AWARD/CONTRACT

1. THIS CONTRACT IS RATED ORDER UNDER DPAS (15 CFR 350)	RATING N/A	PAGE 1	OF	PAGES 57

2. CONTRACT NO. (Proc. Inst. Ident.) NRC-04-06-050	3. EFFECTIVE DATE See Block 19c.	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. RES-05-052

5. ISSUED BY CODE 3100	6. ADMINISTERED BY (If other than Item 5) CODE 3100
U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Jeffrey R. Mitchell, 301-415-6465 11545 Rockville Pike, Mail Stop T-7-I-2 Rockville MD 20852	U.S. Nuclear Regulatory Commission Div. of Contracts Mail Stop T-7-I-2 Washington, DC 20555

7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, State and ZIP Code)

APPLIED PROGRAMMING TECHNOLOGY INC
ATTN: KENNETH JONES

84 LONG VIEW DR

BLOOMSBURG PA 178157006

CODE   Contractors DUNS: 092982854   FACILITY CODE

8. DELIVERY

☐ FOB ORIGIN   ☐ OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT

10. SUBMIT INVOICES   ITEM
(4 copies unless otherwise specified)
TO THE ADDRESS SHOWN IN:

11. SHIP TO/MARK FOR CODE	12. PAYMENT WILL BE MADE BY CODE 3100
U.S. Nuclear Regulatory Commission Washington DC 20555	U.S. Nuclear Regulatory Commission Payment Team, Mail Stop T-7-I-2 Attn: (NRC-04-06-050) Washington DC 20555

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:	14. ACCOUNTING AND APPROPRIATION DATA RES-C06-345
☐ 10 U.S.C. 2304(c)( ) ☐ 41 U.S.C. 253(c)( )	66015111205 Y6851 252A 31x0200.660 Obligate $300,000.00

15A. ITEM NO	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	The Contractor shall provide the U.S. Nuclear Regulatory Commission (NRC) with services as described in Section C "Statement of Work" and in accordance with the terms and conditions of this contract. ORCA.GOV incorporated by reference.				

15G. TOTAL AMOUNT OF CONTRACT $34x,76l.l5

16. TABLE OF CONTENTS   See Attached Table of Contents

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				**PART II - CONTRACT CLAUSES**	
	A	SOLICITATION/CONTRACT FORM			I	CONTRACT CLAUSES	
	B	SUPPLIES OR SERVICES AND PRICES/COSTS				**PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.**	
	C	DESCRIPTION/SPECS./WORK STATEMENT			J	LIST OF ATTACHMENTS	
	D	PACKAGING AND MARKING				**PART IV - REPRESENTATIONS AND INSTRUCTIONS**	
	E	INSPECTION AND ACCEPTANCE			K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
	F	DELIVERIES OR PERFORMANCE					
	G	CONTRACT ADMINISTRATION DATA			L	INSTRS., CONDS., AND NOTICES TO OFFER	
	H	SPECIAL CONTRACT REQUIREMENTS			M	EVALUATION FACTORS FOR AWARD	

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. ☒ CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return __2__ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)	18. ☐ AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.

19A. NAME AND TITLE OF SIGNER (Type or print)	20A. NAME OF CONTRACTING OFFICER
Kenneth R Jones, President	Donald A. King Contracting Officer
19B. NAME OF CONTRACTOR BY _____ (Signature of person authorized to sign)	19C. DATE SIGNED 8/8/06	20B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	20C. DATE SIGNED 8/3/2006

STANDARD FORM 26   REV. (4-85)

Table of Contents

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 PROJECT TITLE

The title of this project is as follows:

. SNAP MAINTENANCE AND DEVELOPMENT

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

The Symbolic Nuclear Analysis Package (SNAP) is a graphical user interface system designed to support NRC Nuclear analysis codes. Under this contract, the contractor will: (1) maintain and modify the SNAP user interface code in a manner consistent with the current code design and general coding practices for SNAP; (2) maintain compatibility with current versions of the SNAP supported analytical codes: RELAP5, TRACE, CONTAIN, MELCOR, FRAPCON, and FRATRAN; and (3) maintain and improve the SNAP code documentation and help system to ensure that it is current with the current

B.3 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988) ALTERNATE I (JUN 1991)

(a) (BASE YEAR) The total estimated cost to the Government for full performance of this contract is $342,961.15, of which the sum of $311,782.86 represents the estimated reimbursable costs, and of which $31,178.29 represents the fixed fee.

(b) There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of cost for performance of the work under this contract and the actual cost for performance of that work.

(c) The amount currently obligated by the Government with respect to this contract is $300,000.00, of which the sum of $272,727.27 represents the estimated reimbursable costs, and of which $27,272.73 represents the fixed fee.

(d) It is estimated that the amount currently allotted will cover performance through June 2007.

(e) (OPTION YEAR 1) The total estimated cost to the Government for full performance of Option Year 1 is $378,760.92, of which the sum of $344,328.11 represents the estimated reimbursable costs, and of which $34,432.81 represents the fixed fee.

