# Scope of Work for Contract DE-AC07-00ID13658 Between the S.M. Stoller Corp. and the Idaho Operations Office

## Introduction

The Environmental Surveillance, Education, and Research (ESER) Program manages the offsite surveillance program, collecting various environmental samples near the INL. This program is managed by a contractor, currently S.M. Stoller Corporation, under the direct oversight of NE-ID. The samples are analyzed at offsite laboratories, including Idaho State University, thereby maintaining independence from the Management and Operations contractor. A major product of the ESER Program is the Site Environmental Report—published annually in compliance with DOE Order 231.1A. This report summarizes INL environmental monitoring activities and environmental compliance status and includes data from all INL contractors. The ESER program also manages other tasks, including land management support, public environmental education, ecological risk assessment, and ecological/radioecological research. NE-ID expects the M&O and ESER contractors to have a reciprocal relationship for provision of data at minimal or no expense.

All INL ecological and radioecological research is performed and/or managed by the ESER Program, except those projects funded through the Laboratory-Directed Research and Development program or Idaho Completion Project. The ESER Program manages the National Environmental Research Park, which was conveyed upon the INL in 1975. This entails publicizing the availability of the Park, providing standards and requirements to outside entities that perform research at INL, and coordinating research locations and security/access needs. The ESER Program also manages the Protective Cap/Biobarrier Experiment facility at the Experimental Field Station and as such all newly contemplated activities at the Experimental Field Station should be coordinated with the ESER Program contractor.

These tasks, in part, supplement work performed by the M&O contractor and other INL contractors. The ESER Program also depends upon the M&O contractor to provide various unique services needed to perform the aforementioned tasks and the M&O contractor has occasion to directly contract with ESER to perform additional discrete tasks. As such, it is critical that the relationship between the ESER and M&O contractors is positive and cooperative. It is NE-ID's expectation that the M&O contractor will be mindful of the ESER Program's unique roles and responsibilities at the INL and will make every effort to ensure that there is minimal discord and no duplication of effort. The ESER Program should not be viewed as a competitor but rather as a partner in accomplishing INL's missions. To this end, NE-ID expects the INL and ESER contractors to establish an interface agreement that will identify how the two entities will work together, including but not limited to: support/facility services, security and site access requirements, electronic access to INL procedures, field worker notification/plan of the day, and other activities.

The following pages contain the actual scope of work from contract DE-AC07-00ID13658 between DOE and the S. M. Stoller Corporation.

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STATEMENT OF WORK

# C.1 ENVIRONMENTAL SURVEILLANCE, EDUCATION, AND RESEARCH

## 1.0 INTRODUCTION

The U.S. Department of Energy, Idaho Operations Office (DOE-ID) is required by DOE Orders to maintain an environmental monitoring program on and around the Idaho National Engineering and Environmental Laboratory (INEEL). Responsibilities under the National Environmental Policy Act and the Resource Conservation and Recovery Act require DOE-ID to characterize the INEEL Site in regard to the existing environmental conditions and environmental contaminants. Land stewardship functions are also required by DOE Orders and as good management practices. Specific functions are to be performed under this Statement of Work by an independent contractor.

The INEEL is located on 890 square miles in the upper Snake River Plain in southeast Idaho. The INEEL is a large, complex, multi-program DOE site. Within the INEEL Site are eight major applied engineering, waste management, and research and development facilities. Activities at the INEEL have covered most parts of the nuclear fuel cycle. Over the past 50 years, 52 nuclear reactors operated. Environmental restoration (cleanup) and interim storage of waste has replaced reactor safety research and nuclear fuel reprocessing. Research into a wide range of fields, including energy efficiency, renewable energy, technology development, and systems engineering, continues to be important at the INEEL.

It is critical that the contractor maintains independence from the DOE-ID and the INEEL Management and Operating (M&O) contractor. The contractor shall provide independent environmental surveillance data and analysis to satisfy the concerns of key stakeholders such as the State of Idaho, the U.S. Environmental Protection Agency, The Shoshone-Bannock Tribes, and the general public in Idaho. The importance of the contractor building and maintaining trust among these stakeholders in evaluating the effect of the INEEL operations on the natural environment within and surrounding the INEEL cannot be overemphasized.

## 2.0 GENERAL QUALIFICATIONS AND SCOPE

In general, the tasks described in this Statement of Work are environmental surveillance (offsite), ecological support, environmental education, ecological risk assessment, and radioecology and ecology research.

The contractor must maintain an adequately staffed office in southeast Idaho in order to provide ready access to the INEEL site, DOE customers, and other associates who reside in southeast Idaho.

The offsite environmental surveillance program is a well-established program. As such, the sample locations, procedures, sample analyses, reporting, and quality assurance functions are well defined. However, competent and conscientious technicians are required to collect and process the samples, highly accurate and reliable laboratory analyses are needed, and

knowledgeable staff are required to interpret the results for reports and for verification that INEEL processes are operating properly.

