U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Performance Work Statement
For
Environmental Characterization and Remediation Services
21 April 2008

1.0 INTRODUCTION

1.1 Background: The primary mission of the National Nuclear Security Administration Nevada Site Office (NSO) has been to conduct testing of nuclear and conventional explosives in conjunction with the research and development of nuclear tests. Most of the field testing was done at the Nevada Test Site (NTS) and included approximately 828 underground test sites, and 100 atmospheric test locations. In addition to radioisotopes associated with the tests, other contaminants included oils, solvents, gasoline, heavy metals such as lead, and unexploded ordnance. Approximately 1,375 square miles in size, the site is larger than the State of Rhode Island and is one of the largest restricted access areas in the nation. Field testing was also conducted on the Tonopah Test Range (TTR), and the Nevada Test and Training Range (NTTR), formerly the Nellis Air Force Range, adjacent to the NTS.

The Environmental Management (EM) Program was established in 1989 at Department of Energy (DOE) offices around the country to address the environmental impacts associated with more than 50 years of nuclear weapons production in the United States. The NSO EM program encompasses environmental restoration and waste management activities that have resulted from the historic NSO nuclear testing mission. NSO environmental restoration activities fall under the purview of the NSO Environmental Restoration Project (ERP). Originally the ERP consisted of four Sub-Projects, including Industrial Sites, Underground Test Area (UGTA), Soils, and Offsite Sub-Projects. On October 1, 2006 responsibility for the Offsite Sub-Project was transferred to the DOE Office of Legacy Management (LM). The Contractor will not be responsible for performance of the Offsite Sub-Project. Waste management activities fall under the purview of the NSO Waste Management Project (WMP). Planning and Project Control and Public Involvement functions fall under the purview of the EM Program Support Group (PSG).

1.2 Summary of Contract Characteristics: This is a Cost Plus Award Fee contract with Performance Incentive Fee. The work effort under this contract will be evaluated on a performance-based basis. Actual performance incentives will be determined on a fiscal year basis in accordance with Section H, Clause H002 and Performance-Based Fee Plan, Section J, Attachment 4.

1.3 Place of Performance: The Contractor shall perform environmental characterization and remediation services at designated Corrective Action Sites (CASs), or Corrective Action Units (CAUs) at the NTS, TTR, and parts of the NTTR.

1.4 Performance Requirements: Each requirement for every work assignment will contain the following three elements. In each case, when taken together, these elements constitute a performance requirement.

- Performance Objectives - A statement of the outcome or results expected in a specific work assignment. (These objectives will be identified in the contract for each work assignment).

- Performance Measures - The critical few characteristics or aspects of achieving the objective that will be monitored by the Government, e.g. those things that the Government will be gathering data about. Each objective may have one or more measures. (These measures will be dependent on the actual work assignments issued by the Federal Sub-Project Directors. The contract will identify a list of measures from which the Federal Sub-Project Directors will select one or more measures for the specific work assignment that are issued).

- Performance Expectations - The targeted level or range of levels of performance for each performance measure. The Federal Sub-Project Directors will identify the expectations for each measure and incorporate them into the specific work assignment.

2.0 SCOPE OF WORK

2.1 **Requirement:** The Scope of Work requirement includes; program management support, site characterization and assessment, field services, remedial action, and public involvement activities. The Contractor shall comply with the Federal Facility Agreement and Consent Order (FFACO) between DOE/EM, the State of Nevada, the Department of Defense, Defense Nuclear Agency (now the Defense Threat Reduction Agency (DTRA), and DOE/LM. The Contractor shall provide all personnel, materials, and supplies, required to perform under this contract.

2.2 **Requirement Documents**: The Contractor shall comply with the documents identified in Section J, Attachment 5. Additionally, services and products shall comply with all applicable federal, state, and local laws, regulations, guidance and policies, which become effective after the effective date of this contract.

3.0 SPECIFIC REQUIREMENTS

The Contractor shall perform the following activities:

Government Fiscal Year (GFY) 2009
Underground Test Area Sub-Project
Complete Western Pahute Mesa/Central Pahute Mesa Corrective Action Investigation Plan (CAIP) Addendum
Complete Frenchman Flat Transport Model
Complete Yucca Flat/Climax Mine Flow Model
Complete Yucca Flat/Climax Mine Source Term Report
~~Complete Western Pahute Mesa/Central Pahute Mesa Transport Model~~
Complete Frenchman Flat Model Verification
Complete Frenchman Flat Model external peer review
Begin Central Pahute Mesa Drilling Program

Soils Sub-Project
Complete CAIP for Danny Boy Soils Corrective Action Unit (CAU)

Complete CAIP for Frenchman Flats Soils CAU
Complete Corrective Action Decision Document/Closure Report (CADD/CR) for Frenchman Flats Soils CAU
Complete CADD/CR for Danny Boy Soils CAU

Industrial Sites Sub-Project
Complete CR for Industrial Sites CAU 117, Pluto Disassembly Facility
Complete CADD for Industrial Sites CAU 546, Injection Wells, Mud Pits, Cellars and Ponds
Complete CR for Industrial Sites CAU 547, Miscellaneous Contaminated Waste Sites
Complete CR for Industrial Sites CAU 130, Storage Tanks

GFY 2010
Underground Test Area Sub-Project
Complete Frenchman Flat Monitoring Well Network Design
Complete Rainier Mesa/Shoshone Mountain Source Term Report
Begin Rainier Mesa/Shoshone Mountain Transport Model

