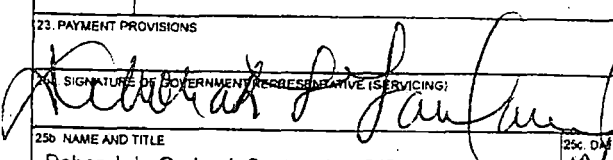
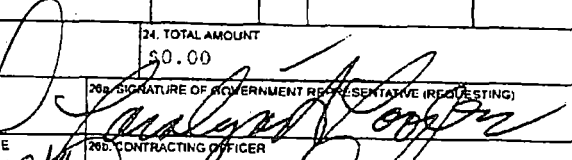


<b>INTERAGENCY AGREEMENT</b>		1. IAA NO. NRC-HQ-25-16-T-0008/M0002		PAGE 1 OF 2	
2. ORDER NO.		3. REQUISITION NO.		4. SOLICITATION NO.	
5. EFFECTIVE DATE 10/13/2016		6. AWARD DATE 10/13/2016		7. PERIOD OF PERFORMANCE 10/01/2016 TO 01/31/2019	
8. SERVICING AGENCY OAK RIDGE NATIONAL LAB ALC: DUNS: 012075755 +4: US DEPARTMENT OF ENERGY OAK RIDGE NATION LABORATORY SITE OFFICE BUILDING 4500N MS 6269 PO BOX 2008 OAK RIDGE TN 37831-6269 POC Deborah Garland, CO TELEPHONE NO. (865) 241-9566		9. DELIVER TO BRAD HARVEY US NUCLEAR REGULATORY COMMISSION TWO WHITE FLINT NORTH BUILDING 11545 ROCKVILLE PIKE MAIL STOP T-7F36 ROCKVILLE MD 20852			
10. REQUESTING AGENCY AMD ALC: 31000001 DUNS: 040535909 +4: US NUCLEAR REGULATORY COMMISSION TWO WHITE FLINT NORTH 11545 ROCKVILLE PIKE MAIL STOP T-5E3 ROCKVILLE MD 20852 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 REVIEW OF SITE-SPECIFIC PROBABLE MAXIMUM PRECIPITATION			
16. ACCOUNTING DATA N/A					
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	NRC-HQ-25-16-T-0008  Master IAA: NRCHQ2514D0004 The purpose of this modification is to incorporate a within scope change to the task order in accordance with the revised statement of work (Attachment 1), which replaces the previous statement of work in its entirety. As a result, the ceiling amount of the task order is increased by \$100,000.00, from \$210,000.00 to \$310,000.00. Accordingly, the subject task order is hereby changed: Continued ...				
23. PAYMENT PROVISIONS		24. TOTAL AMOUNT \$0.00			
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING) 		25b. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) 			
25b. NAME AND TITLE Deborah L. Garland, Contracting Officer		26. DATE 10/19/16		26. CONTRACTING OFFICER CAROLYN A. COOPER	
				26c. DATE 10/13/2016	

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

NOV 18 2016

ADM002

TOTAL AMOUNT OF THIS MODIFICATION: \$100,000.00  
TOTAL AUTHORIZED CEILING AMOUNT: \$310,000.00  
(changed)  
TOTAL AMOUNT OF OBLIGATIONS TO DATE: \$74,768.00  
(unchanged)

The Statement of Work in the task order is  
deleted in its entirety and replaced with the  
following document:

Attachment 1, Revised Statement of Work

All other terms and conditions of the subject  
task order remain unchanged.

ALC: 31000001 DUNS: 040535809

TAS: 31x0200.320

## REVISED STATEMENT OF WORK

NRC-HQ-25-14-D-0004 Task Order NRC-HQ-25-16-T-0008

### Review of Site-Specific Probable Maximum Precipitation Analyses

#### Introduction

##### Background

Probable Maximum Precipitation (PMP) is defined as theoretically the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at a certain time of year. It is a deterministic analysis approach that provides design rainfall depths as a function of area size and duration. The PMP values are used as input for estimating site-scale flooding due to short duration, local intense precipitation (LIP) events and for estimating longer-duration watershed-scale (WS) storm events.