DOE-ID requires ecological support on specific tasks related to ongoing site management and cleanup activities. DOE-ID programs such as Waste Management, Environmental Restoration, Spent Nuclear Fuel, High Level Waste, and Infrastructure require special expertise in areas such as environmental regulations, site ecology, and site characterization. The work requires an in-depth knowledge of wildlife management and INEEL ecosystems. The personnel under this contract provide technical advice to DOE-ID on a wide variety of land management issues including revegetation of disturbed areas, wildlife depredation, threatened and endangered species, noxious weeds, wildlife population dynamics, bio-contaminants, and ecosystem management.

DOE also requires the contractor to conduct a public education and outreach program. A person with expertise in this area is required. Ecological risk assessment, another requirement, requires special skills and experience.

The technical tasks below include research that is of a continuing nature or will not be completed before the current contract expires. The contractor may propose innovative or new research to the Contracting Officer's Representative (COR) within the broad guidelines from year to year. Research that stems from this basic Statement of Work will be considered on a case by case basis, as funds are available. Good ecological research requires biological expertise, research management skills, and the ability to get the information published in peer- reviewed journals.

DOE also encourages the development of students in academic disciplines of value to DOE, through education and training of scientists and graduate students in environmental sciences. The contractor will encourage participation of regional universities located in the states of Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming in performing this Statement of Work. Participation of universities within the state of Idaho is to be emphasized.

Research should also further DOE's needs for information and the development of new research tools. Encouragement of interest in environmental science in grade schools and high schools is desirable. Good information dissemination and methods transfer is important and will be aided by reporting of results in technical journals, press releases, presentations, displays, and regular reports.

The work will be divided into five tasks that are aligned with the program funding sources above. The contractor shall maintain an accounting system that tracks the costs in each of the five tasks. This Scope of Work, however, is arranged by general categories of work to be performed. The most important of these is the offsite environmental surveillance program. Support for land management issues, for environmental education, for ecological risk assessment, for radioecology research, and for ecology research are also included.

A summary of major activities in this Statement of Work is presented in Attachment C-B at the end of the Statement of Work.

This Statement of Work may be periodically modified by mutual agreement of the parties to incorporate changes in research needs and annual budget variations.

## 3.1. OFFSITE ENVIRONMENTAL

The contractor shall conduct an offsite environmental surveillance program. This program shall include collection of samples of air, offsite drinking water, animal tissues, precipitation, milk, wheat, potatoes, lettuce, and soil. Ambient radiation levels shall be measured with thermoluminescent dosimeters. Tissue samples shall be obtained from game animals killed accidentally onsite. The program is described in the Idaho National Engineering and Environmental Laboratory Site Environmental Report for Calendar Year 1997 [DOE/ID-12082 (97)]. Refer to Attachment C-A for web link to this document. Attachment C-C summarizes the program.

3.1.1. Air Sampling. The locations of the air samplers are shown in the INEEL Offsite Environmental Surveillance Program Report: Fourth Quarter 1997 [ESRF-021 (4QT97)], Figure 1, Weekly Air Sampling, and the program is outlined in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program. Refer to Attachment C-A for web link to this document. Attachment C-B summarizes the program. There are ten offsite air samplers, two replicate samplers, two community monitoring stations, and three onsite air samplers (to provide overlap with the M&O contractor onsite air sampling program).

Air filters shall be changed at each station each week. Air filters shall be analyzed weekly for gross alpha, gross beta, and iodine-131 (charcoal cartridge). The filters from each station shall be composited quarterly and the seventeen composites analyzed for gamma emitting nuclides by gamma spectrometry. All composites shall be weighed with a sensitive balance, before and after use, to determine the weight of suspended particulate on the filter. On a regular rotating schedule, five or six of the composites shall be analyzed for strontium-90 and five or six of the composites analyzed for plutonium-238, plutonium-239/240, and americium-241. Air samples shall be collected and prepared for analysis of tritium in air moisture at four locations, with samples collected one to four times per quarter, depending on the amount of atmospheric moisture present.

The contractor shall operate three high-volume air samplers that collect particles smaller than 10 microns in diameter. The filters shall be run every sixth day and weighed on a special laboratory balance to determine the mass of the particles collected. The payment for some leases and electricity, approximately $3,000 per year, for the offsite air sampler locations shall be the responsibility of the contractor, which will be reimbursed by the Government.

3.1.2. Precipitation Sampling. Precipitation samples shall be collected and analyzed for tritium weekly, if available, at the Experimental Field Station, monthly at the Central Facilities Area and in Idaho Falls.

3.1.3. Water Sampling. Fourteen drinking water samples and five surface water samples shall be collected semiannually at the offsite locations listed in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program of ESRF-021 (4QT97). The samples shall be analyzed for gross alpha, gross beta, and tritium.