(f) (OPTION YEAR 2) The total estimated cost to the Government for full performance of Option Year 2 is $374,411.94, of which the sum of $340,374.49 represents the estimated reimbursable costs, and of which $34,037.45 represents the fixed fee.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

OFFICE OF NUCLEAR REGULATORY RESEARCH
RFPA RES-05-052
DRAFT STATEMENT OF WORK

TITLE: SNAP Maintenance and Development

A.   BACKGROUND

The Symbolic Nuclear Analysis Package (SNAP) is a graphical user interface system designed to support U.S. Nuclear Regulatory Commission (NRC) nuclear analysis codes. SNAP includes pre- and post-processor components allowing code specific models to be built, exported, submitted to the analysis code, then receiving the output from the analysis code and displaying the results in a user-friendly fashion. SNAP is written primarily in Java, although some aspects of the post-processor component are written in C. SNAP is designed to be object-oriented and extensible. Currently, SNAP supports the following NRC-developed analytical codes: TRAC/RELAP (Reactor Leak And Power safety excursion code) Advanced Computational Engine (TRACE), RELAP, Version 5 (RELAP5), CONTAIN, MELCOR, FRAPCON and FRAPTRAN. TRACE and RELAP5 are system-level thermal hydraulic codes. MELCOR is a system-level severe accident code. CONTAIN is a code used to predict containment response and associated phenomena. FRAPCON and FRAPTRAN are fuel phenomena codes.

The following component applications make up SNAP:

1.   Model Editor

The purpose of this application is to allow the analyst to create an input model (deck) using graphical tools. The model editor currently also has the ability to read and write RELAP5 American Standard Code for Information Interchange (ASCII) decks and read and write TRACE (Thermal-hydraulic Portable Restart and ASCII formats) decks. A deck that is read in (imported) will be parsed into model editor component objects and displayed on the model editor's canvas. The analyst may then edit the model using the model editor graphical tools and export it for use later.

Through the "animation model" plug-in, the model editor is also the primary application for viewing the results of an analytical code run. Using this application, the analyst may prepare a graphical "mask" that can then be used to display the results of the analytical code in a user friendly fashion. Both 2-D and 3-D masks are supported.

2.   Execution Monitor

The Execution Monitor is an application that manages the running of the analytical codes. This is a "wrapper" for the analytical codes that permits the other SNAP applications to access and interact with the analytical codes as they are running. "Runtime" plug-ins (JAR files) are used to encapsulate this functionality for each code.

3.   Configuration Tool

This tool is used to configure global options for the SNAP client applications. The Calculation and Database servers can also be configured and launched using this tool.

This tool contains a separate panel for Global Options, the Calculation Server, and the Database Server. The Calculation Servers configuration allows the user to set up any number of analytical codes running locally or on remote servers. Database server's configuration allows the user to specify connectivity to databases of results or experimental data.

4.   Job Status Tool

This tool is used to allow the user to see the current status of running analytical codes. Limited control over the running codes is also provided by this application.

5.   Analysis Code Graphing, Advanced Computation and Exploration of data (AcGrace)

Currently, this is the only application in SNAP that is not written in Java. AcGrace is actually an open source application that was modified to read and plot data for several NRC-sponsored analytical codes. AcGrace reads the files produced by the analytical codes and produces plots that can be saved as Portable Document Format (PDF), Scalable Vector Graphics (SVG), Maker Interchange Format (MIF), Postscript and several other formats suitable for publication applications.

6.   SNAP Database Server

The SNAP Database Server provides a platform independent persistent store for models and system configuration information. The SNAP Database Server provides a standardized interface to an embedded relational database management system (RDBMS). The server utilizes Derby, an open source pure-Java Structured Query Language (SQL) database that can be embedded into an application.

7. **Admin Tool**

The SNAP system administrator manages the system configuration information contained in the database using an administrative tool. The tool provides the ability to create users, manage projects, assign privileges and manage system tables.

8. **NRC Databank Server**

The NRC Databank Server is similar in function to the Execution Monitor in that it provides a source of data to the post-processor with the difference being that it works with experimental data as opposed to calculations. The post-processor applications connect to the server to obtain the list of all experimental facilities, the list of experiments available for a given facility, and the list of data channels available for a given experiment. Multiplexed or de-multiplexed data sets can then be retrieved for a selected set of data channels and time ranges.

9. **Calculation Archive Server**

Calculations run on an Execution Monitor may be archived to the SNAP Archive server for long-term retention using the Job Status Tool. The post-processor applications may connect to this server to access archived data sets.

B. OBJECTIVES

1. To maintain and modify the SNAP code in a manner consistent with the current code design and general coding practices for SNAP (specified below).

2. To maintain compatibility with the current versions of the SNAP-supported analytical codes: RELAP5, TRACE, CONTAIN, MELCOR, FRAPCON and FRAPTRAN.

3. To maintain and improve the SNAP code documentation and help system to ensure that it is current with the current code capabilities.

C. TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

The performance of this work scope requires very specialized knowledge on the SNAP code including its code architecture, programming details, and/or its usage. Personnel working on this project shall have an engineering degree or equivalent and shall have experience on programming and usage of the SNAP code (or a code similar to SNAP in terms of being Java-based and having an extensible user interface). Also, personnel working on this project shall demonstrate a complete understanding of (and preferably experience with) a "pluggable" code design and have experience with at least one other (not SNAP) large Java-based application.

4

D. SCOPE OF WORK

General Requirements for SNAP Code Development

1. Code quality assurance procedures outlined in "Software Quality Assurance Procedures for NRC Thermal Hydraulic Codes, NUREG-1737," will be used as a guide (available online through the ADAMS system: ML010170081 at http://www.nrc.gov/). "Software Requirements Specifications (SRS)" and "Software Design and Implementation Documents (SDID)," shall be prepared. Project Officer (PO) approval of these documents must be granted to the contractor before code work (for each code development task) is initiated. Testing shall be performed as approved in the SRS.

2. SNAP is to be maintained in the current version of the Java language.

3. SNAP support of user codes must be implemented using a "plug-in" design. By plug-in," it is meant that all Java codes specific to supporting any one analytical code is to be placed in its own "JAR" file and loaded into SNAP at runtime. Plug-in support is implemented separately for the post-processor and the pre-processor. This requirement is important to maintain SNAP's extensibility.

4. SNAP plug-ins must conform not only to the application interface (API) developed at Applied Programming Technologies, Inc. (APT), but also conform to the design patterns used by APT. Documentation for the SNAP API will be made available upon written request to the Contracting Officer. The source code for SNAP will NOT be released.

WORK UNDER BASE YEAR

Task 5. Application Testing and Distribution

1. SNAP plug-ins for analytical codes shall be tested to ensure that they can import and export the respective code input decks without causing changes in the calculated results. For each analytical code for which SNAP provides a plug-in, the contractor shall maintain and exercise a relevant suite of input decks to assure that the SNAP plug-in is performing input and output operations correctly. The contractor shall at least include in these test suites any decks that are provided by the PO. The contractor shall correct errors discovered in the associated SNAP plug-in during testing as necessary.

2. Maintain a multi-platform, SNAP installation package to support code distribution. SNAP is to be distributed from a website under strict control of the contractor. Access to the SNAP code is to be coordinated through the PO.

3. Evaluate and correct errors reported by the SNAP user community.

4. Maintain and extend SNAP User's manuals and help files to reflect any code changes. Automate linkage to analysis code documentation.

5. Provide User Support. Implement user-supplied requests for improvements as reviewed and approved by the PO.

Base year:
Completion date: One year after award of contract

Task 6. Maintain SNAP Capabilities

The supported analytical codes (MELCOR, CONTAIN, TRACE, FRAPCON/FRAPTRAN and RELAP5) are still undergoing modifications that will necessitate changes to their input format requirements. The contractor shall upgrade SNAP to fully support these modifications. The contractor shall maintain contact with the analytical code developers so that any changes can be identified and modifications made to the respective SNAP plug-in in a timely fashion. The PO shall be notified, either by letter or email, of any planned changes to any plug-in before such changes are actually made. Note that in cases where the analytical code has been updated or changed in a major way, the contractor may need to write an entirely new plug-in for the new version of the analytical code. If the need for an entirely new plug-in is encountered, the contractor shall not proceed to make changes to the existing plug-in, but instead inform the PO so that other actions may be planned.

Base year:
Completion date: One year after award of contract

Task 7. Provide Technical Support

This task provides technical support to the NRC. The work includes making presentations, attending meetings, reviewing technical reports, and providing technical consultation and support as requested by the PO. Also, this task is to provide support for "beta testers." "Beta testers" are SNAP users who are issued pre-release versions of SNAP for the purpose of evaluating SNAP in typical user environments (i.e., "real world" use of SNAP). Currently, there are about 30 beta testers for SNAP; however, only 5-10 are active.

Base year:
Completion date: One year after award of contract

Task 8. Develop SNAP User Interface Test Suite

6

The SNAP developer tests each SNAP plug-in with a suite of test models. However, the user interface does not get "tested" in this process. Therefore, SNAP versions can sometimes contain errors that don't show up until a user finds them through usage. To "catch" these problems and improve the quality of the SNAP interface, the contractor shall develop a set methodology to test the various user level aspects of SNAP. Current technology indicates that Graphical User Interface (GUI) systems, such as SNAP, can be "made" to be testable by splitting the functional part of the GUI away from the visual portion so that automated testing can be performed in batch mode. Indeed, much of the current SNAP GUI is already done in this fashion. The effort under this task includes:

1. The contractor shall design a testing framework for the SNAP graphical user interface that will permit batch (non-visual) testing of the entire SNAP user interface.

2. Once the testing framework has been designed and reviewed for completeness and suitability and approved by the PO via an email or letter, the contractor shall implement the test framework in SNAP.

3. After the test framework has been implemented in SNAP, the contractor shall develop a full-coverage test suite for the SNAP GUI. "Full-coverage" here means that every visual portion of the GUI shall be tested.

