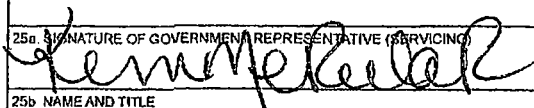
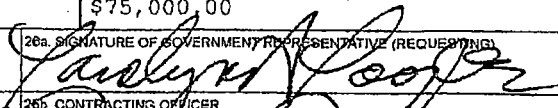


INTERAGENCY AGREEMENT		1. IAA NO. NRC-HQ-60-15-D-0009		PAGE 1 OF 3	
2. ORDER NO.		3. REQUISITION NO. RES-15-0304		4. SOLICITATION NO.	
5. EFFECTIVE DATE 06/30/2015		6. AWARD DATE 06/30/2015		7. PERIOD OF PERFORMANCE 07/06/2015 TO 11/30/2018	
8. SERVICING AGENCY BROOKHAVEN NATIONAL LABORATORY ALC: DUNS: 027579460 +4: BROOKHAVEN SITE OFFICE PO BOX 5000 BLDG 464 UPTON NY 11973-5000 POC Kim Nekulak TELEPHONE NO. 631-344-7439			9. DELIVER TO PETER APPIGNANI US NUCLEAR REGULATORY COMMISSION TWO WHITE FLINT NORTH BUILDING 11545 ROCKVILLE PIKE MAIL STOP T-10A1 ROCKVILLE MD 20852		
10. REQUESTING AGENCY ACQUISITION MANAGEMENT DIVISION ALC: 31000001 DUNS: 040535809 +4: US NUCLEAR REGULATORY COMMISSION TWO WHITE FLINT NORTH 11545 ROCKVILLE PIKE MAIL STOP T-5E3 ROCKVILLE MD 20852-2738 POC Carolyn A. Cooper TELEPHONE NO. (301)415-6734			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-5E03 WASHINGTON DC 20555-0001			13. LEGISLATIVE AUTHORITY Energy Reorganization Act of 1974		
			14. PROJECT ID		
			15. PROJECT TITLE LEVEL 3 PRA PROJECT PEER REVIEW		
18. ACCOUNTING DATA 2015-C0200-FEEBASED-60-60D002-11-6-213-1052-251D					
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	NRC-HQ-60-15-D-0009 The NRC and the DOE Laboratory (BNL) hereby enter into this Agreement for the project entitled, "Peer Review of the Full-Scope Site Level 3 Probabilistic Risk Assessment Project." BNL PI: Pranab K. Samanta (631)344-4948 NRC COR: Peter Appignani (301)415-2360 ALT COR: Jeffrey Wood (301) 415-0953 The period of performance of this agreement shall Continued ...				
23. PAYMENT PROVISIONS		24. TOTAL AMOUNT \$75,000.00			
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING) 		25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) 			
25b. NAME AND TITLE Kim Nekulak, Contracting Officer		25c. DATE JUL 16 2015		25c. CONTRACTING OFFICER CAROLYN A. COOPER	
		25c. DATE 6/30/2015			

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

AUG 17 2015

ADM002

IAA NO NRC-HQ-60-15-D-0009	ORDER NO	PAGE 2	OF 3
<p>commence on July 6, 2015 and end on November 30, 2018.</p> <p>CONSIDERATION AND OBLIGATIONS:</p> <p>(A) Authorized Cost Ceiling Amount: \$702,325.00</p> <p>(B) The amount presently obligated with respect to this DOE Agreement is \$75,000.00. When and if the amount(s) paid and payable to the DOE Laboratory hereunder equals the obligated amount, the DOE laboratory shall not be obligated to continue performance of the work unless and until the NRC Contracting Officer increases the amount obligated with respect to this DOE Agreement. Any work undertaken by the DOE Laboratory in excess of the obligated amount specified above is done so at the DOE laboratory's sole risk.</p> <p>The following documents are hereby made part of this Agreement:</p> <p>Attachment No. 1: Statement of Work</p> <p>Attachment No. 2: DOE Standard Terms and Conditions</p> <p>ALC: 31000001 DUNS: 040535809</p> <p>TAS: 31X0200.320</p> <p>Master IAA: N/A</p>			
<p>00001 Authorized Ceiling Amount</p> <p>Line Item Ceiling\$702,325.00</p> <p>Incrementally Funded Amount: \$75,000.00</p> <p>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.</p> <p>[] Fee Recoverable Work</p> <p>[X] Non-fee Recoverable Work</p> <p>Notwithstanding the agreement effective dates and period of performance start dates stated elsewhere</p> <p>Continued ...</p>			702,325.00