3.1.4. Animal Sampling. Six sheep, four that have spent time grazing on the INEEL site and two control sheep, shall have liver and muscle tissues analyzed for gamma-emitting nuclides and thyroids analyzed for iodine-131 each year. Any big game animals accidentally killed on INEEL roads will be similarly sampled.

3.1.5. Food Sampling. The contractor shall obtain milk samples from a local milk supplier once each week. The samples shall be analyzed for iodine-131. The contractor shall also collect eight other milk samples monthly from commercial dairies and single-family cows. Locations are listed in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program, of ESRF-021 (4QT97). The samples shall be analyzed for iodine-131. One sample from each location shall be analyzed each year for strontium-90 and one sample from each location for tritium. Some analysis for iodine-129 in late summer or early fall is highly desirable.

The contractor shall obtain samples annually of potatoes (5), wheat (11), and lettuce (9) each year from the locations shown in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program, of ESRF-021 (4QT97). The samples shall be analyzed for gamma-emitting nuclides and strontium-90.

3.1.6. Soil Sampling. The contractor shall collect soil samples from each of twelve locations once every two years. The samples shall be collected in calendar year 2000. The samples shall be collected with the same procedure used in previous years to maintain consistency of the data. The samples shall be analyzed for gamma-emitting nuclides, strontium-90, plutonium-238, plutonium-239/240, and americium-241. Samples for gamma-emitting nuclides shall be collected at two depths. The locations of the permanently marked plots are given in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program, of ESRF-021 (4QT97). The locations consist of a site boundary group and a distant group.

3.1.7. Environmental Radiation Measurement. Thermoluminescent environmental dosimeters shall be placed at fourteen offsite locations, thirteen as shown in Appendix A, Table A-1, Summary of the Foundation's Environmental Surveillance Program, of ESRF-021 (4QT97) and the Community Monitoring Station at Mountain View Middle School in Blackfoot. The dosimeters shall be changed every six months.

Readings with a pressurized ion chamber shall be taken at the two Community Monitoring Station locations.

3.1.8. Sample Analysis. The contractor shall arrange for the analysis of the samples by a qualified laboratory with concurrence from the COR. A real-time blind quality assurance program using blanks and spiked samples shall be maintained with the laboratory. The sensitivity of the analyses shall be sufficient to obtain the approximate minimum detectable concentrations stated in Appendix A, Table A-2, Summary of Approximate Minimum Detectable Concentrations for Radiological Analyses, of ESRF-021 (4QT97). The contractor shall be responsible for tabulating, analyzing, and reporting the results.

3.1.9. Other Sampling. Additional samples shall be collected as directed by DOE after unusual events that may produce radioactivity in the atmosphere. Additional samples will normally be air, precipitation, or vegetation samples, collected infrequently, for a short time period. The last time these types of samples needed to be collected was after the Chernobyl accident in 1986.

An IMPROVE air sampler shall be operated on the INEEL at the Central Facilities Area (CFA). The sampler is supplied by the University of California at Davis (U.C. Davis) and operated every sixth day. The U.C. Davis analyzes the filters. The contractor shall pay for the analyses of the filters by U.C. Davis for the station at the Craters of the Moon National Monument as well as the station on the INEEL site ($23,000 in 1998).

The contractor shall participate in the EPA Environmental Radiation Ambient Monitoring System program by operating a high-volume air sampler in Idaho Falls. Filters are to be changed twice a week and sent to the EPA for analysis. Precipitation samples are shipped monthly. Water samples from Idaho Falls are shipped to EPA monthly.

3.1.10. Reporting. The contractor shall prepare a quarterly report on the results of the offsite surveillance program that discusses trends and interprets the results. The contractor shall establish methods to keep the DOE-ID COR informed of the results of the environmental surveillance program in advance of the quarterly report. The information should be timely, with important or unusual results reported within 10 working days. The method of reporting may be by e-mail, telephone, or written communication is at the discretion of the contractor.

The contractor shall have the primary responsibility for the preparation of the Annual Site Environmental Report (ASER) under DOE-ID direction. DOE-ID shall provide the information for the Environmental Compliance Summary and some of the information for the Environmental Program Information, Chapters 2 and 3, respectively. The contractor shall summarize and analyze the data produced from the offsite environmental surveillance program described above. The contractor shall be responsible for obtaining additional information from other INEEL contractors. The contractor shall prepare an offsite dose assessment and a population dose assessment for inclusion in the report. The report shall be prepared according to DOE Order 5400.1 and annual guidance usually issued by letter by DOE Headquarters early in the calendar year following the year of the report. A draft of the report shall be provided for DOE-ID review by July 1 of each year. DOE-ID shall have fifteen working days to provide comments. A final, printed report shall be ready for distribution by September 15 of each year. The contractor shall distribute the report to DOE, DOE contractors, other federal and state agencies, The Shoshone-Bannock Tribes, and the public. Approximately 700 copies are required. One trip to Washington, DC for an annual workshop on the ASER is optional.