General Design Criterion 2 in Appendix A of Part 50 states that structures, systems, and components (SSCs) important to safety at nuclear power plants (NPPs) must be designed to withstand the effects of natural phenomena such as floods without loss of capability to perform their intended safety functions. The design bases for these SSCs are to reflect appropriate consideration of the most severe natural phenomena that have been historically reported for the site and surrounding area. The design bases are also to have sufficient margin to account for the limited accuracy, quantity, and period of time for which the historical data have been accumulated. Section 2.4.2, "Floods" ([ML070100647](#)) and Section 2.4.3, "Probable Maximum Flood (PMF) on Streams and Rivers" ([ML070730405](#)) of NUREG-0800, "Standard Review Plan" (SRP) states that the NRC staff's estimates of flooding potential are based on PMP estimates from appropriate Hydrometeorological Reports (HMRs) published by the National Oceanic and Atmospheric Administration (NOAA).

Rather than relying on the generalized PMP estimates presented in the HMRs, a number of NRC licensees have chosen to perform site-specific PMP estimates as part of their Flood Hazard Reevaluation Report (FHRRs) submittals in response to NRC's request for information (50.54(f)) letter ([ML12053A340](#)) connected with implementing the Near-Term Task Force (NTTF) lessons-learned from the 2011 accident at the Fukushima Dai-ichi NPP ([ML111861807](#)). The NRC is anticipating that additional site-specific PMP estimates may be submitted by its licensees as part of revised FHRRs, mitigating strategies assessments (MSAs), focus evaluations (FEs), integrated assessments (IAs), and other submittals related to removing conservatism in implementing the next phases of their response to the Fukushima accident. Licensees may also be submitting license amendment requests (LARs) seeking changes to their current design basis (CDB) flood protection mechanisms. NRC applicants for Early Site Permits (ESP) and Combined Licensees (COLs) may also be submitting site-specific PMP analyses in support of their new plant applications. Consequently, there is a potential need to review future NRC licensee and applicant submittals that may include site-specific PMP estimates in support of NPP flood evaluations.

### Relationship to Other Projects

ORNL has provided related support via JCN QOJ11 to assist the NRC staff in reviewing the responses (walkdown submittal reports) to the 50.54(f) letter, dated March 12, 2012, Enclosure 4, Recommendation 2.3: Flooding. ORNL also assisted the NRC staff in reviewing the Flood Hazard Reevaluation Reports (FHRRs) provided in response to the 50.54(f) letter, dated March 12, 2012, Recommendation 2.1: Flooding. ORNL has assisted NRC in determining whether or not COL applications met appropriate regulatory requirements pertaining to the site safety related surface water hydrology, groundwater hydrology, and hydraulic structures. Previous hydrology-related tasks include Comanche Peak (Q4006 Task Order 6 and QOC03 Task Order 7), Callaway (Q4006 Task Order 7), Riverbend (Q4006 Task Order 8), and Turkey Point (Q4006 Task Order 13 and QOC03 Task Order 8).

### **Objective(s) of Proposed Work**

The objective of this task order is to obtain technical expertise from Oak Ridge National Laboratory (ORNL) to assist the NRC in reviewing site-specific PMP analyses contained in submittals such as responses to Fukushima-related activities (e.g., revised FHRRs, MSAs, FEs, and IAs), **topical reports**, LARs, and new NPP applications (e.g., ESPs and COLs). These reviews should determine if the resulting site-specific PMP estimates are reasonable and consistent in scope with the site-specific PMP reviews that the staff needs to do under the respective submittal.

### **Work to be Performed and Expected Results**

ORNL will provide all resources necessary to accomplish the tasks and deliverables described in this Statement of Work (SOW). **The purpose of this modification is to incorporate a within scope change to the SOW as reflected in the bold selections.**

Letters of Technical Direction (LTDs) will be issued by the NRC which will indicate the site-specific PMP analysis to be reviewed. The primary deliverables will be Technical Evaluation Reports (TERs).

The TERs will be used by the NRC staff to generate its Safety Evaluation or Staff Assessment, as appropriate. The TER shall contain (a) a description of the information proposed by the licensee, including the assumptions for the analysis, design, and references to consensus standards and (b) review findings (including the basis for the findings), as a result of comparison with the review guidelines. The TER should be written in a manner whereby a person with a non-technical background could understand the basis for the NRC staff's conclusions. The form, content, and regulatory conclusion of the associated TER deliverable will be provided in the associated LTD.