The testing framework and test suite shall be placed in the SNAP code repository and become part of the standard "build" procedure for SNAP. The full test suite will be run (at a minimum) before every public release of SNAP. Standard SNAP development requirements apply to this task. Therefore, SRS and SDID documents are required. Also, a report describing the content and use of the test suite/framework shall be prepared by the contractor and delivered to the PO upon completion of the test suite implementation.

Base Year:
Completion date: 5 months after award of contract

Task 9. SNAP User Interface Testing

The contractor shall use the test suite implemented in Task 4 of this contract to ensure that SNAP code integrity is maintained. Furthermore, the contractor shall add to the test suite any tests that are deemed necessary during the ongoing development of SNAP and SNAP plug-ins. Status of the results of using the test suite shall be documented for each of the public releases in a report to the PO.

Base year:
Completion date: One year after award of contract

Task 10.   Develop 3D Plotting Capability

3D surface plotting capabilities are needed for displaying kinetics information. The contractor shall identify the necessary parameters to plot through discussion with relevant analytical code users, code developers and the PO. Once the desired plot parameters are identified, the contractor shall develop a SRS and SDID describing the requirements and design for an application or plug-in, if determined more appropriate, the contractor can propose a modification to the existing animation plug-in. The product of this task is a fully functional user interface that provides a 3D plotting capability that meets the SRS stated goals. The implementation of the design shall be done in accordance with the general requirements for SNAP code development. The contractor shall test this plotting package on representative sets of data such as might be produced by the Purdue Advanced Reactor Core Simulator code and also with sets of data produced by the TRACE 3D vessel component. The data will be provided either by PO or other NRC contractors. The contractor shall correct any errors discovered during testing. The contractor shall provide a user's guide describing the use of this 3D plotting application.

Base year:
Completion date: 3 months after award of contract

Task 11.   Develop Java Based "Lightweight" Plotting Tools

Integration of the Java applications in SNAP with the C-based application, AcGrace, continues to cause problems with the installation of SNAP. For instance, under MS Windows XP, AcGrace installation requires the installation and configuration of a substantial software package called "CYGWIN." The CYGWIN installation is many times the size of SNAP itself. Also, AcGrace users who are familiar with the Windows XP graphical interface are often confused by the different style dialog boxes and file requesters that it presents. Therefore, it is desirable to have a fast and relatively lightweight plotting interface for SNAP with a consistent user interface that can be installed through the same installation procedure as SNAP itself. Such a package shall provide for the ability to plot directly from the animation view displays (navigator and 2D view) and the ability to batch process to write printable plot files.

The contractor shall develop an advanced plotting tool that integrates the above stated requirements. The contractor shall also determine what other requirements such a plotting package should have based on the current usage of AcGrace with SNAP. Again, this plotting tool may be its own Java application, or may be integrated directly into the existing animation plug-in (JavaBean interface). The implementation shall be done in accordance with the general requirements for SNAP code development.

Base year:
Completion date: One year after award of contract

Task 12.   Develop Advanced JavaBeans for the Animation Plug-in

8

The objects used to "build" an animation file mask are actually JavaBean components. In this work, the contractor shall design and add to the SNAP release package new JavaBeans that can be used for displaying complex data that may be produced by analytic code runs. Currently, one such JavaBean that is envisioned is a "core melt" JavaBean. This JavaBean will be able to display an animation of a melting core including material heat up, fuel and structure relocation, combustion that may be occurring, etc. The contractor shall design and implement such a "core melt" JavaBean and up to ten other JavaBean components. The documentation requirement for these JavaBean components is reduced from the normal SNAP development. In this case, the contractor shall provide a description and design for the component all in one document. The document need not follow the requirements as stated for the other SNAP development documents. However, the contractor shall not proceed with development of any such JavaBean component until the PO or technical monitor provides an email or letter providing approval of the design.

Base year:
Completion date: One year after award of contract

Task 13.   Model Editor User Interface Improvements

User interface issues have been identified by "beta testers" and NRC staff using the TRACE, RELAP5 and CONTAIN plug-ins. Some of the reported issues have been addressed some have not. It is anticipated that many more user interface changes and improvements will be required after SNAP version 1.0 is released (expected in early 2006) and more people begin using and providing user suggestions. Also, the NRC is trying to establish a contract to provide usability feedback before SNAP version 1.0 is released. The contractor shall collect the suggestions for user interface changes and document them in the monthly progress reports. The contractor shall propose solutions as to how to address the user suggestions in SNAP and present them to the PO in a written report. After the PO sends either a written letter or an email to the contractor indicating approval, the contractor shall implement the proposed solution(s).

Base year:
Completion date: One year after award of contract

Task 14.   Develop AVScript Style Analyst Support Interface

The NRC staff and several of its contractors who support the RELAP5 and TRACE development work use a tool called AVScript for automating code runs and plotting tasks. The AVScript tool is currently written in Perl and when used on the MS Windows platform requires a compatible version of Perl to be used there. To help alleviate operating system dependencies and to make the useful features of AVScript available to more analysts, a SNAP feature plug-in is proposed to provide these capabilities.

