

PART I

SECTION C

DESCRIPTION/SPECS./WORK STATEMENT

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PART I

SECTION C - DESCRIPTION/SPECS./WORK STATEMENT

C.1 - INTRODUCTION

This Performance-Based Management Contract (PBMC) is for the management and operation of the Fermi National Accelerator Laboratory (FNAL or the Laboratory). The Contractor shall, in accordance with the provisions of this contract, accomplish the missions and programs assigned by the U.S. Department of Energy (DOE or the Department) and manage and operate the Laboratory. The Laboratory is one of DOE's Office of Science (SC) single-program laboratories. The Laboratory is a Federally Funded Research and Development Center (FFRDC) established in accordance with the Federal Acquisition Regulation (FAR) Part 35 and operated under this management and operating (M&O) contract, as defined in FAR 17.6 and DOE Acquisition Regulation Supplement (DEAR) 917.6.

This contract reflects the Department's effort to enable the Contractor to achieve more highly effective and efficient management of the Laboratory, outstanding science and technology results in a safe and secure environment, more cost effective operations, and enhanced Contractor accountability. Toward this end, this contract establishes a process for minimizing the use of unnecessary DOE orders by tailoring existing and new orders that will enable the Contractor to propose alternate standards, which rely primarily on state and federal laws and regulations, and management processes based on national standards, certified systems and best business practices. Contractor managers shall be held more accountable for maintaining risk mitigation as Laboratory processes and assurance models change.

This contract reflects the application of performance-based contracting approaches and techniques which emphasize results/outcomes and minimize "how to" performance descriptions. The Contractor has the responsibility for total performance under the contract, including determining the specific methods for accomplishing the work effort, performing quality control, and assuming accountability for accomplishing the work under the contract. Accordingly, this PBMC provides flexibility, within the terms and conditions of the contract, to the Contractor in managing and operating the Laboratory.

Desired results of this contract include improved Contractor operational efficiencies, allocations of Contractor oversight resources to direct mission work, and streamlined and more effective federal line management focused on a system-based approach to federal oversight with increased reliance on the results obtained from certified, nationally recognized experts and other independent reviewers. Moreover, science and technology have improved peer review metrics, and incentives to achieve extraordinary results.

Under this PBMC, it is the Contractor's responsibility to develop and implement innovative approaches and adopt practices that foster continuous improvement in accomplishing the mission of the Laboratory. DOE expects the Contractor to produce effective and efficient management structures, systems, and operations that maintain high levels of quality and safety in accomplishing the work required under this contract, and that to the extent practicable and appropriate, rely on national, commercial, and industrial standards that can be verified and

certified by independent, nationally recognized experts and other independent reviewers. The Contractor shall conduct all work in a manner that optimizes productivity, minimizes waste, and fully complies with all applicable laws, regulations, and terms and conditions of the contract.

To the maximum extent practical, this PBMC shall:

- (a) Describe the requirements in terms of outcome or results required rather than the methods of performance of the work;
- (b) Use a limited number of systems-based measurable performance standards (i.e., terms of quality, timeliness, quantity, etc.) to drive improved performance and increased effective and efficient management of the Laboratory;
- (c) Provide for appropriate financial incentives (e.g., fee) when performance standards and contract requirements are achieved;
- (d) Specify procedures for reduction of fee when services are not performed or do not meet contract requirements; and
- (e) Include non-financial performance incentives where appropriate.

C.2 - IMPLEMENTATION OF DOE'S MISSION FOR FNAL

The Contractor shall develop a compelling plan to implement the DOE's SC strategic mission for the Laboratory, as defined below in C.4 "Mission and Major Programs." Within this Plan, the Contractor will map the Laboratory's core competencies to this Laboratory mission. The Contractor will highlight the unique roles the Laboratory fills in SC's capability to accomplish its missions and, more broadly, that of the Department. Upon approval by the Department, the Plan shall be captured within the Fermilab Strategic Plan, which shall be updated annually in accordance with instructions to be issued by the Fermi Site Office (FSO) Manager.

The Performance Evaluation and Measurement Plan (PEMP), as called for within the clause entitled, "Standards of Contractor Performance Evaluation", identifies performance outcomes and indicators, which are updated and agreed upon by the Parties annually, as standards against which the Contractor's overall performance of scientific, technical, operational, and/or managerial obligations under this contract shall be assessed.

C.3 - PERFORMANCE EXPECTATIONS, OBJECTIVES, AND MEASURES

C.3.1 - Core Expectations

C.3.1.1 - General

The relationship between DOE and its national laboratory management and operating Contractors is designed to bring best practices for research and development to bear on the Department's missions.

Through application of these best practices, the Department seeks to assure both outstanding programmatic and operational performance of today's research programs and leadership to assure the relevance to DOE's mission needs, the productivity and quality of its programs to lead the world in meeting tomorrow's needs. Accordingly, DOE has substantial expectations of the Contractor in the areas of: program delivery and mission accomplishment; laboratory stewardship; and excellence in laboratory operations and financial management.

