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Request for Proposal – Idaho National Laboratory
February, 2004

PART I SECTION C

DESCRIPTION/SPECIFICATION/ STATEMENT OF WORK

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Description/Specification/Statement Of Work

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Part I Section C

Statement Of Work

Management And Operation

Of The Idaho National Laboratory (INL)

DOE VISION

The Department of Energy's (DOE's) vision is for the INL to enhance the Nation's security by becoming the preeminent nuclear research, development, and demonstration laboratory within ten years. The INL will also establish itself as a center for national security technology development and demonstration. This requires that the INL be a multi-program National Laboratory with world-class nuclear capabilities. The INL will foster new government, industry, academic and international collaborations to produce the investment, programs and expertise that assure this vision is realized.

C.1 Introduction

The Contractor is responsible for managing and operating the Idaho National Laboratory (INL). The INL is a Federally Funded Research and Development Center (FFRDC) established under Federal Acquisition Regulation (FAR) Part 35.

This Statement of Work describes what the Contractor must achieve. The Contractor's principal focus is providing and directing resources and capabilities to support the nuclear energy and national security missions.

In addition to the broad objectives described here, the Contractor shall receive from DOE specific performance and management objectives, and performance measures. DOE shall provide these in program guidance, financial planning documents, and in other written direction in accordance with other provisions of the contract.

Organizational Conflict of Interest (OCI) and foreign ownership, control, or influence (FOCI) concerns are important and may be addressed at various times during contract performance. OCI and FOCI requirements are described in Section I of the contract.

The amount of fee earned and contract term are directly tied to achieving the DOE vision and accomplishing the requirements described in this Statement of Work. In implementing the DOE vision, the Contractor shall -

1. Provide for the long-term sustainability of the INL.
2. Establish the INL as the preeminent, internationally-recognized laboratory in nuclear energy technologies (including advanced fuel cycles).
3. Establish the INL as a major national security technology development and demonstration center.

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4. Use innovative approaches to achieve the DOE vision.
5. Develop and retain capabilities that support the principal missions and the supporting missions described in this Statement of Work.
6. Ensure INL capabilities and resources are made available to other Federal agencies, state and local governments, academia, and the private sector.
7. Market INL capabilities to strengthen programmatic results and impacts.
8. Solve technical, financial, and regulatory issues associated with program objectives.
9. Significantly improve the cost effectiveness of the INL and accept financial and programmatic responsibility for Contractor and Subcontractor conduct.
10. Establish and implement an effective contractor assurance system.
11. Identify national or commercial standards and best business practices that can be used in place of DOE requirements and implement those approved by DOE.
12. Conduct activities and the work in a manner that instills public confidence in the INL.
13. Conduct public outreach in a manner that actively generates support for INL programs.
14. Work in a manner that is safe to workers, the public, and the environment.
15. Comply with legal requirements and the terms and conditions of this contract.

C.2 Requirements

2.1 Specific Mission Performance Requirements

The Contractor shall –

1. Advance the research and development (R&D) and the engineering capabilities of the INL in support of the Department's principal nuclear energy and national security missions.
2. Establish an appropriate balance among nuclear fuel cycle and nuclear energy technology development, national security, and supporting missions.
3. Win an appropriate share of competitive awards that strengthen INL capabilities where laboratories are allowed to compete.

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2.1.A Nuclear Energy

The Contractor shall –

1. Act as the lead systems integrator for the DOE Office of Nuclear Energy, Science and Technology (NE) near and long-term missions to develop Generation IV (GEN IV) nuclear technologies and advanced fuel cycles.
2. Lead the U.S. research, development and exploration of Next Generation Nuclear Plant (NGNP) technologies and carry out this mission in cooperation with other national laboratories, universities, international partners, and the private sector.

