

**PROGRAM SOLICITATION FOR FINANCIAL  
ASSISTANCE APPLICATIONS  
NO. DE-PS26-00NT40854**



**SOLID STATE ENERGY CONVERSION ALLIANCE (SECA)**

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NATIONAL ENERGY TECHNOLOGY LABORATORY  
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Information regarding this solicitation is available on the Department of Energy, National Energy Technology Laboratory web site at:  
<http://www.netl.doe.gov/business/solicit/index.html>

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## **SECTION I - TECHNICAL REQUIREMENTS**

### **1.1 SUMMARY (JAN 2000)**

The Department of Energy (DOE), National Energy Technology Laboratory (NETL) is seeking applications for the solicitation entitled, "Solid State Energy Conversion Alliance (SECA)." The purpose of the SECA solicitation is to seek Industrial Teams to develop a 3 kilowatt (kW) - 10kW solid-oxide fuel cell system including stack and balance of plant that has a Factory Cost of \$400/kW by 2010 (See Minimum Requirements table for definition of Factory Cost). The goal is to develop solid-oxide fuel cell systems that have broad applicability via use of mass customization techniques. Development of solid-oxide fuel cell systems that are applicable to stationary, mobile, and military applications with minimal differences in core module components is desired.

The SECA Industrial Teams selected will be coordinated with the SECA Core Technology Program through the NETL led SECA Project Management Team. The Core Technology Program will consist of Research and Development organizations that will perform focused applied and exploratory research in support of the Industrial Teams. Coordination of the Core Technology Program will occur through periodic reviews held throughout each annual period. It is anticipated that the focus of the Core Technology Program will be technology development driven by Industrial Team needs in each of the Phases. The following website provides additional information on the SECA Program including the program structure, and information on the Core Technology component: [www.netl.doe.gov/products/power1/fuelcells/12\\_seca.htm](http://www.netl.doe.gov/products/power1/fuelcells/12_seca.htm). Reference information on the SECA program can also be obtained at the NETL Strategic Center for Natural Gas Homepage at [www.netl.doe.gov/scng/](http://www.netl.doe.gov/scng/).

This solicitation is seeking applications for Industrial Teams only. The solicitation for the Core Technology Program will be posted later in Fiscal Year 2001.

### **1.2 BACKGROUND INFORMATION (JAN 2000)**

Fuel cells represent an important opportunity to utilize fossil fuels in an efficient and environmentally friendly manner. Fuel cells have been successfully used in the U. S. Space Program beginning with Gemini and are currently an important component in providing auxiliary power for the Space Shuttles. Fuel cells produced in small expandable modules and manufactured cheaply by taking advantage of economies of production are well suited to meet a growing worldwide demand for energy. Solid-oxide fuel cell systems developed in the SECA Program will not require large one-time investments of capital and uncertain energy projections that characterize the financing and specification of large central generation power plants. The modules produced will be scalable allowing application of capital in smaller incremental amounts as electrical power demands increase. The supercomputer industry is an example of the advantages of this scalable approach.

Solid-oxide fuel cells were once considered the most technically challenging fuel cell type. Many recent breakthroughs in ceramic materials, fuel cell design, and manufacturing technology have changed this view. Advances in ceramic thin film technology enabling the development of high power density electrode supported cells; compact fuel processing technology; and adoption of manufacturing technology developed in related industries such as the semiconductor industry have made the solid -oxide fuel cell a realistic candidate for application of mass customization principles. The Solid State Energy Conversion Alliance is being formed to accelerate the commercial readiness of solid-oxide fuel cell systems in the 3 kW - 10 kW size range by taking advantage of the projected economies of production from this approach.

The Comprehensive National Energy Strategy was issued in October 2000 emphasizing five goals.

- Promote reliable, affordable, clean, and diverse domestic fuel supplies
- Promote reliable, affordable, and clean transformation of fuel supplies into electricity and related products.
- Increase the efficiency and productivity of energy use, while limiting environmental impacts.
- Inform public policy makers, energy industries, and the general public by providing reliable energy information and analysis.
- Cooperate globally on international energy issues.

The Solid State Energy Conversion Alliance is important to achieving these goals.

- A solid-oxide fuel cell is highly efficient. Even without cogeneration a solid-oxide fuel cell system can be twice as efficient as competing technologies due to the direct conversion of fuel to electrical power. With thermal recovery, system efficiency could reach 85%.
- Fuel cell systems promise to be one of the most reliable power generation technologies, if not the most reliable. Hospitals, hotels, and telephone companies are now using them as part of critical uninterruptible power systems. SECA will result in distributed generation products that will further increase grid reliability and safety.
- Solid-oxide fuel cell systems are clean. They generate no solid wastes, and due to the higher efficiency and the replacement of fossil fuel combustion with a lower temperature electrochemical conversion, fuel cells significantly lower emissions of nitrogen compounds and greenhouse gases.
- Fuel cells expand energy choices. They can be used in virtually any application for the production of useful energy from fossil fuels in a very efficient manner. As environmental requirements become more stringent, fuel cells are an important option in producing useful energy in an environmentally friendly way.
- Fuel cells manufactured as small scalable modules and produced cheaply by taking advantage of economies of production, are well suited for developing countries without an existing energy infrastructure, and will help meet a growing worldwide demand for energy. Solid-oxide fuel cell systems developed in the SECA Program will not require large one-time investments of capital that characterize large central generation plants. The modules produced will be scalable allowing application of capital in smaller incremental amounts. This is a tenable economic scenario for developing countries.

### **1.3 SOLICITATION OBJECTIVES (JAN 2000)**

The U. S. Department of Energy is seeking Industrial Teams to develop solid-oxide fuel cell system prototypes with a net power output of 3kW to 10kW. A single prime organization (prime) will lead each Industrial Team. Each project will be structured in three phases over ten years with the Minimum Requirements identified in the table on page 4. DOE anticipates that a full functional prototype will be tested according to the Minimum Requirements no later than the end of each phase. The DOE may require at its discretion to have any or all of the prototypes sent to NETL for further testing following completion of the required Industrial Team testing. Progression to the next phase may be subject to this additional NETL testing at DOE's discretion.

A solid-oxide fuel cell is defined for the purposes of this solicitation as a fuel cell utilizing a ceramic based ionic conductor as the electrolyte. The solid-oxide fuel cell system will include all necessary components for a self-sustaining system. The boundaries of the system extend from the inlet fuel and oxidant flow control and shutoff valves to the power conditioning appropriate to the application (s) proposed including the inverter if an ac output is required. Components required for application specific interfaces such as an isolation transformer are not part of the fuel cell system as defined in this solicitation. Required maintenance intervals for the system cannot be more frequent than 1000 hours. The prototype must be manufactured using the same methods identified in the audited cost estimate and projected for production of the fuel cell system on a mass production scale. It is important that the batch methods used to produce a successful prototype can be scaled to an automated mass production scale. Identification of the required electrical output characteristics for proposed applications should be included in the proposal and test plan. All aspects of the prototype deliverable should be consistent with the application (s) proposed with the exception of the insulation which should be removable and reusable, and representative of the proposed applications.

All aspects of the final solid-oxide fuel cell prototype must be consistent with the cost goal specified for each phase. The projected cost submitted at the end of each phase will be based on a cost estimate with no more than  $\pm 25\%$  uncertainty using the best data available at the time of the estimate and independently audited as described in the Minimum Requirements section. DOE considers the development of "high power density" (e.g.,  $>$  nominal 400ma/cm<sup>2</sup> at 0.7 volts per cell) solid-oxide fuel cells an important component of meeting the 2010 cost goal.

A goal of DOE is to encourage the entry of one or more fuel cell systems developed in the SECA program into one or more commercial markets at the earliest possible date. To facilitate this goal it is preferable, but not absolutely necessary, that the prime leading the Industrial Team have an existing viable business in markets amenable to fuel cell applications. The prime must demonstrate that if a fuel cell system meeting the requirements of this solicitation were commercially ready and available today, the initial market (s) for the system would be large enough to meet the DOE specified cost goals identified in the Minimum Requirements and the prime would be in a position to immediately sell a product in these market (s) (e.g., a company that currently sells or uses electronic components for mobile applications or one that supplies portable power sources for commercial or residential purposes with the market sizes necessary to meet the cost goal). The prime could also demonstrate its capacity to immediately commercialize the fuel cell system in its existing markets even if an auxiliary power or distributed generation product is not currently sold.

If the minimum requirements identified in **each Phase** are not met and/or funding is not available, work in subsequent phases of the Cooperative Agreement may not be authorized by the Government.

MINIMUM REQUIREMENTS			
	PHASE I	PHASE II	PHASE III
POWER RATING (NET)	3kW - 10 kW	3kW - 10 kW	3kW - 10 kW
COST	\$800/kW	\$600/kW	\$400/kW
EFFICIENCY (AC or DC/LHV)	Mobile - 25%	Mobile - 30%	Mobile -30%
	Stationary -35%	Stationary - 40%	Stationary - 40%
STEADY STATE TEST @ NORMAL OPERATING CONDITIONS	1500 hours	1500 hours	1500 hours
	80% availability	85% availability	95% availability
	$\Delta$ Power $\leq$ 2% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .	$\Delta$ Power $\leq$ 1% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .	$\Delta$ Power $\leq$ 0.1% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .
	R-Linear Correlation Coefficient	R-Linear Correlation Coefficient	R-Linear Correlation Coefficient
TRANSIENT TEST	10 cycles	50 cycles	100 cycles
	$\Delta$ Power $\leq$ 1% degradation after 10 cycles at a constant stack voltage.	$\Delta$ Power $\leq$ 0.5% degradation after 50 cycles at a constant stack voltage.	$\Delta$ Power $\leq$ 0.1% degradation after 100 cycles at a constant stack voltage.
TEST SEQUENCE	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours
FUEL TYPE	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity, natural gas, gasoline, or diesel fuel (s) or a representative fuel based on respectively methane, iso-octane, or hexadecane corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity natural gas, gasoline, or diesel fuel (s) corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity natural gas, gasoline, or diesel fuel (s) corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.
MAINTENANCE INTERVALS	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.
DESIGN LIFETIME	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.

## MINIMUM REQUIREMENTS (Supplement)

### 1. POWER RATING

The goal is to develop a 3 kW - 10kW solid-oxide fuel system.

### 2. COST

The cost goals identified in the table shall be met by an independent audited cost estimate that includes the following specified components of the fixed and variable cost of the fuel cell system. The cost estimate must justify the assumed annual production of fuel cell systems per year that support the cost goals of each phase. A fuel cell system is defined in the Solicitation Objectives section. Concurrent with final testing each Industrial Team shall submit a cost estimate of sufficient detail that a  $\pm 25\%$  confidence interval could be assigned. Three auditing firms that routinely perform cost estimate work of the type detailed here shall be identified and presented to the DOE for approval of one of the firms to perform the auditing function. The cost of the independent audit shall be included in the scope of work for this project.

The cost estimate shall establish a Factory Cost. Items to include are:

- Equipment and Plant Depreciation
- Tooling Amortization
- Equipment Maintenance
- Utilities
- Indirect Labor
- Cost of Capital
- Manufactured Materials
- Purchased Materials
- Fabrication Labor
- Assembly Labor
- Indirect Materials

The following costs shall not be included in the cost estimate:

- Research and Development
- Sales and Marketing
- General and Administration
- Warranty
- Taxes

### 3. EFFICIENCY

The efficiency values indicated in the goals may be based on both documented calculations and measurements. The efficiency values must be achieved or exceeded at the beginning and end of the test sequence. The efficiency is defined as AC or DC power output of the system divided by the Lower Heating Value (LHV) of the fuel input stream of the system at full rated load at the steady state normal operating condition over a period of at least one hour.

### 4. STEADY STATE TEST @ NORMAL OPERATING CONDITIONS

The test must be conducted as a prototype with fully independent and self-sustained operation utilizing appropriate load banks to dissipate the energy produced. Test time will be counted only during periods of operational heat-up and cool-down and during the Industrial Team defined Normal Operating Conditions (NOC) corresponding to the proposed applications with DOE approval of the test plan and operating points required. The power stability requirement measurements of power must be made at a constant stack voltage for the entire measurement and all measurements must



be made at the same stack voltage for the duration of the required testing. The variability of fuel cell stack voltage must not exceed a sum of the squares based on the number of cells in the stack and a specified maximum cell variation of 0.02 volts per cell. A remote link shall be established with the NETL site so that test performance can be monitored on a continuous basis. All test data shall be electronically recorded and stored in a retrievable manner. Data should be recorded at a frequency sufficient to resolve significant transient phenomena for NETL review for at least one year after completion of the test. The Government may require at its discretion to have the prototype sent to NETL for further testing following completion of the required Industrial Team testing.

#### 5. TRANSIENT TEST

The test must be conducted as a prototype with fully independent and self-sustained operation utilizing appropriate load banks to dissipate the energy produced. The Industrial Team will identify realistic transients corresponding to the proposed applications with Government approval of the test plan and transients required. All test data shall be electronically recorded and stored in a retrievable manner. Data shall be recorded at a frequency sufficient to resolve significant transient phenomena for NETL review for at least one year. In the event that a modification or repair is required the entire minimum number of cycles for the phase will be repeated.

#### 6. TEST SEQUENCE

See table above.

#### 7. FUEL TYPE

If a non-commercial commodity fuel is used for Phase I it shall contain from 50% to 100% methane, iso-octane, or hexadecane representing natural gas, gasoline, or diesel fuel respectively.

#### 8. MAINTENANCE INTERVALS

The prototype fuel cell system shall not have any design aspect that would require regularly scheduled maintenance at intervals more frequent than 1000 operating hours.

#### 9. DESIGN LIFETIME

The design lifetime of the fuel cell system identified by the applicant shall be consistent with the application (s) and market considerations identified in the application. This lifetime should not be less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for civilian or military uses unless justification is provided for other lifetime specifications in the application.

## SECTION II - CONDITIONS AND NOTICES

### **2.1 REQUESTS FOR EXPLANATION OR INTERPRETATION**

All requests for explanation or interpretation of any part of this solicitation shall be submitted in writing to the Contract Specialist at the aforementioned address. Your written questions regarding the initial evaluation period must be received by the Contract Specialist by November 24, 2000 to allow sufficient time for a reply to reach all prospective offerors before the submission of their offer. The Government reserves the right not to respond to questions submitted after this period, nor to respond to questions submitted by telephone or in person at any time. All amendments will be posted on the NETL Homepage at "<http://www.netl.doe.gov/business/solicit/>"; therefore, offerors are encouraged to periodically check the NETL Homepage to ascertain the status of any amendments as hard copies will not be distributed.

### **2.2 APPLICANT ELIGIBILITY (MAY 2000)**

Any non-profit or for-profit organization, university or other institution of higher education, or non-federal agency or entity is eligible to apply, unless otherwise restricted by the Simpson-Craig Amendment.

Applicants that are seeking financial assistance under this solicitation, are subject to the eligibility requirements of Section 2306 of the Energy Policy Act of 1992 (EPAct).

### **2.3 NUMBER AND TYPE OF AWARDS (JAN 2000)**

It is anticipated that there will be multiple awards resulting from this solicitation. However, the Government reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this solicitation and will award that number of financial assistance instruments which serves the public purpose and is in the best interest of the Government.

The Government intends to use cooperative agreements as the type of award instrument(s).

### **2.4 COST SHARING REQUIREMENTS (DEC 1999)**

In accordance with 10 CFR 600.30, the DOE has determined that a minimum cost share of 20% is required for Phase I and a minimum of 50% is required for Phases II and III. Cost sharing must meet the requirements of 10 CFR 600.123 and 10 CFR 600.224. Allowable costs for cost sharing shall be in accordance with 10 CFR 600 .127 and 10 CFR 600.222 (See also Article 3.7 of this solicitation).

### **2.5 AVAILABILITY OF FUNDS (AUG 1999) (S)**

Funds are not currently available for this solicitation; the Government's obligation under any cooperative agreement (s) awarded is contingent upon the availability of appropriated FY2001 funds.

The anticipated Government funding per Industrial Team per year for Phase I is approximately \$5,000,000. This amount is contingent on the availability of funds and may be higher or lower depending on the dollars authorized and the type of project selected. This \$5,000,000 amount is provided for estimating purposes only and in no way commits the Government.