C.3.1.2 - Program Development and Mission Accomplishment

The Contractor is expected to provide the highest quality of planning, management, and execution of assigned research and development programs. The Contractor is expected to execute assigned programs so as to achieve the greatest possible impact on DOE's mission objectives, to aggressively manage the Laboratory's science and technology capabilities and intellectual property to meet these objectives, and to initiate innovative concepts and research proposals that are in concert with DOE missions. The Contractor shall propose work that will advance DOE's mission objectives and that is aligned to Laboratory capabilities. The Contractor shall strive to meet the highest standards of scientific quality and productivity, "on-time, on budget, as-promised" delivery of program deliverables, and first-rate service to the research community through user facility operation.

The Contractor is expected to demonstrate benefit to the nation from R&D investments by transferring technology to the private sector and supporting excellence in science and mathematics education consistent with achieving continuous progress towards DOE's core missions.

C.3.1.3 - Laboratory Stewardship

The Contractor is expected to be an active partner with DOE in assuring that the Laboratory is renewed and enhanced to meet future mission needs. Within the constraints of available resources and other Contract requirements, the Contractor, in partnership with DOE, shall:

- (a) Maintain an understanding of DOE's evolving Laboratory vision and long-term strategic plan. Address the co-evolution of Laboratory capabilities to meet anticipated DOE and national needs.
- (b) Attract, develop, and retain an outstanding work force, with the skills and capabilities to meet DOE's evolving mission needs.
- (c) Renew and enhance research facilities and equipment so that the Laboratory remains at the state-of-the-art over time and is

well-positioned to meet future DOE needs.

- (d) Build and maintain a financially viable portfolio of research programs that generates the resources required to renew and enhance Laboratory research capabilities over time.
- (e) Maintain a vibrant relationship with the broader research community, to enhance the intellectual vitality and research relevance of the Laboratory, and to bring the best possible capabilities to bear on DOE mission needs through partnerships.
- (f) Build a positive, supportive relationship founded on openness and trust with the community and region in which the Laboratory is located.

C.3.1.4 - Operational and Financial Management Excellence

The Contractor is expected to effectively and efficiently manage and operate the Laboratory through best-in-class management practices designed to foster world-class research while assuring the protection and proper maintenance of DOE research and information assets, the health and safety of Laboratory staff and the public, and the environment. The Contractor is expected to operate the Laboratory so as to meet all applicable laws, regulations, and requirements. The Contractor is expected to manage the Laboratory cost-effectively, while providing the greatest possible research output per dollar of research investment, and, accordingly, to develop and deploy management systems and practices that are designed to enhance research quality, productivity, and mission accomplishment consistent with meeting operational requirements.

C.3.2 - Performance Evaluation Expectations

The performance expectations of this contract are broadly set forth in this Section and reflect the DOE's minimum needs and expectations for Contractor performance. Specific performance work statements, performance standards (measures applied to results/outputs), acceptable performance levels (performance expectations), acceptable quality levels (permissible deviations from performance expectations), and related incentives shall be established annually, or at other such intervals determined by the DOE to be appropriate. The related incentives may be monetary, or where monetary incentives are not desirable or considered effective, the Contractor's performance may be used as a factor which directly affects the past performance report card, or a factor in a decision to reduce or increase DOE oversight or Contractor reporting, as appropriate.

In performance under this contract, the Contractor shall be evaluated within the following general performance goals and expectations:

- (a) Science and Technology (S&T) - The Contractor will deliver innovative, forefront science and technology aligned with DOE strategic goals in a safe, environmentally sound, and efficient manner, and will conceive, design, construct, and operate world-class user facilities.
- (1) Mission Accomplishment (Quality and Productivity of R&D): The Contractor shall produce high-quality, original, and creative scientific results that demonstrate sustained scientific and technological progress and impact, while receiving appropriate external recognition of accomplishments. The Contractor shall also contribute to overall research and development goals of the Department and its customers. Important performance factors for the research and development are: overall productivity/output; impact including the significance of the R&D; leadership including recognition of Science and Technology accomplishments; and delivery including timeliness such as meeting milestones, goals, and other commitments.
 - (2) Construction and Operation of Research Facilities: The Contractor shall develop, construct and operate research facilities and equipment that are needed to insure the Laboratory can meet its S&T missions today and in the future, while effectively and efficiently maintaining current S&T facilities and equipment and providing effective, efficient operation of user facilities to maximize the value of facilities. Important performance factors are: meeting construction schedules, budgets, performance specifications and objectives; operating the facilities reliably, cost effectively, and ensuring that the facilities are available when needed; providing high utilization by providing a science and technology foundation to maximize the value of the facility; and leveraging the facilities by making them available for other customers.
 - (3) Project/Program Management: The Contractor shall provide for effective and efficient stewardship of resources and capabilities, through expert planning, delivery, and risk management. Important performance factors are: establishing a Laboratory vision that includes maintaining key competencies to support research programs and making quality hires; planning including high quality research plans, adequate consideration of technical risks, success in identifying and avoiding/overcoming technical problems and the ability to take advantage of new opportunities; and linking financial data to effective decision making and redirecting resources/projects in response to changing conditions.