Soils Sub-Project
~~Complete Area 20 Soils CAUs CAIP~~
Complete Small Boy Soils CAU CAIP
~~Complete Sedan Soils CAU CAIP~~
Complete GMX Soils CAU CAIP
Complete Small Boy Soils CAU CADD/CR

GFY 2011
Underground Test Area Sub-Project
Complete Frenchman Flat CADD
Complete Rainier Mesa/Shoshone Mountain Flow Model
Complete Western Pahute Mesa Drilling Program
Begin Western Pahute Mesa Well Development and Testing
Begin Yucca Flat/Climax Mine Drilling Program
Complete Yucca Flat/Climax Mine Transport Model

Soils Sub-Project
Complete Area 20 Soils CAUs CAIP
Complete Sedan Soils CAU CAIP
Complete Pu Valley Soils CAU CAIP
Complete Area 20 Soils CAUs CADD/CR
Complete Sedan Soils CAU CADD/CR

GFY 2012
Underground Test Area Sub-Project
~~Complete Yucca Flat/Climax Mine Transport Model~~
Complete Yucca Flat/Climax Mine CAIP Addendum
Complete Frenchman Flat CAP
Complete Central Pahute Mesa Drilling Program
Begin Central Pahute Mesa Well Development and Testing
Begin Frenchman Flat 5 Year Monitoring Program
Soils Sub-Project
~~Complete North Yucca Flat Soils CAU CAIP~~
Begin Johnnie Boy Soils CAU CAIP

Complete GMX Soils CAU CADD/CR
Complete Pu Valley Soils CAU CADD/CR

GFY 2013
Underground Test Area Sub-Project
~~Complete Central Pahute Mesa Drilling Program~~
Begin Rainier Mesa/Shoshone Mountain Drilling Program (pad preparation)
Complete Rainier Mesa/Shoshone Mountain CAIP Addendum
~~Begin Rainer Mesa/Shoshone Mountain Transport Model~~
Begin Yucca Flats/Climax Mine Well Development and Testing
Begin Western Pahute Mesa Tracer/Aquifer Test

Soils Sub-Project
Complete North Yucca Flat Soils CAU CAIP
Begin South Yucca Flat Soils CAU CAIP
Begin Buckboard Mesa Soils CAU CAIP
Complete North Yucca Flat Soils CAU CADD/CR
Begin Johnnie Boy Soils CAU CADD/CR
Begin South Yucca Flat Soils CAU CADD/CR

3.1 Site Characterization, Assessment and Remediation: The Contractor shall prepare assessment/characterization studies for all Sub-Projects and perform Streamlined Approach for Environmental Restoration (SAFER) activities for NNSA/NSO selected CAUs for the Soils and Industrial Sites Sub-Projects. The contractor shall perform all activities and documentation required for the assessment/characterization and SAFER activities, including, but not limited to the following: planning, technical studies, hazardous material handling, waste management, waste disposal, and field coordination. The contractor shall prepare Site Specific Health and Safety Plans (SSHASPs), Real Estate Operations Permits (REOPs), and Quality Assurance Project Plans (QAPPs).

3.1.1 Corrective Action Sites (CAS) and Corrective Action Units (CAUs): The Contractor shall prepare draft and/or final documents to assess/characterize CAUs to adequately determine the extent, nature, and concentration of contamination to support assessment/characterization studies. In addition, the Contractor shall identify and provide a rationale for the selection of a recommended corrective action alternative for each CAS. The Contractor shall prepare Corrective Action Investigation Plans (CAIPs), Corrective Action Decision Documents (CADDs), Closure Reports (CRs), CADD/CRs, and SAFER plans. These reports shall include, as applicable: historical data and site descriptions; geophysical investigations; data quality objectives (DQOs); SSHASPs; QAPPs; number, types, and location of sampling sites for multi-media, statistically determined to reduce decision error; analytical requirements; and waste management plans.

3.1.1.1 The Contractor shall prepare permit documentation for CAUs.

3.1.1.2 The Contractor shall determine for each CAS and/or each CAU, as appropriate, the physiography, geology, and hydrology; define the nature, extent, and volume of any contamination, including their physical, chemical, and radiological constituents, as well as their concentration in affected soil or groundwater.

3.1.1.3 The Contractor shall perform data integration activities necessary to describe: 1) the physical characteristics of each CAS and/or CAU, 2) the nature and extent of contamination, and 3) the contaminant data and transport mechanism. Data integration activities shall include the review of all existing literature applicable to assessment/characterization and SAFER activities.

3.1.1.4 The Contractor shall design and implement a groundwater assessment/ characterization program leading to the development of a hydrologic model for the underground test area (UGTA) CAUs based on existing and new data obtained through characterization activities.

3.1.1.5 The Contractor shall verify and document for NSO EM approval the planned assessment/characterization and SAFER activities are in compliance with applicable environmental laws and regulations.

3.1.1.6 The Contractor shall complete SAFER projects as determined by NSO.

3.1.1.7 The Contractor shall manage all solid, hazardous, radioactive, and mixed waste generated by assessment/characterization and SAFER activities prior to its ultimate treatment, storage, and/or disposal.

3.1.1.8 The Contractor shall provide planning and management services for the identification, grouping, and prioritization of CASs and CAUs.

3.1.2 Sub-Projects

3.1.2.1 Soils

3.1.2.1.1 Background: Nuclear testing activities conducted at the NTS, TTR, and NTTR produced radionuclide contamination of near surface soils. The DOE NSO Environmental Restoration Soils Sub-Project objective is to characterize near surface soil contamination sites and perform corrective actions, where it is cost effective and there is a significant reduction in risk to human health and the environment. Activities for the Soils Sub-Project are required by the implementation of the FFACO Technical Strategy and are predicated on establishing site-specific Corrective Action Levels (CALs).

