FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U. S. Department of Energy

Idaho Operations Office

COST-SHARED DEVELOPMENT OF INNOVATIVE SMALL MODULAR REACTOR DESIGNS

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PART I – FUNDING OPPORTUNITY DESCRIPTION

A. SUMMARY

The Small Modular Reactor (SMR) Licensing Technical Support (LTS) program, sponsored by the U.S. Department of Energy (DOE) Office of Nuclear Energy (DOE-NE), through this Funding Opportunity Announcement (FOA) seeks to facilitate the development of innovative SMR designs that have the potential to address the nation's economic, environmental and energy security goals. Specifically, the Department is soliciting applications for SMR designs that offer unique and innovative solutions for achieving the objectives of enhanced safety, operations, and performance relative to currently certified designs. This FOA focuses on design development and certification only but also encourages the development of innovative business arrangements, such as consortia among power generation companies, plant owners/operators, reactor vendors, and nuclear suppliers and fabricators that have the potential to build and operate new SMR plants in the U.S.

The ultimate goal of this FOA is to promote the development of SMR technologies that offer affordable, safe, secure, and robust sources of zero-carbon energy. For the purposes of this FOA, SMRs are defined as reactor units with a nominal output of 300 megawatts electric (MWe) or less that are able to be factory fabricated and transported to the site for assembly of components and operation. The scope of this FOA focuses on SMR designs that provide unique and innovative features that can serve to improve nuclear safety, operability, efficiency, economics, security, and performance over existing plants and previously certified nuclear plant designs. With respect to safety, these innovative SMRs should be designed to reduce core damage frequency, increase post-accident coping periods, provide features and characteristics that minimize the release of radionuclides under severe accident conditions, maximize resistance to hazards presented by natural phenomena, and present a credible case to the Nuclear Regulatory Commission (NRC) to reduce emergency preparedness zone requirements. The designs should provide diverse and redundant safety systems that include capabilities and design features that aid in managing the consequences of severe accidents similar to the Fukushima events. This may include ability to effectively deal with off-site power loss, ability to augment cooling water reservoirs from external sources, incorporating air and water sampling capabilities, or other innovative instrumentation and diagnostics that support accident management.

As a key success metric, this FOA solicits SMR designs that can be developed to the extent necessary to achieve NRC design certification in sufficient time to support a deployment schedule for the SMRs in the 2025 timeframe. This statement implies that the FOA applicant is capable of achieving NRC design certification on a schedule that subsequently allows completion of site licensing, the sourcing plan including long-lead procurements, construction, operator training and licensing, and other preoperational activities so that the SMR could begin commercial operation within ±2 years of a 2025 target date.

To execute the goals of this FOA, the DOE is seeking applications for financial assistance from applicants (including Domestic Entities and U.S.-incorporated Foreign Entities; see Section III.A) for projects that enable new SMR nuclear power plant designs to be developed and certified by the NRC. Project applications are sought from applicants that can implement a plan

of activities leading to the certification of SMR designs that support deployment in the 2025 timeframe. This design certification is to be completed under the 10 CFR Part 52 licensing process (*Licenses, Certifications, and Approvals for Nuclear Power Plants*) including preparation and submission of design certification applications (DCAs), and technical support of NRC reviews and hearings associated with the applications.

Under this cost-shared partnership, DOE intends to award a cooperative agreement(s) to support first-of-a-kind engineering (FOAKE) development, experiments, analysis, and other work to progress the design toward completion and culminates in the approval of design certification applications by the NRC, including work associated with the resolution of NRC requests for additional information during the review process.

Fifty percent (50%) minimum industry cost share on an annual basis, consisting of monetary or in-kind contributions from applicants, partners, investors and other substantial participants on the design, is required over the life of any cooperative agreement(s) established for selected projects. Increased industry cost-share (i.e., proposed contributions greater than 50%) is a program selection factor in evaluating applications.

Funding for the cooperative agreement(s) awarded under this FOA is subject to Congressional appropriations. The cooperative agreement(s) will be awarded in accordance with Title 10 of the Code of Federal Regulations, Chapter II Subchapter H, Part 600 (10 CFR Part 600).

B. BACKGROUND

The SMR LTS Program seeks to provide assistance to industry to make nuclear power more affordable and available to a wider range of energy customers by accelerating the development, licensing, and commercial deployment of SMR designs. The SMR LTS Program vision is to provide additional nuclear power options to the U.S. commercial nuclear industry and electric utilities that offer more flexibility in financing, siting, sizing, and end-user applications than the larger light water reactor (LWR) designs. The advantages of SMRs include:

- Providing reactor designs that offer passive safety capability requiring little or no operator interaction to place the reactor in a safe configuration;
- Reducing an owner's initial capital outlay or investment due to the anticipated lower capital cost for SMRs;
- Reducing financial risks to potential owners that operate in regulated energy markets;
- Improving cost, schedule, and quality of modular components through replication in a factory setting;
- Reducing construction schedule duration through the use of modular components produced in a factory and transported to the site for assembly;
- Using additional reactor units to incrementally increase output as demand for power increases;

- Providing power for applications where the infrastructure cannot support a large unit, such as smaller electrical markets, isolated areas, smaller grids, or restricted water or acreage sites;
- Providing a carbon-free option for repowering aging fossil power plants or process heat for industrial applications; and
- Providing potential nonproliferation benefits to the U.S. and the wider international community.

There is an emerging domestic and international demand for SMRs, and U.S. industry is well positioned to compete for these growing markets. In the U.S., it is the responsibility of private industry to develop and market commercial nuclear power plants; however, it is a legitimate role of the U.S. government to assist in the development and demonstration of first-of-a-kind (FOAK) nuclear energy technologies to mitigate first-mover licensing and financial risk and accelerate commercial deployment schedules to meet critical U.S. energy, environmental or economic goals. The SMR LTS Program, therefore, seeks to develop and license these new reactor designs that are appropriately sized to meet the economic and infrastructure limitations faced by many domestic utilities wishing to use nuclear power as a solution to their energy, environmental, or economic requirements.

While the intent of the program is to provide SMR technology options for deployment of nuclear power plants as an attractive energy solution for many domestic utilities, the SMR LTS Program will also encourage U.S. industry to compete in the global marketplace by removing various barriers for reactor deployment and accelerating development and demonstration of new designs. Smaller reactors are particularly suitable for countries with electricity grid constraints for many of the reasons stated above, focusing primarily on safety, cost, and matching electric output to grid capacity while supporting the non-proliferation goals of the U.S. government and international community. Applicants that demonstrate a subsequent commitment, capability, and plan to gauge world interest in their SMR design, market the certified design, and complete FOAKE required to deploy the design will be viewed favorably in the selection process. It is expected that innovative designs with NRC design approval will result in a significant world-wide competitive advantage.