- (b) Contractor Leadership/Stewardship - The Contractor shall provide for the effective and efficient management and operation of the Laboratory through a strategic vision and effective planning to assure the Laboratory mission is accomplished. Important performance factors are: Laboratory-wide strategic vision and effective planning including the creation of partnerships and alliances, selection of Laboratory priorities and culture, educational programs, technology transfers, and developing a working relationship with the local community; responsiveness and accountability; and corporate involvement/ contributions including joint appointments, innovative financing proposals, infrastructure support and an overall investment in the success of the Laboratory.

C.3.3 - Performance Objectives and Measures

The results-oriented performance objectives of this contract are stated in the PEMP (Part III, Section J, Appendix B), and/or in the Work Authorization Directives issued annually in accordance with the special clause entitled, "Long-Range Planning, Program Development and Budgetary Administration". The Contractor shall develop a five-year Fermilab Strategic Plan for the overall direction of the Laboratory and for the accomplishment of these objectives. The Plan shall be actively maintained and annually updated in accordance with Strategic Planning instructions issued by the DOE Site Manager. The objectives shall be accomplished within an overall framework of management and operational performance requirements and standards contained elsewhere in this contract. To the maximum extent practicable, these requirements and standards have also been structured to reflect performance-based contracting concepts, including the clause entitled, "Application of DOE Contractor Requirement Documents", which permits the Contractor to propose to the Contracting Officer alternative and/or tailored approaches based on national, commercial or industrial standards and best business practices to meet the outcomes desired by the Government.

DOE's Quality Assurance/Surveillance Plan (QASP) for evaluating the Contractor's performance under the contract shall consist primarily of the PEMP (as called for within the Part II, Section I contract clause entitled, "Total Available Fee: Base Fee Amount and Performance Fee Amount". The QASP establishes the process DOE shall use to ensure that the Contractor has performed in accordance with the performance standards and expectations. The QASP shall summarize the performance standards, expectations and acceptable quality levels for each task; describe how performance will be monitored and measured; describe how the results will be evaluated; and state how the results will affect contract payment.

The Contractor shall develop and implement a Laboratory assurance process, acceptable to the Contracting Officer, which provides reasonable assurance that the objectives of the Contractor's management systems are being accomplished and that the systems and controls will be effective and efficient. The Contractor's assurance process shall reflect an understanding of the risks,

maintain mechanisms for eliminating or mitigating the risks, and maintain a process to ensure that the management systems and their attendant assurance process(es) meet contract requirements.

C.4 - STATEMENT OF WORK

(a) Work Statement

The Contractor shall, in accordance with the provisions of this contract, provide the intellectual leadership and management expertise necessary and appropriate to manage, operate, and staff the Fermi National Accelerator Laboratory (also referred to as Fermilab); to accomplish the research missions and roles assigned by the DOE to the Laboratory; and to perform all other work described in this Statement of Work (SOW). DOE research activities are assigned through strategic planning, program coordination, and cooperation between the Laboratory and DOE.

Inasmuch as the assigned missions of the Laboratory are dynamic, this SOW is not intended to be all-inclusive or restrictive, but is intended to provide a broad framework and general scope of the work to be performed at the Laboratory during the term of the contract. This SOW does not represent a commitment to, or imply funding for, specific projects or programs. All projects and programs will be authorized individually by DOE and/or other work sponsors in accordance with the provisions of this contract.

All work under this contract shall be conducted in a manner that will protect the environment and assure the safety and health of employees and the public. The Contractor shall implement an Integrated Safety Management System (ISMS) that includes an Environmental Management System (EMS). In performing the contract work, the Laboratory shall implement appropriate program and project management systems to track progress and pursue cost-effectiveness in work activities; develop integrated plans and schedules to achieve program objectives, incorporate input from DOE and stakeholders; maintain sufficient technical expertise to manage activities and projects throughout the life of a program; maintain Laboratory facilities and infrastructure as necessary to accomplish assigned missions; and utilize appropriate technologies and management systems to improve cost efficiency and performance.

(b) Mission and Major Programs

(1) Laboratory Goals, Primary Program Sponsor and Mission

a. Laboratory Goals

- i. Enable the most powerful attack on the fundamental science questions of the field of high-energy physics.
- ii. Provide world class facilities for high-energy physics as part of the global network of particle physics.

iii. Develop science and technology for particle physics and cosmology research.

b. Primary Program Sponsor

The primary sponsor of work at Fermilab is the Office of Science's (SC), High-Energy Physics Program.

Additionally, the Contractor may be authorized to pursue other DOE and non-DOE missions that derive from the Laboratory's missions and utilize the Laboratory's core competencies. Collaborations with other federal agencies include the National Science Foundation.

