

INTERAGENCY AGREEMENT		1. IAA NO. NRC-HQ-60-15-T-0022		PAGE OF 1 3	
2. ORDER NO.		3. REQUISITION NO. RES-15-0423		4. SOLICITATION NO.	
5. EFFECTIVE DATE 09/12/2015		6. AWARD DATE 09/08/2015		7. PERIOD OF PERFORMANCE 09/12/2015 TO 08/31/2018	
8. SERVICING AGENCY ARGONNE NATIONAL LAB ALC: DUNS: +4: US DEPARTMENT OF ENERGY 9800 SOUTH CASS AVENUE LEMONT IL 60439 POC Sean Seamon TELEPHONE NO. 630-252-2077			9. DELIVER TO CASPER SUN MAIL STOP TWFN 10-A51 11555 ROCKVILLE PIKE ROCKVILLE MD 20852		
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 Jeffrey Mitchell TELEPHONE NO. 301-415-5074			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 SUPPORT FOR MILLING AND MINING DOSE COMPUTER CODE		
16. ACCOUNTING DATA 2015-X0200-FEEBASED-60-60D003-35-6-199-1061-253D					
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	TASK ORDERING AGREEMENT: NRC-HQ-25-14-D-0003 TASK ORDER NUMBER: NRC-HQ-60-15-T-0022 The NRC and the DOE Lab (ANL) hereby enter into this Agreement, NRCHQ2514D0003- NRCHQ6015T0022 for the project entitled, "Support for Milling and Mining Dose (MILDOS-AREA) Computer Code" The performance period for this agreement shall commence on September 12, 2015 and will expire on August 31, 2018. Continued ...				
23. PAYMENT PROVISIONS			24. TOTAL AMOUNT \$181,629.00		
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING) <i>Sean Seamon</i>			25b. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) <i>Jeffrey R. Mitchell</i>		
25c. NAME AND TITLE Sean Seamon, Contracting Officer		25d. DATE 9/9/15	25e. CONTRACTING OFFICER JEFFREY R. MITCHELL		25f. DATE 9/8/2015

SUNSI REVIEW COMPLETE

TEMPLATE - ADM001

SEP 25 2015

ADM002

Consideration and Obligations:

(a) Authorized Cost Ceiling: \$331,208.00

(b) The amount presently obligated with respect to this DOE Agreement is \$181,629.00. 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 documents are hereby made part of this Agreement:

Attachment No. 1: Statement of Work

NRC CONTRACTING OFFICERS REPRESENTATIVE (COR):
Casper Sun (Primary) and Stephanie Bush-Goddard (Alternate)

ANL PROJECT MANAGER: Bruce Biber
Master IAA: NRCHQ2514D0003

00001

Authorized Cost Ceiling
Line Item Ceiling \$331,208.00
Incrementally Funded Amount: \$181,629.00

331,208.00

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.

- [] Fee Recoverable Work
- [x] Non-fee Recoverable Work

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 Continued ...

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NRC-HQ-60-15-T-0022

ORDER NO

PAGE

OF

3

3

performance are the last date of signature by the parties.

The total amount of award: \$331,208.00. 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-25-14-D-0003		NRC-HQ-60-15-T-0022	N/A
Project Title			
Support for Milling and Mining Dose (MILDOS-AREA) Computer Code			
Job Code Number	B&R Number	DOE Laboratory	
		Argonne National Laboratory	
NRC Requisitioning Office			
Office of Nuclear Regulatory Research			
NRC Form 187, Contract Security and Classification Requirements			
<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> Note Applicable		<input 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)	

1.0 BACKGROUND

MILDOS-AREA is a computer code developed at the Argonne National Laboratory (ANL). The code's purpose is to estimate radiological impacts from airborne emissions from uranium mining and milling facilities, conventional uranium ore operations, and in-situ leach facilities. MILDOS-AREA is used by United States Nuclear Regulatory Commission (NRC) staff, Agreement States, licensees, new applicants, and contractors to perform confirmatory calculations in support of staff reviews of applications involving uranium recovery facilities. The code has been successfully developed and maintained by ANL for use by the NRC and its contractors for many years.

2.0 OBJECTIVE

The objective of this agreement is to continue to update, develop and maintain the MILDOS-AREA computer code. Another objective is to continue to document upgrades in the user manual and technical basis documents. Yet another objective is to provide training to users.

Final objectives are to perform benchmarking activities and provide assistance to NRC staff in guidance development and technical consultations needs.

3.0 SCOPE OF WORK

Argonne National Laboratory must provide all resources necessary to accomplish the tasks and deliverables described in this statement of work (SOW). This includes all phases of the MILDOS-AREA computer code activities including development, maintenance, distribution and training.

