

**ORDER FOR SUPPLIES OR SERVICES**

PAGE OF PAGES

1 17

**IMPORTANT: Mark all packages and papers with contract and/or order numbers.**

BPA NO.

1. DATE OF ORDER <b>5/31/12</b>		2. CONTRACT NO. (if any) NRC-HQ-12-C-04-0065		6. SHIP TO:	
3. ORDER NO. NRC-HQ-12-T-04-0002		4. REQUISITION/REFERENCE NO. RES-12-066 dtd: 12/16/2012		a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Claudia G. Melgar, 301-492-3487 Mail Stop: TWB-01-B10M Washington, DC 20555		7. TO:		b. STREET ADDRESS Attn: Anders Gilbertson, 301-251-7592 Mail Stop: CSB 04-C07M 11555 Rockville Pike	
a. NAME OF CONTRACTOR ENERGY RESEARCH, INC.		b. COMPANY NAME		c. CITY Washington	
c. STREET ADDRESS 6189 EXECUTIVE BLVD		d. CITY ROCKVILLE		d. STATE DC	
e. STATE MD		f. ZIP CODE 208523901		e. ZIP CODE 20555	
9. ACCOUNTING AND APPROPRIATION DATA B&R: 2012-60-11-6-182; JCN: V6038; BOC: 252A; APPN: 31X0200 FAIMIS: 122261 DUNS: 621211259 NAICS: 541330 OBLIGATE: \$45,801.53		10. REQUISITIONING OFFICE		f. SHIP VIA N/A	
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input checked="" type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB		12. F.O.B. POINT		8. TYPE OF ORDER <input type="checkbox"/> a. PURCHASE <input type="checkbox"/> b. DELIVERY REFERENCE YOUR _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated. Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
13. PLACE OF a. INSPECTION    b. ACCEPTANCE		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
15. DISCOUNT TERMS		17. SCHEDULE (See reverse for Rejections)			

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Issuance of Task Order Number 2 under contract NRC-HQ-12-C-04-0065 Title: "Development of the Documentation Process for the Full-Scope Site Level 3 PRA Project"  Current Task Order Cost Ceiling: \$45,801.53 Total Obligated Amount: \$45,801.53 Period of Performance: June 1, 2012 - July 31, 2012  See Attachment 1 for Statement of Work See Clause A.4 for Contractor Acceptance					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
21. MAIL INVOICE TO:						
SEE BILLING INSTRUCTIONS ON REVERSE	a. NAME Department of Interior / NBC NRCPayments@nbc.gov		PHONE:		17(i). GRAND TOTAL	
	b. STREET ADDRESS (or P.O. Box) Attn: Fiscal Services Branch - D2770 7301 W. Mansfield Avenue		FAX:			
	c. CITY Denver	d. STATE CO	e. ZIP CODE 80235-2230			645,801.53

22. UNITED STATES OF AMERICA BY (Signature) 	23. NAME (Typed) Adelis M. Rodriguez Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER
--	---

**SUNSI REVIEW COMPLETE**

**TEMPLATE - ADM001**

JUN 1 2012

**ADM002**

Table of Contents

<b>SECTION A - CONTINUATION BLOCK.....</b>	<b>A-2</b>
A.1 PRICE/COST SCHEDULE .....	A-3
A.2 CONSIDERATION AND OBLIGATION COST-PLUS-FIXED-FEE (AUG 2011) ALTERNATE I (AUG 2011) .....	A-3
A.3 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (AUG 2011).....	A-3
A.4 CONTRACTOR ACCEPTANCE OF TASK ORDER 02 .....	A-5
<b>SECTION B - GENERAL TERMS .....</b>	<b>B-2</b>
B.1 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS (MAY 2010) .....	B-2
B.2 SEAT BELT .....	B-2
B.3 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS (AUG 2011) .....	B-2
B.4 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (JULY 2006) .....	B-3
B.5 GREEN PURCHASING (JUN 2011).....	B-3
B.6 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC PAYMENT/REMITTANCE ADDRESS (AUG2011).....	B-3
<b>SECTION C - STATEMENT OF WORK.....</b>	<b>C-1</b>
<b>SECTION D - ATTACHMENT.....</b>	<b>D-1</b>

