SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS
OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30

1. REQUISITION NUMBER: ZEROREQ-RES-15-0002
PAGE 1 OF 41

2. CONTRACT NO.: NRC-HQ-60-15-A-0001
3. AWARD/ EFFECTIVE DATE:
4. ORDER NUMBER:
5. SOLICITATION NUMBER:
6. SOLICITATION ISSUE DATE:

7. FOR SOLICITATION INFORMATION CALL: a. NAME: RICHARD ROBINSON
b. TELEPHONE NUMBER (No collect calls): 301-415-0728
8. OFFER DUE DATE/LOCAL TIME:

9. ISSUED BY CODE NRCHQ

US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
MAIL STOP TWFN-5E03
ATTN ROB ROBINSON 301-415-0728
WASHINGTON DC 20555-0001

10. THIS ACQUISITION IS [X] UNRESTRICTED OR [ ] SET ASIDE: % FOR:
[ ] SMALL BUSINESS
[ ] HUBZONE SMALL BUSINESS
[ ] SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS
[ ] WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM
[ ] EDWOSB
[ ] 8(A)
NAICS: 541330
SIZE STANDARD: $14.0

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED
[ ] SEE SCHEDULE
12. DISCOUNT TERMS: As Indicated On Each Call
[ ] 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)
13b. RATING:
14. METHOD OF SOLICITATION
[ ] RFQ [ ] IFB [ ] RFP

15. DELIVER TO CODE:

As Indicated On Each Call

16. ADMINISTERED BY CODE NRCHQ

US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
MAIL STOP TWFN-5E03
WASHINGTON DC 20555-0001

17a. CONTRACTOR/ OFFEROR CODE 621211259 FACILITY CODE:

ENERGY RESEARCH INC
6189 EXECUTIVE BLVD
ROCKVILLE MD 208523901

TELEPHONE NO.

[ ] 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER

18a. PAYMENT WILL BE MADE BY CODE:

As Indicated On Each Call

18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED [ ] SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	GSA Contract #: GS23F0110M The U.S. Nuclear Regulatory Commission (NRC) hereby enters into a Blanket Purchasing Agreement (BPA) to provide technical support for the project entitled, "Code Applications for Reactor Systems II (CARS II)" as described in the attached Statement of Work. This BPA is issued against GSA contract number GS23F0110M, under Schedule 871 "Professional Engineering Services." No funds are obligated with this BPA, as specific *(Use Reverse and/or Attach Additional Sheets as Necessary)*				

25. ACCOUNTING AND APPROPRIATION DATA: As Indicated On Each Call
26. TOTAL AWARD AMOUNT *(For Govt. Use Only)*: $0.00

[ ] 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA [ ] ARE [ ] ARE NOT ATTACHED.
[ ] 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA [ ] ARE [ ] ARE NOT ATTACHED.

[X] 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED.

[X] 29. AWARD OF CONTRACT: REF. _____ OFFER DATED 03/04/2015. YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:

30a. SIGNATURE OF OFFEROR/CONTRACTOR

31a. UNITED STATES OF AMERICA *(SIGNATURE OF CONTRACTING OFFICER)*

30b. NAME AND TITLE OF SIGNER *(Type or print)*
30c. DATE SIGNED
31b. NAME OF CONTRACTING OFFICER *(Type or print)*: SHARLENE M. MCCUBBIN
31c. DATE SIGNED: 09/08/2015

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION IS NOT USABLE

STANDARD FORM 1449 (REV. 2/2012)
Prescribed by GSA - FAR (48 CFR) 53.212

TEMPLATE ADM001

SUNSI REVIEW COMPLETE

SEP 19 2016 ADM002

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	tasks will be placed and funded under individual BPA calls. BPA Period of Performance (inclusive of all options): September 8, 2015 - September 7, 2020 Total BPA Ceiling: $4,908,331.30 See attached for specific details regarding this BPA. Period of Performance: 09/08/2015 to 09/07/2020				

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED ☐ INSPECTED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE		32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE

33. SHIP NUMBER	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT	37. CHECK NUMBER
☐ PARTIAL ☐ FINAL			☐ COMPLETE ☐ PARTIAL ☐ FINAL	
38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY		

41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT		42a. RECEIVED BY *(Print)*	
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE	42b. RECEIVED AT *(Location)*	
		42c. DATE REC'D *(YY/MM/DD)*	42d. TOTAL CONTAINERS

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS
OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30

1. REQUISITION NUMBER: ZEROREQ-RES-15-0002
PAGE 1 OF 41

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a. NAME: RICHARD ROBINSON
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US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
MAIL STOP TWFN-5E03
ATTN ROB ROBINSON 301-415-0728
WASHINGTON DC 20555-0001

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[ ] HUBZONE SMALL BUSINESS
[ ] SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS
[ ] WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM
[ ] EDWOSB
[ ] 8(A)
NAICS: 541330
SIZE STANDARD: $14.0

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[ ] SEE SCHEDULE
12. DISCOUNT TERMS: As Indicated On Each Call
[ ] 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)
13b. RATING:
14. METHOD OF SOLICITATION: [ ] RFQ [ ] IFB [ ] RFP

15. DELIVER TO CODE:

As Indicated On Each Call

16. ADMINISTERED BY CODE NRCHQ

US NRC - HQ
ACQUISITION MANAGEMENT DIVISION
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17a. CONTRACTOR/ OFFEROR CODE 621211259 FACILITY CODE:

ENERGY RESEARCH INC
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TELEPHONE NO.

[ ] 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER

18a. PAYMENT WILL BE MADE BY CODE:

As Indicated On Each Call

18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED [ ] SEE ADDENDUM

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25. ACCOUNTING AND APPROPRIATION DATA
As Indicated On Each Call

26. TOTAL AWARD AMOUNT *(For Govt. Use Only)*
$0.00

[ ] 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA [ ] ARE [ ] ARE NOT ATTACHED.
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[X] 29. AWARD OF CONTRACT: REF. _____ OFFER DATED 03/04/2015. YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:

30a. SIGNATURE OF OFFEROR/CONTRACTOR
Mohsen Khatib-Rahbar

31a. UNITED STATES OF AMERICA *(SIGNATURE OF CONTRACTING OFFICER)*

30b. NAME AND TITLE OF SIGNER *(Type or print)*: Mohsen Khatib-Rahbar, President
30c. DATE SIGNED: 09/01/15

31b. NAME OF CONTRACTING OFFICER *(Type or print)*: SHARLENE M. MCCUBBIN
31c. DATE SIGNED:

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	tasks will be placed and funded under individual BPA calls. BPA Period of Performance (inclusive of all options): September 8, 2015 - September 7, 2020 Total BPA Ceiling: $4,908,331.30 See attached for specific details regarding this BPA. Period of Performance: 09/08/2015 to 09/07/2020				

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED ☐ INSPECTED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
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41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT		42a. RECEIVED BY *(Print)*	
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE	42b. RECEIVED AT *(Location)*	
		42c. DATE REC'D *(YY/MM/DD)*	42d. TOTAL CONTAINERS

A.1 NRCB010 BRIEF PROJECT TITLE AND WORK DESCRIPTION

(a) The title of this project is:

Code Applications for Reactor Systems II

(b) Summary work description:

The objective of this Statement of Work (SOW) is to obtain technical assistance in:

- Performing confirmatory and exploratory code simulations;
- Conducting scoping analyses, sensitivity and uncertainty studies;
- Assessing the codes against the experimental data, including evaluating scaling considerations to determine the applicability of the codes to simulate the relevant phenomena;
- Recommending modifications to existing codes and methods; and
- Organizing technical meetings and workshops.

A.2 OBLIGATION OF FUNDS

This BPA does not obligate any funds. The Government is obligated only to the extent of authorized orders actually issued under the BPA by the Contracting Officer.

A.3 NRCF030D PERIOD OF PERFORMANCE ALTERNATE IV

The ordering period for this BPA shall commence on the date of award and will expire on 12 months from the date of award. Any orders issued during this period shall be completed within the time specified in the order, unless otherwise specified herein. (See NRCG010 – ORDERING PROCEDURES.) The term of this BPA may be extended at the option of the Government for four (4) one-year option periods.

Base Period:	September 8, 2015 – September 7, 2016
Option Period(s):	Option Period 1 – September 8, 2016 – September 7, 2017
	Option Period 2 – September 8, 2017 – September 7, 2018
	Option Period 3 – September 8, 2018 – September 7, 2019
	Option Period 4 – September 8, 2019 – September 7, 2020

A.4 PRICE/COST SCHEDULE

The Contractor's GSA rate schedule runs from February 28 – February 27 annually. The annual period of performance for this BPA runs from September 8 – September 7, which spans more than one GSA rate period. As such, the table below shows the GSA rate periods and the applicable rates with the 2% discount already factored into the rates. Further, the table incorporates the current GSA approved escalation factor of 2.9%.

Standard GSA Discount: _____% Quoted NRC Discount: 2 %

GSA Category	2/28/15 – 2/27/16 rates	2/28/16 – 2/27/17 rates	2/28/17 – 2/27/18 rates	2/28/18 – 2/27/19 rates	2/28/19 – 2/27/20 rates	2/28/20 – 2/27/21 rates
Executive	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Executive Engineer Scientist	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Senior Engineer/Scientist	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Engineer/Scientist	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
System Analyst	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Support Staff	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Senior Consulting Engineer	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Executive Consulting Engineer	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Base Period – September 8, 2015 – September 7, 2016

SERVICES

CLIN	Description	Max. Qty	Estimated Total
0001	Labor	[redacted]	[redacted]

Option Period 1 – September 8, 2016 – September 7, 2017

SERVICES

CLIN	Description	Max. Qty	Estimated Total
1001	Labor	[redacted]	[redacted]

Option Period 2 – September 8, 2017 – September 7, 2018

SERVICES

CLIN	Description	Max. Qty	Estimated Total
2001	Labor	[redacted]	[redacted]

Option Period 3 – September 8, 2018 – September 7, 2019

SERVICES

CLIN	Description	Max. Qty	Estimated Total
3001	Labor	[redacted]	[redacted]

Option Period 4 – September 8, 2019 – September 7, 2020

SERVICES

CLIN	Description	Max. Qty	Estimated Total
4001	Labor	[redacted]	[redacted]

TOTAL ESTIMATED LABOR $4,873,331.30

ODCs

CLIN	Description	Max. Qty	Unit Price	Total
0002	Other Direct Costs	[redacted]	LOT	[redacted]

TRAVEL

CLIN	Description	Max. Qty	Unit Price	Total
0003	Travel	[redacted]	LOT	[redacted]

GRAND TOTAL (WITH ALL OPTIONS EXERCISED) $4,908,331.30

A.5 STATEMENT OF WORK - "CODE APPLICATIONS FOR REACTOR SYSTEMS II"

A.5.1 Title of Project

This is a non-personal services contract to provide Code Applications for Reactor Systems (CARS II).

