

* INTERAGENCY AGREEMENT		1 IAA NO NRC-HQ-50-15-D-0001		PAGE OF 1 3	
2 ORDER NO		3 REQUISITION NO NMSS-15-0178		4 SOLICITATION NO	
5 EFFECTIVE DATE 09/08/2015		6 AWARD DATE 09/08/2015		7 PERIOD OF PERFORMANCE 09/14/2015 TO 08/31/2018	
8 SERVICING AGENCY PACIFIC NORTHWEST NAT LAB ALC: DUNS: +4: US DEPARTMENT OF ENERGY PACIFIC NORTHWEST SITE OFFICE PO BOX 350 MS K9-42 PICHLAND WA 99352 POC Genice Madera TELEPHONE NO 509-372-4010			9 DELIVER TO GINA DAVIS US NUCLEAR REGULATORY COMMISSION TWO WHITE FLINT NORTH BUILDING 11545 ROCKVILLE PIKE MAIL STOP T-4B72 ROCKVILLE MD 20852		
10 REQUESTING AGENCY ACQUISITION MANAGEMENT DIVISION ALC: 31000001 DUNS: 040535909 +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 03-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 TECHNICAL SUPPORT FOR NDE BASED INSPECTIONS AND CO		
16 ACCOUNTING DATA 2015-X0200-FEEBASED-50-50D007-33-4-151-1028-251D					
17 ITEM NO.	18 SUPPLIES/SERVICES	19 QUANTITY	20 UNIT	21 UNIT PRICE	22 AMOUNT
	NRC-HQ-50-15-D-0001 The NRC and the DOE Laboratory (PNNL) hereby enter into this Agreement for the project entitled, "Technical Support for Non-Destructive Examinations-Based Inspections and Consensus Code and Standards Support." NRC COR: Gina Davis (301)415-5776 NRC ALT. COR: Darrell Dunn (301)415-7079 PNNL PI: Dr. Ryan Meyer (509)372-4753 Continued ...				
23 PAYMENT PROVISIONS			24 TOTAL AMOUNT \$50,000.00		
25a SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING)			25a SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING)		
25b NAME AND TITLE Melanie Fletcher, Contracting Officer		25c DATE	25b CONTRACTING OFFICER CAROLYN A. COOPER		25c DATE 9/8/2015

The period of performance of this Agreement is September 14, 2015 through August 31, 2018.

CONSIDERATION AND OBLIGATION:

The amount presently obligated with respect to this DOE Agreement is \$50,000. When and if the amount(s) paid and payable to the DOE Laboratory hereunder equals the amount obligated, 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.

The following documents are hereby made a part of this Agreement:

- Attachment No. 1: Statement of Work
- Attachment No. 2: DOE Standard Terms and Conditions
- Master IAA: N/A

00001

Authorized Ceiling Amount

417,016.00

The work hereunder is Non-Fee Recoverable Work.

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.

Notwithstanding the agreement effective dates and period of performance start dates stated elsewhere in the agreement, the effective date of the agreement and start date of the period of performance are the last date signed by the parties.

ALC: 31000001 DUNS: 040535809
TAS: 31X0200.320
Continued ...

The total amount of award: \$417,016.00. The obligation for this award is shown in box 24.

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-50-15-D-0001	N/A	N/A	N/A
Project Title			
Technical Support for Non-Destructive Examinations Based Inspections and Consensus Codes and Standards Development			
Job Code Number	B&R Number	DOE Laboratory	
N/A		PNNL	
NRC Requisitioning Office			
Nuclear Materials Safety and Safeguards (NMSS)			
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 checked="" 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)	
N/A		N/A	
Technical Assignment Control Number (If Fee-Recoverable/Applicable)		Technical Assignment Control Number Description (If Fee-Recoverable/Applicable)	
N/A		N/A	

1.0 BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) monitors Non Destructive Evaluation (NDE) and In-Service Inspections (ISI) of nuclear related systems for the nuclear power industry. The Office of Nuclear Material Safety and Safeguards (NMSS), Division of Spent Fuel Management (DSFM) furthers the regulatory mission of the NRC by providing technical support for NDE and ISI issues. This includes monitoring NDE technologies being developed by the domestic and international nuclear power industry for the inspection of nuclear reactor and dry cask storage systems.