The anticipated Government funding per Industrial Team per year for Phase II is \$8,000,000 and is \$10,000,000 for Phase III. These amounts are contingent on the availability of funds and may be higher or lower depending on the dollars authorized and the type of project selected. These amounts are provided for estimating purposes only and in no way commits the Government.

**2.6 PROJECT PERIOD AND BUDGET PERIODS (SEP 2000)**

The Government anticipates the project period for each award to be approximately ten years. It is anticipated that Phase I will be approximately four years, and Phases II and III will be approximately three years. This however does not preclude projects and/or phases of a longer or shorter duration.

It is also anticipated that each phase will include two budget periods with a continuation application required at the end of the budget period. Funding for each budget period within the approved project period shall be contingent on DOE approval of a continuation application submitted no later than 60 days prior to the end of the current budget period. The continuation application shall be submitted on the SF 424 in accordance with 10 CFR 600.26. Forms for submission of continuation applications can be found at <http://www.netl.doe.gov/business/forms/forms.html>.

**2.7 INTENT TO PROPOSE (S)**

To enable us to anticipate the number of submissions to be evaluated, please complete the information in the Intention to Propose form (See Section VII), and return to the addressee shown via mail, facsimile or e-mail, by the earliest practical date. Should the applicant choose to e-mail the form back, please provide it in WordPerfect 6.1 or Word 97 format.

**2.8 TIME, DATE AND PLACE APPLICATIONS ARE DUE (DEC 1999)**

Applications shall be submitted in paper media in sealed envelopes or packages addressed to the office and point of contact specified below:

**APPLICATIONS MUST BE RECEIVED BY THE CONTRACT SPECIALIST NO LATER THAN 4:00 P.M. EST FOR EACH OF THE APPLICATION DUE DATES SPECIFIED BELOW:**

<u>EVALUATION PERIOD</u>	<u>APPLICATION DUE DATE</u>
1	January 3, 2001
2	January 4, 2002
3	January 3, 2003

Applications must be received at the following mailing address:

U. S. Department of Energy  
National Energy Technology Laboratory  
3610 Collins Ferry Road  
P.O. Box 880  
Attn: Mary S. Gabriele  
Morgantown, WV 26507-0880

Proposal Submission by Other than U.S. Mail

Proposals must be received at the following address:

U.S. Department of Energy  
National Energy Technology Laboratory  
3610 Collins Ferry Road  
Attn: Mary S. Gabriele  
Morgantown, WV 26507-0880

External Marking of Applications

Applications shall be marked with the following information:

- (1) Address of Proposer
- (2) Solicitation Number
- (3) Due Time and Date of Applications
- (4) Point of Contact at Issuing Office

**2.9 TELEGRAPHIC AND E-MAIL APPLICATIONS (AUG 1999)**

Telegraphic and E-mail applications will NOT be considered, however applications may be amended by telegraphic notice provided such notice is received prior to the date and time specified for receipt. The term "Telegraphic" includes both mailgrams and facsimile submissions.

**2.10 LATE APPLICATIONS, AMENDMENTS AND WITHDRAWALS OF APPLICATIONS (AUG 2000)**

An application or amendment of an application shall be timely if it received by the contract specialist on or before any of the deadline dates and times specified in this section.

Applications or amendments of applications may be withdrawn by written notice at any time before award. Written notice includes E-mails and facsimiles. An authorized representative may withdraw applications in person, if the representative's identity is made known and the representative signs a receipt for the application before award. Applications will not be returned unless they are timely withdrawn.

**2.11 ANTICIPATED SELECTION AND AWARD DATES (AUG 1999)**

It is anticipated that selection of applications submitted under Evaluation Period 1 will be in late March 2001. Awards are expected to be made within one hundred and eighty (180) calendar days following the selection. Selection of applications for future evaluation periods will likely be ninety (90) days after receipt of applications, and awards one hundred and eighty (180) calendar days following selection.

**2.12 CONTENT OF RESULTING AWARD (JULY 1999)**

Any agreement awarded as a result of this solicitation will contain the applicable terms and conditions found in the Model Financial Assistance Agreement located in Section VI of this solicitation.

Blank areas appearing in the model agreement indicated by "[ ]" will be completed after negotiations.

**2.13 APPLICATION PREPARATION COSTS (DEC 1999)**

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

**2.14 COMMITMENT OF PUBLIC FUNDS (AUG 1999)**

The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.

**2.15 PRE-APPLICATION CONFERENCE IS NOT PLANNED (JULY 1999)**

A pre-application conference is not contemplated.

**2.16 FALSE STATEMENTS (AUG 1999)**

Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements in applications is prescribed in 18 U.S.C. 1001.

**2.17 CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER (CFDA) (AUG 1999)**

CFDA No. 81.089 - Fossil Energy Research and Development

**2.18 PARTICIPATION BY DEPARTMENT OF ENERGY (DOE) MANAGEMENT AND OPERATIONS (M&O) CONTRACTORS (AUG 2000)**

Applications submitted by, or on behalf of: (1) another Federal agency; (2) a Federally Funded Research and Development Center sponsored by another Federal agency; or (3) a Department of Energy (DOE) Management and Operating (M&O) contractor will not be eligible for an award under this solicitation. However, an application that includes performance of a portion of the work by a DOE M&O contractor will be evaluated and may be considered for award, provided the proposed use of any such entity is specifically authorized in writing by the responsible DOE Contracting Officer or authorized designee and the applicant provides the additional information identified in Section III - APPLICATION PREPARATION INSTRUCTIONS. The responsible DOE Contracting Officer must determine that performance by the M&O contractor: 1) is consistent with or complementary to DOE missions and the missions of the facility to which the work is to be assigned; 2) will not adversely impact execution of assigned programs of the facility; 3) will not place the facility in direct competition with the domestic private sector; and 4) will not create a detrimental future burden on DOE resources.

If a project which includes M&O participation is approved for funding, DOE intends to make an award to the applicant for its portion of the effort and to provide direct funding for the M&O's portion of the effort under the existing DOE M&O contract. The M&O contractor's work scope therefore will not be accomplished through a contract with a recipient as defined in 10 CFR Part 600.3. However, the recipient will be the responsible authority, without recourse to DOE, regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to disputes and claims, arising out of any agreement between the applicant and the M&O contractor.

If a recipient uses an M&O contractor to perform a portion of the work, the recipient's cost sharing requirement would be based on the total cost of the project, including both the recipient's and the M&O's portions of the effort.

**2.19 FEE AND PROFIT (JULY 1999)**

Pursuant to 10 CFR Part 600, fee or profit will not be paid to the recipients or subrecipients of financial assistance awards resulting from this solicitation, nor will profit be paid to any entity which has a substantial interest in the technology and the potential to profit from its commercialization.

**2.20 DETERMINATION OF RESPONSIBILITY (AUG 1999)**

DOE will evaluate the potential Recipient's responsibility before award. Responsibility determinations are focused on the Recipient's capability to manage and account for the funds, property and other assets provided to perform satisfactorily under the terms of the award. If a potential Recipient is determined to not be in compliance or cannot or will not comply with generally applicable requirements (see 10 CFR Part 600, Appendix A), the contracting officer will find the Recipient not responsible and may either disapprove the application or use special restrictive conditions as a term of award.

**2.21 TREATMENT OF PROPRIETARY INFORMATION (AUG 1999)**

An application may include technical data and other data, including trade secrets and/or privileged or confidential

commercial or financial information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

#### NOTICE OF RESTRICTION ON DISCLOSURE AND USE OF DATA

The data contained in pages [ ] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data therein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

DOE shall not refuse to consider an application solely on the basis that the application is restrictively marked.

#### **2.22 EVALUATION PERSONNEL (AUG 2000) (S)**

Applications will be evaluated in accordance with the criteria set forth in Section IV of the solicitation. In conducting this evaluation, the Government may utilize assistance and advice from qualified personnel from other Federal Agencies and DOE site support contractors. **Applicants not wishing to have their application evaluated by nonfederal personnel shall indicate their "non-consent" in Volume I. Applicants are further advised that DOE may be unable to consider an application withholding such consent.**

When using personnel from other Federal agencies and DOE site support contractors, DOE will obtain assurances from all evaluators that DOE's commitments are met relating to the treatment and handling of proprietary information.

#### **2.23 APPLICATION CLARIFICATION (JULY 1999)**

DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.

#### **2.24 AWARD WITHOUT DISCUSSIONS (AUG 1999)**

Notice is given that award may be made after few or no exchanges, discussions or negotiations. Therefore, all applicants are advised to submit their most favorable application to the Government.

#### **2.25 APPLICATION ACCEPTANCE PERIOD (AUG 1999)**

The minimum application acceptance period shall be 180 calendar days after the deadline(s) for receipt of applications.

#### **2.26 GOVERNMENT RIGHT TO REJECT OR NEGOTIATE (JULY 1999)**

The Government reserves the right, without qualification, to reject any or all applications received in response to this solicitation and to select any application, in whole or in part, as a basis for negotiation and or award.

#### **2.27 PRESUBMISSION REVIEW AND CLEARANCES (AUG 1999)**

Presubmission review under Executive Order 12372, "Intergovernmental Review of Federal Programs" is not required.

#### **2.28 SIMPSON-CRAIG AMENDMENT (AUG 1999)**

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.”

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.

### **2.29 LOANS NOT AVAILABLE (JULY 1999)**

Loans are not available under the DOE Minority Economic Impact (MEI) loan program, 10 CFR Part 800, to finance the cost of preparing a financial assistance application.

### **2.30 NOTIFICATION TO UNSUCCESSFUL APPLICANTS (AUG 2000)**

Each unsuccessful applicant will be offered the opportunity for an explanation as to why the application was not selected. Written notice will be provided to unsuccessful applicants after selection in accordance with 10 CFR 600.19. Information about selected projects will be made publicly available.

### **2.31 ADDITIONAL ELIGIBILITY REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 (JULY 1999)**

Awards under this solicitation also are subject to the eligibility requirements stated in Section 2306 of the Energy Policy Act of 1992 (EPAct). An applicant private sector firm shall be eligible to receive financial assistance under this section only if it is a United States-owned company, or the firm is incorporated in the United States and has a parent company which is incorporated in a country which affords to United States-owned companies: (1) opportunities comparable to those afforded to any other company to participate in any joint venture similar to the one described in this solicitation; and (2) adequate and effective protection for United States companies' intellectual property rights.

In addition, the applicant must show that the project, as a whole, is in the economic interest of the United States. To fulfill this requirement, the applicant must consider the contributions of all participants in the project, including any contractors or suppliers that the applicant has named and relied upon in its application. This can be evidenced by: (1) investment in the United States in research, development, and manufacturing, such as the manufacture of major components or subassemblies in the United States; (2) significant contributions to employment in the United States; (3) agreement with respect to any technology arising from assistance provided under this solicitation to promote the manufacture within the United States of products resulting from that technology, taking into account the goals of promoting the competitiveness of United States industry, and to procure parts and materials from competitive suppliers.

All applicants shall complete documentation providing a certification of eligibility under Section 2306 of the EPAct. Based on the information received, a determination by DOE that the EPAct eligibility requirements are met should be made prior to award of an agreement.

### **2.32 NATIONAL ENVIRONMENTAL POLICY ACT STRATEGY (DEC 1999) (S)**

The National Environmental Policy Act of 1969 (NEPA) establishes a national policy to ensure that consideration is given to environmental values and factors in Federal planning and decision making. The Department of Energy's policy is to comply fully with the letter and spirit of NEPA. To ensure that environmental factors are considered in the decision

making process and to promote environmentally responsible decisions, DOE incorporates NEPA requirements early in the planning process for proposed actions. Consistent with Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508) and DOE NEPA regulations (10 CFR Part 1021), an overall strategy for compliance with NEPA has been developed. This includes performing project-specific environmental reviews under 10 CFR 1021.216 of environmental issues pertinent to each proposed project before projects are selected, followed by site-specific environmental reviews under NEPA of each project after DOE selection.

No action taken by DOE with regard to any application prior to the completion of the site-specific analysis, including project selection or award, shall be a final decision for purposes of compliance with NEPA.

### **2.33 PRE-SELECTION PROJECT-SPECIFIC ENVIRONMENTAL QUESTIONNAIRE (DEC 1999)**

For Applications that undergo comprehensive evaluation, DOE will review under 10 CFR 1021.216, project-specific environmental information supplied by the applicant on the Environmental Questionnaire which is submitted as part of Volume I, Business and Financial application. The environmental information provided by the applicant is independently evaluated by DOE and documented in the form of an environmental critique, which may also include supplemental information developed by DOE. Subsequently, DOE prepares a publicly available environmental synopsis to document the consideration given to environmental factors and to record that the relevant environmental consequences of reasonable alternatives have been evaluated in the selection process.

### **2.34 POST-SELECTION ENVIRONMENTAL REVIEW (DEC 1999)**

Soon after selection, which shall be contingent as specified in 10 CFR 1021.216(i), depending on the information necessary to satisfy NEPA, applicants may be requested to provide additional environmental information which is more detailed than that provided on the Environmental Questionnaire of this solicitation. This detailed site-and project-specific information may be used as the basis for site-specific NEPA documents prepared by DOE for each selected project. Such NEPA documents shall be prepared, considered, and published by DOE in full conformance with the requirements of the CEQ regulation and DOE NEPA regulations. DOE must complete its appropriate NEPA process before a go/no go decision and before a recipient may proceed with detailed design under the award.

### **2.35 POST-AWARD ENVIRONMENTAL MONITORING (DEC 1999)**

Each resulting award will specify the monitoring and reporting requirements necessary to ensure compliance with applicable environmental regulations, and permits obtained from Federal, state and local government agencies and DOE NEPA regulations.

### **2.36 52.227-6 ROYALTY INFORMATION. (APR 1984)**

(a) Cost or charges for royalties. When the response to this solicitation contains costs or charges for royalties totaling more than \$250, the following information shall be included in the response relating to each separate item of royalty or license fee:

- (1) Name and address of licensor.
- (2) Date of license agreement.
- (3) Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.
- (4) Brief description, including any part or model numbers of each contract item or component on which the royalty is payable.
- (5) Percentage or dollar rate of royalty per unit.



(6) Unit price of contract item.

(7) Number of units.

(8) Total dollar amount of royalties.

(b) Copies of current licenses. In addition, if specifically requested by the Contracting Officer before execution of the contract, the applicant shall furnish a copy of the current license agreement and an identification of applicable claims of specific patents.

**2.37 952.227-84 NOTICE OF RIGHT TO REQUEST PATENT WAIVER. (FEB 1998)**

Applicants have the right to request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of the contract that may be awarded as a result of this solicitation, in advance of or within 30 days after the effective date of contracting. Even where such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the contract to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the contract. Domestic small businesses and domestic nonprofit organizations normally will receive the patent rights clause at DEAR 952.227-11 which permits the recipient to retain title to such inventions, except under contracts for management or operation of a Government-owned research and development facility or under contracts involving exceptional circumstances or intelligence activities. Therefore, small businesses and nonprofit organizations normally need not request a waiver. See the patent rights clause in the draft contract in this solicitation. See DOE's patent waiver regulations at 10 CFR part 784.

**2.38 NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES (AUG 1999)**

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.

**2.39 REPORTING REQUIREMENTS**

The recipient shall prepare all plans and reports specified in the Federal Assistance Reporting Checklist included in the Model Cooperative Agreement contained under Section VI of this solicitation.

**2.40 RESTRICTIONS ON TRANSFER OF FUEL CELL TECHNOLOGY TO FOREIGN ENTITIES**

It is agreed that the Recipient shall obtain adequate recognition of the United States support for the technology -- patented or unpatented -- developed -- or utilized -- 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 Recipient agrees to notify the Assistant Secretary for Fossil Energy in writing of the adequate recognition obtained prior to entering into any such contracts, licenses, or other agreements. The Recipient shall not enter into any such contracts, licenses, or other agreements without the concurrence of the Assistant Secretary for Fossil Energy or designee. The determination of whether to grant such concurrence shall be at the sole discretion of the Assistant Secretary for Fossil Energy or designee and is not subject to litigation under the Financial Assistance Appeals Board (10 CFR Part 1024). The determination shall be in writing and shall be furnished to the Recipient by the Contracting Officer.

