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SECTION C—DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C-1. Introduction

(a) Oak Ridge National Laboratory is a multi-program Department of Energy (DOE) national laboratory and a Federally Funded Research and Development Center (FFRDC) established in accordance with the Federal Acquisition Regulation Subpart 35. Oak Ridge National Laboratory, subsequently referred to as the Laboratory, is an Office of Science laboratory. The Laboratory performs work for all DOE programs including Science, Electrical Transmission and Distribution, Energy Efficiency and Renewable Energy, Nuclear Energy Science and Technology, Fossil Energy, Environmental Management, and the National Nuclear Security Administration. The Laboratory mission is to conduct basic and applied research and development (R&D) to advance scientific knowledge, the nation's energy resources, national security, and environmental quality and to strengthen educational foundations and national economic competitiveness. DOE programs are carried out in partnership with academia, the private sector, other DOE national laboratories, the international scientific community, and other government agencies. The Laboratory also performs work consistent with the DOE mission for entities other than DOE. The Contractor will advance the frontiers of science and technology through broad interdisciplinary R&D programs that answer fundamental questions, solve technical problems (locally, regionally, nationally, and internationally), and develop and apply technologies to address societal needs.

(b) This performance-based management contract reflects the Contractor's responsibility to develop and implement innovative approaches and adopt practices that foster continuous improvement in accomplishing the Laboratory mission. The Contractor will provide integrated line management of this diverse research institution, aligning multiple program scientific and technical missions with the appropriate resources and support to deliver world-class science in a cost effective manner. Integrated line management incorporates integrated safety management, integrated safeguard and security management, cross organizational teamwork recognizing matrix management, and efficient work practices and applies them to programmatic and operational efforts. Success in partnering with industry and ultimate application of the scientific information and/or technology to solve DOE or broad public issues is essential.

C.2 - The Laboratory Vision

Consistent with the Department's, Office of Science's and other applicable program office's strategic plans, the Contractor shall develop and maintain a compelling five (5) year vision and supporting strategic and business plans for the Laboratory. The vision

and the associated plans shall be communicated to and reviewed by the Department via such planning processes as are established by the Office of Science. The Performance Evaluation and Measurement Plan, 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 Goals, Objectives, and Measures

DOE has substantial expectations of the Contractor in the areas of Science and Technology, Environment, Safety and Health, Security and Emergency Management, Laboratory Operations, and Community Service. Details of the performance evaluation and measurement plan are provided in Section H of the contract. The Office of Science is revisiting the laboratory appraisal process. During FY 2006, it is expected that a common set of performance areas will be put in place that are used across all Office of Science laboratories as the basic structure for annual performance plans.

C-4 Statement of Work (SOW)

(a) Research and Development

(1) In accomplishing the DOE mission, the Contractor shall maintain and advance the R&D capabilities that support all four DOE business lines: *Science and Technology, Energy Resources, Environmental Quality, and National Security*.

Science and Technology—The Contractor shall maintain and enhance critical Laboratory capabilities in materials science and engineering and in neutron science. The Contractor shall manage the High Flux Isotope Reactor (HFIR), the Radiochemical Engineering Development Center and other hot cells, the Center for Nanophase Materials Sciences (CNMS), and the Spallation Neutron Source (SNS) project (and when complete the resulting facility). These facilities will support user programs in neutron scattering, materials irradiation, and isotope production. Also, the Contractor shall manage Laboratory capabilities in analytical and separations chemistry, computational sciences, environmental (including field experimental facilities) and social sciences, fusion science and technology, genetics, genomics, and biotechnology. The Contractor shall direct Laboratory capabilities in nuclear physics, astrophysics with radioactive ion beams, and solid state physics.

Energy Resources—The Contractor has the responsibility to manage Laboratory capabilities in: (1) biomass renewable energy feedstock and conversion technologies; (2) energy efficient technologies for buildings,

industry, transportation, and utility end-use; (3) applied materials in support of energy efficient technologies, electrical transmission and distribution, vehicle technologies, and fossil fuel use; (4) nuclear technology and safety; and (5) assessing national energy use and projections of future energy supply and demand.

Environmental Quality—The Contractor shall maintain and improve capabilities in environmental technology development, environmental restoration and waste management support, and health and environmental risk assessment. The Contractor shall effectively and efficiently manage the minimization, characterization, and certification of Laboratory generated wastes and other materials, and the treatment, storage and disposal of newly generated waste as directed by DOE.

