-Hour Contracts for Fiscal Year Ended 3/31/90
Schedule L	-	Reconciliation of Total Payroll to Total Labor Distributed
Schedule M	-	Listing of Decisions/Agreements/Approvals and Description of Accounting/ Organization Changes
Schedule N	-	Indirect Costs Certification

Copies of audited financial statements and Federal and State income tax returns. (Not included in model - should be included as part of actual submission.

APPENDIX D.3

General and Administrative Expenses (G&A)
Fiscal Year Ended 3/31/90

Schedule of Actual Expenses, Adjustments and Claimed Costs

	Expenses Per General Accounts	Ledger	Adjustments	Claimed Costs	Notes/Schedule Reference
Salaries & Wages	$ 90,007			$90,007	
Legal Fees	1,744			1,744	
Audit Fees	20,585			20,585	
Other Fees	11,776			11,776	
Travel	12,987		(1,295)	11,692	(1)
Entertainment	484		(484)	-	(2)
Advertising & Promotion	354		(287)	67	(3)
Bad Debts	3,018		(3,018)	-	(2)
Tech. Publications	1,500			1,500	
Periodicals	4,935			4,935	
Conventions & Seminars	7,936		(319)	7,617	(1)
Interest Expense	1,500		(1,001)	-	(2)
Holiday	2,322			2,322	*
Vacation	5,812			5,812	*
Sick Leave	987			987	*
Personal Absence	1,082			1,082	*
Employee FICA & Medicare	3,815			3,815	*
FUI	183			183	*
SUI	910			910	*
Workmen's Compensation	516			516	*
Health Insurance	8,912			8,912	*
Life Insurance	1,087			1,087	*
Pension Plan	12,318		(1,883)	10,435	* (4)
Tuition Assistance	912			912	*
Occupancy Allocation	23,151			23,151	Schedule C
IR&D/B&P	59,725		(1,778)	57,947	(5)
Miscellaneous	2,445			2,445	
TOTAL	$280,504		($10,047)	270,457	*

* Depending on the complexity of a company's accounting system, these items could also be accumulated in a separate Fringe Benefit pool and allocated over Total Payroll Dollars).

Notes Explaining Adjustments:

(1) Expenses of President, Vice President and wives on a personal trip are not claimed.

(2) Expressly unallowable costs per government procurement regulation FAR 32.1.

(3) Unallowable advertising expense per FAR 31.205-1. The allowable portion represents allowable recruitment expense per FAR 31.205-34.

(4) Employer contributions to pension plan in excess of that approved and considered allowable by the ACO.

(5) See Schedule below:

	Expenses Per General Ledger	Adjustments	Claimed Costs
IR&D Labor Cost	$ 14,287		$ 14,287
IR&D Travel, Material, & ODC	9,724		9,724
IR&D Overhead	11,822	(715)	11,107(a)
Total IR&D	$ 35,833	$ (715)	$ 35,118
B&P Labor	$ 8,525		$ 9,525
B&P Travel, Material, & ODC	6,485		6,485
B&P Overhead	7,882	(477)	7,405 (a)
Total B&P	$ 23,892	$ (477)	$ 23,415
IR&D/B&P Amount Over Ceiling	$ -	$ (586)	$ (586) (b)
Total IR&D/B&P	$ 59,725	$ (1,778)	$ 57,947

(a) The adjustments in the overhead amounts are due to application of the difference between the 82.75% general Ledger rate and the Claimed rate of 77.74% to the claimed labor amounts.

(b) Refer to FAR 31.205-18 for details regarding the computation of IR&D/B&P ceilings.

Overhead Expenses
Fiscal Year Ended 3/31/90

Schedule of Actual Expenses, Adjustments and Claimed Costs

Accounts	Expense Per General Ledger	Adjustments	Claimed Costs	Notes/Schedule Reference
Salaries & Wages	$ 33,060		$ 33,060	
Postage & Handling	6,235		6,235	
Office Supplies	6,461		6,461	
Small Equipment	878		878	
Temporary Clerical Help	1,816		1,816	
Other Outside Services	30,281		30,281	
Relocation	1,216	(777)	439	(1)
Business Meals	2,702		2,702	
Telephone Expense - Local	1,814		1,814	
Telephone-Long Distance	43,738		43,738	
Telecopier	2,434		2,434	
Equipment Rent	27,151		27,151	
Recruitment	286		286	
Dues/Memberships	2,112	(500)	1,612	(2)
Insurance	737		737	
Depreciation/Amortization	2,824		2,824	
Repairs & Maintenance	1,681		1,681	
Holiday	20,181		20,181	
Vacation	25,440		25,440	
Sick Leave	14,318		14,318	
Severance Pay	32,419	(23,023)	9,396	* (3)
Employer FICA/Medicare	23,612		23,612	
FUI	1,210		1,210	
SUI	5,813		5,813	
Workmen's Compensation	3,311		3,311	
Health Insurance	31,097		31,097	
Life Insurance	6,833		6,833	
Pension Plan	58,320	(8,612)	49,708	* (4)
Occupancy Allocation	154,932		154,932	Scheudle C
Miscellaneous	612		612	
TOTAL	$ 543,524	$ (32,912)	$ 510,612	

* Depending on the complexity of a company's accounting system, these items could also be accumulated in a separate Fringe Benefit pool and allocated offer Total Payroll Dollars (or perhaps Total Direct Labor Dollars).

Notes Explaining Adjustments:

(1) Moving charges in excess of those allowable by FAR 31.2.

(2) Membership fees and tennis dues of one individual - not allowable as per FAR 31.2.

(3) Severance pays in excess of allowable as per direction of ACO.

(4) Employer contributions to pension plan I excess of that approved and considered allowable by ACO.

Appendix D.3

SCHEDULE C

Occupancy Expenses**
Fiscal Year Ended 3/31/90

Schedule of Actual Expenses, Adjustments and Claimed Costs

Accounts

Accounts	Expenses Per General Ledger	Adjustments	Claimed Costs
Salaries & Wages	$ 23,280		$ 23,280
Real Estate Rent	122,959		122,959
Insurance	2,946		2,946
Property Taxes	1,761		1,761
Permit & Licenses	39		39
Depreciation/Amortization	25,417		25,417
Repair & Maintenance	1,681		1,681
GRAND TOTAL	$ 178,083	0	$ 178,083

Allocation of Expenses Based on Square Feet Utilized *			
G&A (Schedule A) 13%	23,151		$ 23,151
Overhead (Schedule B) 87%	$ 154,932		154,932
	$ 178,083	0	178,083

Note - This is an intermediate pool that is allocated to other final pools. Because of the minor amount involved, fringes on the $23,280 salary and wages shown above were charged to the overhead pool.

* It may be necessary to modify the square feet allocation base if the resulting allocation is not equitable. For example, the cost per square foot for executive office or clean rooms may be greater than for warehouse space.

** This example would be applicable to any intermediate pool that is allocated to other final pools.

SCHEDULE D

Bases Used to Allocate Indirect Expenses
Fiscal Year Ended 3/31/90

Pool	General and Administrative Expenses - Schedule A
Base	Total cost input (excludes G&A, IR&D, B&P, and Cost of Money), see Schedule E.
Pool	Overhead Expenses - Schedule B
Base	Straight time direct labor dollars of all contracts and projects including labor costs of IR&D/B&P projects, see Schedules E and H.
Pool	Occupancy Expenses - Schedule C
Base	Square feet assigned to each activity
Pool	Cost of Money (Overhead) - Schedule F
Base	Straight time direct labor dollars of all contracts and projects including labor costs of IR&D/B&P projects.
Pool	Cost of Money (G&A) - Schedule F
Base	Total cost input, (excludes G&A, IR&D, B&P, and Cost of Money.)

Claimed Rates for Each Expense Pool
Fiscal Year Ended 3/31/90

	General Ledger	Adjustments	Claimed Costs	
Overhead				
Overhead Base:				
Contract Labor - Schedule H	$633,012		$633,012	
IR&D Labor - Schedule H	14,287		14,287	*
B&P Labor - Schedule H	9,525		9,525	*
Total Labor	$656,824		$656,824	
Overhead Pool: - Schedule B	$543,524	(32,912)	$510,612	
Overhead Rate	82.75%		77.74%	
General & Administrative Expense Rate (G&A)				
G&A Base				
Contract direct costs - Schedule H				
Labor			$633,012	
Travel			34,563	
Material			842,981	
Other direct costs			172,105	
Subcontracts			944,841	
Total direct costs			$2,627,502	
Overhead - Schedule B			$543,524	**
Less: IR&D/B&P Overhead transferred to G&A:				
IR&D Overhead @ General Ledger Rate 82.75% X 14,287			(11,822)	***
B&P Overhead @ General Ledger Rate 82.75% X 9,525			(7,882)	***
Total Cost Input			$3,151,322	****
G&A Pool				
Total Claimed G&A Expenses - Schedule A			$ 270,457	****
G&A Rate	8.58%			

G&A Rate

Explanatory Comments.

* The IR&D and B&P labor is included in the overhead base in order to allocate a proportionate share of overhead to the labor as required by FAR 31.2. The IR&D/B&P labor and the associated overhead are normally claimed as a part of the G&A expense.

** The claimed G&A base must include both the Schedule B claimed overhead ($510,612) plus overhead costs incurred but not claimed ($32,912).

*** Overhead on the IR&D/B&P laborat the 82.75% rate is added to the G&A pool (Schedule A) and deducted from the G&A base.

**** In summary, the total cost input base consists of contract direct costs plus overhead (claimed and unclaimed) less overhead on IR&D/B&P transferred to the G&A pool. The base does not include IR&D/B&P direct labor or other IR&D/B&P direct costs that are recovered through the G&A pool.

APPENDIX D.3

Form CASB-CMF | APPENDIX A A | SCHEDULE F

Period	Rate	Mo.	COM
Apr-Jun 89	9.75	3/12	2.438
Jul-Dec 89	9.125	6/12	4.563
Jan-Mar 90	8.5	3/12	2.125
			*9.126

FACILITIES CAPITAL
COST OF MONEY FACTORS COMPUTATION

CONTRACTOR:
BUSINESS UNIT:
ADDRESS:

COST PERIOD:	ACCOUNTING	1. Applicable Cost of Money Rate 9.126%	2. Accumulation & Direct Distribution of MVB	Undistributed	4. Total Net Book Value	5. Cost of Money for the Cost Accounting Period	for the Period	7. Facilities Capital Cost of Money Factors
		Recorded	62,761	Basis of	Columns	Columns	In Unit(s)	Columns
		Leased Property	156,000	Allocation	2+3	1 x 4	of Measure	5/4
	Business Unit							
Facilities		Total	218,761					
Capital		Undisbriuted	180,000					
		Distributed	38,761					
		Overhead	30,345	$156,600	$186,945	$17,061	$656,824	0.02597
		Less: Cost of Money on IR&D/B&P Labor				(618)	23812	0.02597
OVER HEAD								
POOLS								
G&A		G&A	8,416	23,400	31,816	2,904		
EXPENSE						618		
POOL						3,522	322	0.00112
TOTAL			38,761	1,800,000	218,761	19,965		

APPENDIX D. 3

SCHEDULE G

Reconciliation of Books of Account and Claimed Direct Costs
Fiscal Year Ended 3/31/90

Description	Amounts per General Ledger	Adjustments	Amount Claimed	Notes
DIRECT COSTS				
Direct Labor	$ 656,824	$	$ 656,824	
Travel	35,173	(1,687)	33,486	(1)
Material	843,192		843,192	
Other Direct Cost	187,493	(3,183)	184,310	(2)
Subcontracts	944,841		944,841	
Total Direct Cost	$ 2,667,523	$ (4,870)	$2,662,653	
	(Schedule H)			

Notes Explaining Adjustments:

(1) Travel - Costs of first class airfare in excess of coach on contract N00039-88-C-0873.

(2) ODGS - Overtime premium not allowable by terms of contract N00039-88-C-0873.

* Includes IR&D/B&P direct costs.

SCHEDULE H

CONTRACT DIRECT COSTS CLAIMED AND NOT CLAIMED
IR&D/B&p DIRECT COSTS INCURRED
OVERHEAD, G&A, AND COST OF MONEY
APPLIED AT CLIAMED RATES
FISCAL YEAR ENDED 3/31/90

Job Order No.	Contract No.	Labor	Travel	Material	Other	Sub-	Total	Overhead	Dir. Cost	G&A	Total Costs	Cost	of	Money	Grand Total
	Cost Type (Note 3):														
1201	NN00039-88-C-0873														
	Claimed	$122,113	$5,231	$115,068	$43,630	$87,912	$373,954	$94,930	$468,884	$40,230	$509,114	$3,171	$525	$3,696	$512,810
	Not Claimed (Note I)		1,687		3,183		4,870		4,870	418	5,288		5	5	5,293
1203	N00040-88-C-0874	16,387	836	312	1,212	15,341	34,088	12,739	48,827	4,018	50,845	426	52	478	51,323
1204	N00050-88-C-0875	8,973	87	9,687	632	7,888	27,267	6,975	34,242	2,938	37,180	(Note 2)	(Note 2)	(Note 2)	37,180
	Total Cost Type	131,086	5,318	124,755	44,262	95,800	401,221	101,905	503,126	43,168	546,294	3,597	577	4,174	564,133
Flexibly Priced (Note 3)															
1205	NN00060-88-c-0913	$210,312	$8,932	$38,643	$59,613	$89,732	$407,232	$163,496	$570,728	$49,968	$619,696	$5,462	$639	$4,101	$625,797
Var T&M/Firm Fixed Price Work		$110,912	$6,312	$18,974	$12,914	$147,318	$296,430	$86,223	$382,653	$32,832	$415,485	$2,880	$429	$3,309	$418,794
Var Commerical Work		$164,315	$11,478	$660,297	$50,921	$596,650	$1,483,661	$127,737	$1,611,398	$138,258	$1,749,656	$	$	$	$1,749,656
Total Contracts Costs		$633,012	$344,563	$842,981	$172,105	$944,841	$2,627,502	$492,100	$3,119,602	$267,662	$3,387,264	$11,939	$1,650	$13,589	$3,400,853
		(Sch H-1)							(Sch H-1)	(Sch H-2)					
IR&D		$14,287	$366	$126	$9,232		$24,011	$11,107	$35,118						
B&P		9,525	244	85	6,156		16,000	7,405	23,415						
Total IR&D/B&P		$23,812	$610	$211	$15,388		$40,021	$18,512	$58,533						
	GRAND TOTAL	$656,824	$35,173	$843,192	$944,841	$2,667,523	$510,612								
Explanatory Note							(Sch. B)								

(1) Direct costs not claimed are explained in Schedule C.