IAANO NRC-HQ-60-15-D-0009	ORDER NO	PAGE 3	OF 3
<p>in the agreement, the effective date of the agreement and start date of the period of performance are the last date of signature by the parties.</p> <p>The total amount of award: \$702,325.00. The obligation for this award is shown in box 24.</p>			

STATEMENT OF WORK

NRC Agreement Number	NRC Agreement Modification Number	NRC Task Order Number (If Applicable)	NRC Task Order Modification Number (If Applicable)
NRC-HQ-60-15-D-0009		NA	NA
Project Title			
Peer Review of the Full-Scope Site Level 3 Probabilistic Risk Assessment Project			
Common Cost Center Number	B&R Number	DOE Laboratory	
1052	11-6-213-1052, Operating Reactors - Research - Reactors Research - Risk Analysis	Brookhaven National Lab	
NRC Requisitioning Office			
Office of Nuclear Regulatory Research (RES/DRA/PRAB)			
NRC Form 187, Contract Security and Classification Requirements			
<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Not Applicable		<input checked="" type="checkbox"/> Involves Proprietary Information <input type="checkbox"/> Involves Sensitive Unclassified	
<input checked="" type="checkbox"/> Non Fee-Recoverable		<input type="checkbox"/> Fee-Recoverable (If checked, complete all applicable sections below)	
Docket Number (If Fee-Recoverable/Applicable)		Inspection Report Number (If Fee Recoverable/Applicable)	
Technical Assignment Control Number (If Fee-Recoverable/Applicable)		Technical Assignment Control Number Description (If Fee-Recoverable/Applicable)	

1.0 BACKGROUND

This is a new DOE agreement to conduct an independent peer review of the full-scope site Level 3 probabilistic risk assessment (PRA) project (referred to as the Level 3 PRA project) per SRM-SECY-11-0089.

In response to the Commission direction in the staff requirements memorandum (SRM) (Agencywide Documents and Management System [ADAMS] Accession No. ML112640419) resulting from SECY-11-0089, "Options for Proceeding with Future Level 3 Probabilistic Risk Assessment (PRA) Activities" (ADAMS Accession No. ML11090A039), the staff is conducting a full-scope site Level 3 Probabilistic Risk Assessment (PRA). As described in SECY-11-0089, this project will meet the following objectives:

- Develop a Level 3 PRA, generally based on current state-of-practice methods, tools, and data,¹ that (1) reflects technical advances since the last NRC-sponsored Level 3 PRAs (NUREG-1150²), which were completed over 20 years ago, and (2) addresses scope considerations that were not previously considered (e.g., low power/shutdown (LPSD), multi-unit risk, other radiological sources).
- Extract new insights to enhance regulatory decision-making and to help focus the agency's mission to protect public health and safety.
- Enhance PRA staff capability and expertise, and improve documentation practices to make PRA information more accessible, retrievable, and understandable.
- Demonstrate technical feasibility and evaluate the realistic cost of developing new Level 3 PRAs.

The scope of the Level 3 PRA project includes all major site radiological sources,³ all internal and external hazards typically considered in previous internal and external event PRAs,⁴ and all modes of plant operation. This scope exceeds that of the NUREG-1150 studies in a number of areas. In particular, as described in SECY-11-0089, the NUREG-1150 studies did not include an assessment of accidents involving other radiological sources such as spent fuel pools, dry storage casks, and other units on site. In addition, the NUREG-1150 studies only addressed at-power operation (though subsequent studies for two of the NUREG-1150 plants involved a limited analysis of low power and shutdown modes of operation) and only partially addressed external hazards.