This paragraph shall be included in all subcontracts.

**2.41 PROPERTY ACQUIRED UNDER THE COOPERATIVE AGREEMENT**

If the "part, piece, component, apparatus or other item" is acquired with Cooperative Agreement funds, or is acquired with Recipient funds and the full cost is allowed for cost sharing purposes, then the item is considered "equipment" under the

financial assistance regulations and will be subject to the property disposition regulations (10 CFR 600.134) when the equipment is no longer needed by Recipient. If the Recipient wishes to retain clear title to the equipment, the Recipient may purchase the equipment at Recipient's expense and allocate a use charge to the DOE agreement. The use charge would be charged to the agreement at the time the equipment is used for work on the agreement.

#### **2.42 PREAWARD COSTS**

The financial assistance rules allow the Recipient considerable flexibility to incur pre-award costs without obtaining prior approval from the Department. Specifically, 10 CFR 600.125 "Revision of Budget and Program Plans," Paragraph (e)(1) states that a Recipient is authorized to incur pre-award costs 90 calendar days prior to award without prior approval of the DOE. The only condition is that all pre-award costs are incurred at the risk of the Recipient and the DOE is under no obligation to reimburse such pre-award costs if for any reason the Recipient does not receive an award or if the award is less than what the Recipient anticipated and thus inadequate to cover such costs.

**SECTION III -APPLICATION PREPARATION INSTRUCTIONS**

**3.1 APPLICATION PREPARATION INSTRUCTIONS -- GENERAL (JULY 1999)**

The application shall be prepared as set forth herein to provide a standard basis for evaluation and to insure that each application will be uniform as to format and sequence. These instructions are not to be included in your application.

Applications shall be prepared in accordance with the instructions found in this section. To aid in evaluation, applications shall be clearly and concisely written as well as being neat, indexed (cross-indexed as appropriate) and logically assembled. All pages of each volume shall be appropriately numbered and identified with the name of the applicant, the date and the solicitation number to the extent practicable. Each volume is a stand alone document, therefore, some information provided may need to be included all volumes.

Each application should clearly demonstrate the applicant's capability, knowledge, and experience in regard to the requirements described herein. Failure to respond or follow the instructions regarding the organization and content of the application may result in the application being deemed unacceptable.

During the review of a complete application, DOE may request the submission of additional information if the information is essential to evaluate the application.

**3.2 UNNECESSARILY ELABORATE APPLICATIONS (JULY 1999)**

Unnecessarily elaborate applications beyond those sufficient to present a complete and effective response to this solicitation are not desired. Elaborate art work and expensive, and expensive visual presentation are neither necessary nor wanted.

**3.3 OVERALL ARRANGEMENT OF APPLICATION (AUG 1999)**

The overall application shall consist of three (3) physically separated volumes, individually entitled as stated below. The required number of each application volume is shown below.

VOLUME	ORIGINAL	NUMBER OF COPIES	TOTAL
Volume I -- Financial Application Documents	1	1	2
Volume II -- Technical Application	1	4	5
Volume III -- Cost Application	1	3	4

The text of each volume shall be typed, single spaced, using Elite size (or equivalent, such as times-roman, courier, or arial), 12 pitch type (or equivalent), and printed, unreduced on size 8 1/2-inch by 11-inch paper. For interpretation of page guidelines, the front and back of a single sheet are counted as two pages. Illustrations shall be legible and no longer than 11-inch by 17-inch fold-outs, as appropriate for the subject matter. Each 11-inch by 17-inch fold-out is considered two pages when determining the number of pages. Pages of each volume shall be sequentially numbered with the volume and page numbers on each page. Except as otherwise noted in the solicitation, the page guidelines set forth constitute a limitation on the total amount of material that may be submitted for evaluation. No material may be incorporated in any application by reference as a means to circumvent the page limitation.

In order that Volumes II be evaluated strictly on its own merit, no cost information shall be included (other than the system cost estimate numbers requested below in the technical application instructions). However, for purposes of clarity, the applicant may include uncosted pricing data, such as direct productive labor hours (DPLH), in Volume II without presenting dollar amounts.

Applicants are not to provide application information in three-ring binders.

**3.4 VOLUME I -- FINANCIAL APPLICATION DOCUMENT PREPARATION INSTRUCTIONS (JULY 2000)**

Volume I consists of a coversheet, assurances, additional representations and certifications, environmental questionnaire, exceptions and deviations, and any other business and financial information.

The application identified as the original shall contain all original signatures of all documents requiring signatures by the applicant. Use of reproductions of signed originals is authorized in all other copies of the application.

Format and Content.

ALL FORMS NEEDED FOR PREPARATION OF VOLUME I ARE FOUND ON THE NETL HOMEPAGE AT:  
<http://www.netl.doe.gov/business/forms/forms.html>.

**PLEASE NOTE THAT ALL FORMS WERE DEVELOPED USING WORDPERFECT 6.1 AND FORMATTED FOR PRINTING USING A HP LASERJET IIISi PRINTER. INSTRUCTIONS FOR COMPLETION OF THE FORMS ARE CONTAINED ON THE BACK OF EACH FORM. QUESTIONS ON COMPLETION OF THE FORMS SHOULD BE ADDRESSED TO THE CONTRACT SPECIALIST.**

Volume I shall include the following documents (in the order listed):

1. FINANCIAL APPLICATION COVERSHEET

The Application Coversheet for Volume I shall contain the following information:

Solicitation Number  
Due Time and Date of Applications  
Name and Address of Proposer  
Point of Contact  
Telephone/FAX Number  
Title of Project  
Program Area of Interest (if applicable)  
Notice of Restriction on Disclosure and Use of Data (See Section VI)

2. APPLICATION FOR FEDERAL ASSISTANCE Standard Form 424# -- **Form # SF424**

3. FINANCIAL ASSISTANCE ASSURANCE PACKAGE -- **Form #: assure.fa**

4. ENVIRONMENTAL QUESTIONNAIRE -- **Form # nepasol**

5. ACKNOWLEDGMENT OF AMENDMENTS

The applicant shall specifically indicate their acknowledgment and receipt of the amendment(s) posted on the NETL Website at <http://www.netl.doe.gov/business/solicit/> by signing the amendment and including it in Volume I or stating the receipt of the amendment in the text of Volume I.

6. ADDITIONAL APPLICATION SUBMISSION REQUIREMENTS FOR FFRDC'S, DOE M&O CONTRACTORS OR LABORATORY ENTITIES

If your application includes work to be performed by an M&O contractor, the following additional information is required:

- A. Application and Field Work Proposal: The application must include a SF 424, Application for Federal Assistance, and budget page for the applicant's portion of the project and a Field Work Proposal (See DOE Order 412.1 Work Authorization System) for the M&O portion of the project.  
  
The application must also describe: 1) the portion of the project that will be conducted by the applicant and the portion that will be conducted by the M&O contractor and 2) the managerial arrangement between the applicant and the M&O contractor. The amount of work (on a cost basis) to be performed by the M&O contractors in the aggregate may not exceed 50 percent of the total work to be performed. DOE will review the application to determine that it meets this criteria and reserves the right to reject any application that fails to do so.
- B. Workscope: The application must provide a scope of work for the effort to be performed by the applicant and a separate scope of work for the effort to be performed by the M&O contractor.
- C. Authorization from the DOE Contracting Officer. The applicant must submit a document from the DOE Contracting Officer or authorized designee stating that the M&O contractor is authorized to participate in the proposed work effort.

#### 7. EXCEPTIONS AND DEVIATIONS TAKEN TO THE MODEL AGREEMENT

The applicant shall identify and explain any exceptions or deviations taken or conditional assumptions made with respect to the model agreement, the requirements of this Section, and other matters included in Volume I, Volume II, and Volume III.

Any exceptions taken must contain sufficient amplification and justification to permit evaluation. The benefit to the Government shall be explained for each exception taken. Such exceptions will not, of themselves, automatically cause an application to be termed unacceptable. A large number of exceptions, or one or more significant exceptions not providing benefit to the Government, however, may result in rejection of your application(s) as unacceptable.

#### 8. ECONOMIC BENEFIT TO THE UNITED STATES

Applicants must provide a separate discussion, not exceeding five (5) pages in length, explaining how the proposed work will benefit the economic interest of the United States. This may be evidenced by (1) investments in the United States in research, engineering, and manufacturing (including, for example, manufacture of major components or subassemblies in the United States; (2) significant contributions to employment in the United States; and (3) agreements to promote the manufacture within the United States of products resulting from technology developed under the project. A description of the quantitative benefits supported by a convincing rationale is preferable to a qualitative discussion. DOE expects that this information will be realistic and constitute a sincere commitment by the applicants to promote economic benefits for the United States.

#### 9. PERFORMANCE OF WORK IN THE UNITED STATES AND COMMITMENT TO PROVIDE MANDATORY COST PARTICIPATION

As a condition of award under this solicitation, applicants must agree that at least 75% of the direct labor cost for the project (including subcontractor labor) will be incurred in the United States, unless the applicant can demonstrate to the satisfaction of DOE that the United States economic interest will be better served through a greater percentage of the work performed outside the United States. For example, an applicant may provide evidence that expertise to develop a technology exists only outside the United States, but that ultimate commercialization of the technology will result in substantial benefits to the United States such as increased employment, increased exports of the U.S.-manufactured products, etc.

Applicants shall provide a statement which demonstrates its agreement with the preceding condition, or provide a detailed argument otherwise.

10. COMMITMENT TO PROVIDE MANDATORY COST PARTICIPATION

Applicants shall describe its commitment to cost share a minimum of 20% of Phase I costs and 50% of Phase II and III costs. Detailed information regarding the type and amount of cost participation shall be contained in Volume III.

11. SUMMARY OF EXCEPTIONS AND DEVIATIONS TAKEN IN OTHER VOLUMES

The applicant shall summarize each technical, cost, business, or other exceptions taken elsewhere, and provide specific cross references to its full discussion.

**3.5 VOLUME II-- TECHNICAL APPLICATION PREPARATION INSTRUCTIONS (AUG 1999)**

1. GENERAL

The technical application will consist of the applicant's outline addressing the technical and management aspects of the project, the applicant's capabilities and what the applicant will do to satisfy the requirements of each phase. Since the technical information contained in this section will be evaluated to determine such matters as understanding of the work to be performed, technical approach, and potential for completing the desired work, it should be specific and complete in every detail. The technical application shall address the cost elements and methodology of the proposed approach relative to the cost goals of the SECA program in detail and the potential for meeting the other objectives of the SECA program. The application should be practical and be prepared simply and economically, providing a straightforward, concise delineation of what it is the applicant will do to satisfy the requirements of the solicitation objectives.

As detailed above, the technical application may be evaluated strictly on the merit of the material submitted, therefore no cost information is to be included.

2. FORMAT AND CONTENT

Volume II, Technical Application, shall include the following components:

- A. Cover Page.
- B. Table of Contents
- C. Technical Discussion
- D. Abstract
- E. Attachments
  - \*Resumes
  - \*Letters of Commitment

3. TECHNICAL DISCUSSION

This section shall contain the major portion of the Technical Application. It shall clearly address each of the Technical Proposal evaluation criteria in Part IV, and at a minimum cover the factors listed below. **The page limitation identified below represents a recommended minimum and a required maximum number of pages for each subsection.** The page guidelines set forth constitute a limitation on the total amount of material that may be submitted for evaluation. No material may be incorporated in any application by reference as a means to circumvent the page limitation. Pages in excess of the maximum numbers identified below will be excluded from evaluation.

A. Technical Approach (20 - 25 pages)

The applicant shall fully describe the planned technical approach for the design, manufacture and test of the required prototypes. All phases of the program must be addressed with the stack and system aspects planned for Phase I receiving the most emphasis. The discussion and description must be in sufficient detail to determine the potential for success and technical viability of the proposed effort. A detailed Scope of Work should not be addressed in this section; rather the underlying technical considerations along with a complete description and technical merit of the proposed stack and system approach should be presented. The applicant shall present a discussion of how the proposed system will meet the minimum requirements in Section I on cost, efficiency, operating conditions, testing, and fuel types.

The applicant shall detail and discuss known research and development (R&D) needs that it recommends be addressed in the Core Technology Program. R&D needs should be categorized as follows: (1) Materials and Manufacturing; (2) Fuel Processing; (3) Modeling and Simulation; (4) Power Electronics; (5) Thermal Systems; and (6) Control System and Sensors.

If multiple applications are proposed, the applicant shall describe the fuel cell systems ability to satisfy these applications in the different market segments identified in the Market Evaluation and Applicants Existing Experience sub-section of the application. A market segment is defined as the stationary market, transportation market, or military market. Multiple applications means two or more applications that are substantially different in nature, e.g. stationary distributed generation, auxiliary power for truck cabs, and auxiliary power for military tank turrets. Dual applications such as residential homes and multiple family dwellings would not be considered substantially different. The applicant must address the aspects of the technical approach which are impacted by the multiple application requirement, and how they will be addressed over the course of the ten-year program.

The applicant shall provide a definitive discussion of the technical problem areas including those issues which inhibit the development of their proposed system. Proposed solutions to all identified problem areas should be included in the discussion.

The applicant shall provide a discussion detailing if the prototype will be manufactured using the same methods projected for production of the fuel cell system on a mass-production scale. If not, please provide rationale as to why it is **not** important that the batch methods used to produce a successful prototype be scaled to an automated mass production scale.

B. Cost Estimate (10 to 15 pages)

The applicant shall provide a detailed cost estimate which accounts for all components of the fuel cell stack and system contained in the proposed stack and system approach. Every effort shall be made to base the estimate on materials supplier and manufacturer estimates in addition to other accepted professional methods of cost engineering. The primary emphasis of the applicants cost estimate shall be focused on meeting the Phase III cost goal of \$400/kW by the end of the ten-year Program. Sufficient detail should also be provided to support meeting the intermediate Phase I and Phase II cost goals as well. The applicant shall provide a discussion of the overall reasonableness of its cost estimate in relation to the goals set forward in this solicitation.

The cost estimate must establish and fully justify a reasonable estimate of the number of units that must be manufactured per year to support the DOE cost goals. DOE currently considers the minimum number of units will be no less than 50,000 base (3kW to 10kW) systems per year.

C. Statement of Work, Milestones and Test Plan (10 to 15 pages)

The applicant shall present a Statement of Work (SOW) that clearly describes the work to be performed in each phase; See Article 3.6 below for discussion on how to prepare a SOW. A detailed description of each task or

activity for the proposed Phase I shall be provided. The level of detail should be adequate for direct incorporation into a Cooperative Agreement. The Statement of Work for Phase I should be organized in a Work Breakdown Structure format. The applicant must provide a table listing the type and number of man-hours required for Phase I. The man-hours shall be related to the specific tasks to be performed and shall indicate the job disciplines and classifications (engineering, manufacturing, scientific, clerical, etc.) for each major task over the Phase I project period.

A general discussion of the work scope for Phase II and Phase III shall be provided in sufficient detail to demonstrate that the proposed effort is reasonable and complete.

A schedule of activities including identification of principal milestones and decision points shall be provided. The applicant shall complete and submit a DOE Form 4600.3 and 3A reflecting these milestones.

The applicant shall provide a preliminary test plan that outlines how it will accomplish the SECA goals for each phase of the project. The applicant shall describe the rationale and objectives for each major activity (experimental and analytical) proposed in the plan. The applicant shall describe and justify other analytical work included the test plan. Any additional criteria exceeding or in addition to the minimum requirements should be indicated in the test plan.

D. Market Evaluation and Applicants Existing Experience (5 to 15 pages)

The applicant must provide a market evaluation indicating which markets and applications are being addressed by the proposed fuel cell system. The applicant must discuss the viability of the market and present evidence for the validity of the discussion. The markets must be consistent with the minimum numbers of base unit production per year identified in the cost estimate as required to meet the DOE cost goals.

The applicant must detail and discuss its existing participation and relevant experience within the markets identified in the application. This current experience does not have to be related to a fuel cell technology but should be relevant to the introduction of the solid-oxide fuel cell technology developed through this solicitation. It should also detail the relevant experience of its Industrial Team members. The applicant shall describe its overall technical and management experience and experience in managing projects similar in type, technology, size, and complexity. Separate from the above discussion, the applicant shall discuss the experience of the Industrial Team members in fuel cell technology and discuss any relevant experience of any of the Industrial Team members with stationary, mobile, and military fuel cell applications. The applicant shall demonstrate its ability to introduce the developed fuel cell technology into the identified market segments.