The DOE is evaluating the potential of building a prototype facility at the INL to demonstrate an advanced nuclear reactor technology coupled with an advanced hydrogen production facility. Should such a project proceed, the INL will play a vital role in moving the NGNP from the conceptual stage to a demonstration facility. The INL shall assist DOE in developing a viable collaborative partnering approach and licensing strategy. The INL shall assist with the establishment and administration of an international private/public consortium to design, build, and operate the NGNP.

3. Assume the lead role in coordinating the Generation IV Nuclear Energy Systems initiative including all technical work conducted by the U.S. in support of its role in the Generation IV International Forum:
 - a. Lead the U.S. development and exploration of Super Critical Water Reactor technology in cooperation with collaborative partner nations and the private sector, including responsibility for the design and construction of any test, research, or demonstration capabilities required for this effort.
 - b. Lead the U.S. development and exploration of Lead Cooled Fast Reactor technology in cooperation with collaborative partner nations and the private sector, including responsibility for the design and construction of any test, research, or demonstration capabilities required for this effort.
 - c. Lead U.S. development and grow and maintain international collaborative relationships to develop Gas Cooled Fast Reactor technology and explore Sodium Cooled Reactor technology. Manage the selection of a future preferred fast reactor and fuel cycle system for long-term application in the U.S.
 - d. Lead U.S. development and grow and maintain international collaborative relationships to develop Very High Temperature Reactor technology. Explore and manage the selection of a future preferred

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reactor and any test, research, or demonstration capabilities required for this effort for application in the U.S.

- e. Provide technical integration and coordination support to the Generation IV International Forum (GIF) and the Policy Group Chair. Serve as the Technical Director of the GIF Secretariat providing the necessary leadership, organizational planning, and project monitoring associated GIF R&D activities.

Note: All work in 2.1.A.3 is to be done within existing authorities, i.e. this section is not to be read as creating any special authority to negotiate with foreign governments or companies outside the usual process.

- 4. Assume the lead role in coordinating and implementing the Advanced Fuel Cycle Initiative, including:
 - a. Leading the development of pyrochemical processing research and development and its application to the fuel systems of relevant Generation IV technologies.
 - b. Leading the development of advanced, proliferation-resistant separations technologies for thermal reactor systems and their application to light water reactor and relevant Generation IV technologies.
 - c. Leading the development of advanced, ultra-high burnup nuclear fuels to support the highly efficient operation of light water reactor plants, NGNPs, and other Generation IV systems.
- 5. Assume a major role in revitalizing nuclear engineering education in the U.S. by:
 - a. Establishing accredited nuclear technology programs at the INL that facilitate the training of nuclear engineers, scientists, and technicians and establish the INL as the major U.S. center of advanced nuclear engineering learning.
 - b. Developing relationships with Idaho Universities to establish a strong network of science and engineering education programs at all levels with a goal of making Idaho a world-leading center for nuclear education at the baccalaureate, masters, and doctorate levels.
 - c. Developing relationships with all other universities with nuclear engineering or applicable science curriculums to strengthen these programs. Provide needed support such as regular opportunities for summer internships for exceptional students, sabbaticals for professors, sabbaticals to universities for INL scientists and

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engineers, and other innovative programs.

- d. Assisting in the coordination of university participation in DOE's overall nuclear technology agenda.
6. Support the Naval Reactors Program, including fuels and materials testing in the Advanced Test Reactor.
7. Provide the nation with needed radioisotopes.
8. Conduct the heat source and generator assembly and test operations for the radioisotope power systems that the DOE develops and provides to user agencies.
9. Provide development and testing support for advanced space reactor and radioisotope power systems.
10. Participate in the DOE Office of Science (SC) fusion program as the designated lead laboratory in support of safety engineering by:
 - a. Identifying potential safety concerns in fusion devices and developing analytic and risk assessment methodologies to improve the safety analyses of these devices.
 - b. Providing fusion regulatory support in areas such as defining regulatory issues for conceptual fusion designs, developing safety guidance for magnetic fusion, and monitoring the evolution of federal regulations and DOE directives /standards.
 - c. Conducting fusion risk assessments and developing fusion safety codes and their application.
 - d. Studying the chemical reactivity of tritium and production of neutron activated fusion materials and mobilization and transport concerns.
11. Support the Nuclear Regulatory Commission (NRC) by:
 - a. Providing risk, reliability and regulatory support.
 - b. Conducting facility-specific safe operating envelopes through expert hazard identification, site characterization, accident analysis and radiological analysis.
12. Support other government programs (Naval Reactors, Office of Science, Office of Energy Efficiency, etc.) as requested and consistent with the principal missions.