(2) Cost of money is not applicable to this contract by terms of the contract.

(3) Cost and flexibly priced contracts should be sorted and subtotaled by Federal Agency if your perform work for both DoD and other non-DoD (civilian) agencies.

SCHEDULE H-1

GOVERNMENT PARTICIPATION IN INDIRECT POOLS
FISCAL YEAR ENDED 3/31/90

Contract Type	Overhead Expense Pool Base Amount	%	G&A Expense Pool Base Amount	$
Cost-Type	$147,473	23.2	$554,823	17.8
Flexibly Priced	210,312	33.2	570,728	18.3
Fixed-Price/T&M	110,912	17.5	382,653	12.3
Commercial	164,315	26.0	1,611,398	51.6
TOTAL	633,012	100 %	3,119,602	100 %
	(Schedule H)		(Schedule H)	

NOTE: The purpose of this schedule is to present a general overview of the extent cost-type and flexibly priced contracts participate in the absorption of indirect expenses.

SCHEDULE H-2

RECONCILIATION OF G&A CLAIMED ON CONTRACTS
TO CLAIMED G&A
FISCAL YEAR ENDED 3/31/90

G&A Claimed on Contracts - Schedule H		$267,662
Rounding difference in claimed rate:		
Claimed G&A rate	.0858000	
Calculated rate (270,457 / 3,151,322)	.0858233	
Rate Difference	.0000233	
Times Claimed G&A base - Schedule E	x $3,151,322	
Rounding Difference		73
G&A applicable to overhead not claimed:		
Overhead not claimed - Schedule B	$32,912	
Less: Unclaimed overhead transferred to G&A		
IR&D unclaimed overhead - Schedule A	(715)	
B&P unclaimed overhead - Schedule A	(477)	
Net unclaimed overhead in G&A base	$31,720	
Times claimed G&A rate	x .0858	
G&A applicable to unclaimed overhead		2,723
Claimed G&A pool - Schedule A		$270,457

NOTE: This reconciliation is presented for information only and is not required to be submitted with the claim.

SCHEDULE H

CONTRACT DIRECT COSTS CLAIMED AND NOT CLAIMED
IR&D/B&p DIRECT COSTS INCURRED
OVERHEAD, G&A, AND COST OF MONEY
APPLIED AT CLIAMED RATES
FISCAL YEAR ENDED 3/31/90

Job Order No.	Contract No.	Labor	Travel	Material	Other	Sub-	Total	Overhead	Dir. Cost	G&A	Total Costs	Cost	of	Money	Grand Total
	Cost Type (Note 3):														
1201	NN00039-88-C-0873														
	Claimed	$122,113	$5,231	$115,068	$43,630	$87,912	$373,954	$94,930	$468,884	$40,230	$509,114	$3,171	$525	$3,696	$512,810
	Not Claimed (Note I)		1,687		3,183		4,870		4,870	418	5,288		5	5	5,293
1203	N00040-88-C-0874	16,387	836	312	1,212	15,341	34,088	12,739	48,827	4,018	50,845	426	52	478	51,323
1204	N00050-88-C-0875	8,973	87	9,687	632	7,888	27,267	6,975	34,242	2,938	37,180	(Note 2)	(Note 2)	(Note 2)	37,180
	Total Cost Type	131,086	5,318	124,755	44,262	95,800	401,221	101,905	503,126	43,168	546,294	3,597	577	4,174	564,133
Flexibly Priced (Note 3)															
1205	NN00060-88-c-0913	$210,312	$8,932	$38,643	$59,613	$89,732	$407,232	$163,496	$570,728	$49,968	$619,696	$5,462	$639	$4,101	$625,797
Var T&M/Firm Fixed Price Work		$110,912	$6,312	$18,974	$12,914	$147,318	$296,430	$86,223	$382,653	$32,832	$415,485	$2,880	$429	$3,309	$418,794
Var Commerical Work		$164,315	$11,478	$660,297	$50,921	$596,650	$1,483,661	$127,737	$1,611,398	$138,258	$1,749,656	$	$	$	$1,749,656
Total Contracts Costs		$633,012	$344,563	$842,981	$172,105	$944,841	$2,627,502	$492,100	$3,119,602	$267,662	$3,387,264	$11,939	$1,650	$13,589	$3,400,853
		(Sch H-1)							(Sch H-1)	(Sch H-2)					
IR&D		$14,287	$366	$126	$9,232		$24,011	$11,107	$35,118						
B&P		9,525	244	85	6,156		16,000	7,405	23,415						
Total IR&D/B&P		$23,812	$610	$211	$15,388		$40,021	$18,512	$58,533						
	GRAND TOTAL	$656,824	$35,173	$843,192	$944,841	$2,667,523	$510,612								
Explanatory Note							(Sch. B)								

(1) Direct costs not claimed are explained in Schedule C.

(2) Cost of money is not applicable to this contract by terms of the contract.

(3) Cost and flexibly priced contracts should be sorted and subtotaled by Federal Agency if your perform work for both DoD and other nonÐDoD (civilian) agencies.

SCHEDULE J

COMPUTATION OF ALLOWABLE IR&D/B&P COSTS
REQUIRED BY FAR 31.205-18(c)(2)
FISCAL YEAR ENDED 3/31/90

		IR&D Costs		B&P Costs	
	Sales (1)	Incurred (2)	Ratio	Incurred (3)	Ratio
	$	$	%	$	%
1987	2,500,000	26,250	1.05%	11,250	0.45%
1988	2,750,000	35,500	1.29%	19,500	0.71%
1989	3,200,000	29,100	0.91%	12,500	0.39%
1990	c 3,611,922	a 35,118		a 23,415	
Historical Ratio d *			1.17%		0.58%
Average Annual Cost *		$32,300		$16,000	
Parameters -					
120% of Average		38,760		19,200	
80% of Average		25,840		12,800	
Product (c x d)		42,259		20,949	
Ceiling					
Calculated (3)		38,760		19,200	
Permitted Interchange (4)		(3,642)		3,642	
Total		b...$35,118		b $22,842	
Amount Questioned (a - b)		0		$ 573	

* Based on the two highest of the preceding three years.

(1) The FAR provides that a basis other than total sales may be used for this formula calculation if another basis is acceptable to the contracting officer. Your rationale for requesting approval of an alternative basis should be submitted in advance to the contracting officer, with a copy to the auditor.

(2) The IR&D and B&P costs incurred for the preceding three-year period are the amounts determined as otherwise allowable before the determination of ceiling limitations resulting from application of the formula in prior years.

(3) If the product is less than 80% of the average annual cost, the calculating ceiling would be 80% of the average annual cost.

If the product is less than 120% of the average annual cost, the product is then the calculated ceiling.

If the product exceeds 120% of the average annual cost, the calculated ceiling would be 120% of the average annual cost.

(4) If the current year incurred IR&D and B&P cost is less than the calculated ceiling, the contractor would be permitted to interchange the excess from one to the other.

NOTE: If you do not yet have the three years of history necessary to prepare this calculation, and there has been no advance agreement negotiated by the contracting officer, allowability will be based on the reasonableness criteria of FAR 31.201-3.

SUMMARY OF HOURS AND AMOUNTS ON T&M/LABOR HOUR
CONTRACT FOR FISCAL YEAR ENDED 3/31/90
Contract No. N00022-0111

Contract Labor		Task 01			Task 02			Task 01	
Category	**Rate ***	**Hours**	**Amount**	**Rate ***	**Hours**	**Amount**	**Rate**	**Hours**	**Amount**
Program Manager	$25.00	100	$2,500.00	$25.00	50	$1,250.00	$22.50	100	$2,250.00
Senior Engineer	$20.00	100	$2,000.00	$17.50	100	$1,750.00	$17.50	100	$1,750.00
Engineer	$15.00	200	$3,000.00	$12.50	100	$1,250.00	$16.00	50	$800.00
Analyst	$12.50	100	$2,150.00	$12.50			$10.00	20	$200.00
Technical Typist	$7.00	50	$350.00	$7.00	100	$700.00			
TOTAL		550	$9,100.00		350	$4,950.00		270	$5,000.00
Other Direct Costs**			$1,000.00			$500.00			$750.00
Travel**			$500.00			$500.00			$250.00
TOTAL			$10,600.00			$5,950.00			$6,000.00
Task Ceiling			$25,000.00			$12,500.00			$7,500.00
* Represents rates specified in the contract which may be higher or lower than actual rates paid.									
** Represents actual costs recorded in the cost records.									

SCHEDULE L

RECONCILIATION OF TOTAL PAYROLL
TO TOTAL LABOR DISTRIBUTED
FISCAL YEAR ENDED 3/31/90

Account	Expenses Per General Ledger
Direct Labor	$656,824
G&A Wages	90,007
G&A Holiday Wages	2,322
G&A Vacation Wages	5,812
G&A Sick Leave	987
G&A Personal Absence	1,082
Overhead Wages	33,060
Overhead Holiday Wages	20,181
Overhead Vacation	25,440
Overhead Sick Leave	14,318
Occupancy Wages	23,280
Overtime Premium (Included in ODC's)	270
TOTAL DISTRIBUTION	$873,583
1st Quarter	$220,375
2nd Quarter	220,132
3rd Quarter	229,101
4th Quarter	212,061
+ Prior Year Accrual	15,128
- Current Year Accrual	23,214
TOTAL	$873,583

SCHEDULE M

LISTING OF DECISIONS/AGREEMENTS, OR
APPROVALS AFFECTING DIRECT/INDIRECT COST
AND DESCRIPTION OF ACCOUNTING OR ORGANIZATION CHANGES
FISCAL YEAR ENDED 3/31/90

A. Decisions/Agreements or Approvals.

1. Severance Pay. (Schedule B) Reference ACO letter of 30 July 1989 regarding Severance Pay and Relocation Expenses of terminated employees.

2. Pension Plan. (Schedules A & B) Reference ACO memorandum of negotiations (1988 - Overhead) of 10 August 1989 which sets forth pension plan rates, vacation approvals, and certain other matters.

3. B&P Ceiling. Included in 2 above.

4. Billing Rates. ACO letter of 3 March 1989 setting forth approved billing rates for FY 1990.

5. Salary Approval. See ACO letter of 19 June 1989 approving salaries of top management.

6. Ceiling Rates. Contract N00039-88-C-0873 provides for a ceiling on overhead and G&A rates of 80% and 10%, respectively. Our claimed rates for FY 1990 are less that the ceiling rates.

B. Accounting or Organization Changes.

1. During the period of January 1990, a redirection of contract N00060-88-C-0914 occurred. The PCO directed us to stretch this program into the future. This action necessitated a significant reduction in our staff. From a total of 25 full-time employees on 1 January 1990, the staff was reduced to a total of 13 full-time employees by 30 May 1990.

2. Effective 1 April 1989, we deleted our secondary overhead pool for fringe benefits expenses. We elected to charge the fringe benefits expenses directly to benefiting overhead pool. This change was made so that we could be more precise in our fringe costs related to the wages and salaries of each pool. All the fringe costs of direct personnel are charged to the overhead expense - Schedule B. We have made a study for the year under audit that reflects that there is no adverse cost impact on government contracts. That study is available for your review.

3. Other than 1 and 2 above, we have no other major accounting or organizational changes during the period. However, we are currently considering adding a material handling pool effective 1 April 1990. Our material and subcontract effort has increased significantly during the last year and we feel that a pool of this nature is appropriate. DCAA will be kept advised of our status and we will discuss this matter with you during the audit of this claim.

APPENDIX D.3

SCHEDULE N

INDIRECT COSTS CERTIFICATION

252.242-7003 Certification of Indirect Costs.

As prescribed in 242.770-1, insert the following clause.

Certification of Indirect Costs (April 1986)

(a) The Contractor shall certify any proposal to establish or modify billing rates or to establish final indirect cost rates in the form set forth in paragraph (b) of this clause. The certificate shall be signed on behalf of the Contractor by an individual of the Contractor's organization at a level no lower than a vice president or chief financial officer of the business segment of the Contractor that submits the proposal. The Contractor understands that if the Contractor fails to submit a certificate as required herein, payments on account of indirect cost shall be at rates unilaterally established by the government.

(b) Certificate of Indirect Costs. The certificate of indirect costs shall read as follows:

Certificate of indirect costs.

This to certify that to the best of my knowledge and belief:

1. I have reviewed the indirect cost proposal submitted herewith;

2. All costs included in the proposal (date and identification of proposal) to establish billing or final indirect cost rates for (identify period covered by rate) are allowable in accordance with the requirements of contracts to which they apply and with the cost principles of the Department of Defense applicable to those contracts;

3. This proposal does not include any costs which are unallowable under applicable cost principles of the Department of Defense, such as (without limitation) advertising and public relations costs, contributions and donations, entertainment costs, fines and penalties, lobbying costs, defense of fraud proceedings, and good will; and

4. All costs included in this proposal are properly allocable to Defense contracts on the basis of a beneficial or causal relationship between the expenses incurred and the contracts to which they are allocated in accordance with applicable acquisition regulations.

I declare under penalty of perjury that the foregoing is true and correct.

Firm: _____

Signature: _____

Name of Corporate Official: _____

Title: _____

Date of Execution: _____

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

NONDISCRIMINATION IN FEDERALLY ASSISTED PROGRAMS

OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-4.3, Paperwork Reduction Project (1910-0400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-0400), Washington, DC 20503.

_____ (Hereinafter called the "Applicant")
HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L.90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385) and Title 10, Code of Federal Regulations, Part 1040. In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or disability, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws and regulations cited above. To this end, the subrecipient shall be required to sign a written assurance form; however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and disability; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and disability in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Civil Rights, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereof, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and

agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person(s) whose signatures appear below and who are authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant certifies that it has complied, or that, within 90 days of the date of the grant, it will comply with all applicable requirements, of 10 C.F.R. 1040.5 (a copy will be furnished to the Applicant upon written request to DOE).

