INTERAGENCY AGREEMENT	1. IAA NO. 31310019N0001	PAGE 1 OF 59

2. ORDER NO.	3. REQUISITION NO.	4. SOLICITATION NO.

5. EFFECTIVE DATE	6. AWARD DATE	7. PERIOD OF PERFORMANCE
03/18/2019	03/13/2019	03/18/2019 TO 03/17/2024

8. SERVICING AGENCY
PACIFIC NORTHWEST NAT LAB
ALC:
DUNS: 000000000 +4:
US DEPARTMENT OF ENERGY
PACIFIC NORTHWEST SITE OFFICE
PO BOX 350 MS K9-42
RICHLAND WA 99352

POC [redacted]
TELEPHONE NO. [redacted]

9. DELIVER TO
MARGARET AUDRAIN
US NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REGULATORY RESEARCH
11555 ROCKVILLE PIKE
ROCKVILLE MD 20852

10. REQUESTING AGENCY
ACQUISITION MANAGEMENT DIVISION
ALC: 31000001/TAS: 31X0200.000
DUNS: 040535809 +4:
US NUCLEAR REGULATORY COMMISSION
ONE WHITE FLINT NORTH
11555 ROCKVILLE PIKE
ROCKVILLE MD 20852-2738

POC Sandra Nesmith
TELEPHONE NO. 301-415-6836

11. INVOICE OFFICE
US NUCLEAR REGULATORY COMMISSION
ONE WHITE FLINT NORTH
11555 ROCKVILLE PIKE
MAILSTOP O3-E17A
ROCKVILLE MD 20852-2738

12. ISSUING OFFICE
US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
MAIL STOP TWFN-07B20M
WASHINGTON DC 20555-0001

13. LEGISLATIVE AUTHORITY
Energy Reorganization Act of 1974

14. PROJECT ID

15. PROJECT TITLE
TECHNICAL ASSISTANCE IN SUPPORT OF AGENCY PROGRAMS

16. ACCOUNTING DATA
No funding obligated

17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	Ref. ZEROREQ-RES-19-0113 TASK ORDERING AGREEMENT TITLE: Technical Assistance in Support of Agency Programs The United States Nuclear Regulatory Commission (NRC) and Pacific Northwest National Laboratory (PNNL) hereby enter into this Enterprise-Wide Task Ordering Agreement, No. 31310019N0001, for the project entitled "Technical Assistance in Support of Agency Programs." Continued ...				

23. PAYMENT PROVISIONS	24. TOTAL AMOUNT
	$0.00

25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING)		26a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING)	
		Monique B. Williams	
25b. NAME AND TITLE	**25c. DATE**	**26b. CONTRACTING OFFICER**	**26c. DATE**
		MONIQUE B. WILLIAMS	4/2/19

Funding will be obligated on the awarded Task Orders issued off this Task Ordering Agreement (TOA). Task Ordering procedures are found in Section 8.0 in the Statement of Work entitled "Procedures for Placing Task Orders Under this Project."

The Maximum Ordering Limitation (MOL) for products and services ordered, delivered and accepted under this agreement during the five-year period of performance is $74,143,000.00. The Contracting Officer may place orders with the DOE Laboratory during the agreement period provided the aggregate amount of such orders does not exceed the MOL.

The ordering period for this contract shall commence on March 18, 2019 and will expire on March 17, 2024. Any orders issued during this period shall be completed within the time specified in the order, unless otherwise specified herein. All task orders are subject to the terms and conditions of this task ordering agreement. In the event of conflict between a task order and this task ordering agreement, the task ordering agreement shall control.

The following documents are hereby made part of this Agreement:

Attachment No. 1: Statement of Work
Attachment No. 2: DOE Standard Terms and Conditions

This agreement is entered into pursuant to the authority of the Energy Reorganization Act of 1974, as amended (42 U.S.C 5801 et seq.). This work will be performed in accordance with the NRC/DOE Memorandum of Understanding dated November 24, 1998. To the best of our knowledge, the work requested will not place the DOE and its contractor in direct competition with the domestic private sector.

NRC CONTACTS:

Contracting Officer Representative (COR):
Margaret Audrain, 301-415-2133,
Continued ...

margaret.audrian@nrc.gov

Alternate COR: Tammie Rivera, 301-415-2376, tammie.rivera@nrc.gov

PNNL CONTACT:

[redacted]

Master IAA: MASTER IAA

ATTACHMENT 1

PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)
ENTERPRISE WIDE AGREEMENT (EWA) NUMBER 31310019N0001

STATEMENT OF WORK

TITLE: Technical Assistance in Support of Agency Programs

1.0 BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) regulates the licensing, construction, and operation of commercial nuclear power and non-power facilities. The Office of New Reactors (NRO) and Office of Nuclear Reactor Regulation (NRR) with support from the Office of Nuclear Security and Incident Response (NSIR) serves the public interest by enabling the safe, secure, and environmentally responsible use of nuclear power in meeting the nation's energy and research needs. The Office of Nuclear Material Safety and Safeguards (NMSS) is responsible for regulating activities which provide for the safe and secure production of nuclear fuel used in commercial nuclear reactors (uranium recovery, conversion, and enrichment activities; fuel fabrication); and development; the safe storage, transportation and disposal of high-level radioactive waste and spent nuclear fuel; and the transportation of radioactive materials regulated under the Atomic Energy Act. NMSS ensures safety and security of nuclear materials by implementing a regulatory program involving activities including licensing, inspection, assessment of licensee performance, events analysis, enforcement, and identification and resolution of generic issues. NMSS develops, documents, and implements policies and procedures needed for drafting effective, coherent, consistent, and understandable regulations. NMSS issues advanced notices of potential rulemakings, proposed rulemakings, direct final rules, draft NUREGs, and other guidance and regulatory documents for public review and comment. The Office of Nuclear Regulatory Research (RES) furthers the regulatory mission of the NRC by providing technical advice, technical tools, and information for identifying and resolving safety issues, making regulatory decisions, and promulgating regulations and guidance. The activities for reactors includes, but are not limited to: reviews of applications for reactor design certifications (DCs), early site permits (ESP), combined license (COL) applications, environmental reviews, reactor pre-application activities, limited work authorizations (LWA), construction permits (CP), operating licenses (OL), license actions (i.e., amendments, relief requests, and exemptions), oversight, decommissioning and staff infrastructure development. The activities for materials and waste facilities include, but are not limited to: reviews of license applications, license renewals, license amendments, exemption requests, decommissioning, and environmental reviews associated with these licensing and decommissioning actions.

NRC anticipates the continued review of COL applications and operating and renewal reactor licensing actions over the next several years as well as a variety of applications for small modular reactors (SMRs) and other advanced reactor designs (SMRs and advanced non-light-water reactors [non-LWRs]). Due to the volume of new and advanced reactor applications as well as licensing actions for operating reactors commercial, contractor resources are needed to provide technical assistance to the agency. Similarly, NSIR seeks technical assistance in support of security matters including, but not limited to: physical security, cyber security, access

authorization, fitness for duty, materials control and accounting security, transportation security, independent spent fuel storage installation security and emergency preparedness. NRC also anticipates the continued review of materials and waste facilities license applications, renewals, amendments, exemption requests, and decommissioning activities over the next years.

NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition,” provides guidance to NRC staff reviewers for performing safety reviews of applications to construct or operate nuclear power plants and the review of applications to approve standard designs and sites for nuclear power plants. The principal purpose of the Standard Review Plan (SRP) is to assure the quality and uniformity of staff safety reviews of LWR facilities. It is also the intent of the SRP to make information about regulatory matters widely available and to improve communication between the NRC, the nuclear power industry, and interested members of the public, thereby increasing understanding of the review process.

NUREG-1800,”The Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants” (SRP-LR), provides guidance to NRC staff reviewers in NRR. These reviewers perform safety reviews of applications to renew nuclear power plant licenses in accordance with Title 10 of the *Code of Federal Regulations* (CFR) Part 54. Consistent with NUREG-0800 the principal purposes of the SRP-LR are to ensure the quality and uniformity of staff reviews and to present a well-defined base from which to evaluate applicant programs and activities for the period of extended operation. In addition, there are a variety of NRC regulatory guides available to support the review process.

An Environmental Safety Review Plan (NUREG-1555), “Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan [ESRP]” provides guidance to NRC staff reviewers for performing environmental reviews of applications related to nuclear power plants. The ESRPs are companions to regulatory guides that address siting and environmental issues. As with NUREG-0800 and NUREG-1800 the purpose of the ESRP is to assure the quality and uniformity of environmental reviews.

NUREG-1748, “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs,” provides guidance to NRC staff when conducting its environmental reviews and associated consultation efforts for materials and waste licensing and regulatory actions. NUREG-1748 also ensures the quality and uniformity of environmental reviews.

Title 10 of the Code of Federal Regulations (10 CFR) Part 20, Standards for Protection Against Radiation establishes standards for protection against ionizing radiation resulting from activities conducted under licenses issued by the NRC. Its purpose is to control the receipt, possession, use, transfer, and disposal of licensed material by any licensee in such a manner that the total dose to an individual (including doses resulting from licensed and unlicensed radioactive material and from radiation sources other than background radiation) does not exceed the standards for protection against radiation.

A decommissioning guidance documents (NUREG-1757), “Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees” provides guidance to NRC staff

reviewers for the decommissioning process for material licensees, the characterization, survey, and determination of radiological criteria and financial assurance, recordkeeping and timeliness. This guidance document takes a risk-informed, performance-based approach to the information needed to support an application for decommissioning a materials license and compliance with the radiological criteria for license termination in 10 CFR Part 20, Subpart E.

2.0 OBJECTIVES

PNNL shall provide qualified, competent, and fully trained personnel to perform the required technical assistance and support services under this contract. PNNL shall not determine NRC policy nor make regulatory decisions.

3.0 SCOPE

PNNL shall provide technical assistance and support in a wide range of technical and scientific disciplines, in accomplishing work-related activities aimed at ensuring the overall safety, security, and adequacy of nuclear power plant design, construction, operations, environmental protection, materials and waste safety licensing, oversight, environmental reviews, and associated regulatory activities.

The scope of work involves placement of task orders. Specific performance standards are delineated in Section 6.0, Performance Standards.

3.1 PRE-APPLICATION

Technical assistance for review of design-specific and other documentation reports, (e.g., technical reports, “white papers,” preliminary system designs or features, programmatic plans) in support of DC, ESP, COL, CP, OL for new and advanced (both light-water and non-light-water designs) reactors, materials and waste licensing and regulatory support actions, and associated environmental review activities. These assistance requirements may include topical report review; acceptance review; advanced non-LWR regulatory framework development; COL application template development, Construction Inspection Procedure program interface and support; NUREG-0800, 10 CFR Parts 50 and/or 52 rulemaking and other rulemaking, as necessary; and interactions with stakeholders through communication plans and public meetings.

3.2 LICENSING SUPPORT

Licensing support consist of the review of numerous interrelated licensing activities associated with operating reactors, new large LWRs, advanced reactors, and materials and waste licensing actions.

These technical assistance activities include:

Review of Design Certifications by supporting an acceptance review, a technical review, and a rulemaking to certify the design. This will require reviewing design information with Inspections, Tests, Analyses and Acceptance Criteria (ITAAC), postulated site parameters, interface requirements, resolution of severe accident issues, and testing requirements.
Review of documentation in support of Design Approval activities. Technical assistance includes performance of acceptance reviews, technical reviews, reviews of final design information with ITAAC, postulated site parameters, interface requirements, resolution of severe accident issues, testing requirements, as necessary, for the NRC to certify the design; and other related activities. DA submittals to be reviewed may include either a complete design or major portions of a complete design.

Review of documentation in support of Manufacturing License activities. Assistance includes performance of acceptance reviews, technical reviews, rulemaking support, review of Applicant organizational and technical qualifications, programmatic plans, reviews of preliminary and final safety analysis reports, reviews necessary to verify that manufacturing activities comply with design requirements; and other related activities.

Technical assistance for review of the safety and environmental portion of new reactor licensing applications. These reviews include preparation of environmental impact statements (EISs), interfacing with applicants, coordination with state and federal agencies, and supporting public meetings and site audits. Also, the contractor shall provide technical assistance to support the safety and environmental portion of the mandatory hearing on new reactor licensing; site safety reviews; emergency preparedness reviews; evacuation time estimates; environmental protection reviews; environmental assessments for DCs and other new reactor rulemaking activities.

Technical assistance for review of the environmental portion of Small Modular Reactor (SMR) licensing applications. These include reviews of applicant preliminary and final environmental reports, development of environmental assessments, assistance in preparation of EIS, interfacing with applicants, coordination with state and federal agencies, and supporting public meetings and site audits. Also, PNNL shall provide technical support for the environmental portion of the mandatory hearing on SMR licensing and other related rulemaking activities as-needed.

Technical assistance for review of documentation in support of Limited Work Authorization/Construction Permit activities under 10 CFR Part 50. This technical assistance includes reviews of applicant organizational, technical, and financial qualifications, construction and fuel cycle cost estimates, programmatic plans, preliminary safety analysis reports, plans for redress of activities performed under the LWA; and other related activities.

Technical assistance for review of documentation in support of LWA/ESP activities under 10 CFR Part 52. These assistance requirements include reviews of applicant organizational, technical, and financial qualifications, programmatic plans, preliminary safety analysis reports,

site safety and security analysis reports, plans for redress of activities performed under the LWA; and other related activities.