A summary of current Laboratory programs follows. The Contractor will update descriptions of major programs in the Fermilab Strategic Plan.

c. Mission

The Contractor will document the mission statement in the Fermilab Strategic Plan.

Fermilab's mission is to advance the understanding of the fundamental nature of matter and energy, by providing leadership and resources for qualified researchers to conduct research at the frontiers of high-energy physics and related disciplines.

Fermilab leads the nation in the construction and operation of large user facilities and in developing the underlying technology for particle physics research. Fermilab's accelerator complex supports the most diverse particle physics program of any laboratory in the country, a program that includes collider experiments, neutrino experiments, experiments with hadron beams, and experiments testing new accelerator and detector technologies.

The Laboratory's mission is built on a foundation of five core competencies:

- i. Construction and operation of experimental facilities for particle physics and particle astrophysics
- ii. Research, design, and development of accelerator and detector technology
- iii. High-performance scientific computing and networking
- iv. International scientific collaboration
- v. Theoretical particle physics and astrophysics

- (2) Major Fermilab research facilities include:

Tevatron Collider

The Tevatron Collider is the highest energy collider in operation and is the only facility in the world that can now address many of the central questions in the realm of high-energy physics. The Tevatron Collider collides protons and antiprotons with center of mass energy of approximately 2 TeV. Two detectors, CDF and D-Zero, observe these collisions.

Neutrinos at the Main Injector (NuMI)

The NuMI facility provides neutrinos for the Main Injector Neutrino Oscillation Search (MINOS) experiment at Fermilab designed to study the phenomena of neutrino oscillations. The beam of neutrinos is sent through the two MINOS detectors, one at Fermilab and one in the Soudan Mine in northern Minnesota.

Mini-Booster Neutrino Experiment (MiniBooNE)

The 8 GeV proton beamline provides protons to the MiniBooNE experiment. MiniBooNE refers to the first phase of the BooNE experiment and describes the neutrino oscillation measurements that are made with a single detector located at Fermilab.

Main Injector Particle Production (MIPP)

The MIPP facility provides a beamline off the Main Injector accelerator to provide the experimental capability to measure particle production using various particle beams between the energy of 5 GeV and 120 GeV.

- (3) Office of Science High-Energy Physics Program

The Contractor shall conduct work to: perform frontier research in theoretical and experimental high-energy physics; build, maintain and operate state of the art experimental user facilities for high-energy physics; perform research and development work in accelerator science, experimental detector design and computing relevant to high-energy physics; support operations of existing DOE high-energy physics experiments and carry out construction projects in high-energy physics areas as assigned.

Fermilab conducts major research programs in the following areas:

Collider Physics:

Several of the most important problems in particle physics can only be addressed with colliders operating at the energy frontier. Possible discoveries include the Higgs boson, supersymmetry, and extra dimensions. In addition, the most attractive models for dark matter involve particles that can be produced and studied in the current generation of collider experiments.

The Contractor shall continue operation of the Fermilab Tevatron. Two international collaborations with a total of 1500 scientists perform research with the CDF and DZero detectors. The Tevatron program is currently scheduled to operate through 2009.

The Large Hadron Collider (LHC) at CERN, Geneva, Switzerland will start to operate around 2007-8. About 3000 scientists will conduct research at the new energy frontier with the A Toroidal LHC Apparatus (ATLAS) and Compact Muon Solenoid (CMS) experiments. The LHC work of Fermilab under this contract consists of the following: 1.) to serve as host laboratory for the US-LHC accelerator project, building accelerator components for the LHC, and for the LHC Accelerator Research Program (LARP); and 2.) to serve as the host laboratory for the U.S. part of the effort to build the CMS detector, and for the CMS research program for American researchers.

Progress has been made in the last year toward realizing an International Linear Collider. The Global Design Effort (GDE) will be anchored by Fermilab and SLAC in the U.S. and several laboratories in Europe and Asia. Under this contract, Fermilab will have the lead responsibility within the U.S. for developing the superconducting accelerating modules and other responsibilities as directed by DOE.

The Contractor will also perform high performance scientific computing in support of Fermilab's major research facilities and the upcoming LHC experiments at CERN. The data collected from these experiments are becoming orders of magnitude more voluminous; petabytes per year are expected. In order to satisfy these needs grid computing has been conceived as an expansion of distributed computing.

Neutrino Physics

Neutrino physics has made rapid advances in recent years. Experiments are trying to understand the nature of neutrino mass, how neutrinos oscillate from one flavor into another, and whether a new matter-antimatter asymmetry can be discovered in the neutrino sector.

The Contractor shall continue the accelerator-based program now operating in neutrino physics at Fermilab. The MINOS experiment has recently started to operate, using the neutrinos from the NuMI beam line. The near detector is situated on the Fermilab site, the far detector is in the Soudan mine in northern Minnesota. The MiniBooNE experiment has been operating for three years using the Booster Neutrino Beam.

