


INTERAGENCY AGREEMENT		1. IAA NO. 31310018F0046			PAGE OF 1 2	
2. ORDER NO.		3. REQUISITION NO. See Schedule		4. SOLICITATION NO.		
5. EFFECTIVE DATE 08/24/2018		6. AWARD DATE 08/24/2018		7. PERIOD OF PERFORMANCE 09/17/2018 TO 07/31/2019		
8. SERVICING AGENCY ALBUQUERQUESANDIA NATL LAB ALC: DUNS: 155505027 +4: DOENNSASFO CONTRACTING OFFICER PO BOX 5400 ALBUQUERQUE NM 87185-5400 POC CHRISTINE WHITLEY TELEPHONE NO. 505-844-3811				9. DELIVER TO KRIS JAMGOCHIAN US NUCLEAR REGULATORY COMMISSION 11555 ROCKVILLE PIKE MAIL STOP 3WFN-08C64M ROCKVILLE MD 20852-2738		
10. REQUESTING AGENCY ACQUISITION MANAGEMENT DIVISION ALC: 31000001 DUNS: 040535809 +4: US NUCLEAR REGULATORY COMMISSION ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE ROCKVILLE MD 20852-2738 POC MICHAEL TURNER TELEPHONE NO. 301-415-6712				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-07B20M WASHINGTON DC 20555-0001				13. LEGISLATIVE AUTHORITY Energy Reorganization Act of 1974		
				14. PROJECT ID		
				15. PROJECT TITLE UNMANNED AERIAL SYSTEMS/DRONES		
16. ACCOUNTING DATA 2018-X0200-FEEBASED-11-11D003-11-5-186-1061-251D						
17. ITEM NO.	18. SUPPLIES/SERVICES			19. QUANTITY	20. UNIT	21. UNIT PRICE
	EWA Agreement No. NRC-HQ-25-14-D-0005 Task Order No. 31310018F0046 The NRC and the DOE Laboratory (SNL) hereby enter into this Agreement/Task Order NRC-HQ-25-14-D-0005/31310018F0046 for the project entitled, "Unmanned Aerial Systems/Drones." The period of performance of this project shall commence on September 10, 2018, and will expire on July 31, 2019. Continued ...					
23. PAYMENT PROVISIONS				24. TOTAL AMOUNT \$300,000.00		
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING)				25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) 		
25b. NAME AND TITLE		25c. DATE	26b. CONTRACTING OFFICER MICHAEL A. TURNER		26c. DATE 09/17/2018	

CONSIDERATION AND OBLIGATIONS:

(a) The authorized cost ceiling is \$300,056.00.

(b) The amount presently obligated with respect to this DOE Agreement is \$300,000.00. When and if the amount(s) paid and payable to the DOE Laboratory hereunder shall equal the obligated amount, the DOE Laboratory shall not be obligated to continue performance of the work unless and until the NRC Contracting Officer shall increase 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 document is hereby made a part of this Agreement:

Attachment No. 1: Statement of Work

Non Fee Recoverable Work

Accounting Info:

2018-X0200-FEEBASED-11-11D003-1061-11-5-186-251D-1
1-5-186-1061 NSIR-18-0058 \$105,000.00

Accounting Info:

2018-X0200-FEEBASED-11-11D003-1061-11-5-186-251D-1
1-5-186-1061 NSIR-18-0070 \$195,000.00

ALC: 31000001

DUNS: 040535809

TAS: 31x0200.320

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.

Master IAA: NRCHQ2514D0005

**COVER PAGE ADDENDUM TO:
STATEMENT OF WORK (SOW)
(Interagency Agreements including DOE Laboratory)**

NRC Agreement Number NRC-HQ-25-14-D-0005	NRC Agreement Modification Number 	NRC Task Order Number (If Applicable) 31310018F0046	NRC Task Order Modification Number (If Applicable)
Project Title Unmanned Aerial Systems/Drones			
Job Code Number 	B&R Number 	DOE Laboratory Sandia National Laboratories	
NRC Requisitioning Office Nuclear Security Incident Response/Division of Physical and Cyber Security Policy/Materials and Waste Security Branch			
NRC Form 187, Contract Security and Classification Requirements <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Note 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) 	

Contracting Officer's Representative

Kris Jamgochian
Security Specialist, PM/COR
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop: 3WFN-08C64M
North Bethesda, MD 20852
Email: Kris.Jamgochian@nrc.gov
Office: (301) 287-3542
Mobile: (301) 642-7294

--- End of Executive Summary ---

DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

(Interagency Agreements)

1.0 BACKGROUND

This is a scope of work to an interagency agreement (IAA) that continues support to the U.S. Nuclear Regulatory Commission (NRC) that includes development of technical assistance in support of agency environmental and reactor programs. Rapidly evolving drone technology is making it possible for potential adversaries to use these devices against NRC licensed facilities. They could be used for surveillance, managing an attack, delivering explosives, amongst other things. A classified intelligence assessment has been provided to the Commission. As part of the NRC process to determine if potential changes are needed in the design basis threat, a technical and vulnerability assessment must be conducted. This project will provide much of the assessment that the staff is required to perform to assist in determining if drones should be included in the NRC design basis threat.

2.0 OBJECTIVE

The objective of the task order is to obtain technical assistance from Sandia National Laboratories (SNL) to assist NRC staff with understanding the threat to nuclear power plants and fuel cycle facilities posed by drones/Unmanned Aerial Systems (UAS) their capabilities, and how they can be detected and countered.