Technical assistance for review of documentation in support of Operating License activities. These assistance requirements may include reviews of applicant organizational, technical, and financial qualifications, operating cost estimates, design acceptability, operational programs, site safety and security, final/updated safety analysis reports, design verification, construction permit and other related activities. Technical assistance for review of documentation submitted by licensees in response to the NRC's post-Fukushima requirements, such as post-Fukushima orders, flooding and seismic hazard reevaluations.

Technical assistance for review of COLs for new and advanced reactors (including non-LWRS). The COL may reference an ESP, a standard DC, both, or neither. PNNL shall provide technical assistance to support the necessary reviews to resolve all safety, security and environmental issues to allow the NRC to authorize construction and conditional operation including ITAAC and license amendments. PNNL shall also review financial qualifications, decommissioning funding assurances, need for power, capitalization, support design acceptance criteria (DAC), emergency preparedness and security requirements for the COL.

Review of licensing topical reports (LTRs) that support new fuel safety analysis codes and methodologies for both existing reactors and new reactors. Technical assistance is also provided for review of LTRs that support new fuel and cladding materials and designs including evolutionary changes to existing designs, new designs including accident tolerant fuel and small modular reactor fuel, and designs for advanced reactors. Technical review of these LTRs makes significant use of fuel performance software developed at PNNL (See Section 3.6, subsection C) as well as extensive fuel performance databases compiled and maintained at PNNL (See Section 3.6 subsection B).

Technical assistance for review of the safety, security, and environmental portions of operating reactors licensing, license renewal, or topical report applications. The review may consist of a portion, or the entire contents of an application. PNNL shall support the required reviews to resolve all safety, security and/or environmental issues to allow the NRC to authorize approval of the operating reactor licensing or license renewal request. The tasks may involve: an acceptance review of the application; preparation of input for a safety evaluation, an environmental assessment, and/or an EIS, including RAIs; coordination with state and federal government agencies and Indian Nations; support of public meetings, participation in site audits, support for Advisory Committee on Reactor Safeguards (ACRS) presentations; and other associated tasks.

Review of the environmental portion of materials and waste licensing applications. These reviews include preparation of environmental impact statements (EISs) and environmental assessments/finding of no significant impact (EA/FONSI), consultations efforts under the Endangered Species Act and National Historic Preservation Act, interfacing with license applicants or licensees, coordination with state and federal agencies, and supporting public meetings and site audits. Also, the contractor shall support the environmental portion of the contested or mandatory hearings.

Technical assistance to aid development and implementation of policies, processes, and guidance documents associated with review and approval of licensing and license renewal applications, as well as pre-application activities, staff and management interactions with industry, internal reporting requirements, and interfacing with stakeholders. Technical assistance in: 1) establishing decision criteria to reach a safety, security, or environmental finding for non-LWR technologies; and 2) identify and resolve gaps in the current regulatory framework associated with non-LWR reactors and the associated fuel cycle.

Additional Guidance and/or References: PNNL shall utilize 10 CFR Parts 50, 51, 52, 54 and associated applicable 10 CFR internal references as necessary, to support the safety, security and environmental reviews. PNNL shall use NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-1437 "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," NUREG-1555 "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan," NUREG-1800 "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants, " NUREG-1801 "Generic Aging Lessons Learned (GALL) Report," and the following NRR Office Instructions (LIC 101 – License Amendment Review Procedures, LIC 102 – Relief Request Reviews, LIC 103 – Exemption from NRR Regulations, LIC 109 – Acceptance Review Procedures, LIC 201 – NRR Support to the Hearing Process, LIC 203 – Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues, LIC – 600 Review of Technical Specifications Task Force Travelers and Creation of CLIIP Model Applications), as necessary, to support the safety and environmental reviews. Also, any applicable Design Specific Review Standards (DSRS) provided by the NRC (the DSRS will be unique for each SMR design; and performs the reference function provided by NUREG 0800 in previous safety reviews) and other applicable NRC regulatory guidance developed to support review of advanced non-LWRS. PNNL shall also use NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs," to support the environmental reviews for materials and waste licensing applications.

3.3 OVERSIGHT

PNNL shall provide technical assistance for review of numerous interrelated oversight activities supporting operating reactors, new large LWRs, and advanced reactors (including non-LWRs) during all phases of the lifecycle from construction through operation. The activities associated with oversight include: quality assurance, vendor inspections, training, plant inspections, assessment and enforcement, operator licensing, preoperational/start-up testing, nondestructive examination, materials evaluation and testing and ITAAC.

Additional Guidance and/or References: PNNL shall utilize the appropriate Inspection Manual Chapters (IMCs) to support any inspection activities.

3.4 REGULATORY INFRASTRUCTURE

PNNL shall provide technical assistance for review of the required infrastructure, including NRC guidance documents, to support the DC, COL, ESP, operating reactor applications, and materials and waste licensing and regulatory review process as well as cybersecurity requirements. This may require technical assistance to the staff in updating office instructions, NUREG-0800, NUREG-1555, 10 CFR Part 50 and Part 52, communication plans, reviewing industry documentation, developing templates and licensing procedures, and supporting public meetings. In addition, the staff may require assistance in development of regulatory framework elements (e.g., review plans and regulatory guidance) to support efficient and timely review of future advanced non-LWR facility applications.

3.5 LITIGATION SUPPORT

PNNL shall provide written documentation of work performed during technical reviews; providing expert testimony and reports based upon research performed for NRC; reviewing and analyzing, on behalf of NRC, the expert testimony/reports of other parties in the litigation.

3.6 UNIQUE CAPABILTIES

In conjunction with the scope of work above, the capabilities provided below are identified as functions provided by PNNL.

Prior to placement of a Task Order, the NRC Contracting Officer Representative (COR) will be required to complete an Enterprise Wide Agreement Source Selection Justification (EWA SSJ). This justification document will be used to verify that the technical requirements are within scope and identify a Unique Capability provided by PNNL. The NRC COR will ensure and certify that "Based on my knowledge of technical requirements and the market research conducted, the work requested will not place DOE and its contractors in direct competition with the domestic private sector."

The NRC COR will be responsible for conducting Market Research to determine the capability required is unique and can only be satisfied by PNNL, which will be documented in the EWA Source Selection Justification and approved by a Contracting Officer.

A. UNIQUE TECHNICAL DISCIPLINES OR COMBINATION OF DISCIPLINES

A unique combination of technical skills and highly specialized experience is necessary to conclude on a reasonable basis that the NRC's minimum need can only be satisfied by PNNL.

(A minimum of a Bachelor's Degree in Engineering/Science or equivalent experience and at least ten years direct nuclear power related experience in each of the disciplines is required.)

A.1 Specialized General Engineering and Scientific Disciplines

Alternative Review
Aquatic Ecologist
Benefits Assessment
Chemical Systems
Climate Science
Computer Science
Containment Systems
Corrosion Science
Demography
Economics
Electrical Systems
Environmental Justice
Environmental Science
Fire Protection
Fuel System Design
Geology
Geotechnical
Health Physicist
Historic Review
Human Factors
Hydrology and Water Resources
Hydrometeorology
Hydropower
Land Use Review
Materials Licensing
Mechanical Systems
Metallurgy & Materials Science
Meteorology and Air Quality
Neutronics
Nondestructive Examination
Nuclear Systems
Radiological and Non-radiological Health
Radiological Engineering and Waste Management
Reactor Design
Reactor Fuel and Fuel Cycle
Reactor Physics
Reactor Systems
Risk and Reliability
Seismic Analysis Including Soil Structure Interactions
Seismology
Severe Accident Progression and Mitigation Alternatives
Site Hazards

Socio-Economics
Sociology
Specialized Nuclear Power Plant Related Systems, Structures, or Components Expertise
Statistical Analysis
Structural Mechanics & Analysis
Structural Seismic Systems
Terrestrial Ecologist
Thermal Hydraulics and Fluid Dynamics Reactor Systems
Transportation
Waste Management
Welding

A.2 Specialized Nuclear Engineering Technical Areas

ADVANCED REACTOR TECHNOLOGY
Advanced Reactor Design
Advanced Reactor Environmental Considerations
Advanced Reactor Fuels Manufacturing
Advanced Reactor Regulatory Infrastructure
Advanced Reactor Software Codes
Advanced Reactor Technical Codes and Standards
DSRS for SMRs
Molten Salt Reactor (MSR) Technology Development

CYBER SECURITY
Cyber Analytics
Cyber Security
Cyber Security Risk Information Sharing Program (CRISP)
Cyber Resiliency Theory, Critical Infrastructure Resiliency Analysis and Modeling
Security Supervisory Control and Data Acquisition Architectures and Communications

DECOMMISSIONING
Decommissioning
Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)
Nuclear Power Plant Financial Assurance for Radiological Decommissioning

ENVIRONMENTAL
Accident analysis and statistical methods
Air quality
Alternative Analysis – Energy, sites and systems
ARCON96 (RG 1.194), XOQDOQ (RG 1.111) HABIT (RG 1.78) ALOHA
Atmospheric dispersion codes PAVAN (RG 1.145)
Cooling tower plume model SACTI
Develop Design Basis Flood Event

Environmental Assessment Regulatory Review Team Home (EARRTH)
Environmental Comment Response Database
Environmental Reviews for Operating Reactor License Renewal, modeling related to high burnup fuel transportation
Environmental Reviews including licensing, license renewal, guidance development and litigation support
Flood Hazard Analysis Deterministic and Probabilistic
Historic and Cultural Resources, NHPA Section 106 compliance, and NHPA Section 106 consultation, tribal involvement/consultation
Hydrological numerical modeling software, oceanography, flooding
Post-Fukushima activities (hydrology expertise, flooding assessments, modeling human factors for operators in natural hazards)
Tech basis for NRC guidance documents flood hazard
VSP Code

FUEL
Accident Analysis and Statistical Methods
Accident Tolerant Fuel
Advanced cladding development and testing
Assist NRC w/ guidance on use of legacy data within metallic fuels irradiation database
Decommissioning (EA & EIS, cost estimates, radiological characterization, dose assessment of residual contamination, risk-informed cleanup prioritization, AERMOD, Air Dispersion Modeling)
Dry Storage System Thermal and Structural Analysis
Extrusion methods for metal fuel fabrication
FFTF test applications (advanced fuel concepts)
Fuel Assembly & Rod Designs
Fuel Mechanical Design
Modeling and simulation (effects of radiation on fuel behavior, impact of material defects and fab tolerances on failure assessments)
Nuclear Fuel Performance Modeling
Post-irradiation examination
Radiological Dose/Human Health/Radiological Safety (GALE, RASCAL, GENII)
Repair of Fuel Canister Systems
Spent fuel storage and transportation (storage systems, cask thermal and structural modeling/testing, post-irradiation examination, SNF removal logistics)
Spent fuel recycling (solvent extraction processes, proliferation resistance, off-gas capture/treatment, vitrification)
Transportation Shock and Vibration Analysis of Conveyance Systems and the Fuel within the Systems
Transportation & Uranium Fuel Cycle
Used/Spent Fuel Dry Storage and Transportation System Analysis

MATERIALS CHARACTERIZATION/DEGRADATION/CORROSION
Accelerated aging
Advanced materials evaluation and modeling capabilities
Additive Manufacturing
Finite element analysis
Harvesting NPP components
Irradiated Materials Testing of Both Irradiated and Unirradiated Materials
Materials Characterization and Property Measurements
Materials Compositional Analysis
Materials science (stress corrosion cracking, cable aging, radiation tolerant materials, component failure analysis & fractography, material degradation)
Peening effectiveness evaluations
PWSCC research with specialized mockups including PWSCC initiation and crack growth rate testing, and statistical analysis of PWSCC crack initiation
Thermo-Mechanical Processing

MISCELLANEOUS
10 CFR Part 26 Fitness for Duty Program Support
Advanced Modeling Techniques
Climate Change/Extreme Weather Events
Distribution of codes
Drug and Alcohol Testing Technologies
Economics, Cost Benefit, Need for Power
Emergency Preparedness, Emergency Management, Evacuation Time Estimates
Fitness for Duty, Fatigue Training and Management, Work Hour Controls
Human Factors and Environmental Factors
Instrumentation & Controls
New Reactor Flooding Hazard Assessments
Radiological Code Development and Maintenance
Risk-informed Licensing Applications (e.g., NFPA 805 LARs, Risk-Informed Technical Specifications, Risk-Informed Categorization of SSCs)
Structured Hazards Assessment and Seismic Hazards

NONDESTRUCTIVE EXAMINATION & IN-SERVICE INSPECTION
Extensive inventory of nuclear power plant mockups and materials
Human Factors for NDE
Inservice inspections (ISI)
Knowledge of ASME Code, 10 CFR 50.55a, NRC regulations and guidance, NPP Systems and Components, Risk Informed ISI regulations and associated ASME Standards
Mockup design
NDE techniques (ultrasonic, phased array ultrasonic, eddy current, radiography, visual examination, etc)
Nondestructive Examination (NDE) modeling and simulation laboratory
Statistical Analysis for NDE

NUCLEAR REACTOR/PLANT ANALYSIS
Accident Consequence Analysis (GENII, MACCS2, RASCAL)
Accidents (design and severe accident)
Design Certification Reviews
Financial assurance for decommissioning
Fuel Performance
Licensing
Nuclear power plant operations
Nuclear power plant systems
Reactor Operations
Reactor Oversight Process (inspection support and training of inspectors)
OPERATING REACTOR SUPPORT
Technical Support for relief request review
Topical report review support

PRA/RISK ANALYSIS
PRA methodology (elicitation techniques, SDP, cybersecurity, passive components, flooding risk, seismic, fire, tornados/wind)
Risk-informed reviews including LARS to implement 10 CFR 50.48 (Fire Protection) and 10 CFR 50.69 (Risk Informed Categorization of SSCs)

SENSORS
Sensors and Instrumentation

B. SPECIALIZED FACILITIES OR EQUIPMENT

The Specialized facilities or equipment identified below, may be necessary when the effort requires their use to successfully complete the project.

