

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

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IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER		2. CONTRACT NO. (If any) 31310018D0011		6. SHIP TO:	
3. ORDER NO. 31310020F0015		4. REQUISITION/REFERENCE NO. NRR-20-0057		a. NAME OF CONSIGNEE US NUCLEAR REGULATORY COMMISSION-	
5. ISSUING OFFICE (Address correspondence to) US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-07B20M WASHINGTON DC 20555-0001				b. STREET ADDRESS WAREHOUSE 4934 BOILING BROOK PARKWAY	
				c. CITY ROCKVILLE	e. ZIP CODE 20852
7. TO:				f. SHIP VIA	
a. NAME OF CONTRACTOR BECKMAN ASSOCIATES INC				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any including delivery as indicated.	
c. STREET ADDRESS 1071 STATE RTE 136 SUITE 20				<input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY BELLE VERNON		e. STATE PA	f. ZIP CODE 150122926		
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITION NG OFFICE OFF OF NUCLEAR REACTOR REGULATION	
11. BUSINESS CLASSIFICATION (Check appropriate box(es))					
<input checked="" type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB					
12. F.O.B. POINT					
13. PLACE OF		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
a. INSPECTION Destination	b. ACCEPTANCE Destination			16. DISCOUNT TERMS 30	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Accounting Info: 2020-X0200-FEEBASED-20-20D003-1054-11-5-139-251A-11-5-139-1054 Period of Performance: 02/24/2020 to 12/31/2020					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME FISCAL ACCOUNTING PROGRAM						\$0.00
	b. STREET ADDRESS (or P.O. Box) ADMIN TRAINING GROUP AVERY STREET A3-G BUREAU OF THE FISCAL SERVICE PO BOX 1328						
c. CITY PARKERSBURG				d. STATE WV	e. ZIP CODE 26106-1328	\$1,143,507.77	17(i) GRAND TOTAL

22. UNITED STATES OF

AMERICA BY (Signature)

03/04/2020



23. NAME (Typed)

JEFFREY R. MITCHELL

TITLE: CONTRACTING/ORDER NG OFFICER

CONTRACTOR ACCEPTANCE OF TASK ORDER 31310020F0015

This confirms the verbal authorization given on February 24, 2020.

Acceptance of Task Order No: 31310020F0015 should be made by having an official, authorized to bind your organization.

Accepted Task Order No: 31310020F0015:

Name

Title

Date

SECTION B – TASK ORDER TERMS AND CONDITIONS

B.1 NRCB010 BRIEF PROJECT TITLE AND WORK DESCRIPTION

(a) Technical Assistance to Support Design Engineering Inspection Services and Training. [Calendar Year 2020]]

(b) Summary of work description: The contractor shall assist the NRC inspection teams in the performance of DBAs at these sites: 1) Harris, 2) Farley, 3) Perry, 4) Waterford, 5) Point Beach, 6) Peach Bottom, 7) River Bend, 8) Oconee (Knowledge Transfer (KT) only), 9) Quad Cities (KT only), 10) Beaver Valley, 11) Surry (KT only), 12) Grand Gulf, and 13) Nine Mile Point (KT only), and conduct KT Training in each of the four regions.

B.2 ESTIMATED COST SCHEDULE

[illegible]

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B.4 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (AUG 2011)

This contract shall commence on February 24, 2020 and will expire on December 31, 2020.

B.5 INSPECTION AND TRAINING SCHEDULE

Plant	Estimated Inspection Start	Estimated Inspection End
Harris	03/09/2020	04/10/2020
Farley	03/30/2020	05/01/2020
Perry	04/13/2020	05/15/2020
Waterford	04/27/2020	05/29/2020
Point Beach	06/15/2020	07/17/2020
Region 1 Training	06/29/2020	07/01/2020
Peach Bottom	07/06/2020	08/07/2020
River Bend	07/06/2020	08/07/2020
Oconee	07/27/2020	08/28/2020
Quad Cities	08/03/2020	09/04/2020
Beaver Valley	09/07/2020	10/09/2020
Surry	09/07/2020	10/09/2020
Region 2 Training	09/09/2020	09/11/2020
Grand Gulf	09/14/2020	10/16/2020
Nine Mile Point	10/12/2020	11/13/2020
Region 4 Training	11/17/2020	11/19/2020
Region 3 Training	12/15/2020	12/17/2020

SECTION C – STATEMENT OF WORK

C.1 STATEMENT OF WORK

Fee Recoverable: With the exception of Task 8, all cost is fee recoverable

C.2 Title of Project

Technical Assistance to Support Design Engineering Inspection Services and Training.

C.3 Background

The U.S. Nuclear Regulatory Commission (NRC) was created as an independent Agency by Congress in 1974 to enable the nation to safely use radioactive materials for beneficial civilian purposes while ensuring that people and the environment are protected. The NRC regulates commercial nuclear power plants and other uses of nuclear materials, such as in nuclear medicine, through licensing, inspection, and enforcement of its requirements. The NRC's headquarters are in Rockville, Maryland, and the NRC has four regional offices located in: King of Prussia, PA; Atlanta, GA; Lisle, IL; and Arlington, TX.

The contractor shall provide all personnel, equipment, supplies, facilities, transportation, tools, materials, supervision, and other items and non-personal services necessary to support NRC Design Engineering Inspections as defined in this Statement of Work (SOW). The contractor shall perform to the standards in this contract.

In accordance with the baseline inspection portion of the Reactor Oversight Process (ROP), the NRC inspects the design and operation of nuclear power reactor plants. These inspections sometimes require contractor technical support.

Design Bases Assurance (DBA) inspections are the primary inspection under this contract. They verify that design bases have been correctly implemented for the selected risk-significant components and that operating procedures and operator actions are consistent with design and licensing bases. This ensures that selected components can perform their safety functions.

In addition to the DBA inspections, contract technical support may be required for other inspections of design and operations including (but not limited to): fire protection; plant modifications; supplemental inspections at plants which experience degraded performance; reactive inspections (such as augmented inspection teams and special Inspections); independent design verification programs; and integrated design inspections.

Since 1982, the NRC has had various design engineering inspection programs that required contractor assistance to supplement staff resources. These have included integrated design inspections (IDIs), safety system functional inspections (SSFIs), electrical distribution system functional inspections (EDSFIs), service water system operational performance inspections, safety systems design and performance capability (SSDPC), fire protection inspections, and Component Design Basis Inspections (CDBIs).