NRC-HQ-12-C-04-0065  
NRC-HQ-12-T-04-0002

**SECTION A -**

**A.1 PRICE/COST SCHEDULE**

<b>BASE PERIOD - Date of award through 2 Months</b>				
<b>CLIN NO.</b>	<b>DESCRIPTION OF SUPPLIES/SERVICES</b>	<b>ESTIMATED COST</b>	<b>FIXED FEE</b>	<b>TOTAL CPFF</b>
001	To develop a documentation process that can be utilized for the full-scope site Level 3 PRA project. This documentation process should account for the benefits of using modern information technology for the purpose of improving risk communication.	\$43,055.07	\$2,746.46	\$45,801.53
Total				\$45,801.53

**A.2 CONSIDERATION AND OBLIGATION--COST-PLUS-FIXED-FEE (AUG 2011)  
ALTERNATE I (AUG 2011)**

(a) The total estimated cost to the Government for full performance of this task order is \$45,801.53, of which the sum of \$43,055.07 represents the estimated reimbursable costs, and of which \$2,746.46 represents the fixed-fee.

(b) There shall be no adjustment in the amount of the Contractor's fixed fee.

(c) The amount currently obligated by the Government with respect to this contract is \$45,801.53, of which the sum of \$43,055.07 represents the estimated reimbursable costs, and of which \$2,746.46 represents the fixed-fee.

(d) It is estimated that the amount currently obligated will cover performance through 2 months.

(e) In accordance with FAR 52.216-8 - Fixed Fee, it is the policy of the NRC to withhold payment of fee after payment of 85 percent of the fee has been paid in order to protect the Government's interest. The amount of fixed-fee withheld from the contractor will not exceed 15 percent of the total fee or \$100,000, whichever is less. Accordingly, the maximum amount of fixed-fee that may be held in reserve is \$411.96.

**A.3 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (AUG 2011)**

This order shall commence on June 1, 2012 and will expire on July 31, 2012.

NRC-HQ-12-C-04-0065  
NRC-HQ-12-T-04-0002

**A.4 CONTRACTOR ACCEPTANCE OF TASK ORDER NRC-HQ-12-T-04-0002**

Acceptance of Task Order No. NRC-HQ-12-T-04-0002 should be made by having an official, authorized to bind your organization, execute two copies of this document in the space provided and return one copy to the Contracting Officer. You should retain the other copy for your records.

Accepted Task Order No. NRC-HQ-12-T-04-0002:

Mr. Kwikell

Name

President

Title

5/31/12

Date

## **SECTION B**

### **B.1 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS (AUG 2011)**

NRC contractors are responsible to ensure that their alien personnel are not in violation of United States immigration laws and regulations, including employment authorization documents and visa requirements. Each alien employee of the Contractor must be lawfully admitted for permanent residence as evidenced by Permanent Resident Form I-551 (Green Card), or must present other evidence from the U.S. Department of Homeland Security/U.S. Citizenship and Immigration Services that employment will not affect his/her immigration status. The U.S. Citizenship and Immigration Services provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on their website, <http://www.uscis.gov/portal/site/uscis>.

The NRC reserves the right to deny or withdraw Contractor use or access to NRC facilities or its equipment/services, and/or take any number of contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor violate the Contractor's responsibility under this clause.

### **B.2 SEAT BELTS**

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

### **B.3 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS (AUG 2011)**

#### **Review and Approval of Reports**

(a) Reporting Requirements. The contractor/grantee shall comply with the terms and conditions of the contract/grant regarding the contents of the draft and final report, summaries, data, and related documents, to include correcting, deleting, editing, revising, modifying, formatting, and supplementing any of the information contained therein, at no additional cost to the NRC. Performance under the contract/grant will not be deemed accepted or completed until it complies with the NRC's directions. The reports, summaries, data, and related documents will be considered draft until approved by the NRC. The contractor/ grantee agrees that the direction, determinations, and decisions on approval or disapproval of reports, summaries, data, and related documents created under this contract/grant remain solely within the discretion of the NRC.

