

<b>INTERAGENCY AGREEMENT</b>		1. IAA NO. NRC-HQ-25-16-T-0008/M0005	PAGE OF 1 2		
2. ORDER NO.		3. REQUISITION NO. NRC-17-C063	4. SOLICITATION NO.		
5. EFFECTIVE DATE 07/21/2017	6. AWARD DATE 07/21/2017	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 ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE MAIL STOP T-7F27 ROCKVILLE MD 20852			
10. REQUESTING AGENCY AMD ALC: 31000001 DUNS: 040535809 +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 TWO WHITE FLINT NORTH 11545 ROCKVILLE PIKE MAILSTOP T9-B07 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 2017-X0200-FEEBASED-25-250005-1062-11-4-212-251D-11-4-212-1062					
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 increase the level of effort in the task order thereby increasing the authorized ceiling amount by \$196,000.00, from \$310,000.00 to \$506,000.00; and increasing the amount obligated by \$196,232.00, from \$309,768.00 to \$506,000.00. Accordingly, the task order is hereby modified:  TOTAL AMOUNT OF THIS ACTION: \$196,000.00 Continued ...				
23. PAYMENT PROVISIONS			24. TOTAL AMOUNT \$196,232.00		
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING) <i>Deborah L. Garland</i>			25b. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) <i>Carolyn A. Cooper</i>		
25c. NAME AND TITLE Deborah L. Garland, Contracting Officer		25d. DATE 8/3/17	25e. CONTRACTING OFFICER CAROLYN A. COOPER		25f. DATE 7/21/2017

TOTAL AUTHORIZED CEILING AMOUNT: \$506,000.00  
(changed)  
TOTAL AMOUNT OBLIGATED THIS ACTION: \$196,232.00  
TOTAL AMOUNT OF OBLIGATIONS TO DATE: \$506,000.00  
(changed)

All other terms and conditions of the subject  
task order, including the Statement of Work,  
remain unchanged.

ALC: 31000001  
DUNS: 0435809  
TAS: 31X0200.320

## STATEMENT OF WORK (SOW)

<b>NRC Agreement Number</b> NRCHQ2514D0004	<b>NRC Agreement Modification Number</b>	<b>NRC Task Order Number (If Applicable)</b> NRC-HQ-25-16-T-0008	<b>NRC Task Order Modification Number (If Applicable)</b> 2
<b>Project Title</b> Review of Site-Specific Probable Maximum Precipitation Analyses			
<b>Job Code Number</b> 1062	<b>B&amp;R Number</b> 2016-25-11-4-212	<b>Servicing Agency</b> Oak Ridge National Laboratory	
<b>NRC Requisitioning Office</b> Office of New Reactors		<b>Period of Performance</b> 10/01/2016 – 01/31/2019	
<b>NRC Form 187, Contract Security and Classification Requirements</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable		<input type="checkbox"/> Involves Proprietary Information <input checked="" type="checkbox"/> Involves Sensitive Unclassified	
<input type="checkbox"/> Non Fee-Recoverable		<input checked="" type="checkbox"/> Fee-Recoverable (If checked, complete all applicable sections below)	
<b>Docket Number (If Fee-Recoverable/Applicable)</b> To be provided in associated Letters of Technical Direction		<b>Inspection Report Number (If Fee Recoverable/Applicable)</b> Not applicable	
<b>Cost Activity Code Number (If Fee-Recoverable/Applicable)</b> To be provided in associated Letters of Technical Direction		<b>Technical Assignment Control Number Description (If Fee-Recoverable/Applicable)</b> To be provided in associated Letters of Technical Direction	

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## DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

### 1.0 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 conservatisms 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.

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## 2.0 OBJECTIVE

The objective of this task order is to obtain technical expertise from the Servicing Agency 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.

## 3.0 SCOPE OF WORK

The Servicing Agency shall provide all resources necessary to accomplish the tasks and deliverables described in this Statement of Work (SOW).

Letters of Technical Direction (LTDs) will be issued by the NRC which will indicate the site-specific PMP analysis to be reviewed. The primary deliverable will be a Technical Evaluation Report (TER).

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.