The current Level 3 PRA project will also incorporate advances made in PRA technology since the completion of the NUREG-1150 studies, as well as more recent changes in nuclear power plant operational performance and safety.

A peer review of each Stage of the project, to include all technical elements of each Stage, as outlined in the Technical Analysis Approach Plan for Level 3 PRA Project (TAAP), is being performed consistent with the ASME/American Nuclear Society (ASME/ANS) PRA standard.⁵

The Office of Management and Budget (OMB) *Final Information Quality Bulletin for Peer Review*⁶ will be used as a guide in performing this peer review. The review will be solely of scientific and technical matters; policy determinations are left for the agency as specified in *Applying OMB Peer Review Guidelines* memo, ADAMS Accession No. ML051600303. This

¹ "State-of-practice" methods, tools, and data refer to those that are routinely used by the NRC and licensees or have acceptance in the PRA technical community.

² NUREG-1150, "Severe Accident Risk: An Assessment for Five U.S. Nuclear Power Plants," December 1990.

³ Including all reactor cores, spent fuel pools, and dry storage casks on site, but excluding fresh nuclear fuel, radiological waste, and minor radiological sources (e.g., calibration devices).

⁴ Deliberate malevolent acts (e.g., terrorism and sabotage) are specifically excluded from the scope of the project.

⁵ ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," Addendum A to RA-S-2008, ASME, New York, NY, American Nuclear Society, La Grange Park, Illinois, February 2009.

⁶ Office of Management and Budget (OMB) *Final Information Quality Bulletin for Peer Review*, Federal Register / Vol. 70, No. 10 / Friday, January 14, 2005 / Notices (70 FR 2664)

independent external peer review is in addition to the ASME/ANS PRA Standard peer reviews outlined in Section 18 of the Technical Analysis Approach Plan for Level 3 PRA Project (TAAP).

2.0 OBJECTIVE

The objective of this agreement is to conduct an independent external peer review to provide an independent assessment of the documented technical work conducted within the Level 3 PRA project. The primary focus is to determine that the model developed for the Level 3 PRA project is technically reasonable and produces reasonable results.

3.0 SCOPE OF WORK

Brookhaven National Laboratory (BNL) shall provide all personnel, equipment, facilities, and resources necessary to accomplish the tasks and deliverables described in this statement of work (SOW).

BNL shall perform peer reviews of the NRC's Level 3 PRA project in an organized and structured approach. This includes a scientific assessment as described in the Office of Management and Budget (OMB) *Final Information Quality Bulletin for Peer Review* as "an evaluation of a body of scientific or technical knowledge that typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information. These assessments include, but are not limited to, state-of-science reports; technology assessments; weight of-evidence analyses; meta-analyses; health, safety, or ecological risk assessments; toxicological characterizations of substances; integrated assessment models; hazard determinations; or exposure assessments. Such assessments often draw upon knowledge from multiple disciplines." Although the TAAP is dynamic and subject to change the TAAP is the guiding document for completing the Level 3 PRA project and should be used to the extent practicable in focusing the scope of the peer reviews. The scope should consider the technical elements as identified in the TAAP.

The requirements established for "influential scientific information" in OMB *Final Information Quality Bulletin for Peer Review* shall be used as a guide in performing the peer reviews. This includes, but is not limited to the selection of qualified individuals to perform the peer review; and the depth of review desired.

The peer reviews are anticipated to be performed by a small group of highly knowledgeable and experienced individuals (2 or 3 individuals). Each peer reviewer is expected to document their insights, both positive and negative, based on the current state of practice for the subject being assessed.

The selection of qualified participants shall be based on expertise relative to the technical area being reviewed, with due consideration of independence and conflict of interest. Qualified participants should be well representative of a wide range of stakeholders including, but not limited to:

- Other U.S. National Labs (not limited to DOE laboratories)
- Academia
- Other Federal agencies

- General recognized experts in the field of PRA and associated engineering disciplines
- Industry (technical organizations, excludes lobbyists)
- Public interest groups (e.g., Union of Concerned Scientist, Greenpeace, other)
- Other

Individuals, including NRC staff, DOE Laboratory personnel and industry consultants, who have personally participated in the development of the Level 3 PRA project, shall be excluded from participating as a peer reviewer. That includes individuals who have participated in ASME/ANS PRA standards peer reviews in support of the Level 3 PRA project

One expectation to consider is that the NRC will publicly disclose the names of the reviewers and the substance of their comments. At a minimum, the names and affiliations of the reviewers will be publicly disclosed along with a summary of their comments to ensure that the peer review process is transparent.