DESIGNATED RESPONSIBLE EMPLOYEE

Name and Title (Printed or Typed)	Telephone Number
Signature	Date

Applicant's Name	Telephone Number
Address	Date

Authorized Official:
President, Chief Executive Officer
or Authorized Designee

Name and Title (Printed or Typed)	Telephone Number
Signature	Date

APPENDIX F

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 10 CFR Part 601, "New Restrictions on Lobbying," and 10 CFR Part 1036, "Government-wide Debarment and Suspension (Non-procurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery. falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub.L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statue occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a),(b),(c),(d),(e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance: (Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER and/or PROJECT NAME
PRINTED NAME and TITLE OF AUTHORIZED REPRESENTATIVE	
SIGNATURE and DATE	

Appendix G.1

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure.)

1. Type of Federal Action: ☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** ☐ a. bid/offer/application b. initial award c. post-award	**3. Report Type:** ☐ a. initial filing b. material change For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier ___, *if known.* Congressional District, *if known:*	**5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:** Congressional District, *if known:*	
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*:	
8. Federal Action Number, *if known:*	**9. Award Amount, if known:** $	
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*	
Items 11 through 15 are deleted.		
16 Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature:** **Print Name:** _____ **Title:** _____ **Telephone No.:** _____ **Date:** _____	
Federal Use Only:	Authorized for Local Reproduction Standard Form - LLL	

APPENDIX G.2

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or sub-award recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Sub-awards include but are not limited to subcontracts, sub-grants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award loan commitment for the prime entity identified in item 4 or 5.

10.(a) Enter the full name, address, city, state and zip code of the registrant under the Lobbying Disclosure Act of 1995 identified in item 4 to influence the covered Federal action.

10.(b) Enter the full name of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

(Items 11 through 15 were removed from the form.)

16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Information Resources Management Policy, Plans and Oversight, HR-4.3, Paperwork Reduction Project (1910-1400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and the office of Management and Budget (OMB), Paperwork Reduction Project (0348-0046), Washington, DC 20503.

APPENDIX G.3

SIMPSON-CRAIG AMENDMENT REPRESENTATION

Check the appropriate block:

The applicant represents that it is an organization described in Section 501(c)(4) of the Internal Revenue Code of 1986 which, after December 31, 1995, has ☐ has not ☐ engaged in any lobbying activities as defined in the Lobbying Disclosure Act of 1995.

Applicant: _____

Title: _____

Signature and Date: _____

FINANCIAL ASSISTANCE PRE-AWARD INFORMATION SHEET

Awardee:_____

Award No.:_____ Amendment No.:_____

A. INTELLECTUAL PROPERTY

A.1. RIGHTS IN PROPOSAL DATA

For an award based on a proposal, it is DOE policy that, in consideration of the award, the Government shall obtain unlimited rights in the technical data contained in the proposal unless the awardee marks those portions of the technical information which he asserts as "proprietary data" or specifies those portions of such technical data which are not directly related to or will not be utilized in the work to be funded under the award.

	YES	NO
Will restrictions be placed on Government rights in the proposal technical data?	( )	( )

If yes, identify the page number(s) of the proposal which contain technical data that is proprietary or is not directly related to or will not be utilized in the work to be funded under the award:

_____

_____

_____

A.2. IDENTIFICATION OF TECHNICAL DATA WHICH IS PROPRIETARY (LIMITED RIGHTS DATA AND RESTRICTED COMPUTER SOFTWARE)

The Rights in Technical Data clause proposed to be used for this award may not permit the utilization of proprietary data in the award work or, if the use of proprietary data is permitted, may not be adequate to meet programmatic requirements. Use of data that is proprietary may prevent you from meeting the data requirements of the award (including delivery of data). Your attention is particularly drawn to the use of LICENSED COMPUTER SOFTWARE.

	YES	NO
Will limited rights data or restricted computer software is utilized in the award work?	( )	( )

If yes, identify the limited rights data or restricted computer software that will be utilized in the award work:

_____

_____

_____

_____

		YES	NO
A.3	Do you intend to request an advance waiver of patent rights?	( )	( )

B. HUMAN RESEARCH

		YES	NO
B.1.	Does the research work involve the use of human subjects as defined in 10 CFR Part 745 and the most current DOE directive regarding research involving human subjects?	( )	( )

If yes, indicate the name, title, and telephone number of a point of contact(s) who can provide detailed information concerning this human subjects research project:

Name: _____

Title: _____

Telephone No.: _____

B.2.	Will the research work involving human subjects involve more than one institution?	( )	( )
	If yes, the participating institutions have obtained DOE or DHHS approval to enter into a joint review arrangement, rely upon the review of another qualified IRB, or make similar arrangements for avoiding duplication of effort pursuant to 10 CFR Part 745.114.	( )	( )

B.3 If an affirmative response was provided to B.1, complete one of the following as applicable:

☐ The involvement of human subjects in the research activities will be in one or more of the exempt categories as described in 10 CFR Part 745.101(b). Provide a description and identify the exemption(s) by regulatory citation(s) below:_____
_____
_____

OR

☐ The applicability of the provisions of the human subjects research policy described in 10 CFR Part 745.101 has been waived by the U.S. Department of Energy for the proposed research activities pursuant to 10 CFR Part 745.101(i).

OR

☐ CERTIFICATION REQUIRED BY 10 CFR PART 745.103(B)

The research involving human subjects has been reviewed and approved by an Institutional Review Board (IRB) on (insert date)_____, as provided for in the current written ☐ Single ☐ Multiple Project Assurance No._____ previously approved by ☐ DOE ☐ DHHS, and will be subject to continuing review by the IRB no less than once per year.

OR

☐ The research involving human subjects has not been reviewed by an IRB. The applicant fully understands that under no condition shall research covered by the policy codified at 10 CFR Part 745.103 be supported prior to receipt of the certification that the research has been reviewed and approved by the IRB.

C. TYPE OF BUSINESS

The Awardee is a:

☐State Government ☐Local Government ☐Indian Tribal Government

☐Institution of Higher Education ☐Hospital ☐Individual ☐Joint Venture

☐For Profit Organization, specify: ☐Corporation ☐Partnership ☐Sole Proprietorship

☐Small Business ☐Disadvantaged Business ☐Woman-Owned Business ☐8(a)

☐Other Nonprofit Organization ☐Other, specify: _____

D. SIMPSON-CRAIG AMENDMENT REPRESENTATION

	☐YES	NO
Is the applicant an organization described in section 501(c)(4) of the Internal Revenue Code of 1986?	( )	( )

If yes, complete the following representation:

The applicant represents that it is an organization described in section 501(c)(4) of the Internal Revenue Code of 1986 which, after December 31, 1995, ☐has ☐has not engaged in lobbying activities as defined in the Lobbying Disclosure Act of 1995.

E. SOCIAL SECURITY NUMBER (SSN)

If the Awardee does not have an Internal Revenue Service (IRS) assigned Employer Identification Number (EIN), awardee SSN is _____.

F. CONGRESSIONAL DISTRICT AND COUNTY

For the principal place of performance, the Congressional District is _____
and the county is _____.

G. PAYMENT INFORMATION (FOR NEW AWARDEES ONLY)

Financial Institution Name _____

Address _____

Depositor Account Number _____

NOTE: Please completes SF 3881 entitled ACH VENDOR/Miscellaneous Payment-Enrollment Form.

_____
Organization Name

_____ _____
Signature Date

_____
Typed Name of Authorized Representative

_____
Typed Title of Authorized Representative

APPENDIX I

Solicitation No.: DE-SC02-01EE50657
Company Name:_____ To be completed by Applicant company
Address: _____ and proposed subcontractors with
_____ estimated costs of over $100,000.00
_____
_____
Project Total Est. Cost: $_____
Project Title: _____

EPACT REPRESENTATION FOR AWARDS $100,000 AND OVER

Section 2306 of the Energy Policy Act of 1992, Pub.L. 102-486 established eligibility requirements for companies to participate in certain financial assistance programs covered under Titles XX through XXIII of the EPAct. For this purpose, "company" means any business entity other than an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 [26 U.S.C. Section 501(c)(3)].

In order for the Department of Energy (DOE) to make an award to a company under a covered program, DOE must determine that the company's participation will be in the economic interest of the United States and, if the company is not a United States-owned company, that the parent company is incorporated in a foreign country that: affords national treatment to United States-owned companies with regard to access to Government-supported joint ventures in energy research and development; affords national treatment to United States-owned companies with regard to general investment opportunities; and affords protection to intellectual property rights owned by United States-owned companies. To assist DOE in making these determinations, the applicant must answer the following questions and make the representation provided therein. In the event the information submitted is inadequate for DOE to make a determination, DOE will request such additional information as may be required.

Company Ownership Information:
(include this information for each participant in a joint venture)

		YES	NO
1.	Is your company a United States-owned company? (U.S. owned company means (1) a company that has majority ownership by individuals who are citizens of the United States, or (2) a company organized under the laws of a State that either has no parent company or has a parent company organized under the laws of a State.)	☐	☐
2.	If no, identify the place in which the parent company is incorporated or organized.	_____	

Economic Interest Information:

1.	Will this project result in investments in the U.S. in research and development?	☐	☐
	If the answer is yes, what percentage of the total estimated cost of the project will be expended in the U.S.? (Contractor and supplier costs are to be included in total estimated costs.) Also, express in terms of dollars. _____		

		NO	YES
2.	Will this project result in investments in U.S. in manufacturing? If the answer is yes, what percentage of the total estimated cost of the project including contractor and supplier costs will be expended in U.S. manufacturing? Also, express in terms of dollars.	☐	☐
3.	Will this project contribute to U.S. employment? If the answer is yes, briefly describe how.	☐	☐
4.	Does, the Applicant agree that it will promote the manufacture within the U.S. of products resulting from any resultant technology and competitively procure parts and materials? Briefly describe plans, if any, for any manufacturing of products arising from the program supported research and development, including the location where such manufacturing is expected to occur. If your answer is no, please explain.	☐	☐
5.	What other benefits to the U.S. will result from this project?	☐	☐

To the best of its current knowledge and belief, the applicant represents that the information provided is current, accurate, and complete and will advise DOE of any changes prior to award.

Applicant _____ Signature _____

Title _____ Date _____

EPACT REPRESENTATION FOR AWARDS UNDER $100,000

Check one blocks and complete as applicable.

☐ _____ (Hereinafter called the "Applicant") represents that it is a United States-owned company. (A company that has majority ownership by individuals who is citizens of the United States or a company organized under the laws of a State that either has no parent company or has a parent company organized under the laws of a State.)

☐ _____ (Hereinafter called the "Applicant") represents that it or its parent company is incorporated or organized in the following country:_____.

The applicant hereby agrees to comply with Section 2306 of the Energy Policy Act (Pub. L. 102-486). In accordance with the above law, the applicant represents that its participation in this financial assistance program would be in the economic interest of the United States based upon its investments in the United States in research, development, and manufacturing, and its contributions to employment in the United States. The applicant agrees with respect to any technology arising from this financial assistance to promote the manufacture of products within the United States and to procure parts and materials from competitive suppliers.

Applicant _____ Signature _____

Title _____ Date _____

APPENDIX J
CH NEPA TRACKING NUMBER: _____

CHICAGO OPERATIONS OFFICE
NATIONAL ENVIRONMENTAL POLICY ACT
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

Organization's Name:_____

Title Of Proposed Research:_____

Topic Number:_____ Subtopic Number:_____

Funding Source: (EE) Office of Advanced Automotive Technology (OAAT)

Contractor Project Manager:_____ Signature:_____

Phone Number: _____ Date:_____

Contractor NEPA Reviewer:_____ Signature:_____

Phone Number: _____ Date:_____

For information on filling out this sheet call: 630-252-2101 (W. S. White)

I. **Description of Proposed Research:**

II. **Description of Affected Environment:**

III. **Potential Environmental Effects:**

NOTE: Attach explanation for each "yes" response. Additional information is important and could be significant in the decision making process.)

A. Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?

		Yes/No
1.	Threatened/Endangered Species and/or Critical Habitats	__ __
2.	Other Protected Species (e.g. Burros, Migratory	__ __
3.	Wetlands	__ __
4.	Archaeological/Historic Resources	__ __
5.	Prime, Unique or Important Farmland	__ __
6.	Non-Attainment Areas	__ __
7.	Class I Air Quality Control Region	__ __
8.	Special Sources of Groundwater (e.g. Sole Source Aquifer)	__ __
9.	Navigable Air Space	__ __
10.	Coastal Zones	__ __
11.	Areas w/Special National Designation (e.g. National Forests, Parks, Trails)	__ __
12.	Floodplain	__ __

B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated substances or activities?

		Yes/No
13.	Clearing or Excavation (indicate if greater than 5 acres)	__ __
14.	Dredge or Fill (under Clean Water Action indicate if greater than 10 acres)	__ __
15.	Noise (in excess of regulations)	__ __
16.	Asbestos Removal	__ __
17.	PCBs	__ __
18.	Import, Manufacture or Processing of Toxicces	__ __
19.	Chemical Storage/Use	__ __
20.	Pesticide Use	__ __
21.	Hazardous, Toxic, or Criteria PollutantAirs	__ __
22.	Liquid Effluent	__ __
23.	Underground Injection	__ __
24.	Hazardous Waste	__ __
25.	Underground Storage Tanks	__ __
26.	Radioactive (AEA) Mixed Waste	__ __
27.	Radioactive Waste	__ __
28.	Radiation Exposures	__ __

C. Other Relevant Disclosures. Will the proposed action involve the following?

				Yes/No
29.	A threatened violation of ES&H gulations/permit requirements			__ __
30.	Siting/Construction/Major Modification of Waste Recovery, or TSD Facilities			__ __
31.	Disturbance of Pre-existing Contamination			__ __
32.	New or Modified Federal/State Permits			__ __
33.	Public controversy (e.g. Environmental Justice Executive Order 12898 consideration and other related public issues)			__ __
34.	Action/involvement of Another Federal Agency (e.g. license, funding, approval)			__ __
35.	Action of a State Agency in a State with NEPAaw. (Does the State Environmental Quality Review)			__ __
36.	Public Utilities/Services			__ __
37.	Depletion of a Non-Renewable Resource		__ __	
38.	Is the proposed work bench-top research	.....	__ __	
39.	Will the proposed work be preformed in an existing laboratory setting	.....	__ __	
40.	Is the proposed work a paper study rather than laboratory bench-top research	.....		__ __

(If you have answered yes to any question above, attach an explanation why "yes" was checked)

NOTE: Do not complete any information below. This information will be completed at the Chicago Operation Office

IV. **Section D Determination:** Is the project/activity appropriate for a determination by the OM under Subpart D of the DOE NEPA Reg for compliance with NEPA?

