

INTERAGENCY AGREEMENT		1. IAA NO. NRC-HQ-20-15-T-0014/M0001		PAGE OF 1 2	
2. ORDER NO.		3. REQUISITION NO. NRR-15-0214		4. SOLICITATION NO.	
5. EFFECTIVE DATE 06/30/2015		6. AWARD DATE 06/30/2015		7. PERIOD OF PERFORMANCE 03/09/2015 TO 09/30/2015	
8. SERVING 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 SHAUN ANDERSON US NUCLEAR REGULATORY COMMISSION OFFICE NRRDSS MAIL STOP 010E07 WASHINGTON DC 20555-0001			
10. REQUESTING AGENCY ADM ALC: 31000001 DUNS: +4: US NUCLEAR REGULATORY COMMISSION ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE ROCKVILLE MD 20852-2738 POC MORIE GUNTER-HENDERSON TELEPHONE NO. 301 415-7924		11. INVOICE OFFICE US NUCLEAR REGULATORY COMMISSION ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE MAILSTOP 03-E17A ROCKVILLE MD 20852-2738			
12. ISSUING OFFICE US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWEN-5E03 WASHINGTON DC 20555-0001		13. LEGISLATIVE AUTHORITY Energy Reorganization Act of 1974			
		14. PROJECT ID			
		15. PROJECT TITLE CATAWBA'S MUR FLUENCE EVALUATION			
16. ACCOUNTING DATA 2015-X0200-FEEBASED-20-20D008-11-4-148-1061-251D					
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	Master IAA: NRCHQ2514D0002 The purpose of this modification is to: (1) add two additional trips to the licensee facility to support the Catawba MUR review and a trip to the NRC headquarters as seen in the attached revised Statement of Work. (2) Increase the ceiling by \$20,009.00 from \$65,306.00 to \$85,315.00. (3) Add incremental funding in the amount of Continued ...				
23. PAYMENT PROVISIONS		24. TOTAL AMOUNT \$7,000.00			
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVING)		25b. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING)			
25d. NAME AND TITLE Kim M. Nekulak Contracting Officer		25c. DATE JUL 15 2015		25e. CONTRACTING OFFICER MORIE E. GUNTER-HENDERSON	
				25f. DATE 6-30-15	

SUNSI REVIEW COMPLETE

TEMPLATE - ADMIN

JUL 21 2015

ANM002

BRAND

NRC-HQ-20-15-T-0014/M0001

ORDER NO

PAGE

OF

2

2

\$7,000.00, thereby increasing the obligation from
\$65,306.00 to \$72,306.00.

All other terms and conditions remain unchanged.

STATEMENT OF WORK

NRC Agreement Number NRC-HQ-25-14-D-0002	NRC Agreement Modification Number 	NRC Task Order Number (If Applicable) NRCHQ2015T0014	NRC Task Order Modification Number (If Applicable) M0001
Project Title: Technical Assistance in Support of Duke Energy Nuclear Operations' License Amendment Request for Catawba's Measurement Uncertainty Recapture Fluence Evaluation			
Job Code Number 	B&R Number 11-4-149	DOE Laboratory Brookhaven National Laboratory (BNL)	
NRC Requisitioning Office Office of Nuclear Reactor Regulation (NRR)			
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 type="checkbox"/> Non Fee-Recoverable		<input checked="" type="checkbox"/> Fee-Recoverable (If checked, complete all applicable sections below)	
Docket Number (If Fee-Recoverable/Applicable) 50-413, 50-414		Inspection Report Number (If Fee Recoverable/Applicable) N/A	
Technical Assignment Control Number (If Fee-Recoverable/Applicable) MF4526, MF4527		Technical Assignment Control Number Description (If Fee-Recoverable/Applicable) 	

1.0 BACKGROUND

The Duke Energy Carolinas, LLC (Duke Energy) has submitted this license application request (LAR) for a measurement uncertainty recapture (MUR) power uprate. Within this LAR (attached), Duke Energy has provided a fluence evaluation using the unapproved code RAPTOR-M3G, developed by Westinghouse. The NRC needs technical assistance to review the RAPTOR-M3G fluence evaluation for Catawba's MUR LAR and that the review is completed according to schedule. The review will be performed in accordance with Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence."

Under NRCHQ2514D0002 task order NRCHQ2015T0014, the Brookhaven National Laboratory (BNL) has been assisting the NRC staff in reviewing Catawba's Measurement Uncertainty Recapture Fluence evaluation for Duke Energy Nuclear.

The purpose of this modification is to add an additional task to the Work Requirements and Schedule section, which involves two site audits. Based on the review conducted thus far and the findings to date, the NRC staff finds that a site audit will enable a more efficient and effective review, thereby improving the NRC staff's ability to fulfill our project goals

2.0 OBJECTIVE

The objective of this task order is to obtain technical expertise from BNL to assist the NRC staff in determining the technical adequacy of the LAR submitted by Duke Energy for Catawba's MUR fluence evaluation (section IV.1.C.ii) in order to address the fluence evaluation issue described above.