A.5.2 Introduction

The contractor shall provide all personnel, equipment, supplies, facilities, transportation, tools, training materials, supervision, and other items and non-personal services necessary to perform Code Applications for Reactor Systems (II) as defined in this statement of work (SOW), except for those items specified as Government-furnished property and services. The contractor shall perform to the standards in this contract/order.

A.5.3 Background

The U.S. Nuclear Regulatory Commission (NRC) uses computer codes and analytical methods to perform systems analyses of currently operating reactors, new reactors, and advanced reactor designs. The Office of Nuclear Regulatory Research (RES) uses these tools and methods to support the Office of Nuclear Reactor Regulation (NRR) and the Office of New Reactors (NRO) in identifying and resolving safety issues, making regulatory decisions, and promulgating regulations and guidance.

NRC's tools and methods cover a range of technical fields including thermal-hydraulics, computational fluid dynamics (CFD), neutronics, severe accidents, and fuel behavior. The principal codes used for reactor system analyses in these technical areas are the TRAC/RELAP Advanced Computational Engine (TRACE) code, Reactor Excursion and Leak Analysis Program (RELAP5), Symbolic Nuclear Analysis Package (SNAP), Purdue Advanced Reactor Core Simulator (PARCS), Severe Core Damage Analysis Program (SCDAP), Radionuclide Transport and Removal and Dose Estimation (RADTRAD), Computer Code for Nuclear Reactor Containment Analysis (CONTAIN), FLUENT, FRAPCON, FRAPTRAN, MACCS, and MELCOR. Hereafter, these listed codes will not be identified separately but will be referred to collectively as the "codes."

These codes currently are used to support the licensing review of new and advanced reactor

designs, including small modular reactors (SMRs), the Economic Simplified Boiling-Water Reactor (ESBWR), U.S. EPR (EPR), Advanced Passive Reactor (AP1000), U.S. Advanced Pressurized Power Reactor (US-APWR), and the Advanced Boiling-Water Reactor (ABWR). These codes also are used to perform reviews of extended power uprate applications for operating reactors, resolve generic safety issues, evaluate emergency procedures and accident management strategies, and evaluate success criteria for probabilistic risk assessments.

An integral part of applying advanced computational methods is ensuring that the codes are applicable to each novel simulation. This is particularly important when codes are exercised for new operating conditions, geometries, and/or plant features. Therefore, code applications to plant transients are often accompanied by extensive code assessments against separate effect and integral test data. Moreover, as codes evolve because of new requirements and advancements in the state-of-the-art, simulations and assessments are maintained to ensure analytical tools and models remain current.

A.5.4 Objective

The objective of this SOW is to obtain technical assistance in:

- Performing confirmatory and exploratory code simulations
- Conducting scoping analyses, sensitivity and uncertainty studies
- Assessing the codes against experimental data, including evaluating scaling considerations to determine the applicability of the codes to simulate the relevant phenomena
- Recommending modifications to existing codes and methods
- Organizing technical meetings and workshops

A.5.5 Type of Contract Contemplated

The contract type contemplated for this requirement is a Blanket Purchase Agreement under a GSA Federal Supply Schedule Contract.

A.5.6 Scope of Work

The contractor shall provide all resources necessary to accomplish the tasks and deliverables described in this SOW. The contractor shall provide technical assistance for simulations and analyses that include normal operations, anticipated operational occurrences, design basis accidents, and beyond-design basis accidents relevant to all currently operating reactor types, as well as new and advanced reactor designs. Such assistance shall be accomplished through the use of the principal computer codes designed to perform the respective simulations for the applicable technical disciplines, including thermal-hydraulics, computational fluid dynamics (CFD), neutronics, severe accidents, radiological consequences, and fuel behavior.
All functions of this SOW will be accomplished through the issuance of task orders. Each task order will provide specific scope of work, levels of effort, deliverables and due dates, and period of performance.

The NRC may issue task orders for work in some or all of the following areas:

1. Confirmatory loss-of-coolant-accident (LOCA) simulations or transient analyses for extended power uprates in currently operating Westinghouse, Combustion Engineering, and Babcock and Wilcox pressurized-water reactors (PWRs) and General Electric boiling-water reactors (BWRs).

2. Confirmatory code simulations for the review of new and advanced reactor designs, such as SMRs, ESBWR, EPR, AP1000, US-APWR, and the ABWR.

3. Exploratory code simulations to support rulemaking such as those done in support of revisions to 10 CFR 50.61 (pressurized thermal shock) or 10 CFR 50.46 (large-break LOCA).

4. Scoping analyses and preliminary calculations toward the identification and resolution of generic safety issues such as GSI-185: Control of Recriticality Following Small-Break LOCAs in PWRs and GSI-191: Assessment of Debris Accumulation on PWR Sump Performance.

5. Sensitivity and uncertainty studies to examine the response of plants and plant systems to variabilities in boundary conditions and key parameters such as time of operator action, fuel burnup, and the gap conductance model.

6. Evaluation of experimental data including scaling adequacy and the applicability of the data to specific reactor designs and transients, such as the use of data from the Rig-of-Safety Assessment facility to assess TRACE for the AP1000.

7. Scoping studies to assess specific code model improvements to enhance applicability for specific models such as using the CONTAIN component of the TRACE code in simulating BWRs.

8. Code assessments against data collected in separate effect and integral effect test facilities such as experimental data to establish code accuracy, limitations, and range of applicability such as those conducted for the developmental assessment of TRACE 5.0.

9. Demonstration of code applicability to scenarios involving novel geometries or operating characteristics such as the passive systems of the ESBWR or the reflux-condensation operation of EPR steam generators.

10. Development of phenomena identification and ranking tables for simulations of reactor systems and transients that extend beyond the validated range of conditions.

11. Targeted technical studies for new systems such as the CFD studies on flow rate and cavitation in the advanced accumulators of the US-APWR or the boron injection system of the ESBWR.

12. Multidisciplinary investigations such as those involving integration of thermal-hydraulic, severe accident, fuel response, and CFD analyses, such as those used to support resolution of the steam generator thermally-induced rupture containment bypass scenario.

13. Organization of technical meetings and workshops to bring together experts for multidisciplinary research or the conduct of peer reviews such as the evaluation of global safety margins and the review of TRACE 5.0-Patch IV.

A.5.7 List Services/Deliverables

Deliverables, schedules, and/or milestones will be developed in each task order.

The deliverables specified in each task order may differ from other task orders in this contract and may include, but are not limited to, such items as follows:

1. Calculation notebooks used for developing input decks for nuclear reactor systems calculations.
2. Letter reports describing the work performed submitted in accordance with each task order specification and schedule.

3. Transmittal packages including the following items: input, restart and output files, plot files, AVSCRIPT files, documentation, and calculation notebooks in CD format.

All deliverables shall be submitted to the Contracting Officer's Representative (COR) in the format and delivery method specified in each task order.

A.5.8 Other Direct Costs

Other direct costs will be determined and specified in each task order. Other direct costs could include, but are not limited to, such expenses as courier charges and presentation and workshop materials.

For estimating purposes for the Blanket Purchase Agreement, Quoters shall assume $2000 per year, or at total of $10,000, for Other Direct Costs.

A.5.9 Estimated Materials Required

No special equipment, outside of the computer equipment needed to perform computer simulations using the codes identified previously in this SOW, is required.

A.5.10 Reporting Requirements

The contractor is required to provide a monthly letter status report (MLSR) by the 20th of the month following the month to be reported to the Contracting Officer (CO) and COR, as specified in the individual task order, and to RESDSAMLSR.Resource@nrc.gov. A separate MLSR shall be submitted for each task order.

The MLSR shall identify the project title, job code, project manager, period of performance and reporting period; summarize each month's technical progress; and list monthly spending, total spending to date, and remaining funds. Any administrative or technical difficulties which may affect the schedule or costs of the project shall be immediately brought to the attention of the

COR.

A.5.11 Publications

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

All information and data related to this project that the contractor gathers or obtains shall be both protected from unauthorized release and considered the property of the Government. The contracting officer will be the sole authorized official to release verbally or in writing, any data, the draft deliverables, the final deliverables, or any other written or printed materials pertaining to this contract/order. Press releases, marketing material, or any other printed or electronic documentation related to this project, must not be publicized without the written approval of the contracting officer. (See NRCAR §2052.235-70, "Publication of research results")

A.5.12 Government-Furnished Property

The NRC will provide proprietary plant data, input decks and reports, if necessary and available, to the Contractor. All such data, input decks, and reports shall be clearly marked as "Proprietary" and securely stored in a place where they are not available to the general public.

The NRC will supply the applicable computer codes that NRC develops and maintains as necessary on a task order basis.
Any other reports, documents, equipment, and other materials that will be provided by the NRC will be determined and specified in each task order.

At the end of this contract/order, disposition of GFP shall be in accordance with FAR 52.245-1, Government Property.

A.5.13 Access to Government Property and Facilities

The contractor is permitted access to the Government's facilities, as specified below:

Contractor personnel are required to be escorted by an NRC employee at all times while in an NRC facility. Upon arrival at NRC Headquarters, contractor personnel are required to check-in at the security desk to obtain a visitor's badge, which must be conspicuously displayed at all times while within NRC-controlled space.

In addition, all visitors shall not engage in classified or safeguards discussions, or have access to classified information or systems, until the visitor(s) clearance is verified by the Personnel Security Branch. Such conversations can only occur in DFS-approved areas.

Also, use of Photography/Recording devices in NRC space requires prior approval from the Director of DFS NRC Form 875 "Request for Authorization and Approval for Use of a Camera in U. S. NRC Facilities and Space."

A.5.14 Place of Performance

The work to be performed under this contract/order will be primarily performed at the contractor's facility. The place of performance will be specified in each task order.

A.5.15 Security Requirements

No security clearance is required for this contract.