The Soils Sub-Project CAUs are divided into five groups, which parallel the categories presented in the FFACO:

1. Storage-Transportation Tests: GMX, Plutonium Valley, Project 57, Double Tracks, and Clean Slate Sites 1, 2, and 3.

2. Cratering Experiments: NTS Areas 10, 18, 20, and 30. (Sedan, Johnnie Boy, Danny Boy, Cabriolet/Palanquin, Schooner, and Buggy respectively)

3. Atmospheric Tests: South Yucca Flat (Areas 1, 3, 4, and 7), North Yucca Flat (Areas 2, 8, 9, and 10), Frenchman Flat (Area 5 and 11), Buckboard Mesa (Area 18) and Small Boy. This grouping also includes small restricted areas of contamination produced by unplanned venting of subsurface tests.

4. Hydronuclear Experiments: Hydronuclear Tests.

5. Nuclear Rocket Engine Experiments: Nuclear Rocket Engines (This CAU includes surface soil contamination not addressed by the Industrial Sites Sub-Project.)

The objective of the Soils Sub-Project is to reduce the risk to human health and the environment through implementation of a cost-effective corrective action strategy. This strategy encompasses CAU characterization, assessment, corrective action evaluation, and corrective action implementation.

For the Soil Sub-Project sites, where it is cost effective and there is a significant reduction in risk to human health and the environment, corrective actions will be performed. For the Soil Sub-Project sites, where it is not cost effective and a significant reduction in risk to human health and the environment cannot be achieved, corrective actions are not anticipated. For the Soils Sub-Project sites within designated future testing areas, corrective actions are not anticipated. The future testing area sites are defined in the Nevada Test Site Environmental Impact Statement (EIS) and Nevada Test Site Resource Management Plan (RMP).

For each Soil Sub-Project CAU, a site-specific CAL will be established that allows for release of the CAUs in accordance with agreed upon designated land uses that are in accordance with the Nevada Test Site EIS and RMP. The CAL is based on a dose criterion of 25 millirem per year (mrem/yr) and concurrence with identified decision makers on future land use scenarios, dose calculation methodology, and dose calculation input parameters. The CAL is required by DOE Orders to have an as-low-as-reasonably-achievable (ALARA) analysis performed. Fieldwork is performed as authorized by NSO applicable directives, including the REOPs.

3.1.2.1.2 Corrective Action Investigation Plan (CAIP): The Contractor shall prepare a CAIP that includes: a historical literature review and historic evaluation, a description of the data quality objectives (DQOs), preliminary risk (dose) assessment (if applicable), and site characterization scope of work. NEPA mandated Environmental Assessment (EA) documentation is not required because remaining

uncharacterized Soils Project CAUs are included in the Environmental Impact Analysis and Record of Decision for the NTS EIS. The Contractor is responsible for document production, reproduction, and distribution of a draft CAIP for NSO, NDEP, and contractor review. The Contractor shall ensure each CAIP conforms to the approved Standardized Outline. The Contractor shall resolve NSO and other contractor comments by providing a response to comments using a document review sheet form. Nevada Department of Environmental Protection (NDEP) comments shall be addressed by the Contractor and a copy of the document review sheet shall be included as an appendix in the final CAIP document for review by NSO and NDEP. After NDEP approval, the contractor shall prepare a Portable Document Format (PDF) conversion and submit the final CAIP to the DOE Office of Scientific and Technical Information (OSTI) and the Public Reading Facilities identified in the FFACO (PRFs).

For Soils Sub-Project CAUs with areas of contamination greater 20 hectares, the Management and Operating (M&O) contractor will use an aerial-based detection system to establish the horizontal extent of contamination. A ground-based detector platform is also used by the M&O contractor, when appropriate, to determine the depth of contamination, isotopic ratios, and to verify that hot spots do not exist that may bias the aerial and ground-based detector system results. For Soils Sub-Project CAUs with areas of contamination less than 20 hectares, only ground-based detector systems are utilized by the M&O contractor. After in situ radiological surveys are completed, the contractor shall conduct soil sampling to further characterize the Ground Zero and suspected burial areas, as required.

3.1.2.1.3 Corrective Action Decision Document (CADD)/Closure Report (CR): The contractor shall prepare a CADD/CR that discusses the scope and substance of activities used to identify, evaluate, and recommend why no further corrective action is necessary; how and why any required use restrictions will be applied; and basis for implemented closure activities, including such actions as long-term surveillance and monitoring, as part of a post-closure monitoring program. The CADD/CR shall include a corrective action investigation summary including a discussion of results, justification for no further corrective action, a data assessment, a risk assessment, if applicable and a summary of closure activities. CADD/CR document preparation activities include: obtain peer reviews (as identified by NSO) and perform technical editing of the document; provide document production, reproduction, and distribution of a draft CADD/CR for NSO, NDEP, and contractor review; provide technical support during the review

period; address and resolve NSO, NDEP, and contractor review comments and prepare document review sheets; revise the draft document based on review comments and publish a final document for NSO and NDEP review. The contractor shall research and resolve any comments and prepare a comment response form. NDEP comments shall be addressed within the final document and a copy of the document review sheet shall be issued as an appendix. After NDEP approval, the contractor shall prepare a PDF conversion and submit the final CADD/CR to OSTI and the PRFs.