3.1.11. Community Monitoring Stations. The contractor shall continue to operate the two Community Monitoring Stations at Mountain View Middle School in Blackfoot and Madison Middle School in Rexburg. Operation of the stations includes the collection of data on radioactivity and particulates in air and ambient radiation levels as noted above. A weather station shall also be maintained. A local display of the data collected shall be provided. The contractor shall work with a teacher at each school to be trained and paid as the station operator. The teacher and the contractor shall cooperate in exploring ways the station and its data can be included in the school's curriculum.

## 3.2. ECOLOGICAL SUPPORT FOR LAND MANAGEMENT ISSUES

The contractor shall provide ecological support to DOE-ID for land management issues. Assistance shall include support from the contractor's staff and from various universities with which the contractor maintains contractual relationships. The contractor shall assess the impacts of natural phenomena (such as fire, drought, and cyclical weather patterns) on the INEEL Site and provide advice concerning possible mitigation and appropriate land management practices. Recommendations on how to manage and whether to revegetate disturbed areas shall be provided. Preventive measures to lessen the chances of range fires resulting in property damage at INEEL facilities shall be recommended. Long-term vegetation trends on the INEEL shall be evaluated, including the invasion of a fire-susceptible exotic grass on the INEEL. Two permanent vegetation transects shall be surveyed for vegetative abundance about once every five years. The last survey was in 1995, therefore a survey is due to be

conducted in 2000. The contractor shall provide expertise and advice to DOE-ID personnel or as directed by the COR for other land management issues, such as animal damage control and depredation prevention, noxious weed control, threatened and endangered species protection, wetlands issues, and reclamation of disturbed areas. The contractor shall coordinate and administer National Environmental Research Park activities on the INEEL Site. The contractor may be asked to provide technical assistance to DOE-ID and other cooperating agencies for the recently designated Sagebrush Steppe Ecosystem Reserve at INEEL. A press release describing this effort and the DOE Secretarial Proclamation can be found in Attachment C-A.

3.2.1. Wildlife Surveys. Wildlife population levels and trends shall be monitored. Semiannual big game surveys shall be conducted in January and June to estimate wintering and summering populations of elk, deer, and pronghorn antelope with sufficient accuracy to assess trends. Ground-based survey methods may be substituted for aerial surveys when the accuracy of the ground-based methods is sufficiently close to the aerial surveys to meet INEEL needs to forecast population increases that may result in significant depredation of agricultural areas surrounding the INEEL.

Midwinter raptor counts shall be conducted on and around the INEEL Site in conjunction with the Midwinter Bald Eagle Count. Three to four teams of two people shall participate from the contractor staff for one day in January of each year. Fourteen breeding bird surveys, using the protocol of the U.S. Geological Survey, Biological Resources Division, shall be conducted around INEEL facilities (short routes), at CFA to evaluate the effects of irrigating with sewage wastewater and at five remote locations (25 miles each). Data on breeding bird surveys shall be maintained, trends examined, and a summary report prepared every three to five years.
Data shall also be reported to the Biological Resources Division. We anticipate that the surveys will be performed by contractor personnel and by a university student assistant or temporary employee. A brief report of the data will be provided annually.

3.2.2. National Environmental Policy Act (NEPA) Support. The contractor shall provide NEPA assistance through onsite surveys of proposed surface-disturbing activities on the INEEL and possible impacts on vegetation, wildlife, critical habitat, wetlands, and threatened and endangered species. Environmental checklists that identify those impacts shall be investigated and an evaluation provided to the INEEL Operating Contractor and the DOE-ID NEPA Compliance Officer within, in most cases, ten days. The number of field evaluations may vary from year to year (20 to 45). The evaluations conducted in 1997 may be found in Table 4, NEPA Field Evaluations conducted by the Environmental Science and Research Foundation during 1997 in the Environmental Science and Research Foundation Annual Technical Report
to DOE-ID: Calendar Year 1997 (ESRF-027). Advice shall be given to the Operating Contractor regarding revegetation of disturbed areas. The contractor shall provide information and reviews as requested for environmental assessments and environmental impact statements related to INEEL projects.

3.2.3 Contacts with Other Agencies. The contractor shall be the point-of-contact for the exchange of technical information with state and Federal land management and wildlife agencies and Native American Tribes. The contractor shall not engage in policy or other decision-making discussions with those entities. They include the U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Geological Survey (Biological Resources Division), Idaho Department of Fish and Game, U.S. Forest Service, U.S. National Park Service, and U.S. Animal Plant and Health Inspection Service (APHIS). The contractor shall reimburse APHIS $2,000 per year for predator control on the INEEL Site.