The contractor shall design and implement the feature plug-in following the general requirements for code development as specified previously in this document (i.e.,

9

prepare an SRS and SDID documents, obtain PO approval before implementation of design, etc.).

Base year:
Completion date: One year after award of contract

Task 15. Update CONTAIN Plug-in

The SNAP CONTAIN code plug-in was the first plug-in to use the Common Application Framework for Engineering Analysis (CAFEAN) plug-in interface. The CONTAIN plug-in would greatly benefit from modifications that have been made to other CAFEAN-based plug-ins since its release. User interface improvements that have been implemented for the TRACE code shall be reviewed and implemented where appropriate for CONTAIN. The contractor shall document in SRS and SDID the requirements and any design changes needed for the CONTAIN plug-in code to be brought up to date with the TRACE plug-in code. The contractor shall obtain PO approval of the documents, either through an e-mail or letter, before proceeding to the implementation phase of the work.

Base year:
Completion date: 7 months after award of contract

Task 16. Restore Functionality of the RELAP5 to TRACE Vessel Conversion Tool

The SNAP RELAP5 plug-in has been, or will be, converted into a CAFEAN format; however, the existing RELAP5 to TRACE vessel conversion feature plug-in is still based upon the old RELAP5 plug-in and will therefore not function anymore. The contractor shall design and implement a new RELAP5 to TRACE vessel conversion feature plug-in based on the new CAFEAN format SNAP RELAP5 plug-in. All of the features of the current vessel conversion feature plug-in shall be reproduced in the new feature plug-in. All of the features of the new plug-in should be documented in SRS. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work. The contractor shall obtain PO approval of the documents, either through an e-mail or letter, before proceeding to the implementation phase of the work.

Base year:
Completion Date: 3 months after award of contract

Task 17. Develop "Animation Export" Capabilities

Users of the SNAP animation model plug-in have expressed a strong desire to be able to export animations produced by SNAP. The contractor shall add to the animation plug-in the ability to save the animations that it displays to a file that can be played back with third party software or with freely distributable software. As a minimum, playback in MS PowerPoint must be achieved. Some form of playback on the LINUX/UNIX platform must also be provided. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain PO approval of the documents, either by email or letter, before proceeding to the implementation phase of the work.

Base year:
Completion Date: 5 months after award of contract.

WORK UNDER OPTION YEAR 1

Task 18.   Application Testing and Distribution

1.   SNAP plug-ins for analytical codes shall be tested to ensure that they can import and export the respective code input decks without causing changes in the calculated results. For each analytical code for which SNAP provides a plug-in, the contractor shall maintain and exercise a relevant suite of input decks to assure that the SNAP plug-in is performing input and output operations correctly. The contractor shall at least include in these test suites any decks that are provided by the PO. The contractor shall correct errors discovered in the associated SNAP plug-in during testing as necessary.

2.   Maintain a multi-platform, SNAP installation package to support code distribution. SNAP is to be distributed from a web site under strict control of the contractor. Access to the SNAP code is to be coordinated through the NRC project manager.

3.   Evaluate and correct errors reported by the SNAP user community.

4.   Maintain and extend SNAP user's manuals and help files to reflect any code changes. Automate linkage to analysis code documentation.

5.   Provide user support. Implement user supplied requests for improvements as reviewed and approved by the PO.

Option year 1:
Completion date: One year after start of option year one

Task 19.   Maintain SNAP Capabilities

The supported analytical codes (MELCOR, CONTAIN, TRACE, FRAPCON/FRAPTRAN and RELAP5) are still undergoing modifications that will necessitate changes to their input format requirements. The contractor shall upgrade SNAP to fully support these modifications. The contractor shall maintain contact with the analytical code developers so that any changes can be identified and modifications made to the respective SNAP plug-in in a timely fashion. The PO shall be notified either by letter or email of any planned changes to any plug-in before such changes are actually made. Note that in cases where the analytical code has been updated or changed in a major way, the contractor may need to write an entirely new plug-in for the new version of the analytical code. If the need for an entirely new plug-in is encountered, the contractor shall not proceed to make changes to the existing plug-in, but instead inform the PO so that other actions may be planned.

Option Year 1:
Completion date: One year after start of option year one

Task 20.   Provide Technical Support

This task provides technical support to the NRC. The work includes making presentations, attending meetings, reviewing technical reports, and providing technical consultation and support as requested by the PO. Also, this task is to provide support for "beta testers." "Beta testers" are SNAP users who are issued pre-release versions of SNAP for the purpose of evaluating SNAP in typical user environments (i.e., "real world" use of SNAP). Currently, there are about 30 beta testers for SNAP; however, only 5-10 are active.

Option year 1:
Completion date: One year after start of option year one

Task 21.   SNAP User Interface Testing

The contractor shall use the test suite implemented in Task 4 of this contract to ensure that SNAP code integrity is maintained. Furthermore, the contractor shall add to the test suite any tests that are deemed necessary during the ongoing development of SNAP and SNAP plug-ins. Status of the results of using the test suite shall be documented for each of the public releases in a report to the PO.