National Security—The Contractor shall maintain existing materials storage and processing facilities and develop related technologies. The Contractor shall support DOE, in the development of technologies that promote non-proliferation, international nuclear safety, enhanced national security, and safe stockpile stewardship.

(2) The Contractor shall effectively and efficiently manage all of the Laboratories' core competencies. This includes directing research in neutron-based science and technology; computational science and advanced computing; biological and environmental sciences and technology; and advanced materials synthesis, processing, and characterization. In addition, the Laboratory has core competencies in instrumentation, controls and measurement science and technology, and in energy production and end-use technologies. The Contractor shall ensure the Laboratory conducts basic and applied research, development, and demonstration activities facilitating deployment of technologies both in U.S. and international markets through partnerships with the private sector.

The Contractor will direct these core competencies into creative research projects for DOE in partnership(s) with universities, other federal laboratories and agencies, and the private sector. Opportunities to transfer technology into useful products and processes should be conducted in close cooperation with private sector sponsors. The Contractor shall make it possible for the private sector to join in development/operation activities with the Laboratory to enhance teamwork and technology transfer.

(3) The Contractor is responsible for operating 20 national user facilities supporting diverse DOE mission areas. The 20 user facilities are: the Advanced Propulsion Technology Center, the Bioprocessing Research Facility, the Buildings Technology Center, the Californium User Facility,

the Center for Nanophase Materials Sciences, the Computational Center for Industrial Innovation, the Cooling, Heating, and Power Integration Laboratory, the Fuels, Engines, and Emissions Research Center, the High Flux Isotope Reactor, the High Temperature Materials Laboratory, the Holifield Radioactive Ion Beam Facility, the Metals Processing Laboratory Users Center, the Metrology Research and Development Laboratory, the Mouse Genetics Research Facility, the National Transportation Research Center, the NanoScale Science and Technology Laboratory, the Physical Properties Research Facility, the Power Electronics and Electric Machinery, the Shared Research Equipment Program, and the Spallation Neutron Source Experimental Facility. The Contractor shall also operate the American Museum of Science and Energy as directed by DOE.

The Contractor is responsible for accommodating over 3,000 visiting scientists that are guests of the Laboratory every year, and maintaining over 700 agreements to engage the 20 user facilities. Agreements are in place with other government agencies, industries, universities, and international participants.

(4) The Contractor shall effectively, efficiently, and safely operate the HFIR. HFIR provides state-of-the-art facilities for neutron scattering and materials irradiation and is the world's leading source of elements heavier than plutonium for research, medicine, and industrial applications. HFIR is a light-water cooled and moderated reactor with a design power level of 100 megawatts and a normal operating power of 85 megawatts. HFIR supports production of radioactive elements that benefit approximately 800 customers in diverse areas like cancer radiation therapy, nondestructive inspection of explosives and aircraft, and as start-up sources for nuclear reactors.

(5) The Contractor shall maintain effective operations of existing and planned user facilities, other appropriate facilities, and provide effective customer service to user clients. The Contractor shall implement DOE mission objectives to ensure user facilities are user friendly, readily available, and can operate within conditions requested by user clients.

The Contractor is also responsible for new user facilities that pose a significant challenge in planning and scheduling experiments. For example, the Spallation Neutron Source (SNS) project when fully operational is estimated to have 1000-2000 user scientists per year in a wide variety of scientific investigations. A number of other facilities are proposed at the Laboratory during the term of this contract.

(6) The Contractor shall manage and maintain government-owned buildings and facilities at the Laboratory site, together with the utilities and appurtenances thereto. The Contractor is also responsible for certain buildings at the Y-12 Plant. Some of the facilities at the Laboratory are managed by the DOE-Oak Ridge Office's other prime contractors.

(7) The Contractor shall manage the resources and capabilities of the Laboratory and provide leadership for this scientific institution. The Contractor will effectively and efficiently direct the day-to-day management of the Laboratory and proficiently link scientific/engineering capabilities to accomplish DOE's objectives. Providing leadership in methods of integrated line management to ensure inter-laboratory team building and intra-laboratory cooperation while supplying a safe working environment is essential. The Contractor is charged with maintaining and enhancing the intellectual resource base in order to avoid erosion of the scientific and engineering foundations at the Laboratory and to promote world leadership prominence in areas as mandated by the Office of Science. The Contractor is also responsible for the employment of all personnel engaged in the SOW efforts and for the readiness and training of its personnel.

