

Statement of Work for Review and Evaluation of NIST's Radiation Safety Programs

May 28, 2010 DRAFT

A. BACKGROUND INFORMATION

On March 1, 2010, the Nuclear Regulatory Commission (NRC) issued a Confirmatory Order to the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) as a result of an alternative dispute resolution (ADR) mediation session. Numerous actions to be taken by NIST were identified. One action directs NIST to contract with an independent consultant to develop an assessment plan and to evaluate the effectiveness of NIST's radiation safety programs for NRC licenses SNM-362 and 05-03166-05 using that plan.

B. SCOPE OF WORK

The Contractor shall act as an independent consultant to develop a radiation safety program assessment plan that can be used to assess the effectiveness and adequacy of the programmatic and procedural elements of NIST's radiation safety programs. This assessment plan shall also include the elements necessary to perform an assessment of NIST's compliance with federal regulations and the requirements of NRC licenses SNM-362 and 05-03166-05. Using the plan, the Contractor shall conduct the assessment and provide a final report that discusses the findings and recommendations for radiation safety program improvement.

The assessment plan and resulting assessment shall not include any operations conducted under the NRC Research Reactor TR-5 license or the NRC Exempt Quantity Distribution License Number 19-23545-01E. The records and operations reviewed shall be those conducted in CY 2009 to date for NRC licenses SNM-362 and 05-03166-05.

C. APPLICABLE DOCUMENTS

1. Assessment Areas for License # SNM-362 (Attachment 1)
2. Assessment Areas for License 05-03166-05 (Attachment 2)

D. SPECIFIC REQUIREMENTS, INCLUDING DELIVERABLES AND DELIVERABLE DUE DATES

The Contractor shall provide all support for project oversight, administration and technical execution of this contract. The Contractor shall be responsible for providing any equipment, including Personal Protective Equipment (PPE), required for the performance of this effort. The Contractor is responsible for maintaining accurate records of project activities. The Contractor shall meet the following assessment requirements:

1. Upon award of the contract resulting from this RFP, and to prepare to conduct the assessment, the successful offeror will attend a pre- assessment meeting or conference call to discuss the project's logistics, schedule, communications, and confidentiality. In addition, the contractor will have the opportunity to participate in an observation tour of the NIST facilities and may independently interview any individuals they determine would materially contribute information for the assessment. The date for this on-site visit will be announced upon award of the contract.
2. Within 30 calendar days of contract award, the Contractor shall submit a plan for the assessment of the NIST Radiation Safety Program, including a detailed outline of the contents of the final assessment report.
3. Within 30 Calendar Days of NRC Approval of the Assessment Plan, the Contractor shall commence assessment of NIST Radiation Safety Program using that plan.
 - a) For the SNM-362 and 05-03166-05 NRC licenses, the assessment shall include a review of licensed operations with respect to the Root Cause and Contributing Causes identified in the NRC Special Inspection Report.
 - b) The SNM-362 license assessment shall also review licensed operations with respect to the program areas listed in attachment 1 and all of the areas listed in Appendix J of NUREG 1556, Volume 6, and Appendix M of NUREG 1556, Volume 11.
 - c) The 05-03166-05 assessment license shall also review licensed operations with respect to the program areas listed in attachment 2 and all of the areas listed in Appendix L of NUREG 1556, Volume 7.
4. During the conduct of the NIST Radiation Safety Program assessment, the Contractor shall comply with the requirements of NRC licenses SNM-362 and 05-03166-05 and NIST safety and security policies and procedures.
5. During the course of the Assessment, the consultant shall immediately notify the NIST Radiation Safety Officer of any observed issues that have, or may have radiological significance or regulatory compliance implications. A summary of these notifications shall be included in the written Progress Reports provided every 15 days.