Option year 1:
Completion date: One year after start of option year one

12

Task 22.   Develop Java Based "Lightweight" Plotting Tools

Integration of the Java applications in SNAP with the C-based application, AcGrace,
continues to cause problems with the installation of SNAP. For instance, under MS
Windows XP, AcGrace installation requires the installation and configuration of a
substantial software package called "CYGWIN." The CYGWIN installation is many times
the size of SNAP itself. Also, AcGrace users who are familiar with the Windows XP
graphical interface are often confused by the different style dialog boxes and file
requesters that it presents. Therefore, it is desirable to have a fast and relatively
lightweight plotting interface for SNAP with a consistent user interface that can be
installed through the same installation procedure as SNAP itself. Such a package shall
provide for the ability to plot directly from the animation view displays (navigator and 2D
view) and the ability to batch process to write printable plot files.

The contractor shall develop an advanced plotting tool that integrates the above stated
requirements. The contractor shall also determine what other requirements such a
plotting package should have based on the current usage of AcGrace with SNAP.
Again, this plotting tool may be its own Java application, or may be integrated directly
into the existing animation plug-in (JavaBean interface). The implementation shall be
done in accordance with the general requirements for SNAP code development.

Option year 1:
Completion date: One year after start of option year one.

Task 23.   Develop Advanced JavaBeans for the Animation Plug-in

The objects used to "build" an animation file mask are actually JavaBean components.
In this work, the contractor shall design and add to the SNAP release package new
JavaBeans that can be used for displaying complex data that may be produced by
analytic code runs. Currently, one such JavaBean that is envisioned is a "core melt"
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JavaBean components is reduced from the normal SNAP development. In this case, the
contractor shall provide a description and design for the component all in one document.
The document need not follow the requirements as stated for the other SNAP
development documents. However, the contractor shall not proceed with development
of any such JavaBean component until the PO provides an email or letter providing
approval of the design.

Option year 1:
Completion date: One year after start of option year one

Task 24.   Model Editor User Interface Improvements

User interface issues have been identified by "beta testers" and NRC staff using the TRACE, RELAP5 and CONTAIN plug-ins. Some of the reported issues have been addressed, some have not. It is anticipated that many more user interface changes and improvements will be required after SNAP version 1.0 is released (expected in early 2006) and more people begin using and providing user suggestions. Also, the NRC is trying to establish a contract to provide usability feedback before SNAP version 1.0 is released. The contractor shall collect the suggestions for user interface changes and document them in the monthly progress reports. The contractor shall propose solutions as to how to address the user suggestions in SNAP and present them to the PO in a written report. After the PO sends either a written letter or an email to the contractor indicating approval, the contractor shall implement the proposed solution(s).

Option year 1:
Completion date: One year after start of option year one

Task 25.   Develop "Modernized" MELCOR Plug-in

The SNAP MELCOR plug-in that was completed in 2005 addressed versions 1.8.5 and 1.8.6 of MELCOR. Since then, MELCOR developers have reimplemented the MELCOR code in FORTRAN 95 and have significantly changed the input deck format and organization. Therefore, a plug-in for the modernized version of MELCOR will need to be created. The contractor shall create the modernized MELCOR plug-in for SNAP providing support for input model editing and creation, runtime support and restart abilities, and connection to the animation model capabilities of SNAP. The contractor shall test the plug-in on a set of input decks provided to them by the NRC and confirm that the plug-in supports the modernized MELCOR code fully. The contractor shall follow the general requirements for code development as specified previously in this document (i.e., prepare SRS and SDID documents, obtain PO approval before implementation of design, etc.).

Option year 1:
Completion date: One year after start of option year one

Task 26.   Add TRACE ECI Support to SNAP TRACE Plug-in Model Editor Capabilities

The TRACE Exterior Component Interface (ECI) provides TRACE with a method of transferring runtime calculation data between processes. This is meant to be used for "breaking" a calculation into pieces for running under separates threads possibly on separate machines and for interfacing specialized component models compiled as separate code. The SNAP TRACE plug-ins runtime interface can currently control and monitor the ECI "pieces." However, it is desirable to have a graphical interface that would allow a user to split an input model into the separate pieces that will be split off as separate ECI components. The contractor shall design and implement such an interface into the SNAP TRACE plug-in. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain

approval of the documents from the PO, either through an email or letter, before proceeding to the implementation phase of the work.

Option year 1:
Completion date: 3 months after start of option year one

Task 27.   Implement a "pluggable" Layout Engine for the Model Editor and Improve the Current Layout Algorithm

A semi-sophisticated algorithm that usually does an adequate job for small simple models currently handles layout of components on the 2D views. However, for plant size models where such a layout tool is really needed, the layout algorithm often produces unsatisfactory results. The analyst is then left to layout the model himself by hand. However, the model editor provides only minimal help with regard to manual layout. Features such as grouping components, alignment of components and other structured drawing tools would greatly improve the analyst's ability to layout a model by hand.