Accelerated Aging Laboratories

- High Exposure Facility gamma irradiation with thermal control
- Advanced protocol ovens for controlled thermal aging

Materials Testing Laboratories

- Large capacity autoclaves with precision environmental simulation capabilities
- Online automated load control
- Crack growth rate detection and monitoring
- In-situ dynamic mechanical analysis
- Defect formation and the effect on material behavior
- Material response to extreme environments

Materials Analysis Laboratories

- Metallography and optical microscopy laboratory
- Scanning electron microscopy and focused ion beam machining laboratory
- Transmission electron microscopy laboratory

- Atom probe tomography laboratory
- Polymer Aging, Characterization, and Testing laboratory
- Thermal analysis
- Molecular content and structure analysis

Non-destructive examination laboratories

- Ultrasonic Laboratory with extensive phased-array ultrasonic capabilities
- High energy X-ray laboratory
- NDE modeling and simulation laboratory
- Eddy current laboratory

Radiochemical Processing Laboratory (RPL)

- Advance the cleanup of radiological and hazardous wastes
- Processing and disposal of nuclear fuels
- Addressing National Security
- The production and delivery of medical isotopes
- Post-Irradiation Examination (PIE) of fuels and materials

C. USE OF PATENTS, COPYRIGHTS, PROPRIETARY INFORMATION OR SECRET PROCESSES

The use of patents, copyrights, proprietary information, or secret processes may be required when the following apply:

(i) One or a combination of patents, copyrights, proprietary information, or secret processes are essential to the successful completion of the effort, or
(ii) The requirement cannot be revised to permit competition and open disclosure in the commercial sector.

Atmospheric Dispersion Codes

- **PAVAN** — The PAVAN code, an atmospheric dispersion model that implements the guidance contained in RG 1.145, uses joint frequency distributions (JFDs) of wind direction, wind speed, and atmospheric stability class to estimate X/Q values for specific averaging time periods at specified distances. RG 1.145 provides guidance on calculating atmospheric dispersion (X-/Q) estimates for the assessment of the consequences of design basis accidents for nuclear power stations. Such assessments are required under 10 CFR 100 and 10 CFR 52. The model is based on a straight-line Gaussian model that assumes the release rate is constant for the entire period of the release.
- **ARCON96** — ARCON96 is a computer code used to calculate atmospheric relative concentrations (X/Q) in support of control room habitability assessments required by 10 CFR Part 50, Appendix A, General Design Criterion 19. RG 1.194 provides guidance on determining (X /Q) values in support of design basis control room radiological habitability assessments at nuclear power plants. ARCON96 is based on a straight-line Gaussian

model that assumes the release rate is constant for the entire period of the release. The model can account for both plume meander under low wind speed conditions and the plume dispersion due to building wakes.

- **XOQDOQ** — XOQDOQ is a computer code used to evaluate routine or anticipated, intermittent releases of radionuclides at nuclear power plants. These assessments are required by 10 CFR Part 50 and 10 CFR Part 100. RG 1.111 provides guidance estimating atmospheric transport and dispersion of gaseous effluents in routine releases from LWRs Relative atmospheric dispersion (X/Q) and deposition factors (D/Q) are calculated for 22 specific distances out to 50 miles from the site in each directional sector. XOQDOQ is based on a straight-line Gaussian model. The model accounts for variation in the location of release points, additional plume dispersion due to building wakes, plume depletion via dry deposition and radioactive decay, and adjustments to consider non-straight trajectories.

Decommissioning Code

- **Visual Sample Plan (VSP) Code** — The VSP code, developed by PNNL, couples site, building, and sample location visualization capabilities with optimal sampling design and statistical analysis strategies. Development of VSP originated in the mid-1990s in concurrence with development of the Data Quality Objectives (DQO) process at the U.S. Environmental Protection Agency (EPA) (EPA 2006). Since its initial development, VSP has been funded for development by multiple agencies, including adding support for MARSSIM survey design for the NARC Office of Research. VSP is used on sites worldwide to optimize resources by determining the number and location of samples to meet objectives, thereby minimizing sampling efforts and reducing costs for users.

Emergency Response and Emergency Consequence Planning Codes

- **Radiologic Assessment System for Consequence Analysis (RASCAL)** — The RASCAL code consists of three consequence models: STDose, FMDose, and DecayCalc. STDose estimates: (1) source terms for radiological accidents; (2) atmospheric transport, diffusion, and deposition of effluents from the accidents; and (3) doses from exposure to the effluents. FMDose calculates doses from environmental measurements of radioactivity in the air and on the ground. DecayCalc calculates activity of radionuclides present at a future time following decay and in-growth.
- **MELCOR Accident Consequence Code Systems (MACCS2)** — MACCS was developed at Sandia National Laboratories for the NRC to simulate the impact of severe accidents at nuclear power plants on the surrounding environment. The second generation code, MACCS2, provides detailed analyses of accidents by calculating a radiological release's atmospheric transport and environmental dispersion. Designed primarily as a probabilistic risk assessment (PRA) tool, MACCS2 can sample annual weather data and generate statistics that describe the effects of weather variations at the time of a release. MACCS2 analyses results include land contamination areas and levels of contamination, doses to individuals and populations, health effects and risks, and economic losses resulting from an accident.
- **Areal Locations of Hazardous Atmospheres (ALOHA)** — The ALOHA code is a hazard modeling program which is used to plan for and respond to chemical emergencies. ALOHA allows the user to enter details about a real or potential chemical

release, and then the model will generate threat zone estimates for various types of hazards. ALOHA can model toxic gas clouds, flammable gas clouds, BLEVEs (Boiling Liquid Expanding Vapor Explosions), jet fires, pool fires, and vapor cloud explosions. The threat zone estimates are shown on a grid in ALOHA, and they can also be plotted on maps within standard mapping software (e.g., MARPLOT®, Esri's ArcMap, Google Earth, and Google Maps).

Environmental Codes

- **GENII** — The GENII Environmental Dosimetry System, is used to ensure compliance with environmental regulations, is a set of computer programs that can be used to estimate radionuclide concentrations in the environment and dose/risk to humans and biota from acute or chronic exposures, releases to surface water or atmosphere, and initial contamination conditions. The models available in GENII include: atmospheric transport, surface water transport, waste/soil redistribution, terrestrial uptake, human exposure, dose/risk, and uncertainty/sensitivity.
- **Subsurface Transport Over Multiple Phase (STOMP)** — STOMP is a sequential numerical simulator for modeling multi-fluid flow and transport through geologic media. The simulator was specifically designed to provide scientists and engineers from varied disciplines with multidimensional analysis capabilities for modeling subsurface flow and transport phenomena. Developed with the support of the U.S. Department of Energy, Office of Environmental Restoration and Waste Management, the simulator's modeling capabilities address a variety of subsurface environments, including nonisothermal conditions, fractured media, multiple-phase systems, nonwetting fluid entrapment, soil freezing conditions, nonaqueous phase liquids, first-order chemical reactions, radioactive decay, solute transport, dense brines, nonequilibrium dissolution, and surfactant-enhanced dissolution and mobilization of organics.

Reactor Fuel Analysis Codes

- **Fuel Rod Analysis Package Constant (FRAPCON) Code** — The FRAPCON code is a LWR fuel thermal mechanical model for analysis of steady-state fuel performance. This code has been maintained under contract at PNNL for RES since 1997. PNNL has continuously developed new models, improved existing models, and expanded the assessment database so that FRAPCON is demonstrated to provide best best-estimate predictions of fuel thermal mechanical performance. FRAPCON is used as an audit tool by the NRC and PNNL contractors during review and approval of applicant fuel thermal mechanical licensing topical reports.
- **Fuel Rod Analysis Program Transient (FRAPTRAN) Code** — The FRAPTRAN code is an LWR fuel thermal mechanical model for analysis of transient fuel performance. This code has been maintained under contract at PNNL for RES since 2001. PNNL has continuously developed new models, improved existing models, and expanded the assessment database so that FRAPTRAN is demonstrated to provide best best-estimate predictions of fuel thermal mechanical performance during transient accident scenarios such as loss-of-coolant accident and reactivity-initiated accident. FRAPTRAN is used as an audit tool by the NRC and PNNL contractors during review and approval of applicant fuel thermal mechanical licensing topical reports and to assist in updating RGs and standard review plans related to accident analysis.

- **Fuel Analysis under Steady-state and Transients (FAST) Code** — The FAST code is an LWR fuel thermal mechanical model for analysis of steady-state and transient fuel performance. This code is the latest evolution of FRAPCON and FRAPTRAN and combines the steady-state and transient capabilities from these codes so that base irradiation and hypothetical accidents may be modeled in a single code. This code has also been updated to include material properties and performance models for accident tolerant fuels and for advanced reactors including sodium cooled fast reactors. FAST is used as an audit tool by the NRC and PNNL contractors during review and approval of applicant fuel thermal mechanical licensing topical reports.

Reactor Licensing Codes

- **Habitability (HABIT) Code** — The HABIT code is designed to assist in the evaluation of control room habitability in the event of accidental spills of toxic chemicals consistent with RG 1.78. It consists of a number of program modules and produces files containing tabular output that can be printed, viewed, or imported into spreadsheet programs for further applications. HABIT also implements a heavy-gas dispersion model, unifies input screen of the external transport (EXTRAN) code, the Dense Gas Dispersion (DEGADIS) code, the SLAB code, and incorporates Bitter Mc-Quaid Criteria calculation to determine which model needs to run and provide plotting the concentration versus time outputs.
- **Gaseous and Liquid Effluent (GALE) Code** — The GALE code is used to calculate the gaseous and liquid effluent release from LWRs including boiling-water reactors (BWR) and pressurized-water reactors (PWRs). GALE has been maintained under contract at PNNL for RES since 2008. Under cooperation with the American Nuclear Society, PNNL has led the development of the updated standard ANS18.1 for the radioactive source term for normal operation of LWRs and updated GALE to use this new standard. PNNL also developed a new graphical user interface for GALE to assist users in running GALE. GALE is used as an audit tool by the NRC during review and approval of new reactor applications.

D. ACCRUED KNOWLEDGE

Accrued knowledge enables timely placement of work with a servicing agency or DOE when another source cannot realistically perform the necessary work without expending significant time and effort to understand previous project work and achieve results that are essential to the successful completion of the current project phase. In these cases, the agency may not have the time or financial resources to permit another source to undertake the current phase of the requirement.

- **EARRTH – Environmental Assessment Regulatory Review Team Home**

  EARRTH is a web-based, knowledge management/collaboration site developed by PNNL for NRC projects that contains highly customized tools, guidance material, and knowledge management information to assist in the execution and archive of NRC projects. This collaboration site is not open to the public.

- **Financial Assurance for Decommissioning**

  PNNL originated the NRC's minimum decommissioning fund formula in 1988 and has maintained the formula to the present date. PNNL has also created algorithms that are critical to the accurate completion of updates performed in the area of financial assurance for decommissioning. PNNL was selected by the NRC to perform a subsequent study in 2010 that validated the adequacy of the current formula in light of changes in technology, waste disposal, and decommissioning experience. The accumulated experience and knowledge that reside at PNNL ensure that the lab is unique in its capability to support updates of the NRC minimum decommissioning fund formula and biannual updates of NUREG-1307. Any other contractor would incur significant expense and delay in order to produce a complete product, and acquire the understanding of the calculations, methods, and assumptions underlying NUREG-1307 as well as the surety methods in 10 CFR 50.75.

4.0 WORK REQUIREMENTS

The task orders will be placed by the NRC Contracting Officer (CO). PNNL shall submit a technical and cost proposal in response to the task order Request for Proposal. PNNL shall perform each task order in accordance with the final project plan approved by the COR.

PNNL shall follow a quality control plan which outlines the procedures and system they will use for document version control, technical input tracking, change management, and technical and editorial reviews. PNNL shall organize, track, and manage changes in a structured, systematic, and transparent manner, throughout the review and production of each deliverable. Further information regarding the staffing plan and project plan are provided in Attachments 1 and 2.

5.0 PERSONNEL QUALIFICATIONS

All personnel performing work under this agreement shall have pertinent technical experience by discipline and technical area, including PNNL Project Managers and team members. Experience in these disciplines and technical areas must be related to the design, construction, operation, maintenance, security, inspection and environmental review of nuclear power plants. Emphasis is placed on experience that is related to safety, security and environmental impact where judgments are made as to whether applicable codes and federal regulations are being, or have been, implemented and/or followed. It is the responsibility of PNNL to propose technical staff, employees, subcontractors or specialists who have the required educational background, experience, security clearance and/or access authorization or combination thereof, to meet both the technical and regulatory objectives of the work specified in the task order statement of work (SOW). The number of personnel required will vary during the course of the agreement. The availability of qualified PNNL personnel who shall possess the minimum experience, educational background, and combination thereof, will be negotiated on each task order.