The NRC has found it beneficial to form inspection teams, which include technical assistance from contractors with current nuclear plant experience. These inspections usually start with design requirements and follow the plant implementation through plant operations and maintenance practices.

Specific inspection requirements will be defined per task order under this contract, with authorized maximum levels of effort specified per task order. The schedule for the inspections will be provided by the COR. The contractor shall coordinate with the NRC in providing qualified contractor inspectors to support the NRC's regional inspection teams.

C.4 Objective

The objective of this acquisition is to obtain contractor support for the following services: 1) conducting inspections 2) providing knowledge management training, and 3) engineering consulting, for evaluating the design and operation of nuclear power reactor plants.

C.5 Scope of Work/Tasks

The contractor shall provide technical support to the NRC for inspections, which will be assigned by the NRC's Contracting Officer (CO) through issuance of task orders. Inspections shall be performed in accordance with applicable inspection procedures (IPs), such as IP 71111.21M, "Design Bases Assurance Inspection (Team)," which is a publicly available document accessible at:

<https://www.nrc.gov/docs/ML1634/ML16340B000.pdf>.

The NRC Regional Team Leader (RTL) or COR will issue guidance to the contractor inspectors during the inspection. The following is a summary of the scope of work:

- For planning purposes, there will be about 20 DBA inspections conducted each year distributed among the four NRC Regions located in King of Prussia, PA; Atlanta, GA; Lisle, IL; and Arlington, TX. During the 2020 Fiscal Year, the NRC will transition away from using contractors for technical assistance on DBA inspections. Consequently, about four of the DBA inspections will require one mechanical and one electrical contractor. Except for the fourth quarter and needs by the regions to fill a resource gap, the remaining DBA inspections will require at least one contractor providing technical assistance on inspections while the remaining contractor will be on an on-call status for consulting and knowledge management training. Each DBA inspection requires 204 hours per individual contractor who will be conducting the inspection. During the inspection (not including the preparation and documentation weeks) the on-call consulting contractor will be available for a minimum of 10 hours per week during normal NRC core hours (7:30 am to 5:00 pm) throughout the entire inspection.
- It is estimated that the contractor, who will be conducting the training requires 24 hours for delivery and 72 hours for preparation (approximately 100 hours).
- It is anticipated that there will be up to four DBA inspections conducted simultaneously during contract performance. Therefore, the contractor shall be required to maintain a pool of at least 8 qualified contractor inspectors available to support DBA inspections. For those inspections using one contractor, there shall be another contractor available for knowledge management training and consulting. The oversight for the contractor can be assigned to NRC staff other than the RTL. The contractor inspectors shall be designated as key personnel.

- Optional Inspections may cover unscheduled design engineering and operations inspections. Typically, there will be a maximum of five optional inspections per year. The scope and schedule of these inspections will be defined in each separate task order. The task order for optional inspections will contain inspection elements like those stated in the tasks section below.
- The hours and number of contractor inspectors needed for each activity are summarized as follows:

Activities per Region	No. of Contractors	Hours per Individual
1 st inspection	2 per inspection	204 per inspection
2 nd & 3 rd inspections*	1 per inspection	204 per inspection
Consulting 4 th and 5 th	1 per inspection	10 minimum per week per inspection
Training	1 per session	Approximately 100 total training delivery and preparation,
		24 administrative support.

*Additional contract inspectors may be needed to fill resource staffing gaps

Task 1- Attend Post Award Conference and Meetings

The contractor shall attend a post award conference convened by the contracting activity or contract administration office in accordance with FAR Subpart 42.5. The CO, CORs, and other Government personnel, as appropriate, may request meetings (alternately conference calls) with the contractor to review the contractor's performance. These will occur only when necessary and determined by the COR. At these meetings the CO will apprise the contractor of how the government views the contractor's performance and the contractor shall apprise the Government of problems, if any, being experienced with contract performance. Appropriate action shall be taken to resolve outstanding issues. These meetings shall be at no additional cost to the Government.

The contractor shall be required to meet annually with the COR and CO after the start of this contract. Additional meetings will be scheduled by the COR, as needed. The contractor may request meetings whenever an outstanding issues(s) exists and no mutual resolution is apparent.

Task 2- Perform DBA Inspection Element 1 – Contractor Inspector Prerequisites:

Requirement: Prior to the scheduled start date of the inspection, the contractor shall assign contractor inspectors (key personnel) to the inspection(s). The contractor shall ensure that the assigned key personnel have completed all site access requirements including all web-based training specified by the COR or by the licensee, including psychological assessments, drug testing, and specified continuing training requirements. Exceptions must be approved by the COR.

Standard: Contractor inspectors shall meet all applicable site access requirements, including specified continuing training requirements.

Deliverable: The contractor shall send the COR a notification via email that confirms the contractor inspectors have met all applicable site access requirements.

Due: The contractor shall notify the COR via email prior to starting Task 3, if there are any problems with the contractor inspectors obtaining site access.

Task 3- Perform DBA Inspection Element 2 – Inspection Preparations:

Requirement: The contractor inspectors shall prepare for inspections for five business days, divided between the regional office and the inspectors' home offices. The RTL will coordinate the location of the inspection preparations with the inspectors. Inspection preparation shall be performed in accordance with the applicable inspection procedure (IP) (e.g., IP 71111.21M). The contractor shall prepare an inspection plan which describes how the inspection will be conducted.

Standard: The inspection plan shall be prepared in accordance with IP 71111.21M.

Deliverable: The contractor shall submit the inspection plan to the RTL for approval.

Due: The contractor shall electronically submit the inspection plan to the RTL in a Microsoft Word document format no later than one business day prior to starting Task 4.

Task 4- Perform DBA Inspection Element 3 - Conduct Onsite Inspections:

Requirement: The contractor inspectors shall, under the direction of the RTL conduct site inspections in accordance with the applicable inspection procedures, as directed by the RTL and the task order issued describing the specific work. The contractor inspectors shall verbally report inspection progress to the RTL during daily team meetings.

Standard: All inspections shall be conducted in accordance with IPs referenced in the task order defining the inspection(s). All written notes documenting the contractor inspector's results shall be accurate, legible, and contain no spelling or grammatical errors.