A.5.16 Physical Security

The contractor shall be responsible for safeguarding all Government property. At the close of each work period, Government facilities, equipment, and materials shall be secured.

A.5.17 Post-award Orientation (kickoff) or Periodic Progress Meetings

Kick-off meetings and/or periodic progress meetings will be determined and specified in each task order.

A.5.18 Key Personnel Qualification Requirements

The contractor shall provide technical analysts who, when combined, have knowledge and experience using the latest versions of the applicable reactor systems analysis computer codes, including TRACE, RELAP5, SNAP, PARCS, SCDAP, RADTRAD, CONTAIN, FLUENT, FRAPCON, FRAPTRAN, MACCS and MELCOR, in the areas of fuel behavior, thermal-hydraulics, reactor physics principles, neutronics, severe accidents tools and methods, CFD, numerical methods, and the computational modeling of both transient and accident simulations for operating reactors (including PWRs and BWRs) and new or advanced light-water reactor designs. In addition, the contractor shall have computer capabilities to perform code development and validation, and technical analysts with experience and knowledge of computer hardware and compiler technologies for compiling and running the codes.

A.5.19 General – Contractor Personnel

Contractor Employees

The contractor shall not employ persons for work on this contract if such employee is considered by the contracting officer to be a potential threat to the health, safety, security, general well-being or operational mission of the installation and its population.

Contractor personnel shall present a neat appearance and be easily recognized as contractor employees. Contractor personnel attending meetings, answering phones, and working in other situations where their status is not obvious are required to identify themselves as such to avoid creating the impression that they are Government officials.

The contractor shall not employ any person who is an employee of the U.S. Government if employing that person would create a conflict of interest. Additionally, the contractor shall not

employ any person who is an employee of the NRC, unless such person seeks and receives approval according to NRC regulations."

A.5.20 Data Rights

The NRC shall have unlimited rights to and ownership of all deliverables provided under this contract/order, including reports, recommendations, briefings, work plans and all other deliverables. All documents and materials, to include the source codes of any software, produced under this contract/order are the property of the Government with all rights and privileges of ownership/copyright belonging exclusively to the Government. These documents and materials may not be used or sold by the contractor without written authorization from the CO. All materials supplied to the Government shall be the sole property of the Government and may not be used for any other purpose. This right does not abrogate any other Government rights. The definition of "unlimited rights" is contained in Federal Acquisition Regulation (FAR) 27.401, "Definitions." FAR clause at FAR 52.227-14, "Rights in Data-General," is hereby incorporated by reference and made a part of this contract/order.

(See FAR 27.409 - Rights in Data and Copyrights)

A.5.21 Applicable Publications (Current Editions)

The contractor must abide by all applicable regulations, publications, manuals, and local policies and procedures.

The "TRACE Pressurized Water Reactor Modeling Guidelines" must be followed for the development and assessment of all TRACE models.

ORDER TERMS AND CONDITIONS

B.1 INTRODUCTION

In the spirit of the Federal Acquisition Streamlining Act, the Nuclear Regulatory Commission (NRC) and **Energy Research, Inc. (ERI)** hereby enter into a cooperative agreement, otherwise referred to as a Blanket Purchase Agreement (BPA), to further reduce the administrative costs of acquiring supplies/services from the General Services Administration (GSA) Federal Supply Schedule Contract # TBD. Federal Supply Schedule contract BPA's eliminate contracting and open market costs such as: search for sources; the development of technical documents, solicitations and the evaluation of offers. Teaming Arrangements are permitted with Federal Supply Schedule Contractors in accordance with Federal Acquisition Regulation (FAR) 9.6.

The agreement details all services with accompanying prices and descriptions, which may be ordered under this BPA.

This BPA expires on 12 months from the date of award or such later ending date as determined by the exercise of any option.

All orders placed against this BPA are subject to the terms and conditions of all the clauses and provisions in full text or incorporated by reference in this document.

B.2 TERMS AND CONDITIONS

Pursuant to **GSA FSS Schedule Contract # GS23F0110M**, regarding Blanket Purchase Agreements, the Contractor agrees to the following terms of a Blanket Purchase Agreement (BPA) EXCLUSIVELY WITH the Nuclear Regulatory Commission:

B.3 ADMINISTRATIVE DATA

A Blanket Purchase Agreement (BPA) is hereby established between **ERI** and the Nuclear Regulatory Commission under the following terms and conditions incorporated in this BPA and GSA Federal Supply Schedule contract:

NRC Points of Contact:
Shawn Marshall – Contracting Officer's Representative
Raymond Skarda – Alternate Contracting Officer's Representative
Rob Robinson – Contract Specialist
Sharlene McCubbin – Contracting Officer

ERI Point of Contact:
Tracey Mullinex

B.4 FSS-BPA CLAUSE CONTENT

The clauses that regulate this FSS Blanket Purchase Agreement can be referenced in the **Federal Supply Schedule contract # GS23F0110M**.

B.5 NRCD020 BRANDING

The Contractor is required to use the statement below in any publications, presentations, articles, products, or materials funded under this contract/order, to the extent practical, in order to provide NRC with recognition for its involvement in and contribution to the project. If the work performed is funded entirely with NRC funds, then the contractor must acknowledge that information in its documentation/presentation.

Work Supported by the U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Regulatory Research, under BPA number **NRC-HQ-60-15-A-0001**.

B.6 NRCD010 PACKAGING AND MARKING

(a) The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Surface Transportation Board, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation.

(b) On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

(c) Additional packaging and/or marking requirements are as follows: N/A

B.7 2052.215-71 CONTRACTING OFFICER'S REPRESENTATIVE AUTHORITY

(a) The contracting officer's authorized representative hereinafter referred to as the COR for this contract is:

Name:	Shawn O. Marshall
Office:	Office of Nuclear Regulatory Research (RES)
E-Mail:	Shawn.Marshall@nrc.gov
Phone:	(301)251-7523

Alternate COR

Name:	Ray Skarda
Office:	Office of Nuclear Regulatory Research (RES)
E-Mail:	Raymond.Skarda@nrc.gov
Phone:	(301) 251-7969

(b) Performance of the work under this contract is subject to the technical direction of the NRC COR. The term "technical direction" is defined to include the following:

(1) Technical direction to the contractor which shifts work emphasis between areas of work or tasks, authorizes travel which was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work or changes to specific travel identified in the Statement of Work), fills in details, or otherwise serves to accomplish the contractual statement of work.

(2) Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.

(3) Review and, where required by the contract, approval of technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

(c) Technical direction must be within the general statement of work stated in the contract. The COR does not have the authority to and may not issue any technical direction which:

(1) Constitutes an assignment of work outside the general scope of the contract.

(2) Constitutes a change as defined in the "Changes" clause of this contract.

(3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.

(4) Changes any of the expressed terms, conditions, or specifications of the contract.

(5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

(d) All technical directions must be issued in writing by the COR or must be confirmed by the COR in writing within ten (10) working days after verbal issuance. A copy of the written direction must be furnished to the contracting officer. A copy of NRC Form 445, Request for Approval of Official Foreign Travel, which has received final approval from the NRC must be furnished to the contracting officer.

(e) The contractor shall proceed promptly with the performance of technical directions duly issued by the COR in the manner prescribed by this clause and within the COR's authority under the provisions of this clause.

(f) If, in the opinion of the contractor, any instruction or direction issued by the COR is within one of the categories as defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request the contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.

(g) Any unauthorized commitment or direction issued by the COR may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.

(h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect thereto is subject to 52.233-1 - Disputes.

(i) In addition to providing technical direction as defined in paragraph (b) of the section, the COR shall:

(1) Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the contracting officer changes in requirements.

(2) Assist the contractor in the resolution of technical problems encountered during performance.

(3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(4) Assist the contractor in obtaining the badges for the contractor personnel.

(5) Immediately notify the Personnel Security Branch, Division of Facilities and Security (PERSEC/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return the individual's badge to PERSEC/DFS within three days after their termination.

B.8 2052.215-70 KEY PERSONNEL. (JAN 1993)

(a) The following individuals are considered to be essential to the successful performance of the work hereunder:

Dr. Mohsen Khatib-Rahbar
Dr. Roy Karimi
Dr. Alfred Krall
Dr. Zhe Yuan
Mr. Michael Zavisca

*The contractor agrees that personnel may not be removed from the contract work or replaced without compliance with paragraphs (b) and (c) of this section.

(b) If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 work days, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall immediately notify the contracting officer and shall, subject to the concurrence of the contracting officer, promptly replace the personnel with personnel of at least substantially equal ability and qualifications.

(c) Each request for approval of substitutions must be in writing and contain a detailed explanation of the circumstances necessitating the proposed substitutions. The request must also contain a complete resume for the proposed substitute and other information requested or needed by the contracting officer to evaluate the proposed substitution. The contracting officer and the project officer shall evaluate the contractor's request and the contracting officer shall promptly notify the contractor of his or her decision in writing.

(d) If the contracting officer determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work is not reasonably forthcoming, or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the contract or the service order, the

contract may be terminated by the contracting officer for default or for the convenience of the Government, as appropriate. If the contracting officer finds the contractor at fault for the condition, the contract price or fixed fee may be equitably adjusted downward to compensate the Government for any resultant delay, loss, or damage.

B.9 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

(a) Total expenditure for travel may not exceed **$25,000.00** for the life of the Blanket Purchasing Agreement without the prior approval of the Contracting Officer.

(b) All foreign travel must be approved in advance by the NRC on NRC Form 445, Request for Approval of Official Foreign Travel, and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. The contractor shall submit NRC Form 445 to the NRC no later than 30 days prior to the commencement of travel.

(c) The contractor will be reimbursed only for those travel costs incurred that are directly related to this contract and which are allowable subject to the limitations prescribed in FAR 31.205-46.

(d) It is the responsibility of the contractor to notify the contracting officer in accordance with the FAR Limitations of Cost clause of this contract when, at any time, the contractor learns that travel expenses will cause the contractor to exceed the travel ceiling amount identified in paragraph (a) of this clause.

(e) Reasonable travel costs for research and related activities performed at State and nonprofit institutions, in accordance with Section 12 of Pub. L. 100-679, shall be charged in accordance with the contractor's institutional policy to the degree that the limitations of Office of Management and Budget (OMB) guidance are not exceeded. Applicable guidance documents include OMB Circular A-87, Cost Principles for State and Local Governments; OMB Circular A-122, Cost Principles for Nonprofit Organizations; and OMB Circular A-21, Cost Principles for Educational Institutions.

