

**SUPPLEMENTAL PAGES FOR
INTERAGENCY AGREEMENT NUMBER E16PG00012
BETWEEN
THE BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT (BSEE)
AND
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
QUANTITATIVE RISK ASSESSMENT, ENGINEERING TEST DESIGN,
AND FAILURE ANALYSIS**

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1. PARTIES AND PURPOSE

This Interagency Agreement (IA) establishes an agreement between the Department of the Interior (DOI) Bureau of Safety and Environmental Enforcement (BSEE), and the National Aeronautics and Space Administration (NASA) Johnson Space Center for the purpose of collaborating on safety, reliability, risk management, and engineering test and analysis activities that are deemed to be of mutual interest and that advance the mission of BSEE. Major task areas under this IA include quantitative risk assessment, engineering test design, and failure analysis. This agreement should be read with the corresponding 7600A

2. AUTHORITY

The authority for the BSEE and NASA to enter into this agreement is:

(a) The Economy Act (31 USC 1535) and FAR 17.502-2, which authorizes agencies to enter into mutual agreements to obtain supplies or services if: (1) sufficient funds are available; (2) the head of the ordering agency or major organizational unit decides the order is in the best interest of the United States Government; (3) the agency or unit to fill the order is able to provide or get by contract the ordered goods or services; and (4) the head of the agency decides ordered goods or services cannot be obtained as economically or conveniently by contracting directly with a private source.

(b) The National Aeronautics and Space Act of 1958 (51 USC 20113(e)).

3. AUTHORITY FINDINGS

BSEE warrants that sufficient funding is currently available for this agreement, that the services cannot be obtained as conveniently or economically by contracting with a private source, and that it is in the best interest of the Government to provide funding to the NASA for the work under this Interagency Agreement.

NASA warrants it can provide or can get by contract the services needed to fulfill this requirement.

4. DURATION OF AGREEMENT

This agreement will become effective when signed by the parties. The period of performance begins upon signing of both parties and will extend for 60 months. The termination date may be amended at any time by mutual written consent of the parties.

5. STATEMENT OF WORK

Background:

BSEE's mission is to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement.

BSEE employs various tools and strategies to assure effective management of operational risks within the offshore oil and gas industry. To expand and enhance BSEE's capabilities and expertise with regard to quantitative risk management, design and testing of emerging technologies and hardware, and failure analysis, among other subject areas related to operational risk, BSEE would like to adopt the unique methods and technologies developed by NASA for humans, hardware, and technology operating in extreme environments, adapted to the offshore oil and gas industry. Probabilistic Risk Assessment (PRA) is a technique used at NASA to quantitatively model risk. PRA was used in the modeling of the Space Shuttle Program and is presently being used for the International Space Station and the Orion deep space capsule programs.

NASA has extensive experience in engineering test design and analysis of unique hardware and systems.

NASA Johnson Space Center (JSC) is home to a nationally accredited failure analysis laboratory that provides a wide range of electrical and mechanical testing, analysis, and training capabilities to the aerospace community and industry. The failure analysis laboratory, otherwise known as the Receiving Inspection and Test Facility (RITF), specializes in failure mitigation through electrical and mechanical component screening and materials validations, and in failure analysis that begins with non-destructive testing and becomes increasingly invasive, as needed, to determine the cause or mechanism of a failure.

The work product and outcomes of this agreement could comprehensively impact safety and reliability standards within the entire oil and gas industry. For NASA, the experience gained performing these activities could reduce costs and increase capabilities in areas of interest for future space exploration missions.

Objectives:

NASA will assist BSEE in achieving three primary objectives: develop BSEE's quantitative risk management capability through the use of probabilistic risk assessment (PRA); evaluate, design, and test technologies and hardware including emerging technologies and best available and safest technology (BAST); and assess failures and near miss occurrences using NASA's resources and expertise to include access to NASA's failure analysis laboratory.

Tasks:

The objectives will be addressed via three major task areas:

1. Quantitative risk assessment;
2. Engineering test design; and
3. Failure analysis.

Task Area 1: Quantitative Risk Assessment

NASA will work with BSEE to prepare a PRA Procedures Guide Document and a PRA Methodologies Document appropriate for the oil and gas industry. NASA may prepare one or more detailed PRAs with BSEE and possibly industry partners if appropriate systems or partners are identified. In the course of performing a PRA, NASA will work with BSEE staff to train them about preparation and use of PRAs.