Deliverable: The contractor inspectors shall submit written notes in Microsoft Word, documenting inspection results. The contractor inspectors shall document any issues of concern, which shall include the following: 1) statements which describe the issue of concern; 2) NRC or industry requirement to which the licensee is not in compliance; and 3) safety significance of the noncompliance.

Due: The contractor inspectors shall provide the RTL written notes which describes all performance deficiencies identified within one business day of identifying the deficiencies.

Task 5- Provide DBA Inspection Element 4 - Home Office Review of the Inspection Results:

Requirement: The contractor inspectors shall conduct home office reviews using design basis documentation (drawings, calculations, etc.) and review the results of the inspection at the contractor inspector's home office, in accordance with the approved inspection plan. The contractor shall verbally report the inspection progress to the NRC RTL.

Standard: Verbal progress on home office reviews shall be provided to the NRC RTL as defined in the time period below.

Deliverable: Verbal progress report to the RTL.

Due: The contractor inspectors shall submit the verbal or daily progress report to the RTL daily by close of business (i.e., 5 p.m. local time) of each home office review. Contract inspectors, along with NRC inspectors, should have daily meetings during the home office review period.

Additional Guidance or Reference: Approved inspection plan developed under Element 2. Each inspection has more specific inspection plan which details which inspection element, i.e., calculation or other inspection sample the contract inspector shall review.

Task 6- Provide DBA Inspection Element 5 - Documentation of Inspection Results:

Requirement: The contractor inspectors shall provide written input to the NRC inspection report to the RTL in accordance with Inspection Manual Chapter (IMC) 0611, "Power Reactor Inspection Reports" as a Microsoft Word file. The manual is available on the following link:

<https://www.nrc.gov/docs/ML1804/ML18043A807.pdf>

Standard: The contractor inspectors shall provide inspection input as defined in the time period below. The Inspection Report input shall conform to the requirements provided in IMC 0611 "Power Reactor Inspection Reports" and the requirements of the contract.

Deliverable: The contractor inspectors shall submit the Inspection Report input in Microsoft Word format to the RTL.

Due: The contractor inspectors shall electronically submit the Inspection Report input to the RTL within seven calendar days after the inspection exit date. The RTL may extend this due date if additional reviews are needed.

Additional Guidance or Reference: After the inspection report input is submitted to the RTL, the contractor inspector shall not perform additional work on the inspection report unless directed by the RTL. The Inspection Report input shall be electronically transmitted directly from the contractor inspector to the RTL.

The contractor inspectors may be required to provide additional inspection input or reviews, which typically require 20-40 hours per instance. A provision for this additional scope will be stated in the task order describing the inspection(s).

Task orders may be issued by the NRC CO requesting discussions and support for NRC presentations such as answering questions at teleconferences, workshops, or other NRC meetings to describe findings from the DBA inspections over the life of the contract.

Task 7- Optional Inspections:

Task orders may be issued by the NRC CO to request contractor support for other inspections, or to support NRC training needs such as: (1) inspections of plant modifications; (2) supplemental

inspections at plants which, experience degraded performance in accordance with the ROP Action Matrix available at the following link:

<https://www.nrc.gov/reactors/operating/oversight/actionmatrix-summary.html>; (3) reactive inspections such as Augmented Inspection Teams and Special Inspections; (4) Independent Design Verification Programs; (5) Integrated Design Inspections; and (6) Provide design inspection training to NRC inspectors as directed by the COR. As appropriate, the NRC may require support for inspections of design or operations not identified above.

For these inspections or to provide training to NRC inspectors, the contractor may need to pursue key personnel with specific engineering skills that are not available from key personnel previously defined in the contract. The specific engineering skills will be listed with each task order for the optional inspections.

Typically, between a maximum of six of these inspections and one training request shall be required each year of contract performance. These inspections shall be conducted in accordance with the applicable inspection procedure referenced and/or provided with each task order. These inspections may contain the same elements as required above for the DBA inspections. Any differences will be described in the applicable task order issued to request the work.

Task 8 - Provide Knowledge Management Training Sessions Element 1 Submission of Training Material

Standard: At the request of the COR, the contractor inspectors shall provide four (4) 2 to 3-day knowledge management training sessions, which shall cover, at a minimum, inspection techniques (e.g. relevant tools used to perform analysis or quick checks such as thumb rules or hand calculations or other calculation methodology) engineering disciplines covering design, testing, operating experience, and maintenance principles. At a minimum, the NRC will request sessions for the engineering topic areas listed in the Table 1 covering inspection techniques, generic (common) issues, and operating experience as discussed in Appendices A and B of IP 71111.21M:

Table 1: Training Topics

Region	1	2	3	4
Day 1	HVAC and fan design and testing inspection techniques	Seismic supports and Structural Design inspection techniques	Pump and Motor design and flow testing inspection techniques	Electrical protection and coordination inspection techniques - circuit breakers, fuses, relays, design maintenance testing inspection techniques
Day 2	Heat exchanger & cooling tower design and testing inspection techniques	Equipment Protection for Internal and External Hazards (cranes) inspection techniques	Valve design and O & M testing (flow design & balancing, open/close timing, IST) inspection techniques	EDG electrical inspection techniques - ESF sequencing load shedding/TSSRs/Generator (Field flash/power output/frequency) inspection techniques

Day 3	EDG mechanical (Fuels, oil, tank inspections, SA & CA reqts.) inspection techniques	NONE	IA/Compressed Air (usage requirements, air receiver and system inspection & maintenance) techniques	I & C (Digital I & C/EQ/total loop uncertainties, time testing, installation, maintenance. design, calibration & inspection techniques
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Deliverable: The contractor inspectors shall submit the training material using Microsoft Word, adobe acrobat pdf, or PowerPoint formats as necessary, and provide an inspection checklist for the corresponding topic of the training session. NRC will make and distribute copies of training material as necessary.

Due: No later than 28 calendar days before the scheduled training, the contractor shall electronically submit the training material and checklist to the COR. The due date can be modified as necessary.

Additional Guidance or Reference: The contractor inspector shall not perform additional work on the training material unless directed by the COR.

The contractor inspectors may be required to provide additional modifications of the submitted training materials at the discretion of the COR and may require 10 hours per instance. A provision for this additional scope will be stated in the task order describing the training.