Subsequent to NRC approval of the assessment plan, the Contractor shall submit the deliverables in the table below. Deliverable numbers 3 and 5 shall document all of the program areas assessed and the method of assessment. Deliverable numbers 3, 4, and 5 shall include findings, recommendations, noteworthy practices, and conclusions. A finding is defined as any condition or action that deviates from an applicable regulation, standard or procedure or adversely impacts the quality or reliability of any aspect of the radiation-safety program. A recommendation is defined as a suggestion that, when implemented, could improve the performance and effectiveness of a task, process or program. A noteworthy practice is defined as a practice that leads to the improvement in the effectiveness or efficiency of the radiation-safety program.

Number	Description	Date Due
1	During the on-site assessments in Gaithersburg and Boulder, conduct daily out briefings to the Technical Information Contact and/or designees on the results of each day's assessment.	Daily After Commencement of the On-Site Assessments.
2	Written progress reports to the Technical Information Contact on the degree of completion of each section of the assessment report.	Every 15 Calendar Days After Contract Award.
3	Draft Report documenting all program areas assessed, the method of assessment, and any findings, recommendations, noteworthy practices, and conclusions provided to the Technical Information Contact. Thirty copies of the report shall be provided as a <u>confidential draft</u> document in hard copy format and four copies in electronic form.	Within 30 Calendar Days After Completion of the Assessment.
4	Summary Report briefing to the IRSC	Between 14 and 21 Calendar Days of Delivery of the Draft Report
5	Final Report to the Technical Information Contact and the NRC Send a copy of the final report to the Director, Division of Nuclear Materials Safety, U.S. NRC, Region IV. Provide forty bound paper copies and 4 electronic versions of the <u>final</u> report to NIST.	Within 120 Calendar Days of NRC Approval of Contractor Assessment Plan and No Later Than 14 Calendar Days of Receipt of NIST's Comments on the Draft Report
6	Electronic copies of all records of project activities provided to the NIST Health Physics Office.	Within 7 Days of Delivery of Final Report

Standards for Acceptance of Deliverables: The Technical Information Contact (TIC) will provide comments on Deliverable number 3 within 14 calendar days of receipt of Deliverable number 4.

E. PERIOD OF PERFORMANCE AND PLACE OF PERFORMANCE

The period of performance shall be 270 calendar days after award of this requirement.

The place of performance of the assessment will be both NIST Gaithersburg and Boulder at the addresses below.

Gaithersburg Campus
National Institute of Standards and Technology
100 Bureau Drive
Gaithersburg, MD 20899

Boulder Campus
325 Broadway
Boulder, CO 80305-3328

F. GOVERNMENT-FURNISHED PROPERTY, DATA AND/OR INFORMATION

All property, data and information provided by the Government in the performance of this task remains the property of the Government and shall be surrendered to the government upon completion or termination of this requirement. Likewise, all deliverables generated under this requirement remain the property of the Government.

Upon contract award the Government will provide the following:

1. NRC licenses SNM-362 (current and renewal submitted May 2010) and 05-03166-05 (current)
2. IRSC Charter
3. NIST Administrative Manual Sub-Chapter 12.03
4. Health Physics Instructions (Gaithersburg)
5. Radiation Safety Instructions (Boulder)
6. Radiation Safety Manual (NIST Lab Safety Manual, Chapter 8)
7. Health Physics Annual Reports 2008, 2009
8. Health Physics Documents and Files
9. NRC Special Inspection Report dated 11/2/2009

The Contractor will be provided workspace at each location during on-site activities. The Contractor will be provided a computer, phone, and access to a printer. All other material needed to support the performance of the effort resulting from this SOW shall be provided by the successful offeror. The contractor shall also have access to NIST laboratories for purposes of this audit, and conference room as available for discussions.

All Government furnished materials will be returned to the NIST Health Physics Office.

G. RISK ASSESSMENT

The HSPD-12 Security Risk Level assigned to this contract is TBD risk.

H. PERFORMANCE REQUIREMENTS

The Contractor shall comply with all performance requirements set forth in Sections C and D and deliverable due dates listed in Section E of this requirement. The TIC shall

monitor the Contractor's performance for compliance with performance standards, deliverable due dates, and technical validity and innovation of recommended improvements to the NIST Radiation Safety program.