## 4.0 TASKS AND DELIVERABLES

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

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
1.	Orientation		

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
1.a	<p><b>TASK: Orientation</b> 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><b>ACCEPTANCE CRITERIA:</b> Attendance by individuals involved in the assigned review</p>	Within 10 working days of receiving the LTD	1. Participation in meeting
2.	pTER and RAIs		
2.a	<p><b>TASK: Acceptance Review</b> Review assigned sections to evaluate the completeness and technical sufficiency of the submittal.</p> <p><b>ACCEPTANCE CRITERIA:</b></p> <ol style="list-style-type: none"> <li>1. Communicate results of the acceptance review</li> <li>2. If requested, develop requests for supplemental information (RSIs) to address missing information</li> </ol>	Date of Acceptance Review TBD	<ol style="list-style-type: none"> <li>1. Documentation of the results of the Acceptance Review</li> <li>2. Provide RSIs</li> </ol>
2.b	<p><b>TASK: Inspection</b> 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><b>ACCEPTANCE CRITERIA:</b></p> <ol style="list-style-type: none"> <li>1. Assist the NRC staff in developing an inspection plan</li> <li>2. Participate in the inspection</li> <li>3. Assist the NRC staff in completing an inspection report</li> </ol>	Date, time, and location of inspection TBD	<ol style="list-style-type: none"> <li>1. Input to the inspection plan</li> <li>2. Participation in inspection</li> <li>3. Input to inspection report</li> </ol>

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
2.c	<p><u>TASK: Licensee/Applicant Audit</u> Determine if an audit would be helpful in expediting the review. If approved, participate in the audit. Optional: Travel to audit location to participate in audit (audit participation may be available via webinar)</p> <p><u>ACCEPTANCE CRITERIA:</u> 1. Assist the NRC staff in developing a list of Information Needs for the audit 2. Participate in the audit 3. Assist the NRC staff in closing out the Information Needs and completing an audit report</p>	Date, time, and location of audit TBD	<ol style="list-style-type: none"> <li>1. List of information needs for an audit</li> <li>2. Participation in audit</li> <li>3. Input to audit report</li> </ol>
2.d	<p><u>TASK: Draft pTER and RAIs</u> 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.</p> <p><u>ACCEPTANCE CRITERIA</u> 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</p>	Draft pTER and associated RAIs to be provided as documented a LTD	<ol style="list-style-type: none"> <li>1. Draft pTER</li> <li>2. Draft RAIs (NOTE: several rounds of RAIs may be necessary)</li> </ol>
2.e	<p><u>TASK: Final pTER</u> Incorporate NRC staff comments and finalize pTER.</p> <p><u>ACCEPTANCE CRITERIA</u> 1. Finalize pTER that incorporates NRC staff comments</p>	Final pTER shall be submitted within 10 working days of receipt of NRC staff comments	1. Final pTER
3.	FTER		

Task #	Task and Acceptance Criteria	Schedule	Deliverable(s)
3.a	<p><u>TASK: Draft FTER</u> Review Licensee's responses to RAIs 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><u>ACCEPTANCE CRITERIA</u> 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><u>TASK: Final FTER</u> Incorporate NRC Staff comments and finalize FTER.</p> <p><u>ACCEPTANCE CRITERIA:</u> 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.	ACRS Meetings		
4.a	<p><u>TASK: ACRS Meetings</u> 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><u>ACCEPTANCE CRITERIA:</u> Prepare materials to be presented to the ACRS and participate in ACRS meetings</p>	TBD	1. Slides 2. Presentation at ACRS meetings
5.	Monthly Letter Status Report		
5.a	<p><u>TASK: Monthly Letter Status Report</u> Generate Monthly Letter Status Reports (MLSRs)</p> <p><u>ACCEPTANCE CRITERIA:</u> 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 **electronic reading room (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.

## 5.0 ESTIMATED LABOR CATEGORIES, KEY PERSONNEL AND LEVELS OF EFFORT

**5.1 Labor Categories, Requirements and Key Personnel.** Personnel working under this agreement/order shall meet the minimum requirements for experience and education, as follows:

LABOR CATEGORY	POSITION MINIMUM REQUIREMENTS	KEY PERSONNEL* (YES OR NO)
<b>Project Manager</b>	Bachelor's Degree in Engineering or Science	Yes
<b>Key Staff (Mid-level Technical)</b>	Adequate academic background and work experience in performing and reviewing site-specific PMP analyses	Yes
<b>Support Staff (Junior Technical)</b>	Adequate academic background <del>or</del> and work experience in performing and reviewing site-specific PMP analyses	Yes

**5.2 Level-of-Effort (in hours).** An estimate the number of hours required for each labor category, including base and option periods, is provided below. This estimate is advisory only and not to be considered as the sole basis for development of a staffing plan.