PNNL proposes [redacted] to provide the following program management activities:

(1) ensuring DOE and PNNL program management requirements are met;
(2) oversight responsibility for all task orders placed under this agreement;
(3) oversight responsibility for the efforts and access authorization of any PNNL team that is assembled for each task order placed under any resultant contract;
(4) perform other project management duties that are necessary for the successful completion of task orders and overall contract requirements;
(5) ensure the quality and schedule of deliverables so that all information and data are accurate and complete in accordance with the SOW for each task order;
(6) interface closely with the COR and CO;
(7) oversight responsibility of monthly letter status report (MLSR) submissions and resolution of any issues in which NRC expectations are not being met.

6.0 PERFORMANCE STANDARDS

PNNL performance for each task order will be evaluated based on meeting the performance standard established for each task order and shall be documented by the NRC COR on the performance evaluation form (Attachment 3). It should be noted that award of subsequent task orders will be based on the assigned Laboratory's ability to meet the schedule, milestones, and deliverable requirements of the preceding task orders.

The deliverables required under this agreement shall conform to the standards contained, or referenced, in the SOW for each task order. The Performance Requirements Summary (Attachment 4) outlines the performance requirements, deliverables, acceptable standards, surveillance method, and incentives and/or deductions applicable to the assigned task). Individual task orders may modify the performance requirements depending on the task order scope of work.

7.0 DELIVERABLES

7.1 Monthly Letter Status Report (MLSR)

In accordance with MD 11.7, PNNL shall submit a Monthly Letter Status Report (MLSR) by the 20th day of each month to:

- NRC CO and Task Order COR

With copies to the following:

- Office of Administration/Division of Contracts (electronic copy only) to ContractsPOT.Resource@nrc.gov
- Department of Treasury (electronic copy only) to NRC@fiscal.treasury.gov
- Others as defined in the task order statement of work

The MLSR shall be submitted electronically. See Attachment 5 for the content and format of the Monthly Letter Status Report. Each MLSR submission shall include a projected six-month spending plan of the total estimated costs, at a minimum.

7.2 Technical Reporting Requirements

Unless otherwise specified in a task order, PNNL shall provide all deliverables as draft products. The COR will review all draft deliverables (and coordinate any internal NRC staff review, if needed) and provide comments back to the contractor. PNNL shall revise the draft deliverable based on the comments provided by the COR, and then deliver the final version of the deliverable. When mutually agreed upon between PNNL and the COR, PNNL shall submit preliminary or partial drafts to help gauge PNNL's understanding of the particular work requirement.

PNNL shall provide deliverables in electronic formats. The electronic format shall be provided in MS Word (unless specified otherwise in the Task Order) or other word processing software approved by the COR. For each deliverable, PNNL shall provide an electronic copy to the COR and CO, unless specified otherwise in the task order and the COR would like a hard copy. The schedule for deliverables shall be contained in the approved project plan for the task order effort.

The types, quantities, and distribution of the reports will be specified in each task order and shall be submitted by PNNL. Typically, the reports will involve:

Technical Evaluation Report (TER): Requests for this type of report are made when a formal report is required but the distribution is limited. As appropriate, the draft and final TERs will summarize the work performed, results attained, findings, conclusions and recommendations.

NUREG/CR Report: This is the most formal PNNL report and is requested when there is significant and important compilation of information and wide distribution of the report as a stand-alone document is required and when the staff believes the document will be referenced frequently. NUREG/CR reports require the completion/execution of an NRC form 426A, to be completed by PNNL and sent to the Technical Monitor for processing. For further information refer to Management Directive 3.7, "NUREG-Series Publications"

Trip Report: In general, every trip for which results are not directly incorporated into either of the above types of reports should be documented in a short, concise trip report. Trips that are used as an input to an inspection report need not have a trip report (see the paragraph below).

Technical Letter Reports: All other reports and documents and other information (e.g., RAI, computer software, inspection report inputs) due to be delivered by PNNL under the contract that do not fall under the other types of reports listed above are transmitted under the cover of a "Technical Letter Report."

The transmittal letter and cover page of each report or deliverable should reference the following:

- Agreement and Task Order Number
- Project Title and Facility Name
- Cost Center
- Cost Activity Code (CAC) / Enterprise Project Number (EPID) / Docket number (if applicable)
- Inspections Report (if applicable)

Certain deliverables may need to be prepared in NUREG or NUREG/CR format. If draft reports are required, the number of drafts expected will be stated in each task order. If proprietary or other sensitive information will be included in the report, the report will identify the proprietary or other sensitive information and specify the means of handling this information.

The decision, determination, or direction by the NRC that information possessed, formulated or produced by PNNL constitutes sensitive unclassified or safeguards information is solely within the authority and discretion of the NRC. In performing work under this agreement, PNNL shall clearly mark sensitive unclassified and safeguards information, to include for example, "OUO-Allegation Information" or "OUO-Security Related Information" on any reports, documents, designs, data, materials, and written information, as directed by the NRC. In addition to marking the information as directed by the NRC, PNNL shall use the applicable NRC cover sheet (e.g., NRC Form 461, "Safeguards Information") in maintaining these records and documents. The PNNL shall ensure that sensitive unclassified and safeguards information is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. PNNL shall comply with the requirements to mark, maintain, and protect all information, including documents, summaries, reports, data, designs, and materials in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954, as amended, its implementing regulations (10 CFR 73.21), Sensitive Unclassified and Non-Safeguards Information policies, and NRC Management Directive and Handbook 12.6. Some reports containing sensitive information will require the contractor to access NRC's Safeguards Information Local Area Network and Electronic Safe (SLES). The contractor shall coordinate with the COR for access to SLES.

Results of this work, other than pre-decisional, proprietary or sensitive information, may be published in the open literature provided the speech, article, or paper has been reviewed and approved by the COR and by the appropriate NRC official prior to its presentation or submission in accordance with procedures established in NRC Management Directives 3.10, "NRC Contractor Unclassified Papers, Journal Articles and Press or Other Media Releases on Regulatory and Technical Subjects." All requests for approval will be sent to the NRC CO with a copy sent to the task order COR. It is recognized that the NRC requires as a minimum that the paper include the statement, "Work Supported by the U.S. Nuclear Regulatory Commission." In addition, PNNL will coordinate with the CO and COR to determine whether any additional caveats or disclaimers are necessary.

8.0 PROCEDURES FOR PLACING TASK ORDERS UNDER THIS PROJECT

Task order request for proposal (TORFP): When the need for a task order arises, the NRC CO will send a TORFP which may include the following as appropriate:

(1) Scope of work/meetings/travel and deliverables;
(2) Reporting requirements;
(3) Period of performance - place of performance;
(4) Applicable special provisions;
(5) Technical skills required; and
(6) Estimated level of effort.

Task Order Technical Proposal: By the date specified in the TORFP, PNNL shall deliver to the CO a written or verbal (as specified in the TORFP technical proposal submittal instructions) technical proposal that provides a staffing plan, and project plan for performance of the effort. The staffing and project plan shall be submitted in the format (or similar format) of Attachments 1 and 2 of the SOW.

Cost Proposal: The PNNL's cost proposal for each task order must be fully supported by cost and pricing data adequate to establish the reasonableness of the proposed amounts. When PNNL's estimated cost for the proposed task order exceeds $100,000 and the period of performance exceeds six months, PNNL shall be required to submit a PNNL Spending Plan (LSP) as part of its cost proposal. The TORFP indicates if a LSP is required.

For each task order request for proposal, PNNL shall identify all key personnel and the proposed number of staff hours that will be committed to complete the work specified in the task order. PNNL shall include the resumes for all professional personnel proposed to be utilized in the performance of any resulting task order, unless otherwise available as part of the basic contract. PNNL shall electronically submit the task order proposal to the CO.

Task Order Award: After reaching agreement on the approach and estimated cost of the task order with PNNL, the CO will issue the task order. PNNL shall perform all work described in task orders issued by the CO. Task orders include the following:

(1) SOW/meetings/travel and deliverables;
(2) Reporting requirements;
(3) Period of performance;
(4) Key personnel;
(5) Applicable special provisions; and
(6) Total task order amount including any fixed fee.

Within five work days of receipt of the task order, PNNL shall acknowledge receipt and acceptance of the task order and return it to the CO.

Accelerated Task Order Procedures: In case of urgency, the NRC may request that PNNL immediately begin work before a definitive task order under an existing DOE approved task ordering agreement is negotiated in accordance with MD 11.7. When this accelerated

procedure is requested by the NRC, DOE agrees to begin promptly negotiating the terms of the task order under the existing agreement. Once agreement is reached, a task order will be issued by the COR in accordance with the procedure described above.

Task Order Modification: In the event that the need for a work scope or cost ceiling modification is required after acceptance of the task order, the CO or PNNL requesting the change shall initiate contact with the other to reach agreement. Upon completion of negotiations, a modification to the task order that incorporates the agreed upon changes will be issued by the CO.

9.0 MEETINGS AND TRAVEL

Each task order will specify and propose any required meetings or travel to nuclear power plant sites throughout the United States; NRC offices in Rockville, Maryland; NRC regional offices; and any other location required for performance of the work detailed in the task order statement of work. Prior to any trip taken during the period of performance under this agreement that is within the work scope limits, PNNL shall obtain written approval from the COR or CO if the travel exceeds the total number of person-trips negotiated.

10.0 NRC FURNISHED MATERIALS

Any reports, documents, equipment, and other materials required by PNNL to perform the work will be stated in the NRC Furnished Materials Section of the task order. In general, the task order COR will provide those NRC documents related to the task order that is readily available. PNNL staff will identify any additional NRC documentation needed and the COR will determine whether it will be provided by NRC or obtained directly by PNNL from Agency-wide Document Access Management System (ADAMS), the NRC Public Document Room, or the NRC public web site.

11.0 ORGANIZATIONAL CONFLICT OF INTEREST INFORMATION

Upon submitting a proposal to the NRC, each DOE Laboratory shall acknowledge the disclosure requirements of: 1) the NRC Organizational Conflict of Interest clauses, Management Directive 11.7, Section 2.3.2.12 and Section 2.33; and 2) the provisions of the Memorandum of Understanding (MOU) between DOE and NRC, dated 1998 (which states, in part, that DOE recognizes that Section 170A of the Atomic Energy Act of 1954, as amended, requires that NRC be provided with disclosures on potential conflicts when NRC obtains technical, consulting, research and other supporting services). DOE further recognizes that the assignment of NRC work to DOE laboratories must satisfy NRC's organizational conflict of interest (OCOI) standards.

Therefore, each DOE Laboratory, in its proposal to NRC (which will be incorporated into an interagency agreement between NRC and DOE), is required to make an assertion per #1 or #2 of Part A below. If the DOE Laboratory selects #1, then, it must also fill out the accompanying Part B; whereby the DOE Laboratory must, again, make an assertion by answering each of the five (5) NRC OCOI provisions per the NRC Acquisition Regulation (NRCAR).

PART A:

"In accordance with PNNL role in, and responsibility for, disclosing its relationships with organizations which conduct business in the same and/or similar technical area as described by the present and/or ongoing NRC project's scope of work, and in accordance with the NRC clause as stated herein, PNNL hereby asserts that it has examined its relationships with all such organizations, and has also examined its current and future/planned work, and where appropriate, its past work (generally for the previous five years), for DOE and other organizations, and PNNL states the following:

1) PNNL hereby discloses the following relationships Not Applicable (NA) that may give rise to a potential OCOI. (DOE Laboratory must answer the questions in Part B below);

Or

2) PNNL to the best of its knowledge and belief, asserts that it has no current work, planned work, and where appropriate, past work for DOE and others (to mean - organizations in the same and/or similar technical area as the present and/or ongoing NRC project scope of work); and PNNL hereby asserts that it is not aware of any same/similar technical work that would give rise to any potential OCOI as defined in the Atomic Energy Act of 1954, as amended, and in the NRC/DOE MOU.

Signed: _____

PART B:

In accordance with PNNL role/responsibility regarding OCOI disclosure, as stated in Part A, above PNNL further discloses, to the best of its knowledge and belief, that:

1) PNNL and/or any of its organizational affiliates* as defined in Part A above [does not] provide advice and recommendations to the NRC in the same technical area (e.g., fire protection, probable risk assessment, seismic, vulnerability analysis, fracture mechanics) where it is also providing consulting assistance to any organization regulated by NRC. If PNNL "does" - the PNNL hereby discloses such organization(s) in Part A above;

2) PNNL and/or any of its organizational affiliates as defined in Part A above [does not] provide advice and recommendations to the NRC on the same or similar matter (e.g., particular licensing amendment, particular EIS, particular high-level waste repository site) on which it is also providing assistance to any organization regulated by NRC. If PNNL "does" - the PNNL hereby discloses such organization(s) in Part A above;

3) PNNL and/or any of its organizational affiliates as defined in Part A above [will not] be required to evaluate its own products or services, or has been substantially involved in the development or marketing of the products or services of another entity. If PNNL "does" - the PNNL hereby discloses such organization(s) in Part A above;

4) PNNL and/or any of its organizational affiliates as defined in Part A above [does not] have a conflicting role, given the award of the present and/or ongoing NRC project, in which its judgment or the judgment of any of its organizations may be biased in relation to its work for NRC. If PNNL "does" – the PNNL hereby discloses such conflicting role(s) with organization(s) in Part A above;

5) PNNL and/or any of its organizational affiliates as defined in Part A above [are not] soliciting or performing concurrent work at an applicant or licensee site, while performing work in the same/similar technical area for NRC at the same site. If PNNL "does" – then the PNNL hereby discloses such organization(s) in Part A above."

Signed: _____

*Organization affiliate – Business concerns which are affiliates (related) to each other when either directly or indirectly, one concern or individual controls or has the power to control another, or when a third party (i.e., parent firm) has the power to control both.