I. TRAVEL

Travel will be refunded in accordance with the Federal Travel Regulation (FTR), and will not exceed the maximum per diem rate (meals and lodging), and transportation costs, in effect at the time of travel.

J. DELIVERABLES AND PAYMENT SCHEDULE

The Contractor may invoice the Government upon receipt from the TIC that a given deliverable is of acceptable quality and that all other assigned tasks are up to date.

K. CONTRACTOR MINIMUM QUALIFICATIONS

The Contractor (the firm or its officers) must have at least five (5) years providing radiation program evaluation and assessment services. In addition, the Contractor shall identify the personnel to be assigned to the NIST Radiation Safety Program review. The lead consultant and individual managing on-site activities must have a minimum of 10 years directly applicable experience in developing and implementing radiation safety programs, conducting compliance reviews, and working within the Environmental Health and Safety (EHS) field. The lead auditor must have previous experience managing and directing a Radiation Safety Program within a major research facility and/or university. At least one auditor shall be certified by the American Board of Health Physics.

L. GENERAL INFORMATION

This work does not involve confidential or proprietary data. The certification and accreditation requirements of Clause 1352.239-73 do not apply and a security accreditation package is not required.

Misconduct or Disruption of Services: At any time during the performance period of this contract, the Contracting Officer, Technical Information Contact (TIC) or Operating Unit (OU) Director may request the Contractor employee be immediately removed from the premises if they determine, at their unilateral discretion, that any of the Contractor employees' actions or impaired state to be a disruption to the workforce.

Safety: The Contractor's employees shall be responsible for knowing and complying with all installation safety prevention regulations. Such regulations include, but are not limited to, general safety, fire prevention, and waste disposal.

Patent Rights: The Government retains a Government use license to all inventions arising from this work.

Security: NIST is a restricted campus. An identification badge is required for access for entry into buildings and also is shown to the armed Security Police when entering the campus.

Identification Badges: Contractor employees shall comply with NIST identification and access requirements. The Contractor is responsible for absences due to expired identification and access documents. Each Contractor employee shall wear a visible identification badge provided by the NIST Security Office. The badge must show the full name, title, and if required by NIST, the words "Contractor" in front. The Contractor employee shall turn in the NIST identification badge and vehicle pass to the TIC or Contracting Officer (CO) upon termination of their services under this contract.

Vehicle Registration: All Contractor employees must register their vehicles with the NIST Security Office to gain access to the campus. A valid driver's license, Government-furnished civilian ID, proof of insurance and current registration must be presented to the NIST Security Office, at which time a NIST vehicle pass will be issued. The pass shall be displayed on the vehicle's rear view mirror in accordance with instructions. The Contractor employee shall follow NIST procedures for removal and turn-in of the vehicle pass upon termination of services under this contract.

Media Inquiries: The Contractor employee shall not respond to any media inquiries. Any inquiries from the media shall be immediately relayed to the TIC and/or CO. There shall be no interviews, comments, or any other response without the knowledge and approval of the NIST Director.

ATTACHMENT 1: LICENSE # SNM-362 ASSESSMENT AREAS

The SNM-362 NRC license assessment shall include the Licensed Operations and Program Specific Elements listed below.

A. Licensed Operations

1. Assess the adequacy of licensed operations with respect to the Root Cause, Contributing Causes, and Causal Factors identified in section 4 of enclosure 1 to the NRC Special Inspection Report.
2. Assess the adequacy of licensed operations with respect to the program areas listed in Appendix J of NUREG 1556, Volume 6, and Appendix M of NUREG 1556, Volume 11.

B. Program Specific Elements

1. Radiation Protection Procedures (Health Physics Instructions)

Assess the adequacy of all procedures and the effectiveness of the implementation of these operating and emergency instructions.

2. Research and Source Usage Protocols

Assess that NIST radiological hazard analyses adequately address the hazards of the radiation source term considering all of the activities (as described in the research protocol) being conducted with that source with respect to safety significance and regulatory compliance.

Assess the mechanism for ensuring that appropriate procedures and engineering controls have been verified to be in place prior to the commencement of research utilizing licensed material.