1.   To improve the layout features of SNAP, the contractor shall develop a layout engine plug-in interface so that new layout plug-ins can be implemented independent of the SNAP core code.

2.   In addition, the contractor shall implement the current layout algorithm as a plug-in that is compatible with the new layout plug-in design. Improvements to the current algorithm to improve layout of large plants models shall also be investigated and recommendations shall be made to the PO as to the best options. Upon approval from the PO, the contractor shall implement the recommended layout engine option.

3.   Features for manual layout shall be designed and implemented in SNAP. Features such as grouping components, alignment tools, etc., shall be proposed by the contractor and presented either orally or in a written document to the PO. In either case, the presentation shall have a "story board" visual to demonstrate the concepts involved. Upon approval from the PO, either via email or written letter, the contractor shall develop the standard SRS and SDID documents and implement the design. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain approval of the documents from the PO, either through an email or written letter, before proceeding to the implementation phase of the work.

Option year 1:
Completion date: 10 months after start of option year one

Task 28.   Develop an Advanced Renodalization Tool

Renodalization of hydraulic components in TRACE or RELAP5 (and probably other such codes) can be very problematical when there are heat structures, control systems, or other hydraulic components attached. There are several areas where the current renodalization functionality can be expanded to improve efficiency. The current 1D renodalization functionality is restricted to operating on one component at a time. The ability to uniformly renodalize a group of selected components shall be added to assist with nodalization studies. The ability to scale the cross-sectional flow area of a selection of 1D components shall also be provided. A hydraulic loop could have every component's flow area scaled. This would allow an analyst to select a loop, copy the loop into a model, and adjust its flow areas to lump unbroken loops or extract a loop from a lumped loop. The ability to split TRACE TEE components into separate pipes and split and merge pipe components shall also be provided. Heat structures, signal variables, and steady state controllers that refer to hydraulic components will automatically adjust to take into account the new component numbers and node indexes. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain approval of the documents from the PO, either through an email or written letter, before proceeding to the implementation phase of the work.

Option year 1:
Completion date: 6 months after start of option year one.

WORK UNDER OPTION YEAR 2

Task 29.   Application Testing and Distribution

1.   SNAP plug-ins for analytical codes shall be tested to ensure that they can import and export the respective code input decks without causing changes in the calculated results. For each analytical code for which SNAP provides a plug-in, the contractor shall maintain and exercise a relevant suite of input decks to assure that the SNAP plug-in is performing input and output operations correctly. The contractor shall at least include in these test suites any decks that are provided by the PO. The contractor shall correct errors discovered in the associated SNAP plug-in during testing as necessary.

2.   Maintain a multi-platform SNAP installation package to support code distribution. SNAP is to be distributed from a web-site under strict control of the contractor. Access to the SNAP code is to be coordinated through the PO.

3.   Evaluate and correct errors reported by the SNAP user community.

4. Maintain and extend SNAP user's manuals and help files to reflect any code changes. Automate linkage to analysis code documentation.

5. Provide user support. Implement user-supplied requests for improvements as reviewed and approved by the PO.

Option year 2:
Completion date: One year after start of option year two

Task 30.   Maintain SNAP Capabilities

The supported analytical codes (MELCOR, CONTAIN, TRACE, FRAPCON/FRAPTRAN and RELAP5) are still undergoing modifications that will necessitate changes to their input format requirements. The contractor shall upgrade SNAP to fully support these modifications. The contractor shall maintain contact with the analytical code developers so that any changes can be identified and modifications made to the respective SNAP plug-in in a timely fashion. The PO shall be notified in writing by letter or email of any planned changes to any plug-in before such changes are actually made. Note that in cases where the analytical code has been updated or changed in a major way, the contractor may need to write an entirely new plug-in for the new version of the analytical code. If the need for an entirely new plug-in is encountered, the contractor shall not proceed to make changes to the existing plug-in, but instead inform the PO so that other actions may be planned.

Option year 2:
Completion date: One year after start of option year two.

Task 31.   Provide Technical Support

This task provides technical support to the NRC. The work includes making presentations, attending meetings, reviewing technical reports, and providing technical consultation and support as requested by the PO. Also, this task is to provide support for "beta testers." "Beta testers" are SNAP users who are issued pre-release versions of SNAP for the purpose of evaluating SNAP in typical user environments (i.e., "real world" use of SNAP). Currently, there are about 30 beta testers for SNAP; however, only 5-10 are active.

Option year 2:
Completion date: One year after start of option year two

Task 32.   SNAP User Interface Testing

The contractor shall use the test suite implemented in Task 4 of this contract to ensure that SNAP code integrity is maintained. Furthermore, the contractor shall add to the test suite any tests that are deemed necessary during the ongoing development of SNAP

and SNAP plug-ins. Status of the results of using the test suite shall be documented for each of the public releases in a report to the PO.

