

**U.S.Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

| | | | |
|--|--------------|--|---|
| 1. Identification Number: DE-NE0009326 | | 2. Program/Project Title: | |
| 3. Recipient: Nufuels, Inc 62329 North Star DR Montrose, CO81403-7964 | | Laboratory Groundwater Restoration R&D Bench Study with Natural Uranium Core and Groundwater | |
| 4. Reporting Requirements: | | Frequency | Addresses |
| A. MANAGEMENT REPORTING | | | |
| <input checked="" type="checkbox"/> Research Performance Progress Report (RPPR) (RD & D Projects) | | Q F | (A B E) |
| <input type="checkbox"/> Progress Report (Non - RD & D Projects) | | | |
| <input checked="" type="checkbox"/> Special Status Report | | O | (A B E) |
| B. SCIENTIFIC/TECHNICAL REPORTING | | | |
| (Dissemination of results is required for RD&D projects. Reports & other S&T publications/products must be submitted using the appropriate DOE Announcement Notice(AN) located at: https://www.osti.gov/elink) | | | |
| <u>Product</u> | | <u>Announcement Notice(AN)</u> | |
| <input checked="" type="checkbox"/> Scientific & Technical Reporting Product | | | |
| A. Journal Article-Accepted Manuscript | DOE AN 241.3 | O | https://www.osti.gov/elink-2413() |
| B. Scientific/Technical Conference Paper /Presentation or Proceedings | DOE AN 241.3 | O | https://www.osti.gov/elink-2413 |
| C. Scientific/Technical Software & Manual | DOE AN 241.4 | A | https://www.osti.gov/elink/241-4.jsp |
| D. Other STI (e.g., dissertation/thesis, see instructions) | DOE AN 241.3 | O | https://www.osti.gov/elink-2413 |
| <input checked="" type="checkbox"/> Final Scientific/Technical Report | DOE AN 241.3 | F | https://www.osti.gov/elink-2413() |
| C. FINANCIAL REPORTING | | | |
| <input checked="" type="checkbox"/> SF -425, Federal Financial Report | | Q F | (A B E) |
| D. CLOSEOUT REPORTING | | | |
| <input checked="" type="checkbox"/> Patent Certification | | F | (A B E) |
| <input checked="" type="checkbox"/> SF -428 & 428B Final Property Report | | F | (A B E) |
| <input type="checkbox"/> Other (see special instructions) | | | |
| E. OTHER REPORTING | | | |
| <input type="checkbox"/> Annual Indirect Cost Proposal | | | |
| <input checked="" type="checkbox"/> Audit of For-Profit Recipients | | O | Send to CFO at: DOE-Audit-Submission@hq.doe.gov & (A E) |
| <input checked="" type="checkbox"/> SF -428 Tangible Personal Property Report Forms Family | | O | (A E) |
| <input type="checkbox"/> Other (see special instructions) | | | |
| FREQUENCY CODES AND DUE DATES: | | | |
| A - Within 5 calendar days after events or as specified | | F - Final; within 90 calendar days after expiration or termination of award. | |
| Y - Yearly; within 90 days after the end of the reporting period. | | Y180 - Yearly; within 180 days after the end of the recipient's fiscal year. | |
| Q - Quarterly; within 30 days after end of the reporting period. | | S - Semiannually; within 30 days after end of reporting period. | |
| O - Other; See special instructions for further details. | | | |

5. *Special Instructions: [Insert special instructions to recipient for unique reporting requirements or reporting requirements with frequency of O]*

Your performance in providing on-time report deliverables will be monitored by Procurement Services Division (PSD), Idaho Operations Office, Department of Energy. Reports not received by the specified due date are late. Overdue, inaccurate, or non-conforming reports are not acceptable. PSD will withhold payments or take other administrative actions as needed for non-compliance with reporting requirements. Only the Contracting Officer may waive or excuse required reports.

In order for accurate logging and processing of reports, it is critical that reports be sent to all the specified addressees and in the manner requested. PSD receives a copy of all reports via psdrept@id.doe.gov. The message subject line must include the award number.

Message Subject Line Example: DE-NE000XXXX, 4Q SF 269A Report.

The official award number must also be identified on all reports. A project number, if assigned by the program manager, may also be included, but is not a substitute for the official award number.