From knowledge gained in performing the PRA, NASA will update the PRA Procedures Guide Document and the PRA Methodologies Document. NASA will participate in public forums and standards meetings at the request of BSEE to explain PRA procedures and methodologies. NASA will subsequently work with third parties/operators to assist them in developing acceptable PRAs. As requested, NASA will review industry-prepared PRAs as a consultant to BSEE. As requested, NASA will participate on a team to evaluate the synergies and differences in common risk methodologies to better identify and understand potential applications for BSEE decision making. While industry partners may be involved in developing detailed PRAs, all PRA work would be prepared for BSEE or at BSEE's direction and not for the industry partner or at the industry partner's direction.

Task Area 2: Engineering Test Design

NASA will assist BSEE with the design of test protocols for emerging technologies, BAST, and/or hardware specified by BSEE; provide oversight of test protocols; perform testing; and provide statistical analysis of test results. This agreement allows NASA to assist BSEE in the development, determination, and/or characterization of requirements (e.g., quality assurance and quality control) and verification criteria for emerging technologies. As requested, NASA will assist BSEE in engineering test design-related requirements development arising out of BSEE Systems Reliability Section/Quality Control – Failure Incident Team (SRS/QC-FIT) technical evaluations.

Task Area 3: Failure Analysis

As requested, NASA will support BSEE's failure mitigation, accident investigation, and SRS/QC-FIT technical evaluation efforts with NASA capability and expertise to include services available at its failure analysis laboratory.

Subtasks:

Subtasks under the major task areas will be developed jointly by the BSEE and NASA program contacts as subtask statements of work. Each subtask statement of work will state the related major task area under which the subtask falls, and will include a description of work tasks based on major project milestones; a list of required reporting and deliverables; a schedule for deliverables; and a budget with cost breakdowns.

The parties will execute one subtask concurrently with this IA. The parties will execute subsequent subtasks under this IA consistent with the scope and terms of this IA. Subtasks may not be used to modify the terms of this IA.

Scientific Integrity Statement:

Scientific integrity is vital to Department of the Interior (DOI) activities under which scientific research, data, summaries, syntheses, interpretations, presentations, and/or publications are developed and used. Failure to uphold the highest degree of scientific integrity will result not only in potentially flawed scientific results, interpretations, and applications but will damage DOI's reputation and ability to uphold the public's trust. All work performed must comply with the DOI Scientific Integrity Policy posted to <http://www.doi.gov>, or its equivalent as provided by their organization.

6. DELIVERABLES

The following deliverables shall be submitted in accordance with the schedule specified in Section 7. NASA is responsible for editing and proofreading all material in order to prepare products as error-free as possible prior to their delivery to BSEE.

- A. Status and Financial Reports: NASA will submit status and financial reports every 4 to 6 weeks, and no later than every 6 weeks, containing:
- A summary of work accomplished and overall progress made pursuant to the relevant task and subtask under the agreement.
 - A summary of any significant problems encountered during the reporting period.
 - A summary of any major technical findings or milestones accomplished during the reporting period.
 - A list of any significant meetings held or other contacts made in connection with the agreement during the reporting period, including a brief summary of the meeting subject, participants, and outcomes.
 - A summary of major work activities scheduled for the next reporting period.
 - A summary of any questions or problems regarding NASA's work requiring discussion or resolution with BSEE.
- B. Other Deliverables Specific to Relevant Subtask Statement of Work: NASA will submit deliverables for individual subtasks in accordance with the deliverables section as written in the relevant subtask statement of work.

7. DELIVERABLES SCHEDULE AND DISTRIBUTION

Deliverable products shall be submitted to the e-mail addresses shown below in accordance with the following schedule.

In the event that NASA encounters or anticipates difficulty in meeting the delivery schedule, the COR will be notified in writing of the reasons for the delay and the projected revised delivery dates. Any other related effects of project delay will also be summarized.