B.10 ORDER FORMAT

Each individual BPA Task Order/Call Order will include a statement of work that describes the tasks, services and deliverables required for that order. The NRC will issue a Request for Task Order Proposal (RFTOP) to the contractor. Task Orders/Call Orders will be placed against this BPA by the by the Contracting Officer, based upon the negotiated terms of the proposals received for each individual Call/Task Order.

B.11 PERFORMANCE

The following terms and conditions are applicable:

a. Intentionally deleted

b. The BPA holder shall be familiar with Federal Government and Nuclear Regulatory

Commission acquisition regulations, directives and instructions. If a particular document is required in a specific order, it will be cited within the order's PWS.

c. The BPA holder shall not provide technical direction to any other acquisition BPA holder(s) or government personnel at any time. Neither shall the Government directly supervise BPA holder employees. The BPA holder Task Leader should conduct day to day supervision of BPA holder personnel wherever the BPA holder personnel are located. All direction of the BPA holder shall be through the Contracting Officer (CO) of the ordering organization specified in each individual order. Technical "tasking" assignments for the BPA holder will be transmitted by the program office's COR (or program manager) to the BPA holder's Task Leader.

d. The "ordering period" will run from BPA award to 12 months from that date, or until such ending date of any option year, which may be exercised under the Agreement. The "performance period" will terminate with the end of the BPA, unless the ordering CO elects to extend performance as provided under the BPA. If the ordering CO elects to extend performance beyond the end of the BPA, he/she may extend performance up to six (6) months beyond the end of the order period.

e. Capitalization Requirements: The BPA holder shall provide their employees sufficient computer equipment to support orders. The BPA holder shall be able to support the automatic transmission of unclassified data only to the requiring Program Office by modem if so requested. Any computers connected to, or transmits to (connected or via magnetic media) the government shall be properly protected from computer viruses. The BPA holder shall be capable of supporting the software packages utilized by Nuclear Regulatory Commission for the indicated processors. Specific software packages utilized within a program office shall be stated in the order PWS if it is other than Microsoft Office Professional or Microsoft Project.

f. Cancellation: This BPA may be canceled if the BPA holder fails to perform in accordance with the terms and conditions of this BPA, any order established under this BPA, or if deemed as in the best interests of the Government. The BPA holder must strictly comply with all terms and conditions or the Nuclear Regulatory Commission/ Contracting Officer may determine that performance by the BPA holder has been unsatisfactory and cancel this BPA.

B.12 OPTION TO EXTEND THE TERM OF THE BPA

a. The Government may extend the term of this BPA by written notice to the Contractor at any time prior to the expiration of the BPA, provided that the Government shall give the Contractor a preliminary written notice of its intent to extend at least 30 days before the BPA expires. The preliminary notice does not commit the Government to an extension.

b. If the Government exercises this option, the extended BPA shall be considered to include this option provision.

c. The total duration of this BPA, including the exercise of any options under this clause, shall not exceed the performance period of the governing GSA FSS Contract.

B.13 PRECEDENCE

The Terms and conditions included in this BPA apply to all purchases made pursuant to it. In

the event of an inconsistency between the provisions of this BPA and the Contractor's invoice, the provisions of this BPA will take precedence.

B.14 NRCG010 ORDERING PROCEDURES

(a) The CO is the only individual who can legally obligate funds and commit the NRC.

(b) All task orders and delivery orders shall be prepared in accordance with FAR 16.505.

(c) In accordance with FAR 16.506(b), the following ordering limitations apply:

Minimum order. When the Government requires supplies or services covered by this contract in an amount of less than $3,000.00, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

Maximum order. The Contractor is not obligated to honor—
(1) Any order for a single item in excess of the total agreement value;
(2) Any order for a combination of items in excess of the total agreement value; or
(3) A series of orders from the same ordering office within five (5) days that together call for quantities exceeding the limitation in paragraph (b)(1) or (2) of this section.

The Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within five (5) days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons.

B.15 NRCF010 PLACE OF DELIVERY-REPORTS

The items to be furnished hereunder shall be delivered, with all charges paid by the Contractor, to:

a. Electronic copies to:
NRC Contracting Officer's Representative (COR) – **Shawn Marshall; shawn.marshall@nrc.gov**
NRC Alternative COR – **Raymond Skarda; Raymond.skarda@nrc.gov**
Contracting Officer (CO) – **Rob Robinson; Richard.robinsonii@nrc.gov**

B.16 NRCG030 ELECTRONIC PAYMENT (SEP 2014)

The Debt Collection Improvement Act of 1996 requires that all payments except IRS tax refunds be made by Electronic Funds Transfer. Payment shall be made in accordance with FAR 52.232-33, entitled "Payment by Electronic Funds-Central Contractor Registration".

To receive payment, the contractor shall prepare invoices in accordance with NRC's Billing Instructions. Claims shall be submitted on the payee's letterhead, invoice, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other than Personal," and Standard Form 1035, "Public Voucher for Purchases Other than Personal –

Continuation Sheet." The preferred method of submitting invoices is electronically to: NRCPayments@nrc.gov.

B.17 NRCH470 GREEN PURCHASING (SEP 2013)

(a) In furtherance of the sustainable acquisition goals included in Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," products and services acquired under this contract/order shall be energy-efficient (Energy Star or Federal Energy Management Program (FEMP) designated), water-efficient, biobased, environmentally preferable (e.g., Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, recycled content, and non-toxic or less toxic alternatives, to the maximum extent practicable in meeting NRC contractual requirements.

(b) See NRC's Green Purchasing Plan (GPP) at: http://pbadupws.nrc.gov/docs/ML1219//ML12191A130.pdf and the General Service Administration's (GSA) Green Procurement Compilation at: http://www.gsa.gov/portal/content/198257.

(c) The contractor shall flow down this clause into all subcontracts and other agreements that relate to performance of this contract/order.

B.18 NRCH410 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES

(a) The U.S. Nuclear Regulatory Commission (NRC) contractor and its subcontractor are subject to the Whistleblower Employee Protection public law provisions as codified at 42 U.S.C. 5851. NRC contractor(s) and subcontractor(s) shall comply with the requirements of this Whistleblower Employee Protection law, and the implementing regulations of the NRC and the Department of Labor (DOL). See, for example, DOL Procedures on Handling Complaints at 29 C.F.R. Part 24 concerning the employer obligations, prohibited acts, DOL procedures and the requirement for prominent posting of notice of Employee Rights at Appendix A to Part 24 entitled: "Your Rights Under the Energy Reorganization Act".

(b) Under this Whistleblower Employee Protection law, as implemented by regulations, NRC contractor and subcontractor employees are protected from discharge, reprisal, threats, intimidation, coercion, blacklisting or other employment discrimination practices with respect to compensation, terms, conditions or privileges of their employment because the contractor or subcontractor employee(s) has provided notice to the employer, refused to engage in unlawful practices, assisted in proceedings or testified on activities concerning alleged violations of the Atomic Energy Act of 1954 (as amended) and the Energy Reorganization Act of 1974 (as amended).

(c) The contractor shall insert this or the substance of this clause in any subcontracts involving work performed under this contract.

B.19 NRCH340 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS

NRC contractors are responsible to ensure that their alien personnel are not in violation of

United States immigration laws and regulations, including employment authorization documents and visa requirements. Each alien employee of the Contractor must be lawfully admitted for permanent residence as evidenced by Permanent Resident Form I-551 (Green Card), or must present other evidence from the U.S. Department of Homeland Security/U.S. Citizenship and Immigration Services that employment will not affect his/her immigration status. The U.S. Citizenship and Immigration Services provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on their website, http://www.uscis.gov/portal/site/uscis.

The NRC reserves the right to deny or withdraw Contractor use or access to NRC facilities or its equipment/services, and/or take any number of contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor violate the Contractor's responsibility under this clause.

B.20 NRCH310 ANNUAL AND FINAL CONTRACTOR PERFORMANCE EVALUATIONS

Annual and final evaluations of contractor performance under this contract will be prepared in accordance with FAR Subpart 42.15, "Contractor Performance Information," normally at or near the time the contractor is notified of the NRC's intent to exercise the contract option. If the multi-year contract does not have option years, then an annual evaluation will be prepared Within 12 months increments based upon the date of award.. Final evaluations of contractor performance will be prepared at the expiration of the contract during the contract closeout process.

The Contracting Officer will transmit the NRC Contracting Officer's Representative's (COR) annual and final contractor performance evaluations to the contractor's Project Manager, unless otherwise instructed by the contractor. The contractor will be permitted thirty days to review the document and submit comments, rebutting statements, or additional information.

Where a contractor concurs with, or takes no exception to an annual performance evaluation, the Contracting Officer will consider such evaluation final and releasable for source selection purposes. Disagreements between the parties regarding a performance evaluation will be referred to an individual one level above the Contracting Officer, whose decision will be final.

The Contracting Officer will send a copy of the completed evaluation report, marked "Source Selection Information", to the contractor's Project Manager for their records as soon as practicable after it has been finalized. The completed evaluation report also will be used as a tool to improve communications between the NRC and the contractor and to improve contract performance.

The completed annual performance evaluation will be used to support future award decisions in accordance with FAR 42.1502 and 42.1503. During the period the information is being used to provide source selection information, the completed annual performance evaluation will be released to only two parties - the Federal government personnel performing the source selection evaluation and the contractor under evaluation if the contractor does not have a copy of the report already.

B.21 COPYRIGHT OF CODES - SPECIAL NUCLEAR PURPOSE LICENSE

1. The NRC may, pursuant to Section (c) of FAR Clause 52-227-14, direct the contractor to claim a copyright in computer software and associated data first produced in the performance of this contract. In addition to the general government license rights identified in Section (c) of FAR Clause 52.227-14, such copyright shall be subject to the following Special Nuclear Purpose License rights:

In addition to the license rights granted the government under paragraph (c) of the clause at 52.227-14, RIGHTS IN DATA-GENERAL (DEC 2007), the contractor grants the NRC and others acting on its behalf an exclusive, paid up, worldwide, irrevocable license to distribute the code for nuclear health and safety purposes, which may include analyses of operational, decommissioned, or designs,of nuclear reactor systems and other such facilities involving nuclear technology performed by parties which may include but are not limited to licensees, vendors, contractors, educational institutions, public interest groups, participants in NRC international agreement programs and other government agencies. Further, consistent with NRCAR 2052.209-73, CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST, the contractor agrees that it will not sell or distribute the code to or for the use of such parties or participants and that it will not provide technical services relating to the code to such parties or participants, unless authorized by NRC. In addition, NRC retains the right to improvements made to the code resulting from the contractor's commercial activity that the NRC Contracting Officer (CO) determines are of use for nuclear health and safety purposes. Further, the contractor agrees to include in any licensing agreement that it may enter into with a third party such limitations as are necessary to preserve the rights of the government, and limit the sale and distribution of the software as described above and as limited by the U.S. Departments of Commerce and State concerning foreign sales.