Special Instructions:

REPORT ADDRESSEES

- A. Procurement Services Division (PSD): psdrept@id.doe.gov
- B. DOE Project Manager: Michael Reim, michael.reim@nuclear.energy.gov
- C. DOE Headquarters Program Manager: Michael Reim, michael.reim@nuclear.energy.gov
- D. Technical Monitor: James Lovejoy, lovejob@id.doe.gov
- E. Technical Project Officer: James Lovejoy, lovejob@id.doe.gov
- F.
- G.

Federal Assistance Reporting Instructions

A. MANAGEMENT REPORTING

For awards involving RD&D a Research Performance Progress Report is required to be submitted. For all other awards a Progress Report is required to be submitted.

Either the Research Performance Progress Report (RPPR) or the Progress Report must be checked, but not both.

Research Performance Progress Report (RPPR) (RD&D Projects)

See the attachment entitled “Research Performance Progress Report” for instructions on what the Recipient is to include in the RPPR.

Progress Report (Non-RD&D Projects)

The Recipient must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award and report information:
 - a. The DOE Award Number (as it appears on the award face page)
 - b. Recipient Name (as it appears on the award face page)
 - c. Project Title
 - d. PD/PI Name, Title and Contact Information (e-mail address and phone number)
 - e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
 - f. Project Period (Start Date, End Date)
 - g. Report Submission Date
 - h. Reporting Period Start and End Date
2. A written comparison of the actual project accomplishments with the project goals and objectives established for the reporting period; if goals and/or objectives for the reporting period were not met, a detailed description of the variance shall be provided.
3. A discussion of what was accomplished under these goals and objectives established for this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
4. Cost Status. A comparison of the approved budget by budget period and the actual costs incurred during the reporting period shall be provided. If cost sharing is required, the cost breakdown shall show the DOE share, recipient share, and total costs.
5. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you

submitted a project management plan with your application, you must use this plan to report schedule and budget variances. You may use your own project management system to provide this information.

6. Describe any changes during the reporting period in project approach and the reasons for these changes. Remember, significant changes to the project objectives and scope require prior approval by the Contracting Officer.
7. Describe any actual or anticipated problems or delays and any actions taken or planned to resolve them.
8. Describe any absence or changes of key personnel or changes in consortium/teaming arrangement during the reporting period.
9. List and describe any product produced or technology transfer activities accomplished during this reporting period, such as:
 - A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Program Manager identified in Block 15 of the Assistance Agreement Cover Page.
 - B. Web site or other Internet sites (list the URL) that reflect the results of this project.
 - C. Networks or collaborations fostered.
 - D. Technologies/Techniques (Identify and Describe).
 - E. Inventions/Patent Applications (Identify and Describe with date of application)
 - F. Other products, such as data or databases, physical collections, audio or video, software or NetWare, models, educational aid or curricula, instruments or equipment (Identify and Describe).

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTING

The dissemination of scientific and technical information (STI) ensures public access to the results of federally funded research. STI refers to information products in any medium or format used to convey results, findings, or technical innovations from research and development or other scientific and technological work that are prepared with the intention of being preserved and disseminated in the broadest sense applicable (i.e., to the public or, in the case of controlled unclassified information or classified information, disseminated among authorized individuals). Access to and archival of DOE-funded STI are managed by the DOE Office of Scientific and Technical Information (OSTI). For information about OSTI see <http://www.osti.gov>

For more information on STI submittals, see <http://www.osti.gov/stip/submittal>

By properly notifying DOE OSTI about the published results, the information will be made publicly accessible and discoverable through DOE web-based products.

NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII). PII is defined as any information about an individual which can be used to distinguish or trace an individual's identity. Some information that is considered to be PII is available in public sources such as telephone books, public websites, university listings, etc. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, e-mail address, home telephone number, and general educational credentials. In contrast, Protected PII is defined as an individual's first name or first initial and last name in combination with any one or more of the following types of information: social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts, etc., which could be misused if made publicly available.

1. Scientific and Technical Reporting Products

a. Journal Article-Accepted Manuscript

Recipients are encouraged to publish their work in scholarly journals. When/if a recipient has an article accepted for publication in a peer-reviewed journal they are required to announce the publication to OSTI as detailed below. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist.