Item	Deliverable	Due Date	Number of Copies	Submit to:
1.	Status and Financial Reports	Every 4 to 6 weeks, but no later than every 6 weeks	1 1	CO COR
2.	Other Deliverables Specific to the Relevant Subtask Statement of Work	As stated in the subtask statement of work	As stated in the subtask statement of work	As stated in the subtask statement of work

ADDRESSES FOR DELIVERABLES

In addition to the following addresses, deliverables may be required to be sent to additional BSEE personnel as stated in the relevant subtask statement of work.

Contracting Officer (CO) Christy Tardiff Bureau of Safety and Environmental Enforcement Acquisition Management Division 45600 Woodland Road, VAE-AMD Sterling, VA 20166 Email: christy.tardiff@bsee.gov	Contracting Officer's Representative (COR) Allison Fischman Bureau of Safety and Environmental Enforcement Office of Offshore Regulatory Programs 45600 Woodland Road, VAE-ORP Sterling, VA 20166 Email: allison.fischman@bsee.gov
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8. ACKNOWLEDGEMENTS

All reports, scientific papers, and other presentations resulting from this IA shall acknowledge the BSEE as a sponsor of this study on the title page of the report and the funding page of a presentation by using the following statement: "This study was funded in part by the U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement through Interagency Agreement E16PG00012 with the National Aeronautics and Space Administration."

9. REHABILITATION ACT OF 1973

Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) requires access to and use of information by individuals with disabilities. A deliverable for electronic data such as CD-ROMs to be distributed, or web-based intranet and internet information and applications are subject to Section 508 guidelines. Simplified, this means that electronic files need to be formatted so that they are "readable" by assistive technology devices such as screen readers. More information can be found at <https://www.section508.gov>.

10. GOVERNMENT USE OF DATA

NASA shall ensure that the U.S. Government has unlimited rights in all data included in the deliverables submitted under this IA. "Unlimited rights" means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

NASA shall ensure that the appropriate Rights in Data and Copyright clauses (based in Federal Acquisition Regulation (FAR) and NASA FAR Supplement 52.227-14 as modified at 1852.227-14, and 1852.227-86) are included in all contracts awarded pursuant to this IA (if applicable) in order to ensure the Government reserves unlimited rights to the data."

In the event that software licenses are purchased pursuant to this agreement, NASA shall ensure that the licenses are transferable to BSEE or that BSEE has rights to use the specific software.

Intellectual Property Rights – Data Rights – Free Exchange of Data: NASA and BSEE agree that the information and data exchanged in furtherance of the activities under this IA will be exchanged without use and disclosure restrictions unless required by national security regulations (e.g., classified information) or proprietary.

11. TERMS AND CONDITIONS

NASA shall perform the work and address the information and data requirements in accordance with the requirements of this IA. This IA sets forth the requirements, specifications, conditions, and restrictions which are binding to both parties. Any discrepancies shall be settled in favor of this document.

NASA shall furnish all personnel, equipment, materials, supplies and services in performing the work described in this IA, unless otherwise stated herein.

BSEE agrees to provide funding to NASA towards the cost of this program as described in the budget information below.

BSEE agrees to provide program area subject matter experts as requested to assist NASA in planning and implementation of orders under this agreement. BSEE agrees to provide in a timely manner any BSEE data needed for orders under this agreement. BSEE will provide historical background data and information necessary to provide operational subject knowledge to all involved parties.

12. BUDGET AND FUNDING LIMITATIONS

It is estimated that the total overall cost to BSEE for full performance of this effort will be a Not-To-Exceed amount of \$5,000,000. Funding in the amount of \$5,000,000 is currently available and allotted to this effort. NASA will not provide services or incur costs beyond current funding provided by BSEE. The performance of the Agreement is subject to the availability of funds, and no provision of the Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, Title 31 U.S.C. 1341.