3. Instruments and Equipment

Assess the adequacy of the portable survey instruments used in radiological surveys and the knowledge, skills, and ability of personnel using these instruments.

Assess the adequacy of the portable survey instruments calibration program.

Assess the adequacy of the laboratory instrumentation used in radioanalysis and the knowledge, skills, and ability of HP staff using these instruments.

Assess the adequacy of the laboratory instrumentation quality control program.

4. Radiation Dosimetry Program

Assess the adequacy of procedures associated with dosimetry operations, including issuance/use of external dosimetry, assessment of internal dose, and evaluation of and dose assessment for radiological incidents.

Assess the adequacy of procedural requirements and the technical basis for determining when external and internal dosimetry is required.

Assess the adequacy of methods in place for evaluating, controlling, and acting on potential internal exposures.

Assess the adequacy of engineering and process controls in place for external and internal dose control and minimization.

5. Radiation Safety Training Program

Verify that individuals whose assigned duties involve working with ionizing radiation sources have knowledge commensurate with operational duties.

Verify that workers are informed of the pertinent provisions of NRC regulations and the license, and the requirement to notify management of conditions observed that may, if not corrected, result in safety concerns and/or violation of NRC requirements.

Assess the adequacy of radiation safety awareness training provided to ancillary workers (such as janitorial or clerical staff), contract workers, and visitors.

Assess the adequacy of the refresher training to cover regulation changes and/or radiation safety program changes that affect the workers.

Assess the adequacy of the content of the training program to determine that it is commensurate with the individual's assigned duties including those who are involved with the transportation of radioactive materials.

6. Material Control and Accountability

Assess the adequacy of the process for approving source acquisition and facility utilization.

Assess the adequacy of the methods used to demonstrate compliance with license possession limits and for accountability of sources.

Assess the adequacy of the implementation of leak test procedures.

Assess the adequacy of compliance with applicable Nuclear Materials Management and Safeguards System (NMMSS) reporting requirements.

Assess the adequacy of procedures to control materials that have been made radioactive by use of NIST particle accelerators (including materials in the target and associated activation products in the accelerator along with its shielding).

7. Posting, Labeling, and Control

Assess the adequacy of access control to high radiation or very high radiation areas.

Assess the adequacy of security for radioactive materials.

8. Surveys

Assess the adequacy of surveys that demonstrate compliance with public dose limits.

Determine that surveys are conducted using approved procedures, that the survey results are appropriately reviewed, and that appropriate corrective actions, if any, have been taken.

Assess the adequacy of individuals' knowledge in using survey instrumentation and in conducting a proper radiation survey.

Determine that procedural requirements for surveys are adequate to demonstrate compliance with regulations and pertinent license requirements.

Assess the adequacy of the program with respect to 10 CFR Part 36 compliance activities.

Assess the adequacy of the emergency response program/capabilities for radiological emergencies.

9. As Low As Is Reasonably Achievable (ALARA)

Determine that high level management has made a commitment to minimize exposure to workers and has clearly defined procedures and policies to implement the ALARA philosophy.

Ascertain that the radiation protection staff has been given authority to make certain that ALARA policies are carried out and those workers have been adequately trained to understand the ALARA philosophy and how it should be implemented at their work places.

10. Radioactive Material Shipping

Determine that the shippers of radioactive materials are knowledgeable of the shipping regulations and whether shipping personnel demonstrate adequate skills to accomplish the package preparation requirements for public transport.

11. Radioactive Waste Management

Assess the adequacy of the facility, procedures, documentation, and other controls for the processing and disposal of radioactive waste.

12. Radioeffluents

Assess the adequacy of the procedures and controls for liquid and gaseous radioeffluents.

ATTACHMENT 2: LICENSE # 05-03166-05 ASSESSMENT AREAS

The 05-03166-05 NRC license assessment shall include the Licensed Operations and Program Specific Elements listed below.