3.1.2.2 Underground Test Area (UGTA)

3.1.2.2.1 Background: The scope of the UGTA Sub-Project is to define the site-specific hydrologic boundaries encompassing groundwater resources on the NTS and at off-site locations that may be unsafe for domestic or municipal use and to perform data analysis and modeling activities to allow informed decisions that ensure risk to public health and the environment posed by impacted groundwater are, and will remain, within protective levels.

Work scope activities for a CAU are driven by the implementation of the FFACO technical strategy. CAU specific modeling is required to determine the location of the contaminant boundary and design the corrective action monitoring well system. These activities provide the complete basis for a CADD for regulatory approval. Corrective action involves the completion of the closure activity recommended in the CADD. Compliance with the closure criteria leads to a CR and notice of completion from NDEP. All UGTA CAUs have Nevada Department of Environmental Protection (NDEP) approved CAIPs in place, but may require Addendums. Work required as part of the development of the CAIPs included performing a preliminary analysis of existing data; developing data quality objectives and identification of activities necessary to meet CAI objectives. All CAIPs were consistent with agreed upon outlines developed by NSO and NDEP.

3.1.2.2.2 Correction Action Investigation Plan (CAIP):

DOE developed and prepared CAIP for all CAUs within the UGTA Subproject. The CAIP was prepared in accordance with the FFACO and Data DQO process. The CAIP met the informational requirements of the “Annotated Outline for UGTA Corrective Action Investigation Plan which included a description of the CAU, a summary of the DQO process results, the proposed Corrective Action Investigation (CAI), and a description of and rationale for any planned field investigations.

The CAI provides the plans for the conduct of the investigation that will be carried out, and the details of field investigations and data collection and data analysis activities identified as necessary to better model the physical system. The CAU-scale flow and contaminant transport modeling will also be planned and developed in the CAI, including the modeling steps, flow and transport code selection, and flow model calibration and verification.

During the development of the CAIP, DOE met with NDEP. NDEP was then given the opportunity to review the draft version of the CAIP and identify any deficiencies. Field investigations, data collections, and analyses identified during the development of the CAIP as part of the CAI were not initiated without NDEP approval.

DOE evaluated new and existing data to determine if the data set allowed for the development of an acceptable flow and contaminant transport model, and provided the data evaluation results to NDEP.

After DOE completed its evaluation of existing and new data, and after NDEP reviewed the information that was provided by DOE, it was determined that the data are not adequate to develop a contaminant boundary, however it was determined that the strategy is achievable, and a second phase of the CAI, "Phase II," will require DOE to develop and prepare an addendum to the CAIP and collect additional data.

The CAIP addendum will address the identified data needs, how these data needs are translated to requirements, and what additional work activities will be conducted that are expected to address and/or satisfy these requirements.

Due to the need for additional data acquisition, the Contractor shall prepare CAIP Addendums. The Contractor shall prepare a CAIP Addendum which conforms to the approved Standardized Outline. The Contractor, with technical assistance from project participants, as needed, shall answer questions and provide technical support during NDEP's review of the CAIP Addendum; prepare a formal NDEP comment response document; provide support during comment resolution; and revise the CAIP Addendum following comment resolution. After NDEP approval, the Contractor shall prepare a PDF conversion and submit to OSTI and the PRFs. The CAIP Addendum shall describe additional data analysis and modeling activities, as well as, any new data collection activities required to further reduce uncertainty in the determination of a contaminant boundary. NSO will convene an expert panel, which includes a representative from NSO and a representative from each contractor supporting the

sub-project, to evaluate reduction of uncertainty associated with data acquisition alternatives and compare results with costs to acquire data. The Contractor shall prepare a report documenting the process and results. Data are acquired through field and laboratory studies to supplement significant data gaps determined as a result of initial data analysis and modeling activities. The Contractor's data analysis shall include assembly, interpreting, and documenting existing and newly acquired data pertinent to the development and completion of the CAU flow and transport models. The data analysis volumes shall serve as a primary reference to the CAU modeling effort. The Contractor shall develop the CAU-specific risk-based contaminant boundary based upon the development and verification of a flow and transport model.

3.1.2.2.3 Corrective Action Decision Document (CADD): The Contractor shall prepare the CADD. The scope of the CADD involves determination of the contaminant boundary location and the design of a monitoring well system, including selection of monitoring parameters and developing the performance criteria for the monitoring network. Computer modeling predictions shall be the primary basis for determining the location of contaminant boundary and designing the monitoring well network. The Contractor shall summarize the results of the corrective action investigation in the CADD and shall specify the recommended corrective action alternative. The CADD shall be consistent with FFACO requirements and is reviewed and approved by the NSO and NDEP. The CADD shall be prepared following the UGTA-specific outline agreed upon by the State of Nevada and the DOE. The CADD shall include documentation on the CAI process and results; a discussion on the rational for selection of monitoring parameters; development of performance criteria; design of a CAU specific monitoring network; and discussion of the plan for the five year monitoring program (Proof of Concept). The Contractor shall research and resolve any comments and prepare a comment response form. NDEP comments shall be addressed within the final document and a copy of the document review sheet shall be issued as an appendix. After NDEP approval, the Contractor shall prepare a PDF conversion and submit the final CADD to OSTI and the PRFs.