Task 8 - Provide Knowledge Management training sessions Element 2 Delivering the Training

Standard: The contractor inspectors shall conduct the 2 to 3-day training sessions covering all the training topics requested by the COR. The training dates are as shown in Table 2 as follows:

Table 2: Training Dates

Dates	Office
June 29 to July 1, 2020 (Mon-Wed)*	Region 1
September 9-11, 2020 (Wed-Fri)*	Region 2
November 17-19, 2020 (Tues-Thurs)	Region 4
December 15-17, 2020 (Tue-Thurs)	Region 3

*Holidays on Fri, July 4 and Mon, Sep 7. Training will be at least 2 (at most 3) consecutive days.

Deliverable: The contractor inspectors shall conduct training in an instructor-led training format at the region. The NRC DBAI Training Template is in Enclosure A to this SoW. The training will be broadcasted and recorded to other DBAI regional inspector for distance learning purposes.

Due: The contractor inspectors shall deliver the training during the dates per Table 2 above. The COR may modify the training dates as necessary due to unforeseen circumstances (i.e., weather closures, events, travel delays, etc.) or provide the contractor inspectors at least a seven-day notice otherwise.

Additional Guidance or Reference: The COR will coordinate the location (Regional Office) of the training sessions with the contract inspectors. The hosting Regional Office shall ensure all the sessions are broadcasted and recorded.

The Training will be based on presentation of case studies that involve instructive inspection related elements in the respective topical areas shown in Table 1 above.

Training Approach

1. The BAA SME will coordinate with the regional office to identify specific focus areas for the topics in Table 1. The need for travel for this coordination to the regional office is not anticipated but can be arranged at if determined to be necessary.
2. The basic format is to provide five, 50-minute, experience-based case studies over a nominal 8-hour training day for presentation to the NRC regional inspection staffs.: The general agenda should be as follows:
 - a. 0830-0930 Case Study Session 1
 - b. 0930-0945 Break
 - c. 0945-1045 Case Study Session 2
 - d. 1045-1100 Break
 - e. 1100-1200 Case Study Session 3
 - f. 1200-1330 Lunch
 - g. 1330-1430 Case Study Session 4
 - h. 1430-1445 Break
 - i. 1445-1545 Case Study Session 5
 - j. 1545 – Adjourn Open discussion & questions
3. The initial proposal travel estimate will be based on 10 individual trips to/from the respective regional offices; travel costs can/will be reduced should scheduling permit consecutive scheduling of sessions for individual SMEs.
4. The training schedule will be developed based on the individual SME availabilities and the number of SMEs and the corresponding travel and course presentation related labor, transportation, lodging and M&IE will be adjusted (downward) accordingly.
5. Training material development is estimated based upon the following bounding terms with actual labor and expenses per case study to be based on actual hours worked and limited on an “not-to-exceed” basis considering, as a minimum the following activities:
 - a. The following activities will be accomplished by the BAA staff indicated in parentheses for each. Specific estimates for each activity will be provided by BAA and approved by NRC and the activities will be billed to the contract as direct labor hours plus any travel & living expenses per the contract terms.
 1. SME coordination with regional office to determine NRC staff content preferences and collaborate on training objectives. NRC to provide applicable NRC training standards for material to be delivered [SME + BAA Staff Support]

2. Develop case study outlines including proposed inspection techniques and obtain regional staff email concurrence [SME + BAA Staff Support]
3. Prepare draft PowerPoint presentation including development of text; graphics, handout materials if appropriate [SME + BAA Staff Support]
4. Obtain copyright/ownership authorization for use of graphics and/or handout materials as needed [SME + BAA Staff Support]
5. Prepare final draft, clean copy PowerPoint presentation in NRC required format [SME + BAA Staff Support]
6. Coordinate review of resolution draft by the COR (and RTLs?); resolve comments and resubmit [SME + BAA Staff Support]
7. Make final copy adjustments and deliver material to regional office [SME + BAA Staff Support]
8. Prepare for classroom presentation; finalize talking points & notes [SME]
9. Travel to regional office [SME]
10. Regional office training day(s) [SME]
11. Travel return to residence [SME]

Task 9 – Consulting Support

Standard: At the discretion of the RTL, the contractor inspector shall provide consultation regarding inspection techniques and disposition of issues applicable to the inspection.

Deliverable: The contractor inspectors shall provide remote consultation support by telephonic monitoring and participating in the daily NRC team meetings and, separately from the meetings, on demand as determined by the RTL. The contractor shall provide, at a minimum, consultation support to the team applicable to the inspection such as:

- Insight into any issues or questions posed by the NRC related to engineering principles and operational experiences as applicable. Examples include, guidance to the NRC on engineering issues, questions for the licensee, and any operational experience or previous known issues about the subject SSCs.
- Any professional opinions on specific inspection issues. An example includes a reasonableness of a calculation, associated analysis or evaluation.

The RTL will coordinate the sharing of information needed by the contractor inspector to assist the NRC inspector.

Due: The contractor inspector shall provide team meeting support of up to 2 hours per day for the onsite inspection days and be on call to support the team at the discretion of the RTL. The total hours of support, consisting of on-call and meeting support, will be minimum 10 hours to a maximum 30 hours during normal NRC core hours (7:30 am to 5:00 pm). When contacted by RTL, the contractor inspector shall respond by the next business day.

The contractor shall provide to the COR documentation of conversations with the RTL and the general subject matter; this may be accomplished via e-mail. All written notes documenting the contractor inspector's results shall be accurate, legible, and contain no spelling or grammatical errors.

Additional Guidance or Reference: For remote consultations the RTL shall initiate communication with contractor inspectors by telephone or e-mail.