C. STATEMENT OF OBJECTIVES

As a part of the SMR LTS Program, this FOA focuses on supporting the development of SMR designs that can achieve NRC design certification in a timeframe that would support a 2025 deployment and supports the majority of work performed in the U. S. Applications are invited for innovative designs that exhibit safety, security, and performance characteristics that can exceed the operational capabilities of designs currently certified by the NRC. The applicant must be capable of conducting the necessary engineering, analysis, and regulatory activities to develop and certify the specified SMR design in accordance with NRC regulations. Technical engineering work supporting design development and certification requirements will be the priority work toward which DOE funding will be applied. The following technical scope may be supported under any cooperative agreement(s) established under this FOA:

- Basic Engineering, including establishing basic design configurations, system parameters, sizing, and quantities sufficient for equipment definition necessary to prepare and submit the 10 CFR Part 52 DCA;
- First-of-a-kind Engineering further develops the engineering to confirm standard design requirements are met and is intended to provide the necessary engineering activities to develop a firm cost and schedule estimate for deployment of the standard SMR design;
- Component-level and integral testing to inform design;
- Working group interactions in support of resolution of generic SMR regulatory issues;
- Confirmatory testing and analysis to address NRC Requests for Additional Information (RAIs);
- Analyses to resolve regulatory issues (e.g., development of design-specific topical papers);
- Support for preparing technical documentation of certification applications;
- Technical support of reviews with the NRC staff on the SMR DCA for Final Design Approval, including pre-application reviews;
- Support for preparations for Advisory Committee on Reactor Safety (ACRS) hearings.

Additional technical or non-technical scope may be proposed by the applicant. Any additional work scope will be considered a lower priority than the items identified above and must be agreed to in the context of the cooperative agreement.

Applicant teams will be provided flexibility in pursuing the pathway toward DCA development that best suits their certification project while meeting the objectives of this FOA. The applicant should identify when its SMR DCA shall be submitted to reasonably achieve a 2025 deployment. The application shall be in accordance with 10 CFR Parts 52.46 and .47, "Contents of Applications." The DCA submitted to the NRC is expected to require, as a minimum, the development of a Design Control Document/Final Safety Analysis Report and supporting technical reports in accordance with the CFR language.

Applicants must also provide the NRC with details of any completed components of a testing program and/or propose other engineering, development and testing activities to support the design certification process. Ultimately, the applicant must prove to the satisfaction of the NRC that the performance of each safety feature of the design and the interdependent effects between safety features has been demonstrated through analyses, appropriate test programs, operational experience, or a combination thereof.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding a cooperative agreement(s) under this FOA (See Section VI.B.7 Statement of Substantial Involvement).

B. ESTIMATED FUNDING

The total government funding available for any single award under this FOA MAY be up to one-half (½) of the total program funding currently available (i.e., shall not exceed $226 M). Funding for all award(s) and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority. The actual level of funding, if any, will depend on Congressional appropriations for this program beginning in FY 2013 or at such time that awards are made. In the event Congressional appropriations for the SMR Program are higher or lower than used to arrive at this estimate, the total amount of available government funding to be distributed among these awards could be higher or lower than $226 million.

C. MAXIMUM AND MINIMUM AWARD SIZE

- Ceiling (i.e., the maximum amount for the total award(s), including DOE and industry partner contribution, made under this announcement):

  $452 M (Recipient Cost Share: $226 M; DOE: $226 M). In the event an applicant proposes more than a 50% cost share, the maximum amount for an individual award may exceed $452 M; however, the government's portion shall not exceed $226 M. Actual award size may be higher or lower dependent upon Congressional appropriations.

- Floor (i.e., the minimum amount for an individual award made under this announcement):

  $ None

D. EXPECTED NUMBER OF AWARDS

The intention is to make one award; however, multiple awards could be made if more than one application of sufficient merit is received and funding is available. The government also reserves the right to make no awards under this FOA.

E. ANTICIPATED AWARD SIZE

Maximum award size for this project is estimated to be $452 M with non-Federal sources providing $226 M and DOE providing $226 M. Actual award size may be higher or lower dependent upon Congressional appropriations.

F. PERIOD OF PERFORMANCE

Each award is expected to be five years in duration.

G. TYPE OF APPLICATION

DOE will accept only new applications under this announcement.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

1. Individuals

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime recipient or subrecipient.

2. Domestic Entities

For-profit entities, educational institutions, and nonprofits[1] that are incorporated (or otherwise formed) under the laws of a particular State or territory of the United States are eligible to apply for funding as a prime recipient or subrecipient.

State, local, and tribal government entities are eligible to apply for funding as a prime recipient or subrecipient.

DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) and DOE Government-Operated Government-Owned laboratories (GOGOs) are eligible to apply for funding as a prime recipient or subrecipient. If an FFRDC is proposed as a team member or subrecipient, the requirements contained in Section III.C. apply.

Non-DOE/NNSA FFRDCs and non-DOE GOGOs are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient.

Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient.

3. Foreign Entities

Foreign entities, whether for-profit or otherwise, are eligible to apply for funding under this FOA.

Other than as provided in the "Individuals" or "Domestic Entities" sections above, all prime recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a prime recipient, it must designate in the full application a subsidiary or affiliate

[1]Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are not eligible to apply for funding.

incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime recipient. The full application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate.

A foreign entity may receive funding as a subrecipient.

4. Incorporated Consortia

Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a prime recipient or subrecipient. For consortia incorporated (or otherwise formed) under the laws of a State or territory of the United States, please refer to "Domestic Entities" above. For consortia incorporated in foreign countries, please refer to the requirements in "Foreign Entities" above.

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer.

5. Unincorporated Consortia

Unincorporated consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime recipient/consortium representative. The prime recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. The eligibility of the consortium will be determined by the eligibility of the prime recipient/consortium representative.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

6. Restricted Eligibility

Per DOE's determination under 10 CFR 600.6(b), prime/lead applicants currently in negotiations for or in receipt of government financial assistance for similar SMR

design/licensing FOAs are not eligible. This restriction does not apply to subrecipients, subawards, vendors, or team members of the prime/lead applicant.

B. COST SHARING

The Recipient cost share must be at least 50% of the total allowable costs of the project (i.e., the sum of the government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable costs of the projects) and must come from non-Federal sources unless otherwise allowed by law. (See FOA Part VIII.F for additional information regarding cost sharing; see also 10 CFR Part 600.30 for more information on the cost sharing requirements.)

C. OTHER ELIGIBILITY REQUIREMENTS

FFRDC contractors may be proposed as a team member on another entity's application subject to the following guidelines:

- Authorization for non-DOE/NNSA FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project, and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.
- Authorization for DOE/NNSA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project, and this authorization must be submitted with the application. The following wording is acceptable for this authorization:

  "Authorization is granted for the Fill-in 1: [Name] Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."
- Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE/NNSA will fund a DOE/NNSA FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.
- Cost Share. The applicant's cost share requirement will be based on the total allowable cost of the project. FFRDC costs are included as part of government cost share.
- FFRDC Contractor Effort:
  - The scope of work to be performed by the FFRDC contractor may not be more significant than the scope of work to be performed by the applicant.
  - The FFRDC contractor effort, in aggregate, shall not exceed 20% of the total estimated cost of the project.