The prime applicant shall demonstrate that if a fuel cell system meeting the requirements of this solicitation were commercially ready and available today, the initial market (s) for the system would be large enough to meet the DOE specified cost goals identified in the minimum requirements and the prime applicant would be in a position to immediately sell a product in these market (s) (e.g., a company that currently sells or uses electronic components for mobile applications or one that supplies portable power sources for commercial or residential purposes with the market sizes in question). The applicant should demonstrate their capacity to immediately commercialize the fuel cell system in the proposed markets even if an auxiliary power or distributed generation product is not currently sold, if the potential exists (e.g. a utility that generates power via central generation power plants but with a power market amenable to distributed generation).

E. Capabilities, Facilities, Team Structure and Personnel (5 to 10 pages)

The applicant must discuss the capabilities for the entire Industrial Team. The key personnel involved and their relationship to the project shall also be included, along with resumes (RESUMES ARE NOT INCLUDED IN THE 10 PAGE LIMITATION - THEY ARE TO BE PROVIDED AS AN ATTACHMENT). The key personnel should have a minimum of ten years experience directly related to the work under their cognizance as



identified in the application. Each key person's resume shall further identify relevant capabilities, experience, and responsibilities (including dates). The applicant shall clearly indicate past work that is relevant to expectations for success of the proposed project.

In support of the applicant's technical approach, a discussion of the availability and commitment of the applicant's (or team members) facilities and equipment, testing apparatus, laboratories, and additional personnel shall be provided. The applicant shall identify specific facilities and laboratories that will be devoted to this work, including any planned equipment or facility additions over the three phases. In general, DOE does not anticipate funding new facilities, although exceptions could be made based on compelling arguments. The applicant must provide a list of major materials, parts, and equipment required to perform the project and detail the availability of these items.

The applicant shall discuss the team structure emphasizing how the overall program will be structured and managed. A description of organizational and individual responsibilities and activities assignments for each team member shall be provided. The applicant shall also discuss the availability of key personnel. An organization chart of all entities involved in the project shall be included. Relationships with team members, consultants, and subcontractors should be defined. The applicant shall discuss how all of the various entities will work together to accomplish the proposed work. It shall describe the method that will be used to maintain internal and inter-organizational control over budget, schedule, quality of performance, and project end products. Letters of commitment from any identified subcontractors or consultants shall be included as an attachment (LETTERS OF COMMITMENTS ARE NOT INCLUDED IN THE 10-PAGE LIMITATION).

#### 4. PUBLIC ABSTRACT

This section shall contain a public abstract of not more than one (1) typewritten page clearly stating the objectives of the proposed research, the title of the project, methodology, and sponsoring organization (s). It is a stand-alone document. This abstract may be released to the public by DOE in whole or in part at any time. It is, therefore, required that it shall not contain proprietary data or confidential business information.

#### 3.6 STATEMENT OF WORK INSTRUCTIONS (DEC 1999)

All applications must contain a single, detailed Statement of Work that addresses how the project objectives will be met. The Statement of Work must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below.

Applicants shall prepare the Statement of Work in the following format:

##### TITLE OF WORK TO BE PERFORMED

(Insert title of work to be performed. Be concise and descriptive.)

##### A. OBJECTIVES

Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

##### B. SCOPE OF WORK

This section should not exceed one-half page and should summarize the effort and approach to achieve the objective(s) of the work for each Phase.

##### C. TASKS TO BE PERFORMED

Tasks, concisely written, should be provided in a logical sequence and should be divided into the phases of the project. This section provides a brief summary of the planned approach to this project.

#### PHASE I

Task 1.0 (Title)

(Description)

Subtask 1.1 (Optional)

(Description)

Task 2.0 - (Title)

Task 3.0 - (Title)

#### Phase II

General description of effort to be completed.

#### Phase III

General Description of effort to be completed.

#### D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the attached “Federal Assistance Reporting Checklist” and the instructions accompanying the checklist.

The Recipient shall provide a list of deliverables other than those identified on the “Federal Assistance Reporting Checklist” that will be delivered. These reports shall also be identified within the text of the Statement of Work.

1. Task 1.1 - (Report Description)
2. Task 2.2 - (Report Description)

#### E. BRIEFINGS/TECHNICAL PRESENTATIONS

At a minimum, the applicant shall include the following briefings/technical presentations in its application. Any additional trips shall also be detailed and justified.

1. The Recipient shall prepare a minimum of one briefing for presentation to the COR at the COR’s facility located in Pittsburgh, PA or Morgantown, WV per year. Briefings shall be given by the recipient to explain the plans, progress, and results of the technical effort.
2. The Recipient shall attend two SECA Core Technology Program Review Meetings per year. For application preparation purposes, the applicant shall assume one program review will be at a major city on the east coast and one will be at a major city on the west coast.
3. The Recipient is expected to attend additional conferences as required to report on its project activities (applicant to propose location).

4. The Recipient shall attend and present a program summary at the annual SECA Workshop. For application preparation purposes, the applicant shall assume the program review will be at a major city on the east coast.

### **3.7 VOLUME III - COST APPLICATION PREPARATION INSTRUCTIONS**

The applicant must provide detailed budget information on one or more of the following budget forms. The budget for Phase I should be accompanied by detailed supporting cost information as required in Paragraph 1 below. Budgetary estimates should only be provided for Phases II and III.

Supporting cost data shall be submitted as indicated by the instructions on the reverse of the budget form or the supporting cost detail requirement in Paragraph 5 of this clauses. The DOE Form 4620.1 and the ER F 4620.1A is used most generally for educational institutions and the DOE Form 4600.4 and SF424a are use most generally by other than educational institutions. The form submitted shall be at the discretion of the applicant.

Failure to provide the detailed cost information as described in the instructions will result in an incomplete package. The applicant shall stipulate in the application the source and amount of cost sharing and the value of third party in-kind contributions proposed to meet the requirement.

- a. Federal Assistance Budget Information -- DOE F 4600.4 -- **Form #D4600.4**
- b. Budget Page DOE F 4620.1 -- **Form # D4620.1**
- c. Grant Application Project Period Summary ER F 4620.1A -- **Form #ERF4620**
- d. Budget Information -Non-Construction Programs -- SF424a -- **Form #SF424a**

The information presented on the forms should reflect the total program (Phases I, II, and III). Detailed supporting information is however required to justify the Phase I budget.

#### **1. SUPPORTING COST DETAIL REQUIREMENTS FOR PHASE I**

The following cost detail is required for the proposed cost elements for Phase I. Additionally teaming members and subcontractors are also required to submit the below information with their budgets.

**Personnel** -- In support of the proposed personnel costs, provide a supplemental schedule that identifies the labor hours, labor rates, and cost by labor classification for each budget year. Also indicate the basis of the labor classification, number of hours, and labor rates. An example of the basis for the labor classification and number of hours could be past experience, engineering estimate, etc. An example of the basis for the labor rates could be actual rates for the individuals who will perform the work or an average labor rate for the labor classification or a departmental average rate.

**Fringe Benefits** -- Provide the method used to calculate the proposed rate amount. If a fringe benefit has been negotiated with, or approved by, a Federal Government agency, provide a copy of the agreement. If no rate agreement exists, provide the method used to calculate the proposed amount.

**Travel** -- For each proposed trip, provide the purpose, number of travelers, travel origin and destination, number of days, and a breakdown of costs for airfare, lodging, meals and incidentals. The basis for the airfare, lodging, meals and incidentals must be provided, such as past trips, current quotations, Federal Travel Regulations, etc.

**Equipment** -- Provide an itemized list of each piece of equipment, individual costs, and the basis for estimating the cost, for example, vendor quotes, catalog prices, prior invoices, etc.

**Supplies** -- Provide an itemized list of supplies, individual costs, and the basis for estimating the cost, for example, vendor quotes, catalog prices, prior invoices, etc.

**Contractual** -- Include in this category the cost of consultants and subcontractors in the same level of detail as the

applicant's costs.

**Consultants** -- Provide the hourly or daily rate along with the basis for the rate. Furnish resumes or similar information regarding qualifications or experience. Provide at least two invoices reflecting hourly or daily rates charged to customers other than the Government. A statement signed by the consultant certifying his or her availability and salary must be provided. If travel or incidental expenses are to be charged, give the basis for these costs.

**Subcontractors** -- Provide the total cost per year for each subcontractor. Detail of subcontractor's costs should appear in the subcontractor's budget explanation.

**Construction** -- Provide detail of construction costs, if applicable.

**Other Direct Costs** -- Provide an itemized list with costs for any other item proposed as a direct cost and state the basis for each proposed item.

**Indirect Costs** -- If indirect rates have been negotiated with or approved by a Federal Government agency, please provide a copy of the latest rate agreement. If you do not have a current rate agreement, submit an indirect cost rate proposal which includes the major base and pool expense groupings by line item and dollar amount. In either case, provide a breakdown of the proposed indirect costs for each of our accounting periods included in the application. Identify the rate and allocation base for each indirect cost, such as Overhead, General and Administrative, Facilities Capital Cost of Money, etc.

**Cost Sharing** - Considering the nature of the effort, the potential for future economic benefit, and the Energy Policy Act of 1992, a minimum of 20% of cost-sharing is required for Phase I, and 50% is required for Phase II and III.

The proposed cost share must be presented in the same level of detail as the cost to be reimbursed by the Government. Your cost application must show the breakout between Federal and non-Federal sources. The non-federal share may include cash, personnel, services, equipment, and other resources.

All cost sharing or matching contributions, including cash and third party contributions shall meet the following criteria:

- (1) are verifiable from the recipient's records,
- (2) are necessary and reasonable for proper and efficient accomplishment of project or program objectives,
- (3) are not included as contributions for any other federally-assisted project or program,
- (4) are allowable and allocable 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.

Detailed below is a list of project costs not allowed for cost-sharing purposes:

- (1) DOE shall not accept valuation for property sold, transferred exchanged, or otherwise manipulated to acquire a new basis for depreciation purposes or to establish a rental value in circumstances which would amount to a transaction for the mere purpose of meeting the cost share requirements of this solicitation.
- (2) Property which has been fully depreciated will not receive any cost-sharing value except to the extent that it has been in continuous use by the applicant during the entire previous year.
- (3) Existing facilities, equipment, and supplies, or previously expended research or development funds are not cost-sharing for the purposes of this solicitation, except as amortized, depreciated, or expensed in normal business practice.
- (4) Patents, proprietary data, or prior work will not be valued in determining the offer's cost participation.
- (5) Allowable costs which are absorbed by the applicant as its share of cost participation may not be charged directly or indirectly or may not have been charged directly or indirectly in the past to the Federal Government under other contracts, agreements, or grants. Additionally, other appropriated federal funds are not cost-sharing for the purposes of this solicitation.



## SECTION IV - EVALUATION AND SELECTION

### **4.1 INTRODUCTION (MAY 2000)**

This section contains the evaluation approach as well as the individual criteria to be used in the evaluation of applications.

### **4.2 GENERAL (JULY 1999)**

It is the policy of DOE that any financial assistance be awarded through a merit-based selection process which means a thorough, consistent and independent examination of applications based on pre-established criteria by persons knowledgeable in the field of the proposed project.

### **4.3 PRELIMINARY EVALUATION (MAY 2000)**

Prior to a comprehensive evaluation, applications will undergo an initial review to determine whether the information required by the solicitation has been submitted and is properly completed. Applications will be reviewed for relevance to the SECA program and for responsiveness to the requirements of the solicitation. Solicitations that require cost-sharing will be reviewed to insure that this requirement has been met. Volume I of the application will be reviewed to assess the Applicant's eligibility under the lobbying, EPAct and Simpson-Craig Amendment requirements, and the requirement to complete 75% of the direct labor in the United States. Failure to successfully meet any one of these Preliminary Evaluation criteria may result in the elimination of the application and no further consideration in the Comprehensive Evaluation. In the event that an application is eliminated, a notice will be sent to the Applicant stating the reason(s) that the application will not be considered for financial assistance under this solicitation.

### **4.4 COMPREHENSIVE EVALUATION (AUG 1999)**

Applications passing the preliminary evaluation shall be subject to a comprehensive evaluation in accordance with the technical evaluation criteria listed in this section.

The technical evaluation is conducted to determine the merits of the technical application with regard to the potential success of the project as well as future commercial applications. Comprehensive evaluation results in a numerical score for each application against each of the technical evaluation criteria.

The Environmental, Health, Safety, and Security (EHSS) Evaluation, which is not point scored, is conducted to determine the completeness of the Environmental Questionnaire, and to assess the applicant's awareness of EHSS requirements for mitigating project related EHSS risks and impacts.

The cost evaluation, which is not point scored, is conducted to determine the extent of cost participation, completeness of the cost estimate, and appropriateness and reasonableness of the cost.

### **4.5 TECHNICAL EVALUATION CRITERIA (AUG 1999)**

Technical applications submitted in response to this solicitation will be evaluated and scored in accordance with the criteria listed below. The weighting factors for each technical evaluation criteria is identified below and will be applied to obtain a final evaluation rating for each application.

#### **1. Technical Approach - 40%**

Adequacy of the planned technical approach with respect to the design, manufacture, and test of the required prototype. Demonstrated likelihood that the proposed technical approach presented will lead to a prototype at the end of each phase that meets the solicitation's minimum requirements. Identification and appropriateness of proposed R&D needs. Ability of the system to satisfy multiple applications in different market segments. Effectiveness of methods and approaches

proposed to mitigate or avoid problems. Demonstrated likelihood that the methods projected for production can be used to produce a prototype.

## 2. Cost Estimate - 20%

Thoroughness of the cost estimate, including accounting for all the components of the stack and system as well as the items identified in the minimum requirements. Demonstrated reasonableness of the cost estimate and likelihood that the solicitation cost goals will be met at the end of each phase.

## 3. Statement of Work, Milestones, and Test Plan - 20%

Soundness and completeness of proposed Statement of Work. Demonstrated likelihood that the proposed efforts will lead to a prototype meeting the Phase I goals. Adequacy of the work breakdown structure, including covering of critical activities, organizational responsibilities, and matching resources to requirements. Appropriateness of proposed man-hours.

Completeness of the Phase II and III effort discussion, and demonstrated likelihood that the prototypes will meet the minimum requirements for Phase II and III. Adequacy of sequence of activities, milestones and decision points. Adequacy and completeness of the preliminary test plan.

## 4. Market Evaluation and Applicants Existing Experience - 10%

Reasonableness of proposed market evaluation. Demonstrated viability of the proposed market(s). Relevant business experience in the markets proposed. Demonstrated experience in fuel cell technology and in stationary, mobile, and military fuel cell applications. Likelihood that the initial proposed market is adequate to meet the DOE cost goals, and the applicant has the ability to sell a product in these markets. Ability to introduce developed fuel cell technology in the identified market segments. Demonstrated capacity to commercialize the fuel cell system even if auxiliary power or distributed generation product is not currently sold.

## 5. Capabilities , Facilities, Team Structure and Personnel - 10%

Demonstrated credentials, capabilities, and experience of key personnel and entire Industrial Team. Type, quality, and availability of the proposed equipment, materials, and facilities. Reasonableness of justification for purchase or lease of facilities, equipment, or materials.

Adequacy of the proposed team structure and availability of key personnel. Likelihood that the proposed structure will be sufficient to complete the project objectives.

### **4.6 COST EVALUATION CRITERIA (JULY 1999) (S)**

The costs proposed will be evaluated in response to this solicitation in order to:

- (a) determine the level of verifiable cost sharing; and
- (b) ensure that all work elements included in the Statement of Work have associated costs, and that those costs appear appropriate and reasonable for the effort proposed.

If as a result of the technical evaluation and the application of the cost evaluation criteria, two or more applications are considered to be essentially equal, the percentage of cost share relative to the proposed cost may be the deciding factor in making a selection for award.

Selection of an offeror for award may involve a determination as to whether an otherwise technically superior application is worth any additional cost.