13. ACCOUNTING DATA AND TRANSFER OF FUNDS.

Requests for payments or reimbursement shall be submitted via IPAC: Intra-governmental On-Line Payment and Collection (IPAC), at <https://www.ipac.gov>. The IPAC application shall cite the number of this agreement, appropriation symbol, other necessary accounting identification codes and billing period. As appropriate, prior to billing BSEE, the servicing agency shall provide the BSEE Contracting Officer's Representative with information necessary to back-up each IPAC payment being requested. Financial information to be referenced:

BSEE

1. Business Event Type Code (BETC): DISB
2. TAS/Appropriation Code: 014 X 1700 000
3. Type of Funds/expiration: No Year Funds

4. Accounting codes: See Page 2
5. BPN/DUNS: 966785987
6. Employer ID (EIN): 320345786
7. Agency Location Code: 14-22-0000

NASA

1. Business Event Type Code (BETC): COLL
2. BPN/DUNS: 003251113
3. Agency Location Code: 80000004
4. Treasury Account Symbol: 080 2016 2017 0122 000

The IA number and title shall be provided on all billing documents. Billing issues shall be directed to:

BSEE Finance Office
45600 Woodland Road, VAE-FD
Sterling, VA 20166

Each fund transfer will be effected through a separate invoice, which will include (but not limited to) a description of the goods or services provided and key project or acquisition milestones associated with the funds.

Nothing contained in the agreement shall abrogate the statutory responsibility or authority of either BSEE or NASA.

14. MODIFICATIONS AND INTERPRETATIONS

Changes and/or modifications to this agreement may be made at any time upon mutual written consent of the parties. Modifications shall cite the Interagency Agreement identification number (E16PG00012) and shall set forth the exact nature of the change and/or modification.

No verbal statements by any person and no written statements by anyone other than a warranted BSEE Contracting Officer shall be interpreted as modifying or otherwise affecting the terms of this agreement. Subsequent subtasks may be modified under the same terms. Modification of a subtask does not modify this IA.

Any schedule or milestone of this IA and subsequent subtasks is estimated based on the parties' current understanding of the projected availability of its respective goods, services, facilities, or equipment. In the event that either party's projected availability changes, NASA or BSEE, respectively, shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The parties agree that NASA's and BSEE's use of its own goods, services, facilities, or equipment shall have priority over the use planned in this IA.

15. TERMINATION AND CANCELLATION CLAUSE

Either party may terminate this agreement by providing 60 days written notice to the other party. If the requesting agency cancels the order, the servicing agency is authorized to collect costs incurred prior to cancellation of the order plus any termination costs.

The total value of the agreement, including termination costs, will not exceed the amount of funding obligated under the agreement.

16. RESOLUTION OF DISAGREEMENTS

Should disagreements arise on the interpretation of the provisions of this agreement or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area (s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement or interpretation is not reached within 30 days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

If a dispute related to funding remains unresolved for more than 30 calendar days after the parties have engaged in an escalation of the dispute, it will be resolved in accordance with instructions provided in the Treasury Financial Manual (TFM) Volume 1, Part 2, Chapter 4700, Appendix 10, available at <http://tfm.fiscal.treasury.gov/home.html>.

17. LIABILITY AND RISK OF LOSS

Each Party agrees to assume liability for its own risks arising from or related to activities conducted under this IA.

18. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or BSEE may, consistent with Federal law and this agreement, release general information regarding its own participation in this IA as desired. Insofar as participation of the other Party in this IA is included in a public release, NASA and BSEE will seek to consult with each other prior to any such release, consistent with the Parties' respective policies.

19. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this agreement, e.g., "Liability and Risk of Loss," "Intellectual Property Rights," and clauses related to financial obligations shall survive such expiration or termination of this agreement.

20. CONTACTS

The following officials are the principal points of contact between the Parties in the performance of this Agreement:

Contracting Officer (CO), BSEE

Christy Tardiff
Bureau of Safety and Environmental Enforcement
Acquisition Management Division
45600 Woodland Road, VAE-AMD
Sterling, VA 20166
Telephone: (703) 787-1367
Email: christy.tardiff@bsee.gov

Contracting Officer's Representative (COR), BSEE

Allison Fischman
Bureau of Safety and Environmental Enforcement
Office of Offshore Regulatory Programs
45600 Woodland Road, VAE-ORP
Sterling, VA 20166
Telephone: (703) 787-1793
Email: allison.fischman@bsee.gov