To ensure that the U.S. has a lead role for some of the critical experiments needed in the distributed program of neutrino physics, the Contractor is expected to exploit the unique capabilities of Fermilab.

Particle Astrophysics

Particle astrophysics is the science at the interface of particle physics, cosmology, and astrophysics. It requires several experimental approaches, each of which gathers very different experimental information.

Fermilab physicists will continue to participate in a research program to detect the dark matter halo by observing its interactions with normal matter. The Cryogenic Dark Matter Search-II (CDMS-II) experiment operating in the Soudan mine is part of this research effort. The Contractor shall manage the construction and operation of the CDMS-II experiment for a broad collaboration with many university groups.

Studies of the cosmic microwave background and results from various astronomical observatories and sky surveys are major sources of what is known about dark matter and dark energy. In view of Fermilab's contributions to and the scientific importance of the Sloan Digital Sky Survey (SDSS), the Contractor shall continue participation in operation of the SDSS.

The Contractor shall also continue project management functions and operations of the Auger Cosmic Ray observatory in Malargue, Argentina.

Quark Physics

The Fermilab facilities are used for broad spectrum test beams and experiments to measure quark level processes and cross sections needed for interpretation of neutrino, collider or astrophysics experiments. Quark physics research is an important example of the lab facilities being made available to the user community for high energy physics research. The availability of the facilities for the purposes of furthering research in high energy physics is a service to the community, and the Contractor shall ensure that the laboratory's facilities are available for users performing qualified research and other activities ancillary to the OHEP mission.

Accelerator Research and Development

The primary technology of particle physics is that of accelerators, and the advance of the field has been closely tied to breakthroughs in accelerator

development. The Contractor is expected to perform a significant role in research and development in this area.

Superconducting magnet technology is fundamental to large hadron colliders, including the Tevatron and the Large Hadron Collider. The Contractor is expected to continue to participate in the development of superconducting magnets.

Superconducting accelerating modules based on superconducting RF (SCRF) technology form a basic unit of the International Linear Collider (ILC). Fermilab was a member of the TESLA collaboration that developed the SCRF technology selected for the ILC. The Contractor shall participate in the U.S. effort on the ILC, and will be host lab for the U.S. SCRF effort.

Theoretical Physics

Fermilab has achieved significant prominence in theoretical particle physics and theoretical astrophysics. These activities include field theory, phenomenology, computer simulations, astrophysical studies, and cosmology. In addition, the lab has fostered a vibrant visitors program, and seminars and workshops on theoretical physics topics relevant to these areas of interest. The Contractor shall continue to perform research in theoretical physics and carry on these programs to maintain Fermilab's position of prominence in this area.

(4) Technology Transfer Programs

The Contractor shall contribute to U.S. technological competitiveness through research and development partnerships with industry that capitalize on the Contractor's expertise and facilities. Principal mechanisms to effect such contributions are: cooperative research and development agreements, access to user facilities, reimbursable work for non-DOE activities, personnel exchanges, licenses, and subcontracting.

The Contractor shall cooperate with industrial organizations to assist in increasing U.S. industrial competitiveness, by assisting in the application of science and technology R&D. Such cooperation may include an early transfer of information to industry by arranging for the active participation by industrial representatives in the Contractor's programs. Cooperation with industrial partners may include long-term strategic partnerships aimed at commercialization of Laboratory inventions or the improvement of industrial products. The Contractor shall respond to specific near-term technological needs of industrial companies with special emphasis given to working with the types of businesses identified in the Small Business Subcontracting Plan clause of this contract. The Contractor is encouraged to develop and capitalize on productive relationships with regional and local companies and through forums such as conferences, workshops, and traveling presentations. It is anticipated

that these organizations will be particularly effective participants in the Laboratory's technology transfer activities in promoting a mutually beneficial relationship between DOE and the communities surrounding the Laboratory.

Cooperation may also include use by industrial organizations of Laboratory facilities and other assistance as may be authorized, in writing, by the Contracting Officer.

(5) University and Science Education Program

The Contractor shall work with colleges and universities, with special emphasis on Historically Black Colleges and Universities/Minority Institutions, and initiate new programs to enhance science and mathematics education at all levels. The Contractor shall encourage participation by a diverse group of faculty and students in Laboratory programs to bring their talents to bear on important research problems and contribute to the education of future scientists and engineers. The Contractor shall also conduct programs for students and faculty to enrich mathematics and science education. A particular purpose of these programs is to encourage members of under-represented societal groups to enter careers in science and engineering.

The Contractor shall maintain its programs of cooperation with the academic and educational community and with nonprofit research institutions for the purpose of promoting research and education in scientific and technical fields of interest to DOE's programs. This cooperation may include, but is not limited to, such activities as: (i) Operation of the U.S. Particle Accelerator School; (ii) joint experimental programs with colleges, universities, and nonprofit research institutions; (iii) interchange of college and university faculty and Laboratory staff; (iv) student/teacher educational research programs at the pre-collegiate and collegiate level; (v) post-doctoral programs; (vi) arrangement of regional, national, or international professional meetings or symposia; (vii) use of special Laboratory facilities by colleges, universities, and nonprofit research institutes; or, (viii) provision of unique experimental materials to colleges, universities, or nonprofit research institutions or to qualified members of their staffs.