Public access to peer-reviewed scholarly publications can be achieved by following these instructions. If the Recipient has a journal article accepted for publication which contains information/data produced under the award, then the Recipient must submit an AN 241.3 for the author's full-text version of the accepted manuscript, as described below, at the time the article meets the status of being "accepted" for publication. The Federal Government's right to use the data produced under a Federal award is established in 2 CFR 200.315(d), U.S. Government's retained license to published results of federally funded research.

Content. The Recipient is to announce to DOE the final peer-reviewed accepted manuscript (AM), i.e., the version of the journal article content that has been peer reviewed and accepted for publication in a journal, by providing a persistent link to the accepted manuscript on the recipient's publicly accessible institutional repository or submitting the full text (see Electronic Submission Process below). The Recipient should NOT submit the journal's published version of the article, i.e., the Recipient should NOT submit a copyrighted reprint. The Recipient should not submit the content of peer reviews or a commitment to publish. The Recipient should provide

only the accepted manuscript content intended to be the published article.

DOE will make no additional review of the content of an AM because the AM is a version of the journal article with the content to be published (i.e., publicly released) by the journal publisher. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. DOE may choose to defer providing public access until an administrative interval period has passed.

The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate and that it is not a copyrighted reprint, i.e., the final version of the published article. Recipients are reminded that the article is to include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. The Journal Article-Accepted Manuscript must be announced via the DOE Energy Link System (E-Link) by submitting a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

Within the AN 241.3, provide relevant journal information (article title, journal name, volume, issue, and any other pertinent publication information). Also provide a persistent link to the repository location of the accepted manuscript. An example of an acceptable persistent link is a URL to the specific location of the Journal Article-Accepted Manuscript hosted on a public, openly accessible university research publications website. If a persistent link is not available or if the website has access restrictions (preventing public access), then the Recipient must upload the full-text of the Accepted Manuscript using the AN 241.3 and E-Link instructions.

Full-text of accepted manuscripts must be in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

b. Scientific/Technical Conference Paper/Presentation or Proceedings

Recipients are encouraged to announce Scientific and Technical Conference Papers/Presentations if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “O – Other” on the Checklist. Instructions for how to announce such STI can be found below. In cases where the Recipient is required to create and submit a Conference Proceedings, the Frequency will be “F – Final.”

Content. The content should include: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor. Also include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. Scientific/technical conference papers/presentations or proceedings must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

DOE will not review conference papers or presentations prior to making publicly available via OSTI since they were already presented in a public setting during a conference. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate for and has been publicly released.

Scientific/technical conference papers or proceedings that are textual documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation. Audiovisual formats, such as PowerPoint (PPT) or video presentations, may be submitted as a Microsoft PPT file or audiovisual file by selecting the appropriate format on the AN 241.3 for the file to be uploaded or, in the case of videos posted on a publicly available website, by providing a link to the specific video. Format options and other instructions can be found at <http://www.osti.gov/stip/audiovisualsti>.

c. **Scientific/Technical Software & Manual**

Content. When a Recipient submits software to OSTI for dissemination, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts, unless otherwise specified in the award.

Submission Process. The software submission must be accompanied by a completed DOE Announcement Notice (AN) 241.4 “Announcement of U.S. Department of Energy Computer Software.” The announcement notice and instructions are available on E-Link at <https://www.osti.gov/mlink/241-4.jsp>. The AN 241.4 may be filled online and submitted electronically, with a printed copy or note accompanying the shipped software package.

Software (including user guide or manual) must be submitted on computer disk (CD) shipped via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

d. **Other STI**

Recipients are encouraged to announce other forms of STI especially if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “O – Other” on the Checklist.

Other types of STI produced which may be for used for public dissemination of project results include: dissertation/thesis, patent, book, or other similar products. These types of STI may also be announced using DOE AN 241.3 by following instructions on the E-Link website (<https://www.osti.gov/mlink-2413>).

2. **Final Scientific/Technical Report**

For R&D type awards where a Final Scientific/Technical Report is required, recipients are required to create and submit a final technical report. This Reporting Requirement will be denoted with the Frequency “F – Final” on the Federal Assistance Reporting Checklist.

The scientific/technical report is intended to increase the diffusion of knowledge gained by DOE-funded research, and all requirements shall be interpreted in that light.