** Section 170A of The Atomic Energy Act of 1954, as amended, uses the term “person” to mean any entity – e.g., sole proprietorship, partnership, joint venture, corporation; university; limited partnership, subchapter S corporation; limited liability company, etc.

The OCOI disclosure requirement extends to any subcontractors the PNNL intends to use under the agreement.

12.0 LICENSE FEE

Plant specific licensing actions are fee recoverable. Each task order will state whether or not the work is license fee recoverable.

13.0 SECURITY REQUIREMENTS

Work performed under this agreement may have specific security requirements. Individual task orders will define the security requirements necessary for the scope of work being performed.

14.0 ATTACHMENTS:

1. Staffing Plan Format
2. Project Plan Format
3. Performance Evaluation Plan
4. Performance Requirements Summary
5. Monthly Letter Status Report Requirements

Attachment 1

Staffing Plan Format

The staffing plan shall identify all proposed organizational resources to be dedicated to the task order effort. The plan shall clearly indicate the capabilities of the proposed personnel to perform the effort described in the statement of work for the specific task order effort. The following (or similar) format shall be used to represent the staffing plan. The staffing plan shall include the name, discipline/expertise, project role, and estimated hours of all personnel proposed to accomplish the effort, as well as, all proposed consultants and subcontract personnel. For all personnel not initially proposed in the base agreement, provide a resume.

The Laboratory is to identify any current/former NRC employees (list name, title, and date individual left NRC and provide a brief description of the individual's role under this proposal). If there are no current/former NRC employees involved, a negative statement is required.

Staffing Plan - Task Order

Name	Expertise	Project Role (task)	Title	Est. Hours

Attachment 2

Project Plan Format

The project plan shall clearly describe the Laboratory's planned technical and management approach to performing the effort described in the statement of work for the specific task order. The Laboratory shall describe its proposed technical approach by task or phase, identifying for each, the schedule, milestones, and deliverables (in Microsoft Project[7] or similar format); the methodology, innovations, and quality control measures to be used; problems and risks anticipated, as well as your risk mitigation plans. The Laboratory shall also describe the management and administrative controls your organization will employ to meet the cost, performance, and schedule requirements of the effort. Once established, and approved by the COR, the project management plan, inclusive of schedule, shall form the basis for accomplishment of the task order and shall be used as a means to assess performance.

Project Plan Approach
A team of experts (e.g., Key Personnel) as identified in the attached staffing plan will be assigned to this effort. The effort will be conducted according to the following process and schedule. Innovations to be used to ensure the schedule is met consist of use of Microsoft Project[7] or similar format.

Task Name	Duration	Projected Start Date	Projected Finish Date
Authorization to Proceed - Staff assignments finalized			
Meeting with NRC for review of Project Plan			
Finalized Project Plan submitted (Deliverable)			
Task 1 - AAA			
Task 2 - BBB Report Completed (Deliverable)			
Internal Performance assessment completed (mid-project)			
Lessons learned documented			
Review NRC completed Performance Assessment and provide comments & lessons learned			

Quality Control — All deliverable products will receive peer review by an independent experienced editor and technical reviewer prior to being submitted to NRC. A NUREG template will be used by all reviewers.

Risk Mitigation	The schedule for this effort is critical to completion of the entire review and update program. As such, a web-based database will be used to accumulate and share updated reports. Staff will meet with all stakeholders to discuss changes prior to incorporation of the changes into the final document to eliminate numerous iterations.

Attachment 3

Performance Evaluation Plan

Agreement No. Task Order #: Rating Period: MM/DD/YYYY to MM/DD/YYYY

COR: (Contractor) PM:

Assessment of Task Order Performance

Category	Rating			
I. Technical Performance	Excellent	Satisfactory	Unsatisfactory	N/A
Appropriate Standard Review Plan (SRP)/Environmental Impact Statements (EIS) Sections/Licensing Documents/Amendments Reviewed				
Incorporation of Comments				
II. Task Management	Excellent	Satisfactory	Unsatisfactory	N/A
Timeliness (Schedule)				
III. Budget Management	Excellent	Satisfactory	Unsatisfactory	N/A
Budget Compliance				

Note: A written justification is required, and must be attached, for any rating of Unsatisfactory; however, comments may still be provided with a Satisfactory rating if there are issues of concern.

COR
I certify that the above evaluation is accurate.

Comment:

Signature Date

Rating Scale and Subcategory Definition

Appropriate Documents Reviewed and Technical Input Submitted

- Excellent - Reviewed all appropriate documents and provided input as specified in the Task Order. Interfaced with NRC staff as required to collect their inputs, and make recommendations in a clear and concise manner.

- Satisfactory - Addressed all appropriate documents as specified in the Task Order. Communication with the NRC staff was infrequent (less than weekly) but adequate.

- Unsatisfactory - Did not address 2 or more appropriate input requirements as specified in the Task Order. Communications with NRC staff was infrequent and inadequate.

Budget

- Excellent - Performed all work specified in the Task Order at or within the initial budget.

- Satisfactory - Performed all identified tasks within the NRC adjusted budget that was adjusted for issues outside the Contractor's control. Contractor identified budget and schedule issues promptly to NRC to allow adequate time to evaluate the situation and revise the budget as needed.

- Unsatisfactory - Failed to complete work specified in the Task Order within budget. Did not adequately keep NRC advised of issues that could affect the task budget or schedule.

Incorporation of Comments

- Excellent - Communicated effectively and in a timely manner with NRC to incorporate NRC comments promptly and correctly. Resolved or incorporated major comments in one iteration. General and editorial comments were resolved quickly and ahead of schedule. Questions and potential issues were resolved in a highly professional manner.

- Satisfactory - Communicated adequately with the NRC staff to collect and incorporate comments. One or more rounds of comment resolution were required to resolve major issues. General and editorial comments were resolved within the established scheduled time period.

- Unsatisfactory - Communication between the contractor and NRC was inadequate to identify and incorporate comments in a timely manner. Several iterations of comment resolution were insufficient to incorporate the NRC comments. Major issue resolution

was not pursued appropriately, and general and editorial comments were not adequately addressed, which caused a schedule delay.

Timeliness

- Excellent - Completed all tasks on or ahead of schedule
- Satisfactory - Completed all tasks at or ahead of the schedule revised due to circumstances beyond the contractor’s control.
- Unsatisfactory - Exceeded the agreed upon (or revised) schedule by greater than 2 business days.

Attachment 4

Performance Requirements Summary

Performance Requirements and Deliverables	Standard	Method of Review	Incentive/Deduction
Management Controls	A Project Plan shall be established consistent with the NRC licensing review schedule. The format for this Project Plan is provided in Attachment 2. Once established, and approved by the COR, the project plan, inclusive of schedule, shall form the basis for accomplishment of the task order and shall be used as a means to assess performance.	The COR or designee will review. The licensing review schedule will be updated and monitored on a frequent basis. The COR shall assess the performance of the contractor for each task order using the Performance Evaluation Plan provided in Attachment 3.	Award of subsequent task orders will be based on the assigned contractor's ability to meet the schedule, milestones, and deliverable requirements of the preceding orders as documented on Attachment 3. Failure to meet the schedule, milestones, and deliverable requirements of preceding orders as documented on Attachment 3 may result in non-award of subsequent task orders, or even shortening of the EWA stated period of performance.

Performance Requirements and Deliverables	Standard	Method of Review	Incentive/Deduction
Technical Evaluation Report	The format is provided in each task order. The content should address the relevant portion of the reference standard and any Safety Evaluation Report (SER) writing templates furnished by the NRC.	The COR or designee will review the technical letter report to the standards to assure compliance. The COR shall assess the performance of the contractor for each task order using the Performance Evaluation Plan provided in Attachment 3.	Award of subsequent task orders will be based on the assigned contractor's ability to meet the schedule, milestones, and deliverable requirements of the preceding orders as documented on Attachment 3. Failure to meet the schedule, milestones, and deliverable requirements of preceding orders as documented on Attachment 3 may result in non-award of subsequent task orders, or even shortening of the EWA stated period of performance.

Performance Requirements and Deliverables	Standard	Method of Review	Incentive/Deduction
Request for additional information (RAIs)	Guidance for writing RAIs is provided in each task order.	The COR or designee will review the RAIs to the standards to assure compliance. The COR shall assess the performance of the contractor using the Performance Evaluation Plan provided in Attachment 3.	Award of subsequent task orders will be based on the assigned contractor's ability to meet the schedule, milestones, and deliverable requirements of the preceding orders as documented on Attachment 3. Failure to meet the schedule, milestones, and deliverable requirements of preceding orders as documented on Attachment 3 may result in non-award of subsequent task orders, or even shortening of the EWA stated period of performance.

Attachment 5

MONTHLY LETTER STATUS REPORT INSTRUCTIONS

In accordance with Management Directive 11.7, NRC Procedures for Placement and Monitoring of Work with the U.S. Department of Energy, the DOE Laboratory must submit an electronic Monthly Letter Status Report (MLSR) by the 20th day of each month to the Contracting Officer's Representative (COR), the Contracting Officer (CO), and ContractsPOT.Resource@nrc.gov. If the project is a task ordering agreement, a separate MLSR and a summary project MSLR must be submitted for each task order. A task order MLSR is required even if work was not performed during the reporting period. When NRC determines that work under a task order was completed and that the final costs are acceptable, the task order may be omitted from the MLSR. The MSLR for each task order shall match the billing invoice for the billing period and the amount billed. If there is a discrepancy between the billing invoice and the MSLR then the MSLR shall provide the reason for the discrepancy.

The MLSR must include the agreement number; the task order number, if applicable; the job code number; the title of the project; project period of performance; the task order period of performance, if applicable; the COR's name, telephone number, and e-mail address; the full name and address of the DOE Laboratory; the principal investigator's name, telephone number and e-mail address; and the reporting period. In addition, the MLSR must include the following information:

FINANCIAL STATUS SECTION

A. Overall Funding

Provide the following:
Total Ceiling Amount: $
Total Amount of Funds Obligated to Date: $
Total Amount of Funds Expended to Date: $
Percentage of Funds Expended to Date: %
Balance of Obligated Funds Remaining: $
Total Estimated Encumbered Costs: $
Balance Available Less Encumbered Costs: $
Estimated Date Based on Spend Plan When Obligated Funds Will Be Expended: [Date]

Encumbered costs are committed costs (also known as commitments) against a specific purpose. Costs are considered encumbered, or set aside, when funds are reserved for payment once the materials are received or services are rendered.

B. DOE Laboratory Acquired Property

Report all property with an acquisition cost of $5,000 or more, including Information Technology (IT) hardware and software, acquired for the project during the month. Report all sensitive property regardless of cost. The following information is required on each reported property: item; the property description; the manufacturer, model number, and serial number, if applicable; the acquisition cost; the date received; and the DOE or DOE Laboratory property identification number, when appropriate. If property was not acquired during the reporting month, include a negative statement to that effect in the MLSR.

The final MLSR must include a closeout property report certifying that property acquired under the NRC project with an acquisition cost of greater than $5,000, including IT hardware and software, and sensitive property regardless of cost, is included in the DOE official property records and that the list is complete. For each item listed, the report must contain the item description; manufacturer, the model number, the serial number, if applicable; the acquisition or development cost; the date received, and the DOE or DOE Laboratory property identification number, when appropriate. The closeout property report must identify any ongoing or contemplated NRC projects on which the property could be utilized. The report must identify if property was not acquired under the project, include a negative statement property if requiring special handling based on security, health, safety, or other reasons as to that affect.

C. NRC-Funded Software Developed

Report NRC funded software with a useful life of 2 years or more and a development cost of greater than $5,000. Provide the following information on each NRC funded software: the software name and function; the development cost; the computer language used; the operation system; the physical location of the software and/or the hardware system; the date the software development was completed; and the scheduled replacement date or projected useful life. If the useful life is not readily apparent, the useful life is considered to be 5 years from the day the software was considered operational.

TECHNICAL STATUS SECTION

A. Deliverables/Milestones Schedule

Provide the following information for each deliverable/milestone identified in the SOW: the associated task; the description; the planned completion date; the revised completion date if applicable; and, the actual completion date. The deliverables/milestones schedule must be revised as necessary. Any variance in schedule must be identified and discussed in detail. Discussion must include the cause for the variance, together with any proposed solution to bring the dates within the original planned dates.

B. Progress During Reporting Period

Provide a clear and concise discussion of the work performed during the reporting period. At a minimum, these discussions must include sufficient detail to support the costs reported for the reporting period. A summary of significant meetings and conference calls may be included. In addition, the current status of each task must be identified. **Progress reported as "worked on all tasks" is not acceptable.**

C. Travel

Travel taken during the reporting period must be fully described and must include, at a minimum, the purpose of the travel, whether prior NRC authorization was required and obtained, the names of all travelers, the beginning and ending dates of the travel, and the destination point.

D. Description of Estimated Encumbered Costs

INSERT LANGUAGE HERE

E. Anticipated and Encountered Problem Areas

Problems encountered during the reporting period and anticipated in subsequent period(s) must be identified. Discussion of problems encountered during the reporting period must include the actual solution. If the solution was not implemented during the reporting period, a detailed discussion of the proposed solution must be included. The status of the problem must be updated in subsequent MLSRs until problem resolution is achieved and reported. Clearly identify the person(s) and/or organization(s) with responsibility to address the problem. If NRC is required to take action to resolve a problem or concern, the COR should be notified separately.