(b) **Publication of Results.** Prior to any dissemination, display, publication, or release of articles, reports, summaries, data, or related documents developed under the contract/grant, the contractor/grantee shall submit them to the NRC for review and approval. The contractor/grantee shall not release, disseminate, display or publish articles, reports, summaries, data, and related documents, or the contents therein, that have not been reviewed and approved by the NRC for release, display, dissemination or publication. The contractor/grantee agrees to conspicuously place any disclaimers, markings or notices, directed by the NRC, on any articles, reports, summaries, data, and related documents that the contractor/grantee intends to release, display, disseminate or publish to other persons, the public, or any other entities. The contractor/grantee agrees, and 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, data, and related documents developed under the contract/grant, for any governmental purpose and to have or authorize others to do so.

(c) **Identification/Marking of Sensitive Unclassified Non-Safeguards Information (SUNSI) and Safeguards Information (SGI).** The decision, determination, or direction by the NRC that information possessed, formulated or produced by the contractor/grantee constitutes SUNSI or SGI is solely within the authority and discretion of the NRC. In performing the contract/grant, the contractor/grantee shall clearly mark SUNSI and SGI, to include for example, OOU-Allegation Information or OOU-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, the contractor shall use the applicable NRC cover sheet (e.g., NRC Form 461 Safeguards Information) in maintaining these records and documents. The contractor/grantee shall ensure that SUNSI and SGI is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. The contractor/grantee 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 Non-Safeguards and Safeguards Information policies, and NRC Management Directives and Handbooks 12.5, 12.6 and 12.7.

(d) **Remedies.** In addition to any civil, criminal, and contractual remedies available under the applicable laws and regulations, failure to comply with the above provisions, and/or NRC directions, may result in suspension, withholding, or offsetting of any payments invoiced or claimed by the contractor/grantee.

(e) **Flowdown.** If the contractor/grantee intends to enter into any subcontracts or other agreements to perform this contract/grant, the contractor/grantee shall include all of the above provisions in any subcontracts or agreements.

#### **B.4 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (AUG 2011)**

(a) The U.S. Nuclear Regulatory Commission (NRC) contractor and its subcontractor are subject to the Whistleblower Employee Protection public law provisions as codified at 42 U.S.C. 5851. NRC contractor(s) and subcontractor(s) shall comply with the requirements of this Whistleblower Employee Protection law, and the implementing regulations of the NRC and the Department of Labor (DOL). See, for example, DOL Procedures on Handling Complaints at 29 C.F.R. Part 24 concerning the employer obligations, prohibited acts, DOL procedures and the

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0002**

requirement for prominent posting of notice of Employee Rights at Appendix A to Part 24 entitled: "Your Rights Under the Energy Reorganization Act".

(b) Under this Whistleblower Employee Protection law, as implemented by regulations, NRC contractor and subcontractor employees are protected from discharge, reprisal, threats, intimidation, coercion, blacklisting or other employment discrimination practices with respect to compensation, terms, conditions or privileges of their employment because the contractor or subcontractor employee(s) has provided notice to the employer, refused to engage in unlawful practices, assisted in proceedings or testified on activities concerning alleged violations of the Atomic Energy Act of 1954 (as amended) and the Energy Reorganization Act of 1974 (as amended).

(c) The contractor shall insert this or the substance of this clause in any subcontracts involving work performed under this contract.

#### **B.5 GREEN PURCHASING (JUN 2011)**

(a) In furtherance of the sustainable acquisition goals of Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" products and services provided under this contract/order shall be energy- efficient (Energy Star or Federal Energy Management Program (FEMP) designated), water-efficient, biobased, environmentally preferable (e.g., Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives, where such products and services meet agency performance requirements.  
<http://www.fedcenter.gov/programs/eo13514/>

(b) The contractor shall flow down this clause into all subcontracts and other agreements that relate to performance of this contract/order.

#### **B.6 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC PAYMENT/REMITTANCE ADDRESS (AUG 2011)**

The Debt Collection Improvement Act of 1996 requires that all Federal payments except IRS tax refunds be made by Electronic Funds Transfer. It is the policy of the Nuclear Regulatory Commission to pay government vendors by the Automated Clearing House (ACH) electronic funds transfer payment system. Item 15C of the Standard Form 33 may be disregarded.