3.1.2.2.4 Corrective Action Plan (CAP): The M&O contractor will prepare the CAP which will be derived from the CADD and will contain details on the implementation of the corrective action proposed for the CAU. The Contractor shall provide technical support to the M&O contractor during the preparation of the CAP. This technical support shall include responding to information calls, contributing to the sections describing the implementation of the selected corrective action, reviewing information prepared by the M&O

contractor, and preparing other materials for inclusion in the draft CAP. Once the draft CAP is completed, activities performed by the Contractor shall include reviewing the draft CAP, preparing formal comments, and providing support to NSO and the M&O contractor during the DOE review phase of the CAP. The M&O contractor will lead the DOE review of the draft CAP. The Contractor shall conduct a technical review of the draft CAP commensurate with their technical oversight role. The review shall be detailed to ensure that the CAP is consistent with the CADD and the proposed corrective action. Review comments shall be recorded on DOE document review sheets (DRSs).

The main product of this effort is a set of formal comments that the Contractor shall deliver to the M&O contractor at the end of the review period. The Contractor shall support to the M&O contractor in answering reviewer's questions on an as-needed basis. Once internal review of the draft CAP has been completed, the M&O contractor will submit the CAP to NDEP for review. The M&O contractor will lead the NDEP review of the CAP. The Contractor shall support the M&O contractor and DOE during the review. Activities shall include providing support to NSO and the M&O contractor during the review phase of the document by answering NDEP questions or fulfilling information calls, and preparing and/or reviewing comment responses. After NDEP approval, the M&O contractor will prepare a PDF conversion and submit the final CAP to OSTI and PRFs.

3.1.2.2.5 Field Activities

3.1.2.2.5.1 Well Drilling Program: The UGTA well drilling program involves several contractors with various responsibilities. During well drilling and completion, the Contractor shall provide, at a minimum, the following:

- Provide on-site technical and scientific support for well design and construction, drilling operations, and geological and geophysical interpretation.
- Document and report well-site activities on a 24-hour basis as they relate to drilling, well construction, and technical and science-related operations.
- Provide specific detailed monitoring information for each well to satisfy fluid management requirements. Fluid management monitoring shall include analysis of tritium and lead in make-up water and discharge fluids.

- Provide water quality monitoring information for each well to determine the nature and chemistry of the groundwater. Water quality monitoring parameters shall consist of pH, conductivity, and temperature. Additional monitoring shall be required on a well-specific basis.
- Monitor and maintain the introduction of groundwater tracers to determine groundwater production during drilling.
- Collect geologic samples (e.g., rock cuttings and/or core) and prepare detailed descriptions.
- Collect, process, and submit fluid management, well discharge, and groundwater samples for off-site analysis.
- Provide waste management oversight for the appropriate handling of waste and/or hazardous materials.
- Manage investigation-derived waste (IDW) in accordance with plans and procedures.
- Obtain water-level measurements from boreholes and constructed wells.
- Document the volumes and nature of drilling fluids used in downhole applications per the Fluid Management Plan (FMP).
- Monitor and document the volumes of fluids and solids produced as effluent from drilling operations.
- Collect swipe samples and analyze for tritium using a liquid scintillation instrument, or equivalent, to support “unrestricted release” of material (e.g., samples and equipment).
- Collect and document various drilling parameters.
- Provide environmental and regulatory support for fluid management, analysis, and approval of process material.

3.1.2.2.5.2 Well Development and Testing: During well development and testing the Contractor is responsible for implementing project plans and policies and coordinating with NSO representatives and other participating contractors. The Contractor is responsible for defining the scope of work and designating the necessary resources to complete the work; shall serve as the primary point-of-contact for resolution of technical, resource, and scheduling issues; is responsible for overall supervision of field operations, ensuring that work is performed

according to plans, procedures, and quality control protocols; shall review work practices, analyze hazards, implement mitigating controls, and perform safety inspections ensuring commitment to Integrated Safety Management System (ISMS) principles; is responsible for assessing environmental compliance practices and coordinating waste management activities; and is responsible for performing surveillances on field activities to ensure adherence to plans and procedures.

3.1.2.3 Industrial Sites

3.1.2.3.1 Background: CASs located on the NTS and TTR where activities were conducted that supported nuclear testing activities are grouped as Industrial Sites. Industrial Site CASs is grouped into CAUs based on four criteria: (1) responsible party (2) site function, (3) geographic location, and (4) length of time needed to complete the action. CASs are first be assigned to CAUs based on the agency responsible for the investigation and/or corrective action. CASs is then grouped by function when they shared similar technical issues and waste types. CASs with similar functions are grouped geographically with other CASs to facilitate corrective actions. Finally, CASs are grouped into CAUs according to the length of time needed to complete the corrective actions.

Corrective actions for Industrial Site CAUs will range from no action to clean closure. The types of corrective actions may be as simple as small, isolated housekeeping site source removals to large-scale, multi-faceted projects addressing shallow groundwater and subsurface soil contamination. To further define the corrective actions for the wide range of Industrial Sites, the overall corrective action process has been subdivided into three possible process flowpaths:

(1) the housekeeping process, (2) the SAFER process, and (3) the complex process. Decisions to use specific processes are based on the complexity of the CAS conditions and the possibilities of choosing corrective action alternatives before investigations are complete.

The preparation of plans and their contents will correspond with the complexity of each CAU and the chosen corrective action process. If appropriate, each CAU will have a CAIP. The CAIP will contain or reference all necessary management and technical information. Optional CAU work plans may be written and referenced if information applies to all CASs in a CAU, or if CAUs are sufficiently similar to facilitate the use of common information.

CADDs, CAPs, and CRs will be prepared, as necessary, to guide and document corrective action decisions and activities. If sufficient information exists at a particular CAU to plan the corrective actions prior to completion of the investigation, a SAFER Plan may be prepared. This plan will contain all the necessary elements usually found in CAIPs, CADDs, and CAPs.