A discussion of the impact on the projected cost and schedule of the project or task order must be included. If the projected actual cost is expected to be greater than or less than the planned cost and/or if the schedule is projected to be longer than or less than the planned schedule, an in-depth rationale for the difference(s) must be provided. Actions to mitigate schedule delays and/or cost increases must be thoroughly described.

Problems or circumstances requiring a modification to the level of effort, estimated cost, scope of work, or travel requirements must also be discussed in the MLSR. The COR should be notified separately if a modification is needed. **Such notification must not be delayed until issuance of the MLSR.**

F. Plans for the Next Reporting Period

Provide a concise discussion of work to be performed and a description of anticipated travel during the next reporting period. Describe milestones anticipated to be completed in the next reporting period.

License Fee Recovery Cost Status (Applicable to Fee-Recoverable work only)

Pursuant to the provisions on fees of Title 10 of the *Code of Federal Regulations* Parts 170 and 171, provide the total amount of fee recoverable costs incurred during the reporting period and fiscal year to date for each project or task order. The License Fee Recovery Cost Status (LFRCS) must be on a separate page as part of the MLSR for the agreement, and must be in the format provided in the MLSR template under the LFRCS Section. If fee recoverable costs were not incurred during the reporting period. The DOE Laboratory must indicate if fee recoverable costs should not be rounded to the nearest dollar.

Facilities must be sorted by docket number. Unit numbers, for example, Beaver Valley 2, must be identified for each facility included in the LFRCS table. For projects or task orders that involve more than one unit, each unit must be listed separately and the costs must be split appropriately between the units. Common costs, as defined below, must be identified separately in the LFRCS table and must be divided among all facilities where work was performed during the reporting period. The total of the period costs reported in the LFRCS table must equal the total of the period costs reported in the Financial Status section of the MLSR. In the event the LFRCS and Financial Status section totals are not equal, an explanation for the variance must be provided.

"Common costs" are costs associated with the performance of an overall program that benefit all similar licensees covered under that program or that are required to satisfactorily carry out the program. Common costs include costs associated with the following: preparatory or startup efforts to interpret and reach agreement on methodology, approach, acceptance criteria, regulatory position, or technical reporting requirements; efforts associated with the lead-plant concept that might be involved during the first one or two plant reviews; meetings and discussions involving the above efforts to provide orientation, background knowledge, or guidance during the course of a program; any technical effort applied to a category of plants; and project management. Common costs, at a minimum, must be reported quarterly in the MLSR. The common costs for the quarter must be apportioned in proportion to the costs incurred during the quarter for each of the plants for which work was performed. DOE laboratories that are able to report common costs on a monthly basis must do so.

SPENDING PLAN UPDATE

The initial DOE Laboratory Project Spending Plan must be included in the initial MLSR. Thereafter, the spending plan must be updated on the MLSR Spending Plan Update Template in Excel, and submitted with the MLSR. Spending plan updates cover two fiscal years (current fiscal year and following fiscal year). Discussion must include significant spending plan variances, the cause for the variance, and proposed solutions to bring the cost within planned amounts. Definitions of spending plan are provided below:

Planned – Spending plan agreed to by the parties in Part 3, Spending Plan, of the DOE Laboratory Project and Cost Proposal for NRC Work.
Revised – Updated spending plan revised by the DOE Laboratory. Spending plan must be updated as necessary.
Actual – Total costs expended by the DOE Laboratory as reported in the MLSR.
Variance – Percentage difference between planned, or revised if applicable, and actual.

MONTHLY LETTER STATUS REPORT

Reporting Period Start Date	**Reporting Period End Date**	
NRC Agreement Number	**Task Order Number (if applicable)**	**Common Cost Center Code**
Project Title		
Period of Performance Start Date	**Period of Performance End Date**	
COR	**Telephone**	**E-mail**
DOE Laboratory		
DOE Site Address		
Principal Investigator	**Telephone**	**E-mail**

Financial Status Section

A. Overall Funding

Current Month Cost: $
Total Ceiling Amount: $
Total Amount of Funds Obligated to Date: $
Total Amount of Funds Expended to Date: $
Percentage of Funds Expended to Date: %
Balance of Obligated Funds Remaining: $
Total Estimated Encumbered Costs: $
Balance Available Less Estimated Encumbered Costs: $

B. DOE Laboratory Acquired Property

Item*	Description	Manufacturer	Model Number	Serial Number	Acquisition Cost ($)	Receipt Date	Property Identification Number

*Asterisk represents sensitive item

C. NRC-Funded Software Developed

Name *	Function	Development Cost ($)	Computer Language Used	Operating System	Location of System	Date Software Completed	Date of Scheduled Replacement /Useful Life

*Asterisk represents sensitive software

Technical Status Section

A. Deliverables/Milestones Schedule

Task	Description	Planned Completion Date	Revised Completion Date (if applicable)	Actual Completion Date

B. Progress During Reporting Period

C. Travel

D. Description of Estimated Encumbered Costs

E. Anticipated and Encountered Problem Areas

F. Plans for the Next Reporting Period

LICENSE FEE RECOVERY COST STATUS
(Sample Task Order)

DOE Contract No./Job Code:

Title:

Period:

Report Title	Facility Name	Docket Number	Identification Number	Period Costs	Cumulative Cost This Fiscal Year
Common Costs*					
Task 1					
Task 2					

No license fee recoverable costs were incurred during the reporting period.

*Common costs shall be reported on a quarterly basis in the MLSR at a minimum. Those laboratories that are able to report common costs on a monthly basis shall do so.

ATTACHMENT 2
31310019N0001

STANDARD TERMS AND CONDITIONS TO BE ATTACHED TO ALL NRC INTERAGENCY AGREEMENTS AWARDED TO DEPARTMENT OF ENERGY (DOE) NATIONAL LABORATORIES

All work performed for NRC at a DOE laboratory is conducted under the terms and conditions of the DOE contract in place to manage and operate that laboratory. The below set of terms and conditions provide additional guidance in specific areas that are particular to work performed for NRC and supplement the DOE contract provisions.

1. Technical Direction

The NRC Contracting Officer's Representative (COR), as named in the NRC Statement of Work (SOW), is responsible for ensuring that the services required under this project are delivered in accordance with the terms of the SOW. All technical direction instructions to the DOE Laboratory must be issued through the COR.

Technical direction includes interpreting technical specifications, providing needed details, and suggesting possible lines of inquiry. Technical direction must not constitute new work or affect overall project cost or period of performance. Technical direction must be confirmed in writing to the DOE Laboratory, a copy provided to the DOE Site Office or the DOE Field Office, and a copy placed in the NRC Program Office project file.

2. Key Personnel

The individual(s) identified as key personnel in the Technical Proposal, is (are) considered essential to the successful performance of the work. The DOE Laboratory agrees that these personnel shall not be removed from the project or replaced without complying with the following:

- If one or more of the key personnel, for whatever reason, becomes or is expected to become unavailable for work under this contract for a continuous period exceeding 30 workdays, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the DOE Laboratory shall immediately notify the Contracting Officer (CO) in NRC's Acquisition Management Division of its intent to make key personnel replacements.

- All requests for approval of substitutions on a project shall be in writing and shall provide detailed explanation of the circumstances necessitating the proposed substitutions. The request shall contain a complete résumé for the proposed substitute and other information requested by the NRC office to approve or disapprove the proposed substitution. The NRC will evaluate such requests and promptly notify the DOE Laboratory of its approval or disapproval thereof in writing.

- The project may be terminated if the office determines that:

Suitable and timely replacements of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the project is not reasonably forthcoming.

The resultant reduction of effort or expertise would be so substantial as to impair the successful completion of the project or work order.

3. Billing Requirements

DOE shall bill NRC monthly for costs paid in support of NRC projects by the agreement number and task order number (if applicable). The DOE shall bill and collect from NRC by an electronic transfer of funds through the U.S. Treasury Intergovernmental Payment and Collection System (IPAC).

The DOE voucher shall identify the NRC Agreement Number and the NRC Task Order number (if applicable). The DOE voucher, as a minimum, shall indicate the month that costs were incurred and the dollar amount of these costs. In some instances, because of accrual accounting and other adjustments, the amounts may differ slightly from the original accrual amount.

When monthly letter status report (MLSR) costs differ from the amount billed, DOE shall provide an explanation of the difference on the voucher.

The DOE voucher shall be sent to support the IPAC funds transfer. The instructions must identify the billable activities as specified by 10 CFR Part 170. The DOE voucher and other required documentation shall be submitted to—

NRC Payments
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mailstop O3-E17A
Rockville, MD 20852-2738

Electronic Commercial Vendor and IPAC Payments:
Effective immediately, commercial vendors and Federal entities should use the new electronic mailing addresses shown below:

Invoice and training billing Email address – NRCPayments@NRC.gov
IPAC billing Email address – NRCIPAC.Resource@NRC.gov

4. Monthly Letter Status Reports (MLSR)

In accordance with MD 11.7, the DOE laboratory shall submit a Monthly Letter Status Report (MLSR) by the 20th day of each month to:

- NRC Contracting Officer's Representative

With copies to the following:

- Office of Administration/Acquisition Management Division (electronic copy only) to ContractsPOT.Resource@nrc.gov

The MLSR should contain at a minimum all of the information required in the instructions for completing Monthly Letter Status Reports as defined in Attachment 1 of the NRC SOW.

5. Limitation of Funds

NRC is not obligated to reimburse DOE for costs incurred by its contractors in excess of the total amount obligated by an appropriately executed interagency agreement form. The NRC CO in NRC's Acquisition Management Division will formally notify the appropriate DOE Site Office or the DOE Field Office of any projects that are intended to be phased out or terminated as soon as such intent is known, preferably at least 30 days before the proposed termination date. For work orders with fixed performance periods, the DOE Site Office or the DOE Field Office should assume that the program will terminate on the last day of the period specified in the award form unless notified otherwise.

If at any time the Laboratory has reason to believe that the costs will exceed the total amount authorized, the Laboratory must notify NRC and the DOE Site Office or the DOE Field Office. In the absence of formal NRC instructions to continue or to terminate a work order, the DOE Site Office or the DOE Field Office contract officer or his or her designee will notify NRC by e-mail or other suitable written means when the accrued costs of any NRC work order approaches 75 percent of the authorized funding level for a project or task order (TO).

The notification should include the estimated date when the accrued costs will equal the authorized funds, and may, if appropriate, recommend or request the NRC action desired. The notification should be sent to the appropriate NRC CO and COR with a copy to DOE. After this notification, the NRC will evaluate costs incurred against technical progress and, if necessary, will:

- Increase funding authorization
- Change the scope of the work
- Change the period of performance
- Terminate the project

The performance of work shall be completed within the period stated in the most current authorization document. When the DOE Laboratory anticipates that the work cannot be completed within the fixed time period, it shall notify the NRC CO and COR in writing and send a copy of the notice to the DOE Site Office or the DOE Field Office. Notification shall be made in sufficient time to allow for the issuance of a modification to the agreement, authorizing an extension of the work period to the date necessary to complete the authorized work. If the period of performance is not extended, the office shall notify DOE and the DOE Laboratory via issuance of a modification which should contain closeout instructions, including the reconciliation of any excess funds.

6. Organizational Conflict of Interest

Upon submitting a proposal to the NRC, each DOE Laboratory would continue to acknowledge the disclosure requirements of: 1) MD 11.7, "Organizational Conflict of Interest"; and 2) the provisions of the Memorandum of Understanding (MOU) between DOE and NRC, dated 1998

(which states, in part, that DOE recognizes that Section 170A of the Atomic Energy Act of 1954, as amended, requires that NRC be provided with disclosures on potential conflicts when NRC obtains technical, consulting, research and other supporting services). DOE further recognizes that the assignment of NRC work to DOE laboratories must satisfy NRC's organizational conflict of interest (OCOI) standards.

Therefore, each DOE Laboratory, in its proposal to NRC (which will be incorporated into an interagency agreement between NRC and DOE), is required to make an assertion per #1 or #2 of Part A below for themselves and all subcontractors proposed prior to their award. If the Laboratory selects #1, then, it must also fill out the accompanying Part B – whereby the Laboratory must, again, make an assertion by answering each of the five (5) NRC OCOI provisions per the NRC Acquisition Regulation (NRCAR).

PART A:

"In accordance with [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] role in, and responsibility for, disclosing its relationships with organizations which conduct business in the same and/or similar technical area as described by the present and/or ongoing NRC project's scope of work, and in accordance with the NRC clause as stated herein, [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby asserts that it has examined its relationships with all such organizations, and has also examined its current and future/planned work, and where appropriate, its past work (generally for the previous five years), for DOE and other organizations, and [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] states the following:

1) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses the following relationships _____ [state the name of persons, organizations, and business relationships, etc. **] _____ that may give rise to a potential OCOI. (DOE Laboratory or subcontractor must answer the questions in Part B below);

Or

2) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] to the best of its knowledge and belief, asserts that it has no current work, planned work, and where appropriate, past work for DOE and others (to mean - organizations in the same and/or similar technical area as the present and/or ongoing NRC project scope of work); and [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby asserts that it is not aware of any same/similar technical work that would give rise to any potential OCOI as defined in the Atomic Energy Act of 1954, as amended, and in the NRC/DOE MOU.