**The TER will also document the basis for its key TER conclusions and will include, as appropriate, calculation packages and input and output files as attachments.**

### Deliverables and/or Milestones Schedule

The following table lists the Tasks and Acceptance Criteria, Schedule, and Deliverables for each review assigned to ORNL via a LTD:

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
<b>1.</b>	<b>Orientation</b>		
1.a	<p><u>TASK: Orientation</u> Prepare for and participate in an orientation/kick-off meeting with the NRC staff to discuss the scope of work, expectations, and contract management.</p> <p><u>ACCEPTANCE CRITERIA:</u> Attendance by individuals involved in the assigned review</p>	Within 10 working days of receiving the LTD	1. Participation in meeting
<b>2.</b>	<b>pTER and RAIs</b>		
2.a	<p><u>TASK: Electronic Reading Room (ERR)</u> Review assigned sections to evaluate the completeness and technical sufficiency of the submittal.</p> <p><u>ACCEPTANCE CRITERIA:</u> 1. Communicate results of the acceptance review 2. If requested, develop requests for supplemental information (RSIs) to address missing information</p>	Date of Acceptance Review TBD	1. Documentation of the results of the Acceptance Review 2. Provide RSIs
2.b	<p><u>TASK: Inspection</u> Participate in pre-inspection activities (e.g., assist in developing and reviewing an inspection plan), onsite inspection activities, and post-inspection activities (e.g., assist in developing and reviewing the inspection report). Optional: Travel to the inspection location to participate in inspection (inspection participation may also occur via webinar)</p> <p><u>ACCEPTANCE CRITERIA:</u> 1. Assist the NRC staff in developing an inspection plan 2. Participate in the inspection 3. Assist the NRC staff in completing an inspection report</p>	Date, time, and location of inspection TBD	1. Input to the inspection plan 2. Participation in inspection 3. Input to inspection report

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
2.c	<b><u>TASK: Licensee/Applicant Audit</u></b> Determine if an audit would be helpful in expediting the review. If approved, participate in the audit.	Date, time, and location of audit TBD	1. List of information needs for an audit 2. Participation in audit
	Optional: Travel to audit location to participate in audit (audit participation may be available via webinar)  <b><u>ACCEPTANCE CRITERIA:</u></b>		3. Input to audit report
	1. Assist the NRC staff in developing a list of Information Needs for the audit 2. Participate in the audit Assist the NRC staff in closing out the Information Needs and completing an audit report		
2.d	<b><u>TASK: Draft pTER and RAIs</u></b> Complete an independent analysis as requested by the NRC staff and develop a draft preliminary TER (pTER). Identify the issues and needs for additional or clarifying information in the pTER and assist in the development of draft Requests for Additional Information (RAIs). Participate in meetings as requested to resolve the RAIs.  <b><u>ACCEPTANCE CRITERIA</u></b> 1. Complete the draft pTER following the guidance provided in the associated LTD 2. Develop the RAIs following guidance to be provided in a LTD	Draft pTER and associated RAIs to be provided as documented a LTD	1. Draft pTER 2. Draft RAIs (NOTE: several rounds of RAIs may be necessary)
2.e	<b><u>TASK: Final pTER</u></b> Incorporate NRC staff comments and finalize pTER.  <b><u>ACCEPTANCE CRITERIA</u></b> 1. Finalize pTER that incorporates NRC staff comments	Final pTER shall be submitted within 10 working days of receipt of NRC staff comments	1. Final pTER
3.	<b>FTER</b>		