The nuclear power industry, including NRC staff, participates in national consensus codes and standards activities for developing inspection requirements for dry storage casks. To optimize regulatory involvement in these activities, NRC staff participation with specific knowledge of the relevant, innovative NDE technologies deployed in the nuclear power industry (e.g., BMIs, CRDMs, steam generators, vessel internals, spent fuel pool, etc.) is required. In addition, other relevant industries such as aerospace, automotive, civil infrastructure, etc., are required to inspect components with access limitations, radiation fields, possible corrosion, and complex geometries. To ensure that current technical expertise is maintained, it is necessary that the NRC participate in industry meetings, conferences, and workshops to establish these types of codes and standards.

2.0 OBJECTIVE

The objective of this agreement is to acquire technical support for NDE based inspections and consensus code and standards development, as applied to dry cask storage systems. PNNL will be required to perform the following:

- 1) Monitor NDE technologies being developed by the domestic and international nuclear power industry for the inspection of nuclear reactor and dry cask storage systems.
- 2) Participate in national consensus codes and standards activities to develop inspection requirements for dry storage casks.
- 3) Attend industry meetings, conference, and workshops to establish knowledge of these codes and standards.

3.0 SCOPE OF WORK

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

PNNL shall, on an as-needed basis, provide technical assistance on NDE and ISI related issues to the NRC. This includes the monitoring of NDE technologies being developed by the industry for the inspection of dry cask storage systems. This capture of information regarding relevant NDE technologies includes those deployed in other industries (e.g. aerospace, automotive, civil infrastructure) to inspect components that are difficult to access, and to capture examples of innovative NDE technologies developed for reactors to solve complex inspection challenges (e.g. BMIs, CRDMs, steam generators, vessel internals, spent fuel pool, etc.). This agreement shall include participation (at the direction of NRC) in national codes and standards activities to develop inspection requirements for dry storage casks.

4.0 SPECIFIC TASKS

PNNL shall perform the following tasks:

Task 1: Technical Assistance Relating to NDE Support

PNNL shall monitor NDE technologies being developed by the industry for the inspection of dry cask storage systems. This capture of information regarding relevant NDE technologies includes those deployed in other industries to inspect components that are difficult to access, and to capture examples of innovative NDE technologies developed for reactors to solve complex inspection challenges. In addition to staying informed of NDE technologies, PNNL shall then assess the information that is/is not viable and provide monthly letter reports which shall discuss the status of their findings.

As directed by NRC, PNNL shall also participate in national codes and standards activities to develop inspection requirements for dry storage casks. These industry meetings/conferences/workshops conducted to establish codes and standards are necessary and PNNL shall attend these planning meetings as needed to provide technical support to the NRC. In some cases, this shall be in the form of giving presentations on PNNL efforts.

PNNL shall provide technical input at quarterly ASME Code meetings which begin in November, 2015, to provide information concerning the fulfillment of NRC requirements and standards.

PNNL Response:

PNNL is in general agreement with the Task 1 description, with the following specific proposals:

- *PNNL proposes to participate at three (3) ASME Boiler and Pressure Vessel Code meetings in fiscal year 2016 and four (4) ASME Boiler and Pressure Vessel Code meetings per year after to support and provide technical input to the newly formed Task Group on ISI of Spent Fuel Storage and High-Level Waste Transportation Containments (BPV XI).*
- *PNNL proposes to participate on approx. monthly phone calls of the EPRI ESCP NDE subcommittee to monitor NDE technologies being developed by the domestic and international nuclear power industry for the inspection of dry cask storage systems.*
- *Beyond participating in the stated meetings above, PNNL proposes to further contribute by developing potential ASME Code requirements and technical basis documents for the Task Group to review and performing limited parametric work in support of this activity, as needed.*
- *PNNL proposes to leverage other funded NRC projects related to NDE of dry storage casks and reactor components to capture examples of innovative NDE technologies developed to solve complex inspection challenges and to stay abreast of other NDE/ISI related topics with relevance to dry storage cask systems.*

Task 2: Develop Final Report

In addition to PNNL providing monthly letter reports describing the status of their findings, as outlined in Task 1, PNNL shall also prepare a final report. This report shall be a compilation of the monthly letter reports, as well as additional technical input regarding ASME Code support and the rationale behind the conclusions made. This shall serve as a valuable tool and resource for posterity.