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0001**

**SECTION C**

**CONTRACT NO:** NRC-HQ-12-C-04-0065  
**TASK ORDER NO:** NRC-HQ-12-T-04-0002  
**TITLE:** Investigation of Site Risk Issues  
**JCN:** V6038  
**B&R NUMBER:** 2012-60-11-6-182  
**NRC PROJECT OFFICER:** Anders Gilbertson, 301-257-7592  
[Anders.Gilbertson@nrc.gov](mailto:Anders.Gilbertson@nrc.gov)  
**NRC CONTRACT SPECIALIST:** Claudia Melgar, 301-492-3487  
[Claudia.Melgar@nrc.gov](mailto:Claudia.Melgar@nrc.gov)

**1.0. BACKGROUND**

A full-scope site Level 3 probabilistic risk assessment (PRA) for a nuclear power plant site can provide valuable insights into the relative importance of various risk contributors by assessing accidents involving one or more reactor cores as well as other site radiological sources (i.e., spent fuel pools and dry storage casks). These insights can be used to further enhance regulatory decision-making and to help focus limited agency resources on issues most directly related to the agency's mission to protect public health and safety.

Although Level 3 PRAs have since been performed to some extent within both the United States and international nuclear industries, NRC has not sponsored development of a Level 3 PRA for a nuclear power plant site since NUREG-1150. In the more than two decades that have passed since the NUREG-1150 Level 3 PRAs were performed, numerous technical advances have been made that were not reflected in the NUREG-1150 PRA models. The staff has also identified additional scope considerations not previously considered that could be addressed by performing a new full-scope site Level 3 PRA.

During the Annual Commission Meeting on Research Programs, Performance, and Future Plans on February 18, 2010, the staff proposed a scoping study to evaluate the feasibility of performing a new full-scope site Level 3 PRA for a nuclear power plant site.

---

1 NUREG-1150, "Severe Accident Risk: An Assessment for Five U.S. Nuclear Power Plants," December 1990.



On March 19, 2010, the Commission expressed conditional support<sup>2</sup> for Level 3 PRA related activities and directed the staff to provide the Commission with various options for proceeding with this work that include costs and perspectives on future regulatory uses for Level 3 PRAs. On July 7, 2011, the NRC staff responded<sup>3</sup> to the SRM by providing three proposed options for proceeding with the Level 3 PRA development project. These three options consisted of (1) maintaining the status quo (i.e., continuing with evolutionary development of PRA technology); (2) conducting focused research to address identified gaps in existing PRA technology before performing a full-scope site Level 3 PRA; and (3) conducting a full-scope site Level 3 PRA. On September 21, 2011, the Commission approved<sup>4</sup> a modified version of the third option which extended the completion schedule from three years to four years.

Future Level 3 PRAs could be used to support a variety of PRA staffing, knowledge management, and risk communication activities. The development of future Level 3 PRAs within the NRC could help develop first-hand knowledge about PRA and the technical skills needed for performing and reviewing PRAs. In support of knowledge management activities, this development could provide the technical basis for updating guidance and training materials for PRA developers, reviewers, and users.

A PRA is a complex model that consists of many technical aspects and can provide both qualitative and quantitative assessments of risk. Each technical aspect of the PRA must be adequately documented so that the process of developing the PRA is well understood and can be easily reproduced. Modern information technology can be used to enhance the documentation of the technical aspects of the PRA such as relevant assumptions, decisions, methods, models, tools, and data. In addition this enhanced documentation can facilitate external stakeholder understanding of not only the relative importance of various risk contributors to public risk, but also the underlying assumptions and limitations affecting the results and risk insights.

## **2.0 OBJECTIVE**

The objective of this task is to develop a documentation process that can be utilized for the full-scope site Level 3 PRA project. This documentation process should account for the benefits of using modern information technology for the purpose of improving risk communication.

---

<sup>2</sup> SRM 100218, "Staff Requirements—Briefing on Research Programs, Performance, and Future Plans," dated March 19, 2010 (ADAMS Accession No ML100780578).

<sup>3</sup> SECY-11-0089, "Options for Proceeding with Future Level 3 Probabilistic Risk Assessment Activities," dated July 7, 2011 (ADAMS Accession No ML11090A039).

<sup>4</sup> SRM-SECY-11-0089, "Staff Requirements—SECY-11-0089—Options for Proceeding with Future Level 3 Probabilistic Risk Assessment (PRA) Activities," dated September, 21, 2011 (ADAMS Accession No ML112640419).