Signed: _____

PART B:

In accordance with [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] role/responsibility regarding OCOI disclosure, as stated in Part A, above [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] further discloses, to the best of its knowledge and belief, that:

1) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] and/or any of its organizational affiliates* as defined in Part A above [does/does not] provide advice and

recommendations to the NRC in the same technical area (e.g., fire protection, PRA, seismic, vulnerability analysis, fracture mechanics) where it is also providing consulting assistance to any organization regulated by NRC. If [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] "does" - then [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses such organization(s) in Part A above;

2) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] and/or any of its organizational affiliates as defined in Part A above [does/does not] provide advice and recommendations to the NRC on the same or similar matter (e.g., particular licensing amendment, particular EIS, particular high level waste repository site) on which it is also providing assistance to any organization regulated by NRC. If [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] "does" - then [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses such organization(s) in Part A above;

3) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] and/or any of its organizational affiliates as defined in Part A above [will/will not] be required to evaluate its own products or services, or has been substantially involved in the development or marketing of the products or services of another entity. If [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] "will" - the [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses such organization(s) in Part A above;

4) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] and/or any of its organizational affiliates as defined in Part A above [does/does not] have a conflicting role, given the award of the present and/or ongoing NRC project, in which its judgment or the judgment of any of its organizations may be biased in relation to its work for NRC. If [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] "does" – then [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses such conflicting role(s) with organization(s) in Part A above;

5) [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] and/or any of its organizational affiliates as defined in Part A above [are/are not] soliciting or performing concurrent work at an applicant or licensee site, while performing work in the same/similar technical area for NRC at the same site. If [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] "are" – then the [INSERT NAME OF DOE LABORATORY OR SUBCONTRACTOR] hereby discloses such organization(s) in Part A above."

Signed: _____

*Organization affiliate – Business concerns which are affiliates (related) to each other when either directly or indirectly, one concern or individual controls or has the power to control another, or when a third party (i.e. parent firm) has the power to control both.

** The Atomic Energy Act of 1952 uses the term “person” to mean any entity – e.g., sole proprietorship, partnership, joint venture, corporation; university; limited partnership, subchapter S corporation; limited liability company, etc.

7. Incompatibility Between Regular Duties and Private Interests

(a) Employees of a management and operating contractor shall not be permitted to make or influence any decision on behalf of the contractor which directly or indirectly affects the interest

of the Government, if the employee's personal concern in the matter may be incompatible with the interest of the Government. For example: An employee of a contractor will not negotiate, or influence the award of, a subcontract with a company in which the individual has employment relationship or significant financial interest; and an employee of a contractor will not be assigned the preparation of an evaluation for DOE or for any DOE contractor of some technical aspect of the work of another organization with which the individual has an employment relationship, or significant financial interest, or which is a competitor of an organization (other than the contractor who is the individual's regular employer) in which the individual has an employment relationship or significant financial interest.

(b) The contractor shall be responsible for informing employees that they are expected to disclose any incompatibilities between duties performed for the contractor and their private interests and to refer undecided questions to the contractor.

8. Intellectual Property Rights

The statutory, regulatory, and procedural intellectual property policies of DOE will be applicable to the work falling under this work order—

- Provided that information concerning disclosures of inventions identified as having been conceived or first actually reduced to practice under Commission-funded work will be reported to the Commission, and the Commission will be kept advised as to their status.

- Except that the Commission reserves the right to control title to inventions as to any rights that vest in the Commission under statute. If DOE and DOE's contractor, where the contractor has such rights, should determine not to protect these inventions either domestically or abroad, the Commission will have the right to protect these inventions.

- Provided that if the technology covered by an invention disclosure upon which DOE intends to file a patent application on behalf of the U.S. Government is deemed by the Commission to fall within the Commission's mission, that is, when the technology relates to nuclear facilities and materials safety, safeguards, and environmental protection in support of the Commission's licensing and regulatory functions, the Commission may so notify DOE and a determination will be made by the parties as to which party will file the patent application or applications.

- Provided that neither party shall grant an exclusive patent license on an agency owned invention without the approval of the other party.

9. Acquired Material, Equipment, or Software (Property)

In accordance with Management Directive 11.7, the Laboratory proposal must include a description of the property required for project performance that has an estimated acquisition cost of $500 or more. The proposal must also identify the potential development of NRC-funded software during the project. NRC-funded software is software specifically developed for NRC by the Laboratory and is generally the deliverable for the project.

After the NRC reviews the list of property and NRC-funded software included in the Laboratory proposal, any questions regarding the acquisition of property or the development of NRC-funded software will be addressed with the Laboratory during negotiations. After negotiating

project terms and conditions, NRC shall issue an agreement authorizing the work and approving acquisition of property or development of NRC-funded software.

Laboratories shall submit a written request to the NRC project manager for approval to develop additional NRC-funded software or purchase additional property with an estimated acquisition cost of $500 or more after work initiation. The project manager shall approve or disapprove the acquisition or development of any additional items in writing.
DOE Laboratories shall report property, including software, with an acquisition cost of $500 or more in the monthly letter status report in the month the property or software was acquired. DOE laboratories shall forward an electronic copy of all monthly letter status reports to the NRC Office of Administration, Acquisition Management Division: ContractsPOT.Resource@nrc.gov, in addition to the NRC COR. DOE Laboratories shall provide the information listed in the Monthly Letter Status Report instructions for each item reported as appropriate, in the monthly letter status report.

10. Dissemination of Project Information/Publication Requirements

(a) Prior to any dissemination, display, publication, presentation, or release of papers, articles, reports, summaries, or abstracts developed under the NRC/DOE Agreement, the DOE Laboratory shall submit them to the NRC for review and comment. NRC shall have a review and comment period of at least [60] days, after which both an NRC and DOE Laboratory representative at the lowest management level, shall attempt to resolve any differing viewpoints or statements which are the subject of NRC objection. If the matter cannot be resolved at that level, the issue shall be brought up to the next management level in both organizations until an agreement can be reached or it reaches the Office Director level. Matters which cannot be resolved at this level shall be submitted for resolution to the Laboratory's Technology Partnership Ombudsman (as set forth in the Laboratory's Management and Operating contract with DOE or NNSA pursuant to § (p) of Department of Energy Acquisition Regulation (DEAR) 970.5227-3 "Technology Transfer Mission" (Aug 2002)). In the event resolution cannot be achieved by the Ombudsman, the NRC may direct the Laboratory/DOE to not publish the work as a NUREG/CR, but publish as a Laboratory report without the NRC office name or Project Manager's name listed on the report, and with a Disclaimer conspicuously noted on the report, article, summary, abstract or related document that the Laboratory/DOE intends to release, display, disseminate or publish to other persons, the public or any other entities:

> "The views expressed in this [paper, journal article, report, summary, or abstract] do not represent those of the U.S. Nuclear Regulatory Commission."

(b) The NRC and DOE agree to handle all classified information provided or developed during the course of this project in accordance with all applicable laws and regulations governing the handling of such information. In the event NRC determines during its review and comment period that a draft Laboratory paper, article, report, summary, or abstract contains classified information regarding the work performed for NRC, NRC, in addition to commenting on the subject matter, shall also direct the Laboratory/DOE to direct an authorized classification authority to appropriately review, classify and mark the product, pursuant to nationally acceptable standards/guidelines. Under these circumstances, the Laboratory will either publish the work solely as a classified product pursuant to NRC direction, or not publish the work in any format. In cases where classification of the product is in dispute, NRC may consult with DOE's Office of Classification; however NRC retains the ultimate authority over the classification of the product.

(c) In addition, travel costs to present papers or reports developed under the NRC/DOE Agreement may not be authorized if the NRC program manager determines that presentation of the paper does not support the NRC program or project. Such determination will not affect payment of the contract work costs.

(d) The DOE Laboratory contractor, to the extent it is permitted to and asserts copyright therein, grants a royalty-free, nonexclusive, irrevocable worldwide license to the Government to use, reproduce, modify, distribute, prepare derivative works, release, display or disclose the articles, reports, summaries, abstracts, and related documents developed under the Agreement, for any governmental purposes and to have or authorize others to do so.

11. Review and Approval of Reports

The Laboratory/DOE shall comply with the terms and conditions of the agreement regarding the contents of the draft and final reports, summaries, data and related documents, to include correcting, deleting, editing, revising, modifying, formatting and supplementing and of the information contained therein. Corrective actions shall not be undertaken unless sufficient funding from NRC is available to cover the costs of the corrective actions. Performance under the agreement shall not be deemed accepted or completed until it complies with NRC's directions.

Identification/Marking of Sensitive Unclassified and Safeguards Information. DOE shall comply with the requirements stated MD's 12.7 "NRC Safeguards Information Security Program" as follows:

a) Classification Clause

To the extent that the performance of work under this work order involves classified information, the following clause is applicable:

- In the performance of work under this work order, DOE shall ensure that a DOE authorized classifier shall assign classification levels to all documents, material, and equipment originated or generated by the performing organization in accordance with classification guidance furnished by the Commission. Each subcontract and purchase order issued hereunder involving the generation of classified documents, material, or equipment shall include a provision to the effect that in the performance of such subcontract or purchase order, a DOE authorized classifier shall assign classification levels to all such documents, material, and equipment in accordance with classification guidance furnished by the NRC.

- When appropriate, the attached NRC Form 187, "Contract Security and/or Classification Requirements," is a part of this work order. It is the responsibility of the NRC office originating the work order to review the classification assigned and to refer any problems to the NRC Division of Security Operations (DSO), NSIR, for resolution.

b) Safeguards Information, Unclassified Controlled Nuclear Information, or Unescorted Access to Protected and Vital Areas of Nuclear Power Plants

To the extent that the performance of work under this work order involves Safeguards Information (SGI), the following clause is applicable:

> In the performance of the work under this project, DOE shall assure that the DOE laboratory shall mark and protect all documents, material, and equipment originated, generated, or received by the performing organization in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954, as amended, its implementing regulations (10 CFR 73.21), “Protection of Safeguards Information: Performance Requirements.” Further guidance on the protection of Safeguards Information and examples of proper marking of cover; title page, and back cover are contained in NRC Management Directive (MD) 12.7, "NRC Safeguards Information Security Program” and the NRC Guide to Marking Safeguards Information.

To the extent that performance of work under this work order involves unclassified controlled nuclear information (UNCI), the following clause is applicable:

> In the performance of the work under this project, DOE shall assure that the DOE laboratory shall mark and protect all documents, material, and equipment originated, generated, or received by the performing organization in accordance with the provisions of Section 148 of the Atomic Energy Act of 1954, as amended, is implementing DOE regulations, and DOE orders and guidance.

It is the responsibility of the NRC office originating the work to indicate whether the work will involve SGI or unescorted access to protected and vital areas of nuclear power plants. An NRC Form 187, “Contract Security and/or Classification Requirements,” shall be completed to indicate such access.

c) Proprietary Information

In connection with the performance of work under this work order, NRC may furnish for DOE review, evaluation, or other use certain trade secrets or confidential or privileged commercial or financial information determined by the office to be exempt from public inspection or disclosure. A synopsis of such information must be submitted in writing to the DOE contracting officer for reaching agreement with the office on the acceptance and use of the information. Up-to-date guidance on the protection of proprietary information used in reports prepared by the DOE laboratory on proper marking of cover, title page, and back cover may be obtained from the NRC COR.

Proprietary or other privileged information may be provided by the office on an individual basis to DOE laboratory employees working as NRC consultants with the understanding that it shall be protected from disclosure and shall be returned to the office upon completion of the work. Any such claimed proprietary data will be appropriately identified and marked as such. The use of proprietary information in reports prepared by consultants requires protection. Further information may be obtained from the NRC COR.

d) Other Sensitive Unclassified Non-Safeguards Information (SUNSI)

Information other than safeguards, unclassified controlled nuclear, proprietary information, and pre-decisional information may at times be determined to be sensitive. The use of such information in reports requires the specific NRC designation and protection as prescribed by the NRC SUNSI policy. Further information may be obtained from the NRC COR.

12. Sensitive Information Work Efforts

To the extent that the performance under this work order involves classified information, the following clauses are applicable:

- Responsibilities. DOE and the DOE contractor (performing organization) shall be responsible for safeguarding Restricted Data, Formerly Restricted Data, and other National Security Information and for protecting it against sabotage, espionage, loss, and theft in accordance with applicable NRC and DOE security regulations and requirements.
- Transmission of Classified Matter. Except as otherwise expressly provided, DOE or the DOE contractor shall, upon completion or termination of the work order, transmit to the NRC program office all classified matter in its possession or in the possession of any person under its control in connection with performance of this project or work order. If retention of any classified matter is required by DOE or the DOE contractor, DOE must obtain the approval of the NRC program office and complete a certificate of possession specifying the classified matter to be retained.

- Regulations. DOE and the DOE contractors shall be responsible for compliance with all applicable NRC and DOE security regulations and requirements.

- Definition of Restricted Data. The term “Restricted Data,” as used in this clause, means all data concerning (1) the design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but does not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act of 1954, as amended.

- Definition of Formerly Restricted Data. The term “Formerly Restricted Data,” as used in this clause, means classified information related primarily to the military utilization of atomic weapons that can be adequately safeguarded as National Security Information, subject to the restrictions on transmission to other countries and regional defense organizations that apply to Restricted Data.

- Definition of National Security Information. National Security Information is information that has been determined pursuant to Executive Order 13526 or any predecessor order to require protection against unauthorized disclosure and is so designated.

- Security Clearance of Personnel. DOE and DOE laboratories shall not permit any individual to have access to Restricted Data, Formerly Restricted Data, or National Security Information, except in accordance with the Atomic Energy Act of 1954, as amended, Executive Orders 12968 and 10865, and DOE regulations or requirements applicable to the particular type or category of classified information to which access is required.