PNNL Response:

PNNL is in general agreement with the Task 2 description. PNNL proposes the final report be prepared in stages. PNNL makes the following specific proposals:

- *PNNL proposes interim reports (quarterly) documenting the technical bases and rationale of the ASME Boiler and Pressure Vessel code case requirements/conclusions based on notes and minutes from ASME Code meetings. The interim reports will document*

information regarding relevant NDE technologies, including those deployed to inspect components that are difficult to access, and to capture examples of innovative approaches developed for reactors to solve complex inspection challenges that are captured during the interim reporting period. The interim reports will also document similar information from the domestic and international nuclear power industry for the inspection of dry cask storage systems that is captured during the interim reporting period.

- PNNL proposes a draft Technical Letter Report (TLR), derived from the interim reports, that will document the technical bases and rationale of the ASME Boiler and Pressure Vessel code case requirements/conclusions. This draft TLR is also expected to incorporate information regarding:
 - relevant NDE technologies, including those deployed in other industries to inspect components that are difficult to access, and to capture examples of innovative NDE technologies developed for reactors to solve complex inspection challenges
 - relevant NDE technologies being developed by the domestic and international nuclear power industry for the inspection of dry cask storage systems
- PNNL proposes a final TLR that will incorporate modifications based on review of the draft TLR described above by the NRC and any updates that may be deemed necessary based on new developments since issuance of the draft TLR.

Task 3 - Project Management (new task)

PNNL will conduct the work defined in the NRC guidance and provide specified deliverables within the time and budget provided. Due to type of activities and deliverables shown, this task has been determined to be important and necessary for PNNL project coordination.

5.0 DELIVERABLES AND/OR MILESTONES SCHEDULE

Task Number	Deliverable/Milestone Description (include NRC acceptance criteria if applicable)	Due Date (if any)
1	PNNL shall provide monthly letter reports.	1 st report due NLT 45 days from the commencement of this agreement. Subsequent reports due NLT the 15 th day of each month.
2	PNNL shall provide a final report.	NLT 30 working days prior to contract completion

PNNL Response:

PNNL agrees with the below proposed milestones and schedule.

Task Number	Deliverable/Milestone Description (include NRC acceptance criteria if applicable)	Due Date (if any)
1	PNNL shall provide <i>interim (quarterly)</i> letter reports.	Reports due NLT 60 days after meeting of Task Group on ISI of Spent Fuel Storage and High-Level Waste Transportation Containments (BPV XI) at ASME Boiler and Pressure Vessel Code meetings
2	PNNL shall provide a draft TLR.	NLT than 60 days prior than required completion date of final TLR.
3	PNNL shall provide a final TLR.	NLT 30 working days prior to contract completion
4	Monthly Letter Status Report (MLSR)	20 th of each month

6.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

The technical expertise of PNNL shall include understanding of relevant and innovative NDE technologies deployed in the nuclear power industry (e.g. BMIs, CRDMs, steam generators, vessel internals, spent fuel pool, etc.) as well as other relevant industries such as aerospace, automotive, civil infrastructure, etc. to inspect components with access limitations, radiation fields, possible corrosion, and complex geometries.

PNNL Response:

Ryan Meyer will be the Project Manager and will provide technical expertise and overall guidance. Other key personnel will be Michael Anderson who will participate in ASME Code meetings and provide input to the interim and final reports. Ms. Lori Bisping will provide project coordination support to the team. Kay Hass and other Administrative staff will provide text processing and administrative duties. See Appendix A for resumes of key personnel.