3.0 SCOPE OF WORK

BNL must provide all resources necessary to accomplish the tasks and deliverables described in this statement of work (SOW).

The scope of work involves review and evaluation of the technical and regulatory basis for the use of the RAPTOR-M3G code developed by Westinghouse.. Review of the Code must show compliance with Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence". BNL must provide input for the NRC staff's Safety Evaluation(SE) report that documents the NRC's technical, legal, and safety basis for approving the license amendment. The goal of the SE is to provide the technical, safety, and legal basis for the NRC's decision regarding approving this code. In support of this goal, BNL will review the methodology and results described in the application for technical adequacy and agreement with applicable NRC guidance. The Contractor will draft a Technical Evaluation Report (TER) describing their review and conclusions on the technical and regulatory adequacy of RAPTOR-M3G code.. If portions of the code are not shown to be technically adequate to support the conclusions expressed in the application, or if portions of the code do not agree with NRC guidance, then the Contractor will identify these "gaps" in writing as a request for additional information (RAI) and provide them to the NRC technical point of contact and Contracting Officer Representative (COR). The NRC technical point of contact and COR will coordinate issuing the RAI to the licensee to address the gaps and obtain responses. The BNL will review responses to the RAI and use those responses to finalize the TER.

4.0 SPECIFIC TASKS

BNL must perform the following tasks:

Using the criteria and guidelines found in Regulatory Guide (RG) 1.190 and 1.99 as necessary to review the acceptability of Catawba's MUR fluence evaluation (section IV.1.C.ii) within the LAR submitted by Duke Energy.

Task 1 Kickoff Meeting

1.a Preparation for Kickoff Meeting

Become familiar with the LAR submittal by Duke Energy.

1.b Attend Kickoff Meeting

Attend a one-time kick-off meeting (either in person or via conference call) to discuss the scope of work, expectations, task order management, and performance requirements of the task order. The kick-off meeting shall be held within ten (10) working days after BNL receipt of LAR materials.

Task 2 Review LAR Submission

2.a Evaluate the LAR Submittal

Review the LAR to determine the technical accuracy and regulatory compliance of the request.

2.b Prepare Draft Technical Evaluation Report

Prepare a draft Technical Evaluation Report (TER) that incorporates the results of the review and evaluation. The TER should be organized to parallel the applicable sections in NRC's Standard Review Plan, Chapters 4 and 15. The TER may include other relevant information that is not included in the SRP. Only input to SER sections requiring revision must be included in the TER. The TER must contain draft text, tables, and illustrations, as appropriate, suitable for inclusion in NRC's SER. The TER must provide sufficient information to adequately support the NRC staff's rationale for why there is reasonable assurance that public health and safety is protected. It must be written so that a person with either non-nuclear technical background or non-technical background can understand the basis for conclusions cited.

Prepare final draft TER that incorporates comments provided by the COR.

As directed by the COR, participate in conference calls with Duke Energy to discuss the LAR materials.

2.c Prepare RAIs

Identify unresolved issues and any additional or clarifying information needed in the LAR submission. Prepare draft RAIs for use by NRC in requesting more information from Duke Energy to clarify issues raised during review of the LAR.

As directed by the COR, participate in conference calls with Duke Energy to discuss additional information to be provided or clarified with the LAR.

2.d Review RAI Responses

Review Duke Energy's responses to the RAIs to determine whether they adequately resolve the outstanding issues.

2.e Audit at facility

Prepare for and travel to the licensee facility to audit the design documents supporting Catawba's License Amendment Request. Prepare a trip report.

2.f Update the TER

Update the draft TER prepared under Task 2.b to incorporate Duke Energy's RAI responses and revise related portions of the draft text, tables, and illustrations in the TER. Prepare a final TER that incorporates comments provided by the COR.

As directed by the COR, participate in conference calls with Duke Energy to discuss the responses of the RAIs.

5.0 DELIVERABLES AND/OR MILESTONES SCHEDULE

The schedule for project deliverables is shown in the following table.

Deliverable Number	Deliverable and Acceptance Criteria	Deliverable Due Date
1	For Task 2.b, Draft TER Acceptance Criteria: Report must have the required content and follow the required format	NLT 4 weeks after award of task order
2	For Task 2.b, Final Draft TER Acceptance Criteria: All COR comments are addressed in the TER.	NLT 1 week after receipt of COR comments
3	For Task 2.c, Draft RAIs Acceptance Criteria: RAIs are technically sound, adequately address identified issues, and include a regulatory basis for each request.	NLT 4 weeks after award of
4	For Task 2.c, Final RAIs Acceptance Criteria: All COR comments are reflected in the RAIs.	NLT 1 week after receipt of COR comments
5	For Task 2.e, Audit at Facility Acceptance Criteria: Deliverable contains required content	NLT 1 week after trip
6	For Task 2.f, Draft Updated TER Acceptance Criteria: Deliverable contains required content	NLT 2 weeks after receipt of RAI responses
7	For Task 2.f, Final Updated TER Acceptance Criteria: All COR comments are addressed in the updated TER	NLT 1 week after receipt of COR comments

All deliverables shall include the following identifying information:

Agreement No.