Yes

A. **DOE-CH NEPA Coordinator Review:**

Indicate the recommendation and specific class of action from Appendix A-D to Subpart D (10 CFR 1021):

CX

Category:

DOE-CH ACQ Review:

Signature :_____ Date:_____

B. DOE CH NEPA Coordinator Review:

Concurrence with Proposed Class of Action Recommended

Category:

DOE CH NEPA Reviewer: _____

Signature:_____ Date:_____

Signature:_____ Date_____

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR
Part 1021.400 that establishes an action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for the Categorical Exclusion referenced above. Therefore by my signature below, I have determined that the proposed action may be categ excluded
from further NEPA review and documentation.

DOE CH NCO Reviewer: W. Sedgefield White
Phone No.: 630-252-2101

Signature: _____ Date: _____

APPENDIX K

CHECKLIST

Applicant: _____

Topic: _____

Subtopic: _____

Please complete the checklist and paper clip (one copy only) to the cover sheet of the original (signed) copy of the assistance application.

DOES THE APPLICATION SATISFY THE FOLLOWING REQUIREMENTS:

		Yes	No
√	One, and only one, topic from the Appendix A identified on the Face Page.	€	
√	Both endorsements on face page completed and signed.		
√	Indirect costs for subcontracts, by the proposing company, do not exceed 5%		
√	Statement of Work Page contains no proprietary information.		
√	Main text (technical content) is included as requested in Subsection 4.4.2.		
√	No pages other than 8 1/2" x 11".		
√	No type smaller than (1) 12 points for proportionally spaced fonts and (2) 12 characters per inch (elite) for non-proportionally spaced fonts (except as legends) on reduced drawings, but not tables).		
√	All Certifications are completed, and signed by an authorized representative of the applicant's company.		

APPENDIX L

PRE-APPLICATION INFORMATION

DE-SC02-01EE50657 for Cooperative Automotive Research for Advanced Technology (CARAT). Please review this announcement and complete the following information. This information is to be received by Ms. Earlette Robinson, Procurement Member, no later than **May 30, 2001**. This pre-application is not to exceed 2 pages. Do not include proprietary or confidential information.

PROJECT TITLE

NAME of PRINCIPAL INVESTIGATOR

IDENTIFY POTENTIAL AUTOMOTIVE INDUSTRY PARTNERS

TOPICAL NUMBER (1-7)

PROJECT SUMMARY

OBJECTIVES

GENERAL APPROACH

APPROXIMATE SCHEDULE

APPROXIMATE COST FOR PHASE I

DELIVERABLE FOR PHASE I

REPRESENTATIVE:_____TITLE:_____

PHONE NUMBER: (___)_____DATE:_____

RETURN TO: Ms. Earlette Robinson
No. DE-SC02-01EE50657
U. S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439
FAX: (630) 252-5045

APPENDIX M

ACH VENDOR/MISCELLANEOUS PAYMENT OMB No. 1510-0056

ENROLLMENT FORM Expiration Date 06/30/93

This form is used for Automated Clearing House (ACH) payments with an addendum record that contains payment - related information processed through the Vendor Express Program. Recipients of these payments should bring this information to the attention of their financial institution when presenting this form for completion.

PRIVACY ACT STATEMENT The following information is provided to comply with the Privacy Act of 1974 (P.L. 93-579). All information collected on this form is required under the provisions of 31 U.S.C. 3322 and 31 CFR 210. This information will be used by the Treasury Department to transmit payment data, by electronic means to vendor's financial institution. Failure to provide the requested information may delay or prevent the receipt of payments through the Automated ClearingHouse Payment System.		
AGENCY INFORMATION		
FEDERAL PROGRAM AGENCY ***U.S. DEPARTMENT OF ENERGY - CHICAGO OPERATIONS OFFICE***		
AGENCY IDENTIFIER: ***DOE2***	AGENCY LOCATION CODE (ALC): ***89-00-0701***	ACH FORMAT: ☒ CCD + ☐ CTX ☐ CTP
ADDRESS: ***FINANCIAL SERVICES GROUP*** ***9800 SOUTH CASS AVENUE, ARGONNE, IL 60439***		
CONTACT PERSON NAME: ***KIMBERLI POWERS***		TELEPHONE NUMBER ***630/252-2344***
ADDITIONAL INFORMATION:		
PAYEE/COMPANY INFORMATION		
NAME		SSN NO. OR TAXPAYER ID NO.
ADDRESS		
CONTACT PERSON NAME		TELEPHONE NUMBER:
FINANCIAL INSTITUTION INFORMATION		
NAME		
ADDRESS		
ACH COORDINATOR NAME:		TELEPHONE NUMBER:
NINE-DIGIT ROUTING TRANSIT NUMBER: ___ ___ ___ ___ ___ ___ ___ ___		
DEPOSITOR ACCOUNT TITLE:		
DEPOSITOR ACCOUNT NUMBER:		LOCKBOX NUMBER:
TYPE OF ACCOUNT: ☐ CHECKING ☐ SAVINGS ☐ LOCKBOX		
SIGNATURE AND TITLE OF AUTHORIZED OFFICIAL: (Could be the same as ACH Coordinator)		TELEPHONE NUMBER:

APPENDIX N

REPRESENTATION REGARDING PROPOSED COST-SHARING

At 10 CFR 600.123, the Federal government prescribes certain criteria that proposed awardee cost-sharing or matching contributions (including cash and third party in-kind contributions), must meet in order for such cost-sharing to be allowable under its financial assistance awards. All cost sharing proposed, under this solicitation must meet each of these requirements, and specifically comply with the items set forth below.

1) Be verifiable from the recipient's records;

2) Not included as contributions for any other federally-assisted project or program;

3) Be necessary and reasonable for proper and efficient accomplishment of project or program objectives;

4) Be allowable under the applicable cost principles;

5) Not paid by the Federal government under another award, except where authorized by Federal statute to be used for cost sharing or matching;

6) Be provided for in the proposed budget;

7) Not include any foregone fee or profit ;

8) Not include any prior costs incurred (i.e., costs to conduct prior research or development, patents, or to develop technical reports under previous research efforts). (Note: item #8 is unique to this solicitation; it is not part of 10 CFR 600.123, specially complies with the criteria set forth above;

I hereby represent that my proposed cost sharing meets all of the requirements of 10 CFR 600.123, and specifically complies with the criteria set forth above:

_____
Name

_____
Organization

_____
Date

REPRESENTATION CONCERNING FINANCIAL MANAGEMENT SYSTEM

The Federal government prescribes certain standards for financial management systems under its financial assistance awards. The degree to which a recipient meets standards for fund control and accountability may impact the method by which the recipient is reimbursed under any resultant award. To receive advance payments , a recipient's financial management system must meet all of the requirements of 10CFR 600.121, and specifically provide for the following:

1) Accurate, current, and complete disclosure of the financial results of each federally-sponsored project or program in accordance with the Department's financial reporting requirements;

2) Records that identify adequately the source and application of funds for federally-sponsored activities;

3) Effective control over and accountability for all funds, property, and other assets;

4) Comparison of outlays with budget amounts for each award;

5) Written procedures to minimize the time elapsing between the transfer of funds to the recipient from the U.S. Treasury and the issuance or redemption of checks, warrants, or payments by other means for program purposes by the recipient;

6) Written procedures for determining the reasonableness, allocability, and allowability of costs in accordance with the provisions of the applicable Federal cost principles and the terms and conditions of the award; and

7) Accounting records, including cost accounting records that are supported by source documentation.

I hereby represent that my financial management system does / does not **(circle one)** meet all of the standards for financial management systems set forth above:

_____
Name

_____
Organization

_____

Date

SAMPLE

COOPERATIVE

AGREEMENT

Solicitation No. DE-SC02-01EE50657
CARAT Program

DOE F 4600.1 (3-85)

U.S. DEPARTMENT OF ENERGY
NOTICE OF FINANCIAL ASSISTANCE AWARD

Under the authority of Public Law 95-91 Department of Energy Organization Act and subject to legislation, regulations and policies applicable to (cite legislative program title): OFFICE OF ADVANCED AUTOMOTIVE TECHNOLOGIES (OAAT)

PROJECT TITLE XXX	2. INSTRUMENT TYPE ☐ GRANT ☒ COOPERATIVE AGREEMENT
RECIPIENT (Name, address, zip code, area code and telephone No.) XXX ( )	4. INSTRUMENT NO. DE-FG02-01EEXXXXX From: To: 5. AMENDMENT NO. A000 From: To:
RECIPIENT PROJECT DIRECTOR (Name and telephone No.) XXX ( )	☐ REVISION ☐ SUPPLEMENT ☐ OTHER
RECIPIENT BUSINESS OFFICER (Name and telephone No.) XXX ( )	12. ADMINISTERED FOR DOE BY: (Name, address, zip code, telephone No.) XXX, Contract Specialist U.S. Department of Energy, Chicago Operations Office 9800 South Cass Avenue Argonne, Illinois 60439 (630) 252-
. DOE PROJECT OFFICER (Name and telephone No.) XXX ( )	

. RECIPIENT TYPE

☐ State Gov't ☐ Indian Tribal Gov't ☐ Hospital ☐ For Profit Organization ☐ Individual

☐ Local Gov't ☐ Institute of Higher Education ☐ Other Nonprofit Organization ☐ C ☐ P ☐ SP ☐ OTHER (Specify) _____

. ACCOUNTING AND APPROPRIATION DATA

Appropriation Symbol	b. B&R Number	c. FT/AFP/OC	d. CFA Number	15. EMPLOYER I.D. NO./SSN
XXX	XXX	XXX	N/A	XXX

. BUDGET AND FUNDING INFORMATION

a. Current Budget Period Information		b. Cumulative DOE Obligations	
) DOE Funds Obligated This Action	$ .00	(1) This Budget Period [Total of lines a.(1) and a.(3)]	$ .00
) DOE Funds Authorized for Carry Over	$ .00		
) DOE Funds Previously Obligated in This Budget Period	$ .00	(2) Prior Budget Periods	$ .00
) DOE Share of Total Approved Budget	$ .00		
) Recipient Share of Total Approved Budget	$ .00	(3) Project Period to Date [Total of lines b.(1) and b.(2)]	$ .00
) Total Approved Budget	$ .00		

. TOTAL ESTIMATED COST OF PROJECT $ N/A

(This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount).

. AWARD/AGREEMENT TERMS AND CONDITIONS

iis award/agreement consists of this form plus the following:

a. Special terms and conditions (if grant) or schedule, general provisions, special provisions (if cooperative agreement)

b. Applicable program regulations (specify) ___N/A_____ (Date) _____

c. DOE Assistance Regulations, 10 CFR Part 600, as amended, Subparts A and ☒ B (Grants and Cooperative Agreements) or ☐ C (State and Local Governments)

d. Application/proposal dated __XXX_____, ☐ as submitted ☐ with changes as negotiated

. REMARKS

See Page No. 2 of this Notice of Financial Assistance Award

. EVIDENCE OF RECIPIENT ACCEPTANCE (Signature of Authorized Recipient Official) (Date) (Name) (Title)	21. AWARDED BY (Signature of Authorized Recipient Official) (Date) (Name) (Title)

19. REMARKS (continued)

1. The following terms and conditions, attached hereto, are made a part hereof:

   a. Budget Page - DOE F 4620.1, which sets forth the approved budget for the budget and project period;

   b. Statement of Work;

   c. Special Terms and Conditions for Research Financial Assistance Awards, coded SPRG-0201;

   d. Additional Special Provisions;

   e. Federal Assistance Reporting Checklist, dated XX-XX-XX.

   f. Intellectual Property Provisions Research, Development or Demonstration Domestic Small Business and Nonprofit Organizations, coded SBNP-498;

   g. All references to the terms “grant(s)” shall be read as “cooperative agreement”; the term “grantee” shall be read as “participant, recipient or awardee;” the term “sub-grant” shall be read as “sub-awards.

Insert BUDGET PAGE (DOE F 4620.1) here

Insert STATEMENT OF WORK here

Special Terms and Conditions for Financial Assistance Awards

The requirements of this attachment take precedence over all other requirements of this award found in regulations, the general terms and conditions, DOE orders, etc., except requirements of statutory law. Any apparent contradiction of statutory law stated herein should be presumed to be in error until the recipient has sought and received clarification from the Contracting Officer.

1. PAYMENT OFFICE

CR-54/CHO
Accounts Payable Division
U. S. Department of Energy
P.O. Box 500
Germantown, MD 20874-0500

2. FINANCE OFFICE

U. S. Department of Energy
Chicago Operations Office
Financial Services Group
9800 South Cass Avenue
Argonne, Illinois 60439

3. PAYMENT

Payment under this award will be made by:

☐ Advance by Department of Treasury Automated Standard Application for Payments System (ASAP)

The recipient shall request cash only as needed for immediate disbursements, shall report cash disbursements in a timely manner, and shall impose the same standards of timing and amount, including reporting requirements, on secondary recipients.

☐ Advance by Automated Clearing House (ACH)

☐ Reimbursement by ACH

When requesting an advance or reimbursement payment via ACH, the recipient shall submit an original Request for Advance or Reimbursement, SF 270, to the Payment Office specified in Section 1. above, and a copy of the SF 270 to the Contract Specialist specified in Block 12 of the Notice of Financial Assistance Award (DOE F 4600.1). The timing and amount of advance payment requests shall be as close as is administratively feasible to the actual disbursements. Such requests shall not be made in excess of reasonable estimates of cash outlays for a 30-day period.

A completed “Automated Clearing House (ACH) Vendor Miscellaneous Payment Enrollment Form” must be on file with the Finance Office specified in Section 2. above prior to requesting any ACH payment.

4. DECONTAMINATION AND/OR DECOMMISSIONING (D&D) COSTS

Notwithstanding any other provisions of this Agreement, including but not limited to FAR 31.205-31, when applicable, as incorporated by Financial Assistance Rule 600.127(a), the Government shall not be responsible for or have any obligation to the recipient for (i) Decontamination and/or Decommissioning (D&D) of any of the recipient's facilities, or (ii) any costs which may be incurred by the recipient in connection with the D&D of any of its facilities due to the performance of the work under this Agreement, whether said work was performed prior to or subsequent to the effective date of this Agreement.

5. FEDERALLY-OWNED PROPERTY

If you acquire federally-owned property under this award whether fabricated, furnished or purchased with Capital Equipment Funds, then a listing of such property shall be submitted on DOE F 4300.3, Summary Report of DOE-Owned Plant & Capital Equipment, to the Contracting Officer within 45 days after August 31 of each year and within 30 days after the project period ends. The report must separately identify items, which were fabricated, furnished, or purchased with Capital Equipment funds under this award.