Content. Research findings and other significant STI resulting from the DOE-sponsored R&D project shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire project period. For Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, a final scientific/technical report must be submitted after the completion of each phase, e.g., Phase I, Phase II, and sequential Phase II, as described in the Special Instructions.
2. **STI that is publicly accessible need not be duplicated in the report if a citation with a link to where the information may be found is included in the report. For example, articles found in PAGES (i.e., DOE’s Public Access Gateway for Energy and Science, <http://www.osti.gov/pages/>) are accessible to the public.**
3. Provide identifying information: the DOE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
4. Include an acknowledgment of Federal support and a disclaimer, which must appear in the publication of any material as noted in the terms and conditions.
5. Include any limitations on public release of the report, if applicable. If the document being submitted contains patentable material or protected data (i.e., data first produced in the performance of the award that is protected from public release for a period of time by terms of the award agreement, e.g., SBIR protected data), then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data (e.g., SBIR protected data) and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports. Any restrictive markings must also be noted in the distribution limitation section of the Announcement Notice (AN) 241.3 (see Electronic Submission Process, below). No protected PII should be included (see PII definition).
6. Provide an abstract or executive summary, which should be a minimum of one paragraph and written in terms understandable by an educated layperson. (Refer to <http://www.osti.gov/stip/standards> for ANSI/NISO guidance as needed.) The abstract included in an application may serve as a model for this.
7. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, and findings. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the results in a manner that conveys to the scientific community the STI created during the project. To minimize duplication, the report may reference

STI, including journal articles, that is publicly accessible. See also #2.

8. For guidance offered by the National Information Standards Organization on typical attributes and content of a technical report, if needed, refer to ANSI/NISO Z39.18-2005 (R2010), Scientific and Technical Reports – Preparation, Presentation, and Preservation (see <http://www.osti.gov/stip/standards>).

Electronic Submission Process. The final scientific/technical report must be submitted via the DOE Energy Link System (E-Link) with a completed electronic version of DOE Announcement Notice (AN) 241.3, “U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI).” The Recipient can complete, upload, and submit the DOE AN 241.3 online via E-Link (<https://www.osti.gov/elink-2413>).

The Recipient must mark the appropriate block in the “Intellectual Property/Distribution Limitations” Section of the DOE AN 241.3. Reports that are electronically uploaded must not contain any limited rights data (proprietary data), classified information, protected PII, information subject to export control classification, or other information not subject to release. During the upload process, the Recipient must self-certify that no content of this nature is being submitted. For assistance with reports containing such content, contact the Contracting Officer.

Text documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

C. FINANCIAL REPORTING

The Recipient must complete the SF-425 as identified on the Reporting Checklist in accordance with the report instructions. A fillable version of the form is available at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>.

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The Recipient must provide a DOE Form 2050.11, “PATENT CERTIFICATION.” This form is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Reporting Forms.

Final Property Report

See Instructions under **SF-428 Tangible Personal Property Report Forms Family** below.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the recipient’s fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs. The format and content of the indirect cost proposal should follow the Defense Contract Audit Agency’s (DCAA) ICE Model in order to be considered an adequate proposal.

DCAA's ICE Model can be found on the DCAA website at: <https://www.dcaa.mil/Checklists-Tools/ICE-Model/>.

Cognizant Agency. The Recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving its indirect costs. If the DOE awarding office is the cognizant agency, the Recipient must email their annual indirect cost proposal to pdsrept@id.doe.gov.

Audit of For-Profit Recipients

As required by 2 CFR parts 910.500 through 910.521, a For-Profit entity which expends \$750,000 or more during their fiscal year in DOE awards must have a compliance audit conducted for that year.

Submission: The compliance audit report(s) must be submitted to DOE within the earlier of 30 days after receipt of the auditor's report(s) or nine months after the end of the audit period (Recipient's fiscal year-end). The compliance audit report must be emailed, along with audited financial statements (if applicable), to the appropriate DOE Contracting Officer at pdsrept@id.doe.gov as well as to the DOE Office of the Chief Financial Officer (CFO) at DOE-Audit-Submission@hq.doe.gov.