3.0 SCOPE OF WORK

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

SNL shall assist the NRC staff by conducting a technical assessment of drone technology and how it could be used by potential adversaries against nuclear facilities. This assessment will include a look at the current timeframe and into the near future. SNL will also assess potential vulnerabilities to nuclear facilities as a result of adversary use of drones.

4.0 SPECIFIC TASKS

SNL shall perform the following tasks:

Task 1 Project Initiation

Task 1a. Kick Off Meeting

Participate in a kick off meeting with the COR and other NRC staff to review the SOW, expectations, project management, and performance requirements of this task order. The meeting shall be held within ten working days after award of this task order. Prepare a written

summary of the meeting that includes at a minimum the following: (1) identify meeting participants from the NRC and SNL, 2) convey minutes of the meeting that clearly describe the substance of the meeting, and 3) list and describe decisions about scheduling and action items.

Task 2 Technology Assessment

Conduct a technology assessment to identify what UASs are currently available given commercial technology, as well as a prediction of what is likely to be available in the reasonable near-term. Participate in meetings and communications via electronic mail and telephone or teleconference with the COR and NSIR Project Technical Lead, as necessary, to discuss project status.

Task 3 Adversarial Use Assessment

Identify how UASs may be used by a well-trained adversary as part of an attack on a facility (both nuclear power plants and fuel cycle facilities). This shall include the use of single or multiple UASs. Deliverable 2 provided upon completion of this task.

Task 4 Vulnerability Assessment

Assess the vulnerabilities of and potential consequences to nuclear power plants and fuel cycle facilities with adversary attacks that include the use of UASs. In particular, the focus at nuclear power plants should be on radiological sabotage as reflected in RG 5.69 and with theft and diversion, as well as chemical release at fuel cycle facilities as reflected in RG 5.70. Draft final report, deliverable #3 due upon completion of this task.

Task 5 Final Report

Provide a summary of previous work that provides insights into the detection and countering of UAS. Incorporate NRC staff comments on draft final report. The contractor shall provide a final report summarizing the work performed and the results and conclusions derived shall be submitted to the COR.

5.0 LIST OF DELIVERABLES

Task No.	Deliverable/Milestone Description and Acceptance Criteria	Deliverable Format	Due Date
1a.	Written summary of the kick-off meeting Standard: Summary includes the minimum required information identified in Section 4.0 of this SOW	Microsoft Word	Within 5 calendar days upon completion of kick-off meeting

2.	Interim Report of Technology Assessment and Potential Adversary uses of UASs.	Microsoft Word	Within 6 weeks of award of this Task Order.
3	Draft Report of Technology Assessment and Potential Adversary uses of UASs	Microsoft Word	Within 16 weeks of award of this Task Order.
4	Final Report of Technology Assessment and Potential Adversary uses of UASs Acceptance Criteria: All COR comments are addressed in the Outline.	Adobe PDF	Within 28 weeks of award of this Task Order.
All	Per SOW Section 8.1, Monthly Letter Status Reports (MLSRs) Acceptance Criteria: Report contains all required information.	Microsoft Word or Adobe PDF	NLT than 20th of the following month

The COR will review all draft deliverables and provide comments back to the laboratory within 60 calendar days from receipt of initial draft regulatory guide. SNL shall revise the draft deliverables based on the comments provided by the COR, and then provide the final version of the deliverable. The above deliverables shall be provided electronically to the COR consistent with the document's level of required protection.

6.0 ESTIMATED LABOR CATEGORIES, KEY PERSONNEL AND LEVELS OF EFFORT

6.1 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)
Project Manager	See Below	Yes
Technical Staff	See Below	Yes

The Project Manager and Technical staff shall possess expert level knowledge in blast effects, analyses of blast effects, and UAS. Possess a college degree in a technical engineering curriculum. Possess technical knowledge of physical security. Possess technical knowledge of the safety systems associated with nuclear power plants. Possess a technical understanding of

the chemicals used in fuel cycle operations and how they are stored. Ability to obtain or currently possess an access authorization to the TOP SECRET level of information.

6.2 Level-of-Effort (in hours). This subsection is left blank intentionally.

7.0 CERTIFICATION AND LICENSE REQUIREMENTS

N/A

8.0 MEETINGS AND TRAVEL

No travel is required for this task order. All meetings in support of this task order will be held via teleconference.

9.0 REPORTING REQUIREMENTS

SNL 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.

9.1 Monthly Letter Status Report (MLSR)

SNL must provide a Monthly Letter Status Report which consists of a technical progress report and financial status report. This report will be used by the sponsoring agency 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 information, problem identification and resolution, travel plans, and staff hour summary. Copies must be sent to the COR and AMD at ContractsPOT.Resource@nrc.gov.

As 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 the NRC's [preferred] MSLR template

10.0 PERIOD OF PERFROMANCE

This Section is left blank intentionally.

11.0 APPLICABLE PUBLICATIONS (CURRENT EDITIONS)

Safeguards Information guidance (DG-SGI-1 *Designation Guide for Safeguards Information*).

12.0 APPLICABLE PUBLICATIONS (CURRENT EDITIONS)

Any documents generated by the contractor under this contract/order shall not be released for publication or dissemination without CO and COR prior written approval.

13.0 NEW 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.

All format guidance, as specified in NUREG-0650, Revision 2, 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

14.0 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 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.