2. The NRC reserves the right to direct the contractor to transfer the copyright in codes and associated data developed under this contract to successor contractors subject to the above general government and special license rights. Should NRC determine that it is in the government's interest to have NRC staff perform the software development and maintenance work required under this contract, the contractor agrees to maintain the copyright subject to the above general government and special license rights.

The NRC shall have unlimited rights to and ownership of all deliverables provided under this contract, including reports, recommendations, briefings, work plans and all other deliverables. All documents and materials, to include the source codes of any software, produced under this contract are the property of the Government with all rights and privileges of ownership/copyright belonging exclusively to the Government. These documents and materials may not be used or sold by the contractor without prior written authorization from the CO. All materials supplied to the Government shall be the sole property of the Government and may not be used for any other purpose. This right does not abrogate any other Government rights. The definition of "unlimited rights" is contained in Federal Acquisition Regulation (FAR) 27.401, "Definitions." FAR clause at FAR 52.227-14, "Rights in Data-General," is hereby incorporated by reference and made a part of this contract/order.

B.22 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST. (JAN 1993)

(a) Purpose. The primary purpose of this clause is to aid in ensuring that the contractor:

(1) Is not placed in a conflicting role because of current or planned interests (financial, contractual, organizational, or otherwise) which relate to the work under this contract; and

(2) Does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described apply to performance or participation by the contractor, as defined in 48 CFR 2009.570-2 in the activities covered by this clause.

(c) Work for others.

(1) Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees under this contract abide by the provision of this clause. If the contractor has reason to believe, with respect to itself or any employee, that any proposed consultant or other contractual arrangement with any firm or organization may involve a potential conflict of interest, the contractor shall obtain the written approval of the contracting officer before the execution of such contractual arrangement.

(2) The contractor may not represent, assist, or otherwise support an NRC licensee or applicant undergoing an NRC audit, inspection, or review where the activities that are the subject of the audit, inspection, or review are the same as or substantially similar to the services within the scope of this contract (or task order as appropriate) except where the NRC licensee or applicant requires the contractor's support to explain or defend the contractor's prior work for the utility or other entity which NRC questions.

(3) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site, the contractor shall neither solicit nor perform work in the same or similar technical area for that licensee or applicant organization for a period commencing with the award of the task order or beginning of work on the site (if not a task order contract) and ending one year after completion of all work under the associated task order, or last time at the site (if not a task order contract).

(4) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site,

(i) The contractor may not solicit work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate.

(ii) The contractor may not perform work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate, and for one year thereafter.

(iii) Notwithstanding the foregoing, the contracting officer may authorize the contractor to solicit or perform this type of work (except work in the same or similar technical area) if the contracting officer determines that the situation will not pose a potential for technical bias or unfair competitive advantage.

(d) Disclosure after award.

(1) The contractor warrants that to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest as defined in 48 CFR 2009.570-2.

(2) The contractor agrees that if, after award, it discovers organizational conflicts of interest with respect to this contract, it shall make an immediate and full disclosure in writing to the contracting officer. This statement must include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract if termination is in the best interest of the Government.

(3) It is recognized that the scope of work of a task-order-type contract necessarily encompasses a broad spectrum of activities. Consequently, if this is a task-order-type contract, the contractor agrees that it will disclose all proposed new work involving NRC licensees or applicants which comes within the scope of work of the underlying contract. Further, if this contract involves work at a licensee or applicant site, the contractor agrees to exercise diligence to discover and disclose any new work at that licensee or applicant site. This disclosure must be made before the submission of a bid or proposal to the utility or other regulated entity and must be received by the NRC at least 15 days before the proposed award date in any event, unless a written justification demonstrating urgency and due diligence to discover and disclose is provided by the contractor and approved by the contracting officer. The disclosure must include the statement of work, the dollar value of the proposed contract, and any other documents that are needed to fully describe the proposed work for the regulated utility or other regulated entity. NRC may deny approval of the disclosed work only when the NRC has issued a task order which includes the technical area and, if site-specific, the site, or has plans to issue a task order which includes the technical area and, if site-specific, the site, or when the work violates paragraphs (c)(2), (c)(3) or (c)(4) of this section.

(e) Access to and use of information.

(1) If, in the performance of this contract, the contractor obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), the contractor agrees not to:

(i) Use this information for any private purpose until the information has been released to the public;

(ii) Compete for work for the Commission based on the information for a period of six months after either the completion of this contract or the release of the information to the public, whichever is first;

(iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public; or

(iv) Release the information without prior written approval by the contracting officer unless the information has previously been released to the public by the NRC.

(2) In addition, the contractor agrees that, to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or

the Freedom of Information Act (5 U.S.C. Section 552 (1986)), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat the information in accordance with restrictions placed on use of the information.

(3) Subject to patent and security provisions of this contract, the contractor shall have the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.

(f) Subcontracts. Except as provided in 48 CFR 2009.570-2, the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms contract, contractor, and contracting officer, must be appropriately modified to preserve the Government's rights.
(g) Remedies. For breach of any of the above restrictions, or for intentional nondisclosure or misrepresentation of any relevant interest required to be disclosed concerning this contract or for such erroneous representations that necessarily imply bad faith, the Government may terminate the contract for default, disqualify the contractor from subsequent contractual efforts, and pursue other remedies permitted by law or this contract.

(h) Waiver. A request for waiver under this clause must be directed in writing to the contracting officer in accordance with the procedures outlined in 48 CFR 2009.570-9.

(i) Follow-on effort. The contractor shall be ineligible to participate in NRC contracts, subcontracts, or proposals therefor (solicited or unsolicited) which stem directly from the contractor's performance of work under this contract. Furthermore, unless so directed in writing by the contracting officer, the contractor may not perform any technical consulting or management support services work or evaluation activities under this contract on any of its products or services or the products or services of another firm if the contractor has been substantially involved in the development or marketing of the products or services.

(1) If the contractor under this contract, prepares a complete or essentially complete statement of work or specifications, the contractor is not eligible to perform or participate in the initial contractual effort which is based on the statement of work or specifications. The contractor may not incorporate its products or services in the statement of work or specifications unless so directed in writing by the contracting officer, in which case the restrictions in this paragraph do not apply.

(2) Nothing in this paragraph precludes the contractor from offering or selling its standard commercial items to the Government.

B.23 2052.204-70 SECURITY. (OCT 1999)

(a) Security/Classification Requirements Form. The attached NRC Form 187 (See List of Attachments) furnishes the basis for providing security and classification requirements to prime contractors, subcontractors, or others (e.g., bidders) who have or may have an NRC contractual relationship that requires access to classified information or matter, access on a continuing basis (in excess of 90 or more days) to NRC Headquarters controlled buildings, or otherwise requires NRC photo identification or card-key badges.
(b) It is the contractor's duty to safeguard National Security Information, Restricted Data, and Formerly Restricted Data. The contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding National Security Information,

Restricted Data, and Formerly Restricted Data, and for protecting against sabotage, espionage, loss, and theft, the classified documents and material in the contractor's possession in connection with the performance of work under this contract. Except as otherwise expressly provided in this contract, the contractor shall transmit to the Commission any classified matter in the possession of the contractor or any person under the contractor's control in connection with performance of this contract upon completion or termination of this contract.

(1) The contractor shall complete a certificate of possession to be furnished to the Commission specifying the classified matter to be retained if the retention is:

(i) Required after the completion or termination of the contract; and
(ii) Approved by the contracting officer.

(2) The certification must identify the items and types or categories of matter retained, the conditions governing the retention of the matter and their period of retention, if known. If the retention is approved by the contracting officer, the security provisions of the contract continue to be applicable to the matter retained.

(c) In connection with the performance of the work under this contract, the contractor may be furnished, or may develop or acquire, proprietary data (trade secrets) or confidential or privileged technical, business, or financial information, including Commission plans, policies, reports, financial plans, internal data protected by the Privacy Act of 1974 (Pub. L. 93-579), or other information which has not been released to the public or has been determined by the Commission to be otherwise exempt from disclosure to the public. The contractor agrees to hold the information in confidence and not to directly or indirectly duplicate, disseminate, or disclose the information, in whole or in part, to any other person or organization except as necessary to perform the work under this contract. The contractor agrees to return the information to the Commission or otherwise dispose of it at the direction of the contracting officer. Failure to comply with this clause is grounds for termination of this contract.

(d) Regulations. The contractor agrees to conform to all security regulations and requirements of the Commission which are subject to change as directed by the NRC Division of Facilities and Security and the Contracting Officer. These changes will be under the authority of the FAR Changes clause referenced in Section I of this document.

(e) Definition of National Security Information. As used in this clause, the term National Security Information means information that has been determined pursuant to Executive Order 12958 or any predecessor order to require protection against unauthorized disclosure and that is so designated.

(f) Definition of Restricted Data. As used in this clause, the term Restricted Data means all data concerning design, manufacture, or utilization of atomic weapons; the production of special nuclear material; or the use of special nuclear material in the production of energy, but does not include data declassified or removed from the Restricted Data category under to Section 142 of the Atomic Energy Act of 1954, as amended.

(g) Definition of Formerly Restricted Data. As used in this clause the term Formerly Restricted Data means all data removed from the Restricted Data category under Section 142-d of the Atomic Energy Act of 1954, as amended.

(h) Security clearance personnel. The contractor may not permit any individual to have access

to Restricted Data, Formerly Restricted Data, or other classified information, except in accordance with the Atomic Energy Act of 1954, as amended, and the Commission's regulations or requirements applicable to the particular type or category of classified information to which access is required. The contractor shall also execute a Standard Form 312, Classified Information Nondisclosure Agreement, when access to classified information is required.