The final peer review report(s) completed by the reviewers and/or Laboratory and delivered to the NRC under this contract will be publicly available, and must be able to withstand a high level of scrutiny. Therefore, the peer review will focus on publicly available information and documentation. However, it is recognized that the peer review participants will also need access to proprietary information used in developing the Level 3 PRA. BNL and its contractors are responsible for ensuring that proprietary information is not included in the publicly available final report(s). It is also the responsibility of BNL to ensure that the experts identified by BNL to participate in the peer review are appropriately vetted to access this information and are expected to properly control any proprietary information in their possession. The NRC does recognize that a broad range of disciplines and associated expertise will be required to perform this peer review and that the availability of qualified experts may be limited. There is no classified or safeguards information associated with this project.

4.0 SPECIFIC TASKS

BNL shall perform the following tasks:

TASK 1. Coordinate with NRC staff to obtain the necessary information to perform the peer reviews

- A. BNL shall coordinate with NRC staff to obtain the necessary information to perform the peer reviews. There is a substantial amount of documentation available for the Level 3 probabilistic risk assessment and only the information necessary to complete a technical review will be provided to the peer reviewers. A meeting with NRC staff prior to commencing any work is strongly encouraged (aka a kick-off meeting). BNL shall plan to meet with NRC staff at NRC Headquarters to review the information relative to the Level 3 PRA project and identify the information requirements.

TASK 2. Establish guidance for the peer review project

- A. BNL shall create a project level guidance document for the peer review project. This guidance document will assist the DOE Lab in managing the project and provide assurance to NRC that the peer reviews conform to the applicable guidance. The actual peer review process will be developed via a separate task.

Using the OMB peer review guidance⁷, the NRC Memo on Applying the OMB Peer Review Guidelines⁸, the TAAP, and other applicable guidance, create a guidance document for this peer review project. Factors to consider include, but are not limited to:

- How individual peer reviews will be coordinated and conducted
 - Expectations of the peer reviewers
 - Transparency
 - Non disclosure agreements
 - Independence
 - Participant selection process
 - Establishing independence from the Level 3 PRA project
 - Conflict of interest identification, including organizational conflict of interest
 - Distribution and control of information
 - Control of proprietary information
 - Determine when an appropriate segment in the Level 3 probabilistic risk assessment (i.e. TAAP) is sufficiently complete to review and what segments should be reviewed together
 - Scope (e.g., level of detail) of the peer reviews
 - When/how peer review reports are delivered to NRC
 - Oversight of peer reviewers by the DOE Laboratory
 - Leadership roles and responsibilities
 - Scheduling
 - Issue tracking
 - Coordination with NRC staff
 - NRC feed back
 - Other considerations
- B. A draft Project Guidance Document shall be submitted to NRC for review and comment. NRC staff will review and approve the guidance document.

TASK 3. Identify the areas of expertise necessary to perform the peer reviews.

- A. BNL shall examine the TAAP to identify the areas of expertise needed to perform a complete and independent technical assessment of the Level 3 PRA project. Document this examination and the results of that examination.

⁷ Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review, Federal Register / Vol. 70, No. 10 / Friday, January 14, 2005 / Notices (70 FR 2664)

⁸ Applying OMB Peer Review Guidelines memo, ADAMS Accession No. ML051600303

Based on the above examination and understanding of the composition of a full-scope PRA, BNL shall identify how the Level 3 PRA will be partitioned to allow for an effective and efficient peer review. The partitions identified will be a significant basis for defining the scope of the reviews. For example, the reactor, at-power internal and external hazards analysis could be a single partition to be reviewed, or the reactor, at-power internal hazards analysis could be reviewed separately from the reactor, at-power external hazards analysis. Priority should be given to the most effective and efficient scheme, while not exacerbating the technical quality of the review.