#### **4.7 RELATIVE ORDER OF IMPORTANCE OF EVALUATION CRITERIA (JULY 1999) (S)**

The evaluation of the technical application will be conducted using preestablished weights to determine the relative merits of the application in accordance with the technical evaluation criteria. The technical application is of greater importance than the cost application. However, as detailed above, if as a result of the technical evaluation and the application of the cost evaluation criteria, two or more applications are considered to be essentially equal, the percentage of cost share relative to the proposed cost may be the deciding factor in making a selection for award. The Financial Application Document will be evaluated for adequacy and compliance with the solicitation.

#### **4.8 APPLICATION OF PROGRAM POLICY FACTORS (MAY 2000)**

These factors, while not indicators of the Applicant's merit, e.g., technical excellence, cost, applicant's ability, etc., may be essential to the process of selecting the application(s) that, individually or collectively, will best achieve the program objectives. Such factors are often beyond the control of the Applicant. Applicants should recognize that some very good applications may not receive an award because they do not fit within a mix of projects which maximizes the probability of achieving the DOE's overall research and development objectives. Therefore, the following Program Policy Factors may be used by the Source Selection Authority (SSA) to assist in determining which of the ranked application(s) shall receive DOE funding support.

1. It is desirable to select for award a group of projects which represents a diversity of technical approaches, methods, applications, and/or market segments;
2. It may be desirable to support complementary and/or duplicative efforts or projects, which, when taken together, will best achieve the research objectives;
3. It is desirable that different kinds and sizes of organizations be selected for award in order to provide a balanced programmatic effort and a variety of different technical perspectives;

The above factors will be independently considered by the SSA in determining the optimum mix of applications that will be selected for support. These policy factors will provide the SSA with the capability of developing, from the competitive solicitation, a broad involvement of organizations and organizational ideas, which both enhance the overall technology research effort and upgrade the program content to meet the goals of the DOE.

#### **4.9 BASIS FOR SELECTION AND AWARD (MAY 2000)**

The Department of Energy anticipates the award of one or more financial assistance instruments to those applicants whose applications are determined to be in the best interest of the Department in achieving the program objectives set forth in this solicitation. Selection of an application by the Department will be achieved through a process of evaluating and comparing the relative merits of the applicant's complete applications, in accordance with all of the evaluation factors set forth in this section.

This process reflects the Department's desire to accept an application based on its potential in best achieving program objectives, rather than solely on evaluated technical merit or cost. Accordingly, the Department of Energy may select for an award all, none, or any number or part, of an application, based on its decision as to which meritorious applications best achieve the program objectives set forth in this solicitation.

It is important for applicants to note that selection for negotiations will be made entirely on the basis of applications submitted. Applications should, therefore, address specifically the factors mentioned in the evaluation criteria, and not depend upon reviewers' background knowledge.



**SECTION V - ELECTRONIC FORMS AND/OR DOCUMENTS**

- A. All forms needed for preparation of the recipient’s application are found on the NETL website at: **<http://www.netl.doe.gov/business/forms/forms.html>** in either WordPerfect or Portable Document Format (PDF). Furthermore, a listing of the Volume I forms is presented in the table below. Please note that all forms were developed using WordPerfect 6.1 and formatted for printing using an HP LaserJet IIISi printer. No form is provided by DOE to the proposer to show willingness to cost share the required minimum. The proposer must provide a letter of commitment signed by a duly authorized corporate official committing the organization to the required cost sharing.
- B. To view and print PDF files from the NETL website, one needs to first download and install the free Adobe Acrobat Reader from Adobe Systems, Inc. See our getting started instructions for help. For assistance with any of the electronic forms or documents, please send an e-mail to the attention of the “mgabri@netl.doe.gov,” or by telephone at (304) 285-4253 (Also reference trouble shooting page).

Note: Forms downloaded in WordPerfect are fillable; however, care should be taken to maintain the original format.

<b>Form #</b>	<b>Title</b>
assure.fa	Financial Assistance Assurance Package
D1600.5	*Assurance of Compliance
D4600.4	Federal Assistance Budget Information
D4620.1	Budget Page
F4220.35	*Additional Representations & Certifications for Federal Financial Assistance
F4220.38	*NETL Assurance, Non-Construction Programs
nepasol	Environmental Questionnaire for Solicitations
SF424	Application for Federal Assistance
SF424b	Assurances - Non-Construction Programs
SFLLL	*Disclosure of Lobbying Activities
*Form also contained within form file: <u>assure.fa</u> . Provided separately for convenience.	

**SECTION VI - SAMPLE COOPERATIVE AGREEMENT**



## INSTRUCTIONS

*(This form shall be completed in accordance with the following instructions. For any clarification or additional information that might be needed, consult the appropriate section of the DOE Financial Assistance Procedures Manual (DOE-FAPM).)*

Insert in the space provided, in the line which begins, "Under the Authority of Public Law ...," the number and the name of the Public Law which authorizes this award. On the line below, enter the title of the pertinent program.

**Block 1** — Enter the project title as it appears in the SF-424 or equivalent application/proposal face sheet.

**Block 2** — Place a checkmark in the box beside the appropriate financial assistance instrument.

**Block 3** — Enter the name, address, and telephone number of the applicant/proposer as it appears in the SF-424 or equivalent application/proposal face sheet.

**Block 4** — Enter the instrument number. (See DOE-FAPM.)

**Block 5** — Enter the appropriate amendment number. (See DOE-FAPM for guidance.)

**Block 6** — Enter the starting date and expiration date for the current budget period. If a budget period is being changed, enter the starting date and expiration date for the budget period, as changed.

**Block 7** — Enter the starting date and anticipated completion date for the project. If a project period is being changed, enter the starting date and anticipated completion date for the project period, as changed.

**Block 8** — Enter the name and telephone number of the individual designated by the applicant/proposer as the director of the project.

**Block 9** — Enter the name and telephone number of the individual designated by the applicant/proposer as the contact for all business matters.

**Block 10** — Place a checkmark in the box opposite the term which identifies the type of action being taken. (The terms are defined in the DOE-FAPM.)

**Block 11** — Enter the name, address, and telephone of the individual designed by the DOE program office as the project officer.

**Block 12** — Enter the name, address, and telephone number of the individual/organization who will administer the agreement for DOE.

**Block 13** — Place a checkmark in the box beside the applicable recipient type. If the recipient is a for-profit organization, also check one of the lower boxes as follows: "C" for Corporation, "P" for Partnership, and "SP" for Sole Partnership. If the recipient is of a type not indicated, place a checkmark in the box beside "Other," and identify the recipient type in the space provided.

**Block 14** — Enter where indicated, the appropriation symbol, B&R number, Fund Type (FT)/AFP Code (AFP)/Objective Class (OC) and CFA Number from the Procurement/Financial Assistance Request Authorization (DOE Form PR-799A). Completion Block 14.d. is required only for awards made by Headquarters.

**Block 15** — Enter the applicant's/proposer's Federal Employer Identification No. from the SF-424 or equivalent application/proposal face sheet, or if the applicant/proposer is an individual, enter his/her social security number.

**Block 16** — Entries should be made as follows. (If no dollar entry is appropriate, a zero should be entered to indicate there was no error of omission.)

**Line a.(1)** — Enter the amount of DOE funds obligated by this action.

**Line a.(2)** — Enter the amount of DOE funds not expended in prior budget period(s), if any, authorized by DOE for expenditure in the current budget period.

**Line a.(3)** — Enter the amount of DOE funds previously obligated in the current budget period.

**Line a.(4)** — Enter DOE's share of the total approved budget shown in Line a.(6).

**Line a.(5)** — Enter the recipient's share of the total approved budget shown on Line a.(6).

**Line a.(6)** — Enter the total approved budget for the current budget period. (Add the amounts in Lines a.(4) and a.(5).)

**Line b.(1)** — Enter the amount of DOE funds obligated in the current budget period. (Add the amounts in Lines a.(1) and a.(3).)

**Line b.(2)** — Enter the amount obligated by DOE in prior budget periods.

**Line b.(3)** — Enter the amount obligated by DOE in the project period to date. (Add the amounts in Lines b.(1) and b.(2).)

**Block 17** — Must be completed for cooperative agreements. Contracting Officers may exercise discretion as to whether to complete it for grants. Enter the blank provided, the amount which represents the current estimate of total funds and dollar value of in-kind contributions (both DOE and recipient shares) needed to carry out the entire project. Include all funds and contributions previously provided, those being provided by this action, and all anticipated future obligations and contributions of both parties.

**Block 18** — Complete as follows.

**Item a.** — No entry necessary.

**Item b.** — Enter the legal citation from the Code of Federal Regulations or Federal Register and the effective date for the program regulations applicable to the program under which the award is made.

**Item c.** — Mark the box beside B for grants or C for cooperative agreements.

**Item d.** — In the blank provided, enter the date of the application/proposal. (If SF-424 is used, see block 23c on page 1.) Place a checkmark in the appropriate box to indicate whether the application/proposal was accepted as submitted or with negotiated changes.

**Block 19** — Enter any explanation or advisory comments which are required for, or applicable to, this action.

**Block 20** — Will be completed by the recipient.

**Block 21** — The Contracting Officer shall sign and date the top line. His/her name and title should be entered on the next two lines. This box must be signed prior to forwarding to recipient.

## **SECTION II - SPECIAL TERMS AND CONDITIONS**

### **2.1 CONSECUTIVE NUMBERING (JAN 1999)**

Due to automated procedures employed in formulating this document, clauses and provisions within it may not always be continuously numbered.

### **2.2 PREVAILING REGULATIONS (NOV 1998)**

As indicated on the face page, Block 18c, this Award is subject to the DOE Assistance Regulations of Title 10, Code of Federal Regulations, Part 600. This set of regulations may be found in most major libraries or on the World Wide Web at:

<http://www.pr.doe.gov/fahome.html>

### **2.3 ORDER OF PRECEDENCE (DEC 1999)**

In the event of any inconsistency among the provisions of this agreement, the inconsistency shall be resolved by giving precedence as follows: (a) Applicable Public Laws; (b) the special terms and conditions or schedule of articles; (c) 10 CFR Part 600; and (d) other documents, exhibits and attachments.

### **2.4 SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE RECIPIENT (JAN 1999)**

There will be substantial involvement between the DOE and the Recipient during performance of this Cooperative Agreement.

The DOE and participant will share responsibility for the management of the project as further described in this section.

#### a. Recipient Role

The Recipient shall be responsible for all aspects of project performance as set forth in the Statement of Work. All services, personnel, facilities, equipment, materials, and supplies shall be furnished by the Recipient, unless otherwise specified under this Cooperative Agreement. The Recipient Project Director shall serve as its authorized representative for the technical elements of all work to be performed under this Cooperative Agreement. The Recipient Business Officer shall serve as its authorized representative for administrative elements dealing with the Cooperative Agreement.

#### b. DOE Role

DOE shall monitor the Recipient's progress in performing the project and shall have a substantial role in project decision making.

The DOE Contracting Officer is the only Government Representative authorized to accept the reports and other deliverables the Recipient is required to provide under this Cooperative Agreement. The DOE Project Officer (same as Contracting Officer's Representative) shall have the authority to comment on those technical reports, plans, and other technical information the Recipient is required to submit to DOE for review and comment.

The DOE Project Officer shall have the authority to issue written technical advice that suggests redirecting the project work (e.g., by changing the emphasis among different tasks), or pursuing specific lines of inquiry likely to assist in accomplishing the Statement of Work. The DOE Project Officer is not authorized to issue, and the Recipient is not required to follow, any technical advice that constitutes work which is not within the scope of the Statement of Work; which in any manner causes an increase or decrease in the total estimated cost or in the time required for performance of the project; which has the effect of changing any of the terms or conditions of the Cooperative Agreement; or which interferes with the Recipient's right to perform the project in accordance with the terms and conditions of this Cooperative Agreement.

The Government has the right to inspect and evaluate the work performed or being performed under the cooperative agreement, and the premises where the work is being performed, at all reasonable times and in a manner that will not unduly delay the work. If the Government performs inspection or evaluation on the premises of the recipient or a subcontractor, the recipient shall furnish and shall require subcontractors to furnish all reasonable facilities and assistance for the safe and convenient performance of these duties. The extent and nature of the inspection and evaluation shall be at the discretion of the Contracting Officer. In addition, the DOE may require at its discretion to have any or all of the prototypes sent to NETL for further testing following completion of the required Industrial Team testing.

c. No Government Obligation to Third Parties

In connection with the performance of the project, the Government shall have no obligation or responsibility to any contractor, subcontractor or other person who is not a party to this Cooperative Agreement. The foregoing limitation shall apply notwithstanding the Contracting Officer's prior approval of or consent to any contract awarded by the Recipient. The Recipient shall be responsible, without recourse to DOE, except for amounts DOE is otherwise obligated to pay pursuant to the provisions of this Cooperative Agreement for the resolution and satisfaction of all preaward protests, contract administration issues, and contract disputes arising out of contracts awarded by the Recipient for acquisitions related to the Project.

**2.5 COST SHARING (JULY 2000)**

The total estimated cost of the project for the work to be accomplished under this award is [\$ ]. The Recipient and the Government agree to share the allowable project costs under this award as follows:

	Phase I	Phase II	Phase III	Total
DOE:	[\$ ]	[\$ ]	[\$ ]	[\$ ]
Recipient:	[\$ ]	[\$ ]	[\$ ]	[\$ ]
Total:	[\$ ]	[\$ ]	[\$ ]	[\$ ]

**2.6 FUNDING (AUG 2000)**

This award is to be incrementally funded. The DOE has currently obligated \$[ ] and anticipates, subject to the availability of additional funds, obligating the DOE balance of \$[ ]. The Recipient shall not be obligated to continue performance of this project beyond the amount set forth in Block 16(b)(3) of the DOE F 4600.1.

**2.7 ALLOWABLE PREAWARD COSTS (MAR 1999)**

The Recipient is entitled to reimbursement of preaward costs in the amount not to exceed [ ] of DOE obligations. These costs are limited to work associated with performance of [ ], incurred during the period starting on [ ] through the effective start date of this award (Block 7, DOE F 4600.1).

**2.8 CONTINUATION APPLICATION (DEC 1999)**

Funding for each budget period within the approved project period shall be contingent on DOE approval of a continuation application submitted no later than 60 days prior to the end of the current budget period. The continuation application shall be submitted on the SF 424 in accordance with 10 CFR 600.26. Forms for submission of continuation applications can be found at <http://www.netl.doe.gov/business/forms/forms.html>.

**2.9 METHOD OF PAYMENT (APR 2000)**

The method of payment to the Recipient shall be accomplished by the method checked below:

- Advance in accordance with 10 CFR 600.122(b)
- Reimbursement in accordance with 10 CFR 600.122(e)
- Other in accordance with 10 CFR 600.122

The Recipient shall request advances or reimbursements using the Standard Form SF 270, Request for Advance or Reimbursement, and shall complete Blocks 1-11 and 13. Electronic versions of the SF 270 can be found on the NETL website at: <http://www.netl.doe.gov/business/forms/forms.html>

**Note 1:** If the block designating payment by Advance is used, the Recipient is allowed advances not to exceed the funding required to cover expenditures for any succeeding one month time period. Such requests for monthly advances shall be prepared using the Standard Form SF 270 in an original and two (2) copies.

The original is to be submitted to:

U. S. Department of Energy  
Oak Ridge Financial Services  
P. O. Box 4787  
Oak Ridge, TN 37831

The two copies are to be submitted to:

U. S. Department of Energy  
National Energy Technology Laboratory  
Attn: Accounts Payable  
P. O. Box 880  
Morgantown, WV 26507-0880]

Note 2: If the block designating payment by Reimbursement is used, the Recipient shall submit the request for payment for costs incurred using the Standard Form SF 270 in an original and two (2) copies as indicated in Note 1 above. This request shall not be submitted more frequently than monthly.

#### Status of Payments

The Oak Ridge Financial Service Center (ORFSC) has a system via Internet, in which Recipients can request information about payments by invoice, by award number, and/or by paid date. The system is called Vendor Inquiry Payment Electronic Reporting System (VIPERS) and is available to Recipients at the following website: <http://finweb.oro.doe/vipers.htm>. Recipients must have a federal tax identification number (TIN) and then obtain a personal identification number (PIN) to access the system.