SF-428 Tangible Personal Property Report Forms Family

Requirement. The SF-428 is a forms family consisting of 5 forms: the SF-428, SF-428-A, SF-428-B, SF-428-C and SF-428S. Fillable versions of the SF-428 forms are temporarily available at https://www.reginfo.gov/public/do/PRAViewIC?ref_nbr=201002-3090-001&icID=192059. The SF-428 is the cover page and the submitter attaches the appropriate form or forms as listed on the SF-428.

- The SF-428A is the Annual report, due Oct 30th of each calendar year.
- The SF-428B is the Final Award Closeout Report, due 90 calendar days after completion or termination of the award.
- The SF-428C is the Disposition Report/Request.
- The SF-428S is the supplemental form for the SF-428-A, SF-428-B, and SF-428-C.

If at any time during the award the Recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the Recipient must submit an annual inventory of this property to the DOE Administrator using the SF-428 and SF-428-A forms at the address on page 1 of this checklist **no later than October 30th of each calendar year**, to cover an annual reporting period ending on the preceding September 30th. The SF-428 and SF-428-B reports are required 90 calendar days after completion or termination of award to complete the closeout process.

Content of Inventory. As required on the SF-428-A and SF-428-S forms, the inventory must include a description of the property, tag number, acquisition date, and acquisition cost, if purchased with project funds. The location of property should be listed under the Comments section. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

RESEARCH PERFORMANCE PROGRESS REPORT

Standard Cover Page Data Elements and Reporting Categories

The standard cover page data elements shown below, as well as mandatory and optional components comprise the complete research performance progress report format. Each category in the RPPR is a separate reporting component. Each component is marked to indicate if it is optional or mandatory. Mandatory components must be addressed in each report, optional are at your discretion. For Optional components, if you have nothing significant to report during the reporting period on a question or item, state "Nothing to Report," if there are reportable items, please submit according to the instructions for each section.

1. COVER PAGE DATA ELEMENTS: Mandatory

- a. Federal Agency and Organization Element to Which Report is Submitted
- b. Federal Grant or Other Identifying Number Assigned by Agency
- c. Project Title
- d. PD/PI Name, Title and Contact Information (e-mail address and phone number)
- e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
- f. Submission Date
- g. DUNS Number
- h. Recipient Organization (Name and Address)
- i. Project/Grant Period (Start Date, End Date)
- j. Reporting Period End Date
- k. Report Term or Frequency (annual, semi-annual, quarterly, final, other)
- l. Signature of Submitting Official (electronic signatures (i.e., Adobe Acrobat) are acceptable)

2. ACCOMPLISHMENTS: Mandatory

What was done? What was learned?

The information provided in this section allows the agency to assess whether satisfactory progress has been made during the reporting period. The PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer.

a. What are the major goals and objectives of this project?

List the major goals of the project as stated in the approved application or as approved by the agency. Describe the proposed technical approach to obtain those goals. If the application lists milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion. Generally, the goals will not change from one reporting period to the next. However, if the awarding agency approved changes to the goals during the reporting period, list the revised goals and objectives. Also explain any significant changes in approach or methods from the agency approved application or plan.

b. What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. As the project progresses, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

c. What opportunities for training and professional development has the project provided?

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

d. How have the results been disseminated to communities of interest?

Describe how the results have been disseminated to communities of interest. Include any outreach activities that have been undertaken to reach members of communities who are not usually aware of these research activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

e. What do you plan to do during the next reporting period to accomplish the goals and objectives?

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

If there are no changes to the agency-approved application or plan for this project or if this is the final report, state "Nothing to Report."

3. PRODUCTS: Mandatory

What has the project produced?

Publications are the characteristic product of research. Agencies evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many projects (though not all) develop significant products other than publications. Agencies assess and report both publications and other products to Congress, communities of interest, and the public.

List any products resulting from the project during the reporting period. Examples of products include: publications, conference papers, and presentations; website(s) or other Internet site(s); technologies or techniques; inventions, patent applications, and/or licenses; and other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments or equipment, research material, interventions (e.g., clinical or educational), new business creation or any other public release of information related to the project.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

a. Publications, conference papers, and presentations

Report only the major publication(s) resulting from the work under this award. There is no restriction on the number. However, Agencies are interested in only those publications that most reflect the work under this award in the following categories:

- i. Journal publications.** List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published

proceedings of a scientific society, a conference, or the like. A publication in the proceedings of a one-time conference, not part of a series, should be reported under “Books or other non-periodical, one-time publications.”

Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no). Also see instructions under **B. Scientific/Technical Reporting** regarding the submission of accepted manuscripts and other STI as appropriate.

- ii. **Books or other non-periodical, one-time publications.** Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like.

Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).

- iii. **Other publications, conference papers and presentations.** Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above.

b. Website(s) or other Internet site(s)

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

c. Technologies or techniques

Identify technologies or techniques that have resulted from the research activities. Describe the technologies or techniques and how they are being shared.

d. Inventions, patent applications, and/or licenses

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim or final Research Performance Progress Report is not a substitute for any other invention reporting required under the terms and conditions of an award.

e. Other products

Identify any other significant products that were developed under this project. Describe the product and how it is being shared. Examples of other products are: Data or databases; Physical collections; Audio or video products; Software or NetWare; Models; Educational aids or curricula; Instruments or equipment; Research material (e.g., germplasm, cell lines, DNA probes, animal models); Interventions (e.g clinical, educational); new business creation; and Other.

4. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: Mandatory

Who has been involved?

Agencies need to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations. The following information on participants and other collaborating organizations during this reporting period must be provided:

a. What individuals have worked on the project?

Provide the following information for: (1) Project director(s)/Principal investigator(s) (PDs/PIs); and (2) each person who has worked, and was funded by the project, at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). Please note that such reporting does not constitute a formal institutional report of effort on the project, but rather is used by agency program staff to evaluate the progress of the project during a given reporting period.

i. Provide the name and identify the role the person played in this project.

Indicate the total number of months (including partial months) (Calendar, Academic, Summer) that the individual worked on this project. Using the project roles identified below, select the most senior role in which the person worked on the project for any significant length of time. For example, if an undergraduate student graduated, entered graduate school, and continued to work on the project, show that person as a graduate student, preferably explaining the change in involvement.

ii. Project Roles:

PD/PI

Co PD/PI

Faculty

Community College Faculty

Technical School Faculty

K-12 Teacher

Postdoctoral (scholar, fellow or other postdoctoral position)

Other Professional

Technician

Staff Scientist (doctoral level)

Statistician

Graduate Student (research assistant)

Non-Student Research Assistant

Undergraduate Student

Technical School Student

High School Student

Consultant

Research Experience for Undergraduates (REU) Participant

Other (specify)

iii. Describe briefly how this person contributed to this project.

If information is unchanged from a previous progress report, provide the name only and indicate "no change."

iv. Identify the person's state, U.S. territory, and/or country of residence. State whether this person has collaborated internationally.

If the participant was U.S.-based, state whether this person collaborated internationally with an individual located in a foreign country, and specify whether the person traveled to the foreign country as part of that collaboration, and, if so, what the duration of stay was. The foreign country(ies) should be identified.

If the participant was not U.S.-based, state whether this person traveled to the U.S. or another country as part of a collaboration, and, if so, what the duration of stay was. The destination country should be identified.

Example:

- 1. Name:** Mary Smith
- 2. Total Number of Months:** 5.5
- 3. Project Role:** Graduate Student
- 4. Researcher Identifier:** 1234567
- 5. Contribution to Project:** Ms. Smith has performed work in the area of combined error-control and constrained coding.
- 6. State, U.S. territory, and/or country of residence:** Michigan, U.S.A.
- 7. Collaborated with individual in foreign country:** Yes
- 8. Country(ies) of foreign collaborator:** China
- 9. Travelled to foreign country:** Yes
- 10. If traveled to foreign country(ies), duration of stay:** 5 months

b. Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Describe active other support for the PD/PI(s) or senior/key personnel whose support has changed and what the change has been (e.g., a previously active grant that has closed, a previously pending grant that is now active). Active other support includes all financial resources, whether Federal, non-Federal, commercial or organizational, available in direct support of an individual's research endeavors, including, but not limited to, research grants, cooperative agreements, contracts, or organizational awards, (e.g., Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations). Annotate this information so it is clear what has changed from the previous submission. Other support does not include prizes or gifts.

Submission of active other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. DOE requires prior written approval if a change in active other support significantly impacts the effort on this award.