B. The TAAP addresses the various scope elements of the study, in Sections 12 through 17. The major scope elements are provided below for convenience.

- Reactor, at-power internal hazards Level 1, 2, 3 PRA
- Reactor, at-power external and other hazards Level 1, 2, 3 PRA
- Reactor, low-power and shutdown internal and external hazards Level 1, 2, 3 PRA
- Spent fuel pool Level 1, 2, 3 PRA
- Dry cask storage Level 1, 2, 3 PRA
- Integrated site risk PRA (i.e., integration of both reactors, the spent fuel pools, and dry cask storage)

The NRC recognizes that the scope elements may not be ideally categorized to perform a technical peer review. Although the TAAP is dynamic and subject to change the TAAP is the guiding document for completing the Level 3 PRA project and should be used to the extent practicable in focusing the scope of the peer reviews. The scope should also consider the technical elements as identified in the TAAP, to the extent practicable.

TASK 4. Identify qualified participants based on the expertise requirements identified in Task 3 with due consideration of independence and conflict of interest

- A. Based upon the areas of expertise established in Task 3, identify candidate participants qualified to perform an appropriate technical review of the Level 3 PRA project or parts thereof.

NOTE: Individuals, including NRC staff, DOE Laboratory personnel and industry consultants, who have participated in the development of the Level 3 PRA, shall be excluded from participating in this peer review. That includes individuals who have participated in ASME/ANS PRA standards peer reviews in support of the Level 3 PRA project.

- B. BNL shall submit the list of candidate participants to NRC staff for review, along with a resume for each candidate and which scope elements (or technical areas within a scope element) of the Level 3 PRA the individual will be reviewing. NRC staff will review and approve all candidate participants identified by BNL and notify the lab which are acceptable candidates.

TASK 5. Place approved participants under subcontract

- A. BNL shall place the NRC approved participants, who are not BNL employees, under contract to perform the peer reviews, when necessary. In addition to the standard terms of the contract, the contract shall include the following provisions:
- A requirement to sign a non-disclosure agreement with respect to the Level 3 probabilistic risk assessment project. BNL and NRC staff will work together to establish an appropriate standard non-disclosure agreement.
 - The subcontractors are expected to properly control any proprietary information in their possession.
 - The subcontractors should have the expectation that the NRC will publicly disclose the slate of reviewers and the substance of their comments. At a minimum, the names and affiliations of the reviewers will be publicly disclosed along with a summary of their comments to ensure that the peer review process is transparent.
 - BNL and its contractors are responsible for ensuring that proprietary information is not included in the publicly available final report(s).
- B. Some potential peer reviewers may not require a contract (e.g., staff from other Federal agencies or foreign government organizations). However, these participants, as well as BNL staff participating in the peer reviews shall also be subject to the terms above.

TASK 6. Create and establish a Peer Review Process

- A. BNL shall create and establish a peer review process. The process created will assist the peer reviewers and provide for consistency of the actual peer reviews. The peer review process shall utilize a structured and organized approach. As stated above, the objective of the peer review is to provide an independent assessment of the technical work conducted within the Level 3 PRA project. The primary focus is to determine that the model developed for the Level 3 PRA project is technically reasonable and produces reasonable results. The technical review shall be based on the current "state of practice". Although the statement of work assumes the participants chosen to perform the peer reviews will have sufficient knowledge and expertise in the areas they will be reviewing, the peer review process shall include any criterion or criteria used to determine the reasonableness of the PRA model and its results for the subject areas under review.
- B. Each peer reviewer will perform an independent review of their areas of expertise associated with the applicable segment of the Level 3 PRA project. Each peer reviewer is expected to document their insights, both positive and negative, based on the current state of practice for the subject being assessed. At a minimum, the peer reviewers shall document which insights they consider crucial to the reasonableness of the PRA model and its results (key insights) and distinguish them from the other insights they identify.

No consensus advice or recommendations resulting from group deliberation or interaction is permitted.