OBJECTIVES

- Provide 50-minute, experientially based training sessions for presentation to the NRC regional inspection staffs using a case study approach based on the SME's experience. Examples of Case Studies are in Appendix 1 of Enclosure A, "Typical Topics for Inclusion in Training." *The fundamental element of the training objective is to transfer the SME's knowledge of how to evaluate the DBA/ relevant topics effectively.*
- - For each NRC-identified topical area draw on your experience in doing design basis inspections to discuss
 - performance-based inspection techniques for the subject areas addressed by IP71111.21M;
 - key design basis and performance considerations for those subjects;
 - previously identified significant safety and compliance issues and what contributed to their identification.
 - The sessions should address each sub-topic listed in Table A-1 below at least at the level of discussion key inspection approaches, methods, techniques:

Table A-1: Training Topics

Regions	1	2	3	4
Day 1	HVAC and fan design and testing inspection techniques	Seismic supports and Structural Design inspection techniques	Pump and Motor design and flow testing inspection techniques	Electrical protection and coordination inspection techniques - circuit breakers, fuses, relays, design maintenance testing inspection techniques
Day 2	Heat exchanger & cooling tower design and testing inspection techniques	Equipment Protection for Internal and External Hazards (cranes) inspection techniques	Valve design and O & M testing (flow design & balancing, open/close timing, IST) inspection techniques	EDG electrical inspection techniques - ESF sequencing load shedding/TSSRs/Generator (Field flash/power output/frequency) inspection techniques
Day 3	EDG mechanical (Fuels, oil, tank inspections, SA & CA reqts.) inspection techniques	NONE	IA/Compressed Air (usage requirements, air receiver and system inspection & maintenance) techniques	I & C (Digital I & C/EQ/total loop uncertainties, time testing, installation, maintenance. design, calibration & inspection techniques

- The attendees should have a basic knowledge of the systems, structures, components and/or activities (no “basic-level” technical training is needed)
- Multiple case study topics per session are acceptable. See sample outline in Appendix 2 of Enclosure A, “Sample 1 Day Presentation Approach,” for an example outline.
- The case studies and presentation material should include:
 - A summary or overview of key SSC or activities and their safety-sensitive attributes and historical perspectives relevant to the NRC-identified topical area and case study content; as described in IP7111.21M and its Appendices A and B.
 - Effective approaches to evaluation of the case study topics in the inspection process, for example:
 - The approach to review conformance with the design bases and analyses; outstanding design issues, modifications, etc., reflecting the IP7111.21m section 02 inspection requirements;
 - Inspection methods to achieve a highly effective evaluation of the design and related attributes reflective of the inspection requirements;
 - The relation of the methods to previously identified safety issues, compliance issues, generic issues; including inspection method lessons-learned; and,
 - A summary of the performance- and compliance-based significance of the case study examples in the context of the ROP

The terms Inspection methods or techniques are intended to be defined by their simple reading.

Explain your approach to evaluating the topical areas, how you prioritize what to look at, e.g. which kinds of documents or field observations, interview subjects and questions, etc.

Explain how to evaluate the objects of your review, e.g., calculations, specifications, drawings, tests & their results, complex analyses, etc.

FORMAT

- The training will be presented in a MS PowerPoint (PPT) format; this package represents the content and the BAA office will separately provide a PPT template file.
- The training will be presented:
 - To classroom groups at each regional office
 - With 2-3 training days in the same week per office
 - Covering multiple subjects
 - In accordance with a schedule as shown below (subject to NRC approval).
- The in-region training sessions will be broadcast to the other regions via Skype, Go-To Meeting or NRC’s WEBEX video system.

Figures, photos, document excerpts that are not in the public domain (i.e. are subject to copyright or trademark regulations) must be attributed to their owners and receive the owner’s permission for use where appropriate.

The PPT slides will include the key points of the discussion per the objectives above including figures, document excerpts, etc. that are important to the training. The PPT “notes” section will include the SME’s amplifying talking points in a manner that could enhance the understanding of a future reader.

OUTLINE

- Set the Stage = Overview of SSC or Activity to be discussed
 - Description of the SSC(s) or activity(ies) that you’ll be presenting
 - Their applicable regulatory and safety analyses frameworks (not necessarily in the order to be presented – your discretion), e.g. applicable
 - General Design Criteria
 - Applicable design bases and safety functions involved
 - Other applicable NRC requirements and guidance
 - SSC configuration or condition
 - External or natural events as factors
- **Describe Key Inspection Considerations, Methods & Review Techniques**
 - What to look at:
 - Key design basis documentation
 - How to prioritize what gets reviewed
 - How to prioritize what gets follow-up
 - How to frame the results vis a vis the regulatory and safety analysis frameworks
 - How to look at the:
 - Design calculations
 - Drawings
 - Specifications
 - Modifications
 - Operating & test procedures and associated performance data
 - Maintenance & calibration procedures and associated performance data
 - Field observations
- **Summarize & Close with Key Messages Repeated**

The following are summaries of previously identified inspection issues. They are intended to be examples of potential presentation content and discussions as part of the Knowledge Transfer training. They are provided as examples and their inclusion in the training material and the form of that inclusion are at the discretion of the RTL and the BAA SME. The examples below only reflect the kind of topics to consider and are not intended to either require their specific inclusions nor to constrain your use of other similar cases.

In the cases below the issues identified were more safety significant and resulted in the performance of operability evaluations and more extensive corrective actions by the licensees, as well as appropriate enforcement action by the NRC.

Electrical System Capability – Multiple NPPs

Several electrical design and operational issues were identified related to various aspects of electrical system design and maintenance, including motor starting studies, control circuit voltage, procedures for offsite power availability, and maintenance and testing of electrical equipment. Many of the issues identified related to degraded voltage protection and availability of offsite power that supported the NRC's publication of Regulatory Issue Summary (RIS) 2011-12, "Adequacy of Station Electric Distribution System Voltages," in late 2011. The RIS refers to findings that the BAA team documented at D.C. Cook, Fermi, Palo Verde, and Peach Bottom. These examples required licensee action to demonstrate compliance with General Design Criteria (GDC) 17 of 10 CFR Part 50, Appendix A.

DC Cook AFW NPSH and Volume

At the D.C. Cook CDBI, the licensee could not demonstrate by analysis that there would be sufficient water volume in the CST if AFW pumps in both units are aligned (cross-tied) to one CST as allowed by plant procedures. The licensee's corrective action included verifying the CST contained a sufficient volume of water for adequate NPSH and to prevent vortexing in support of operation of both units' AFW pumps. Also, the licensee-initiated actions to perform a formal calculation to increase the available water volume in the CST when the units are cross-tied. The finding was more than minor because the failure to adequately evaluate the CST water volume when cross-tied could have led to an insufficient useable volume in the CST preventing the auxiliary feedwater system from performing its function. This could have affected the mitigating systems cornerstone objective of design control.