## 3.3. ENVIRONMENTAL EDUCATION

The contractor shall provide information and educational services relating to environmental surveillance and wildlife use of the INEEL in cooperation with the Communications Division of DOE-ID. Environmental education activities will include:

a) Periodic information releases about environmental research and surveillance projects, wildlife, vegetation and other environmentally related topics from the INEEL to Idaho newspapers, TV, and radio stations;
b) Presentations to a wide variety of audiences including tour, school, and professional groups;
c) Self-explanatory interpretative signs at several study sites, such as the biobarrier demonstration site, to assist contractor, DOE and others to explain projects to visitors, program reviewers, etc.;
d) Interpretative brochures;
e) Portable photo interpretative displays for schools, meetings, airports, etc.;
f) Operation of the traveler's radio station at the intersection of highways 20 and 26; g) Share information with the INEEL M&O contractor, Idaho Department of Fish and Game, Bureau of Land Management, The Shoshone-Bannock Tribes, etc. as requested by DOE;
h) Editing of university press releases prior to submittal to DOE for approval;
i) Guidance, training, and access assistance to university personnel and other scientists requesting permission to conduct studies on the INEEL; and
(j) Other activities directed by DOE.

A level of effort of 0.5 man-years per year by an Environmental Educator is anticipated.

## 3.4. ECOLOGICAL RISK ASSESSMENT SUPPORT

The contractor shall assist in the development and review of ecological risk assessment (ERA) documents. The contractor shall support Department-wide initiatives in ecological risk assessment modeling, document preparation, document review and travel to meetings on these topics. The contractor shall also investigate a tiered approach for future ecological monitoring. Travel may involve two trips to the East Coast of two or three days duration each year. The contractor shall perform other functions related to ecological risk assessment on the INEEL. A level of effort of 0.5 man-years per year by a qualified research scientist is anticipated.

## 3.5. RADIOECOLOGY AND ECOLOGY RESEARCH

A description of the research performed by the incumbent contractor, the Environmental Science and Research Foundation (ESRF), may be found in the Annual Technical Reports. The Environmental Science and Research Foundation Annual Technical Report to DOE-ID: Calendar Year 1997 (ESRF-027). Refer to Attachment C-A for web link to this document.

3.5.1. Protective Cap/Biobarrier Experiment. The Protective Cap/Biobarrier Experiment was started in 1993. It has included tests of a demonstration biobarrier for environmental restoration areas or waste management areas compared to an EPA design. The Protective Cap/Biobarrier Experiment (PC/BE) facility determined the effectiveness of different designs which use natural materials in preventing water intrusion, erosion, and bio-intrusion, including small mammals, ants and vegetation. The various experimental plots were subjected to various intensities and frequencies of simulated precipitation (supplemental irrigation). Neutron hydroprobes and time

domain reflectometry were used to monitor soil moisture, and vegetation development and survival were monitored. The contractor shall prepare a final report in Fiscal Year 2000 on the effects of the biobarrier on soil water storage.

In addition, tests to determine the impacts of small mammals burrowing on different waste cover designs were conducted. Burrowing mammals, (ground squirrels and kangaroo rats) introduced onto the PC/BE plots in Fiscal Year 98 were monitored to determine colonization and use rates for each vegetation and cover type on the PC/BE. Burrowing depths were evaluated by analyzing excavated soils for the presence of colored gravel and chemical tracers placed at various depths during construction of the PC/BE and by analyzing data from previous foam injection and excavation experiments. A final report shall be prepared in FY-2000.

Research was conducted on the effect of ants on infiltration of water into and through the PC/BE. A final report shall be prepared in FY-2000.

3.5.2. Other Ecology Research. Population trends of endangered, threatened, and sensitive species of wildlife shall be followed. Specific studies of those populations shall be periodically conducted, such as current studies of Townsend's big-eared bats and pygmy rabbits. As long as the incumbent continues these two studies, they shall not be the responsibility of the contractor, but shall remain the responsibility of the ESRF since they are joint studies by agreements the ESRF has with other agencies. The joint agency study on monitoring of amphibian and reptile populations and the joint project on impacts from fire on habitat fragmentation on shrub-steppe birds shall also remain the responsibility of the ESRF. These research projects are representative examples of the types of research projects the contractor should propose.

The contractor shall continue research on movement patterns of elk that may cause depredation damage of surrounding farm crops, examine various management practices to control elk depredation, and characterize elk habitat use. Movements of radio-collared elk shall be monitored. The FY-99 subcontractor costs for this research were about $22,000.

The contractor shall continue to investigate the ecological impacts of irrigating native vegetation with sewage wastewater and determine the changes in vegetation, wildlife use, trace metal contamination, and deep percolation of water due to land application of wastewater. This research has been performed in-house by the incumbent contractor.

3.5.3. Radioecology Research. The contractor shall continue the research on the fate of radionuclides in liquid effluents released to two plastic-lined evaporation ponds at the Test Reactor Area. The research, begun in 1994, shall continue to assess the buildup of radionuclides in the pond system and possible transport to humans from waterfowl using the ponds. This research has been performed in-house by the incumbent contractor.