### **3.0 SCOPE OF WORK**

Future Level 3 PRAs could be used to support a variety of PRA staffing, knowledge management, and risk communication activities. The development of future Level 3 PRAs within the NRC could help develop first-hand knowledge about PRA and the technical skills needed for performing and reviewing PRAs. In support of knowledge management activities, this development could provide the technical basis for updating training materials for PRA developers, reviewers, and users. The work under this task order shall include the development of an effective documentation process for the full-scope site Level 3 PRA project, as discussed in section 4.0.

### **4.0 TASK**

#### **4.1 Task 2 DEVELOPMENT OF THE DOCUMENTATION PROCESS**

**Requirement:** The contractor shall develop a documentation process that can be utilized for the full-scope site Level 3 PRA project. The developed documentation process shall also investigate and take advantage of, as appropriate, modern information technology for the purpose of improving the overall risk communication of the full-scope site Level 3 PRA project, including making the PRA information more accessible, retrievable, and understandable. As part of this task, the contractor, with assistance from the NRC contracting officer representative (COR), shall interview NRC staff members who are potential users of the information produced from the full-scope site Level 3 PRA project so as to identify and incorporate the most beneficial documentation capabilities.

**Standard(s):** The contractor shall submit all deliverables on time to the NRC contracting officer representative (COR) and NRC contracting officer (CO) and the deliverable shall be technically acceptable and in the specified format. The contractor shall provide the deliverables in the form of Microsoft® Word® 2007 and Microsoft® PowerPoint® 2007 documents, as appropriate, to NRC COR and NRC CO, unless otherwise directed by the NRC COR.

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0001**

**5.0 DELIVERABLES/SCHEDULES AND/OR MILESTONES**

Task 2 shall have the following reporting requirements:

**White Paper Status Report**

Standard: For Task 2 a brief (1 or 2 page) report on the status of the white paper shall be provided to the NRC project manager by the contractor 2 weeks after work has initiated on the task. This report shall describe the activities that have been performed by the contractor on this task and what information sources have been used, as well as any planned upcoming activities to be performed and information sources to be used by the contractor. The report should also include the current (preliminary) list of issues and brief mention of notable insights, if any.

**Draft White Paper**

Standard: For Task 2, the completed draft white paper shall be provided to the NRC project manager by the contractor 4 weeks after work has been initiated on the task. This draft white paper will be reviewed by NRC staff and the staff will provide comments on the draft white paper within a week of NRC receipt of the document. Following the staff's review, the draft white paper will be returned to the contractor and any NRC comments will be discussed with the contractor to determine how the contractor should resolve the comments.

**Final White Paper**

Standard: For Task 2, the final white paper shall be provided to the NRC project manager by the contractor 1.5 months after work has been initiated on the task. The final version of the white paper shall address all NRC comments on the draft version, unless otherwise agreed to by the NRC project manager. Following delivery of the final white paper, the contractor shall work with NRC staff to resolve any new or outstanding comments on the paper.

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0001**

**6.0 Key Personnel**

The following individuals are considered essential to the successful performance of work hereunder and are key personnel:

Name	Key Personnel
Dr. Mohsen Khatib-Rahbar	Project Manager
Dr. David Beraha	Technical Resource
Dr. Roy Karimi	Lead Analyst
Dr. Ali Azarm	Support Analyst

The contractor agrees that such personnel shall not be removed from the effort under the TO without approval of the NRC PO and NRC CO.

**7.0 RESEARCH QUALITY**

The quality of NRC research programs are assessed each year by the Advisory Committee on Reactor Safeguards. Within the context of their reviews of RES programs, the definition of quality research is based upon several major characteristics:

Results meet the objectives (75 percent of overall score)  
Justification of major assumptions (12 percent)  
Soundness of technical approach and results (52 percent)  
Uncertainties and sensitivities addressed (11 percent)

Documentation of research results and methods is adequate (25 percent of overall score)  
Clarity of presentation (16 percent)  
Identification of major assumptions (9 percent)

It is the responsibility of the contractor to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC project manager and technical monitor will review all research products with these criteria in mind.