- Responsibility. The applicant, if successful, will be the responsible authority 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 FFRDC contractor.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to http://www.grants.gov, select "Apply for Grants," and then select "Download Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package. Once they have been downloaded, access the mandatory documents by highlighting the document and then clicking the "move form to complete" button. Then complete forms as required.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

Applicants are requested, but not required, to submit a letter of intent by 04/05/2013. This letter should include the name of the applicant, the title of the project, the name of the Project Manager(s), estimated project cost, and a one-page abstract. Letters of intent will be used by DOE to organize and expedite the merit review process. Failure to submit such letters will not negatively affect a responsive application submitted in a timely fashion. The letter of intent should be sent by E-mail to SMRFOA800@id.doe.gov.

2. Pre-application

Pre-applications are not required.

C. CONTENT AND FORM OF APPLICATION – SF 424

Applicants must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL- Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. Files attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.

1. SF 424 - Application for Federal Assistance

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 21 can be found on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Certifications and Assurances.

2. Project/Performance Site Location(s)

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2-digit state code followed by a dash and a 3-digit Congressional district code, for example VA-001. Hover over this field for additional instructions.

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

3. Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on "Add Mandatory Other Attachment" to attach the Project Narrative. Click on "Add Optional Other Attachment" to attach the other files.

a. Project Narrative File - Mandatory Other Attachment

The project narrative must not exceed 80 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5 x 11-inch paper with 1-inch margins (top, bottom, left, and right) [single spaced] with font no smaller than 11 point. EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named "Project.pdf," and click on "Add Mandatory Other Attachment" to attach.

The project narrative must include:

1) Narrative Cover Page which must indicate:
   a) The name and type of organization;
   b) The announcement number;
   c) The project title;
   d) The technical and business points of contact for the applicant, denoting the names, titles, addresses, telephone and facsimile numbers, and electronic mail addresses (see Attachment B: Point of Contact Sheet);
   e) Project Manager's name, telephone number, facsimile number, e-mail address, and organization name/unit; and
   f) Names of team/partnership/consortium members.

2) Merit Review Criteria and Other Selection Factors Discussion. This section should be formatted to address each of the merit review criterion and sub-criterion listed in Section V.A, as well as each Other Selection Factors. In addressing the merit review criterion and sub-criterion, applicants are encouraged to reference any correlation between the responses provided under this item and the responses provided for other information requests, including Summary Level System Descriptions (item 3 below), the Certification Gap Analysis (item 4 below), and the Project Management Plan. Applicants shall provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria and Other Selection Factors. DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERIA AND SUB-CRITERIA AND OTHER SELECTION FACTORS.

3) Summary Level System Descriptions. Provide summary-level system descriptions for the major elements of the SMR design. The summary-level system descriptions should provide a clear statement of the functions assigned to the system, a basic operational overview, and simplified system diagrams, where applicable. The descriptions should highlight SMR design innovation incorporated into their specific technologies and identify specific capabilities and characteristics that offer unique solutions to achieving the objectives of enhanced safety, performance and operations. These descriptions should emphasize those systems that involve the most innovative features. Summary-level system descriptions should be provided for the following systems:

- Reactor core and fuel
- Reactor coolant system
- Instrumentation and control systems
- Electrical systems
- Containment system
- Engineered safety features, and auxiliary and emergency systems
- Power conversion systems
- Radioactive waste handling systems
- Fuel handling systems

DOE wants to ensure that selected SMR design(s) provide the highest possible levels of safety, security, and operational simplicity. Therefore, sufficient design detail should be included in the system descriptions to substantiate the anticipated plant response to hazards presented by natural phenomena and design basis accident scenarios, as well as identifying the plant's ability to respond to accident consequences. Applicants should also provide status of the development of specific classes of design documents associated with the systems, where

applicable (e.g., plant layout drawings, piping and instrumentation diagrams (P&IDs), etc.).

4) Certification Gap Analysis. Include a gap analysis that provides current status of development of the systems identified above, and describes the research, testing, analysis and further development required to complete a design certification approval from the NRC. Include relevant schedules and nominal cost information for activities required to close the identified gap.

5) Project Timetable. This section should outline as a function of time, year by year, all the important major activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress. Applicants must provide proposed schedules for submittal and NRC approval of DCAs with key milestones and deliverables supporting the development of the design. The applicant should also address any NRC licensing activities (summary of NRC correspondence, summary of NRC meetings and discussions, pre-application review activity or plans, NRC design certification review plans, etc.) that have taken place up to the date of the FOA application. The timetable should indicate applicant understanding and commitment to meeting the regulatory process.

6) Relevance and Outcomes/Impacts. This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts. The justification for the proposed project should include a clear statement of the importance of the project in terms of the utility of the outcomes and the target community of beneficiaries.

7) Roles of Participants. For multi-organizational projects, describe the roles and the work to be performed by each participant (including estimates of percentages of total project effort to be accomplished by each participant), business agreements between the applicant and participants, and how the various efforts will be integrated and managed.

8) Facilities and Other Resources. Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed and, if appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project such as machine and electronics shops.

9) Equipment. List critical items of equipment (e.g., items involved in key test programs or important long-lead procurements) required for successful completion of this project and identify whether the item of equipment is already available or proposed for acquisition, the pertinent capabilities of each and the location of available equipment and the estimated acquisition cost of equipment proposed for acquisition. For each item of equipment proposed for acquisition,

identify, if any comparable equipment is already at your organization and explain why it cannot be used.

10) Bibliography and References, If Applicable. Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations.

11) Statement of Project Objectives. The project narrative must contain a single, detailed Statement of Project Objectives (SOPO) that addresses how the project objectives will be met. The SOPO must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below. The SOPO 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 or confidential business information.

Applicants shall prepare the SOPO in the following format:

TITLE OF WORK TO BE PERFORMED

(Insert the 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, as appropriate. This section provides a brief summary of the planned approach to this project. An outline of the Project Management Plan (referenced in Task 1.0 below and required to be submitted with your application) is provided later in this Part.

PHASE I

Task 1.0 - Project Management and Planning

(Description includes work elements required to develop, implement, revise, and maintain the Project Management Plan and to manage and report on activities in accordance with the plan.)

Subtask 1.1

(Description)

Task 2.0 - (Title)

PHASE II (Optional)

Task 3.0 - (Title)

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, including the expected delivery dates. These reports shall also be identified within the text of the Statement of Project Objectives. See the following examples:

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

b. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project manager(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the DOE may make it available to the public (if an award is made). The project summary must not exceed one (1) page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) single-spaced with font no smaller than 11 point. Save this information in a file named "Summary.pdf," and click on "Add Optional Other Attachment" to attach.

c. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all resumes in a single file named "bio.pdf" and click on "Add Optional Other Attachment" to attach. The biographical information for each resume must not exceed 2 pages when printed on 8.5" by 11" paper with 1-inch margins (top, bottom, left, and right) single spaced with font no smaller than 11 point and should include the following information, if applicable:

Education and Training. Undergraduate, graduate, and postdoctoral training; provide institution, major/area, degree, and year.