If there is nothing significant to report during this reporting period or no change from the previous reporting period, state "Nothing to Report."

c. What other organizations have been involved as partners?

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute.

Provide the following information for each partnership:

1. Organization Name:
2. Location of Organization: (if foreign location list country)
3. Partner's contribution to the project: (identify one or more)
 - i. Financial support;

- ii. In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);
- iii. Facilities (e.g., project staff use the partner's facilities for project activities);
- iv. Collaborative research (e.g., partner's staff work with project staff on the project);
- v. Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site).
- vi. Other

4. More detail on partner and contribution (foreign or domestic).

If there is nothing significant to report during this reporting period, state "Nothing to Report."

d. Have other collaborators or contacts been involved?

Some significant collaborators or contacts within the recipient's organization may not be covered by "What people have worked on the project?" Likewise, some significant collaborators or contacts outside the recipient's organization may not be covered under "What other organizations have been involved as partners?"

For example, describe any significant:

- 1. collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;
- 2. collaborations or contact with others outside the organization; and
- 3. collaborations or contacts with others outside the United States or with an international organization.

Identify the state(s), U.S. territory(ies), or country(ies) of collaborations or contacts.

It is likely that many recipients will have no other collaborators or contacts to report.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

5. IMPACT: Mandatory

What was done? What was learned?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

The taxpaying public and its representatives deserve a periodic assessment to show them how the investments they make benefit the nation. Through this reporting format, and especially this section, recipients provide that assessment and make the case for Federal funding of research and education.

Agencies use this information to assess how their research programs: increase the body of knowledge and techniques; enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and improve the physical, institutional, and information resources that enable those people to get their training and

perform their functions.

This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to: the development of the principal discipline(s) of the project; other disciplines; the development of human resources; teaching and educational experiences; physical, institutional, and information resources that form infrastructure; technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a startup company); society beyond science and technology; or foreign countries.

a. What was the impact on the development of the principal discipline(s) of the project?

Describe how findings, results, and techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project. Summarize using language that a lay audience can understand (Scientific American style). How the field or discipline is defined is not as important as covering the impact the work has had on knowledge and technique. Make the best distinction possible, for example, by using a “field” or “discipline”, if appropriate, that corresponds with a single academic department (i.e., physics rather than nuclear physics).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

b. What was the impact on other disciplines?

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

c. What was the impact on the development of human resources?

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology. For example, how has the project: provided opportunities for research and teaching in the relevant fields; improved the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research, teaching, or other related professions; developed and disseminated new educational materials; provided scholarships; or provided exposure to science and technology for practitioners, teachers, young people, or other members of the public?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. What was the impact on teaching and educational experiences?

Describe how the project made an impact or is likely to make an impact on teaching and educational experiences. For example, has the project: developed and disseminated new educational materials; led to ideas for new approaches to course design or pedagogical methods; or developed online resources that will be useful for teachers and students and other school staff?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What was the impact on physical, institutional, and information resources that form infrastructure?

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical,

institutional, and information resources that form infrastructure, including: physical resources such as facilities, laboratories, or instruments; institutional resources (such as establishment or sustenance of societies or organizations); or information resources, electronic means for accessing such resources or for scientific communication, or the like.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

f. What was the impact on technology transfer?

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including: transfer of results to entities in government or industry; instances where the research has led to the initiation of a start-up company; or adoption of new practices.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

g. What was the impact on society beyond science and technology?

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as: improving public knowledge, attitudes, skills, and abilities; changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or improving social, economic, civic, or environmental conditions.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

h. What percentage of the award’s budget was spent in foreign country(ies)?

Describe what percentage of the award’s budget was spent in foreign country(ies). If more than one foreign country is involved, identify the distribution between the foreign countries. U.S.-based recipients should provide the percentage of the budget spent in the foreign country(ies) and/or, if applicable, the percentage of the budget obligated to foreign entities as first-tier subawards.

Recipients that are not U.S.-based should provide the percentage of the direct award received, excluding all first-tier subawards to U.S. entities. If applicable, provide separately the percentage of the budget obligated to non-U.S. entities as first-tier subawards.