**8.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED**

This task requires in-depth knowledge and expertise in the development and analysis of PRA modeling aspects associated with the development of a Level 3 PRA. This expertise includes, but is not limited to in-depth knowledge and expertise in the development of initiating event analysis; event tree development and analysis; system reliability model (e.g., fault tree) development and analysis; human reliability analysis, data analysis, accident sequence quantification, uncertainty analysis; and PRA modeling of internal fires and floods, external events, and low power and shutdown modes of reactor operation. This task also requires familiarity with PRA modeling of non-reactor sources of radiological material (i.e., spent fuel pools and dry storage casks).

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0001**

As part of this task, the contractor shall interface with the team performing the Level 2 and 3 PRA aspects of the study. However, specific expertise in Level 2 and 3 PRA is not required for performance of this contract.

Additionally, the contractors shall also be technically creditable to respond to technical questions during presentations to the Advisory Committee on Reactor Safeguards (ACRS). The contractor's technical credibility will be based on their in-depth knowledge of PRA resulting from their education and work experience.

The labor categories required for this project are listed below including their descriptions:

**Senior Engineer/Analyst (or equivalent)**

Individuals that are proposed to work under this labor category shall possess a minimum of 15 years of technical experience and 5 years of project management experience. The minimum educational requirements are a Ph.D. or Master's degree in a recognized engineering or scientific field from an accredited program of study. Equivalent experience in a science or engineering field may be considered. These individuals shall also have multiple scientific publications and have extensive peer recognition as an authority in his/her field of study.

Technical experience shall consist largely of the in-depth knowledge and expertise discussed in the first paragraph of this section, and should also include technical experience with applied research, technical analysis, technical support activities, and independent problem solving. Project management experience shall include experience with directing work under technical projects and with multiple personnel. Experience with directing PRA-type projects is preferred.

**Engineer/Analyst (or equivalent)**

Individuals that are proposed to work under this labor category shall possess a minimum of 3 years of technical experience and a Master's or a minimum of 5 years of technical experience and a Bachelor's degree. The academic degree shall be for a recognized engineering or scientific field from an accredited program of study. An Engineer/Analyst is expected to perform detailed PRA analyses with some direction from the Senior Engineer/Analyst, but should possess enough understanding of the development of PRAs to make independent technical decisions.

Technical experience shall, at a minimum, consist of familiarity with developing models and performing analyses for a PRA. Specifically, this familiarity should include a significant understanding of the aspects of a PRA discussed in the first paragraph of this section.

## 9.0 PUBLICATIONS NOTE

RES encourages the publication of the scientific results from RES sponsored programs in refereed scientific and engineering journals as appropriate. If the laboratory proposes to publish in the open literature or present the information at meeting in addition to submitting the required technical reports, approval of the proposed article or presentation should be obtained from the NRC Project Manager. The RES Project Manager shall either approve the material as submitted, approve it subject to NRC suggested revisions, or disapprove it. In any event, the RES Project Manager may disapprove or delay presentation or publication of papers on information that is subject to Commission approval that has not been ruled upon or which has been disapproved. Additional information regarding the publication of NRC sponsored research is contained in NRC Management Directives 3.7, "NUREG Series Publications," and 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects."

If the presentation or paper is in addition to the required technical reports and the RES Project Manager determines that it will benefit the RES project, the Project Manager may authorize payment of travel and publishing costs, if any, from the project funds. If the Project Manager determines that the article or presentation would not benefit the RES project, the costs associated with the preparation, presentation, or publication will be borne by the contractor. For any publication or presentations falling into this category, the NRC reserves the right to require that such presentation or publication will not identify the NRC's sponsorship of the work.

### NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS

The U.S. Nuclear Regulatory Commission (NRC) began to capture most of its official records electronically on January 1, 2000. The NRC will capture each final NUREG-series publication in its native application. Therefore, please submit your final manuscript that has been approved by your NRC Project Manager in both electronic and camera-ready copy.

All format guidance, as specified in NUREG-0650, Revision 2, will remain the same with one exception. You will no longer be required to include the NUREG-series designator on the bottom of each page of the manuscript. The NRC will assign this designator when we send the camera-ready copy to the printer and will place the designator on the cover, title page, and spine. The designator for each report will no longer be assigned when the decision to prepare a publication is made. The NRC's Publishing Services Branch will inform the NRC Project Manager for the publication of the assigned designator when the final manuscript is sent to the printer.