Professional Experience. Beginning with the current position, list professional/academic positions with a brief description, in chronological order.

Publications. Provide a list any publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than five professional and scholarly activities related to the effort proposed.

d. SF 424 A Excel, Budget Information – Non-Construction Programs File

Applicants must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A Excel, "Budget Information – Non Construction Programs" form on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms. The Excel files must not be locked and should permit DOE review of formulas used.

Applicants may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria to be allowable under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G). Save the information in a single file named "SF424A.xls" and click on "Add Optional Other Attachment" to attach. Note: See FOA Part VIII, paragraph F.

e. Budget Justification File

Applicants must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify the basis of estimate, identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment, cost of each item, and a description of procurement method(s) used to determine cost(s) is(are) fair and reasonable; identify proposed subaward/consultant work, cost of each subaward/consultant, and a description of the procurement method(s) used to determine cost(s) is(are) fair and reasonable; describe purpose of proposed travel, number of travelers, and number of travel days; list general categories of supplies and amount for each category; and provide any other information required to support the proposed budget).

Provide the name of the cognizant/oversight agency, if applicant has one, and the name and phone number of the individual responsible for negotiating your indirect rates.

Applicants must have a letter from each third party contributing cost sharing (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost sharing. In the budget justification, identify the following information for each third party contributing cost sharing: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing – cash, services, or property. Applicants are required to submit these signed letters of commitments. Save the budget justification information in a single file named "Budget.pdf," and click on "Add Optional Other Attachment" to attach.

f. Subaward Budget File(s)

Applicants must provide a separate budget (i.e., budget for each budget year and a cumulative budget) and budget justification file in accordance with section e. above for each subawardee that is expected to perform work estimated to be more than $150,000, or 50 percent of the total work effort (whichever is less). Use the SF 424 A Excel for Non-Construction Programs. This form is found on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under DOE budget forms. Save each subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g., ucla.xls or energyres.xls), and click on "Add Optional Other Attachment" to attach.

g. Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractor, if applicable

If a DOE/NNSA FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1A Work Authorization System. This Order and the DOE Field Work Proposal form are available at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms. In addition to the DOE Field Work Proposal form, a DOE/NNSA FFRDC contractor must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify the basis of estimate, identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; describe purpose of proposed travel, number of travelers, and number of travel days; list general categories of supplies and amount for each category; and provide any other information needed to support the proposed budget). Use up to 10 letters of the FFRDC name (plus .pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on "Add Optional Other Attachment" to attach.

h. Project Management Plan

The Project Management Plan (PMP) should be formatted to include the following sections with each section to include the information as described below:

1) Executive Summary. Provide a description of the project that includes the objective, project goals, and expected results. For purposes of the application, this information is included in the Project Narrative and should be simply copied to this document for completeness, so that the PMP is a stand-alone document.

2) Risk Management. Provide a summary description of the proposed approach to identify, analyze, and respond to perceived risks associated with the proposed project. Project risk events are uncertain future events that, if realized, could impact the success of the project. As a minimum, include the initial identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues.

3) Milestone Log. Provide milestones for each budget period (or phase) of the project. Each milestone should include a title and planned completion date. Milestones should be quantitative and show progress toward budget period and/or project goals.

   During project performance, the Recipient will report the Milestone Status as part of the required quarterly Progress Report as prescribed under Attachment A, Sample Reporting Requirements Checklist. The Milestone Status will present actual performance in comparison with Milestone Log, and include:

   a) the actual status and progress of the project;

   b) specific progress made toward achieving the project's milestones; and,

   c) any proposed changes in the project's schedule required to complete milestones.

4) Funding and Costing Profile. Provide a table (the Project Funding Profile) that shows, by budget period, the amount of government funding going to each project team member, as well as projected total amounts per member. Also, provide a table (the Project Costing Profile) that projects, by month, the expenditure of government funds for the first budget period, at a minimum.

5) Project Timeline. Provide a timeline of the project (similar to a Gantt chart) broken down by each task and subtask, as described in the Statement of Project Objectives. The timeline should include for each task, a start date, and end date. The timeline should show interdependencies between tasks and include the milestones that are identified in the Milestone Log above.

6) Success Criteria at Decision Points. Provide success criteria for each decision point in the project, including go/no-go decision points and the conclusions of budget periods and the entire project. The success criteria should be objective and stated in terms of specific, measurable, and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project.

As the first task in the Statement of Project Objectives, successful applicants will revise the version of the PMP that is submitted with their applications by including details from the negotiation process. This PMP will be updated by the Recipient as the project progresses, and the Recipient must use this plan to report schedule and budget variances. The PMP will contain the project cost and schedule baseline and will be used as a basis to report budget and schedule variances.

Save this plan in a single file named "pmp.pdf," and click on "Add Optional Other Attachment" to attach.

i. Multiple Project Managers (PMs)

The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PMs. This decision is solely the responsibility of the applicant.

If multiple PMs will be designated, the application must identify the Contact PM/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PMs. This plan should, at a minimum, include:

1) process for making decisions on scientific/technical direction;
2) publications;
3) intellectual property issues;
4) communication plans;
5) procedures for resolving conflicts; and
6) PMs' roles and administrative, technical, and scientific responsibilities for the project.

Save this plan in a single file named "cmp.pdf," and click on "Add Optional Other Attachment" to attach.

j. Current and Pending Support

Applicants (including all proposed team members and subrecipients) shall identify funding sources by agency, project name, monetary amount, and length of term for each source that is pending or currently in place for the project or individuals involved in project execution within the past three years. Applicants shall also indicate any connection, similarities, duplication or synergism with work performed under the pending or current funding received and the work proposed in response to this FOA. The information provided in response to this application requirement will be used in determining the program policy factor at Part V, Section A.3.a. Save the information in a file named "Support.pdf" click on "Add Optional Other Attachment" to attach.

k. Conflict of Interest Statement (Required for National Laboratories, DOE and non-DOE FFRDC applicants and subapplicants)

Conflicts of interest may exist due to previous efforts performed by the Labs or assistance provided in program direction and other mission related activities. Accordingly, for each subapplicant that is a National Laboratory or DOE and/or non-DOE FFRDC, identify any potential conflicts of interest, fully explain the conflict, whether you feel it is significant or not, along with your rationale, and, if significant, how you will avoid, neutralize, or mitigate the potential conflict.