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
3.a	<p><b><u>TASK: Draft FTER</u></b> Review Licensee's responses to RAls to determine if they adequately resolve the outstanding issues. Update independent analyses discussed in the pTER based on the licensee's responses. Incorporate the review results into the final TER (FTER).</p> <p><b><u>ACCEPTANCE CRITERIA</u></b> 1. Complete the draft FTER following the guidance provided in the associated LTD</p>	Draft FTER shall be provided as documented in the LTD	1. Draft FTER
3.b	<p><b><u>TASK: Final FTER</u></b> Incorporate NRC Staff comments and finalize FTER.</p> <p><b><u>ACCEPTANCE CRITERIA:</u></b> 1. Final FTER that incorporates NRC Staff comments</p>	Final FTER shall be submitted within 10 working days of receipt of NRC Staff comments	1. Final FTER
4.	<b>ACRS Meetings</b>		
4.a	<p><b><u>TASK: ACRS Meetings</u></b> Prepare presentation materials (e.g., slides) to be presented to the Advisory Committee on Reactor Safeguards (ACRS). Optional: Travel to the NRC HQ to attend ACRS meetings (ACRS meeting participation may be available via webinar)</p> <p><b><u>ACCEPTANCE CRITERIA:</u></b> Prepare materials to be presented to the ACRS and participate in ACRS meetings</p>	TBD	1. Slides 2. Presentation at ACRS meetings
5.	<b>Monthly Letter Status Report</b>		
5.a	<p><b><u>TASK: Monthly Letter Status Report</u></b> Generate Monthly Letter Status Reports (MLSRs)</p> <p><b><u>ACCEPTANCE CRITERIA:</u></b> 1. MLSR contains all required information</p>	By the 20th of the following month	1. MLSR

Task 2.a involves reviewing the licensee's submittal to ensure that it contains sufficient technical information, both in scope and depth, for the Servicing Agency to begin its detailed technical review **within a predictable time**. Any missing information shall be identified, including a list of documents that should be placed in an ERR. ERRs are intended to serve the purpose of a "virtual" audit of the licensee's calculation packages and other non-docketed materials. The materials in a reading room can only be viewed; they cannot be printed or saved. The Servicing Agency should use these reading rooms to fullest extent possible.

In the process of preparing the pTER as part of Task 2.d, it may become necessary to seek additional information from the licensee explaining or amplifying a particular matter. RAIs are necessary when the information is not included in the submittal or cannot be reasonably inferred from the information available to the laboratory. The request for hard and electronic copies of any materials (e.g., input and output files, datasets, better quality figures etc.) may require a RAI.

### **Key Personnel**

Donald Williams, Jr. took over as project manager of the Enterprise Wide Agreement NRCHQ2514D0004. David Watson is the task order NRCHQ2516T008 project manager and principal investigator. Evaluation of site specific probable maximum precipitation determinations will be conducted primarily by Shih-Chieh Kao and Scott DeNeale and they will also have primary responsibility in preparing the TERs and TRDs. Résumés are on file.

### **Subcontractors/Consultants Information**

No subcontract or consulting work is anticipated for this agreement.

### **Travel**

At the discretion of the COR, most meetings, including the orientation and audits, will be held via webinars and/or conference calls.

The following travel assumptions were considered in planning the work effort. For each site-specific PMP review assigned to ORNL, assume:

- **One 1-person, 5-day meeting at inspection location to participate in an Inspection**
- **One 2-person, 5-day meeting at audit location to participate in an audit**
- **One 2-person, 2-day meeting at the NRC Headquarters in Rockville, MD, to participate in an ACRS meeting.**

ORNL personnel will be authorized travel expenses consistent with the Federal Travel Regulation (FTR) and the limitation of funds specified for the travel within this agreement/order. All travel requires prior written approval from the COR.

### **Materials/Services**

No major procurements are anticipated under this project. Should ORNL require purchase of material costing \$500 or more after this project starts, ORNL shall request approval of the NRC PM in writing.

## **Reporting Requirements and Schedule**

### 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, ORNL 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/Acquisition Management Division to [ContractsPOT.Resource@nrc.gov](mailto:ContractsPOT.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.

#### MLSR Distribution:

[NRCIPAC.Resource@nrc.gov](mailto:NRCIPAC.Resource@nrc.gov)

[ContractsPOT.Resource@nrc.gov](mailto:ContractsPOT.Resource@nrc.gov)

[Brad.Harvey@nrc.gov](mailto:Brad.Harvey@nrc.gov)

[Joseph.Giacinto@nrc.gov](mailto:Joseph.Giacinto@nrc.gov)

[Carolyn.Cooper@nrc.gov](mailto:Carolyn.Cooper@nrc.gov)

### **Period of Performance**

The period of performance for this task order is October 1, 2016 through January 31, 2019.

### **NRC-Furnished Property/Materials**

N/A

### **Access to Non-NRC Facilities/Equipment**

No special facilities are required for this project.