#### **2.10 NOTICE OF INVOICE PROCESSING BY SUPPORT CONTRACTOR (DEC 1999)**

A support service contractor performs the function of processing of all invoices submitted to the National Energy Technology Laboratory, against its awards. Therefore, this contractor has access to your business confidential cost/rate information. A special provision in this contractor's award requires the confidential treatment by all contractor employees of any and all business confidential information of other contractors and financial assistance recipients to which they have access.

#### **2.11 METHOD OF PAYMENT - PAYMENT MANAGEMENT SYSTEM (PMS) 10 CFR 600.122 (NOV 1998)**

Payment Management System (PMS): The Recipient is required to maintain advances of federal funds in interest bearing accounts. Any interest income earned by the Recipient on federal funds must be remitted at least quarterly to the cognizant DOE office. However, up to \$250 of the interest earned per year may be retained by the Recipient to cover administrative expenses.

Funds advanced to the Recipient must be kept to a minimum amount necessary to meet the Recipient's cash flow needs. Cash needs shall be determined by the Recipient's cash outlay requirements and shall not be based on costs incurred. If funds are erroneously drawn in excess of the Recipient's immediate disbursement needs, the excess funds should be promptly refunded and reissued when needed. The only exception to this is when excess funds will be disbursed by the Recipient within seven calendar days or when the excess funds are less than \$10,000 and will be disbursed within thirty (30) calendar days.

A computer generated report (PMS 272 -- Federal Cash Transaction Report, Status of Federal Cash) will be furnished by the Department of Health and Human Services (DHHS) to all Recipients on a quarterly basis with active PMS accounts. The Recipient will be required to review the report and certify that the data is correct. In addition to returning the certified report to the DHHS, a copy of the report should be sent to the cognizant Contracting Officer. Unsigned reports will be returned and may cause delays in payment if the report due date has passed.

A detailed statement of costs incurred and the cost sharing amount shall be forwarded to the Contracting Officer concurrent with drawdowns from the PMS.

#### **2.12 ACKNOWLEDGMENT OF FEDERAL FUNDING (NOV 1998)**

When issuing statements, press releases, requests for proposals, bid solicitations, and other documents describing this project, the Recipient shall clearly state (1) the percentage of the total cost of the project which will be financed with Federal money, and (2) the dollar amount of Federal funds for the project.

#### **2.13 REAL PROPERTY - NONE (JAN 1999)**

No real property may be acquired under this award.

#### **2.14 RECIPIENT ACQUIRED PROPERTY (MAY 1999)**

Reference Attachment [ ] for a listing of property authorized for acquisition under this award. Property acquired by the Recipient under this award shall be managed in accordance with 10 CFR 600.130 to 10 CFR 600.137, and reported as prescribed in Attachment B, Federal Assistance Reporting Checklist.

**2.15 KEY PERSONNEL (JUNE 2000)**

Recipient personnel considered to be essential and key to the work being performed hereunder are specified [Insert the words "in Block 8 on the Face Page of this award." or in the case where there are several key personnel names insert the word "below" and list the persons. It is not necessary to list the persons if only one person is identified and that name is the same as the one on the face page of the award. ]

<u>NAME</u>	<u>TITLE</u>	<u>TELEPHONE</u>
[ ]	[ ]	[ ]

The personnel specified in this clause are considered to be essential to the project. Before diverting any key personnel to work outside the scope of this award, the Recipient shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the project. No key personnel may be substituted without the Contracting Officer's approval. Such approval shall be obtained in advance of the substitution, except that the Contracting Officer may ratify a substitution which, because of exigent circumstances, was made before the Recipient could request and/or obtain the Contracting Officer's approval.

**2.16 PAPERWORK REDUCTION (NOV 1998)**

The award is subject to the requirements of the Paperwork Reduction Act of 1980 as implemented by the Office of Management and Budget rules, "Controlling Paperwork Burdens on the Public," published at 5 CFR 1320. These requirements apply if the Recipient will collect information from ten (10) or more respondents at the specific request of DOE, or if the award requires specific DOE approval of the information collection or the collection procedures.

The Recipient shall submit any proposed sponsored information collection to the person identified on the DOE F 4600.1 (Award Face Page, Block 12). The proposal shall be submitted at least 120 days prior to the intended date of information collection. DOE will seek the requisite approval from the Office of Management and Budget (OMB) and will promptly notify the Recipient of the disposition of the request.

**2.17 PUBLIC ACCESS TO INFORMATION (APR 2000)**

The Freedom of Information Act, as amended, and the DOE implementing regulations (10 CFR 1004) require DOE to release certain documents and records regarding awards to any person who provides a written request. The intended use of the information will not be a criterion for release.

**2.18 NATIONAL SECURITY (NOV 1998)**

It is not expected that activities under the award will generate or otherwise involve classified information (i.e., Restricted Data, Formerly Restricted Data, National Security Information).

However, if in the opinion of the Recipient or DOE such involvement becomes expected prior to the closeout of the award, the Recipient or DOE shall notify the other in writing immediately. If the Recipient believes any information developed or acquired may be classifiable, the Recipient shall not provide the potentially classifiable information to anyone, including the DOE officials with whom the Recipient normally communicates, except the Director of Classification, and shall protect such information as if it were classified until notified by DOE that a determination has been made that it does not require such handling. Correspondence which includes the specific information in question shall be sent by registered mail to U. S. Department of Energy, Attn.: Executive Assistant for Defense Programs, DP-4, 4A-019/FORS, 1000 Independence Avenue, Washington, D.C. 20585. If the information is determined to be classified, the Recipient may wish to discontinue the project, in which case the Recipient and DOE shall terminate the award by mutual agreement. If the award is to be terminated, all materials deemed by DOE to be classified shall be forwarded to DOE, in a manner specified by DOE, for proper disposition. If the Recipient and DOE wish to continue the award, even though classified information is involved, the Recipient shall be required to obtain both personnel and facility security clearances through the Office of Safeguards and Security for Headquarters awarded awards obtained through DOE field organizations. Costs associated with handling and protecting any such classified information shall be negotiated at the time the determination to proceed is made.

**2.19 NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS (DEC 1999)**

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.



**2.20 LOBBYING RESTRICTION (DEPARTMENT OF INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT, 2000) (DEC 1999)**

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.

A copy of the DOE "Lobbying Brochure" which provides a summary of the statutory and regulatory restrictions regarding lobbying activities for Federal contractors can be found at (<http://www.pr.doe.gov/lobbying.html>).

**2.21 NOTICE REGARDING UNALLOWABLE COSTS AND LOBBYING ACTIVITIES (NOV 1998)**

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.

**2.22 YEAR 2000 COMPLIANCE (NOV 1998)**

Year 2000 compliant means, with respect to information technology, the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.

The Recipient assures, by acceptance of this award, that items delivered under this contract are year 2000 compliant.

**2.23 REPORTING (NOV 1998)**

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.

**2.24 RESEARCH INVOLVING RECOMBINANT DNA MOLECULES (NOV 1998)**

Any Recipient performing research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules agrees by acceptance of this award to comply with the National Institute of Health "Guidelines for Research Involving Recombinant DNA Molecules," (59 FR 34496, July 5, 1994 as amended by 59 FR 40170, 60 FR 20726, 61 FR 1482, 61 FR 10004, 62 FR 53335, 62 FR 56196, 62 FR 59032 and 63 FR 8052, "subject to change - call 301-496-9838 to obtain reference to a current version.")

**2.25 SAFETY & HEALTH AND ENVIRONMENTAL PROTECTION (JAN 1999)**

The Recipient shall implement the DOE work in accordance with all applicable Federal, State, and local laws, including codes, ordinances, and regulations, covering safety, health, and environmental protection.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

**2.26 PERMITS AND LICENSES (AUG 1999)**

Within sixty (60) days of award, the Recipient shall submit to the DOE Contracting Officer Representative (COR) a list of ES&H approvals that, in the Recipient's opinion, shall be required to complete the work under this award. The list shall include the topic of the approval being sought, the approving authority, and the expected submittal/approval schedule. The COR shall be notified as specific items are added or removed from the list and processed through their approval cycles.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

#### **2.27 RESTRICTIONS ON TRANSFER OF FUEL CELL TECHNOLOGY TO FOREIGN ENTITIES**

It is agreed that the Recipient shall obtain adequate recognition of the United States support for the technology -- patented or unpatented -- developed -- or utilized -- 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 Recipient agrees to notify the Assistant Secretary for Fossil Energy in writing of the adequate recognition obtained prior to entering into any such contracts, licenses, or other agreements. The Recipient shall not enter into any such contracts, licenses, or other agreements without the concurrence of the Assistant Secretary for Fossil Energy or designee. The determination of whether to grant such concurrence shall be at the sole discretion of the Assistant Secretary for Fossil Energy or designee and is not subject to litigation under the Financial Assistance Appeals Board (10 CFR Part 1024). The determination shall be in writing and shall be furnished to the Recipient by the Contracting Officer. This paragraph shall be included in all subcontracts.

#### **2.28 PERFORMANCE OF WORK IN UNITED STATES**

The Recipient must agree that at least 75% of the direct labor cost for the project (including subcontractor labor) will be incurred in the United States, unless the applicant can demonstrate to the satisfaction of DOE that the United States economic interest will be better served through a greater percentage of the work performed outside the United States.

## **SECTION III - INTELLECTUAL PROPERTY PROVISIONS**

### **3.1 INTELLECTUAL PROPERTY PROVISIONS (JAN 1999)**

The patent and technical data clauses included in this section apply to this award. As used in these applicable clauses, the term "Patent Counsel" refers to the following point of contact:

Intellectual Property Law Division  
U.S. Department of Energy  
Chicago Operations Office  
9800 South Cass Avenue  
Argonne, IL 60439

In any of the FAR and DEAR clauses contained in this section, use of the term "Contract" means "Award" and "Contractor" means "Recipient."

The Recipient shall include intellectual property clauses in any contract awarded in accordance with requirements of the clauses in this section and of 10 CFR Part 600.27.

### **3.2 PUBLICATION OF RESULTS/ACKNOWLEDGMENT STATEMENT (JAN 1999)**

Publication of the results of the award is encouraged subject to any applicable restrictions in 10 CFR 600.27 (Patent and Data Provisions). Publications, as well as reports prepared under this award shall contain the following acknowledgment statement:

"This (describe material) was prepared with the support of the U.S. Department of Energy, under Award No. DE-[ ]. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE".

### **3.3 RECIPIENT PRESS RELEASES (APR 1998)**

The DOE policy and procedure on planned press releases requires that all Recipient press releases be reviewed and approved by DOE prior to issuance. Therefore, the Recipient shall, at least ten (10) days prior to the planned issue date, submit a draft copy to the Contracting Officer of any planned press releases related to work performed under this award. The Contracting Officer will then obtain necessary reviews and clearances and provide the Recipient with the results of such reviews prior to the planned issue date.

### **3.4 CONFIDENTIAL BUSINESS INFORMATION (DEC 1999)**

Data represented to the Department as being confidential business information, and which does not include "Technical Data" as that term is defined in 52.227-14 Rights in Data General clause of this agreement, shall be submitted as an attachment to the required reports and will be withheld from disclosure outside NETL to the extent permitted by law, provided such attachment and each page therein is stamped with the following legend and no other:

#### **CONFIDENTIAL BUSINESS INFORMATION**

The Recipient considers the data furnished herein to contain confidential business information which is to be withheld from disclosure outside NETL to the extent permitted by law.

### **3.5 RIGHTS IN TECHNICAL DATA (FE-DELIVERY) (SEPT 1999)**

Delivery of limited rights data. The Recipient shall, at the option of the Contracting Officer, be required to deliver any limited rights data used in the performance of this award. Such data shall be subject to the provision of clause FAR 52.227-14, Rights in Data--General with Alternatives II and V, paragraph (g), "Protection of Limited Rights Data and Restricted Computer Software."

1. The limited rights data subject to clause FAR 52.227-14 are listed below. This listing of data, which are asserted by the Recipient to be limited rights data, does not constitute an admission by the Government that the data is in fact limited rights data.

**[RECIPIENT TO IDENTIFY/CERTIFY SPECIFIC DATA ASSERTED TO BE PROPRIETARY  
(STATEMENT FROM RECIPIENT)]**

2. Subject to clause FAR 52.227-14 paragraph (g)(2), any limited rights data so delivered shall be marked with the appropriate "Limited Rights Notice."
3. The Recipient shall not introduce or utilize any limited rights data not identified in (1) above without advance written notification of the Contracting Officer.

Minimum technical data deliverable with unlimited rights. Notwithstanding any other provision of this award, the following technical data first produced under this award as a minimum, shall be delivered to the DOE with unlimited rights:

**[COR TO SPECIFY WHAT DATA S/HE WANTS TO HAVE DELIVERED WITH UNLIMITED RIGHTS]**

### **3.6 RIGHTS IN TECHNICAL DATA (FE-INSPECTION) (SEPT 1999)**

Withholding of limited rights data. Notwithstanding the inclusion of clause FAR 52.227-16, Additional Technical Data Requirements, in this award or any provision of this award specifying the delivery of technical data, the Recipient may withhold limited rights data from delivery, provided that the Recipient furnishes in lieu of any such limited rights data so withheld technical data disclosing the source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements ("Form, Fit and Function" data, e.g., specification control drawing, catalog sheets, envelope drawings, etc.), or a general description of such limited rights data where "Form, Fit and Function" data are not applicable. Such data shall be subject to the provision of clause FAR 52.227-14, Rights in Data--General with Alternative V, paragraph (j), "Inspection Rights," and paragraph (g), "Protection of Limited Rights Data and Restricted Computer Software."

1. The limited rights data subject to clause FAR 52.227-14 are listed below **[OR in Attachment [ ] attached hereto and made a part hereof]**. This listing of data, which are asserted by the Recipient to be limited rights data, does not constitute an admission by the Government that the data is in fact limited rights data.

**[RECIPIENT TO IDENTIFY/CERTIFY SPECIFIC DATA ASSERTED TO BE PROPRIETARY (STATEMENT FROM RECIPIENT)]**

2. Subject to clause FAR 52.227-14 paragraph (j), any limited rights data specifically used in the performance of this award shall, at the option of the Contracting Officer, be available for inspection by a designee of the Contracting Officer at the project facility.
3. The Recipient shall not introduce or utilize any limited rights data not identified in paragraph (1) above in the performance of the award without the expressed written permission of the Contracting Officer.

Minimum technical data deliverable with unlimited rights. Notwithstanding any other provision of this award, the following technical data first produced under this award as a minimum, shall be delivered to the DOE with unlimited rights:

**[COR TO SPECIFY WHAT DATA S/HE WANTS TO HAVE DELIVERED WITH UNLIMITED RIGHTS]**

### **3.7 RESTRICTED COMPUTER SOFTWARE (FE-INSPECTION) (SEPT 1999)**

The restricted computer software subject to the provisions of clause FAR 52.227-14, Rights in Data--General with Alternative V, paragraphs (j) and (g) are listed below. This list of software programs, which are asserted by the Recipient to be restricted computer software, does not constitute an admission by the Government that the software is in fact restricted computer software.

**[RECIPIENT TO IDENTIFY/CERTIFY SPECIFIC SOFTWARE ASSERTED TO BE PROPRIETARY (STATEMENT FROM RECIPIENT)]**

Subject to clause FAR 52.227-14 paragraph (j), any restricted computer software specifically used in the performance of this award shall, at the option of the Contracting Officer, be available for inspection by a designee of the Contracting Officer at the project facility.

The Recipient shall not introduce or utilize any restricted computer software not identified above without advance written notification of the Contracting Officer.

### **3.8 RESTRICTED COMPUTER SOFTWARE (FE-DELIVERY) (SEPT 1999)**

The restricted computer software subject to the provisions of clause FAR 52.227-14, Rights in Data--General with Alternatives III and V, paragraph (g) are listed below. This list of software programs, which are asserted by the Recipient

to be restricted computer software, does not constitute an admission by the Government that the software is in fact restricted computer software.

**[RECIPIENT TO IDENTIFY/CERTIFY SPECIFIC SOFTWARE ASSERTED TO BE PROPRIETARY (STATEMENT FROM RECIPIENT)]**

Subject to clause FAR 52.227-14 paragraph (g)(3), any restricted computer software specifically used in the performance of this award shall, at the option of the Contracting Officer, be delivered to the Government. Any restricted computer software so delivered shall be marked with the "Restricted Rights Notice" provided in clause FAR 52.227-14 paragraph (g)(3).