4.0 SPECIFIC TASKS

The Argonne National Laboratory must perform the following tasks:

Task 1: Maintain and Update MILDOS-AREA Computer Code

Argonne National Laboratory must maintain and update the MILDOS-AREA computer code. This includes ensuring that state-of-the-art models, methods, parameters and parameter distributions are incorporated in the computer code. It also includes ensuring state-of-the-art uranium facility practices reflect how the code works. Updates and improvement include upgrading Graphical User Interface (GUI) capabilities, including adding adequate analysis results as text reports and adding interactive graphic outputs.

Maintenance includes performing software quality assurance (SQA) checks, including verification and validation (V&V) testing of the code and GUI. These SQAs should, at a minimum, include accepted software QA procedures, as set forth in NUREG/BR-0167, "Software Quality Assurance Program and Guidelines," and include documentation and version control procedures for the code. The Software Quality Assurance program shall align with the ongoing development of the code documentation as outlined in Task 2.

Argonne shall outline and discuss, with the COR, for establishing a probabilistic shell (i.e.; similar to RESRAD 6.0 code series) and develop software to allow dose calculations based on peak-of-the-mean or mean-of-the peak dose at user specified times. Generic uncertainty and sensitivity analyses similar to what was done in NUREG/CR-6676 for MILDOS-AREA would be beneficial (may include implementing probabilistic capabilities in MILDOS-AREA).

ANL must work with NRC to identify what maintenance and upgrade should be updated and in what priority order.

Task 2: Maintain and Update MILDOS Computer Code Documentation

Argonne National Laboratory shall continue to maintain and update the MILDOS-AREA computer code documentation to align with Task 1 upgrades. This documentation should align with standard computer code documentation to include a User's Guide and Technical Basis Documents (models and methods). Upgrades to documentation should be newer versions of the

same document/NUREG that add to the readability and efficiency of the documentation. It is anticipated that the NUREGs will be reviewed and revised periodically to align with updates of the code in Task 1 and to incorporate lessons learned from NRC staff, licensee and vendor exercises and training sessions and international counterparts.

Task 3: Training

Argonne National Laboratory must provide training of the MILDOS-AREA computer code, the target schedule is once per year. The minimum training required is once and the maximum training requirement is three for the life of this agreement. This includes coordinating with multiple NRC Offices (e.g., the Office of Nuclear Regulatory Research, the Office of the Chief Human Capital Officer), Agreement States and other entities to organize the training. ANL must also provide full technical training at least once and support to the NRC staff and Agreement States in the form of technical presentations and tutorial sessions, conference calls, meetings, and written correspondence that will assist them with code development and maintenance functions. All training activities requests will be coordinated through the COR.

A complete set of training presentation slides and associated technical documents, after the code has undergone a major revision. ANL must perform a full training class for NRC. The training time is flexible based on the need of training materials. The training materials, must include basic training on the computer code, user's manual, and program quick installation guide.

Task 4: Technical Assistance in Updating Other Guidance Documents (NUREGS and Regulatory Guides), Benchmarking the Code and Knowledge Management Activities

Argonne National Laboratory must provide technical assist the NRC in updating guidance documents associated with the MILDOS-ARE computer code. For example, the physical/mathematical models and default parameters in Regulatory Guide 3.59, NUREG-1569, and the MILDOS Technical basis document have not been validated and must be verified and validated and updated into the code and documentation. Please note that documentation upgrades directly related to the computer code upgrades will be performed in Task 2. ANL must provide technical assist with updating the models and methods in these documents.

In addition, and as directed by the COR, Argonne shall benchmark the air dispersion model in MILDOS-AREA against other models/codes and document results of the benchmarking exercise.

Task 5: Technical Support, Knowledge Management Activities and Consultation

Argonne National Laboratory must provide technical support and consultation assistance to the COR including knowledge management activities. ANL must also provide technical support to the NRC staff in the form of technical presentations and tutorial sessions, conference calls, help desk support, meetings, and written correspondence that will assist the NRC staff with code development and maintenance functions.

Finally, ANL must also assist in knowledge management activities, code modernizations plans (i.e. maintainability, readability, and extendibility), and assisting in the diagnosis of MILDOS-AREA Codes coding errors and problem.

All technical assistance requests will be coordinated through the COR and documented in MLSR..