7.0 MEETINGS AND TRAVEL

PNNL shall travel to NRC HQ, located in Rockville, MD, once a year for a status meeting. This will require one to two PNNL staff members, for the duration of three to four days. Conversely, NRC will travel to PNNL site, located in Pasco, WA, once a year for a status meeting. This will also require one to two NRC staff members, for the duration of three to four days. In addition, NRC will plan for PNNL attending four meetings/conferences/workshops requiring travel per year. This will require one to two PNNL staff members, for the duration of three to four days each. During these trips, PNNL shall provide technical assistance, or present their work. Trip location and purpose for these four meetings are yet to be determined, but have been factored in for budget planning purposes.

All travel requires written Government approval from the CO, unless otherwise delegated to the COR. Foreign travel for PNNL personnel requires a 60-day lead time for NRC approval. For prior approval of foreign travel, PNNL 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 will be approved by the NRC Executive Director for Operations (EDO).

PNNL Response:

PNNL is in agreement with meetings and travel except that PNNL proposes to hold only one status meeting per year at NRC Headquarters in Rockville, MD.

Meeting	Location	Duration	# Staff	When
ASME Code Meeting	Henderson, NV	3 days	1.5	16-Feb
ASME Code Meeting	Orlando, FL	3 days	1.5	16-May
ASME Code Meeting	Washington, DC	3 days	1.5	16-Aug
ASME Code Meeting	St. Louis, MO	3 days	1.5	16-Nov
ASME Code Meeting	estimating purposes used DC	3 days	1.5	17-Feb
ASME Code Meeting	Anchorage, AK	3 days	1.5	17-May
ASME Code Meeting	estimating purposes used DC	3 days	1.5	17-Aug
ASME Code Meeting	estimating purposes used DC	3 days	1.5	17-Nov
ASME Code Meeting	estimating purposes used DC	3 days	1.5	18-Feb
ASME Code Meeting	estimating purposes used DC	3 days	1.5	18-May
ASME Code Meeting	estimating purposes used DC	3 days	1.5	18-Aug
PNNL	Richland, WA	1.5 days	2	FY 16
NRC Headquarters	Rockville, MD	4 days	2	FY 17
PNNL	Richland, WA	1.5 days	2	FY 18

(Code meetings will involve 2 staff, however for estimating purposes, one staff will split costs with another NRC project, therefore showing 1.5 staff)

8.0 REPORTING REQUIREMENTS

PNNL shall structure 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.

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, PNNL shall 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. If a project is a task ordering agreement, a separate MLSR 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 MLSR must include the following information: 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.

9.0 PERIOD OF PERFORMANCE

The period of performance for this work is September 14, 2015 through August 31, 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 PNNL 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 PNNL concerning technical aspects of the agreement/task order; issue written interpretations of technical requirements, including Government drawings, designs, specifications; monitor PNNL's performance and notify PNNL of any deficiencies; coordinate availability of NRC-furnished material and/or GFP; and provide site entry of PNNL personnel.

Contracting Officer's Representative

Name: Gina Davis
Agency: U.S. Nuclear Regulatory Commission
Office: Nuclear Materials Safety and Safeguards
Mail Stop: TWFN-04-B72
Washington, DC 20555-0001
E-Mail: Gina.Davis@nrc.gov
Phone: 301-415-5776

Alternate Contracting Officer's Representative

Name: Darrell Dunn
Agency: U.S. Nuclear Regulatory Commission
Office: Nuclear Materials Safety and Safeguards
Mail Stop: TWFN-04-B72
Washington, DC 20555-0001
E-Mail: Darrell.Dunn@nrc.gov
Phone: 301-415-7079

11.0 MATERIALS REQUIRED
N/A

12.0 NRC-FURNISHED PROPERTY/MATERIALS
N/A

13.0 RESEARCH QUALITY
N/A

**14.0 STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES
MANUSCRIPTS**
N/A

15.0 OTHER CONSIDERATIONS

References

N/A

Access to Non-NRC Facilities/Equipment

N/A

Applicable Publications

N/A

Controls over document handling and non-disclosure of materials

N/A