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2.1.B National Security

The Contractor shall –

1. Be a lead science and technology provider in nuclear nonproliferation and counter proliferation.
2. Engage in the development, testing, and deployment of systems and technologies to protect the homeland by:
 - a. Ensuring the INL becomes the leading center in the nation for developing science-based, technical solutions protecting the nation's critical infrastructure.
 - b. Utilizing the INL's site-wide electrical distribution, communications, cyber-security and other infrastructures to provide real world testing capabilities aimed at analyzing threats to, or vulnerabilities in, infrastructure systems.
 - c. Developing solutions to identified threats and vulnerabilities and testing solution sets in real world conditions.
3. Meet Department of the Army cost, production schedules, and quality requirements for the Specific Manufacturing Capability (SMC).
4. Ensure the INL is a leading provider of applied solutions to satisfy program requirements for Defense and Intelligence Community clients.

2.1.C Science and Technology Supporting the Principal Missions

The Contractor shall –

1. Research, develop, and deploy technologies that improve the efficiency, cost effectiveness, and environmental impacts of systems that generate, transmit, distribute, and store electricity and fuels (to include fossil and alternative).
2. Support and improve the competitive standing of the INL in a broad range of other science and technology programs, such as biological sciences, earth sciences, physics, chemical sciences, materials science, fusion science, modeling and simulation, and computational sciences.
3. Establish a world-class capability in the modeling and simulation of advanced systems such as Generation IV Nuclear Energy Systems, in particular:
 - a. Develop the capability to model advanced nuclear systems from the microscopic to the macroscopic level, enabling advanced

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experimentation involving Generation IV technologies.

- b. Explore development of an innovative affiliation with the state of Idaho, the Universities, and industry in the State to establish a major world center in advanced modeling and simulation. The center would conduct the analysis, research, simulation, and collection of engineering data needed to evaluate all fuel cycles from the viewpoint of cost, safety, waste management, and proliferation resistance.
4. Provide innovative solutions to the management of waste associated with current and future nuclear operations.
5. Provide technical and management support to the Office of Civilian Radioactive Waste Management on an as directed basis.

2.2 Facilities and Operations Requirements

The Contractor shall –

1. Provide for the safe and efficient operation of all INL facilities.
2. Systematically evaluate and reduce the cost of providing mission infrastructure, including footprint reduction.
3. Aggressively streamline, upgrade, and plan for new infrastructure (such as a new fast test reactor) at the INL using the goals and milestones contained in the INL Ten-Year Site Plan.
4. Manage special nuclear material, waste, and spent nuclear fuel in accordance with Section J, Attachment P.

2.3 General Management Requirements

The Contractor's general management responsibilities include budget and financial management; infrastructure management; property management; project management; construction management; litigation; labor relations; procurement; information resources; public information and external communications; regulatory compliance; integrated safety management; emergency preparedness; counterintelligence; and safeguards and security. The Contractor's success is directly tied to the skill and innovation it brings to leading and managing the INL.

The Contractor shall –

1. Establish and maintain management systems to ensure the work is performed effectively and efficiently.

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2. Provide systems and methodologies to identify and resolve financial, budgetary, and program risks and to establish priorities.
3. Accept assignment of agreements for products and services signed by predecessor contractors. The Contractor may negotiate changes to those agreements if necessary to accomplish the work.
4. Provide effective communications with DOE-NE, NE-ID, and other lead DOE and Work for Others project sponsors.
5. Reduce or eliminate non-core services and functions through innovative business arrangements.
6. Continuously challenge past laboratory practices and policies that do not provide a favorable cost-benefit return to program missions.