C. The peer review process should include the following major activities:

- Preparation for the peer review,
- Performance of the peer review and
- Post peer review activities.

Items to consider in the peer review process include:

- The criterion or criteria, if any, used to determine the reasonableness of the PRA model and its results for the topic being reviewed
- What is expected of the peer reviewers
- Distribution of documentation/information to peer reviewers
- Who will be the peer review lead
- Who will coordinate the report writing and the reports
- Coordination with NRC staff
- Other

All reports shall be submitted in Microsoft Word format. Spreadsheets associated with the reports shall be submitted in Microsoft Excel format.

A draft process document shall be submitted to NRC for review and comment. NRC staff will review and approve the process document.

TASK 7. Schedule the Peer Reviews

The peer review schedule will be determined after the completion of Tasks 1, 2 & 3. BNL and NRC staff will work together to establish an initial schedule based on the areas of the Level 3 PRA that are significantly complete to perform a peer review and the anticipated schedule of the areas yet to be completed.

The peer reviews should be scheduled for completion prior to the period of performance end date.

TASK 8. Perform a Peer Review of the full-scope site Level 3 Probabilistic Risk Assessment

- A. BNL shall perform a peer review of the Level 3 PRA for each partition identified in Task 3. Each peer review shall be conducted in a structured and organized approach in accordance with the peer review process established in Task 6.
- B. BNL shall repeat Task 8 for each area/partition identified in Task 3.

TASK 9. Peer Review Reports

- A. A report shall be prepared by each peer reviewer, independently, for each area (partition) reviewed. At a minimum, each report shall contain the following sections:
- Purpose
 - Objective
 - Executive summary to include key insights (see Task 6)
 - A signed statement of independence
 - Scope of the review
 - Insights⁹ (results, conclusions, outcomes) both positive and negative and the significance (consequence or implication) of the insight.
 - Suggestions or recommendations to improve the technical acceptability of the Level 3 PRA.
 - Resume of the reviewer

BNL shall coordinate the individual peer review reports, assemble the individual reports into a single document, if applicable, and submit to NRC. BNL shall provide a cover page indicating, at a minimum, the scope (what was reviewed) and who performed the review(s). When multiple reports are assembled, the reviewer's executive summaries including key insights shall be duplicated as part of the front matter preceding the individual peer review reports.

It is suggested that BNL prepare a standard statement of independence for all reviews, and a standard purpose, objective and scope for each area reviewed.

TASK 10. Present Results to ACRS

NRC staff anticipates that the Advisory Committee on Reactor Safeguards (ACRS) will review this work and schedule a meeting for discussion. This task provides for BNL participation at that meeting. Note section 14.0, *Research Quality*

5.0 DELIVERABLES AND/OR MILESTONES SCHEDULE

DELIVERABLES: The deliverables for this project are:

- Final Peer Review Guidance Document
- Final Peer Review Partitions report
- Final Peer Review Process
- The Peer Review Reports
- Monthly Letter Status Reports (MLSRs)

⁹ Task 6: Each peer reviewer is expected to document their insights, both positive and negative, based on the current state of practice for the subject being assessed. As a minimum, the peer reviewers shall document which insights they consider crucial to the success of the project (key insights) and distinguish them from the other insights they identify. No consensus advice or recommendations resulting from group deliberation or interaction is permitted.

Deliverables shall be delivered to the COR, electronically in the formats specified above. MLSRs shall be delivered as specified in section 9.0, Reporting Requirements below. Other file formats will be at the discretion of the COR in accordance with agency standards specified in section 9.0, Reporting Requirements below.

MILESTONES SCHEDULE: The table below lists milestones, deliverables and their due dates.