Technical/Administrative Point of Contact, NASA

Sheela Logan, New Business Development Engineer
NASA Johnson Space Center
2101 NASA Parkway, Houston TX 77058
Telephone: (281) 483-4214
Email: sheela.logan-1@nasa.gov

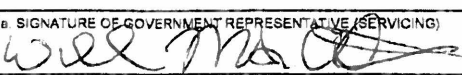
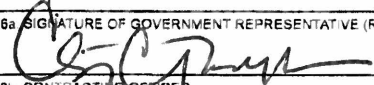
Technical/Administrative Point of Contact, NASA

David Kaplan, Chief, Quality & Flight Equipment Division
NASA Johnson Space Center
2101 NASA Parkway, Houston TX 77058
Telephone: (281) 483-3729
Email: david.i.kaplan@nasa.gov

The Parties agree that if there is a change regarding the information in this section, the Party making the change will notify the other Party in writing of such change.

21. ATTACHMENTS

FMS Forms 7600A and 7600B
Subtask Statement of Work:
Probabilistic Risk Assessment Procedures Guide and Methodologies: Phase One

INTERAGENCY AGREEMENT		1. IAA NO. E16PG00012			PAGE OF 1 12	
2. ORDER NO		3. REQUISITION NO. 0040251201		4. SOLICITATION NO.		
5. EFFECTIVE DATE See Block 26c		6. AWARD DATE		7. PERIOD OF PERFORMANCE		
8. SERVICING AGENCY B Johnson Nasa/Lyndon Space Center ALC: 80000004 DUNS: 003251113 +4: P.O. BOX ZA Houston TX 77058 POC Sheela Logan TELEPHONE NO 281-483-4214				9. DELIVER TO BSEE Offc of Offshore Reg Pgrm 45600 Woodland Road, VAE-ORP Sterling VA 20166-9216 US		
10. REQUESTING AGENCY BSEE - HQ ALC: 14-22-0000 DUNS: 966785987 +4: Bureau of Safety & Environmental Enforcement 45600 Woodland Road, VAE-AMD Sterling VA 20166 POC Christy Tardiff TELEPHONE NO 707-787-1367				11. INVOICE OFFICE BSEE Finance Division 45600 Woodland Road, VAE-FD Sterling VA 20166-9216		
12. ISSUING OFFICE BSEE Acquisition Operations Branch 45600 Woodland Road, VAE-AMD Sterling VA 20166-9216				13. LEGISLATIVE AUTHORITY See text section		
				14. PROJECT ID		
				15. PROJECT TITLE		
16. ACCOUNTING DATA 01						
17. ITEM NO.	18. SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT	
	<p>This Interagency Agreement is established between the Department of the Interior (DOI), Bureau of Safety and Environmental Enforcement (BSEE) and the National Aeronautics and Space Administration (NASA) Johnson Space Center to conduct Quantitative Risk Assessment, Engineering Test Design, and Failure Analysis.</p> <p>Funding in the amount of \$5,000,000 is hereby obligated. This agreement is fully funded.</p> <p>Continued ...</p>					
23. PAYMENT PROVISIONS				24. TOTAL AMOUNT \$5,000,000.00		
25a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (SERVICING) 				26a. SIGNATURE OF GOVERNMENT REPRESENTATIVE (REQUESTING) 		
25b. NAME AND TITLE WILLIAM S. McARTHUR		25c. DATE 04/25/16	26b. CONTRACTING OFFICER Christy Tardiff		26c. DATE 1/28/2016	
DIRECTOR, SAFETY AND MISSION ASSURANCE						

The period of performance begins on the date of the latest signature on page 1 and will extend for 60 months.

Legacy Doc #: BSE
Account Assignment: K G/L Account: 6100.255C0
Business Area: E000 Commitment Item: 255C00 Cost Center: EEEE000000 Functional Area: EN1SF0000.000000 Fund: 16XE1700IN Fund Center: EEEE000000 PR Acct Assign Line: 01

00010 BSEE-NASA IA FOR QUANTITATIVE RISK ASSESSMENT, ENGINEERING TEST DESIGN, AND FAILURE ANALYSIS

5,000,000.00

The total amount of award: \$5,000,000.00. The obligation for this award is shown in box 24.