Any Capital Equipment funds and the equipment to be purchased, fabricated, or furnished with such funds are indicated on Page No. 2 of the Notice of Financial Assistance Award.

6. NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS - SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

7. NOTICE REGARDING UNALLOWABLE COSTS AND LOBBYING ACTIVITIES

Recipients of financial assistance are cautioned to carefully review the allowable cost and other provisions applicable to expenditures under their particular award instruments. If financial assistance funds are spent for purposes or in amounts inconsistent with the allowable cost or any other provisions governing expenditures in an award instrument, the government may pursue a number of remedies against the recipient, including in appropriate circumstances, recovery of such funds, termination of the award, suspension or debarment of the recipient from future awards, and criminal prosecution for false statements.

Particular care should be taken by the recipient to comply with the provisions prohibiting the expenditure of funds for lobbying and related activities. Financial assistance awards may be used to describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not to encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation

8. REPORTING

Failure to comply with the reporting requirements contained in this award will be considered a material noncompliance with the terms of the award. Noncompliance may result in a withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or of unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

9. APPROPRIATIONS ACT RESTRICTIONS

If the appropriation symbol contained in Block 14.a. of the Notice of Financial Assistance Award for this award is listed below, paragraph 9.a. is applicable to this award, otherwise paragraph 9.b. applies:

89X0213.91	89X0215.91
89X0234.91	89X0235.91

a. Department of Interior and Related Agencies Appropriations Act:

1. Lobbying Restriction (Interior Act)

The awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

2. Compliance With Buy American Act

In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the "Buy American Act"). The recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

b. Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Acts:

Lobbying Restriction (Energy and Water Appropriations)

The awardee agrees that none of the funds obligated on this award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

10. PARTIALLY FUNDED FINANCIAL ASSISTANCE AWARD WITH COST SHARING

This cooperative agreement is partially funded on a cost reimbursement basis without fee or profit. The total estimated cost of the project to be conducted during the current budget period specified in Block 6. of the face page is $_____, of which the estimated cost to DOE is $_____ and the estimated cost to the Recipient is $_____. The Cumulative DOE Obligation for the current budget period is $_____, and, subject to the availability of additional funds, DOE anticipates obligating an additional $_____ hereunder for the current budget period. The Recipient shall not be obligated to continue performance of the project beyond the total of (a) the amount of funds set forth as the Cumulative DOE Obligation specified in Block 16.b. (1) of the face page, (b) the amount, if any, set forth as DOE Funds Authorized for Carry Over in Block 16.a. (2) of the face page; and (c) the amount of the Recipient's current obligation for the current budget period, viz., $_____; provided, however, that, once the Cumulative DOE Obligation has been increased by DOE to $ _____, the Recipient's obligation shall be increased to a total amount of $_____, and the Recipient shall be expected to bring this phase of the project (covered by the current budget period) to its conclusion within the amount of $_____, and there is no commitment by DOE to provide any additional funding to the Recipient. This cooperative agreement is subject to a refund of unexpended funds to DOE."

ADDITIONAL SPECIAL PROVISIONS

TABLE OF CONTENTS

CLAUSE	SUBJECT	PAGE
1.	Cost Share Contributions	1
2.	Indirect Cost Applied to Teaming Partners' Costs	1
3.	Fee	1
4.	Adequate Recognition	1
5.	Statement of Substantial Involvement	2
6.	Technical Direction	2

ADDITIONAL SPECIAL PROVISIONS

1. COST SHARE CONTRIBUTIONS

It is the intention of the Government and the Recipient to share the allowable and allocable costs for performance of the work under this Agreement during the budget/project period beginning_____ and ending_____, on a XX.XX percent (Government) and XX.XX percent (Recipient) basis. As a result, the Government's contribution toward the aforementioned budget/project period shall be $_____, as specified in Block 16.a. (4) of the face page, and the Recipient's contribution shall be $_____, as specified in Block 16.a. (5) of the face page. The cost share percentages specified above shall also apply to any increase in the Total Approved Budget, specified in Block Block No. 16a. (6) of the face page. Notwithstanding any other provision in this Agreement, it is understood by the parties that no additional Federal funding above that specified in Block 16.b. (3) of the face page will be provided under this Agreement notwithstanding the total cost of the project at its completion. The Recipient further understand and agrees that it is liable for its pro rata share of the total allowable and allocable costs incurred for work performed under this Agreement in the event the project is terminated early or is not funded to its completion".

2. INDIRECT COST APPLIED TO TEAMING PARTNERS' COSTS

Notwithstanding applicable cost principals, and allowable and allocable costs for performance of the work under this Agreement, indirect costs charged by the Participant to sub-award(s), subcontract(s), and (Teaming Partners) shall not exceed 15% of the sub-award total costs.

3. FEE

No fee shall be paid to the Recipient or any sub-award for performance under this Agreement.

4. ADEQUATE RECOGNITION

It is agreed that the Participant shall obtain adequate recognition of the United States support for the technology developed under this cooperative agreement in any contracts, licenses, or other agreements which involve the transfer to foreign entities of the fuel cell technology developed in whole or in part at Government expense. The Participant agrees to notify and obtain concurrence from the Assistant Secretary for Energy Efficiency and Renewable Energy or designee in writing of the adequate recognition obtained prior to entering into any such contracts, licenses, or other agreements. The Awardee shall not enter into any such contracts, licenses, or other agreements without the concurrence of the Assistant Secretary for Energy Efficiency and Renewable Energy or designee. The determination of whether to grant such concurrence shall be at the sole discretion of the Assistant Secretary for Energy Efficiency and Renewable Energy or designee and is not subject to litigation under 10 CFR §600.22, Disputes and Appeals. The determination shall be in writing and shall be furnished to the Awardee by the Contracting Officer. Examples of such an adequate recognition could include: (1) a commitment to manufacture in the U.S.A.; (2) a requirement to reimburse the U.S. Government for its R&D costs; and/or (3) a commitment to jointly sponsor the R&D program.

5. STATEMENT OF SUBSTANTIAL INVOLVEMENT

The Department of Energy (Department, DOE) will be substantially involved in all Tasks of the Statement of Work. The Department will collaborate with the participant in evaluating, accepting, and achieving the milestones for research as proposed by the respondent.

The Department will provide technical direction to the overall program, as well as the individual program elements as it is determined to be necessary and appropriate by DOE. The Department will participate during the full duration of the project, and will have continuing rights to conduct ongoing negotiations with the participant regarding the technical direction of the work conducted under this Agreement. The Department staff members will attend meetings and participate in the formation and direction of scope of the key development activities. The DOE Project Officer will participate in the development, review and approval of all proposed statements of work, including subcontractor statements of work, prior to the execution of any subcontract. The Department will review technical progress reports and provide input to these reports as deemed necessary. In addition, the Department will have the right to have National Laboratories or selected private organizations perform independent tests and evaluations of the cooperative agreement's deliverables, thus providing an additional measure of technical progress.

The Department may collaborate with the participant in the allocation of funds budgeted for this Agreement. Further, as work progresses, funding needs may change and depending upon availability of funds, the Department may collaborate with the participant to reallocate funds budgeted between the different programs and projects.

The Department will thus be actively monitoring all phases of the participant's research and development activities, including participation in the participant's reviews of its contractor's activities and review of the contractor's reports to the participant. The Department will actively participate in the participant's process of reviewing and approving each phase of the proposed programs and projects.

The substantial involvement by the Department under this Agreement will remain in effect for the term of the cooperative agreement award unless otherwise amended in writing by the Contracting Officer. Moreover, this statement of substantial involvement by the Department does not increase the Department of Energy's liability under the Agreement award.

6. TECHNICAL DIRECTION

A. The work to be performed by the Participant under this Cooperative Agreement is subject to the surveillance and written Technical Direction of a "DOE Project Officer," identified in block 11 of the face page. The term "Technical Direction" is defined to include, without limitation, the following:

1. Directions to the Participant which redirects the work effort, shifts work emphasis between work areas or tasks, require pursuit of certain lines of inquiry, fill in details or otherwise provide technical guidance to the Participant in order to accomplish the tasks and requirements stated in the Statement of Work as contained in the agreement.

2. Provision of information to the Participant, which assists in the interpretation of drawings, specifications or technical portions of the Statement of Work as contained in the Agreement.

3. Review and, where required by the Cooperative Agreement, approval of technical reports, drawings, specifications or technical information to be delivered by the Participant to DOE under the Cooperative Agreement.

4. The DOE Project Officer shall monitor the Participant's performance with respect to compliance with the requirements of this Cooperative Agreement.

B. Technical direction and management surveillance shall not impose tasks or requirements upon the Participant additional to or different from the tasks and requirements stated in the Statement of Work of this Agreement. The Technical Direction to be valid:

1. Must be issued in writing consistent with the tasks and requirements stated in the Statement of Work of this Agreement; and

2. May not:

   a. constitute an assignment of additional work outside the tasks and requirements stated in the Statement of Work of this Agreement;

   b. in any manner cause an increase or decrease in the total estimated project cost or the time required for project performance;

   c. change any of the expressed terms, conditions or specification of the Cooperative Agreement; or

   d. accept non-conforming work.

C. The Participant shall proceed promptly with the performance of Technical Directions duly issued by the DOE Project Officer in the manner prescribed by paragraph B. above and which are within his authority under the provisions of paragraph A. above; provided, however, that the Participant shall immediately cease the performance of any Technical Direction upon receipt of a written instruction to that effect from the Contracting Officer.

D. If in the opinion of the Participant any Technical Direction issued by the DOE Project Officer is within one of the categories as defined in B.2. (a) through (d) above, the Participant shall not proceed but shall notify the Contracting Officer in writing within five working days after the receipt of any such Technical Direction and shall request the Contracting Officer to rescind such direction or mutually agree to modify the agreement accordingly.

E. The only persons authorized to give Technical Direction to the Participant under this Agreement are the Contracting Officer and any “DOE Project Officer” as listed in Block 11 of the face page. Any action taken by the Participant in response to any direction given by any person other than the Contracting Officer or DOE Project Officer shall not 7 be binding upon the Government.

FEDERAL ASSISTANCE REPORTING CHECKLIST

1. Identification Number: To Be Determined	2. Program/Project Title: To Be Determined
3. Recipient: To Be Determined	

4. Reporting Requirements:	Frequency	No. of Copies	Addressees
PROGRAM/PROJECT MANAGEMENT REPORTING			See below
☐ DOE F 4600.3, "Federal Assistance Milestone Plan"	O, A	1, 1	2, 3
☒ DOE F 4600.3A, "Milestone Log" [1]			
☐ DOE F 4600.4, "Federal Assistance Budget Information"			
☐ DOE F 4600.5, "Federal Assistance Management Summary Report"			
☐ DOE F 4600.6, "Federal Assistance Program/Project Status Report"			
☒ SF-269A, "Financial Status Report" Short Form	Y, F	1	1
TECHNICAL INFORMATION REPORTING			
☐ DOE F 1430.22, Notice of Energy RD&D Project			
☒ Technical Progress Report [1, 2, 3]	Q	1, 1	2, 3
☒ Topical Report [4]	A	1, 1	2, 3
☒ Final Technical Report [4,5]	F	Orig + 1	1, 2

FREQUENCY CODES AND DUE DATES:

A - As Necessary; within 5 calendar days after events.

F - Final; 90 calendar days after the performance of the effort ends.

Q - Quarterly; within 30 days after end of calendar quarter or portion thereof.

O - One time after project starts ; within 30 days after award.

X - Required with proposals or the application or with significant planning changes.

Y - Yearly; 30 days after the end of program year. (Financial Status Reports 90 days).

S - Semiannually; within 30 days after the end of program fiscal half year.

5. Special Instructions:

[1]Report will be sent electronic E-mail only.
[2]For Tasks 1 and 2, the format and content of the Progress Report will be as mutually agreed upon by the awardee and the DOE Project Officer. For Task 3, 4, and 5, the Progress Report will provide project information including, but not limited to, a work breakdown structure, start and end dates, resource amounts and rates, materials, baseline data, task dependencies and other information required to measure the progress of schedule and cost. This additional data shall be provided via electronic media that is formatted for Microsoft Project.
[3]For work under Task 5, this shall include a report to provide information for the demonstration host site under the National Environment Policy Act.
[4]Reports to addressees 2 and 3 will be prepared and sent as a word processor electronic file or other presentation compatible format.
[5]Reports to addressee 1 shall be submitted in hard copy, along with 2 copies of DOE F 241.1, Announcement of U.S. Department of Energy (DOE) Scientific and Technical Information (STI)

Mail Reports to:

Addressee Number 1 (See Block No. 12 of the Notice of Financial Assistance Award).

Send Electronic Report to:

Addressee Number 2	Addressee Number 3
To Be Determined	To Be Determined

6. Prepared by: (Signature and Date)	7. Reviewed by: (Signature and Date)

SPECIAL INSTRUCTIONS FOR TOPICAL AND FINAL REPORTS

Topical and Final Reports shall be prepared in accordance with the following guidelines:

a. The main body of each report shall be prefaced by an informative abstract of no more than 200 words.

b. The following notice shall appear on the inside front cover or on the title page of all technical reports:

"NOTICE

This report was prepared an account of work sponsored by the United State Government. Neither the United States nor the Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, project or process disclosed or represents that issue would not infringe privately-owned rights."

c. The report shall have an introduction which states the objective of the work and provides general information helpful in understanding the report.

d. Mathematical analysis shall include a sitting of fundamental assumptions, boundary conditions, empirical constants and relationships, and a definition of all parameters.

e. Experimental test data shall include a statement of objectives and description of the tests, and the extent to which the objectives were satisfied.

f. The report shall contain a "Conclusions" section that summarizes noteworthy results of the work reported.

g. Topical Reports shall be stand-alone documents, prepared when appropriate to:

(1) report comprehensive statements of the technical results of work performed on a specific task or phase of the Statement of Work.

(2) report details of scientific or technological advances or major breakthroughs.

h. A draft Topical Report and Final Report are to be sent to addressee "B" for review and approval, before issued for distribution.

i. Final copies of the Topical Report(s) and the Final Technical Report must be accompanied by 2 copies of DOE F 241.1, "Announcement of Department of Energy (DOE) Scientific and Technical Information (STI)."