(6) International Collaboration

In accordance with DOE policies, and in consultation with DOE, the Contractor shall maintain a broad program of international collaboration in areas of research of interest to the Laboratory and to DOE.

(7) International Linear Collider (ILC)

DOE has expressed a clear interest in the U.S. hosting the ILC at a site on and/or near Fermilab. The Contractor will continue to perform the R&D related to the ILC as discussed under section C.4 (b)(3). The Contractor will also continue to coordinate with and support the Global Design Effort (GDE). In the event that the Department decides to pursue a bid to host the ILC at a site on

and/or near Fermilab, the Contractor will play a major role in preparing the bid, including, but not limited to, providing data, analysis, community involvement, site studies, and other activities as directed by DOE.

(8) Other Programs

The Contractor is responsible for the conduct of such other programs and activities as the Parties may mutually agree, including: (i) The providing of the facilities of the Laboratory to the personnel of public and private institutions for the conduct of research, development, and demonstration work, either within the general plans, programs and budgets agreed upon from time to time between DOE and the Contractor, or as may be specifically approved by DOE. The Laboratory facilities shall be made available on such other general bases as DOE may authorize or approve; (ii) The conduct of research and development work for non-DOE sponsors which is consistent with and complementary to the DOE's mission and the Laboratory's mission under the contract, and does not adversely impact or interfere with execution of DOE-assigned programs, does not place the facilities or Laboratory in direct competition with the private sector and for which the personnel or facilities of the Laboratory are particularly well adapted and available, as may be authorized, in writing, by the Contracting Officer; (iii) The dissemination and publication of unclassified scientific and technical data and operating experience developed in the course of the work; (iv) The furnishing of such technical and scientific assistance (including training and other services, material, and equipment), which are consistent with and complementary to the DOE's and Laboratory's mission under this contract, both within and outside the United States, to the DOE and its installations, Contractors, and interested organizations and individuals.

(c) Administration and Operation of the Laboratory

The Contractor is responsible for the operation, including management and maintenance, of the Laboratory including the planning in consultation with DOE and the making of recommendations to DOE for new buildings, facilities and utilities and alteration of existing buildings, facilities, and utilities on the Laboratory site and elsewhere, including the furnishing of all necessary basic design and operating criteria. When requested by DOE, the Contractor shall provide for the design, engineering, construction, and alteration, by subcontract or otherwise, of such buildings, facilities, and utilities on the Laboratory site and elsewhere as authorized or approved, in writing, from time to time by DOE. Before proceeding with other than design aspects of any project which the Contractor, acting in good faith, considers may reasonably be within the coverage of the Davis-Bacon Act (40 U.S.C. 314 et seq.), the Contractor shall obtain a written determination by the Contracting Officer as to the applicability of the Davis-Bacon Act to such project. When it is determined that the Davis-Bacon Act does cover a particular work project, the Contractor shall procure by subcontract the covered work in accordance with DOE approved procedures.

(1) Strategic Planning

The Contractor shall perform overall integrated planning, including strategic planning and the development of a strategic plan, covering all programs, issues and needs including, acquisition, upgrades, and management of Government-owned, leased or controlled facilities and supporting infrastructure and real property located at the site.

(2) Protection of the Workers, the Public and the Environment

The safety and health of workers and the public and the protection and restoration of the environment are fundamental responsibilities of the Contractor. Accordingly, the Contractor shall: (i) Take necessary actions, to minimize injuries and/or fatalities and prevent worker exposures and environmental releases in excess of established limits; (ii) Establish clear environmental, safety, and health (ES&H) priorities and manage activities in proactive ways that effectively increase protection to the environment and to public and worker safety and health; and, (iii) Carry out all activities in a manner that complies with health, safety and environmental regulations; minimizes wastes; and complies with DOE Directives.

The Contractor shall maintain a system that clearly communicates the roles, responsibilities, and authorities of line managers, and that holds line managers accountable for work practices and performance in a manner that ensures protection of workers, the public and the environment. Specifically, (i) the Laboratory Director shall hold direct reports accountable for strong leadership and management of risks within their area of responsibility; (ii) line managers shall be responsible for understanding the hazards associated with, and controls necessary for, safe performance of work; and (iii) the ES&H program shall be operated as an integral, but visible, part of how the organization conducts business, including prioritizing work and allocating resources based on risk reduction.

The Contractor shall maintain effective management systems to identify deficiencies, resolve them in a timely manner, ensure that corrective actions are implemented (addressing the extent of conditions, root causes, and measures to prevent recurrence), and prioritize and track commitments and actions.