Ft. Calhoun Flooding

From August 9, 1973, to September 8, 2009, Ft. Calhoun failed to prescribe instructions in their procedures that would ensure that the plant could be safely shutdown at the probable maximum flood elevation of 1009.3 feet mean sea level. The licensee's updated safety analysis report, technical specifications, and station procedures state that protection of the raw water pumps against flooding up to the probable maximum flood height of 1009.3 feet mean sea level is accomplished by sandbag berms and flood gates. During an intake structure walk down, two unsealed, 14-inch diameter fire protection piping penetrations in the outer wall were observed, with the bottom of the penetration at elevation 1008.5 feet mean sea level. The penetrations had an air gap of about 1/2-inch between the wall and the pipe. After reviewing station procedures, it was determined that the unsealed penetrations would not be sealed during flooding conditions. As a result, the licensee verified that there were no other open penetrations in the building walls below the flood level of 1009.3 feet mean sea level and changed procedures to provide temporary sealing of the penetrations if predicted floods occurred before the permanent seals were installed. This deficiency adversely affected the Mitigating

Systems Cornerstone attribute of external events and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The plant was subsequently challenged by extended periods of river flooding.

Comanche Peak AFW NPSH

An issue involved the failure to adequately evaluate and respond to industry operating experience. The licensee had previously received relevant information provided by the manufacturer of the Unit 1 and 2 condensate storage tank diaphragms regarding actions necessary to ensure the tanks' diaphragm integrity would be maintained. However, the licensee failed to enter the issue into the corrective action program as required. In addition, the licensee subsequently received additional industry-operating experience regarding a condensate storage tank diaphragm failure at another facility and again failed to take action. This resulted in the diaphragms' susceptibility to failure, which could cause a loss of suction to all three auxiliary feedwater pumps. The failure to incorporate relevant operating experience information into station instructions, procedures, or drawings as needed to maintain the condensate storage tank diaphragm in a configuration where its performance during accident conditions would preclude blockage of the suction pipes to the auxiliary feedwater. This finding was of more than minor significance because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined that the finding represented the degradation of equipment and functions specifically designed to mitigate the loss of feedwater and that during an event the loss would degrade or make inoperable all three of the auxiliary feedwater pumps. Therefore, the finding was potentially risk significant and was of low to moderate safety significance (White). This finding has a crosscutting aspect in the area of human performance and work practices, because the licensee did not define and effectively communicate expectations regarding procedural compliance and personnel following procedures involving evaluation of operating experience.

ANO 50.9 Issue

At the Arkansas Nuclear One an inspection identified a violation of 10 CFR 50.9, "Completeness and Accuracy of Information," which states in part that information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects. The licensee's response to Generic Letter 2007-01, "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients," did not accurately describe the licensee's programs and activities for detection of the degradation of inaccessible or underground power cables that support emergency diesel generators, offsite power, essential service water, service water, component cooling water, and other systems. The inspection found that there was no evidence that these had ever been periodically or routinely inspected for Unit 1 as the licensee had asserted; it was subsequently determined that the inspections had not been performed for either unit. The finding was more than minor because the information was material to the NRC's decision-making processes.

Watts Bar - AFW Pumps NPSH

Design calculation EPMJKJ011191 evaluated the available NPSH to the AFW pumps. Our specialist's review of the calculation revealed it failed to evaluate the available NPSH for each AFW pump during the most limiting process where suction is swapped from the Condensate Storage Tank (CST) to ERCW. The licensee performed an analysis to reevaluate analysis conservatisms and re-determine the NPSH during the swap-over process. While the required NPSH was apparently satisfied, the margin was reduced from 12.07 feet to 3.16 feet. However, the calculation inappropriately assumed that Unit 2 was still in construction and therefore failed to evaluate effects of shared ERCW train flow effects on the Unit 1 AFW system with Unit 2 operational again potentially reducing the available NPSH below acceptable values.

Sequoyah - Effects of a Design Basis Tornado

The intake and exhaust fire dampers in all diesel generator rooms were not designed to withstand a high air flow rate, e.g., portions of these dampers had previously failed by the normal start of a second exhaust fan. Several issues were identified with respect to a near-passing tornado and the operability of the EDG room dampers:

- A tornado will cause a high differential pressure across these dampers, thereby creating a much greater rate of air flow across the inlet and outlet openings of the ventilation system. Since the intake and exhaust fire dampers at each EDG bay have not been analyzed to withstand the high rate of air flows and the turbulence resulting from a passing tornado, they are expected to fail closed and completely block all air flow to each EDG room, the only means for EDG room cooling.
- Additionally, the exhaust fans, the dampers for each EDG Bay exhaust fan, and each EDG exhaust fan ductwork and fan housing are also not designed or analyzed to withstand the effects of a passing tornado.
- Furthermore, the EDG crankcase over-pressure trip device will lock out the EDG start logic upon depressurization by a tornado and maintain the start logic locked out during an emergency start because it is designed to actuate at 1-inch W.G. Efforts to bypass the start lock out device will also fail because the steps in procedure to disable it are not written in the correct order.
- Moreover, one tornado could potentially cause failure of all the SQN EDGs as all the EDG bays are in the same building

Because of the finding the licensee took the following compensatory measure actions:

1. SQN manufactured and staged 32 blocking devices to be installed upon the occurrence of tornado watch (following a specially written procedure) where they are to be attached to the grid located in each EDG room above the inlet and outlet fire dampers, protruding into each fire damper, thereby preventing its undesirable closure;
2. Upon a notification of a tornado watch an access hatch at the outlet side of the exhaust fan in each EDG room will be opened to minimize the pressure differential across the duct and fan exhaust damper; and
3. Upon a notification of a tornado warning or whenever a tornado is seen near the plant, all EDGs will be started as a precautionary measure.

St. Lucie - Gravity Dampers Unable to Perform Their Safety Function

Unit 1 Electrical Equipment Rooms (EER) Supply Fans HVS-5A and 5B are equipped with gravity dampers whose safety function is to close when the associated fan does not operate in order to

prevent short circuiting the air flow, available from the operating fan. The EER consists of the A Switchgear room, the B switchgear room, the Static Inverter room, the cable Spreading room, and the two Battery rooms.

- While a work order documented that the dampers could not be closed, it documented the determination that the condition did not affect fan performance.
- Similar work was performed on sister damper 5B with similar results. However, the closure of the dampers is a safety related function required for cooling of the EER upon loss of a fan.
- The plant staff efforts to demonstrate adequate flow with one fan and the deficient damper condition and, separately, to manually close the dampers by applying force to their counterweights were unsuccessful, resulting in insufficient EER flow.