For the electronic manuscript, the Contractor shall prepare the text in Microsoft Word, and use any of the following file types for charts, spreadsheets, and the like.

**NRC-HQ-12-C-04-0065**  
**NRC-HQ-12-T-04-0001**

File Types to be Used for NUREG-Series Publications	
File Type	File Extension
Microsoft®Word®	.doc
Microsoft® PowerPoint®	.ppt
Microsoft®Excel	.xls
Microsoft®Access	.mdb
Portable Document Format	.pdf

This list is subject to change if new software packages come into common use at NRC or by our licensees or other stakeholders that participate in the electronic submission process. If a portion of your manuscript is from another source and you cannot obtain an acceptable electronic file type for this portion (e.g., an appendix from an old publication), the NRC can, if necessary, create a tagged image file format (file extension.tif) for that portion of your report. Note that you should continue to submit original photographs, which will be scanned, since digitized photographs do not print well.

If you choose to publish a compact disk (CD) of your publication, place on the CD copies of the manuscript in both (1) a portable document format (PDF); (2) a Microsoft Word file format, and (3) an Adobe Acrobat Reader, or, alternatively, print instructions for obtaining a free copy of Adobe Acrobat Reader on the back cover insert of the jewel box.

#### **10.0 MEETINGS AND TRAVEL**

One 2-person trip for 2 days to NRC HQ to discuss multi-unit considerations. The government will pay up to the rates specified in the Government Federal Travel Regulations (FTR) for travel destination. **NO PAYMENT WILL BE MADE WITHOUT BACKUP DOCUMENTATION/RECEIPTS.** All travel must be approved in advance by the NRC Contracting Officer Representative.

Hotel reservations, estimated cost for travel, rental car and, any other expenses that may be incurred in connection with the tasks shall be made by the contractor and will be reimbursed for actual plus allowable negotiated General and Administration, with back up documentation/receipts attached to the invoice. Actual expenses will be reimbursed up to the established ceiling for travel.

#### **11.0 NRC-FURNISHED MATERIAL**

No NRC-furnished materials are required.

NRC-HQ-12-C-04-0065  
 NRC-HQ-12-T-04-0001

**SECTION D**

**CONTRACTOR SPENDING PLAN – TASK ORDER 2**

Period of Performance: June 1, 2012 through July 31, 2012  
 Solicitation No.: NRC-HQ-12-R-04-0045, Task Order 2  
 Total Estimated Costs: \$45,801.53  
 Offeror Name: Energy Research, Inc.

Cost Details by Month: Cost Elements	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month
Direct Costs	\$17,915.28	\$17,915.28				
Indirect Costs	\$4,985.49	\$4,985.49				
Total Estimated Costs	\$22,900.77	\$22,900.77				
Project Completion	50%	100%				
Cost Elements	7th Month	8th Month	9th Month	10th Month	11th Month	12th Month
Direct Costs						
Indirect Costs						
Total Estimated Costs						
Project Completion						





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON DC 20555

May 30, 2012

Energy Research, Inc.  
Attention: Tracey Mullinix  
6189 Executive Blvd.  
Rockville, MD 20852-3901


SUBJECT: TASK ORDER NRC-HQ-12-T-04-0002 UNDER CONTRACT NUMBER  
NRC-HQ-12-C-04-0065, ENTITLED "DEVELOPMENT OF THE  
DOCUMENTATION PROCESS FOR THE FULL-SCOPE SITE LEVEL 3  
PRA PROJECT"

Dear Ms. Mullinix:

Enclosed for your review and signature is an electronic copy of the subject task order. If you agree with the provisions contained therein, please sign, date, and return one signed copy to the specialist. **A scanned copy or electronic signature is acceptable and highly encouraged, it can be sent to [Claudia.Melgar@nrc.gov](mailto:Claudia.Melgar@nrc.gov).** Or you can also fax the signed copy to 301-492-3487.

Should you have any questions regarding the subject task order, please contact Claudia G. Melgar, on 301-492-3487 or [Claudia.Melgar@nrc.gov](mailto:Claudia.Melgar@nrc.gov).

Sincerely,

  
Adelis M. Rodriguez, Contracting Officer  
Reactors, Safety and Licensing Branch  
Division of Contracts

Enclosure: Task Order No. NRC-HQ-12-T-04-0002