The Recipient shall not introduce or utilize any restricted computer software not identified in (A) above without advance written notification of the Contracting Officer.

**3.9 52.227-1 AUTHORIZATION AND CONSENT. (JUL 1995) -- ALTERNATE I (APR 1984)**

- (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.

**3.10 52.227-2 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 supplies 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.

**3.11 52.227-3 PATENT INDEMNITY. (APR 1984)**

- (a) The Contractor shall indemnify the Government and its officers, agents, and employees against liability, including costs, for infringement of any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of the manufacture or delivery of supplies, the performance of services, or the construction, alteration, modification, or repair of real property (hereinafter referred to as "construction work") under this contract, or out of the use or disposal by or for the account of the Government of such supplies or construction work.
- (b) This indemnity shall not apply unless the Contractor shall have been informed as soon as practicable by the Government of the suit or action alleging such infringement and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in its defense. Further, this indemnity shall not apply to -
  - (1) An infringement resulting from compliance with specific written instructions of the Contracting Officer directing a change in the supplies to be delivered or in the materials or equipment to be used, or directing a manner of performance of the contract not normally used by the Contractor;
  - (2) An infringement resulting from addition to or change in supplies or components furnished or construction work performed that was made subsequent to delivery or performance; or

(3) A claimed infringement that is unreasonably settled without the consent of the Contractor, unless required by final decree of a court of competent jurisdiction.

**3.12 952.227-9 REFUND OF ROYALTIES. (MAR 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 cost or charges in the nature of royalties, license fees, patent or use of or for the rights in patents and patent applications in connection with performing this contract or any subcontract here-under. 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 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 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 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 including subcontract in which the amount of royalties reported during negotiation of the subcontract exceeds \$250.

**3.13 952.227-11 PATENT RIGHTS-RETENTION BY THE CONTRACTOR (SHORT FORM). (FEB 1995)**  
**(Applicable to small business and non-profits.)**

(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 1954 (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 its 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 121.3-8 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)(1), (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 co-inventors (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.

**3.13 952.227-14 PATENT RIGHTS-ACQUISITION BY THE GOVERNMENT. (SEP 1997) (Applicable to Large Businesses)**

(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 march-in 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 to 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 it 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 all subject inventions during that period, and including a statement that all subject inventions have been disclosed (or that there are not such inventions), and that such disclosure has been made in accordance with the procedures required by paragraph (e)(1) of this clause.

(ii) A final report, within 3 months after completion of the contracted work listing all subject inventions or containing a statement that there were no such inventions, and listing all subcontracts at any tier containing a patent rights clause or containing a statement 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. 1) 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.

**3.15 FAR 52.227-14 RIGHTS IN DATA -GENERAL. (JUN 1987) WITH ALTERNATES II, III, and V (JUN 1987) AS AMENDED BY DEAR 927.409 (JAN 1999)**

(a) Definitions.

(1) "Computer databases," 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) Allocation of rights.

(1) Except as provided in paragraph (c) of this clause 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 of 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) of this clause.

(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) of this clause;

(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) of this clause;

(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) of this clause; 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) of this clause.

(c) Copyright -

(1) Data first produced in the performance of this contract. Unless provided otherwise in paragraph (d) of this clause, 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 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 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 or 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 (c)(1) of this clause; provided, however, that if such data are computer software the Government shall acquire a copyright license as set forth in subparagraph (g)(3) of this clause 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 placed 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 in this paragraph of this clause 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 subparagraph (g)(2) or (g)(3) of this clause 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 no 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 (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be canceled or ignored. 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 (e)(1)(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 (e)(1) of this clause 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 agency 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) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the 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 subdivisions (b)(1)(i), (ii), and (iii) of this clause 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 are to be treated as limited rights data and not restricted computer software.

(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 \_\_\_\_\_, 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.

(Reserved)

(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 other 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.

(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) of this clause, 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 were made by a particular representative, the Contracting Officer shall designate an alternate inspector.

**3.16 52.227-16 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.

**3.17 52.227-23 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.

**SECTION IV - LIST OF ATTACHMENTS**

**4.1 LIST OF ATTACHMENTS (JAN 1999)**

Attachment A -- Statement of Work

Attachment A1 -- Minimum Requirements

Attachment B -- Federal Assistance Reporting Checklist

Attachment C -- Budget Page(s)

Attachment D -- Recipient Acquired Property

**4.2 ATTACHMENT A -- STATEMENT OF WORK (JAN 1999)**

[Insert the Statement of Work here. The format should be similar to the following and to that required in Section III, Article 3.6, STATEMENT OF WORK INSTRUCTIONS. In addition, the SOW shall address how the minimum requirements detailed in Attachment A1 will be met. ]

A. Objectives

B. Scope of Project

C. Phase I Tasks to Be Performed

General Description of Phases II and III.

D. Deliverables

The Recipient shall provide reports in accordance with the enclosed Federal Assistance Reporting Checklist and the instructions accompanying the Checklist. In addition to the reports identified on the Reporting Checklist, the Recipient shall provide the following:

[ ]



MINIMUM REQUIREMENTS			
	PHASE I	PHASE II	PHASE III
POWER RATING (NET)	3kW - 10 kW	3kW - 10 kW	3kW - 10 kW
COST	\$800/kW	\$600/kW	\$400/kW
EFFICIENCY (AC or DC/LHV)	Mobile - 25%	Mobile - 30%	Mobile - 30%
	Stationary -35%	Stationary - 40%	Stationary - 40%
STEADY STATE TEST @ NORMAL OPERATING CONDITIONS	1500 hours	1500 hours	1500 hours
	80% availability	85% availability	95% availability
	$\Delta$ Power $\leq$ 2% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .	$\Delta$ Power $\leq$ 1% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .	$\Delta$ Power $\leq$ 0.1% degradation/500 hours at a constant stack voltage with $R \geq 0.95$ .
	R-Linear Correlation Coefficient	R-Linear Correlation Coefficient	R-Linear Correlation Coefficient
TRANSIENT TEST	10 cycles	50 cycles	100 cycles
	$\Delta$ Power $\leq$ 1% degradation after 10 cycles at a constant stack voltage.	$\Delta$ Power $\leq$ 0.5% degradation after 50 cycles at a constant stack voltage.	$\Delta$ Power $\leq$ 0.1% degradation after 100 cycles at a constant stack voltage.
TEST SEQUENCE	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours	1) Steady State Test -1000 hours 2) Transient Test 3) Steady State Test - 500 hours
FUEL TYPE	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity, natural gas, gasoline, or diesel fuel (s) or a representative fuel based on respectively methane, iso-octane, or hexadecane corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity natural gas, gasoline, or diesel fuel (s) corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.	For the complete duration of the Steady State and Transient Tests, operate the Prototype on either a commercial commodity natural gas, gasoline, or diesel fuel (s) corresponding to the proposed primary application (s). Utilize external or internal primary fuel reformation or oxidation. If multiple applications using different fuels are proposed split the total test time equally among the different fuel types.
MAINTENANCE INTERVALS	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.	Design aspects should not require maintenance at intervals more frequent than 1000 operating hours.
DESIGN LIFETIME	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.	Not less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for military uses.

## MINIMUM REQUIREMENTS (Supplement)

### 1. POWER RATING

The goal is to develop a 3 kW - 10kW solid-oxide fuel system.

### 2. COST

The cost goals identified in the table shall be met by an independent audited cost estimate that includes the following specified components of the fixed and variable cost of the fuel cell system. The cost estimate must justify the assumed annual production of fuel cell systems per year that support the cost goals of each phase. A fuel cell system is defined in the Solicitation Objectives section. Concurrent with final testing each Industrial Team shall submit a cost estimate of sufficient detail that a  $\pm 25\%$  confidence interval could be assigned. Three auditing firms that routinely perform cost estimate work of the type detailed here shall be identified and presented to the DOE for approval of one of the firms to perform the auditing function. The cost of the independent audit shall be included in the scope of work for this project.

The cost estimate shall establish a Factory Cost. Items to include are:

- Equipment and Plant Depreciation
- Tooling Amortization
- Equipment Maintenance
- Utilities
- Indirect Labor
- Cost of Capital
- Manufactured Materials
- Purchased Materials
- Fabrication Labor
- Assembly Labor
- Indirect Materials

The following costs shall not be included in the cost estimate:

- Research and Development
- Sales and Marketing
- General and Administration
- Warranty
- Taxes

### 3. EFFICIENCY

The efficiency values indicated in the goals may be based on both documented calculations and measurements. The efficiency values must be achieved or exceeded at the beginning and end of the test sequence. The efficiency is defined as AC or DC power output of the system divided by the Lower Heating Value (LHV) of the fuel input stream of the system at full rated load at the steady state normal operating condition over a period of at least one hour.

### 4. STEADY STATE TEST @ NORMAL OPERATING CONDITIONS

The test must be conducted as a prototype with fully independent and self-sustained operation utilizing appropriate load banks to dissipate the energy produced. Test time will be counted only during periods of operational heat-up and cool-down and during the Industrial Team defined Normal Operating Conditions (NOC) corresponding to the proposed applications with DOE approval of the test plan and operating points required. The power stability requirement measurements of power must be made at a constant stack voltage for the entire measurement and all measurements must be made at the same stack voltage for the duration of the required testing. The variability of fuel cell stack voltage must not exceed a sum of the squares based on the number of cells in the stack and a specified maximum cell variation of 0.02 volts per cell. A remote link shall be established with the NETL site so that test performance can be monitored on a continuous basis. All test data shall be electronically recorded and stored in a retrievable manner. Data should be recorded at a frequency sufficient to resolve significant transient phenomena for NETL review for at least one year after completion of the test. The Government may require at its discretion to have the prototype sent to NETL for further testing following completion of the required Industrial Team testing.

### 5. TRANSIENT TEST

The test must be conducted as a prototype with fully independent and self-sustained operation utilizing appropriate load banks to dissipate the energy produced. The Industrial Team will identify realistic transients corresponding to the proposed applications with Government approval of the test plan and transients required. All test data shall be electronically recorded and stored in a retrievable manner. Data shall be recorded at a frequency sufficient to resolve significant transient phenomena for NETL review for at least one year. In the event that a modification or repair is required the entire minimum number of cycles for the phase will be repeated.

#### 6. TEST SEQUENCE

See table above.

#### 7. FUEL TYPE

If a non-commercial commodity fuel is used for Phase I it shall contain from 50% to 100% methane, iso-octane, or hexadecane representing natural gas, gasoline, or diesel fuel respectively.

#### 8. MAINTENANCE INTERVALS

The prototype fuel cell system shall not have any design aspect that would require regularly scheduled maintenance at intervals more frequent than 1000 operating hours.

#### 9. DESIGN LIFETIME

The design lifetime of the fuel cell system identified by the applicant shall be consistent with the application (s) and market considerations identified in the application. This lifetime should not be less than 40,000 operating hours for stationary applications and 5,000 hours for transportation applications for civilian or military uses unless justification is provided for other lifetime specifications in the application.

**4.3 ATTACHMENT B -- FEDERAL ASSISTANCE REPORTING CHECKLIST (JAN 1999)**

NETL F 540.3-1#  
(12/1999) OPI=PS10  
(Previous Editions Obsolete)

# FEDERAL ASSISTANCE REPORTING CHECKLIST

<b>1. AWARDEE:</b> TBD	<b>2. IDENTIFICATION NUMBER:</b> DE-PS26-00NT40854
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**3. REPORT SUBMISSION ADDRESS:** *The requested quantity of all required report deliverables shall be submitted to the following address:*

**NETL AAD DOCUMENT CONTROL BLDG. 921**  
**U.S. DEPARTMENT OF ENERGY**  
**NATIONAL ENERGY TECHNOLOGY LABORATORY**  
**P.O. BOX 10940**  
**PITTSBURGH, PA 15236-0940**

4. PLANNING AND REPORTING REQUIREMENTS:	FORM NO.	FREQ.	NUMBER OF COPIES
<b>A. PROGRAM/PROJECT MANAGEMENT</b>			
<input checked="" type="checkbox"/> Federal Assistance Milestone Plan	DOE F 4600.3	Q	2
<input checked="" type="checkbox"/> Milestone Log	DOE F 4600.3A	Q	2
<input type="checkbox"/> Federal Assistance Management Summary Report	DOE F 4600.5		
<input checked="" type="checkbox"/> Federal Assistance Program/Project Status Report	DOE F 4600.6	Q	2
<input checked="" type="checkbox"/> Financial Status Report	SF-269 or SF-269A	Q	3
<input type="checkbox"/> Federal Cash Transaction Report	SF-272		
<b>B. TECHNICAL (One paper copy and one PDF electronic file copy)</b>			
<input checked="" type="checkbox"/> Technical Progress Report	None	Y	2
<input checked="" type="checkbox"/> Topical Report	None	A	2
<input checked="" type="checkbox"/> Final Report	None	F	2
<b>C. ENVIRONMENTAL</b>			
<input checked="" type="checkbox"/> Hazardous Substance Plan	None	O	3
<input checked="" type="checkbox"/> Hazardous Waste Report	None	F	3
<input type="checkbox"/> Environmental Compliance Plan	None		
<input type="checkbox"/> Environmental Monitoring Plan	None		
<input type="checkbox"/> Environmental Status Report	None		
<b>D. PROPERTY</b>			
<input type="checkbox"/> Annual Report of Property in the Custody of Contractors			
<input type="checkbox"/> High Risk Property Report	F 580.1-8		
<input checked="" type="checkbox"/> Report of Termination or Completion Inventory	F 4440.5		
	SF-1428 or SF-120	FC	1
<b>E. EXCEPTION</b>			
<input type="checkbox"/> Conference Record	None		
<input checked="" type="checkbox"/> Hot Line Report	None	A	2
<input checked="" type="checkbox"/> Journal Articles/Conference Papers and Proceedings	None	A	2
<input type="checkbox"/> Software			
<input type="checkbox"/> Other _____			

**5. FREQUENCY CODES AND DUE DATES:**

A - As required; for due date of Hot Line Report, Property Reports, and all other reports, see attached text.  
 C - Federal Assistance change/revision, within 15 calendar days after event.  
 F - Final; within ninety (90) calendar days after the project period ends.  
 FC - Final (End of Effort - No Draft); end of effort.  
 M - Monthly; within twenty-five (25) calendar days after end of the report period.  
 O - Once after award; within thirty (30) calendar days after award.  
 Q - Quarterly; within thirty (30) calendar days after end of the calendar quarter or portion thereof.  
 S - Semiannually; within thirty (30) calendar days after end of program half-year.  
 Y - Yearly; 90 calendar days after the end of calendar year.

**6. SPECIAL INSTRUCTIONS:**

The forms identified in the checklist are available at <http://www.netl.doe.gov/business/forms/forms.html>. Alternate formats are acceptable provided the contents remain consistent with the form. All **technical reports** submitted to the DOE **must** be accompanied by a completed and signed **NETL F 2050.4** addressing patent information.

#### **4.4 GENERAL INSTRUCTIONS FOR THE PREPARATION AND SUBMISSION OF REPORTS (MAY 1999)**

The Recipient shall prepare and submit (postage prepaid) the plans and reports indicated on the "Federal Assistance Reporting Checklist" to the addressee identified on the checklist. The level of detail the Recipient provides in the plans and reports shall be commensurate with the scope and complexity of the effort and shall be as delineated in the guidelines and instructions contained herein. The prime Recipient shall be responsible for acquiring data from any contractors or subrecipients to ensure that data submitted are compatible with the data elements which prime Recipients are required to submit to DOE.

#### **4.5 FEDERAL ASSISTANCE MILESTONE PLAN (DOE F 4600.3) AND MILESTONE LOG (DOE F 4600.3A) (MAY 1999)**

The milestone plan is used as a planning tool, establishing the time schedule for accomplishing the planned work. Usually, it is accompanied by the DOE F 4600.3A, "Milestone Log." The Milestone Plan portrays the major milestones of the project in bar chart format. The purpose of the plan is to establish the Recipient's time schedule for accomplishing planned events and milestones. It covers the life of the project and is to be organized by major project activities, such as those performed at work breakdown structure Level 2. Intermediate events and critical milestones are further identified in an attached "milestone log" and include the identification number, descriptive name of the event or milestone, and the scheduled date of completion.