(i) Criminal liabilities. Disclosure of National Security Information, Restricted Data, and Formerly Restricted Data relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data, Formerly Restricted Data, or any other classified matter that may come to the contractor or any person under the contractor's control in connection with work under this contract, may subject the contractor, its agents, employees, or subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.; 18 U.S.C. 793 and 794; and Executive Order 12958.)

(j) Subcontracts and purchase orders. Except as otherwise authorized, in writing, by the contracting officer, the contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

(k) In performing contract work, the contractor shall classify all documents, material, and equipment originated or generated by the contractor in accordance with guidance issued by the Commission. Every subcontract and purchase order issued under the contract that involves originating or generating classified documents, material, and equipment must provide that the subcontractor or supplier assign the proper classification to all documents, material, and equipment in accordance with guidance furnished by the contractor.

B.24 NRCH032 INFORMATION TECHNOLOGY (IT) SECURITY REQUIREMENTS – GENERAL (APR 2014)

Basic Contract IT Security Requirements

The contractor agrees to insert terms that conform substantially to the language of the IT security requirements, excluding any reference to the Changes clause of this contract, all subcontracts under this contract.

For unclassified information used for the effort, the contractor shall provide an information security categorization document indicating the sensitivity of the information processed as part of this contract if the information security categorization was not provided in the statement of work. The determination shall be made using National Institute of Standards and Technology (NIST) Special Publication (SP) 800-60 and must be approved by CSO. The NRC contracting officer and Contracting Officer's Representative (COR) shall be notified immediately before the contractor begins to process information at a higher sensitivity level.

If the effort includes use or processing of classified information, the NRC contracting officer and Contracting Officer's Representative (COR) shall be notified before the contractor begins to process information at a more restrictive classification level.

All work under this contract shall comply with the latest version of policy, procedures and standards. Individual task orders will reference latest versions of standards or exceptions as necessary. These policy, procedures and standards include: NRC Management Directive (MD)

volume 12 Security, Computer Security Office policies, procedures and standards, National Institute of Standards and Technology (NIST) guidance and Federal Information Processing Standards (FIPS), and Committee on National Security Systems (CNSS) policy, directives, instructions, and guidance. This information is available at the following links:

NRC Policies, Procedures and Standards (CSO internal website):

http://www.internal.nrc.gov/CSO/policies.html

All NRC Management Directives (public website):

http://www.nrc.gov/reading-rm/doc-collections/management-directives/

NIST SP and FIPS documentation is located at:

http://csrc.nist.gov/

CNSS documents are located at:

http://www.cnss.gov/

When e-mail is used, the Contractors shall only use NRC provided e-mail accounts to send and receive sensitive information (information that is not releasable to the public) or mechanisms to protect the information during transmission to NRC that have been approved by CSO.

All Contractor employees must sign the NRC Agency-Wide Rules of Behavior for Authorized Computer Use prior to being granted access to NRC computing resources.

The Contractor shall adhere to following NRC policies, including but not limited to:

- Management Directive 12.5, Automated Information Security Program
- Computer Security Policy for Encryption of Data at Rest When Outside of Agency Facilities
- Policy for Copying, Scanning, Printing, and Faxing SGI & Classified Information
- Computer Security Information Protection Policy
- Remote Access Policy
- Use of Commercial Wireless Devices, Services and Technologies Policy
- Laptop Security Policy
- Computer Security Incident Response Policy

Contractor will adhere to NRC's prohibition of use of personal devices to process and store NRC sensitive information.

All work performed at non-NRC facilities shall be in facilities, networks, and computers that have been accredited by NRC for processing information at the sensitivity level of the information being processed.

Contract Performance and Closeout

The contractor shall ensure that the NRC data processed during the performance of this contract shall be purged from all data storage components of the contractor's computer facility,

and the contractor will retain no NRC data within 30 calendar days after contract is completed. Until all data is purged, the contractor shall ensure that any NRC data remaining in any storage component will be protected to prevent unauthorized disclosure.

When contractor employees no longer require access to an NRC system, the contractor shall notify the Contracting Officer's Representative (COR) within 24 hours.

Upon contract completion, the contractor shall provide a status list of all contractor employees who were users of NRC systems and shall note if any users still require access to the system to perform work if a follow-on contract or task order has been issued by NRC.

Control of Information and Data

The contractor shall not publish or disclose in any manner, without the contracting officer's written consent, the details of any security controls or countermeasures either designed or developed by the contractor under this contract or otherwise provided by the NRC.

Any IT system used to process NRC sensitive information shall:

- Include a mechanism to require users to uniquely identify themselves to the system before beginning to perform any other actions that the system is expected to provide.
- Be able to authenticate data that includes information for verifying the claimed identity of individual users (e.g., passwords).
- Protect authentication data so that it cannot be accessed by any unauthorized user.
- Be able to enforce individual accountability by providing the capability to uniquely identify each individual computer system user.
- Report to appropriate security personnel when attempts are made to guess the authentication data whether inadvertently or deliberately.

Access Controls

Any contractor system being used to process NRC data shall be able to define and enforce access privileges for individual users. The discretionary access controls mechanisms shall be configurable to protect objects (e.g., files, folders) from unauthorized access.

The contractor system being used to process NRC data shall provide only essential capabilities and specifically prohibit and/or restrict the use of specified functions, ports, protocols, and/or services.

The contractors shall only use NRC approved methods to send and receive information considered sensitive or classified. Specifically,

- Classified Information - All NRC Classified data being transmitted over a network shall use NSA approved encryption and adhere to guidance in MD 12.2 NRC Classified Information Security Program, MD 12.5 NRC Automated Information Security Program and Committee on National Security Systems. Classified processing shall be only within facilities, computers, and spaces that have been specifically approved for classified processing.

- SGI Information – All SGI being transmitted over a network shall adhere to guidance in MD 12.7 NRC Safeguards Information Security Program and MD 12.5 NRC Automated Information Security Program. SGI processing shall be only within facilities, computers, and

spaces that have been specifically approved for SGI processing. Cryptographic modules provided as part of the system shall be validated under the Cryptographic Module Validation Program to conform to NIST FIPS 140-2 overall level 2 and must be operated in FIPS mode. The contractor shall provide the FIPS 140-2 cryptographic module certificate number and a brief description of the encryption module that includes the encryption algorithm(s) used, the key length, and the vendor of the product.

The most restrictive set of rights/privileges or accesses needed by users (or processes acting on behalf of users) for the performance of specified tasks must be enforced by the system through assigned access authorizations.

Separation of duties for contractor systems used to process NRC information must be enforced by the system through assigned access authorizations.

The mechanisms within the contractor system or application that enforces access control and other security features shall be continuously protected against tampering and/or unauthorized changes.

Configuration Standards

All systems used to process NRC sensitive information shall meet NRC configuration standards available at: http://www.internal.nrc.gov/CSO/standards.html.

Information Security Training and Awareness Training

Contractors shall ensure that their employees, consultants, and subcontractors that have significant IT responsibilities (e.g., IT administrators, developers, project leads) receive in-depth IT security training in their area of responsibility. This training is at the employer's expense.

Media Handling

All media used by the contractor to store or process NRC information shall be controlled in accordance with the sensitivity level.

The contractor shall not perform sanitization or destruction of media approved for processing NRC information designated as SGI or Classified. The contractor must provide the media to NRC for destruction.

Vulnerability Management

The Contractor must adhere to NRC patch management processes for all systems used to process NRC information. Patch Management reports will made available to the NRC upon request for following security categorizations and reporting timeframes:

- 5 calendar days after being requested for a high sensitivity system
- 10 calendar days after being requested for a moderate sensitivity system
- 15 calendar days after being requested for a low sensitivity system

For any contractor system used to process NRC information, the contractor must ensure that information loaded into the system is scanned for viruses prior to posting; servers are scanned for viruses, adware, and spyware on a regular basis; and virus signatures are updated at the

following frequency:

- 1 calendar day for a high sensitivity system
- 3 calendar days for a moderate sensitivity system
- 7 calendar days for a low sensitivity system

B.25 NRCH030 SECURITY REQUIREMENTS FOR INFORMATION TECHNOLOGY LEVEL I OR LEVEL II ACCESS APPROVAL (SEP 2013)

The contractor must identify all individuals selected to work under this contract. The NRC Contracting Officer's Representative (COR) shall make the final determination of the level, if any, of IT access approval required for all individuals working under this contract/order using the following guidance. The Government shall have full and complete control and discretion over granting, denying, withholding, or terminating IT access approvals for contractor personnel performing work under this contract/order.

The contractor shall conduct a preliminary security interview or review for each employee requiring IT level I or II access and submit to the Government only the names of candidates that have a reasonable probability of obtaining the level of IT access approval for which the employee has been proposed. The contractor shall pre-screen its applicants for the following:

(a) felony arrest in the last seven (7) years; (b) alcohol related arrest within the last five (5) years; (c) record of any military courts-martial convictions in the past ten (10) years; (d) illegal use of narcotics or other controlled substances possession in the past year, or illegal purchase, production, transfer, or distribution of narcotics or other controlled substances in the last seven (7) years; and (e) delinquency on any federal debts or bankruptcy in the last seven (7) years.

The contractor shall make a written record of its pre-screening interview or review (including any information to mitigate the responses to items listed in (a) - (e)), and have the employee verify the pre-screening record or review, sign and date it. The contractor shall supply two (2) copies of the signed contractor's pre-screening record or review to the NRC Contracting Officer's Representative (COR), who will then provide them to the NRC Office of Administration, Division of Facilities and Security, Personnel Security Branch with the employee's completed IT access application package.

The contractor shall further ensure that its personnel complete all IT access approval security applications required by this clause within fourteen (14) calendar days of notification by the NRC Contracting Officer's Representative (COR) of initiation of the application process. Timely receipt of properly completed records of the pre-screening record and IT access approval applications (submitted for candidates that have a reasonable probability of obtaining the level of security assurance necessary for access to NRC's IT systems/data) is a requirement of this contract/order. Failure of the contractor to comply with this requirement may be a basis to terminate the contract/order for cause, or offset from the contract's invoiced cost or price the NRC's incurred costs or delays as a result of inadequate pre-screening by the contractor.

SECURITY REQUIREMENTS FOR IT LEVEL I

Performance under this contract/order will involve contractor personnel who perform services requiring direct access to or operate agency sensitive information technology systems or data (IT Level I). The IT Level I involves responsibility for the planning, direction, and implementation

of a computer security program; major responsibility for the direction, planning, and design of a computer system, including hardware and software; or the capability to access a computer system during its operation or maintenance in such a way that could cause or that has a relatively high risk of causing grave damage; or the capability to realize a significant personal gain from computer access.