Save this sheet in a single file named "COI.pdf," and click on "Add Optional Other Attachment" to attach.

l. Export Control Statement

Applicants must submit a certification statement regarding its plan to comply with all applicable export control regulations, including the Export Administration Regulations (EAR) (15 CFR Parts 730-774), the International Traffic in Arms Regulations (ITAR) (22 CFR Parts 120-130), and the Nuclear Regulatory Commission and Department of Energy export regulations at 10 CFR Parts 110 and 810, for the technology developed under this FOA.

Save this sheet in a single file named "EXCS.pdf," and click on "Add Optional Other Attachment" to attach.

m. Compliance Matrix

Applicants shall complete the FOA compliance matrix in Attachment B. This matrix identifies the FOA requirements, the section and clause where the requirement is listed in the FOA, and the application page number(s) that addresses the requirement. Save the FOA compliance matrix in a single file titled "FOA_Compliance_Matrix."

4. SF-LLL Disclosure of Lobbying Activities

If applicable, complete SF- LLL.

Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Summary of Required Forms/Files

Applications must include the following documents which are all part of the Grants.gov application package.

Name of Document	Format	File Name
Application for Federal Assistance – SF424	Form	N/A
Project/Performance Site Location(s)	Form	N/A
Other Attachments Form: Attach the following files to this form:	Form	N/A
Project Narrative File	PDF	Project.pdf
Project Summary/Abstract File	PDF	Summary.pdf
Resume File	PDF	bio.pdf
SF 424A – Excel - Budget Information for Non-Construction Programs File	Excel	SF424A.xls
Budget Justification File	PDF	Budget.pdf
Subaward Budget File(s)	Excel	See Instructions
Project Management Plan	PDF	pmp.pdf
Coordination and Management Plan, if applicable	PDF	cmp.pdf
Current and Pending Support	PDF	Support.pdf
Conflict of Interest Statement, if applicable	PDF	COI.pdf
Export Control Statement	PDF	EXCS.pdf
FOA Compliance Matrix	PDF	FOA_Compliance_Matrix.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable.	Form	N/A

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information.
- Other budget information.

- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR Part 1040.5).
- Representation of Limited Rights Data and Restricted Software, if applicable.
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable.

E. SUBMISSION DATES AND TIMES

1. Letter of Intent Due Date

Applicants are requested to submit a letter of intent by 04/05/2013. The letter of intent should be sent by E-mail to SMRFOA800@id.doe.gov. Failure to submit such letters will not negatively affect a responsive application submitted in a timely fashion.

2. Pre-application Due Date

Pre-applications are not required.

3. Application Due Date

Applications should be received by 07/01/2013, not later than 8:00 PM Eastern Time. Applicants are encouraged to transmit their applications well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

F. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organizations are in FAR Part 31.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90-day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an e-mail to support@grants.gov. Please also provide an "information only" notification of any difficulties at SMR-FOA800@id.doe.gov.

2. Registration Process

Applicants must COMPLETE the one-time registration process (all steps) before submitting its first application through Grants.gov (See http://www.grants.gov/applicants/get_registered.jsp). The DOE recommends this process be started at least six weeks before the application due date. It may take 44 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at http://www.grants.gov/assets/organizationregcheck.pdf as a guide to the process.

IMPORTANT: During the System for Award Management (SAM) registration process, applicants will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner Identification Number" (MPIN). When applicants have completed the process, applicants should call the Grants.gov Helpdesk at 1-800-518-4726 to verify the final step has been completed (i.e., Grants.gov registration).

3. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four e-mails. It is extremely important that the AOR watch for and save each of these e-mails. It may take up to two (2) business days from application submission to receipt of e-mail Number 2. The titles of the four e-mails are:

Number 1 - Grants.gov Submission Receipt Number

Number 2 - Grants.gov Submission Validation Receipt for Application Number

Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

4. Application Validity Timeframe

By submitting an application in response to this FOA applicants agree that their applications are valid for at least 1 year from the date set forth for receipt of applications to this FOA.

PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives and stated goals of the funding opportunity announcement. If the application fails to meet these requirements, it may be deemed non-responsive and eliminated from full merit review.

2. Merit Review Criteria

Selection will be made in accordance with the following review criteria and the program policy factors listed in item 3. **The review criteria are listed in descending order of relative importance; sub-criteria under each criterion are not necessarily listed in descending order of importance.** All applications will be evaluated, using an adjectival rating, against these criteria. Applications must be fully responsive to each of the following criteria.

<u>Criterion 1 – Development of New Approaches and Innovations in Safety, Operation, and Economics of SMRs</u>

The technical merit of the proposed SMR system level design will be evaluated, including the extent to which the SMR design incorporates safety, operability, efficiency, economic and security performance characteristics that exceed the capabilities of designs currently certified by the NRC. With respect to safety, the extent to which SMR plants are designed to reduce core damage frequency, increase post-accident coping periods, provide features and characteristics that minimize the release of radionuclides under severe accident conditions, maximize resistance to hazards presented by natural phenomena, and present a credible case to the NRC to reduce emergency preparedness zone requirements will be evaluated. The extent to which the designs provide diverse and redundant safety systems that can provide capabilities and design features that aid in managing the consequences of severe accidents similar to the Fukushima events will also be evaluated. The extent to which the application demonstrates a sufficient understanding of the technology will be evaluated, as well as how the applicant's innovative technical approach significantly improves performance over the current state-of-the-art. In evaluating this criterion, DOE will evaluate the extent to which:

a. The SMR design emphasizes plant safety and resilience through the use of robust defense-in-depth strategies, incorporation of diverse systems where necessary,

utilization of passive safety features, maximizing simplicity and the elimination or reduction of the likelihood of 'design basis' and 'beyond design basis' accidents through the use of innovative design features.

b. The SMR design incorporates features that aid in the management of severe accident consequences, such as alternate means of accessing off-site power and cooling water, incorporating environmental sampling capabilities, or other innovative instrumentation and diagnostics that support accident analysis and response.

c. The SMR design incorporates innovative features that reduce operational costs, reduce the potential for occupational exposures, facilitate repair and replacement of equipment, effectively monitor plant conditions under operational and post-accident conditions, enable air-cooled condenser options, and improve overall plant availability/reliability.

d. The SMR design introduces innovative provisions and concepts that will support the reduction of construction, fabrication and deployment costs by improved modularity and factory fabrication capability.

e. The SMR design incorporates innovative design features, equipment, processes and/or operational methodologies that maximize electrical energy generated per unit of nuclear fuel and minimize waste mass and volume associated with plant operation and spent fuel management.

f. The SMR design incorporates innovative features, equipment, processes and/or operational methodologies that provide proliferation resistance and/or physical protection improvements by design.

Criterion 2 – Potential Benefits to U.S.