#### **4.6 FEDERAL ASSISTANCE PROGRAM/PROJECT STATUS REPORT (FORM 4600.6) (MAY 1999)**

This report is a concise narrative describing the current status of the effort. The report allows Recipients to communicate developments, achievements, changes and problems. The award Recipient enters a brief narrative discussion of the following topics: approach changes; performance variances, accomplishments, or problems; open times; and status assessment and forecast. Each of these topics is addressed, as appropriate, for a given reporting period and the report is submitted periodically, as required, during the life of the project.

#### **4.7 FINANCIAL STATUS REPORT (STANDARD FORM 269 OR 269A) (MAY 1999)**

This report is used for the Recipient to provide regular periodic accounting of project funds expended. The accounting may be on either a cash or accrual basis. Actual total expenditures and obligations incurred, but not paid, are reported for each reporting period for each major activity. They should correlate with those identified on the "Federal Assistance Milestone Plan" when the "Federal Assistance Milestone Plan" is required. Provision is made to identify the Federal and non-Federal share of project outlays for each identified activity.

#### **4.8 TECHNICAL REPORTS (JULY 2000)**

**CAUTION:** Technical reports SHALL NOT include Limited Rights Data (such as restricted, proprietary or business sensitive information). Limited Rights Data shall be submitted in a separate appendix to the technical report. This appendix SHALL NOT be submitted in an electronic format but rather submitted in ONE ORIGINAL AND THREE (3) PAPER COPIES along with the paper version of the sanitized technical report deliverable. The appendix shall be referenced in, but not incorporated into, the sanitized technical report deliverable under the contract. In accordance with FAR 52.227-14, Rights in Data-General, the appendix must be appropriately marked and identified.

Further, if this award authorizes the awardee under the provisions of The Energy Policy Act of 1992 to request protection from public disclosure for a limited period of time of certain information developed under this award, technical reports SHALL NOT contain such Protected EAct Information. Such information shall be submitted in a separate appendix to the technical report that is suitable for release after the agreed upon period of protection from public disclosure has expired. The appendix shall be referenced in, but not incorporated into, the sanitized technical report deliverable under the contract. In accordance with the clause titled "Obligations as to Protected Energy Policy Act (EAct) Information," the appendix must be appropriately marked and identified.

All TECHNICAL REPORTS submitted to the DOE MUST be accompanied by a completed and signed NETL F 2050.4, addressing potentially patentable information.

#### **4.9 TECHNICAL PROGRESS REPORT (ANNUAL, QUARTERLY, AND SEMI-ANNUAL) (MAY 1999)**

The body of the report should contain a full account of progress, problems encountered, plans for the next reporting period, and an assessment of the prospects for future progress.

The Technical Progress Report should include sufficient detail to allow the work to be reproduced by others. Results and reduced data shall be presented together with a discussion of the relevance of the findings. When experimental systems and/or procedures are being utilized for the first time, they shall be described in detail. This description shall contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use. All data reduction and transformation methods shall be fully documented. For every fourth calendar quarter for quarterly reports or every second half year for semi-annual reports, the report should be expanded to provide for detailed information on the results of the past year, problems encountered, significant accomplishments, listing of publications, presentations, and approaches to be taken the following year.

Informational items in technical progress reports shall include:

Experimental Apparatus -- A comprehensive description, including dimensions drawings or sketches, of the apparatus and associated diagnostic measurement equipment employed to perform the experimental research.

Experimental and Operating Data -- All experimental data acquired during the course of research including detailed characterization of the sample materials subjected to experimentation.

Data Reduction -- A complete description of the methods employed to transform raw measured data into a form usable for interpretation along with any assumptions or restrictions inherent in the method and the resultant reduced data.

Hypothesis and Conclusions -- Logic for drawing conclusions or developing hypotheses shall be clearly stated along with applicable assumptions or restrictions.

#### **4.10 TOPICAL REPORT (MAY 1999)**

These reports usually provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail significant new scientific or technical advances. If required, DOE shall review and approve the report outline prior to submission of the report.

#### **4.11 FINAL TECHNICAL REPORT (AUG 2000)**

The Final Report shall document and summarize all work performed during the award period in a comprehensive manner. It shall also present findings and/or conclusions produced as a consequence of this work. This report shall not merely be a compilation of information contained in subsequent quarterly, or other technical reports, but shall present that information in an integrated fashion, and shall be augmented with findings and conclusions drawn from the research as a whole.

#### **4.12 GUIDELINES FOR ORGANIZATION OF TECHNICAL REPORTS (DEC 1999)**

The following sections should be included (as appropriate) in technical reports in the sequence shown. Any section denoted by an asterisk is required in all technical reports.

TITLE PAGE\* - The Title Page of the report itself must contain the following information in the following sequence:

Report Title  
Type of Report (Quarterly, Semi-Annual, Annual, Topical, Final)  
Reporting Period Start Date  
Reporting Period End Date  
Principal Author(s)  
Date Report was Issued (Month [spelled out] and Year [4 digits])  
DOE Award Number (e.g., DE-FG26-99NT12345) and if appropriate, task number  
Name and Address of Submitting Organization (This section should also contain the name and address of significant subcontractors or subrecipients who participated in the production of the report.)

DISCLAIMER\* -- The Disclaimer must follow the title page, and must contain the following paragraph:

“This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents

that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.”

ABSTRACT\* - should be a brief, concise summary of the report.

TABLE OF CONTENTS\*

LIST(S) OF GRAPHICAL MATERIALS

INTRODUCTION

EXECUTIVE SUMMARY - this should be a well organized summary that highlights the important accomplishments of the research during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional “abstract.”

EXPERIMENTAL\* - this should describe, or reference all experimental methods being used for the research. It should also provide detail about materials and equipment being used. Standard methods can be referenced to the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available thru the literature or other reference publications.

RESULTS AND DISCUSSION\* - It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem.

CONCLUSION\* - The conclusion should not simply reiterate what was already included in the “Results and Discussion” section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since “relevancy” continues to be a criteria of the program.

REFERENCES\*

BIBLIOGRAPHY

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDICES (IF NECESSARY)

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

Measurement Units -- All reports to be delivered under this instrument shall use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units shall be followed by their U.S. Customary Equivalents in parentheses ( ).

The Recipient shall insert the text of this clause, including this paragraph, in all subcontracts under this award.

Note: SI is an abbreviation for "Le Systeme International d'Unites."

#### **4.13 ELECTRONIC MEDIA STANDARD FOR PREPARATION OF TECHNICAL REPORTS (DEC 1999)**

##### **FILE FORMAT**

Production of high-quality, electronic documents is dependent on the quality of the input that is provided. Thus, the Recipient shall submit one good quality paper copy using either permanent or alkaline paper plus an electronic version of each technical report.

ELECTRONIC REPORTS SHALL BE SUBMITTED IN THE ADOBE ACROBAT PORTABLE DOCUMENT

**FORMAT (PDF). ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT.**

Each report shall be an integrated file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts.

**SUBMISSION FORMAT**

The electronic file(s) shall be submitted via diskette or CD-ROM. Diskettes or CD-ROMs must be labeled as follows:

- DOE Award Number
- Type/Frequency of Report(s)
- Reporting Period (if applicable)
- Name of submitting organization
- Name, phone number and fax number of preparer

Diskettes -- Diskettes must be 3.5" double-sided, high-density (1.4 M Byte capacity). If file compression software is used to transmit a PDF file spanning more than one diskette, PKZIP from PKWare, Inc., is the required compression software. State the number of diskettes in the set (e.g., 1/3)

CD-ROM -- The electronic file(s) may be submitted on an ISO9660-format CD-ROM.

**FILE NAMING**

In naming the electronic file, the Recipient shall use the standard eight-character naming convention for the main file name, and the three character extension applicable to the software use, e.g., .pdf for Adobe.

For the main file name, the first five characters are the last five digits from the award number; e.g., for Award Number DE-FG26-97NT12345, the first five characters are 12345.

The next character represents the technical report and will always be designated as "R".

The remaining two characters indicate the chronological number of the particular type of report; e.g., Quarterly Technical Progress Reports for a 5-year award are numbered R01 through R20. Thus, the main file name for the sixth Quarterly Technical Progress Report under Award No. DE-FG26-99NT12345 would be 12345R06.PDF. If monthly, quarterly, annual, and a final technical report are required, the numbers would run from R01 through R86 (60 monthly reports, 20 quarterly reports, 5 annual reports, and 1 final report).

**4.14 ENVIRONMENTAL (DEC 1999)**

In response to the requirements of the National Environmental Policy Act of 1969 (NEPA) and other related environmental statutes, the National Energy Technology Laboratory (NETL) requires the submission of various documents that assess the environmental aspects and projected impacts of all of its proposed actions. These documents may include the following: (1) Hazardous Substance Plan, (2) Hazardous Waste Report, (3) Environmental Compliance Plan, (4) Environmental Monitoring Plan, and (5) Environmental Status Reports.

The environmental information provided in these documents will enable NETL to fulfill its responsibilities under NEPA (additional information about the requirements of the National Environmental Policy Act can be found in the DOE NEPA Compliance Guide and 10 CFR 1021) and to monitor the Recipient's compliance with other environmental regulations. The implementation of any task associated with a proposed action will be dependent upon DOE completing necessary NEPA documentation. Therefore, to minimize the risk of project delays, it is imperative that these reports be submitted in a timely manner.

The information contained herein specifies the basic environmental requirements for this award, but it is not to be interpreted as containing all necessary information for any given project. Likewise, certain aspects of the requirements may not be applicable. Accordingly, the level of information provided should be sufficient for DOE to assess the environmental implications of the proposed action.

**4.15 HAZARDOUS SUBSTANCE PLAN (MAY 1999)**



The Recipient shall submit a Hazardous Substance Plan not later than thirty (30) days after initial award. The Plan shall specifically identify each Hazardous Substance (as defined under 40 CFR 261, Subpart D, entitled Lists of Hazardous Wastes) anticipated to be purchased, utilized or generated in the performance of this award. For each such Hazardous Substance identified, the Plan shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Anticipated Quantity to be purchased, utilized or generated
- Anticipated Hazardous Waste Transporter
- Anticipated Hazardous Waste Disposal Facility Contractor and Location (City/Municipality, State)
- Anticipated Treatment Method

#### **4.16 HAZARDOUS WASTE REPORT (MAY 1999)**

The Recipient shall submit a Hazardous Waste Report at the completion of award performance. The Report shall specifically identify each Hazardous Waste (as defined under 40 CFR 261, Subpart D, entitled Lists of Hazardous Wastes) actually utilized, or generated in the performance of this award. For each such Hazardous Waste identified, the Report shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Actual Quantity Disposed
- Actual Hazardous Waste Transporter
- Actual Hazardous Waste Disposal Facility Contractor and Location (City/Municipality, State)
- Actual Disposal Date
- Actual Treatment Method

The Hazardous Waste Report is intended as a final reconciliation of anticipated versus actual Hazardous Substances purchased, utilized, or generated in the performance of this award.

#### **4.17 PROPERTY REPORTS (DEC 1999)**

The NETL Property Handbook entitled "Management of Government Property in the Possession of Contractors," contains forms, instructions, and suggested formats for submission of property reports. This handbook can be found at <http://www.netl.doe.gov/business/index.html>.

#### **4.19 REPORT OF TERMINATION OR COMPLETION INVENTORY (SF-1428 AND SF-120) (MAY 1999)**

This report submitted on the SF-1428 and SF-120 is due immediately upon completion or termination of the award. The Recipient is required to perform and cause each subcontractor to perform a physical inventory, adequate for disposal purposes, of all Government property applicable to the award.

#### **4.20 HOT LINE REPORT (DEC 1999)**

The "Hot Line Report" may be used to report a major breakthrough in research, development, or design; an event causing a significant schedule slippage or cost growth; an environmental, safety and health violation; achievement of or failure to achieve an important technical objective; or any requirement for quickly documented direction or redirection. The report shall be submitted by the most rapid means available, usually electronic, and should confirm telephone conversations with DOE representatives. Identification as a "Hot Line Report" serves notice at each link in the delivery chain that expedition in handling is required. Unless otherwise agreed by the parties involved, DOE is expected to take action and respond in a similarly timely manner. The report should include:

1. Recipient's name and address;
2. Award title and number;
3. Date;
4. Brief statement of problem or event;
5. Anticipated impacts; and
6. Corrective action taken or recommended.

Hot line reports shall document the incidents listed below:

1. Any single fatality or injuries requiring hospitalization of five or more individuals is to be immediately reported.
2. Any significant environmental permit violation is to be reported as soon as possible, but within 24 hours of the discovery of the incident.
3. Other incidents that have the potential for high visibility in the media are to be reported as quickly as possible, but within 24 hours following discovery.
4. Any failure resulting in damage to Government-owned equipment in excess of \$50,000 is to be reported as quickly as possible, but within 24 hours of the discovery of the failure.
5. Any unplanned event which is anticipated to cause a schedule slippage or cost increase significant to the project is to be reported within 24 hours.
6. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported.
7. Any accidental spill or release which is in violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported, but within 24 hours of the discovery of the accident.
8. Any incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 days of discovery.

The requirement to submit Hot Line Reports for the incidents identified in 1, 2, 3, 6, or 7 is for the sole purpose of enabling DOE officials to respond to questions relating to such events from the media and other public.

When an incident is reported in accordance with 4, 5, 6, 7, or 8, the Recipient shall conduct an investigation of its cause and make an assessment of the adequacy of resultant action. A written report is required no later than ten (10) calendar days following the incident and shall include an analysis of the pertinent facts regarding the cause, and a schedule of the remedial events and time periods necessary to correct the action.

When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first; if possible, and coordinated with NETL Communications and Public Affairs Division, the Contracting Officer Representative (COR) and the Contracting Officer.

#### **4.21 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY LARGE BUSINESSES FOR DOE REVIEW (DEC 1999)**

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall simultaneously submit a draft version of the document to the DOE COR and the DOE Patent Counsel Office prior to the publication, presentation, or announcement. The document submitted to the DOE Patent Counsel shall be accompanied by a completed NETL Form 2050.4. The DOE COR and DOE Patent Counsel shall review the draft version of the document and notify the Recipient of approval or recommended changes. The approved final version shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

**4.22 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A SMALL BUSINESS OR NONPROFIT ORGANIZATION FOR DOE REVIEW (DEC 1999)**

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of approval or recommended changes. The final version, along with a completed NETL Form 2050.4, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

**4.23 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A UNIVERSITY FOR DOE REVIEW (DEC 1999)**

The Recipient shall submit to DOE for review and comment all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 2050.4, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of recommended changes. The final version, along with a completed NETL Form 2050.4, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

**4.24 ATTACHMENT C -- BUDGET PAGES (APR 1999)**

Insert Budget Page and/or f4620.1A Grant Application Project Period Summary

Insert the either the DOE Form 424a or the DOE 4600.4 if it is anticipated that an award will be made to commercial organizations.

**4.24 ATTACHMENT D -- RECIPIENT ACQUIRED PROPERTY**

[ TBD ]

**SECTION VII - INTENT TO PROPOSE**

**INTENTION TO PROPOSE (JULY 1999)**

SOLICITATION NUMBER : DE-PS26-00FT40854

WE \_\_\_\_\_ DO \_\_\_\_\_ DO NOT INTEND TO SUBMIT A APPLICATION.

NAME AND ADDRESS OF FIRM OR ORGANIZATION (INCLUDING ZIP CODE)

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\_\_\_\_\_  
AUTHORIZED SIGNATURE (Optional for E-Mail Responses)

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\_\_\_\_\_  
TYPED OR PRINTED NAME AND TITLE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
TELEPHONE NO.

\_\_\_\_\_  
FACSIMILE NO.

\_\_\_\_\_  
E-MAIL ADDRESS

Please return this form to:

MAIL TO: U.S. Department of Energy  
National Energy Technology Laboratory  
ATTN: Mary S. Gabriele  
3610 Collins Ferry Road  
Morgantown, WV 26507-0880

VIA FACSIMILE: (304) 285-4683  
VIA E-MAIL: mgabri@netl.doe.gov