3.1.2.3.2 Corrective Action Investigation Plan: The Contractor shall ensure each CAIP includes: historical knowledge about the site and operations; DQOs; peer reviews and technical editing of the document. The Contractor is responsible for document production, reproduction, and distribution of a draft CAIP for NSO, NDEP, and contractor review. The Contractor shall ensure each CAIP conforms to the approved Standardized Outline. The Contractor shall research and resolve any comments and prepare a comment response form. NDEP comments shall be addressed within the final document and a copy of the document review sheet shall be issued as an appendix. After NDEP approval, the Contractor shall prepare a PDF conversion and submit the final CAIP to OSTI and the PRFs.

3.1.2.3.3 Corrective Action Decision Document (CADD): Activities performed by the Contractor shall include CAI; analytical work; waste management and disposal; and CADD preparation.

3.1.2.3.3.1 Corrective Action Investigation: Plan and perform the field investigation. Specifically, the effort includes the following activities: perform required NEPA activities; prepare a SSHASP to guide all planned field operations; prepare a sampling instruction set to provide specific direction to the sampling crew with respect to procedures used for all aspects of sampling, decontamination, sample packaging, and shipping; prepare a REOP and a FMP to identify key personnel for the field activities; provide all necessary services and logistical support for the field effort; assemble the field crew; conduct a readiness review; and otherwise prepare for the effort. A “pre-field” briefing shall be held and the field crew shall mobilize to the project site, perform the field investigation as specified in the CAIP, and demobilize from the site.

3.1.2.3.3.2 Analytical Work: Perform chemical, radiological, and physical parameter analyses on samples acquired during field operations, as required by the

CAIP. Full analytical data packages shall be obtained for characterization samples. All samples shall undergo Tier I and II data validation and five percent of the samples shall be submitted to an off-site laboratory for Tier III data validation. Support activities shall include laboratory coordination, data tracking and assessment, and posting analytical results in the Common Data Repository (CDR).

3.1.2.3.3.3 Waste Management and Disposal: Provide waste management services for all site Investigation Derived Waste (IDW) generated during the field investigation, to include periodic inspections. Waste records and manifests shall be prepared and maintained with copies provided to the M&O contractor. A waste characterization profile is completed to determine the appropriate waste classification. For radioactive waste, a waste profile is prepared demonstrating compliance with the NTS waste acceptance criteria (NTSWAC) for Radiological Waste Acceptance Plan (RWAP) approval. Disposal services shall be provided for all non-hazardous and hazardous waste generated at TTR. Radioactive waste, and all NTS-generated waste, shall be disposed in coordination with the M&O contractor's Waste Management Division.

3.1.2.3.3.4 Corrective Action Decision Document Preparation (CADD): Prepare a CADD that consists of a corrective measures study, and an investigation report as an appendix that presents the data collected in the field. Preparation activities include: perform peer reviews and technical editing of the document; provide document production, reproduction, and distribution of a draft CADD for NSO, NDEP, and contractor review; provide technical support during the review period; address and resolve NSO, NDEP, and contractor review comments and prepare document review sheet; revise the draft document based on review comments and publish a final document for NSO and NDEP review. The Contractor shall ensure each CADD conforms to the approved Standardized Outline. The Contractor shall research and resolve any comments and prepare a document review sheet. NDEP comments shall be addressed within the final document and a copy of the document review sheet shall be issued as an appendix. After NDEP

approval, the Contractor shall prepare a PDF conversion and submit it the final CADD to OSTI and the PRFs.

3.1.2.3.4 Streamlined Approach For Environmental Restoration (SAFER): Activities performed by the Contractor shall include preparing a SAFER Plan and conducting field work.

3.1.2.3.4.1 SAFER Plan: Based on Preliminary Assessment information and a site visit, limited sampling activities shall be conducted to determine the type of waste disposal required. A SAFER justification letter shall be prepared and transmitted to NSO and NDEP. A draft SAFER Plan and engineering drawings/as-built drawings shall be prepared. The SAFER Plan shall be prepared according to the Standardized Outline agreed upon by NSO and NDEP and shall incorporate the DQO process. An internal review/comment resolution activity sequence shall be conducted. The draft SAFER Plan shall be submitted to NSO and NDEP for review/comment. Comment resolution shall be completed and a final SAFER Plan shall be prepared. The final SAFER Plan shall be transmitted to NSO and NDEP. NDEP approves final SAFER Plan and/or requires modification to the document. After NDEP approval, the Contractor shall prepare a PDF conversion and submit the final SAFER Plan to OSTI and the PRFs.

3.1.2.3.4.2 Field Work: Prepare a REOP, SSHASP, Work Packages, Field Management Plan (FMP), NEPA Checklist, and Radiation Work Permits (RWP), for the closure activities. If required, the Contractor is responsible for holding an ALARA meeting. Readiness Review and "pre-field" briefing shall be conducted prior to mobilization of labor and equipment to the closure site. Waste shall be characterized, stored, transported, and disposed in accordance with applicable regulations/requirements.

3.1.2.3.5 Decontamination and Decommission (D&D) SAFER: Activities performed by the Contractor shall include preparing a D&D SAFER Plan and conducting D&D SAFER field work.

3.1.2.3.5.1 D&D SAFER Plan: The SAFER Plan and the D&D Plan will be reviewed and approved by NDEP and NSO. The SAFER Plan shall conform to the approved Standardized Outline and shall

incorporate the DQO process. The following areas shall be reviewed: quality assurance, quality control, technical editing, peer review, regulatory compliance, and health and safety. Following completion of the draft document review, comment resolution shall be performed and a comment response form shall be completed. NDEP comments shall be addressed within the final document and a copy of the document review sheet shall be included in the final version of the document as an appendix. After NDEP approval, the Contractor shall prepare a PDF conversion and submit the final D&D SAFER Plan to OSTI and the PRFs.