- Safeguards Information Access. DOE and DOE laboratories shall not permit any individual to have access to Safeguards Information, except in accordance with 10 Code of Federal Regulations Part 73.22 and NRC Management Directive 12.7.

- Liability. It is understood that the unauthorized disclosure or the failure to properly safeguard Restricted Data, Formerly Restricted Data, or National Security Information that may come to the DOE or to any person under an NRC/DOE work order in connection with work under the work order may subject the performing organization, and its agents, employees, or subcontractors, to administrative sanctions and criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended [42 U.S.C. 2011et seq.], 18 U.S.C. 793 and 794; and Executive Orders 13526 and 12968.)

- Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Commission, DOE shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this project or work order.

13. Software Development

Systems development efforts shall comply with applicable Government-wide Federal Information Processing Standards developed by the National Institute of Standards and Technology, applicable public laws, Office of Management and Budget circulars, and NRC policies and procedures. Particular attention is necessary to incorporate security features in the design of systems that process sensitive data. The format of software deliverables is specified in NRC Bulletin 0904-4. If any deliverable is provided on diskette, the diskette shall be scanned for viruses by the contractor and verified to be free of viruses before delivery to NRC. All software development, modification, or maintenance tasks shall follow general guidance provided in NUREG/BR-0167, “Software Quality Assurance Program and Guidelines.” NRC shall advise the DOE Patent Counsel with respect to any rights in the software that NRC desires under any particular project, which rights include NRC imposing restrictions on use, and distribution of the software by DOE or the Laboratory.

14. Copyright in Computer Software and Codes

In the event that a DOE Laboratory desires to assert a copyright of any computer software or computer code funded in whole or in part by NRC, the Laboratory shall request, in writing, the written approval of the cognizant NRC division director or designee before advising DOE's patent counsel of the Laboratory’s desire to seek the copyright.

If NRC determines that public health and safety or other programmatic considerations dictate that the DOE Laboratory contractor should not be given permission to copyright the computer software or code, the NRC CO, after consultation with the NRC Office of the General Counsel (OGC) and the division director or designee, shall so advise the Laboratory in writing.

Alternatively, if permission to copyright computer software or a computer code is granted, the cognizant NRC CO, after consultation with OGC and division director or designee, shall provide the Laboratory with written notice of that decision. In those cases in which the cognizant NRC CO determines that the rights retained by the Government pursuant to the copyright provisions of the Laboratory contract should be modified to protect NRC's interests, NRC will advise DOE's patent counsel of NRC's desire to modify DOE's standard policy with respect to permission for a contractor to assert copyright in that code. DOE and NRC will then jointly determine the appropriate provisions for the code. The DOE patent counsel shall provide the Laboratory with written notice, with a copy to the cognizant NRC division director or designee, of that joint determination. The Laboratory may then proceed to assert copyright.

In no case shall the DOE Laboratory take action relating to assertion of copyright until the NRC CO provides written approval to the Laboratory’s request to assert copyright. Further, DOE shall not permit a contractor to assert copyright of an NRC-funded computer code or computer software without the written approval of the cognizant NRC division director or designee. Where NRC has not granted permission to copyright, NRC recognizes that once a Laboratory has delivered to NRC a developed version of a particular code, the Laboratory may exercise the

existing right that both the Laboratory and other parties have to further develop, without NRC funds, software codes that are in the public domain and to copyright the new, non-NRC-funded versions of these codes without NRC approval.

15. Appropriate Use of Government Furnished Information Technology (IT) Equipment and/or its Services/Access

When the NRC work at a DOE site requires electronic processing of information, DOE will follow NIST Special Publication (SP) 800-37 Rev. 1 or later, and SP 800-53 Rev. 3 or later (which are based on FIPS-199 and FIPS-200). For those specific projects with electronic processing of Safeguards Information (SGI), Restricted Data (RD) and/or Unclassified Nuclear Information (UCNI), the NRC shall provide DOE with the appropriate requirements that must be met on a project by project basis. In addition, for those specific projects that require classified electronic information processing, DOE will follow the CNSS policy, directives, instructions, and guidance.

16. NRC Information Technology Security Training

Agencies/Contractors shall ensure that their employees, consultants, and subcontractors with access to the NRC's information technology (IT) equipment and/or IT services complete NRC's online initial and refresher IT security training requirements to ensure that their knowledge of IT threats, vulnerabilities, and associated countermeasures remains current. Both the initial and refresher IT security training courses generally last an hour or less and can be taken during the employee's regularly scheduled work day. Agency/Contractor shall ensure that their employees, consultants, and subcontractors, with access to the NRC's IT equipment, complete the Information Security (INFOSEC) Awareness Training annually; no later than December 31st.

Agency/Contractor employees, consultants, and subcontractors shall complete the NRC's online, "Computer Security Awareness" course on the same day that they receive access to the NRC's IT equipment and/or services, as their first action using the equipment/service. For those Agency/Contractor employees, consultants, and subcontractors who are already working under an existing agreement/contract, the online training must be completed in accordance with agency Network Announcements issued throughout the year.

Agency/Contractor employees, consultants, and subcontractors who have been granted access to NRC information technology equipment and/or IT services must continue to take IT security refresher training offered online by the NRC throughout the term of the agreement/contract. Agency/Contractor employees will receive notice of NRC's online IT security refresher training requirements through agency-wide notices.

The NRC reserves the right to deny or withdraw Agency/Contractor use or access to NRC IT equipment and/or services should the Agency/Contractor violate the Agency/Contractor's responsibility under this clause.

17. Contract Security Requirements for Unescorted Access to Nuclear Power Plants

If performance under this work order involves unescorted access to protected and vital areas of nuclear power plants or access to nuclear power reactor SGI, individual contractors requiring

access to protected and vital areas of nuclear power plants or access to nuclear power reactor SGI shall be approved for unescorted access in accordance with the following procedures:

17.1 Temporary Approval

The contractor (DOE laboratory employees and laboratory contractors) does not need a temporary approval if he or she has a valid Government clearance, for example, a DOE “Q” or “L” clearance. If the contractor employee does not have such a clearance, the contractor shall submit the information discussed below within 30 calendar days following contract award, modification, or proposal of new personnel for contract tasks. This information shall be provided for each person proposed to perform tasks requiring unescorted access to nuclear power plants or access to nuclear power reactor SGI. If access to SGI is needed, and unescorted access is not required, the provisions of 10 CFR 73.22 must be followed as a condition for access to SGI. The information shall be provided to the NRC Division of Facilities and Security (DFS) through the NRC COR and consists of the following:

- A completed Personnel Security Forms Packet, including an SF 86, "Questionnaire for National Security Positions,” and copies of the individual’s 5-year employment and education history checks, including verification of the highest degree obtained

- A reference from at least one additional person not provided by the individual

- Results of a psychological evaluation (This is not a requirement of the background check that is required for access to SGI.)

- Form FD-258, ORIMDNRC000Z (Fingerprint Card)

- A certification that the contractor has found all checks acceptable

The results of a psychological examination that uses a reliable written personality test or any other professionally accepted clinical evaluation procedure shall be used to evaluate a subject’s trustworthiness, reliability, and stability. The contractor shall review all required information for accuracy, completeness, and legibility, except Part 2 of the SF 86, which must be completed in private and submitted, along with the Form FD-258 by the individual to the contractor in a sealed envelope, or the individual shall be fingerprinted by the subject utility, and the contractor shall be subject to the utility’s access authorization program. As described in this section, DFS shall conduct criminal history and credit checks and a security assurance interview with the individual. On the basis of the results of these checks, DFS shall determine the individual’s eligibility for temporary access and indicate an objection or no objection to NRC pending completion of the required background investigation.

17.2 Final Approval

Final approval shall be granted if:

- The individual has completed processing (by the Office of Personnel Management) of the required investigation resulting in NRC endorsement for unescorted access at all nuclear facilities for the life of the contract.

- The contractor has obtained unescorted access authorization (other than temporary access) at the specific utility through that utility's access authorization program, resulting in unescorted access at a specific facility.

- The individual possesses a valid Government-issued clearance as verified by DFS.

- A valid Government-issued clearance is defined as a U.S. Government-issued security clearance equivalent to or higher than an NRC "L" clearance (i.e., Secret) based on a comparable investigation not more than 10 years old. The investigation specified in MD 11.7, Section 11.12.2 may involve an National Agency Check and Inquiries (NACI) or other investigation as deemed necessary by DFS in accordance with 10 CFR Part 10, 10 CFR 73.22, NRC MD's 12.3, "NRC Personnel Security Program" and 12.7 "NRC Safeguards Information Security Program." Any question regarding the individual's eligibility for unescorted access to protected or vital areas of nuclear power facilities will be resolved in accordance with the provisions set forth in MD 12.3, which are incorporated into the work order by reference as though fully set forth therein. The contractor shall, for each contractor individual approved for access under the provisions of this section, submit to DFS through NRC a signed statement from the individual that he or she understands his or her responsibility to report information bearing on his or her continued eligibility for access authorization as specified in MD 12.3. Access to SGI not also involving unescorted access to protected and vital areas of nuclear power plants shall require the submission of a completed Personnel Security Forms Packet to DFS through NRC and will require a Background Check in accordance with 10 CFR Part 73.22 and MD 12.7. Any questions regarding the individual's eligibility for access to nuclear power reactor SGI shall be resolved in accordance with the provisions set forth in MD 12.7, which is incorporated into this contract by reference as though fully set forth herein. On the basis of the review of the applicant's security forms by DFS and/or the receipt of adverse information by NRC, the individual may be denied access to nuclear power reactor SGI until a final determination of his or her eligibility for access is made under the provisions of MD 12.7.

17.3 Fitness for Duty

Pursuant to NRC policy, all individuals proposed for work under this contract who require unescorted access to nuclear power plants shall be subject to the requirements of the licensee's fitness-for-duty program (10 CFR Part 26).

17.4 Basic Exposure Control and Personnel Dosimetry Training Requirements

The contractor shall certify that personnel working under the scope of this contract have completed basic exposure control and personnel dosimetry training sufficient to meet the requirements of commercial nuclear power plants for unescorted access. Site specific training obtained at each site shall still be required during the performance of work under this contract in addition to the basic training.

17.5 Subcontractor Information—Subcontracting

The DOE organization shall notify the issuing NRC CO in writing reasonably in advance of entering into any major or significant technical service subcontract not contained in the original proposal. "Major or significant'' must be used with judgment and related to the total value of the project and/or impact on the results. This advance notification shall include the following:

- A description of services to be called for by the subcontract

- Identification of the proposed subcontractor

- The proposed subcontract costs (in total)

- A signed conflict of interest statement

The NRC CO may require additional specific subcontractor information or limitations. The NRC CO will issue a modification to the agreement upon approval of the subcontracting effort.

18. Information on NRC Cooperative Programs with Foreign Governments and Organizations and With U.S. Industry

DOE facilities, contractors, and subcontractors working on NRC cooperative programs with foreign governments and organizations and with U.S. industry perform this work with the understanding that draft or formal reports on this work are to be available only to participants in the program until public availability is authorized by the NRC office. Reports or codes (including data) on this work shall be issued as “Draft Preliminary Reports (Codes)” until the office authorizes issuance of the report as a formal report with the designation NUREG/IA-XXXX for international agreement reports or NUREG/CR-XXXX for contractor reports. Details of the handling of reports may be obtained from the NRC COR.

19. Stop-Work Order

The NRC CO may, at any time, by modification to the agreement to the DOE CO, require the DOE Laboratory to stop all or any part of the work called for by this work order for a period of up to 90 days after the order is delivered to the DOE Laboratory, and for any further period to which the parties may agree. Any such order will be specifically identified as a “stop-work order” issued pursuant to this clause. Upon receipt of such an order, the DOE Laboratory shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of cost allocable to the work covered by the order during the period of work stoppage.

Within a period of 90 days after a stop-work order is delivered to DOE or within any extension of that period to which the parties shall have agreed the office shall either:

- Cancel the stop-work order

- Terminate the work covered by this work order

If a stop-work order issued under this clause is cancelled or the period of the stop-work order or any extension thereof expires, DOE will authorize its contractor to resume work. An adjustment will be made in the delivery schedule or cost, or both, and the work order must be modified in writing accordingly. If a stop-work order is not cancelled and the work covered by the order is terminated in accordance with the terms of this work order, costs resulting from the stop-work order will be allowed in arriving at the termination settlement.

20. Termination

Circumstances may arise in which either NRC or DOE wishes to terminate performance of a project in whole or in part. If both parties agree, the work order may be terminated. If DOE

wishes to terminate the project, it shall advise the cognizant NRC CO. If NRC wishes to terminate the project, the cognizant NRC CO will advise the cognizant DOE Site Office or the DOE Field Office and send a copy of the termination agreement to the DOE Laboratory.

Within 60 days after the effective date of the termination of the work order, the DOE Laboratory shall submit a termination settlement proposal to the cognizant NRC CO, through the cognizant DOE Site Office or the DOE Field Office. When additional time is required to compile all outstanding costs, such as subcontractor costs, the DOE Site Office or the DOE Field Office shall provide a written notification to the NRC CO that includes a proposed due date for the final settlement proposal. In the event of disagreement between the parties, the cognizant NRC CO will make the final decision. The DOE Laboratory shall not incur new obligations for the terminated portion of the project after the effective date and must cancel as many outstanding obligations as possible. NRC will allow full credit to the DOE Laboratory for obligations properly incurred by the recipient before termination.