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

Protection of workers, the public and the environment are fundamental responsibilities of the Contractor and a critically important performance expectation. The Contractor's Environment, Safety and Health (ES&H) program shall be operated as an integral, but visible, part of how the organization conducts business. A key element is continued implementation of the ORNL Integrated Safety Management System (ISMS), including prioritizing work planning and execution; establishing clear ES&H priorities; and allocating the appropriate level of trained and qualified resources to address programmatic and operational considerations; and continued implementation of integrated safeguards and security management systems and policies to provide a safe and secure work environment. The Contractor shall ensure that cost reduction and efficiency efforts are fully compatible with ES&H performance.

The Contractor shall perform all activities in compliance with applicable health, safety, and environmental laws, orders, regulations, and national consensus standards (contained in ORNL Work Smart Standards); and governing agreements and permits executed with regulatory and oversight government organizations. The Contractor shall take necessary actions to preclude serious injuries and/or fatalities, keep worker exposures and environmental releases as low as reasonably achievable below established limits, minimize the generation of waste, and maintain or increase protection to the environment, public and worker safety and health.

Incorporating integrated line management, the Contractor shall put in place a system that clearly communicates the roles, responsibilities, and authorities of line managers. The Contractor shall hold line managers, including direct reports accountable for implementing necessary controls for safe performance of work in their respective area of responsibility. The Contractor shall establish 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, as appropriate, consider ES&H performance in selection of its subcontractors and incorporate ES&H requirements into subcontracts.

(c) Project Management

The Contractor shall manage all facility engineering and construction efforts in a manner that allows completion of project objectives in a safe and environmentally sound manner within the planned schedule, cost, and technical baselines. Specifically, the contractor is expected to achieve all project deliverables associated with scientific facility upgrades, modernization and the ITER Project in accordance with DOE directives and requirements.

(d) Mission Related Partnerships

The Contractor shall maintain and enhance existing partnerships and develop new technology partnership activities in support of the DOE mission. Mechanisms for partnerships include cooperative research and development agreements, direct assistance programs, employee loan programs, user facility agreements, memoranda of cooperation, memoranda of understanding, memoranda of agreement, license agreements, privately funded technology transfer, and other arrangements as approved by DOE in which research and development resources are leveraged with private sector partners. Efforts to develop broad based partnerships with academic research institutions, other agencies, other DOE laboratories, the international scientific community, and with the private sector are essential to the long term viability of the Laboratory. Accomplishments in creating these partnerships may expand beyond the more classical cooperative research and development agreements as approved by DOE. Neutron science, isotope production, functional genomics, nanotechnology and computational research programs provide opportunities for partnerships with the private sector, universities, and other national laboratories to advance scientific frontiers and enhance technology development. Facilities and instrumentation may be developed with applications in the pharmaceutical industry, clinical medicine, environmental remediation, and other areas.

(e) Other Activities

(1) The Contractor shall manage facilities and resources to optimize the effectiveness of operations in support of the DOE mission. The Contractor shall maintain critical skill mixes and resources at the Laboratory. The Contractor should perform make/buy analyses on work functions that may be inefficient and determine options for improvement. The Contractor shall examine Laboratory operations to consolidate work efforts, eliminate duplication of scientific effort, identify underutilized facilities, and reduce operational costs. Site planning activities shall be conducted by the Contractor proactively addressing concerns of DOE, regulatory agencies, and stakeholder groups.

(2) The Contractor shall support DOE/ORO in its responsibilities for land use planning and land management activities and natural resources management for the DOE Oak Ridge Reservation, which consists of 33749 acres of federally-owned land. The Contractor's responsibilities are land and facility planning for the Laboratory site, coordinating and conducting research and its associated operational and maintenance activities within the National Environmental Research Park (NERP).

(3) The contractor shall assist DOE through direct participation and other support in achieving DOE's energy efficiency goals and objective 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.

(4) In addition to the services specifically described in other provisions of this SOW, the Contractor shall perform services as DOE and the Contractor shall agree in writing that will be performed from time to time under this contract as Oak Ridge or elsewhere, as follows:

(i) Services incidental or related to the services described in other provisions of this SOW.

(ii) Services, using existing facilities and capabilities, for other federal agencies and nonfederal entities in accordance with policies and procedures established by DOE.

(iii) Services, using existing or enhanced facilities and capabilities, for the Nuclear Regulatory Commission (NRC), under agency agreements between NRC and DOE.

(iv) Services in support of ORO programs when the work involved has been determined by DOE to be within the unique capabilities of the Contractor or when the work involved has been determined by DOE to be within the special scientific and technical capabilities of the Contractor and the urgent need for the services precludes acquiring them from another source.