The extent to which the applicant's plan quantifies the overall strategic value of the SMR design, development, and deployment to the U.S. economy as a power provider, a source of domestic jobs, and a potential technology exporter will be evaluated. Applicant business plans will be evaluated based on the following elements:

a. Extent or degree to which project funding provided for technical assistance on design development and certification activities under the award will be allocated or subcontracted to domestic entities and such work is performed by domestic entities.

b. Extent or degree to which the applicant expects to domestically manufacture SMR components and employ U.S. supply chain companies, corporations or subsidiaries for SMR construction projects, including the potential to enhance the capabilities of domestic nuclear suppliers and vendors.

c. The extent to which domestic utilities or utility consortia have expressed interest, provided an endorsement for, or taken specific actions to select the applicant's technology for a reactor build project within the timeframe specified in this FOA, including entering into specific licensing actions.

d. Potential for widespread SMR deployment projects that can establish sustained support for or create new domestic nuclear suppliers.

Criterion 3 – Likelihood of Achieving SMR Design Certification to be Available for Industry Deployment in the 2025 Timeframe

The probability that the applicant team will complete the design development to the extent necessary to achieve NRC approval of the SMR design certification application in sufficient time to deploy the SMR in the timeframe specified will be evaluated. In evaluating this criterion, DOE will evaluate the extent to which the application demonstrates:

a. Clear evidence of the applicant's commitment to meeting the goals of the program, as well as an acceptable, realistic schedule of key management decision points for the design, engineering, and certification of the SMR. The following items are examples of evidence that can be identified as proof of progress in addressing design-specific licensing issues:

   - Meetings with the NRC resulting in agreement on methodologies to address certification issues or closure of such issues;
   - Completion of topical papers for the NRC addressing certification issues;
   - Investment in and completion of testing and analysis programs that address certification issues;
   - Development of or funding of technical contracts with technical specialists to address issues;
   - Corporate-level financial decisions that result in continuing or accelerating certification work; and,
   - Existence of a plant cost estimate which demonstrates an understanding of the financial commitment to meet 2025 deployment.

b. Overall plan to complete design, engineering, testing, analysis and design certification document development for the SMR design, and an acceptable/realistic expected timeline of interactions with the NRC (pre-application, design certification application, response to additional NRC inquiries, technical reports, etc.), including interactions completed to date, that result in completing the design certification of the proposed reactor plant design.

c. An acceptable/realistic approach to completing design finalization for the selected SMR design following the certification, including FOAK engineering required, that is mature and is likely to result in commercialization.

Criterion 4 – Applicant Team Capabilities and Experience, Including Management Capability

The extent to which applicant teams provide objective evidence that they have the resources and abilities to successfully complete the design and design certification deliverables in a technically defensible manner, and to work within the NRC regulatory framework will be evaluated. Current activities, relevance and depth of the organization's experience and capabilities, together with that of key personnel, will be evaluated as it relates to the likely

successful completion of the design, engineering, and certification goals. In evaluating this criterion, DOE will consider the extent to which the application demonstrates the following:

a. That the capabilities and qualifications of engineering and technical personnel, project managers, other key contributors (including utilities, generation and transmission cooperatives, supply chain vendors, or industry consortia), and subcontractors are such that they can successfully accomplish the technical and regulatory scope of this project.

b. That the applicant team has demonstrated successful experience/past performance, knowledge and understanding of the business and regulatory requirements for projects of similar size, scope and complexity in achieving project technical success within budget and on time with no significant safety and quality issues.

c. The applicant team's identification of and work with advisory boards (including participation from utilities, generation and transmission cooperatives, supply chain vendors, or industry consortia) that are capable of providing industry perspective and technical knowledge important to design decisions, and how the applicant will work with such boards to best achieve the objectives of the SMR project. This includes participation on activities related to design reviews, safety analysis, project planning, and other actions involved in the licensing process.

d. An acceptable and clear/convincing assessment of how the experience and capabilities described above will translate into successful approval of the design certification.

Criterion 5 – Technical Quality of the Proposed Project Management Plan and Business Approach

DOE will evaluate the overall quality/acceptability of the proposed Project Management Plan and business approach. In evaluating this Criterion, DOE may consider the merit, feasibility, and realism of the proposed overall methodology and approach to the project; the schedule, including sequence of project tasks, principal milestones and times for each task; the planned assignment of responsibilities; proposed project efficiencies; and, the resources available to the applicant in carrying out the project.

3. Other Selection Factors

Program Policy Factors. The selection official may consider the following program policy factors in the selection process:

a. Extent of industry cost-share (i.e., proposed contributions greater than 50%).

b. Extent to which proposed project costs are reasonable given cost/budget considerations.

c. Extent or degree to which the proposed technology provides the capability to meet different or varying generation capacity requirements, or provides competitive nuclear generating technology options to the electric power industry.

d. Extent or degree to which the project provides economic benefit or stimulus created by Federal government spending, with consideration to how well applicants will provide a broad distribution of Federal funds especially to economically distressed areas.

e. Extent or degree to which the project or technology may provide clean energy options for Federal facility application.

f. Extent or degree to which the project promotes broad domestic industrial expansion or growth.

g. Extent or degree to which the SMR design provides safe, secure power options for geographically diverse and remote locations.

h. The existence of foreign utilities or utility consortia that have expressed interest, provided an endorsement, or taken specific action to select or otherwise support the applicant's technology for a reactor build project as an indicator of longer-term export potential.

i. Extent or degree to which the applicant can accelerate certification approval processes for the selected design ahead of date required to meet a 2025 deployment.

The above program policy factors may be used by the Selection Official to assist in determining which application shall receive DOE funding support. These factors, while not indicators of the application's technical excellence, applicant's ability, etc., are essential to the process of selecting the application that, individually or collectively, will best achieve the program objectives and maximize public benefits. These factors may also be influenced by issues beyond the control of the Applicant. Each Applicant should recognize that some very good applications might not receive an award because they do not fit within a mix of projects that maximizes the probability of achieving the DOE's overall objectives.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Policy and Guidance at http://energy.gov/management/office-management/operational-management/financial-assistance.

The government may request site visits or oral presentations to support the merit review process by providing the Merit Review Panel the opportunity to better understand and validate information contained in the application. Site visits or oral presentations will be requested from only the highest ranked applicants. The determination of highest ranked applications will consider which applications are the most likely to be selected for an award under the FOA based on the strengths, weaknesses, and adjectival ratings assigned by the Merit Review Panel. The site visit and oral presentation, if requested, will be reviewed in accordance with the same merit review criteria identified in Part V.A.2. above and will

consist of applicants presenting their overall approach to the development of new approaches and innovations for SMRs, presenting a high level summary of the proposed project in relation to the merit review criteria, and responding to a fixed set of questions from the Merit Review Panel. If the DOE determines a site visit or oral presentations are needed to support the merit review process, only those applicants who are determined to be the highest ranked applicants will be scheduled for a site visit or to make an oral presentation. Those applicants not eligible for a site visit or to participate in oral presentations will receive written notice. Details regarding the logistics and requirements for the site visit or oral presentation, if requested, will be sent to eligible applicants approximately 10 days prior to the date the applicant is scheduled for the site visit or oral presentation. Costs incurred by the recipient to support a site visit or an oral presentation will be provided at the recipient's own expense and will not be reimbursable as part of this FOA or under any resulting award.