LABOR CATEGORY	ESTIMATED HOURS			
	FISCAL YEAR 2017	FISCAL YEAR 2018	FISCAL YEAR 2019	TOTAL
<b>Project Manager</b>	48 + 72 = 120	24 + 36 = 60	24 + 36 = 60	96 + 144 = 240
<b>Key Staff (Mid-level Technical)</b>	288 + 144 = 432	144 + 72 = 216	144 + 72 = 216	576 + 288 = 864
<b>Support Staff (Junior Technical)</b>	120 + 144 = 264	60 + 72 = 132	60 + 72 = 132	240 + 288 = 528
<b>TOTAL</b>	456 + 360 = 816	228 + 180 = 408	228 + 180 = 408	912 + 720 = 1632

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The level-of-effort above assumes the Servicing Agency will perform two site-specific PMP reviews per year for FY2017 and one site-specific PMP review per year for FY2018 and FY2019, for a total of four reviews.

## **6.0 CERTIFICATION AND LICENSE REQUIREMENTS**

N/A

## **7.0 MEETINGS AND 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 should be considered in planning the work effort. For each site-specific PMP review assigned to the servicing agency, 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

Servicing agency 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.

## **8.0 REPORTING REQUIREMENTS**

The Servicing Agency is responsible for structuring the deliverables to current agency standards. Deliverables shall be submitted free of spelling and grammatical errors and shall conform to requirements stated in this section.

### **8.1 Monthly Letter Status Report (MLSR)**

The Servicing Agency shall provide a Monthly Letter Status Report which consists of a technical progress report and financial status report. This report will be used by the NRC Staff to assess the adequacy of the resources utilized by the Servicing Agency to accomplish the work contained in this SOW and to provide status of the Servicing Agency progress in achieving tasks and producing deliverables. The report shall include agreement/order summary information, work completed during the specified period, milestone schedule

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information, problem identification and resolution, travel plans, and staff hour summary.

Copies shall be sent to the COR and AMD at [ContractsPOT.Resource@nrc.gov](mailto:ContractsPOT.Resource@nrc.gov).

## **9.0 CONTRACTING OFFICER'S REPRESENTATIVE**

### Contracting Officer's Representative

Name: Brad Harvey  
Agency: U.S. Nuclear Regulatory Commission  
Office: Office of New Reactors  
Mail Stop: T-7F27  
Washington, DC 20555-0001  
E-Mail: [Brad.Harvey@nrc.gov](mailto:Brad.Harvey@nrc.gov)  
Phone: 301-415-4118

### Alternate Contracting Officer's Representative

Name: Joseph Giacinto  
Agency: U.S. Nuclear Regulatory Commission  
Office: Office of New Reactors  
Mail Stop: T-7F27  
Washington, DC 20555-0001  
E-Mail: [Joseph.Giacinto@nrc.gov](mailto:Joseph.Giacinto@nrc.gov)  
Phone: 301-415-0714

## **10.0 NRC-FURNISHED PROPERTY/MATERIALS**

N/A

## **11.0 REQUIRED MATERIALS, FACILITIES, HARDWARE/SOFTWARE**

N/A

## **12.0 APPLICABLE PUBLICATIONS (CURRENT EDITIONS)**

N/A

## **13.0 DATA RIGHTS**

The NRC shall have unlimited rights to and ownership of all deliverables provided under this agreement/order, including reports, recommendations, briefings, work plans and all other deliverables. All documents and materials, to include the source codes of any software, produced under this agreement/order are the property of the NRC with all rights and privileges of ownership/copyright belonging exclusively to the NRC. These documents and materials may not be used or sold by the Servicing Agency without prior written authorization from the CO. All

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materials supplied to the NRC shall be the sole property of the NRC and may not be used for any other purpose. This right does not abrogate any other Government rights.

#### **14.0 SECURITY REQUIREMENTS**

Some of the information provided, used and/or generated under this agreement may be designated as Sensitive Unclassified Non-Safeguards Information (SUNSI) because it may contain proprietary information and/or discuss the design and/or operation of upstream and nearby dams, water flows, and/or water level heights following dam failure(s). The Servicing Agency is responsible for properly protecting SUNSI from public release in accordance with NRC Policy for Handling, Marking, and Protecting SUNSI documents **as specified in a LTD.**