Task Number	Deliverable/Milestone Description	Due Date
2	Draft Peer Review Guidance Document	NLT 60 working days from the commencement of this agreement.
2	Final Peer Review Guidance Document	NLT 30 working days after receipt of NRC comments
3	Draft Peer Review Partitions	NLT 90 working days from the commencement of this agreement
3	Final Peer Review Partitions	NLT 30 working days after receipt of NRC comments
4	Draft List of Candidate Participants	NLT 90 working days from the commencement of this agreement
4	Final List of Candidate Participants	NLT 30 working days after receipt of NRC comments
6	Draft Peer Review Process	NLT 120 working days from the commencement of this agreement
6	Final Peer Review Process	NLT 30 working days after receipt of NRC comments
7	Draft Peer Review Schedule	NLT 120 working days from the commencement of this agreement
7	Final Peer Review Schedule	NLT 30 working days after receipt of NRC comments
8&9	Peer Review Reports	Per peer review schedule established in Task 7
10	Trip Report for ACRS Meeting	TBD

NOTE: For Tasks 2, 3, 4, 5, 6 and 7, BNL should expect NRC to provide comments to BNL within 30 days of receipt. For Task 9, Peer Review Reports, BNL should expect NRC to provide comments to BNL within 60 days of receipt.

6.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

This project requires staff and subcontractors with expertise in the areas of commercial nuclear power plant PRA and associated engineering disciplines (e.g., thermal hydraulics, systems analysis, human reliability). In addition, areas of expertise will be identified in Task 4.

7.0 MEETINGS AND TRAVEL

The following travel is anticipated for this agreement:

- 1) Task 1: Information assessment and kick-off meeting
 - NRC Headquarters, Rockville, MD.
 - 2 persons
 - 4 days
- 2) Progress Meetings (2 trips)
 - NRC Headquarters, Rockville, MD.
 - 1 person
 - 2 days per meeting
- 3) Task 10: Attend ACRS Meeting
 - NRC Headquarters, Rockville, MD.
 - 2 persons
 - 2 days
 - Trip report

All travel requires written Government approval from the CO, unless otherwise delegated to the COR.

Foreign travel for BNL personnel requires a 60-day lead time for NRC approval. For prior approval of foreign travel, BNL shall submit an NRC Form 445, "Request for Approval of Official Foreign Travel." NRC Form 445 is available in the MD 11.7 Documents library and on the NRC Web site at: <http://www.nrc.gov/reading-rm/doc-collections/forms/>. Foreign travel is approved by the NRC Executive Director for Operations (EDO).

8.0 REPORTING REQUIREMENTS

BNL is responsible for structuring the deliverable to follow agency standards. The current agency standard is Microsoft Office Suite 2010. The current agency Portable Document Format (PDF) standard is Adobe Acrobat 9 Professional. Deliverables must be submitted free of spelling and grammatical errors and conform to requirements stated in this section.

Deliverables shall be delivered to the COR, electronically in the formats specified above and in Task 6. MLSRs shall be delivered as specified below. Other file formats will be at the discretion of the COR in accordance with agency standards specified above. Deliverables can be provided via email, CD-ROM or other applicable electronic method approved by NRC staff (e.g. FTP, MassTransit Web File Transfer Services, etc.). Reports and deliverables are not

anticipated to be NUREG-series reports. However, Section 15.0, *Standards for Contractors Who Prepare NUREG-Series Manuscripts* has been retained in this SOW to be used if a NUREG-series manuscript is required to be completed.

Monthly Letter Status Reports

In accordance with Management Directive 11.7, NRC Procedures for Placement and Monitoring of Work with the U.S. Department of Energy, BNL must electronically submit a Monthly Letter Status Report (MLSR) by the 20th day of each month to the Contracting Officer Representative (COR) with copies to the Contracting Officer (CO) and the Office Administration/Division of Contracts to ContractsPOT.Resource@nrc.gov. Additional copies of the MLSR shall be sent to RESDRAMLSR Resource at RESDRAMLSR.Resource@nrc.gov.

If a project is a task ordering agreement, a separate MLSR must be submitted for each task order with a summary project MLSR, even if no work has been performed during a reporting period. Once NRC has determined that all work on a task order is completed and that final costs are acceptable, a task order may be omitted from the MLSR.

The MLSR must include the following: agreement number; task order number, if applicable; job code number; title of the project; project period of performance; task order period of performance, if applicable; COR's name, telephone number, and e-mail address; full name and address of the performing organization; principal investigator's name, telephone number, and e-mail address; and reporting period. At a minimum, the MLSR must include the information discussed in Attachment 1. The preferred format for a MLSR can also be found in Attachment 1.