6. CHANGES/PROBLEMS: Mandatory

The PD/PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer. If not previously reported in writing, provide the following additional information, if applicable: Changes in approach and reasons for change; Actual or anticipated problems or delays and actions or plans to resolve them; Changes that have a significant impact on expenditures; Significant changes in use or care of animals, human subjects, and/or biohazards.

a. Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the Contracting Officer.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

c. Changes that have a significant impact on expenditures

Describe changes during the reporting period that may have a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than

anticipated.

d. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

e. Change of primary performance site location from that originally proposed

Identify any change to the primary performance site location identified in the proposal, as originally submitted.

7. SPECIAL REPORTING REQUIREMENTS: Mandatory

Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

8. BUDGETARY INFORMATION: Mandatory

This component will be used to collect budgetary data from the recipient organization. The information will be used in conducting periodic administrative/budgetary reviews. Budgetary data identified and required by the Contracting Officer should be submitted in an Excel spreadsheet format.

9. PROJECT OUTCOMES: Mandatory

What were the outcomes of the award?

This information is used at the completion of the award to ascertain the cumulative outcomes or findings of a project. Describe project outcomes specifically for the public to provide insight into the outcomes of Federally-funded research, education, and other activities. Agencies may make this information available to the public in an electronic format.

Project Outcomes

The recipient is to provide information regarding the cumulative outcomes or findings of the project. For the final RPPR for the project, provide a concise summary of the outcomes or findings of the award (no more than 8,000 characters) that:

- a. is written for the general public (non-technical audiences) in clear, concise, and comprehensible language;
- b. is suitable for dissemination to the general public, as the information may be available electronically;
- c. does not include proprietary, confidential information or trade secrets; and
- d. includes up to six images (images are optional).

Please note that this reporting of project outcomes does not constitute a formal dissemination of scientific and technical information (STI) but rather is used by agency program staff to publicize project results, outcomes or findings.

To ensure the public access to the results of federally funded research notify DOE Office of Scientific and Technical Information about the published results so the information will be made publicly accessible and

discoverable through DOE web-based products. Access to and archival of DOE-funded STI are managed by the (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <http://www.osti.gov/stip/submittal>.

DEMOGRAPHIC INFORMATION FOR SIGNIFICANT CONTRIBUTORS

Agencies may require that recipients provide demographic data about significant contributors for a variety of purposes, including the following:

- to gauge whether our programs and other opportunities are fairly reaching and benefiting everyone regardless of demographic category;
- to ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else;
- to gauge and report performance in promoting partnerships and collaborations;
- to assess involvement of international investigators or students in work we support;
- to track the evolution of changing science, technology, engineering and mathematics (STEM) fields at different points in the pipeline (e.g., medicine and law demographics have recently changed dramatically);
- to raise investigator and agency staff awareness of the involvement of under-represented groups in research;
- to encourage the development of creative approaches for tapping into the full spectrum of talent of the STEM workforce;
- to respond to external requests for data of this nature from a variety of sources, including the National Academies, Congress, etc.; and
- to respond to legislatively-required analysis of workforce dynamics. Legislation requires at least one agency to routinely estimate scientific workforce needs. This analysis is accomplished through reviewing demographic data submitted for the existing workforce.

Demographic data (i.e., gender, ethnicity, race, and disability status) should be provided directly by significant contributors, with the understanding that submission of such data is voluntary. There are no adverse consequences if the data are not provided. Confidentiality of demographic data will be in accordance with agency’s policy and practices for complying with the requirements of the Privacy Act.

Gender: Male
 Female
 Do not wish to provide

Ethnicity: Hispanic or Latina/o
 Not-Hispanic or not-Latina/o
 Do not wish to provide

Race (select one or more): American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or other Pacific Islander
 White
 Do not wish to provide

Disability Status: Yes (check yes if any of the following apply to you)

- Deaf or serious difficulty hearing
- Blind or serious difficulty seeing even when wearing glasses
- Blind or serious difficulty seeing even when wearing glasses
- Other serious disability related to a physical, mental, or emotional condition

No

Do not wish to provide

This measure is designed as a binary measure; it encompasses all self-reported disabilities. Please do not use it to report the number of individuals who have different types of disabilities (e.g., hearing impairments).

Note: This construct is not designed to be used at an individual-level (i.e., it should not be used for determining accommodation needs or disability status for particular individuals associated with the project).