3.1.2.3.5.2 D&D SAFER Field Work: D&D activities shall consist, of the following activities; decontamination of radiological impacted surfaces and the removal of radioactively impacted items, removal/disposal of hazardous materials from the building, and removal/disposable of asbestos containing material from the building.

3.1.2.3.6 Closure Report (CR): The Contractor shall prepare a CR to document closure activities for the CAU. Activities associated with finalizing the CR document shall include completing and recording Use Restrictions; preparing a draft CR which conforms to the approved Standardized Outline and shall include Use Restrictions and/or engineering as-built drawings. The Contractor shall distribute the draft CR to NSO, NDEP, and M&O contractor for review and shall prepare responses to comments on DRSs. The Contractor shall **s**ubmit the Final CR to NSO and NDEP for approval. After NDEP approval, the Contractor shall prepare a PDF conversion and submit the final CR to OSTI and the PRFs.

3.2 PROGRAM SUPPORT

The Contractor shall provide technical support to assist NSO in planning, management, and execution of the NSO EM Program. The required services include:

3.2.1 Project Controls (Scope, Schedule, and Cost Planning, Budgeting, Executing and Reporting)

3.2.1.1 Background: The NSO EM Program life-cycle baseline is the document that identifies the scope, schedule and cost from the beginning to the end of the ERP. The baseline has been reviewed by the DOE Office of Engineering and Construction Management (OECM), and is under DOE EM configuration control. The NSO EM Program is currently in the

Critical Decision (CD) 2/3 phase. The scope of the life-cycle baseline describes the structure of the Environmental Restoration's technical work and identifies the objectives to be achieved throughout the duration of the project. The life-cycle baseline schedule identifies dependencies and completion time-frames as constrained by assumed funding and resource limitations. Cost information in the baseline depicts the labor, services, and materials required to accomplish the technical scope. The life-cycle baseline provide technical, schedule, and cost details for the historical progress and planned execution of future work. The EM Program life-cycle baseline is maintained under configuration control within the NSO's Environmental Management Information System (EMIS). The EMIS supplies the primary framework for management, control, and retention of earned value management data. The functions and controls within EMIS were designed for use as an EVM compliant system. EMIS is used by NSO environmental sub-projects and contractors as the central life-cycle baseline data control and reporting system and overall EM Program data repository. Outside of EMIS, the Contractor shall maintain its own systems and software for specific baseline development purposes.

3.2.1.2 Project Life Cycle Management

The Contractor shall prepare a Project Execution Plan (PEP) and a Risk Management Plan (RMP) to establish the policies and procedures to be followed to manage and control the execution of activities required by this PWS. The Contractor shall coordinate with other contractors to integrate information into the PEP and RMP for all contracts; evaluate and recommend improvements; and update the PEP and RMP for the NSO EM Program.

The Contractor shall maintain the EM program life-cycle baseline to assist NSO EM in achieving program, project, and sub-project objectives. This shall include a full description of the scope of work for each work package, including technical and regulatory requirements; detailed schedules for the associated activities, including start and finish dates, logic diagrams, critical path analyses, associated milestones, and potential risk factors; and detailed cost estimates, including labor, hours, organizational burden, indirect, support costs, material, equipment, subcontracts, contingency, escalation, and risk factors. The Contractor shall coordinate with the other contractors supporting the EM Program to consolidate data for all project activities and contracts into the Environmental Management Information System (EMIS) in accordance with DOE direction and evaluate and reconcile the data to ensure quality and accuracy of deliverables.

The Contractor shall process, integrate, track, analyze, and report data for the entire ERP concerning the following areas: project management, project control, life-cycle planning, performance measurement, budget formulation and execution, and financial management.

The Contractor shall prepare annual work authorization documentation to assist NSO in achieving EM objectives. The Contractor shall track and report (including EMIS updates) obligations and costs by individual funding source, and provide support to NSO to ensure that obligations and costs do not exceed available funding levels.

The Contractor shall develop a Performance Baseline (PB) for the activities required by this PWS. The Contractor shall support NSO in integrating PB information from all ERP contracts into the EMIS. The Contractor shall evaluate and recommend improvements, and review, revise, and finalize the EMIS baseline.

The Contractor shall support NSO in planning and managing the Critical Decision (CD) approval process to ensure that the form and content of all documents and actions required for CD approval meet the NSO requirements. The Contractor shall coordinate with other contractors to ensure all requirements for approval are met. The Contractor shall support NSO in integrating and consolidating information and documents to represent the total EM Program. The Contractor shall compile the package, presentation, and any other materials needed to obtain CD approval.

3.2.1.3 Earned Value Management

The Contractor shall comply with applicable Earned Value Management System (EVMS) requirements including the American National Standards Institute (ANSI) EVMS standard (ANSI/EIA-748-1998).

The Contractor shall prepare, process, and implement scope, cost, schedule, and technical change control for life-cycle and execution year baselines.

3.2.2 Program Integration

The Contractor shall prepare regulatory agreement, performance measurement, and progress tracking reports to assist NSO in tracking and measuring progress towards meeting established baselines and milestones.

The Contractor shall prepare comprehensive program, project management, health and safety, quality assurance plans, and required NEPA documentation.

The Contractor shall participate in meetings, conference calls, conferences, and other similar forums relating to program integration responsibilities and shall be available to respond to informal NSO requests for information related to Integrated Project Management.