The Contractor shall provide strong leadership and management capabilities to the INL that specifically address -

2.3.A Efficiency

The Contractor shall improve administrative and programmatic efficiency in all aspects of contract performance. The Contractor's efforts at achieving improved efficiency shall –

1. Reduce or eliminate inefficient or unnecessary levels of management.
2. Reduce or eliminate inefficient or unnecessary functions and services.
3. Propose replacement of DOE directives with more efficient national or commercial standards or best business practices. The Contractor shall implement only those approved by the DOE Contracting Officer.
4. Integrate the concepts of continuous improvement into all work activities, including the use of safety and environmental management systems and independent certifications (e.g. International Standards Organization (ISO), Voluntary Protection Program (VPP) Star).

2.3.B Accountability

The Contractor is responsible and accountable for its actions and those actions of its workforce and subcontractors. The Contractor shall -

1. Establish management systems that:
 - a. Contain clear lines of authority and identify a line manager accountable for each INL program, facility, and regulatory activity.

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- b. Account for how funds are spent and property is managed. These systems shall be current, accurate, and auditable. The Contractor is financially responsible for funds and property as described elsewhere in this contract.
2. Provide an annual written assurance statement, signed by the Laboratory Director, beginning at the end of the first year of contract performance, certifying that the Contractor's management systems meet all contract requirements.

2.3.C Human Resources

The Contractor shall -

1. Establish a human relations program that assures successful accomplishment of all contract activities.
2. Recruit and retain highly skilled, experienced, world-class talent to perform the work.
3. Resolve wage, benefit, working conditions, and employee representation issues fairly, legally, and without negatively impacting the work.

2.3.D Small Business

The Contractor shall –

1. Maximize opportunities for all small businesses categories listed in FAR 19.201(a).
2. Meet or exceed the small business goals contained in the Contractor's Small Business Subcontracting Plan.

2.3.E Collaboration

The Contractor shall –

1. Establish and maintain flexible and responsive collaborative relationships.
2. Obtain from INL partners substantial financial and technical support for INL programs. In return, DOE will consider unique and innovative approaches to information and data transfer, commercialization, and licensing of intellectual property. These collaborative relationships shall –
 - a. Contribute to United States technological competitiveness by capitalizing on INL expertise and facilities.

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- b. Involve a broad range of collaborative partners, including Native American Tribes such as the Shoshone-Bannock Tribes, academic research institutions, other DOE laboratories, international organizations, other government agencies, and the private sector.
- c. Establish long-term strategic cooperation aimed at commercialization of inventions or the improvement of industrial products.
- d. Make INL resources accessible to outside researchers including foreign nationals.

2.3.F Technology Transfer and Commercialization

The Contractor shall maintain an active technology transfer and commercialization program using the flexibilities provided by this contract.

2.3.G Relationship with Existing Site Tenants and the Idaho Cleanup Project (ICP) Contractor

The Contractor shall –

- 1. Assume or support, as applicable, all existing Memorandums of Understanding (MOU's) and other contracts for services and support to INL tenants described in Section J, Attachment J-F. The Contractor may suggest changes to those agreements if necessary.
- 2. During the first eight months after contract takeover, provide to the Idaho Cleanup Project (ICP) contractor those services described in Section J, Attachment F-6.
- 3. Prepare and sign an interface agreement with the ICP contractor during transition that describes how the Contractor and the ICP contractor will interface on cross-cutting issues such as security, facility and program transfers, regulatory compliance, assignment of subcontracts and other commercial obligations, and other arrangements of mutual benefit.