5.0 DELIVERABLES AND/OR MILESTONES SCHEDULE

Task Number	Deliverable/Milestone Description			Additional Comments
N/A	Kickoff Meeting (within 30 days of award)			
1 Maintain and Update MILDOS-AREA Computer Code	Monthly Documented Teleconference Discussions of maintenance and updates of computer code			MLSRs are due by the 20 th of each month documenting progress.
	Draft probabilistic shell 12 months after award	NRC review and comment 16 months after award	Finalized probabilistic shell 20 months after award	
2 Maintain and Update MILDOS Computer Code Documentation	Monthly Documented Teleconference Discussions of Computer Code Documentation			MLSRs are due by the 20 th of each month documenting progress.
	Draft User Guide and associated documentation 1 months after major computer upgrade	NRC reviews and comments 2 months after	Final User Guide and associated documentation 4 months after major computer upgrade	
	Review of Documentation - Ongoing			
3 Training	Monthly Documented Teleconference Discussions to discuss training needs			MLSRs are due by the 20 th of each month documenting progress.
	One full and major-training program will be carried out after major computer code updates			
4 Assistance in Updating Other Guidance Documents, Benchmarking the Code and Knowledge Management	Monthly Documented Teleconference Discussions			MLSRs are due by the 20 th of each month documenting progress.
	Ongoing assistance with other guidance documents			
	Draft benchmarking the air dispersion model, 8	NRC Review and comment, 10 months after award	Final benchmarking the air dispersion model, 12	

Activities	months after award		months after award	
5 Technical Support and Consultation	Ongoing			MLSRs are due by the 20 th of each month documenting progress.

6.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

This work requires staff with expertise in the development of the MILDOS-AREA Computer Code. In addition, the work requires staff to have expertise in regulatory issues of radiological impacts from airborne emissions from uranium mining and milling facilities, conventional uranium ore operations, and in-situ leach facilities, environmental transport pathway analysis and health physics. Another requirement is for staff to have the ability to evaluate doses to members of the public as required by 10 CFR Part 20 and 40 CFR. Yet, another requirement is to have experience in Software Quality Control requirements and the knowledge of publishing NUREG.

7.0 ESTIMATED LABOR CATEGORIES AND LEVELS OF EFFORT

Intentionally left blank.

8.0 MEETINGS AND TRAVEL

The contractor shall carry out domestic travel. The travel frequency is approximately 1-2 times a year. The purpose is for project meetings and/or training to NRC Headquarters and travel to uranium facilities to stay abreast of state of the art practices. The number of DOE Lab staff will be 2-3 persons for 3-5 days. If the travel requires training the number of staff may increase to 3-4 persons. ANL must develop a trip report and submit it with the Monthly Letter Status Report for that month.

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).

All travel requires written Government approval from the CO, unless otherwise delegated to the COR.

9.0 REPORTING REQUIREMENTS

The DOE Laboratory is responsible for structuring the deliverable to follow agency standards. The current agency standard is Microsoft Office Suite 2013. The current agency Portable

Document Format (PDF) standard is Adobe Acrobat X 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, the DOE Laboratory 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, Administration Management Division to 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; cost center 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 Attachment 1. The preferred format for a MLSR is in Attachment 1.

10.0 PERIOD OF PERFORMANCE

Refer to block 7 on the IAA award form.

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.

Contracting Officer's Representative

Name: Casper Sun
Agency: U.S. Nuclear Regulatory Commission
Office: Office of Nuclear Regulatory Research
Mail Stop: 10A51
Washington, DC 20555-0001
E-Mail: Casper.Sun@nrc.gov
Phone: 301-415-1646

Alternate Contracting Officer's Representative

Name: Stephanie Bush-Goddard
Agency: U.S. Nuclear Regulatory Commission

Office: Office of Nuclear Regulatory Research
Mail Stop: 10A51
Washington, DC 20555-0001
E-Mail: Stephanie.Bush-Goddard@nrc.gov
Phone: 301-415-0755

12.0 MATERIALS REQUIRED

N/A

13.0 NRC-FURNISHED PROPERTY/MATERIALS

N/A

14.0 RESEARCH QUALITY

The quality of NRC research programs are assessed each year by the Advisory Committee on Reactor Safeguards. Within the context of their reviews of RES programs, the definition of quality research is based upon several major characteristics:

Results meet the objectives (75% of overall score)
 Justification of major assumptions (12%)
 Soundness of technical approach and results (52%)
 Uncertainties and sensitivities addressed (11%)

Documentation of research results and methods is adequate (25% of overall score)
 Clarity of presentation (16%)
 Identification of major assumptions (9%)

It is the responsibility of the DOE Laboratory to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC COR will review all research products with these criteria in mind.

15.0 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.

The final manuscript shall be of archival quality and comply with the requirements of NRC Management Directive 3.7 "NUREG-Series Publications." The document shall be technically edited consistent with NUREG-1379, Rev. 2 (May 2009) "NRC Editorial Style Guide." The goals of the "NRC Editorial Style Guide" are readability and consistency for all agency documents.

All format guidance, as specified in NUREG-0650, "Preparing NUREG-Series Publications," Rev. 2 (January 1999), 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.

16.0 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