The Contractor shall provide consolidated data to NSO, as requested, in the form of reports, briefing materials, planning and budgeting submittals, and data calls.

3.2.3 Regulatory and Policy Review

The Contractor shall review and analyze new and current laws, regulatory requirements and policy guidance, and recommend strategy and policy alternatives to assist in managing to achieve program, project, and Sub-Project objectives. The Contractor shall provide technical support in developing, monitoring, and implementing a variety of agreements with Federal, state and local government agencies to assist in managing the NSO EM activities.

3.2.4 Database Management

The Contractor shall provide database services including maintenance of existing NSO, program, and project-specific databases identified in the supporting documents. The databases contain information for the EM baselines, regulatory compliance, and technical data including geological, hydrological, geophysical, and meteorological data. Contractor shall also provide upgrades to existing databases; configuration management of data; maintenance of hardware associated with the systems; maintenance of software agreements associated with the systems; and shall purchase equipment to ensure systems remain compliant and capable of meeting program requirements.

3.2.5 Records Management

The Contractor shall provide records management in accordance with appropriate regulations and applicable DOE directives. The records management activities must be coordinated closely with the various Sub-Project activities since records are an integral part of the FFACO process. The Contractor shall manage these records through all phases of their life cycle including; creation, collection, maintenance, use, and disposition. The Contractor shall provide records management services and maintain responsibility for records in a variety of forms such as, paper, audiovisual, photographs, and electronic media.

3.2.6 Field Characterization/Remediation and Laboratory Analysis

3.2.6.1 The Contractor shall utilize the appropriate field screening techniques to aid the characterization/remediation process. The Contractor shall collect samples of sufficient quality and quantity to meet project DQOs and NSO requirements for compliance with the FFACO, and other state requirements.

3.2.6.2 The Contractor shall validate characterization/remediation data, and verify that it meets the project data quality objectives, and NSO requirements for compliance with the FFACO, and other state requirements.

3.2.6.3 The Contractor shall participate in the DOE Consolidated Audit Program (DOECAP) by using DOECAP audited laboratories. The Contractor shall have several laboratories on call to provide analysis for large sample volumes and specialty analyses. The Contractor shall also provide an auditor to participate on the DOECAP audit team.

3.2.7 Public Involvement Activities

3.2.7.1 The Contractor shall provide integration, coordination, support, and implementation of EM public involvement activities.

The Contractor shall develop and maintain NSO EM communication products such as the Public Involvement Plan (PIP), meeting presentations, videos, etc. The Contractor shall provide a comprehensive array of products and services in support of both internal and external communications as well as stakeholder involvement initiatives. The Contractor shall also develop a broad array of communications products tailored to meet the needs of EM projects to promote public interest in and understanding of DOE EM-related issues, including multimedia presentations, fact sheets, brochures, newsletters, videos, exhibits, posters, displays, graphics, and web-based information products.

The Contractor shall support and coordinate the EM PIP, which includes all stakeholder meetings, topic-specific public workshops, intergovernmental relations activities, and interactions with federal, state, local, and tribal government entities, oversight groups, regulatory agencies, public interest groups, the Nevada business community, other stakeholders and the public. The Contractor shall support community outreach initiatives, which features environmentally-focused informational products at a wide variety of community events throughout the State of Nevada.

The Contractor shall also be responsible for coordinating photo and video documentation of field programs and activities for use in the development of products. Additionally, the Contractor shall assist NSO in preparing briefings and communications materials for both internal and external audiences.

3.3 TRAVEL

The Contractor may be required to travel by Government provided transportation.

4.0 REPORTS, DATA, AND OTHER DELIVERABLES

The Contractor shall prepare and submit reports in accordance with Reporting Requirements Checklist in Section J, Attachment 2.

ACRONYMS

ALARA	As-Low-As Reasonably Achievable
CADD	Corrective Action Decision Document
CAIP	Corrective Action Investigation Plan
CALs	Corrective Action Levels
CAP	Corrective Action Plan
CAS	Corrective Action Sites
CAUs	Corrective Action Units
CR	Closure Report
D&D	Decontamination and Decommission
DOE	Department of Energy
DOECAP	DOE Consolidated Audit Program
DQOs	Data Quality Objectives
DTRA	Defense Threat Reduction Agency
EA	Environmental Assessment
EIS	Environmental Impact Statement
EM	Environmental Management
EMIS	Environmental Management Information System
ERP	Environmental Restoration Project
EVMS	Earned Value Management System
FFACO	Federal Facility Agreement & Consent Order
FMP	Field Management Plan
IDW	Investigation-Derived Waste
LM	Legacy Management
M&O	Management and Operating
NDEP	Nevada Department of Environmental Protection
NEPA	National Environmental Policy Act
NSO	Nevada Site Office
NTS	Nevada Test Site
NTTR	Nevada Test & Training Range
OECM	Office of Engineering and Construction Management
OSTI	Office of Scientific & Technical Information
PB	Performance Baseline
PDF	Portable Document Format
PEP	Project Execution Plan
PIP	Public Involvement Plan
PSG	Program Support Group
PWS	Performance Work Statement
QAPPs	Quality Assurance Project Plans
REOP	Real Estate Operation Permits
RM	Resource Management Plan
RWAP	Radiological Waste Acceptance Plan
SAFER	Streamlined Approach for Environmental Restoration
SSHASPs	Site Specific Health & Safety Plans
TTR	Tonopah Test Range
UGTA	Underground Test Area
WMP	Waste Management Project