Contractor personnel shall not have access to sensitive information technology systems or data until they are approved by DFS/PSB and they have been so informed in writing by the NRC Contracting Officer's Representative (COR). Temporary IT access may be approved by DFS/PSB based on a favorable review or adjudication of their security forms and checks. Final IT access may be approved by DFS/PSB based on a favorably review or adjudication of a completed background investigation. However, temporary access authorization approval will be revoked and the employee may subsequently be denied IT access in the event the employee's investigation cannot be favorably adjudicated. Such an employee will not be authorized to work under any NRC contract/order requiring IT access without the approval of DFS/PSB, as communicated in writing to the contractor by the NRC Contracting Officer's Representative (COR). Where temporary access authorization has been revoked or denied by DFS/PSB, the contractor shall assign another contractor employee to perform the necessary work under this contract/order without delay to the contract/order performance schedule, or without adverse impact to any other terms or conditions of the contract/order. When an individual receives final IT access approval from DFS/PSB, the individual will be subject to a reinvestigation every ten (10) years thereafter (assuming continuous performance under contract/order at NRC) or more frequently in the event of noncontinuous performance under contract/order at NRC.

CORs are responsible for submitting the completed access/clearance request package as well as other documentation that is necessary to DFS/PSB. The contractor shall submit a completed security forms packet, including the OPM Standard Form (SF) 86 (online Questionnaire for National Security Positions), two (2) copies of the Contractor's signed pre-screening record and two (2) FD 258 fingerprint charts, to DFS/PSB for review and adjudication, prior to the individual being authorized to perform work under this contract/order requiring access to sensitive information technology systems or data. Non-U.S. citizens must provide official documentation to the DFS/PSB, as proof of their legal residency. This documentation can be a Permanent Resident Card, Temporary Work Visa, Employment Authorization Card, or other official documentation issued by the U.S. Citizenship and Immigration Services. Any applicant with less than seven (7) years residency in the U.S. will not be approved for IT Level I access. The Contractor shall submit the documents to the NRC Contracting Officer's Representative (COR) who will give them to DFS/PSB. The contractor shall ensure that all forms are accurate, complete, and legible. Based on DFS/PSB review of the contractor employee's security forms and/or the receipt of adverse information by NRC, the contractor individual may be denied access to NRC facilities and sensitive information technology systems or data until a final determination is made by DFS/PSB and thereafter communicated to the contractor by the NRC Contracting Officer's Representative (COR) regarding the contractor person's eligibility.

In accordance with NRCAR 2052.204-70 "Security," IT Level I contractors shall be subject to the attached NRC Form 187 and SF-86 which furnishes the basis for providing security requirements to contractors that have or may have an NRC contractual relationship which requires access to or operation of agency sensitive information technology systems or remote development and/or analysis of sensitive information technology systems or data or other access to such systems and data; access on a continuing basis (in excess more than 30 calendar days) to NRC buildings; or otherwise requires issuance of an unescorted NRC badge.

SECURITY REQUIREMENTS FOR IT LEVEL II

Performance under this contract/order will involve contractor personnel that develop and/or analyze sensitive information technology systems or data or otherwise have access to such systems or data (IT Level II).

The IT Level II involves responsibility for the planning, design, operation, or maintenance of a computer system and all other computer or IT positions.

Contractor personnel shall not have access to sensitive information technology systems or data until they are approved by DFS/PSB and they have been so informed in writing by the NRC Contracting Officer's Representative (COR). Temporary access may be approved by DFS/PSB based on a favorable review of their security forms and checks. Final IT access may be approved by DFS/PSB based on a favorably adjudication. However, temporary access authorization approval will be revoked and the contractor employee may subsequently be denied IT access in the event the employee's investigation cannot be favorably adjudicated. Such an employee will not be authorized to work under any NRC contract/order requiring IT access without the approval of DFS/PSB, as communicated in writing to the contractor by the NRC Contracting Officer's Representative (COR). Where temporary access authorization has been revoked or denied by DFS/PSB, the contractor is responsible for assigning another contractor employee to perform the necessary work under this contract/order without delay to the contract/order performance schedule, or without adverse impact to any other terms or conditions of the contract/order. When a contractor employee receives final IT access approval from DFS/PSB, the individual will be subject to a review or reinvestigation every ten (10) years (assuming continuous performance under contract/order at NRC) or more frequently in the event of noncontinuous performance under contract/order at NRC.

CORs are responsible for submitting the completed access/clearance request package as well as other documentation that is necessary to DFS/PSB. The contractor shall submit a completed security forms packet, including the OPM Standard Form (SF) 86 (online Questionnaire for National Security Positions), two (2) copies of the Contractor's signed pre-screening record and two (2) FD 258 fingerprint charts, to DFS/PSB for review and adjudication, prior to the contractor employee being authorized to perform work under this contract/order. Non-U.S. citizens must provide official documentation to the DFS/PSB, as proof of their legal residency. This documentation can be a Permanent Resident Card, Temporary Work Visa, Employment Authorization Card, or other official documentation issued by the U.S. Citizenship and Immigration Services. Any applicant with less than seven (7) years residency in the U.S. will not be approved for IT Level II access. The Contractor shall submit the documents to the NRC Contracting Officer's Representative (COR) who will give them to DFS/PSB. The contractor shall ensure that all forms are accurate, complete, and legible. Based on DFS/PSB review of the contractor employee's security forms and/or the receipt of adverse information by NRC, the contractor employee may be denied access to NRC facilities, sensitive information technology systems or data until a final determination is made by DFS/PSB regarding the contractor person's eligibility.

In accordance with NRCAR 2052.204-70 "Security," IT Level II contractors shall be subject to the attached NRC Form 187, SF-86, and contractor's record of the pre-screening which furnishes the basis for providing security requirements to contractors that have or may have an NRC contractual relationship which requires access to or operation of agency sensitive information technology systems or remote development and/or analysis of sensitive information technology systems or data or other access to such systems or data; access on a continuing

basis (in excess of more than 30 calendar days) to NRC buildings; or otherwise requires issuance of an unescorted NRC badge.

CANCELLATION OR TERMINATION OF IT ACCESS/REQUEST

When a request for IT access is to be withdrawn or canceled, the contractor shall immediately notify the NRC Contracting Officer's Representative (COR) by telephone so that the access review may be promptly discontinued. The notification shall contain the full name of the contractor employee and the date of the request. Telephone notifications must be promptly confirmed by the contractor in writing to the NRC Contracting Officer's Representative (COR), who will forward the confirmation to DFS/PSB. Additionally, the contractor shall immediately notify the NRC Contracting Officer's Representative (COR) in writing, who will in turn notify DFS/PSB, when a contractor employee no longer requires access to NRC sensitive automated information technology systems or data, including the voluntary or involuntary separation of employment of a contractor employee who has been approved for or is being processed for IT access.

The contractor shall flow the requirements of this clause down into all subcontracts and agreements with consultants for work that requires them to access NRC IT resources.

B.26 NRCH430 DRUG FREE WORKPLACE TESTING: UNESCORTED ACCESS TO NUCLEAR FACILITIES, ACCESS TO CLASSIFIED INFORMATION OR SAFEGUARDS INFORMATION, OR PERFORMING IN SPECIALLY SENSITIVE POSITIONS (OCT 2014)

All contractor employees, subcontractor employees, applicants, and consultants proposed for performance or performing under this contract shall be subject to pre-assignment, random, reasonable suspicion, and post-accident drug testing applicable to: (1) individuals who require unescorted access to nuclear power plants, (2) individuals who have access to classified or safeguards information, (3) individuals who are required to carry firearms in performing security services for the NRC, (4) individuals who are required to operate government vehicles or transport passengers for the NRC, (5) individuals who are required to operate hazardous equipment at NRC facilities, or (6) individuals who admit to recent illegal drug use or those who are found through other means to be using drugs illegally.

The NRC Drug Program Manager will schedule the drug testing for all contractor employees, subcontractor employees, applicants, and consultants who are subject to testing under this clause. The consequences of refusing to undergo drug testing or a refusal to cooperate in such testing, including not appearing at the scheduled appointment time, will result in the Agency's refusal of the contractor employee to work under any NRC contract. Any NRC contractor employee found to be using, distributing or possessing illegal drugs, or any contractor employee who fails to receive a verified negative drug test result under this program while in a duty status will immediately be removed from working under the NRC contract. The contractor's employer will be notified of the denial or revocation of the individual's authorization to have access to information and ability to perform under the contract. The individual may not work on any NRC contract for a period of not less than one year from the date of the failed, positive drug test and will not be considered for reinstatement unless evidence of rehabilitation, as determined by the NRC "drug testing contractor's" Medical Review Officer, is provided.

Contractor drug testing records are protected under the NRC Privacy Act Systems of Records,

System 35, "Drug Testing Program Records - NRC" found at: http://www.nrc.gov/reading-rm/foia/privacy-systems.html

B.27 52.217-8 OPTION TO EXTEND SERVICES. (NOV 1999)

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance hereunder shall not exceed 6 months. The Contracting Officer may exercise the option by written notice to the Contractor within 1 day of the period of performance end date.

B.28 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT. (MAR 2000)

(a) The Government may extend the term of this contract by written notice to the Contractor within 1 day of the period of performance end date; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

BILLING INSTRUCTIONS FOR
TIME-AND-MATERIALS/LABOR-HOUR TYPE CONTRACTS (MAY 2013)

General: During performance and through final payment of this contract, the contractor is responsible for the accuracy and completeness of data within the Central Contractor Registration (CCR) database and for any liability resulting from the Government's reliance on inaccurate or incomplete CCR data.

The contractor shall prepare invoices/vouchers for reimbursement of costs in the manner and format described herein. FAILURE TO SUBMIT INVOICES/VOUCHERS IN ACCORDANCE WITH THESE INSTRUCTIONS WILL RESULT IN REJECTION OF THE INVOICE/VOUCHER AS IMPROPER.

Standard Forms: Claims shall be submitted on the payee's letterhead, invoice/voucher, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other than Personal," and Standard Form 1035, "Public Voucher for Purchases Other than Personal--Continuation Sheet."