4.0 DELIVERABLES

INEEL Annual Site Environmental Report--draft on July 1 of each year; final on September 15 of each year.

Special reports on specific topics--as requested with due dates negotiated. Research

reports--as specified when new projects are proposed.

General progress reports--to be included in the Monthly Technical Progress Report and the Annual Technical Report. Monthly reports shall be due on the 20th of the month following end of the reporting month. Annual Technical Reports shall be due within six months after the end of the calendar year.

Financial reports--A Cost Plan shall be submitted at the beginning of each Fiscal Year, showing the anticipated costs by month, by business category (salaries, benefits, overhead, supplies, support, research, equipment, etc.), and by each of the five tasks listed in the annual statement of work.

A monthly Cost Report shall be submitted to DOE-ID by the 20th day of each month. The cost report shall list costs for the month by business category in each task.

The monthly reports are also identified in the Reporting Requirements Checklist in Section J of the contract. This checklist identifies frequency, number copies and addressees for the reports.

## 5.0 SPECIAL CONSIDERATIONS

5.1 Environment, Safety, and Health and Security Compliance. The contractor shall follow the federal, state and DOE requirements for environment, safety and health when operating on the INEEL Site. The contractor shall follow federal, state and local requirements for environment, safety and health when operating off the INEEL Site. The contractor shall observe certain necessary INEEL procedural requirements when operating on the INEEL Site such as badging, emergency training, site communications and notification, radiation training, additional facility access requirements, security (including restrictions on foreign nationals), and NEPA documentation for projects. For unescorted access into INEEL site facilities, the following training is required at minimum of the following: RadCon Training (General Employee Radiation Training, Radiation Worker I or II), Health and Safety Access Training (Environment, Safety and Health Training), and Site Access Training (varies by facility).

The following INEEL procedural requirements, when applicable, shall be observed: shipping, hazardous material training, hazardous waste, waste minimization, aviation safety, cultural resources, and planning and scheduling for use of site contractor support services. The contractor shall use the guidance in the "Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance," DOE/EH-0173T (see Attachment C-A), and general industry standards for the environmental surveillance program.

5.2 Other Compliance Issues. DOE and INEEL requirements germane to the activities in this Statement of Work are listed in Sections 5.1 and Attachment C-A of this document. Additionally, during the period of performance, the contractor may be requested to comply with other DOE orders and requirements. Any requests for compliance will follow the processes outlined in either the "Technical Direction" or the "Changes" clause in the contract.

Two programs that will have implications for the contractor's on-site operations are the Voluntary Protection Program and the Integrated Safety Management System. These programs are at different stages of implementation at INEEL and deal with various aspects of environment, safety, and health management. The contractor should become familiar with these two programs, and how its activities are governed by the programs. Information on these two programs can be reviewed by referring to Attachment C-A.

5.3 Equipment Maintenance. The contractor shall be responsible to maintenance of all equipment associated with conducting the activities in the Statement of Work, including Government Furnished Equipment.

5.4 Quality Assurance Plan. The contractor shall prepare a quality assurance plan and submit it to the DOE Technical Representative for approval. The quality assurance program shall be consistent with DOE Order 414.1 or succeeding documents.

5.5 Health and Safety Plan. The contractor shall prepare a Health and Safety Plan and submit it to the DOE Technical Representative for approval.

5.6 Site Cooperation. The contractor shall establish and maintain cooperative working relationships with the INEEL M&O contractor and other Site residents, including Argonne National Laboratory-West and the Naval Reactors Facility. The contractor may be called upon periodically to provide data and other assistance to these groups as deemed necessary by DOE-ID.

Attachment C-A: References


1. Reynolds, T.D., and Warren, R.W., Environmental Science and Research Foundation Annual Technical Report to DOE-ID: Calendar Year 1997, ESRF-027

2. Evans, R. B., et al., Idaho National Engineering and Environmental Laboratory Site Environmental Report for Calendar Year 1997, DOE/ID-12082 (97)

3. ESRF-021(4QT97), INEEL Offsite Environmental Surveillance Program Report: Fourth Quarter 1997.

4. DOE/EH-0173T, Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance.

5. DOE Order 414.1, Quality Assurance (see also 10 CFR 830.120)

6. DOE Order 5400.1, General Environmental Protection

7. DOE Order 5400.5, Radiation Protection of the Public and the Environment

8. DOE Order 231.1, Environment, Safety, and Health Reporting

9. DOE Idaho Operations Office Homepage

10. INEEL M&O Solicitation

11. DOE Integrated Safety Management Program

12. DOE Voluntary Protection Program

13. Agreement in Principle between The Shoshone-Bannock Tribes and DOE.

14. DOE News Release, July 17, 1999 - Energy Department, Bureau of Land Management Create Sagebrush Steppe Reserve at INEEL.