2. Selection

The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Discussions and Award

The government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR Part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

DOE anticipates notifying applicants selected for award by 09/17/2013 and making award(s) by 01/16/2014. DOE reserves the right to make additional award selections using applications submitted in response to this FOA. Award(s) for this project are subject to the availability of Federal funding.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not a notice of award or an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will contain a brief explanation of why the application was not selected.

2. Notice of Award

An Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR part 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

For cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR the Award also includes the Research Terms and Conditions located at http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE cooperative agreements are contained in 10 CFR Part 600 (See: http://www.ecfr.gov). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR are subject to the Research Terms and Conditions located on the National Science Foundation web site at http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.

DUNS and CCR Requirements. Additional administrative requirements for DOE cooperative agreements are contained in 2 CFR Part 25 (See: http://www.ecfr.gov). Prime awardees must keep their data at the SAM current at http://www.sam.gov. SAM is the government-wide system that replaced the CCR. If you had an active registration in the CCR, you have an active registration in SAM. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

Subaward and Executive Reporting. Additional administrative requirements necessary for DOE cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR Part 170. (See: http://www.ecfr.gov). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the SAM.

2. Special Terms and Conditions and National Policy Requirements

The DOE special terms and conditions for use in most cooperative agreements are located at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

The national policy assurances to be incorporated as award terms are located at http://www.nsf.gov/bfa/dias/policy/rtc/appc.pdf and at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

3. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards.

4. Lobbying Restrictions

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

5. Corporate Felony Conviction and Federal Tax Liability Representations

In submitting an application in response to this FOA the Applicant represents that:

1) It is not a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months.

2) No officer or agent of the corporation has been convicted of a felony criminal violation for an offense arising out of actions for or on behalf of the corporation under Federal law in the past 24 months.

3) It is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:

A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

6. Statement of Substantial Involvement

DOE anticipates having substantial involvement during the project period, through technical assistance, advice, intervention, integration with other awardees performing related activities, and technical transfer activities. The Statement of Substantial Involvement may be negotiated with the recipient prior to award. It will be something similar to the following:

The recipient's responsibilities are listed in paragraph a below and DOE's responsibilities are listed in paragraph b.

a. Recipient Responsibilities. The recipient is responsible for:

   1) Performing the activities supported by this award, including providing the required personnel, facilities, equipment, supplies and services;

   2) Defining approaches and plans, submitting the plans to DOE for review, and incorporating DOE's comments;

   3) Managing and conducting the project activities, including coordinating with a DOE management and operating (M&O) contractor on activities performed under the M&O contract that are related to the project;

   4) Notifying DOE of all NRC meetings or design-centered working group meetings and authorizing a limited, pre-identified number of DOE and/or DOE subcontractor personnel to observe such meetings;

   5) Attending annual program review meetings and reporting project status;

   6) Providing DOE appropriate levels of proprietary and non-proprietary information on an as-needed basis to assist in response to external and internal private inquiry. DOE will protect information in accordance with the agreements set forth in the CA language.

   7) Submitting technical reports as stated in the Federal Assistance Reporting Checklist, and incorporating DOE comments;

   8) Update project costs and performance data in the DOE-NE Performance Information Collection System (PICS) as specified Reporting Requirements Checklist. Recipient personnel will update project information at the work breakdown level agreed to in separate negotiations. Schedules will be developed at the appropriate level of detail to define work, key milestones will be provided with the reasonable costs assigned, and personnel will be assigned clear responsibility to update and submit work package information.

   9) Participating in DOE-sponsored generic evaluation and analysis tasks that support improved commercialization potential for the broader SMR industry by providing the appropriate level of non-proprietary knowledge and information to support the goals of the effort; and

   10) Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer (it is anticipated that the number of conferences/meetings will not exceed two per year, not counting program review meetings).

b. DOE Responsibilities. DOE's involvement in the SMR will consist of the following normal Federal stewardship responsibilities (see Section A) below, as well as Substantial Involvement activities (see Section B below).

1) Normal Federal Stewardship Activities:

a) Approving recipient plans prior to award.

b) Providing technical assistance prior to the start of the activity, if requested by the recipient and agreed to by DOE.

c) Providing technical assistance to correct deficiencies in project or financial performance when reports or monitoring indicates some sort of problem.

d) Performing site visits.

e) Reviewing financial, performance, and audit reports.

f) Performing technical reviews to determine whether to continue funding the next budget period.

g) Reviewing performance to ensure that the objectives, terms, and conditions of the award are accomplished.

h) Providing general administrative requirements, such as prior approvals required by the financial assistance regulations and/or OMB Circulars.

i) Reviewing performance after completion.

2) Substantial Involvement Activities:

a) Reviewing project plans and redirecting the work effort if the plans do not address critical programmatic issues.

b) Observing NRC meetings and design-centered working group meetings to identify issues affecting program performance, and taking appropriate actions to redirect funding, if required.

c) Conducting program review meetings (annually or more often if needed) to ensure adequate progress and that the work accomplishes the program and project activities. Redirecting work or shifting work emphasis, if needed. Recommending continued funding.

d) Promoting and facilitating technology awareness activities, including disseminating program results through presentations and publications.

e) Serving as scientific/technical liaison between awardees and other project stakeholders.

f) Reviewing and approving of one stage before work can begin on a subsequent stage.

g) Additional monitoring to permit specified kinds of direction or redirection of the work because of interrelationships with other projects.

h) The power to immediately halt an activity if detailed performance specifications are not met.

c. There are limitations on recipient and DOE responsibilities and authorities in the performance of the project activities. Performance of the project activities must be within the scope of the Statement of Objectives, the terms and conditions of the cooperative agreement, and the funding and schedule constraints.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, and will be attached to the award agreement. A sample checklist is included as Attachment A.

D. PERIODIC COMMUNICATION REQUIREMENTS

Once an award is made, an initial kick-off meeting will be held with DOE to fully understand the successful applicant's approach to the project, to discuss the roles and responsibilities of the various parties involved in establishing the cooperative agreement(s), to establish the requirements of the cooperative agreement, and review the activities requiring further involvement from DOE.

The successful applicant(s) will be required to provide fulfill the elements of the Reporting Requirements Checklist (see the Sample Reporting Requirements Checklist at Attachment A of this FOA).

The successful applicant(s) are further expected to notify the cognizant DOE program manager of all NRC or broadly attended industry meetings related to the design(s), and authorize a limited, pre-identified number of DOE and/or DOE contractor personnel to observe such meetings.