Task Order No.
JCN No.
TAC No.
Licensee
Site

BNL must provide all reports 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 laboratory. BNL must revise the draft deliverables based on the comments provided by the COR, and then deliver the final version of the deliverable. When mutually agreed upon between BNL and the COR, BNL may submit preliminary or partial drafts to help gauge BNL's understanding of the particular work requirement.

The above deliverables shall be provided electronically and in hard copy (upon request) to the Contracting Officer (CO) and COR. See Section 9.0 of this SOW for information on distribution of the MLSR.

The COR will acknowledge receipt of deliverables by e-mail.

6.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

Specialized experience must include expertise in such areas as BWR fuel designs, CPR correlations, BWR systems, and transient and accident analysis. Specific qualifications for this effort include:

Senior Level Engineer with extensive background experience in BWR technology including fuel designs, CPR correlations, systems, transient and accident analysis.

BNL shall provide a project manager to oversee the effort and ensure the timely submittal of accurate and complete deliverables.

The NRC will rely on representation made by BNL concerning the qualifications of the personnel assigned to this task order, including assurance that all information contained in the technical and cost proposals, including resumes, is accurate and truthful. The resume for each professional proposed to work under this task order (principal investigators, technical staff, employees, consultants, specialists or subcontractors) shall describe the individual's experience in applying his or her area of engineering specialization to work in the proposed area. The use of particular personnel on this task order is subject to the COR and CO approval. This includes any proposed changes to key personnel during the life of the task order.

7.0 ESTIMATED LABOR CATEGORIES AND LEVELS OF EFFORT (OPTIONAL SECTION)

The estimated level of effort in professional staff hours apportioned among the tasks by labor category is as shown in the table below. The estimate is advisory only and not to be considered as the sole basis for development of a staffing plan.

Task Number	Labor Category	Estimated Labor Hours	Total
		FY 2015	

1	Senior Engineer	10	10
	Project Manager	2	2
2	Senior Engineer	182	182
	Project Manager	8	8
	Total	192	192

8.0 MEETINGS AND TRAVEL

Optional: 3 one Person, two Day Trips to NRC Headquarters or Licensee Facility.

All travel requires written approval from the COR. Foreign travel for the DOE laboratory personnel requires a 60-day lead time for NRC approval. For prior approval of foreign travel, the DOE laboratory 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).

9.0 REPORTING REQUIREMENTS

BNL is responsible for structuring the deliverables to follow agency standards. The current agency standard software for developing documents is Microsoft Office Suite 2010, including Word 2010 for text documents (.docx) and Excel 2010 for spreadsheets (.xlsx). The current agency Portable Document Format (.pdf) standard is Adobe Acrobat X Pro. Deliverables shall be submitted free of spelling and grammatical errors and conform to requirements stated in this SOW.

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 shall electronically submit a MLSR by the 20th day of each month to the following:

COR

CO

Acquisition Management Division at ContractsPOT.Resource@nrc.gov

Christopher.Jackson@nrc.gov

Matthew.Hardgrove@nrc.gov

RidsNrrDss.Resource@nrc.gov

If a project is a task ordering agreement, separate MLSRs shall 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 content and format of the MLSR shall be consistent with Attachment 5 (Monthly Letter Report Instructions) to the base ordering agreement SOW.

10.0 PERIOD OF PERFORMANCE

The period of performance for this task order is from the effective date of this task order award through September 30, 2105.

11.0 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 the DOE Laboratory 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 the DOE Laboratory 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 the DOE Laboratory of any deficiencies; coordinate availability of NRC-furnished material and/or GFP; and provide site entry of DOE Laboratory personnel.

Alternate Contracting Officer's Representative

Name: Davida Cunanan
Agency: U.S. Nuclear Regulatory Commission
Office: NRR/DSS/SRXB
Mail Stop: O10B03
Washington, DC 20555-0001
E-Mail: davida.cunanan@nrc.gov
Phone: (301) 415-3573

Contracting Officer's Representative

Name: Shaun Anderson
Agency: U.S. Nuclear Regulatory Commission
Office: NRR/DSS
Mail Stop: O10E07
Washington, DC 20555-0001
E-Mail: Shaun.Anderson@nrc.gov
Phone: (301) 415-2039

12.0 MATERIALS REQUIRED (TYPE N/A IF NOT APPLICABLE)

N/A

13.0 NRC-FURNISHED PROPERTY/MATERIALS (TYPE N/A IF NOT APPLICABLE)

The LAR and associated documents will be provided.

NOTE: These documents contain proprietary information and they must be safeguarded against unauthorized disclosure. After completion of work, the documents should

either be destroyed or returned to NRC. If they are destroyed, please confirm this in an e-mail to the COR with a copy to the Contracting Officer and include the date and manner in which the documents were destroyed.

14.0 RESEARCH QUALITY (TYPE N/A IF NOT APPLICABLE)

N/A

**15.0 STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS
(TYPE N/A IF NOT APPLICABLE)**

N/A

16.0 OTHER CONSIDERATIONS (TYPE N/A IF NOT APPLICABLE)

N/A