Electronic Invoice/Voucher Submissions: The preferred method of submitting vouchers/invoices is electronically to the U.S. Nuclear Regulatory Commission, via email to: NRCPayments@nrc.gov.

Hard-Copy Invoice/Voucher Submissions: If you submit a hard-copy of the invoice/voucher, a signed original and supporting documentation shall be submitted to the following address:

NRC Payments
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mailstop O3-E17A
Rockville, MD 20852-2738

Purchase of Capital Property: *($50,000 or more with life of one year or longer)*

Contractors must report to the Contracting Officer, electronically, any capital property acquired with contract funds having an initial cost of $50,000 or more, in accordance with procedures set forth in NRC Management Directive (MD) 13.1, IV, C – "Reporting Requirements" (revised 2/16/2011).

Agency Payment Office: Payment will continue to be made by the office designated in the contract in Block 12 of the Standard Form 26, or Block 25 of the Standard Form 33, whichever is applicable.

Frequency: The contractor shall submit claims for reimbursement once each month, unless otherwise authorized by the Contracting Officer.

Format: Invoices/Vouchers shall be submitted in the format depicted on the attached sample form entitled "Invoice/Voucher for Purchases and Services Other Than Personal". Alternate formats are permissible only if they address all requirements of the Billing Instructions. The instructions for preparation and itemization of the invoice/voucher are included with the sample

**BILLING INSTRUCTIONS FOR
TIME-AND-MATERIALS/LABOR-HOUR TYPE CONTRACTS (MAY 2013)**

form.

Task Order Contracts: The contractor must submit a separate invoice/voucher for each individual task order with detailed cost information. This includes all applicable cost elements and other items discussed in paragraphs (a) through (q) of the attached instructions. In addition, the invoice/voucher must specify the contract number, and the NRC-assigned task/delivery order number.

Billing of Costs after Expiration of Contract: If costs are incurred during the contract period and claimed after the contract has expired, you must cite the period during which these costs were incurred. To be considered a proper expiration invoice/voucher, the contractor shall clearly mark it "EXPIRATION INVOICE" or "EXPIRATION VOUCHER".

Final invoices/vouchers shall be marked "FINAL INVOICE" or "FINAL VOUCHER".

Currency: Invoices/Vouchers must be expressed in U.S. Dollars.

Supersession: These instructions supersede previous Billing Instructions for Time-and-Materials/Labor-Hour Type Contracts (July 2011).

INVOICE/VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL (SAMPLE FORMAT - COVER SHEET)

1. Official Agency Billing Office

NRC Payments
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mailstop O3-E17A
Rockville, MD 20852-2738

2. Invoice/Voucher Information

a. Payee's DUNS Number or DUNS+4. The Payee shall include the Payee's Data Universal Number (DUNS) or DUNS+4 number that identifies the Payee's name and address. The DUNS+4 number is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the Payee to identify alternative Electronic Funds Transfer (EFT) accounts for the same parent concern.

b. Payee's Name and Address. Show the name of the Payee as it appears in the contract and its correct address. If the Payee assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Payee shall require as a condition of any such assignment, that the assignee shall register separately in the Central Contractor Registration (CCR) database at http://www.ccr.gov and shall be paid by EFT in accordance with the terms of

BILLING INSTRUCTIONS FOR
TIME-AND-MATERIALS/LABOR-HOUR TYPE CONTRACTS (MAY 2013)

this contract. See Federal Acquisition Regulation (FAR) 52.232-33(g) Payment by Electronic Funds Transfer - Central Contractor Registration (October 2003).

c. Taxpayer Identification Number. The Payee shall include the Payee's taxpayer identification number (TIN) used by the Internal Revenue Service (IRS) in the administration of tax laws. (See IRS Web site: http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Employer-ID-Numbers-(EINs)).

d. Contract Number. Insert the NRC contract number (including Enterprise-wide Contract (EWC)), GSA Federal Supply Schedule (FSS), Governmentwide Agency Contract (GWAC) number, or Multiple Agency Contract (MAC) number, as applicable.

e. Task Order Number. Insert the task/delivery order number (If Applicable). **Do not include more than one task order per invoice or the invoice may be rejected as improper.**

f. Invoice/Voucher. The appropriate sequential number of the invoice/voucher, beginning with 001 should be designated. Contractors may also include an individual internal accounting number, if desired, in addition to the 3-digit sequential number.

g. Date of Invoice/Voucher. Insert the date the invoice/voucher is prepared.

h. Billing period. Insert the beginning and ending dates (day, month, year) of the period during which costs were incurred and for which reimbursement is requested.

i. Labor Hours Expended. Provide a general summary description of the services performed and associated labor hours utilized during the invoice period. Specify the Contract Line Item Number (CLIN) or SubCLIN, as applicable, and information pertaining to the contract's labor categories/positions, and corresponding authorized hours.

j. Property. For contractor acquired property, list each item with an initial acquisition cost of $50,000 or more and provide: (1) an item description, (2) manufacturer, (3) model number, (4) serial number, (5) acquisition cost, (6) date of purchase, and (7) a copy of the purchasing document.

k. Shipping. Insert weight and zone of shipment, if shipped by parcel post.

l. Charges for freight or express shipments. Attach prepaid bill if shipped by freight or express.

m. Instructions. Include instructions to consignee to notify the Contracting Officer of receipt of shipment.

n. For Indefinite Delivery contracts, the final invoice/voucher shall be marked "FINAL INVOICE" or "FINAL VOUCHER".

o. Direct Costs. Insert the amount billed for the following cost elements, adjustments, suspensions, and total amounts, for both the current billing period and for the cumulative period

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(from contract inception to end date of this billing period).

(1) Direct (Burdened) Labor. This consists of salaries and wages paid (or accrued) for direct performance of the contract itemized, including a burden (or load) for indirect costs (i.e., fringe, overhead, General and Administrative, as applicable), and profit component, as follows:

Labor Category	Hours Billed	Burdened Hourly Rate	Total	Cumulative Hours Billed

(2) Contractor-acquired property ($50,000 or more). List each item costing $50,000 or more and having a life expectancy of more than one year. List only those items of equipment for which reimbursement is requested. For each such item, list the following (as applicable): (a) an item description, (b) manufacturer, (c) model number, (d) serial number, (e) acquisition cost, (f) date of purchase, and (g) a copy of the purchasing document.

(3) Contractor-acquired property (under $50,000), Materials, and Supplies. These are equipment other than that described in (2) above, plus consumable materials and supplies. List by category. List items valued at $1,000 or more separately. Provide the item number for each piece of equipment valued at $1,000 or more.

(4) Materials Handling Fee. Indirect costs allocated to direct materials in accordance the contractor's usual accounting procedures.

(5) Consultant Fee. The supporting information must include the name, hourly or daily rate of the consultant, and reference the NRC approval (if not specifically approved in the original contract).

(6) Travel. Total costs associated with each trip must be shown in the following format:

Start Date		Destination		Costs
From	To	From	To	$

(Must include separate detailed costs for airfare, per diem, and other transportation expenses. All costs must be adequately supported by copies of receipts or other documentation.)

(7) Subcontracts. Include separate detailed breakdown of all costs paid to approved subcontractors during the billing period.

p. Total Amount Billed. Insert columns for total amounts for the current and cumulative periods.

q. Adjustments. Insert columns for any adjustments, including outstanding suspensions for

unsupported or unauthorized hours or costs, for the current and cumulative periods.

r. Grand Totals.

3. Sample Invoice/Voucher Information

Sample Invoice/Voucher Information (Supporting Documentation must be attached)

This invoice/voucher represents reimbursable costs for the billing period from_____through_____.

			Amount Billed	
			Current Period	Cumulative
(a)	**Direct Costs**			
	(1)	Direct burdened labor	$_____	$_____
	(2)	Government property ($50,000 or more)	$_____	$_____
	(3)	Government property, Materials, and Supplies (under $50,000 per item)	$_____	$_____
	(4)	Materials Handling Fee	$_____	$_____
	(5)	Consultants Fee	$_____	$_____
	(6)	Travel	$_____	$_____
	(7)	Subcontracts	$_____	$_____
		Total Direct Costs:	$_____	$_____
(b)	**Total Amount Billed**		$_____	$_____
(c)	**Adjustments** (+/-)		$_____	$_____
(d)	**Grand Total**		$_____	$_____

(The invoice/voucher format provided above must include information similar to that included below in the following to ensure accuracy and completeness.)

SAMPLE SUPPORTING INFORMATION

The budget information provided below is for format purposes only and is illustrative.

Cost Elements:

1) Direct Burdened Labor - $4,800

Labor Category	Hours Billed	Burdened Rate	Total	Cumulative Hours Billed
Senior Engineer I	100	$28.00	$2,800	975
Engineer	50	$20.00	$1,000	465

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Computer Analyst	100	$10.00	$1,000	320
			$4,800	1,760 hrs.

Burdened labor rates must come directly from the contract.

2) Government-furnished and contractor-acquired property ($50,000 or more) - $60,000

Prototype Spectrometer - item number 1000-01 = $60,000

3) Government-furnished and contractor-acquired property (under $50,000), Materials, and Supplies - $2,000

10 Radon tubes @ $110.00	=	$1,100
6 Pairs Electrostatic gloves @ $150.00	=	$ 900
		$2,000

4) Materials Handling Fee - $40

(2% of $2,000 in item #3)

5) Consultants' Fee - $100

Dr. Carney - 1 hour fully-burdened @ $100 = $100

6) Travel - $2,640

(i) Airfare: (2 Roundtrip trips for 1 person @ $300 per r/t ticket)

Start Date	End Date	Days	From	To	Cost
4/1/2011	4/7/2011	7	Philadelphia, PA	Wash, D.C.	$300
7/1/2011	7/8/2011	8	Philadelphia, PA	Wash, D.C.	$300

(ii) Per Diem: $136/day x 15 days = $2,040

7) Subcontracting - $30,000

Company A	=	$10,000
Company B	=	$20,000
		$30,000

(EX: Subcontracts for Companies A & B were consented to by the Contracting Officer by letter dated 6/15/2011.)

Total Amount Billed	$99,580
Adjustments (+/-)	- 0
Grand Total	$99,580

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4. Definitions

Material handling costs. When included as part of material costs, material handling costs shall include only costs clearly excluded from the labor-hour rate. Material handling costs may include all appropriate indirect costs allocated to direct materials in accordance with the contractor's usual accounting procedures.