REPORT DISTRIBUTION LIST

CONTRACT NO. DE-FC01-02EE00000	Type of Report	Type of Report	
Addressees:	***Number of Report Copies***		***Special Instructions***
Contracting Officer To Be Determined			`
Program Manager To Be Determined			

ADDRESS LIST

A. Project Manager
U.S. Department of Energy
1000 Independence Ave. S.W.

Washington, D.C. 20585
(NFAA Block No. 11)

B. Contract Specialist
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439
(NFAA Block No. 12)

Intellectual Property Provisions
Research, Development, or Demonstration
Domestic Small Business and Nonprofit Organizations

01.	FAR 52.227-1 Authorization and Consent (JUL 1995), Alternate I
02.	FAR 52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement (AUG 1996) *This clause is not applicable if the award is for less than $100,000.*
03.	FAR 52.227-14 Rights in Data - General, as modified by DEAR 927.409 (Effective Apr 1998) *If this award requires the use or delivery of limited rights data and/or restricted computer software, Alternates II and III are incorporated , unless modified upon recommendation of Patent Counsel.* *<u>In acquisition awards for basic or applied research with educational institutions, paragraph (d)(3) is replaced with Alternate IV, unless software is specified for delivery or other special circumstances exist.</u>*
04.	FAR 52.227-16 Additional Data Requirements (JUN 1987)
05.	FAR 52.227-23 Rights to Proposal Data (Technical) (JUN 1987)
06.	DEAR 952.227-9 Refund of Royalties (MAR 1995)
07.	DEAR 952.227-11 Patent Rights- Retention by Contractor (Short Form) (MAR 1995) Attachment 1 (for reference only): Patent Rights- Acquisition by the Government (MAR 1995); DEAR 952.227-13

01. FAR 52.227-1 Authorization and Consent; Alternate I

AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services,and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold); however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

(End of clause)

02. FAR 52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement

NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for sup- plies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at FAR 2.101.

(End of clause)

03. FAR 52.227-14 Rights in Data - General, as modified by DEAR 927.409 (Effective Apr 1998)

RIGHTS IN DATA - GENERAL (JUN 1987)

(a) Definitions.

(1) *Computer data bases*, as used in this clause, means a collection of data in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

(2) *Computer software*, as used in this clause, means (i) computer programs which are data comprising a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations and (ii) data comprising source code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the computer program to be produced, created, or compiled. The term does not include computer data bases.

(3) *Data*, as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. For the purposes of this clause, the term does not include data incidental to the administration of this contract, such as financial, administrative, cost and pricing, or management information.

(4) *Form, fit, and function data*, as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, as well as data identifying source, size, configuration, mating, and attachment characteristics, functional characteristics, and performance requirements; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

(5) *Limited rights data*, as used in this clause, means data, other than computer software, developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. The Government's rights to use, duplicate, or disclose limited rights data are as set forth in the Limited Rights Notice of subparagraph (g)(2) of this section if included in this clause.

(6) *Restricted computer software*, as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or privileged; or is published copyrighted computer software, including minor modifications of any such computer software. The Government's rights to use, duplicate, or disclose restricted computer software are as set forth in the Restricted Rights Notice of subparagraph (g)(3) of this section if included in this clause.

(7) *Technical data*, as used in this clause, means recorded data, regardless of form or characteristic, that are of a scientific or technical nature. Technical data does not include computer software, but does include manuals and instructional materials and technical data formatted as a computer data base.

(8) *Unlimited rights*, as used in this clause, means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, including by electronic means, and perform publicly and display publicly, in any manner, including by electronic means, and for any purpose whatsoever, and to have or permit others to do so.

(b) <u>Allocation of rights</u>

(1) Except as provided in paragraph (c) below regarding copyright, the Government shall have unlimited rights in:

(i) Data first produced in the performance of this contract;

(ii) Form, fit, and function data delivered under this contract;

(iii) Data delivered under this contract (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair items, components, or processes delivered or furnished for use under this contract; and

(iv) All other data delivered under this contract unless provided otherwise for limited rights data or restricted computer software in accordance with paragraph (g) below.

(2) The Contractor shall have the right to:

(i) Use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, unless provided otherwise in paragraph (d) below;

(ii) Protect from unauthorized disclosure and use those data which are limited rights data or restricted computer software to the extent provided in paragraph (g) below;

(iii) Substantiate use of, add or correct limited rights, restricted rights, or copyright notices and to take other appropriate action, in accordance with paragraphs (e) and (f) below; and

(iv) Establish claim to copyright subsisting in data first produced in the performance of this contract to the extent provided in subparagraph (c)(1) below.

(c) Copyright.

(1) Data first produced in the performance of this contract. Unless provided otherwise in subparagraph (d) below, the Contractor may establish, without prior approval of the Contracting Officer, claim to copyright subsisting in scientific and technical articles based on or containing data first produced in the performance of this contract and published in academic, technical or professional journals, symposia proceedings or similar works. The prior, express written permission of the Contracting Officer is required to establish claim to copyright subsisting in all other data first produced in the performance of this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For data other than computer software the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Contractor grants to the Government and others acting in its behalf, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government.

(2) Data not first produced in the performance of this contract. The Contractor shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract and which contains the copyright notice of 17 U.S.C. 401 and 402, unless the Contractor identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (1) above; provided, however, that if such data are computer software the Government shall acquire a copyright license as set forth in subparagraph (g)(3) below if included in this contract or as otherwise may be provided in a collateral agreement incorporated in or made part of this contract.

(3) Removal of copyright notices. The Government agrees not to remove any copyright notices place on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) Release, publication and use of data.

(1) The Contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided below in this paragraph or expressly set forth in this contract.

(2) The Contractor agrees that to the extent it receives or is given access to data necessary for the performance of this contract which contain restrictive markings, the

Contractor shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(3) The Contractor agrees not to assert copyright in computer software first produced in the performance of this contract without prior written permission of the DOE Patent Counsel assisting the contracting activity. When such permission is granted, the Patent Counsel shall specify appropriate terms, conditions, and submission requirements to assure utilization, dissemination, and commercialization of the data. The Contractor, when requested, shall promptly deliver to Patent Counsel a duly executed and approved instrument fully confirmatory of all rights to which the Government is entitled.

(e) Unauthorized marking of data

(1) Notwithstanding any other provisions of this contract concerning inspection or acceptance, if any data delivered under this contract are marked with the notices specified in subparagraphs (g)(2) or (g)(3) below and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this contract, the Contracting Officer may at any time either return the data to the Contractor, or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer shall make written inquiry to the contractor affording the Contractor 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Contractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will not longer be made subject to any disclosure prohibitions.

(iii) If the Contractor provides written justification to substantiate the propriety of the markings within the period set in subdivision (i) above, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be canceled or ignore. If the Contracting Officer determines that the markings are authorized, the Contractor shall be so notified in writing. If the Contracting Officer determines, with concurrence of the Head of the Contracting Activity, that the markings are not authorized, the Contracting Officer shall furnish the Contractor a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Contractor files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (iii) until final resolution of the matter either by the Contracting Officer's determination becoming final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(2) The time limits in the procedures set forth in subparagraph (1) above may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(3) This paragraph (e) does not apply if this contract is for a major system or for support of a major system by a civilian agency other than NASA and the U.S. Coast Guard subject to the provisions of Title III of the Federal Property and Administrative Services Act of 1949.

(4) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Contractor is not precluded by this paragraph (e) from bringing a claim under the Contract Disputes Act, including pursuant to the Disputes clause of this contract, as applicable, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this contract.

(f) Omitted or incorrect markings

(1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) below, or the copyright notice required by paragraph (c) above, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Contractor may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Contractor's expense, and the Contracting Officer may agree to do so if the Contractor:

(i) Identifies the data to which the omitted notice is to be applied;

(ii) Demonstrates that the omission of the notice was inadvertent;

(iii) Establishes that the use of the proposed notice is authorized; and

(iv) Acknowledges that the Government has no liability with respect to the disclosure, use, or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) The Contracting Officer may also (i) permit correction at the Contractor's expense of incorrect notices if the Contractor identifies the data on which correction of the notice is to be made, and demonstrates that the correct notice is authorized, or (ii) correct any incorrect notices.

(g) Protection of limited rights data and restricted computer software

(1) When data other than that listed in subparagraphs (b)(1)(i), (ii), and (iii) above are specified to be delivered under this contract and qualify as either limited rights data or restricted computer software, if the Contractor desires to continue protection of such data, the Contractor shall withhold such data and not furnish them to the Government under this Contract. As a condition to this withholding, the Contractor shall identify the data being withheld and furnish form, fit, and function data in lieu thereof. Limited rights data that are formatted as a computer data base for delivery to the Government is to be treated as limited rights data and not restricted computer software.

(2) [Reserved.]

(3) [Reserved.]

(h) Subcontracting

The Contractor has the responsibility to obtain from its subcontractors all data and rights therein necessary to fulfill the Contractor's obligations to the Government under this contract. If a subcontractor refuses to accept terms affording the Government such rights, the Contractor shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subcontract award without further authorization.

(i) Relationship to patents

Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government.

(j) The Contractor agrees, except as may be otherwise specified in this contract for specific data items listed as not subject to this paragraph, that the Contracting Officer or an authorized representative may, up to three years after acceptance of all items to be delivered under this contract, inspect at the Contractor's facility any data withheld pursuant to paragraph (g)(1)

above, for purposes of verifying the Contractor's assertion pertaining to the limited rights or restricted rights status of the data or for evaluating work performance. Where the Contractor whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if the inspection where made by a particular representative, the Contracting Officer shall designate an alternate inspector.

(End of clause)

***Alternate II* (Jun 1987)**

(g)(2) Notwithstanding subparagraph (g)(1) of this clause, the contract may identify and specify the delivery of limited rights data, or the Contracting Officer may require by written request the delivery of limited rights data that has been withheld or would otherwise be withholdable. If delivery of such data is so required, the Contractor may affix the following "Limited Rights Notice" to the data and the Government will thereafter treat the data, subject to the provisions of paragraphs (e) and (f) of this clause, in accordance with such Notice:

LIMITED RIGHTS NOTICE (JUN 1987)

(a) These data are submitted with limited rights under Government contract No. (and subcontract No._____, if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Contractor, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government for the following purposes, if any, provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

-[Agencies may list additional purposes as set forth in 27.404(d)(1) or if none, so state]

(b) This Notice shall be marked on any reproduction of these data, in whole or in part.

(End of notice)

***Alternate III* (Jun 1987)**

(g)(3)(i) Notwithstanding subparagraph (g)(1) of this clause, the contract may identify and specify the delivery of restricted computer software, or the Contracting Officer may require by written request the delivery of restricted computer software that has been withheld or would otherwise be withholdable. If delivery of such computer software is so required, the Contractor may affix the following "Restricted Rights Notice" to the computer software and the Government will thereafter treat the computer software, subject to paragraphs (e) and (f) of this clause, in accordance with the Notice:

RESTRICTED RIGHTS NOTICE (JUN 1987)

(a) This computer software is submitted with restricted rights under Government Contract No. _____ (and subcontract_____, if appropriate). It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (b) of this Notice or as otherwise expressly stated in the contract.

(b) This computer software may be:

(1) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;

(2) Used or copied for use in a backup computer if any computer for which it was acquired is inoperative;

(3) Reproduced for safekeeping (archives) or backup purposes;

(4) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating restricted computer software are made subject to the same restricted rights;

(5) Disclosed to and reproduced for use by support service Contractors in accordance with subparagraphs (b)(1) through (4) of this clause, provided the Government makes such disclosure or reproduction subject to these restricted rights; and

(6) Used or copied for use in or transferred to a replacement computer.

(c) Notwithstanding the foregoing, if this computer software is published copyrighted computer software, it is licensed to the Government, without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause.

(d) Any others rights or limitations regarding the use, duplication, or disclosure of this computer software are to be expressly stated in, or incorporated in, the contract.

(e) This Notice shall be marked on any reproduction of this computer software, in whole or in part.

(End of notice)

(ii) Where it is impractical to include the Restricted Rights Notice on restricted computer software, the following short-form Notice may be used in lieu thereof:

RESTRICTED RIGHTS NOTICE SHORT FORM (JUN 1987)

Use, reproduction, or disclosure is subject to restrictions set forth in Contract No. (and subcontract_____, if appropriate) with_____ (name of Contractor and subcontractor)."

(End of notice)

(iii) If restricted computer software is delivered with the copyright notice of 17 U.S.C. 401, it will be presumed to be published copyrighted computer software licensed to the Government without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause, unless the Contractor includes the following statement with such copyright notice: "Unpublished-rights reserved under the Copyright Laws of the United States."

***Alternate IV* (Jun 1987)**

(c) Copyright--(1) Data first produced in the performance of the contract. Except as otherwise specifically provided in this contract, the Contractor may establish claim to copyright subsisting in any data first produced in the performance of this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For data other than computer software, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license for all such data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Contractor grants to the Government and others acting on its behalf, a paid up, nonexclusive, irrevocable worldwide license for all such computer software to reproduce, prepare derivative works, and perform publicly and display publicly, by or on behalf of the Government.

(End of notice)

04. FAR 52.227-16 Additional Data Requirements

ADDITIONAL DATA REQUIREMENTS (JUN 1987)

(a) In addition to the data (as defined in the clause at 52.227-14, Rights in Data-General clause or other equivalent included in this contract) specified elsewhere in this contract to be delivered, the Contracting Officer may, at any time during contract performance or within a period of 3 years after acceptance of all items to be delivered under this contract, order any data first produced or specifically used in the performance of this contract.

(b) The Rights in Data-General clause or other equivalent included in this contract is applicable to all data ordered under this Additional Data Requirements clause. Nothing contained in this clause shall require the Contractor to deliver any data the withholding of which is authorized by the Rights in Data-General or other equivalent clause of this contract, or data which are specifically identified in this contract as not subject to this clause.

(c) When data are to be delivered under this clause, the Contractor will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(d) The Contracting Officer may release the Contractor from the requirements of this clause for specifically identified data items at any time during the 3-year period set forth in paragraph (a) of this clause.

(End of clause)

05. FAR 52.227-23 Rights to Proposal Data

RIGHTS TO PROPOSAL DATA (TECHNICAL)(JUN 1987)

Except for data contained on pages_____, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data--General" clause contained in this contract) in and to the technical data contained in the proposal dated_____, upon which this contract is based.

06. DEAR 952.227-9 Refund of Royalties

REFUND OF ROYALTIES (FEB 1995)

(a) The contract price includes certain amounts for royalties payable by the Contractor or subcontractors or both, which amounts have been reported to the Contracting Officer.