A. Licensed Operations

1. Assess the adequacy of licensed operations with respect to the Root Cause, Contributing Causes, and Causal Factors identified in section 4 of enclosure 1 to the NRC Special Inspection Report.
2. Assess the adequacy of licensed operations with respect to the program areas listed in Appendix L of NUREG 1556, Volume 7.

B. Program Specific Elements

1. Radiation Protection Procedures (Radiation Safety Instructions)

Assess the adequacy of all procedures and the effectiveness of the implementation of these operating and emergency instructions.

2. Research and Source Usage Protocols

Assess that NIST radiological hazard analyses adequately address the hazards of the radiation source term considering all of the activities (as described in the research protocol) being conducted with that source with respect to safety significance and regulatory compliance.

Assess the mechanism for ensuring that appropriate procedures and engineering controls have been verified to be in place prior to the commencement of research utilizing licensed material.

3. Instruments and Equipment

Assess the adequacy of the portable survey instruments used in radiological surveys and the knowledge, skills, and ability of personnel using these instruments.

Assess the adequacy of the portable survey instruments calibration program.

Assess the adequacy of the laboratory instrumentation used in radioanalysis and the knowledge, skills, and ability of HP staff using these instruments.

Assess the adequacy of the laboratory instrumentation quality control program.

4. Radiation Dosimetry Program

Assess the adequacy of procedures associated with dosimetry operations, including issuance/use of external dosimetry, assessment of internal dose, and

evaluation of and dose assessment for radiological incidents.

Assess the adequacy of procedural requirements and the technical basis for determining when external and internal dosimetry is required.

Assess the adequacy of methods in place for evaluating, controlling, and acting on potential internal exposures.

Assess the adequacy of engineering and process controls in place for external and internal dose control and minimization.

5. Radiation Safety Training Program

Verify that individuals whose assigned duties involve working with ionizing radiation sources have knowledge commensurate with operational duties.

Verify that workers are informed of the pertinent provisions of NRC regulations and the license, and the requirement to notify management of conditions observed that may, if not corrected, result in safety concerns and/or violation of NRC requirements.

Assess the adequacy of radiation safety awareness training provided to ancillary workers (such as janitorial or clerical staff), contract workers, and visitors.

Assess the adequacy of the refresher training to cover regulation changes and/or radiation safety program changes that affect the workers.

Assess the adequacy of the content of the training program to determine that it is commensurate with the individual's assigned duties including those who are involved with the transportation of radioactive materials.

6. Material Control and Accountability

Assess the adequacy of the process for approving source acquisition and facility utilization.

Assess the adequacy of the methods used to demonstrate compliance with license possession limits and for accountability of sources.

Assess the adequacy of the implementation of leak test procedures.

7. Posting, Labeling, and Control

Assess the adequacy of access control to posted areas.

Assess the adequacy of security for radioactive materials.

8. Surveys

Assess the adequacy of surveys that demonstrate compliance with public dose

limits.

Determine that surveys are conducted using approved procedures, that the survey results are appropriately reviewed, and that appropriate corrective actions, if any, have been taken.

Assess the adequacy of individuals' knowledge in using survey instrumentation and in conducting a proper radiation survey.

Determine that procedural requirements for surveys are adequate to demonstrate compliance with regulations and pertinent license requirements.

Assess the adequacy of the emergency response program/capabilities for radiological emergencies.

9. As Low As Is Reasonably Achievable (ALARA)

Determine that high level management has made a commitment to minimize exposure to workers and has clearly defined procedures and policies to implement the ALARA philosophy.

Ascertain that the radiation protection staff has been given authority to make certain that ALARA policies are carried out and those workers have been adequately trained to understand the ALARA philosophy and how it should be implemented at their work places.

10. Radioactive Material Shipping

Determine that the shippers of radioactive materials are knowledgeable of the shipping regulations and whether shipping personnel demonstrate adequate skills to accomplish the package preparation requirements for public transport.

11. Radioactive Waste Management

Assess the adequacy of the facility, procedures, documentation, and other controls for the processing and disposal of radioactive waste.

12. Radioeffluents

Assess the adequacy of the procedures and controls for liquid and gaseous radioeffluents.