The Contractor shall maintain a structured, standards-based approach to planning and control of work including identification and implementation of ES&H standards and requirements that are appropriate for the work to be performed and related hazards.

The Contractor shall maintain an organization that supports effective ES&H management by ensuring appropriate levels of ES&H staffing and competence at every level within Fermilab. Specifically, Contractor shall assure that employees are trained, qualified, and involved in aspects of the organization's activities, including providing input to the planning and execution of work, and

identification, mitigation/elimination of workplace hazards. Contractor shall, similarly, assure that subcontractor employees and users are trained and qualified on job tasks, hazards, and DOE and Fermilab Departmental safety policies, expectations, and requirements, and shall flow applicable ES&H requirements down to subcontractors.

The Contractor must ensure that a Chronic Beryllium Disease Prevention Program (CBDPP) is prepared for the facility that meets the general CBDPP requirements specified in 10 CFR Part 850 – Final Rule issued December 8, 1999.

Finally, the Contractor shall continue to practice effective environmental management.

(3) Community Involvement

The Contractor shall maintain an effective relationship between the Laboratory and the community.

Refer to Clause I.72, DEAR 952.204-75 - Public Affairs, for more detail.

(4) Maintenance

In accordance with DOE standards, the Contractor shall maintain property assets in a manner which ensures the continuity of research operations, fulfillment of program requirements, and ensures the property will satisfy the requirements of current use and DOE guidance. The Contractor must maintain property assets in a manner that promotes operational safety, worker health, environmental compliance, property preservation, and cost-effectiveness while meeting program missions. This requires a balanced approach that not only sustains assets, but also provides for their recapitalization.

(5) Business Management

(i) Human Resources Management. The Contractor shall establish and maintain human resource systems which attract and retain outstanding employees, and continually motivate them to achieve high productivity in scientific research and Laboratory operations.

The Contractor also shall create and maintain at the Laboratory an environment that promotes diversity and fully utilizes the talents and capabilities of a diverse workforce. The Contractor shall seek to recruit a diverse workforce by promoting and implementing DOE and Laboratory goals. Special consideration will be given to Historically Black Colleges and Universities/ Minority Institutions as potential resource pools. The Contractor shall also strive to promote diversity in all of the Laboratory's subcontracting efforts with emphasis on the use of the types of

businesses identified in the Small Business Subcontracting Plan clause of this contract.

- (ii) **Financial Management.** The Contractor shall maintain a financial management system responsive to the obligations of sound financial stewardship and public accountability. The overall system shall include an integrated accounting system suitable to collect, record, and report all financial activities; a budgeting system which includes the formulation and execution of all resource requirements needed to accomplish projected missions and formulate short- and long-range budgets; an internal control system for all financial and other business management processes; and a disbursements system for both employee payroll and supplier payments. The internal audit group for Fermilab shall report to the most senior governing body of the Contractor's parent organization.
- (iii) **Purchasing Management.** The Contractor shall have a DOE-approved purchasing system to provide purchasing support and subcontract administration. The Contractor shall, when directed by DOE and may, but only when authorized by DOE, enter into subcontracts for the performance of any part of the work under this Contract.
- (iv) **Property Management.** The Contractor shall have a DOE approved property management system that provides assurance that the Government owned, Contractor held property is accounted for, safeguarded and disposed of in accordance with DOE's expectations and policies. The Contractor shall perform overall integrated planning, acquisition, maintenance, operation, management and disposition of Government-owned personal and real property, and Contractor-leased facilities and infrastructure used by the Laboratory. Real property management shall include providing office space for the DOE FSO as directed by the DOE FSO Manager.
- (v) **Project Management.** The Contractor shall maintain a project management system to ensure project scope is completed within budget and schedule. The system shall include an earned value management system consistent with requirements under DOE Order 413.3.
- (vi) **Other Administrative Services.** The Contractor shall provide other administrative services, including logistics support to the DOE FSO. In addition, the Contractor shall perform all activities necessary to complete the following work resulting from the termination of Superconducting Super Collider Laboratory (SSCL) Contract No. DE-AC35-89ER40486:
 - (1) Administration of retiree benefits for eligible retired Universities Research Associates, Inc. SSCL employees;
 - (2) Intellectual property administration; and

(3) Records management.