It was also found that the EER HVAC Computer Model data, does not show any margin to the design temperature limits even when the dampers are assumed to operate properly, e.g., Room 3 reaches a temperature of 106°F where the maximum design temperature is 104°F. Furthermore, the inspector determined that each time the “short-circuited” air reenters the suction side of the operating fan, it picks up additional 2.3°F. Also, PSL extended the fan and damper maintenance frequency to once every six years such that these dampers were not scheduled for inspection or maintenance until the 2018 refueling outage. Because of this discovery, PSL took the following compensatory actions:

1. Fabricate two blind plates to be installed in place of the non-functioning gravity dampers;
2. Replace the fasteners affixing the discharge duct to the expansion joints so the blank plates can be installed quickly;
3. pre-stage the blind plates with a toolbox inside the supply fans plenum;
4. install a pitot tube in one of the discharge ducts and send an operator to monitor the duct

Multiple Sites – Post-accident/Post-event electrical system capabilities in post-accident loading, undervoltage or other fault conditions

There have been many issues identified in which design basis performance capabilities had not been confirmed to demonstrated for Class 1E inverters, batteries, medium and low voltage switchgear, EDGs, motor operated valves, and similar equipment required to operate. For example, at South Texas, the licensee had not confirmed by either analysis or testing that NSSS instrumentation was capable of sustained operation at the minimum battery and inverter output conditions. In other cases, equipment failures were not recognized by surveillance testing or equipment failures were not adequately corrected. Findings were made at Comanche Peak, South Texas, Diablo Canyon, Farley, Columbia, Vogtle, DC Cook, Davis-Besse, Hope Creek, and Palo Verde.

Indian Point – EDGs Vulnerable to Non-seismic Transmission Towers Carrying Off-Site Power

Transmission tower W is in close proximity to the RWST and to the building housing all three Emergency Diesel Generators (EDGs). The transmission tower V was similarly located in very close proximity to the opposite side of the building housing the EDGs. The seismic analysis records for the transmission towers were requested but not available. The licensee advised that all the transmission towers were designed for were high wind conditions.

As a result of this finding, the plant’s engineering staff initiated a non-safety related evaluation of the W tower by a third party. Preliminary results of the tower evaluation indicated that seismic effects on the tower were significant and warranted further analysis in that their forces on the tower were substantially greater than the analyzed wind forces and did not take into account the failure of the V transmission tower which was also Moreover, failure of either tower which carry the 138KV off site

power would also render the three EDGs located within their fall projections inoperable. The licensee intended to proceed with the necessary safety-related analyses to evaluate the towers' acceptability.

Watts Bar – Common Service Station Transformer Capacity

From July 2010 to January 2015 TVA had reported to NRC on multiple occasions that two common service station transformers could be counted on as qualified sources of offsite power to be used for accident mitigation. However, an inspection determined that the transformers lacked the capability to meeting the requirements of GDC 17 for post-accident conditions. During the 2010 construction licensing phase of Unit 2 and in a license amendment request (LAR) for Unit 1, the licensee credited an analysis (EDQ00099920070002) that had been performed to support the use of CSST A or B as a credited offsite power source. The licensee stated that this analysis demonstrated that when CSST A or B was electrically aligned (or capable of being aligned via a bus transfer), the CSST (A or B) also satisfied the GDC 17 required design and licensing bases for offsite power for Units 1 and 2, with CSSTs C and D remaining the preferred offsite power sources. The inspectors noted that in some configurations one of the station's 6.9 kV safety-related shutdown boards could be aligned to a unit station service transformer (USST). If a trip of the main turbine were to occur in this alignment, the station's electrical power system would result in an automatic "fast bus transfer" whereby the USST's safety related loads would transfer after a fixed time delay to either CSST A or B. The CSST (A or B) would be the source of electrical power during transient and steady-state conditions following the transfer and should have the capacity and capability to mitigate the consequences of postulated events as delineated in design and licensing basis of the station for dual unit operation. the station staff discovered that the "fast bus transfer" design feature was not accurately included in their analysis (as described to the NRC in various submittals).

Consequently, since July 2011, the licensee had not implemented design control measures to verify or check the adequacy of the design. Specifically, an evaluation was improperly omitted from calculation EDQ00099920070002 which resulted in an inadequate determination of the voltage response during the transfer from a USST to CSST A or B and resulted in the materially incorrect submittals to NRC.

TOPIC

Region IV Day 1 -Electrical - Electrical protection and coordination inspection techniques - circuit breakers, fuses, relays, design maintenance testing inspection techniques

Discuss electrical systems, key safety & compliance considerations, prior inspection issues and how they were found, generic issues, etc.

For power systems do a virtual presentation walkthrough using the power-flow from offsite power through normal and accident power flow paths identifying key design basis considerations, applicable inspection techniques, and prior issues/histories:

- Offsite power and switchyard credited capabilities
- IE Transformers & 4160VAC Systems & Loads
- EDGs
- 480V Loads

Issues & Inspection Techniques

- Accident & Event Vulnerabilities
- Sizing & capacities
- Voltage Drops
- Undervoltage performance
- Loading & Trip schemes
 - Thermal OL bypasses, etc.
 - Transient Volt/Freq issues
 - Equipment aging issues

Lessons Learned & History

- Generic Communications
- ROP Issues
- Enforcement Issues

SECTION D - PACKING AND MARKING

D.1 NRCD020 BRANDING

The Contractor is required to use the statement below in any publications, presentations, articles, products, or materials funded under this contract task 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 Reactor Regulation, under Contract task order number 31310018D0011 / 31310020F0015.

(End of Clause)

D.2 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: None.