Renewed funding will be subject to continued Congressional appropriations and satisfactory effort by the applicant(s) in completing award requirements, including progress toward the completion of certification requirements for the selected SMR design.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of this FOA must be submitted through the FedConnect portal. Applicants must register with FedConnect to respond as an interested party to submit questions, and to review responses to questions. It is recommended applicants register as soon after release of the FOA as possible to have the benefit of all response. DOE will try to respond to a question within three (3) business days, unless a similar question and answer have already been posted on the website.

Questions and comments concerning this FOA shall be submitted not later than ten (10) calendar days prior to the application due date. Questions submitted after that date may not allow the government sufficient time to respond.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACT

All program, administrative and technical SMR-related questions must be submitted to SMRFOA800@id.doe.gov.

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on FedConnect. Applicants can receive an e-mail when a modification or an announcement message is posted by registering with FedConnect as an interested party to this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements. More information is available at http://www.fedconnect.net.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

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

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

Availability of Funds. Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend

on the first page of the project narrative and specifies the pages of the application which are to be restricted:

"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 herein 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."

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

"The following contains proprietary information that (name of applicant) requests not be released to persons outside the government, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the government may seek the advice of qualified non-Federal personnel as reviewers. The government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. UNDERSTANDING COST SHARING REQUIREMENTS

Department-wide cost sharing requirements are established by Section 988 of the Energy Policy Act (EPAct) of 2005. The DOE Financial Assistance Rules at 10 CFR 600 implement cost sharing requirements (see §600.30, §600.123, §600.224, and/or §600.313). SMR requires a minimum of 50% cost sharing by awardees.

In accordance with section 988 (d), Calculation of Amount, when calculating the amount of the non-Federal contribution, the government:

1. May include the following costs as allowable in accordance with the applicable cost principles:

    a. Cash;

    b. Personnel costs;

    c. The value of a service, other resource, or third party in-kind contribution determined in accordance with the applicable circular of the Office of Management and Budget [Note: In-kind contributions, like any other cost, need to be incurred during the award project period, e.g., cannot give credit for costs incurred prior to the award,

including prior development costs, unless otherwise authorized by the applicable cost principles.];

d. Indirect costs or facilities and administrative costs; or

e. Any funds received under the power program of the Tennessee Valley Authority (except to the extent that such funds are made available under an annual appropriation Act).

2. Shall not include:

a. Revenues or royalties from the prospective operation of an activity beyond the time considered in the award;

b. Proceeds from the prospective sale of an asset of an activity; or

c. Other appropriated Federal funds.

The terms and conditions of the cooperative agreement will include appropriate provisions on cost allowability.

The Federal share shall not be required to be repaid as a condition of award. Royalties should not be used to repay or recover the Federal share, but may be used as a reward for technology transfer activities.

Cost Share is often confused with some form of cost matching. The key to understanding how cost share works is to understand the base from which the cost share percentage is calculated. Cost share percentage is a percentage of the Total Allowable Costs of the project. Note that it is NOT a percentage of the DOE funds, but rather the entire project, including all awardee funds, DOE funds and all FFRDC requirements.

When determining the cost share requirement in dollars, it is first necessary to determine the entire project cost. Initially, no consideration would be given as to where the funds would come from. An applicant would determine that a certain cost (e.g., hours, travel, supplies, etc.) would be needed to complete the project as proposed in the application. Once the project cost is determined, an applicant can then calculate the cost share requirement by multiplying the cost share percentage by the project cost. The resulting dollar figure would be the dollar requirement that the applicant must provide as cost share.

Below are several examples of how the cost share amount would be calculated:

Example 1

The applicant determines that the following budget requirements are needed to carry out the work described in its proposal to DOE:

Direct Labor	$100.000
Travel	3,000
Equipment	17,000
Supplies	10,000
Subcontract	20,000
Total Project Cost	**$150,000**

A cost share requirement of 20% was specified in the funding announcement.

Cost Share = (cost share percentage) x (***total project cost***)
Cost Share = (20%) x ($150,000)
Cost Share = $30,000

The applicant must now identify $30,000 of $150,000 as "Cost Share."
The applicant would then request DOE funding in the amount of $120,000.

DOE Share = $120,000 **Awardee Share = $30,000**

Example 2

Using the same scenario as Example 1, but changing the cost share requirement to 50%, results in the following.

Again, the applicant determines that the following budget requirements are needed to carry out the work described in its application to DOE:

Direct Labor	$100.000
Travel	3,000
Equipment	17,000
Supplies	10,000
Subcontract	20,000
Total Project Cost	**$150,000**

A cost share requirement of 50% was specified in the funding announcement.

Cost Share = (cost share percentage) x (total project cost)
Cost Share = (50%) x ($150,000)
Cost Share = $75,000

The applicant must now identify $75,000 of $150,000 as "Cost Share".
The applicant would then request DOE funding in the amount of $75,000.

DOE Share = $75,000 **Awardee Share = $75,000**

Example 3

The applicant determines that the following budget requirements are needed to carry out the work described in its proposal to DOE:

Direct Labor	$200.000
Travel	10,000
Equipment	20,000
Supplies	10,000
FFRDC Subcontract	60,000
Total Project Cost	**$300,000**

A cost share requirement of 20% was specified in the funding announcement.

Cost Share = (cost share percentage) x (total project cost)
Cost Share = (20%) x ($300,000)
Cost Share = $60,000

The applicant must now identify $60,000 of $300,000 as "Cost Share".
DOE would pay $60,000 directly to the FFRDC.
The applicant would then request DOE funding in the amount of $180,000.

DOE Share = $180,000 (funds to Awardee) + $60,000 (FFRDC) = $240,000

Awardee Share = $60,000

Note: FFRDC funds are paid directly to the FFRDC by DOE. The work provided by the FFRDC is still considered part of the Total Project Cost; therefore, it is included in the base from which the Awardee cost share is calculated.

In all cases, the applicant must specify the individual costs that make up each part of the total project cost and indicate whether DOE or Non-DOE funds will be used to cover the cost.

The budget from Example 1 might look something like the following:

		DOE	**Non-DOE**
Direct Labor	$100,000	$70,000	$30,000
Travel	3,000	3,000	0
Equipment	17,000	17,000	0
Supplies	10,000	10,000	0
Subcontract	20,000	20,000	0
Total Project Cost	**$150,000**	**$120,000**	**$30,000**

The application forms in this funding opportunity announcement will facilitate the identification of funding sources.

G. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the U.S., except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the U.S. subject to certain conditions. (See "Notice of Right to Request Patent Waiver" in paragraph H below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the development of the information, of data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes (10 CFR Part 600 Appendix A to Subpart D), would apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will also identify data that will be recognized by the parties as protected data.

H. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the U.S. in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the U.S. in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR Part 784 at http://energy.gov/gc/patents-licensing-and-patent-waivers under the Patent Waivers.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR Part 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

I. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

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

ATTACHMENTS

ATTACHMENT A: SAMPLE REPORTING REQUIREMENTS CHECKLIST
ATTACHMENT B: FOA COMPLIANCE MATRIX