15. Proclamation of the DOE Secretary of Energy Designating the INEEL Sagebrush Steppe Ecosystem Reserve, July 17, 1999.

Attachment C-B: TABLE 1: Summary of Major Activities.

| SOW Reference Section | Key Activities | Frequency/Due Date | Description | Notes |
|---|---|---|---|---|
| 3.1 Offsite Environmental Surveillance | Sampling of air, water, precipitation, food, animal tissues, and environmental radiation | Varied – see Attachment C-C or Section 3.1 of SOW | Collect, tabulate, analyze, interpret, report on samples | 1) Assume leasing and electricity expenses (approx. $3,000/year) for some air samplers; 2) Pay for analyses of IMPROVE air filters (currently $23,000); 3) Arrange for analysis of samples by a qualified laboratory |
| 3.1.10 Reporting | Surveillance Report | Quarterly | Report results of offsite surveillance, trends, interpretation of results | Quarterly Report to DOE-ID |
| | Annual Site Environmental Report | Annually:<br>Draft to DOE-ID 1 July<br>Final distributed by 15 September | Report summary of data, analyses, and results of routine environmental surveillance programs at INEEL | Annual Report widely distributed (approximately 700 copies needed) |
| 3.1.11 Community Monitoring Stations | Operation of Community Monitoring Stations | Varied | Collection of data on radioactivity and particulates in air and ambient rational levels; maintenance of weather station; train and pay local teacher as station operator; cooperate with station operator on incorporation into curriculum | Train and pay local teacher as station operator |
| 3.2 Ecological Support for Land Management Issues | Land Management Issues | As needed | Provide ecological support | |
| | Vegetation Transects | Approximately once every five years | Survey for vegetative abundance | |
| | Natural Phenomena Impact Assessments | As needed | Assess impacts of fire, drought, cyclical weather patterns, etc., and advise on mitigation and land management practices | |
| | Range Management | As needed | Provide advice on revegetation of burned areas and how to prevent range fires; evaluate vegetation trends | |
| | Other Land Management Issues | As needed | Provide expertise/advice on animal damage control, depredation prevention, noxious weed control, threatened/endangered species, wetlands, etc. | |
| 3.2.1 Wildlife Surveys | Big Game Surveys | Semiannually:<br>January and June | Estimate wintering and summering populations of elk, deer, pronghorn antelope; investigate methods of increasing winter forage | |

| SOW Reference Section | Key Activities | Frequency/Due Date | Description | Notes |
|---|---|---|---|---|
| | Breeding Bird Surveys | Annually: June | Conduct 14 breeding bird surveys; maintain data on breeding birds, trending, and prepare a periodic summary report | |
| | Raptor Counts | Annually: January | Conduct midwinter raptor counts throughout the INEEL site | |
| 3.2.2 National Environmental Policy Act (NEPA) Support | NEPA Assistance | As needed | Provide on-location surveys and opinions of proposed surface-disturbing activities and impacts to wildlife, critical habitat, wetlands, and threatened/endangered species; review EA/EIS as requested | |
| 3.2.3 Contacts with Other Agencies | Technical Advisor to DOE | As needed | Serve as technical advisor in support of DOE's interactions with other land management and wildlife agencies | APHIS, $2,000 per year for predator control |
| 3.3 Environmental Education | Outreach | As needed | Provide information and educational services related to environmental surveillance and wildlife use | |
| 3.4 Ecological Risk Assessment Support | Ecological Risk Assessment Support | As needed | Support complex-wide initiatives in ecological risk assessment modeling, document preparation and review, and travel to meetings on these topics | |
| 3.5.1 Protective Cap/Biobarrier Experiment | Protective Cap/Biobarrier Experiment | Final report FY-00 | Continue tests of cap/barrier demonstration and prepare reports on effects of soil water storage, on impacts of small mammal burrowing, and on the effects of ants on water infiltration | Assume responsibility for PC/BE |
| 3.5.2 Other Ecology Research | Select Population Trending | Periodically | Study and trend populations of endangered, threatened, and sensitive species of wildlife | |
| | Study Elk Population | Periodically | Study movements of radio-collared elk that may cause depredation, examine management practices to control the depredation, and characterize elk habitat use | Assume responsibility for Elk depredation studies |
| | Investigate Impacts of Wastewater Land Application | | Investigate ecological impacts resulting from irrigation of native vegetation with sewage wastewater | Assume responsibility for wastewater study |
| 3.5.3 Radioecology Research | Liquid Effluents Research | | Research on fate of radionuclides in liquid effluents at TRA ponds; assess buildup of radionuclides in pond system and potential transport to humans | Assume responsibility for research on TRA ponds |

| SOW Reference Section | Key Activities | Frequency/Due Date | Description | Notes |
|---|---|---|---|---|
| 4.0 Deliverables | Special Reports | As requested | Reports on specific topics as requested | |
| | Research Reports | As requested | Reports on research conducted as proposed | |
| | Technical Progress Reports | Monthly: 20th of each month | Summary of technical progress | |
| | Technical Report | Annually: within six months after end of calendar year | Report of all activities conducted under this scope of work in each calendar year | |
| | Cost Report | Monthly: 25th of each month | Includes monthly invoice and lists costs by business category in each task | |
| 5.4 Quality Assurance Plan | Quality Assurance Plan | Within 30 days after award date; modified as needed | Submit quality assurance plan for approval | |
| 5.5 Health and Safety Plan | Health and Safety Plan | Within 30 days after award date; modified as needed | Submit health and safety plan for approval | |