(End of Clause)

SECTION E - INSPECTION AND ACCEPTANCE

E.1 CONTRACTING OFFICER'S REPRESENTATIVE (COR) AUTHORITY

1. The COR for this task order is:

[REDACTED]

2. Performance of the work under this task order is subject to the technical direction of the NRC COR. The term "technical direction" is defined to include the following:

- i. 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 Performance Work Statement (PWS) or changes to specific travel identified in the PWS), fills in details, or otherwise serves to accomplish the contractual PWS.
- ii. Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.
- iii. Review and, where required by the task order contract, approval of technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

3. Technical direction must be within the general statement of work stated in the task order. The COR does not have the authority to and may not issue any technical direction which:

- i. Constitutes an assignment of work outside the general scope of the contract.
- ii. Constitutes a change as defined in the "Changes" clause of this contract.
- iii. 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.
- iv. Changes any of the expressed terms, conditions, or specifications of the contract.
- v. Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. In addition to providing technical direction as defined in paragraph (b) of the section, the COR shall:
 - a. Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the Contracting Officer changes in requirements.
 - b. Assist the contractor in the resolution of technical problems encountered during performance.
 - c. 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.
 - d. Assist the contractor in obtaining the badges for the contractor personnel.
 - e. Immediately notify the Security Branch, Division of Facilities and Security (SB/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return of any NRC issued badge to SB/DFS within three days after their termination.

- f. Ensure that all contractor employees that require access to classified Restricted Data or National Security Information or matter, access to sensitive unclassified information (Safeguards, Official Use Only, and Proprietary information) access to sensitive IT systems or data, unescorted access to NRC controlled buildings/space, or unescorted access to protected and vital areas of nuclear power plants receive approval of SB/DFS prior to access in accordance with Management Directive and Handbook 12.3.
- g. For contracts for the design, development, maintenance or operation of Privacy Act Systems of Records, obtain from the contractor as part of closeout procedures, written certification that the contractor has returned to NRC, transferred to the successor contractor, or destroyed at the end of the contract in accordance with instructions provided by the NRC Systems Manager for Privacy Act Systems of Records, all records (electronic or paper) which were created, compiled, obtained or maintained under the contract.

SECTION F – DELIVERIES OR PERFORMANCE

F.1 NRCF010 PLACE OF DELIVERY-REPORTS

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

a.

[REDACTED]

b. Name: Jeffrey Mitchell (1 Electronic Copy)
Contract Specialist (CS)
Address: Jeffrey.Mitchell@nrc.gov

(End of Clause)

SECTION G – CONTRACT ADMINISTRATION DATA

G.1 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 the Department of the Interior at NRCPayments@nrc.gov. If the contractor submits a hard copy of the invoice, it shall be submitted to the following address:

NRC Payments

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

(End of Clause)

G.2 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC PAYMENT/REMITTANCE ADDRESS (AUG 2011)

The Debt Collection Improvement Act of 1996 requires that all Federal payments except IRS tax refunds be made by Electronic Funds Transfer. It is the policy of the Nuclear Regulatory Commission to pay government vendors by the Automated Clearing House (ACH) electronic funds transfer payment system. Item 15C of the Standard Form 33 may be disregarded.

SECTION H – SPECIAL CONTRACT REQUIREMENTS

H.1 2052-215-70 KEY PERSONNEL (JAN 1993)

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

Name	Labor Category
[REDACTED]	Electrical
[REDACTED]	Electrical
[REDACTED]	Electrical
[REDACTED]	Electrical
[REDACTED]	Electrical
[REDACTED]	Mechanical
[REDACTED]	Mechanical
[REDACTED]	Mechanical
[REDACTED]	Mechanical

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.

(End of Clause)

H.2 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), nonozone 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.

(End of Clause)

H.3 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.

(End of Clause)

H.4 NRCH400 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS

Review and Approval of Reports

(a) Reporting Requirements. The contractor/grantee shall comply with the terms and conditions of the contract/grant regarding the contents of the draft and final report, summaries, data, and related documents, to include correcting, deleting, editing, revising, modifying, formatting, and supplementing any of the information contained therein, at no additional cost to the NRC. Performance under the contract/grant will not be deemed accepted or completed until it complies with the NRC's directions. The reports, summaries, data, and related documents will be considered draft until approved by the NRC. The contractor/grantee agrees that the direction, determinations, and decisions on approval or disapproval of reports, summaries, data, and related documents created under this contract/grant remain solely within the discretion of the NRC.

(b) Publication of Results. Prior to any dissemination, display, publication, or release of articles, reports, summaries, data, or related documents developed under the contract/grant, the contractor/grantee shall submit them to the NRC for review and approval. The contractor/grantee shall not release, disseminate, display or publish articles, reports, summaries, data, and related documents, or the contents therein, that have not been reviewed and approved by the NRC for release, display, dissemination or publication. The contractor/grantee agrees to conspicuously place any disclaimers, markings or notices, directed by the NRC, on any articles, reports, summaries, data, and related documents that the contractor/grantee intends to release, display, disseminate or publish to other persons, the public, or any other entities. The contractor/grantee agrees, and grants, a royalty-free, nonexclusive, irrevocable worldwide license to the government, to use, reproduce, modify, distribute, prepare derivative works, release, display or disclose the articles, reports, summaries, data, and related documents developed under the contract/grant, for any governmental purpose and to have or authorize others to do so.

(c) Identification/Marking of Sensitive Unclassified Non-Safeguards Information (SUNSI) and Safeguards Information (SGI). The decision, determination, or direction by the NRC that information possessed, formulated or produced by the contractor/grantee constitutes SUNSI or SGI is solely within the authority and discretion of the NRC. In performing the contract/grant, the contractor/grantee shall clearly mark SUNSI and SGI, to include for example, OUO-Allegation Information or OUO-Security Related Information on any reports, documents, designs, data, materials, and written information, as directed by the NRC. In addition to marking the information as directed by the NRC, the contractor shall use the applicable NRC cover sheet (e.g., NRC Form 461 Safeguards Information) in maintaining these records and documents. The contractor/grantee shall ensure that SUNSI and SGI is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. The contractor/grantee shall comply with the requirements to mark, maintain, and protect all information, including documents, summaries, reports, data, designs, and materials in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954 as amended, its implementing regulations (10 CFR 73.21), Sensitive Unclassified Non-Safeguards and Safeguards Information policies, and NRC Management Directives and Handbooks 12.5, 12.6 and 12.7.

(d) Remedies. In addition to any civil, criminal, and contractual remedies available under the applicable laws and regulations, failure to comply with the above provisions, and/or NRC directions, may result in suspension, withholding, or offsetting of any payments invoiced or claimed by the contractor/grantee.

(e) Flowdown. If the contractor/grantee intends to enter into any subcontracts or other agreements to perform this contract/grant, the contractor/grantee shall include all of the above provisions in any subcontracts or agreements.

(End of Clause)