2.4 Regulatory and Safety Requirements

2.4.A Regulatory Requirements

The Contractor shall -

- 1. Maintain a compliant environmental program addressing permitting and disposal activities.
- 2. Safely manage waste, including storage, treatment, and disposal of hazardous, mixed, and radioactive wastes.

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3. Implement effective waste minimization and pollution prevention initiatives.
4. Maintain permits or parts/volumes to permits for INL facilities.
5. Integrate site-wide air and water permitting, monitoring, and reporting.
6. Collect and integrate air and water permit documents and data from INL tenants for their facilities and operations where site-wide permits or reporting are required.
7. Provide information to and coordination with the ICP contractor for its maintenance of the site-wide Resource Conservation and Recovery Act (RCRA) permit and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) agreement.
8. Integrate required site-wide environmental surveillances or studies not covered under CERCLA or RCRA. (Site-wide CERCLA and RCRA activities are the responsibility of the ICP contractor).
9. Perform other environmental reporting as required by the regulations. This may require coordination with INL tenants.

2.4.B Safety Requirements

The Contractor's ability to work safely is critical to successful outcomes. The Contractor shall –

1. Establish clear safety, environmental protection, health, and quality assurance priorities and manage activities consistent with those priorities.
2. Use a graded approach to program and project risk management.
3. Have an effective employee involvement program.
4. Maintain an effective integrated safety management system.

2.5 Laboratory Consolidation and Transition Requirements

2.5.A Consolidation

A critical aspect of contract performance is consolidation of programs, facilities, operations, and personnel formerly administered by the Idaho National Engineering and Environmental Laboratory (INEEL) and Argonne National Laboratory-West (ANL-W). The Contractor shall ensure-

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1. Consolidation of INEEL and ANL-W facilities, operations, and services occur early in the contract to reduce both the existing building footprint square footage and laboratory overhead costs to a level that is both highly efficient and operationally effective.
2. Continuity of operations and program execution during the consolidation process and at all times during contract performance.
3. The INL operates and is recognized as a completely integrated organizational entity.
4. A laboratory culture focused on delivering world-class science and technology outputs.

2.5.B Transition

The Contractor shall efficiently and effectively complete the transition from the incumbent contractors by the end of the transition period in Section F. The Contractor shall use the transition plan submitted with its proposal to begin transition activities. DOE and the Contractor shall negotiate and DOE shall approve a final transition plan not later than 10 working days after the start of the transition period.

The transition plan shall detail the contractor's prioritized approach to accept complete responsibility for all work scope, business systems, and environmental, safety and health management by the end of the transition period. The plan shall include a schedule of major activities, detailed cost breakdown by activity and address as a minimum:

1. Communication process among the Contractor, incumbent contractors, site tenants, the new ICP contractor, and the DOE.
2. Identification of key transition issues and milestones.
3. Identification of a transition team and related costs.
4. Integration of work packages (direct and indirect) and budgets from incumbent contractors.
5. Approach to minimizing impacts on continuity of operations.
6. Dispute resolution.
7. Assumption of the INL's scientific programs and projects.
8. Comprehensive human resource management as described in clause H.14.

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9. Acceptance of existing management systems (e.g., General Electronic Data Processing, Budget and Planning, Purchasing, Material, Compensation, Labor/Payroll, Indirect and Direct Costs, Billing and Estimating).
10. Assumption of all ES&H responsibilities, functions, and activities.
11. Identification and prioritization of issues after transition.

The Contractor may utilize any government furnished facility and equipment that is available in order to minimize costs. Subject to agreement with the incumbent contractors, the Contractor may utilize incumbent contractor personnel on a loaned basis or arrange for early transition of employees. In addition, the Contractor may utilize the services of subcontractors of the incumbent contractors with agreement from the incumbent contractors.

C.3 Deliverables

Contract deliverables are defined in Section J, Attachment I. DOE, through written direction from the Contracting Officer, may require additional reports, analysis, or other information relevant to contract performance.