9.0 PERIOD OF PERFORMANCE

The period of performance for this agreement is July 6, 2015 through November 30, 2018.

10.0 CONTRACTING OFFICER'S REPRESENTATIVE

The COR monitors all technical aspects of the agreement/task order and assists in its administration. The COR is authorized to perform the following functions: assure that BNL performs the technical requirements of the agreement/task order; perform inspections necessary in connection with agreement/task order performance; maintain written and oral communications with BNL concerning technical aspects of the agreement/task order; issue written interpretations of technical requirements, including Government drawings, designs, specifications; monitor the DOE Laboratory's performance and notify BNL of any deficiencies; coordinate availability of NRC-furnished material and/or GFP; and provide site entry of DOE Laboratory personnel.

Contracting Officer's Representative

Name: Peter Appignani
Agency: U.S. Nuclear Regulatory Commission
Office: Nuclear Regulatory Research (RES)
Mail Stop: T-A10
Washington, DC 20555-0001

E-Mail: peter.appignani@nrc.gov
Phone: (301) 415-2360

Alternate Contracting Officer's Representative

Name: Jeffrey Wood
Agency: U.S. Nuclear Regulatory Commission
Office: Nuclear Regulatory Research (RES)
Mail Stop: T-10A1
Washington, DC 20555-0001
E-Mail: Jeffery.Wood@nrc.gov
Phone: (301)415-0953

11.0 MATERIALS REQUIRED

Not Applicable

12.0 NRC-FURNISHED PROPERTY/MATERIALS

Not Applicable

13.0 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% of overall score)

Justification of major assumptions (12%)

Soundness of technical approach and results (52%)

Uncertainties and sensitivities addressed (11%)

Documentation of research results and methods is adequate (25% of overall score)

Clarity of presentation (16%)

Identification of major assumptions (9%)

It is the responsibility of BNL to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC COR will review all research products with these criteria in mind.

14.0 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.

The final manuscript shall be of archival quality and comply with the requirements of NRC Management Directive 3.7 "NUREG-Series Publications." The document shall be technically edited consistent with NUREG-1379, Rev. 2 (May 2009) "NRC Editorial Style Guide." The goals of the "NRC Editorial Style Guide" are readability and consistency for all agency documents.

All format guidance, as specified in NUREG-0650, "Preparing NUREG-Series Publications," Rev. 2 (January 1999), 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.

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.

15.0 OTHER CONSIDERATIONS

References

The following references will be provided to the DOE Laboratory:

1. Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review, Federal Register / Vol. 70, No. 10 / Friday, January 14, 2005 / Notices (70 FR 2664)
2. OMB Final Information Quality Bulletin for Peer Review m05-03, December 16, 2004
3. Applying OMB Peer Review Guidelines memo, ADAMS Accession No. ML051600303.
4. Technical Analysis Approach Plan for Level 3 PRA Project, Rev. 0b – Working Draft, October 2013
5. Audit of NRC's Process for Ensuring Integrity in Scientific Research, OIG-15-A-08, February 10, 2015
6. National Academy of Sciences, National Academy of Engineering, Institute of Medicine, National Research Council, Background Information and Confidential Conflict Of Interest Disclosure, For General Scientific and Technical Studies and Assistance, BI/COI FORM 3.
7. Non-disclosure Agreement for Peer Review of RES Documents/Products, OFFICE INSTRUCTION NO.: PRM-010, Revision 0, PEER REVIEW OF RES PROJECTS, 3/19/2007

Access to Non-NRC Facilities/Equipment

Not Applicable

Applicable Publications

Not Applicable

Controls over document handling and non-disclosure of materials

It is anticipated that the peer review participants will need access to proprietary information used in developing the Level 3 PRA. BNL and its contractors are responsible for ensuring that proprietary information is not included in the publicly available final report(s). It is also the

responsibility of BNL staff and the experts identified by BNL to participate in the peer review to properly control any proprietary information in their possession.

All peer review participants shall be required to sign a non-disclosure agreement. Additional background information may also be requested from peer review participants as well as conflict of interest disclosure.