## Attachment C-C: TABLE 2: Summary of Offsite Environmental Surveillance Program.

| Medium Sampled | Type of Analysis | Number of Samples and Frequency | | SOW Reference Section |
|---|---|---|---|---|
| | | Onsite | Offsite | |
| Air (low-volume) | gross alpha<br>gross beta gamma<br>particulate matter<br>$^{90}Sr$<br>$^{238}Pu$<br>$^{239/240}Pu$<br>$^{241}Am$ | 3 weekly<br>3 weekly<br>3 quarterly<br>3 quarterly<br>1-2 quarterly<br>1-2 quarterly<br>1-2 quarterly<br>1-2 quarterly | 14 weekly[a]<br>14 weekly[a]<br>14 quarterly[a]<br>14 quarterly[a]<br>4 quarterly<br>4 quarterly<br>4 quarterly<br>4 quarterly | 3.1.1 Air Sampling |
| Air (charcoal cartridge) | $^{131}I$ | 3 weekly | 14 weekly[a] | 3.1.1 Air Sampling |
| Air (atmospheric moisture) | $^{3}H$ | None | 4, 1-4 quarterly | 3.1.1 Air Sampling |
| Air (high-volume) | particulate ($PM_{10}$) | None | 3, weekly | 3.1.1 Air Sampling |
| Air (precipitation) | $^{3}H$ | 1, weekly<br>1, monthly | 1, monthly | 3.1.2 Precipitation Sampling |
| Air (IMPROVE) | H, Na thru Pb, $PM_{2.5}$ | 1, weekly | 1, weekly | 3.1.9 Other Sampling |
| Air (high-volume, EPA) | | None | 1, twice weekly | 3.1.9 Other Sampling |
| Air (precipitation, EPA) | | None | 1. monthly | 3.1.9 Other Sampling |
| Water (drinking) | gross alpha<br>gross beta<br>tritium | None | 14, semiannually<br>14, semiannually<br>14, semiannually | 3.1.3 Water Sampling |
| Water (EPA) | | None | 1, monthly | 3.1.9 Other Sampling |
| Water (surface) | gross alpha<br>gross beta<br>tritium | None | 5, semiannually<br>5, semiannually<br>5, semiannually | 3.1.3 Water Sampling |
| Animal Tissue (sheep) | gamma (liver/muscle)<br>$^{131}I$ (thyroid) | 4, annually | 2, annually | 3.1.4 Animal Sampling |
| Animal (Game, Road-killed) | gamma (liver/muscle)<br>$^{131}I$ (thyroid) | As available | as available | 3.1.4 Animal Sampling |
| Food (Milk)<br>- Local supplier<br>- Commercial/Family<br>- Local/Commercial/Family<br>- Local/Commercial/Family | <br>$^{131}I$[b]<br>$^{131}I$[b]<br>$^{90}Sr$<br>$^{3}H$ | <br>None<br>None<br>None<br>None | <br>1, weekly<br>8, monthly<br>9, annually<br>9, annually | 3.1.5 Food Sampling |
| Food (potato) | Gamma<br>$^{90}Sr$ | None | 5, annually<br>5, annually | 3.1.5 Food Sampling |
| Food (wheat) | Gamma<br>$^{90}Sr$ | None | 11, annually<br>11, annually | 3.1.5 Food Sampling |
| Food (lettuce) | Gamma<br>$^{90}Sr$ | None | 9, annually<br>9, annually | 3.1.5 Food Sampling |
| Soil[c] | Gamma<br>$^{90}Sr$<br>$^{238}Pu$<br>$^{239/240}Pu$<br>$^{241}Am$ | None<br>None<br>None<br>None<br>None | 12, biennially<br>12, biennially<br>12, biennially<br>12, biennially<br>12, biennially | 3.1.6 Soil Sampling |
| Radiation (thermoluminescent dosimeter) | Ionizing Radiation | None | 14, semiannually | 3.1.7 Environmental Radiation Measurement |
| Radiation (pressurized ion chamber) | Ionizing Radiation | None | 2, continuous | 3.1.7 Environmental Radiation Measurement |

[a] Two of the 14 samples are taken from replicate samplers used for quality control
[b] Analysis for $^{129}I$ in late summer or early fall is also encouraged.
[c] Soil samples collected in even numbered calendar years.