(b) The term "royalties" as used in this clause refers to any costs or charges in the nature of royalties, license fees, patent or license amortization costs, or the like, for the use of or for rights in patents and patent applications in connection with performing this contract or any subcontract hereunder. The term also includes any costs or charges associated with the access to, use of, or other right pertaining to data that is represented to be proprietary and is related to the performance of this contract or the copying of such data or data that is copyrighted.

(c) The Contractor shall furnish to the Contracting Officer, before final payment under this contract, a statement of royalties paid or required to be paid in connection with performing this contract and subcontracts hereunder together with the reasons.
(d) The Contractor will be compensated for royalties reported under paragraph (c) of this clause, only to the extent that such royalties were included in the contract price and are determined by the Contracting Officer to be properly chargeable to the Government and allocable to the contract. To the extent that any royalties that are included in the contract price are not, in fact, paid by the Contractor or are determined by the Contracting Officer not to be properly chargeable to the government and allocable to the contract, the contract price shall be reduced. Repayment or credit to the Government shall be made as the Contracting Officer directs. The approval by DOE of any individual payments or royalties shall not prevent the Government from contesting at any time the enforceability, validity, scope of, or title to, any patent or the proprietary nature of data pursuant to which a royalty or other payment is to be or has been made.

(e) If, at any time within 3 years after final payment under this contract, the Contractor for any reason is relieved in whole or in part from the payment of the royalties included in the final contract price as adjusted pursuant to paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer of that fact and shall reimburse the Government in a corresponding amount.

(f) The substance of this clause, including this paragraph (f), shall be included in any subcontract in which the amount of royalties reported during negotiation of the subcontract exceeds $250.

(End of clause)

07. DEAR 952.227-11 Patent Rights - Retention by the Contractor (short form)

PATENT RIGHTS - RETENTION BY THE CONTRACTOR (SHORT FORM) (FEB 1995)

(a) Definitions.

(1) "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321, et seq.).

(2) "Made" when used in relation to any invention means the conception of first actual reduction to practice of such invention.

(3) "Nonprofit organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of l954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

(4) "Practical application" means to manufacture, in the case of a composition or product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being

utilized and that is benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

(5) "Small business firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121-3-12, 13 CFR 121.3-18, and 13 CFR 121.3-12, respectively, will be used.

(6) "Subject invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under this contract, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(7) "Agency licensing regulations" and "agency regulations concerning the licensing of Government-owned inventions" mean the Department of Energy patent licensing regulations at 10 CFR Part 781.

(b) Allocation of principal rights. The Contractor may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Contractor retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(c) Invention disclosure, election of title, and filing of patent application by Contractor.

(1) The Contractor will disclose each subject invention to the Department of Energy (DOE) within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters. The disclosure to DOE shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the DOE, the Contractor will promptly notify that agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.

(2) The Contractor will elect in writing whether or not to retain title to any such invention by notifying DOE within 2 years of disclosure to DOE. However, in any case where publication, on sale or public use has initiated the 1-year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by DOE to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Contractor will file its initial patent application on a subject invention to which it elects to retain title within 1 year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor will file patent applications in additional countries or international patent offices within either 10 months of the corresponding initial

patent application or 6 months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure, election, and filing under subparagraphs (c)(l), (2), and (3) of this clause may, at the discretion of the agency, be granted.

(d) Conditions when the Government may obtain title. The Contractor will convey to the Federal agency, upon written request, title to any subject invention

(1) If the Contractor fails to disclose or elect title to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain title; provided, that DOE may only request title within 60 days after learning of the failure of the Contractor to disclose or elect within the specified times.

(2) In those countries in which the Contractor fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Contractor has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of the Federal agency, the Contractor shall continue to retain title in that country.

(3) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum rights to Contractor and protection of the Contractor right to file.

(1) The Contractor will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Contractor fails to disclose the invention within the times specified in paragraph (c) of this clause. The Contractor's license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the Contractor is a party and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of the Federal agency, except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR Part 404 and agency licensing regulations. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the

Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable regulations in 37 CFR Part 404 and agency regulations concerning the licensing of Government owned inventions, any decision concerning the revocation or modification of the license.

(f) Contractor action to protect the Government's interest.

(1) The Contractor agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and (ii) convey title to DOE when requested under paragraph (d) of this clause and to enable the government to obtain patent protection throughout the world in that subject invention.

(2) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by subparagraph (c)(1) of this clause. The Contractor shall instruct such employees, through employee agreements or other suitable educational programs, on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Contractor will notify DOE of any decision not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.

(4) The Contractor agrees to include, within the specification of any United States patent application and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with Government support under (identify the contract) awarded by the United States Department of Energy. The Government has certain rights in the invention."

(g) Subcontracts.

(1) The Contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed by a small business firm or domestic nonprofit organization. The subcontractor will retain all rights provided for the Contractor in this clause, and the Contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) The contractor shall include in all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work the patent rights clause at 952.227-13.

(3) In the case of subcontracts, at any tier, DOE, subcontractor, and the Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between

the subcontractor and DOE with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (j) of this clause.

(h) Reporting on utilization of subject inventions. The Contractor agrees to submit, on request, periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received, by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceeding undertaken by that agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without permission of the Contractor.

(i) Preference for United States industry. Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any product embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in rights. The Contractor agrees that, with respect to any subject invention in which it has acquired title, DOE has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency to require the Contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and, if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that: (1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use; (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees; (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or (4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Special provisions for contracts with nonprofit organizations. If the Contractor is a nonprofit organization, it agrees that:

(1) Rights to a subject invention in the United States may not be assigned without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions; provided, that such assignee will be subject to the same provisions as the Contractor;

(2) The Contractor will share royalties collected on a subject invention with the inventor, including Federal employee coinventors (when DOE deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

(3) The balance of any royalties or income earned by the Contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions will be utilized for the support of scientific research or education; and

(4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms, and that it will give a preference to a small business firm when licensing a subject invention if the Contractor determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the Contractor is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the contractor. However, the Contractor agrees that the Secretary of Commerce may review the Contractor's licensing program and decisions regarding small business applicants, and the Contractor will negotiate changes to its licensing policies, procedures, or practices with the Secretary of Commerce when that Secretary's review discloses that the Contractor could take reasonable steps to more effectively implement the requirements of this subparagraph (k)(4).

(l) Communications.

(1) The contractor shall direct any notification, disclosure, or request to DOE provided for in this clause to the DOE patent counsel assisting the DOE contracting activity, with a copy of the communication to the Contracting Officer.

(2) Each exercise of discretion or decision provided for in this clause, except subparagraph (k)(4), is reserved for the DOE Patent Counsel and is not a claim or dispute and is not subject to the Contract Disputes Act of 1978.

(3) Upon request of the DOE Patent Counsel or the contracting officer, the contractor shall provide any or all of the following:

(i) a copy of the patent application, filing date, serial number and title, patent number, and issue date for any subject invention in any country in which the contractor has applied for a patent;

(ii) a report, not more often than annually, summarizing all subject inventions which were disclosed to DOE individually during the reporting period specified; or

(iii) a report, prior to closeout of the contract, listing all subject inventions or stating that there were none.

(End of clause)

Attachment 1: DEAR 952.227-13 Patent Rights - Acquisition by the Government

PATENT RIGHTS-ACQUISITION BY THE GOVERNMENT (FEB 1995)

(a) Definitions.

"Invention", as used in this clause, means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code or any novel variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321, et seq.).

"Practical application", as used in this clause, means to manufacture, in the case of a composition or product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

"Subject invention", as used in this clause, means any invention of the Contractor conceived or first actually reduced to practice in the course of or under this contract.

"Patent Counsel", as used in this clause, means the Department of Energy Patent Counsel assisting the procuring activity.

"DOE patent waiver regulations", as used in this clause, means the Department of Energy patent waiver regulations at 41 CFR 9-9.109-6 or successor regulations. See 10 CFR part 784.

"Agency licensing regulations" and "applicable agency licensing regulations", as used in this clause, mean the Department of Energy patent licensing regulations at 10 CFR Part 781.

(b) Allocations of principal rights.

(1) Assignment to the Government. The Contractor agrees to assign to the Government the entire right, title, and interest throughout the world in and to each subject invention, except to the extent that rights are retained by the Contractor under subparagraph (b)(2) and paragraph (d) of this clause.

(2) Greater rights determinations.

(i) The contractor, or an employee-inventor after consultation with the Contractor, may request greater rights than the nonexclusive license and the foreign patent rights provided in paragraph (d) of this clause on identified inventions in accordance with the DOE patent waiver regulations. A request for a determination of whether the Contractor or the employee-inventor is entitled to acquire such greater rights must be submitted to the Patent Counsel with a copy to the Contracting Officer at the time of the first disclosure of the invention pursuant to subparagraph (e)(2) of this clause, or not later than 8 months thereafter, unless a longer period is authorized in writing by the Contracting Officer for good cause shown in writing by the Contractor. Each determination of greater rights under this contract shall be subject to paragraph (c) of this clause, unless otherwise provided in the greater rights determination, and to the reservations and conditions deemed to be appropriate by the Secretary of Energy or designee.

(ii) Within two (2) months after the filing of a patent application, the Contractor shall provide the filing date, serial number and title, a copy of the patent application (including an English-language version if filed in a language other than English), and, promptly upon issuance of a patent, provide the patent number and issue date for any subject invention in any country for which the Contractor has been granted title or the right to file and prosecute on behalf of the United States by the Department of Energy.

(iii) Not less than thirty (30) days before the expiration of the response period for any action required by the Patent and Trademark Office, notify the Patent Counsel of any decision not to continue prosecution of the application.

(iv) Upon request, the Contractor shall furnish the Government an irrevocable power to inspect and make copies of the patent application file.

(c) Minimum rights acquired by the Government.

(1) With respect to each subject invention to which the Department of Energy grants the Contractor principal or exclusive rights, the Contractor agrees as follows:

(i) The Contractor hereby grants to the Government a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced each subject invention throughout the world by or on behalf of the Government of the United States (including any Government agency).

(ii) The Contractor agrees that with respect to any subject invention in which DOE has granted it title, DOE has the right in accordance with the procedures in the DOE patent waiver regulations (10 CFR part 784) to require the Contractor, an assignee, or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if it determines that

(A) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(B) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;

(C) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or

(D) Such action is necessary because the agreement required by paragraph (i) of this clause has neither been obtained nor waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(iii) The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization of a subject invention or on efforts at obtaining such utilization that are being made by the

Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any marchin proceedings undertaken by that agency in accordance with subparagraph (c)(1)(ii) of this clause. To the extent data or information supplied under this section is considered by the Contractor, its licensee, or assignee to be privileged and confidential and is so marked, the Department of Energy agrees that, to the extent permitted by law, it will not disclose such information to persons outside the Government.

(iv) The Contractor agrees, when licensing a subject invention, to arrange to avoid royalty charges on acquisitions involving Government funds, including funds derived through a Military Assistance Program of the Government or otherwise derived through the Government, to refund any amounts received as royalty charges on a subject invention in acquisitions for, or on behalf of, the Government, and to provide for such refund in any instrument transferring rights in the invention to any party.

(v) The Contractor agrees to provide for the Government's paid-up license pursuant to subparagraph (c)(1)(i) of this clause in any instrument transferring rights in a subject invention and to provide for the granting of licenses as required by subparagraph (c)(1)(ii) of this clause, and for the reporting of utilization information as required by subparagraph (c)(1)(iii) of this clause, whenever the instrument transfers principal or exclusive rights in a subject invention.

(2) Nothing contained in this paragraph (c) shall be deemed to grant to the Government any rights with respect to any invention other than a subject invention.

(d) Minimum rights to the Contractor.

(1) The Contractor is hereby granted a revocable, nonexclusive, royalty-free license in each patent application filed in any country on a subject invention and any resulting patent in which the Government obtains title, unless the Contractor fails to disclose the subject invention within the times specified in subparagraph (e)(2) of this clause. The Contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions in 37 CFR Part 404 and agency licensing regulations. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical applications and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, DOE will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the

Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable agency licensing regulations and 37 CFR Part 404 concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(4) The Contractor may request the right to acquire patent rights to a subject invention in any foreign country where the Government has elected not to secure such rights, subject to the conditions in subparagraphs (d)(4)(i) through (d)(4)(vii) of this clause. Such request must be made in writing to the Patent Counsel as part of the disclosure required by subparagraph (e)(2) of this clause, with a copy to the DOE Contracting Officer. DOE approval, if given, will be based on a determination that this would best serve the national interest.

(i) The recipient of such rights, when specifically requested by DOE, and three years after issuance of a foreign patent disclosing the subject invention, shall furnish DOE a report stating:

(A) The commercial use that is being made, or is intended to be made, of said invention, and

(B) The steps taken to bring the invention to the point of practical application or to make the invention available for licensing.

(ii) The Government shall retain at least an irrevocable, nonexclusive, paid-up license to make, use, and sell the invention throughout the world by or on behalf of the Government (including any Government agency) and States and domestic municipal governments, unless the Secretary of Energy or designee determines that it would not be in the public interest to acquire the license for the States and domestic municipal governments.

(iii) If noted elsewhere in this contract as a condition of the grant of an advance waiver of the Government's title to inventions under this contract, or, if no advance waiver was granted but a waiver of the Government's title to an identified invention is granted pursuant to subparagraph (b)(2) of this clause upon a determination by the Secretary of Energy that it is in the Government's best interest, this license shall include the right of the Government to sublicense foreign governments pursuant to any existing or future treaty or agreement with such foreign governments.

(iv) Subject to the rights granted in subparagraphs (d)(1), (2), and (3) of this clause, the Secretary of Energy or designee shall have the right to terminate the foreign patent rights granted in this subparagraph (d)(4) in whole or in part unless the recipient of such rights demonstrates to the satisfaction of the Secretary of Energy or designee that effective steps necessary to accomplish substantial utilization of the invention have been taken or within a reasonable time will be taken.