- (6) Integrated Safeguards and Security Management (ISSM). The Contractor shall protect Laboratory assets, personnel, property, and information, to sustain the science mission in a manner commensurate with risks. The Contractor shall conduct a Laboratory ISSM program to include physical site security, protection of Government property, cyber security protections, protection of information, personnel security, and access control for Laboratory staff and visitors, export controls, and counterintelligence.
- (7) Legal Services. The Contractor shall maintain legal support for all contract activities including, but not limited to, those related to patents, licenses, and other intellectual property rights; subcontracts; technology transfer; environmental compliance and protection; labor relations; and litigation and claims.
- (8) Emergency Management. The Contractor shall maintain an emergency management system to include emergency preparedness plans and procedures, and occurrence notification and reporting system, operation of an Emergency Operations Center and emergency response capabilities for local, regional, and national missions.
- (9) Information Resources Management. The Contractor shall maintain information systems for organizational operations and for activities involving general purpose programming, data collection, data processing, report generation, software, electronic and telephone communications, and computer security. The Contractor shall provide computer resource capacity and capability sufficient to support Laboratory-wide information management requirements. The Contractor also shall operate a records management program.
- (10) Self-Assessment Program. The Contractor shall conduct an ongoing self-assessment process that continually samples and validates actual program practice with prescribed DOE and Laboratory policies, standards and procedures.
- (11) Waste Management. Based on DOE funding guidance and other guidance documents, all waste management activities shall be managed in an integrated manner such that waste is managed consistently and in compliance with all applicable regulatory requirements. The Contractor shall fully integrate all research, environmental remediation, and operations activities to meet all regulatory requirements. Waste management activities include: (A) timely characterization, consolidation, segregation and storage of waste; (B) treatment that complies with storage and/or disposal criteria; (C) efficient shipment of waste for treatment, storage and/or disposal; (D) maintaining sufficient and compliant waste storage space at the Laboratory to accommodate waste generation and waste backlog; and (E) implementation of an effective waste minimization and pollution prevention programs.

Based on DOE funding guidance and other guidance documents, the Contractor shall provide responsive and complete waste management services for characterization, treatment and storage through the appropriate use of existing facilities, new facilities, other DOE facilities, and private sector capabilities. Additionally, the Contractor shall implement control systems which integrate research and waste management programs to assure DOE that hazardous and radiological waste will not be stockpiled at the site.

- (12) Facility Operations and Infrastructure. The contractor shall assist DOE through direct participation and other support in achieving DOE's energy efficiency goals and objectives in electricity, water, and thermal consumption, conservation, and savings, including goals and objectives contained in Executive Order 13423, Strengthening Federal Environmental, Energy, and transportation Management. The Contractor shall maintain and update, as appropriate, its Site Plan (as required elsewhere in the contract) to include detailed plans and milestones for achieving site-specific energy efficiency goals and objectives. With respect to this paragraph, the Plan shall consider all potential sources of funds, in the following order: 1) the maximum use of private sector, third-party financing applied on a life-cycle cost effective basis, particularly from Energy Savings Performance Contracts and Utility Energy Services Contracts awarded by DOE; and 2) only after third-party financing options are evaluated, in the event that energy efficiency and water conservation improvements cannot be effectively incorporated into a private sector financing arrangement that is in the best interests of the Government, then DOE funding and funding from overhead accounts can be utilized.

(d) General Responsibilities of the Parties

(1) DOE Responsibilities

DOE is responsible for all activities conducted under this contract and for assuring that Government funds are properly and effectively utilized. Accordingly, the proper discharge of such responsibilities requires that DOE shall have the authority to:

- (i) exercise appropriate general control over the contract work;
- (ii) have full access to information concerning performance of such work;
- (iii) conduct periodic and other appraisals of programmatic, project and managerial objectives and milestones and consult with the Contractor regarding these and other matters of mutual interest; and
- (iv) in accordance with other provisions of the contract, have the authority to review and approve major policies and procedures affecting administrative and operating areas.

(2) Contractor Responsibilities

The Contractor shall be responsible for the diligent and vigorous performance of the contract work in accordance with its best scientific, technical, managerial and administrative judgments. Accordingly, the proper discharge of such responsibility requires that the Contractor shall:

- (i) formulate and establish Laboratory policies and programs;
- (ii) exercise appropriate managerial control over the programmatic and operational activities of the Laboratory;
- (iii) respond, in a timely manner, to recommendations made by DOE as a result of its appraisals;
- (iv) have the right to be kept continually advised, where pertinent, of DOE's current short and long-term objectives, and to confer with DOE with respect thereto and in connection with the formulation of plans or policies which may have a significant effect upon the Laboratory;
- (v) establish policies and objectives for cooperative research and educational programs between the scientific and technological community and the Laboratory; and
- (vi) cooperate in every reasonable way with individuals or groups whose expert or consultative services DOE may choose to use to review and evaluate the scientific, technical, or other aspects of the contract work.

C.5 - PLANS AND REPORTS

The Contractor shall submit periodic plans and reports, in such form and substance as required by the Contracting Officer. These periodic plans and reports shall be submitted at the intervals, and to the addresses and in the quantities as specified by the Contracting Officer. Where specific forms are required for individual plans and reports, the Contracting Officer shall provide such forms to the Contractor. The Contractor shall require subcontractors to provide reports that correspond to data requirements the Contractor is responsible for submitting to DOE. Plans and reports which may be submitted in compliance with this provision are in addition to any other reporting requirements found elsewhere in other clauses of this contract. It is the intention of DOE to consult with the Contractor in determining the necessity, form and frequency of any reports required to be submitted by the Contractor to DOE under this contract.