(v) Subject to the rights granted in subparagraphs (d)(1), (2), and (3) of this clause, the Secretary of Energy or designee shall have the right, commencing four years after foreign patent rights are accorded under this subparagraph (d)(4), to require the granting of a nonexclusive or partially exclusive license to a responsible applicant or applicants, upon terms reasonable under the circumstances, and in appropriate circumstances to terminate said foreign patent rights in whole or in part, following a hearing upon notice thereof to the public, upon a petition by an interested person justifying such hearing:

(A) If the Secretary of Energy or designee determines, upon review of such material as he deems relevant, and after the recipient of such rights or other interested person has had the opportunity to provide such relevant and material information as the Secretary or designee may require, that such foreign patent rights have tended substantially to lessen competition or to result in undue market concentration in any section of the United States in any line of commerce to which the technology relates; or

(B) Unless the recipient of such rights demonstrates to the satisfaction of the Secretary of Energy or designee at such hearing that the recipient has taken effective steps, or within a reasonable time thereafter is expected to take such steps, necessary to accomplish substantial utilization of the invention.

(vi) If the contractor is to file a foreign patent application on a subject invention, the Government agrees, upon written request, to use its best efforts to withhold publication of such invention disclosures for such period of time as specified by Patent Counsel, but in no event shall the Government or its employees be liable for any publication thereof.

(vii) Subject to the license specified in subparagraphs (d)(1), (2), and (3) of this clause, the contractor or inventor agrees to convey to the Government, upon request, the entire right, title, and interest in any foreign country in which the contractor or inventor fails to have a patent application filed in a timely manner or decides not to continue prosecution or to pay any maintenance fees covering the invention. To avoid forfeiture of the patent application or patent, the contractor or inventor shall, not less than 60 days before the expiration period for any action required by any patent office, notify the Patent Counsel of such failure or decision, and deliver to the Patent Counsel, the executed instruments necessary for the conveyance specified in this paragraph.

(e) Invention identification, disclosures, and reports.

(1) The Contractor shall establish and maintain active and effective procedures to assure that subject inventions are promptly identified and disclosed o Contractor personnel responsible for patent matters within 6 months of conception and/or first actual reduction to practice, whichever occurs first in the performance of work under this contract. These procedures shall include the maintenance of laboratory notebooks or equivalent records and other records as are reasonably necessary to document the conception and/or the first actual reduction to practice of subject inventions, and records that show that the procedures for identifying and disclosing the inventions are followed. Upon request, the Contractor shall furnish the Contracting Officer a description of such procedures for evaluation and for determination as to their effectiveness.

(2) The Contractor shall disclose each subject invention to the DOE Patent Counsel with a copy to the Contracting Officer within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters or, if earlier, within 6 months after the Contractor becomes aware that a subject invention has been made, but in any event before any on sale, public use, or publication of such invention known to the Contractor. The disclosure to DOE shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale, or public use of the invention and whether a manuscript describing the invention has been submitted for

publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to DOE, the Contractor shall promptly notify Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor. The report should also include any request for a greater rights determination in accordance with subparagraph (b)(2) of this clause. When an invention is disclosed to DOE under this paragraph, it shall be deemed to have been made in the manner specified in Sections (a)(1) and (a)(2) of 42 U.S.C. 5908, unless the Contractor contends in writing at the time the invention is disclosed that is was not so made.

(3) The Contractor shall furnish the Contracting Officer the following:

(i) Interim reports every 12 months (or such longer period as may be specified by the Contracting Officer) from the date of the contract, listing subject inventions during that period, and certifying that all subject inventions have been disclosed (or that there are not such inventions) and that the procedures required by subparagraph (e)(1) of this clause have been followed.

(ii) A final report, within 3 months after completion of the contracted work listing all subject inventions or certifying that there were no such inventions, and listing all subcontracts at any tier containing a patent rights clause or certifying that there were no such subcontracts.

(4) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by subparagraph (e)(2) of this clause.

(5) The Contractor agrees, subject to FAR 27.302(j), that the Government may duplicate and disclose subject invention disclosures and all other reports and papers furnished or required to be furnished pursuant to this clause.

(f) Examination of records relating to inventions.

(1) The Contracting Officer or any authorized representative shall, until 3 years after final payment under this contract, have the right to examine any books (including laboratory notebooks), records, and documents of the Contractor relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this contract to determine whether

(i) Any such inventions are subject inventions;

(ii) The Contractor has established and maintains the procedures required by subparagraphs (e)(1) and (4) of this clause;

(iii) The Contractor and its inventors have complied with the procedures.

(2) If the Contracting Officer learns of an unreported Contractor invention which the Contracting Officer believes may be a subject invention, the Contractor may be required to disclose the invention to DOE for a determination of ownership rights.

(3) Any examination of records under this paragraph will be subject to appropriate conditions to protect the confidentiality of the information involved.

(g) Withholding of payment (NOTE: This paragraph does not apply to subcontracts).

(1) Any time before final payment under this contract, the Contracting Officer may, in the Government's interest, withhold payment until a reserve not exceeding $50,000 or 5 percent of the amount of this contract, whichever is less, shall have been set aside if, in the Contracting Officer's opinion, the Contractor fails to

(i) Convey to the Government, using a DOE-approved form, the title and/or rights of the Government in each subject invention as required by this clause.

(ii) Establish, maintain, and follow effective procedures for identifying and disclosing subject inventions pursuant to subparagraph (e)(1) of this clause;

(iii) Disclose any subject invention pursuant to subparagraph (e)(2) of this clause;

(iv) Deliver acceptable interim reports pursuant to subparagraph (e)(3)(i) of this clause; or

(v) Provide the information regarding subcontracts pursuant to subparagraph (h)(4) of this clause.

(2) Such reserve or balance shall be withheld until the Contracting Officer has determined that the Contractor has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause.

(3) Final payment under this contract shall not be made before the Contractor delivers to the Contracting Officer all disclosures of subject inventions required by subparagraph (e)(2) of this clause, and acceptable final report pursuant to subparagraph (e)(3)(ii) of this clause, and the Patent Counsel has issued a patent clearance certification to the Contracting Officer.

(4) The Contracting Officer may decrease or increase the sums withheld up to the maximum authorized above. No amount shall be withheld under this paragraph while the amount specified by this paragraph is being withheld under other provisions of the contract. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government rights.

(h) Subcontracts.

(1) The contractor shall include the clause at 48 CFR 952.227-11 (suitably modified to identify the parties) in all subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work to be performed by a small business firm or domestic nonprofit organization, except where the work of the subcontract is subject to an Exceptional Circumstances Determination by DOE. In all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work, the contractor shall include this clause (suitably modified to identify the parties). The contractor shall not, as part of the

consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(2) In the event of a refusal by a prospective subcontractor to accept such a clause the Contractor--

(i) Shall promptly submit a written notice to the Contracting Officer setting forth the subcontractor's reasons for such refusal and other pertinent information that may expedite disposition of the matter; and

(ii) Shall not proceed with such subcontract without the written authorization of the Contracting Officer.

(3) In the case of subcontracts at any tier, DOE, the subcontractor, and Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and DOE with respect to those matters covered by this clause.

(4) The Contractor shall promptly notify the Contracting Officer in writing upon the award of any subcontract at any tier containing a patent rights clause by identifying the subcontractor, the applicable patent rights clause, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Contracting Officer, the Contractor shall furnish a copy of such subcontract, and, no more frequently than annually, a listing of the subcontracts that have been awarded.

(5) The contractor shall identify all subject inventions of the subcontractor of which it acquires knowledge in the performance of this contract and shall notify the Patent Counsel, with a copy to the contracting officer, promptly upon identification of the inventions.

(i) Preference United States industry. Unless provided otherwise, no Contractor that receives title to any subject invention and no assignee of any such Contractor shall grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement may be waived by the Government upon a showing by the Contractor or assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) Atomic energy.

(1) No claim for pecuniary award of compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted with respect to any invention or discovery made or conceived in the course of or under this contract.

(2) Except as otherwise authorized in writing by the Contracting Officer, the Contractor will obtain patent agreements to effectuate the provisions of subparagraph (e)(1) of this clause from all persons who perform any part of the work under this contract, except nontechnical personnel, such as clerical employees and manual laborers.
(k) Background Patents.

(1) Background Patent means a domestic patent covering an invention or discovery which is not a subject invention and which is owned or controlled by the Contractor at any time through the completion of this contract:

(i) Which the contractor, but not the Government, has the right to license to others without obligation to pay royalties thereon, and

(ii) Infringement of which cannot reasonably be avoided upon the practice of any specific process, method, machine, manufacture, or composition of matter (including relatively minor modifications thereof) which is a subject of the research, development, or demonstration work performed under this contract.

(2) The Contractor agrees to and does hereby grant to the Government a royalty-free, nonexclusive license under any background patent for purposes of practicing a subject of this contract by or for the Government in research, development, and demonstration work only.

(3) The Contractor also agrees that upon written application by DOE, it will grant to responsible parties, for purposes of practicing a subject of this contract, nonexclusive licenses under any background patent on terms that are reasonable under the circumstances. If, however, the Contractor believes that exclusive rights are necessary to achieve expeditious commercial development or utilization, then a request may be made to DOE for DOE approval of such licensing by the Contractor.

(4) Notwithstanding subparagraph (k)(3) of this clause, the contractor shall not be obligated to license any background patent if the Contractor demonstrates to the satisfaction of the Secretary of Energy or designee that:

(i) a competitive alternative to the subject matter covered by said background patent is commercially available or readily introducible from one or more other sources; or

(ii) the Contractor or its licensees are supplying the subject matter covered by said background patent in sufficient quantity and at reasonable prices to satisfy market needs, or have taken effective steps or within a reasonable time are expected to take effective steps to so supply the subject matter.

(l) Publication. It is recognized that during the course of the work under this contract, the Contractor or its employees may from time to time desire to release or publish information regarding scientific or technical developments conceived or first actually reduced to practice in the course of or under this contract. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the Contractor, patent approval for release of publication shall be secured from Patent Counsel prior to any such release or publication.

(m) Forfeiture of rights in unreported subject inventions.

(1) The Contractor shall forfeit and assign to the Government, at the request of the Secretary of Energy or designee, all rights in any subject invention which the Contractor fails to report to Patent Counsel within six months after the time the Contractor:

(i) Files or causes to be filed a United States or foreign patent application thereon; or

(ii) Submits the final report required by subparagraph (e)(2)(ii) of this clause, whichever is later.

(2) However, the Contractor shall not forfeit rights in a subject invention if, within the time specified in subparagraph (m)(1) of this clause, the Contractor:

(i) Prepares a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the contract and delivers the decision to Patent Counsel, with a copy to the Contracting Officer; or

(ii) Contending that the invention is not a subject invention, the Contractor nevertheless discloses the invention and all facts pertinent to this contention to the Patent Counsel, with a copy to the Contracting Officer; or

(iii) Establishes that the failure to disclose did not result from the Contractor's fault or negligence.

(3) Pending written assignment of the patent application and patents on a subject invention determined by the Secretary of Energy or designee to be forfeited (such determination to be a final decision under the Disputes clause of this contract), the Contractor shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this paragraph (m) shall be in addition to and shall not supersede other rights and remedies which the Government may have with respect to subject inventions.

(End of clause)

Attachment 2

10 CFR 600.123 *Cost sharing or matching*.

(a) All cost sharing or matching contributions, including cash and third party in-kind, shall meet all of the following criteria.

(1) Are verifiable from the recipient's records.

(2) Are not included as contributions for any other federally-assisted project or program.

(3) Are necessary and reasonable for proper and efficient accomplishment of project or program objectives.

(4) Are allowable under the applicable cost principles.

(5) Are not paid by the Federal Government under another award, except where authorized by Federal statute to be used for cost sharing or matching.

(6) Are provided for in the approved budget.

(7) Conform to other provisions of this subpart, as applicable.

(b) Unrecovered indirect costs may be included as part of cost sharing or matching.

(c) Values for recipient contributions of services and property shall be established in accordance with the applicable cost principles. If DOE authorizes recipients to donate buildings or land for construction/facilities acquisition projects or long-term use, the value of the donated property for cost sharing or matching shall be the lesser of either paragraph (c)(1) or (2) of this section.

(1) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation.

(2) The current fair market value. However, when there is sufficient justification, DOE may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project.

(d) Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services shall be consistent with those paid for similar work in the recipient's organization. In those instances in which the required skills are not found in the recipient organization, rates shall be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid

fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(e) When an employer other than the recipient furnishes the services of an employee, these services shall be valued at the employee's regular rate of pay (plus an amount of fringe benefits that are reasonable, allowable, and allocable, but exclusive of overhead costs), provided these services are in the same skill for which the employee is normally paid.

(f) Donated supplies may include such items as office supplies, laboratory supplies or workshop and classroom supplies. Value assessed to donated supplies included in the cost sharing or matching share shall be reasonable and shall not exceed the fair market value of the property at the time of the donation.

(g) The method used for determining cost sharing or matching for donated equipment, buildings and land for which title passes to the recipient may differ according to the purpose of the award, if either paragraph (g)(1) or (2) of this section apply.

(1) If the purpose of the award is to assist the recipient in the acquisition of equipment, buildings or land, the total value of the donated property may be claimed as cost sharing or matching.

(2) If the purpose of the award is to support activities that require the use of equipment, buildings or land, normally only depreciation or use charges for equipment and buildings may be made. However, the full value of equipment or other capital assets and fair rental charges for land may be allowed, provided that DOE has approved the charges.

(h) The value of donated property shall be determined in accordance with the usual accounting policies of the recipient, with the following qualifications.

(1) The value of donated land and buildings shall not exceed its fair market value at the time of donation to the recipient as established by an independent appraiser (e.g., certified real property appraiser or General Services Administration representative) and certified by a responsible official of the recipient.

(2) The value of donated equipment shall not exceed the fair market value of equipment of the same age and condition at the time of donation.

(3) The value of donated space shall not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.

(4) The value of loaned equipment shall not exceed its fair rental value.

(i) The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties.

(1) Volunteer services shall be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.

(2) The basis for determining the valuation for personal service, material, equipment, buildings and land shall be documented.

(j) DOE shall specify in the solicitation or in the program rule, if any, any cost sharing requirement. The award document shall be specific as to whether the cost sharing is based on a minimum amount for the recipient or on a percentage of total costs.

(k) If DOE requires that a recipient provide cost sharing which is not required by statute or which exceeds a statutory minimum, DOE shall state in the program rule or solicitation the reasons for requiring such cost sharing, recommended or required levels of cost sharing, and the circumstances under which the requirement for cost sharing may be waived or adjusted during any negotiation.

(l) Whenever DOE negotiates the amount of cost sharing, DOE may take into account such factors as the use of program income (see §600.124), patent rights, and rights in data. Foregone fee or profit shall not be considered in establishing the extent of cost sharing.