Option year 2:
Completion date: One year after start of option year two

Task 33.   Develop Java Based "Lightweight" Plotting Tools

Integration of the Java applications in SNAP with the C-based application, AcGrace, continues to cause problems with the installation of SNAP. For instance, under MS Windows XP, AcGrace installation requires the installation and configuration of a substantial software package called "CYGWIN." The CYGWIN installation is many times the size of SNAP itself. Also, AcGrace users who are familiar with the Windows XP graphical interface are often confused by the different style dialog boxes and file requesters that it presents. Therefore, it is desirable to have a fast and relatively lightweight plotting interface for SNAP with a consistent user interface that can be installed through the same installation procedure as SNAP itself. Such a package shall provide for the ability to plot directly from the animation view displays (navigator and 2D view) and the ability to batch process to write printable plot files.

The contractor shall develop an advanced plotting tool that integrates the above stated requirements. The contractor shall also determine what other requirements such a plotting package should have, based on the current usage of AcGrace with SNAP. Again, this plotting tool may be its own Java application, or may be integrated directly into the existing animation plug-in (JavaBean interface). The implementation shall be done in accordance with the general requirements for SNAP code development.

Option year 2:
Completion date: One year after start of option year two

Task 34.   Develop Advanced JavaBeans for the Animation Plug-in

The objects used to "build" an animation file mask are actually JavaBean components. In this work, the contractor shall design and add to the SNAP release package new JavaBeans that can be used for displaying complex data that may be produced by analytic code runs. Currently, one such JavaBean that is envisioned is a "core melt" JavaBean. This JavaBean will be able to display an animation of a melting core including material heat up, fuel and structure relocation, and combustion that may be occurring, etc. The contractor shall design and implement such a "core melt" JavaBean and up to ten other JavaBean components. The documentation requirement for these JavaBean components is reduced from the normal SNAP development. In this case, the contractor shall provide a description and design for the component all in one document.

The document need not follow the requirements as stated for the other SNAP development documents. However, the contractor shall not proceed with development

of any such JavaBean component until the PO provides an email or letter providing approval of the design.

Option year 2:
Completion date: One year after start of option year two.

Task 35.   Model Editor User Interface Improvements

User interface issues have been identified by "beta testers" and NRC staff using the TRACE, RELAP5 and CONTAIN plug-ins. Some of the reported issues have been addressed, some have not. It is anticipated that many more user interface changes and improvements will be required after SNAP version 1.0 is released (expected in early 2006) and more people begin using and providing user suggestions. Also, the NRC is trying to establish a contract to provide usability feedback before SNAP version 1.0 is released. The contractor shall collect the suggestions for user interface changes and document them in the monthly progress reports. The contractor shall propose solutions as to how to address the user suggestions in SNAP and present them to the PO in a written report. After the PO sends either a written letter or an email to the contractor indicating approval, the contractor shall implement the proposed solution(s).

Option year 2:
Completion date: One year after start of option year two.

Task 36.   Develop "Modernized" MELCOR Plug-in

The SNAP MELCOR plug-in that was completed in 2005 addressed versions 1.8.5 and 1.8.6 of MELCOR. Since then, MELCOR developers have reimplemented the MELCOR code in FORTRAN 95 and have significantly changed the input deck format and organization. Therefore, a plug-in for the modernized version of MELCOR will need to be created. The contractor shall create the modernized MELCOR plug-in for SNAP providing support for input model editing and creation, runtime support and restart abilities, and connection to the animation model capabilities of SNAP. The contractor shall test the plug-in on a set of input decks provided to them by the PO, and confirm that the plug-in supports the modernized MELCOR code fully. The contractor must follow the general requirements for code development as specified previously in this document (i.e., prepare SRS and SDID documents, obtain PO approval before implementation of design, etc.).

Option year 2:
Completion date: One year after start option year two

Task 37.   Develop Water and Materials Properties Interface

Currently, several plug-ins require water and material properties data. As of now the water property data is built into SNAP and is based on the RELAP5 "new" water properties package. Materials data for the analytic codes is also built into the respective

SNAP plug-ins. This reproduction of the materials properties and water properties in SNAP is dangerous from the point of view that if the analytical code should change its properties tables without the plug-ins being updated, then the input models that SNAP writes would be incorrect. It has been proposed that SNAP simply "talk" to the respective analytical codes to obtain the properties in question.

Under this task, the contractor shall develop an interface specification that can be used in the respective analytical codes that will permit SNAP to "talk" directly to the respective code to get the water properties or material properties as needed. The contractor shall publish the interface specification in a letter report to the PO and make the interface specification available to other codes developers, as specified by the PO. The contractor shall also write the interface code for the existing plug-ins and communicate these changes to the respective analytical code developers. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain PO approval, either through an email or written letter, before proceeding to the implementation phase of the work.

Option year 2:
Completion date: One year after start of option year two

Task 38.   Add Engineering Data to SNAP

Currently, construction of piping components for TRACE and RELAP5 models requires inputting all of the geometric data associated with the piping being modeled. The geometric cross-sectional data for piping is typically obtained from a standard American Society of Mechanical Engineers (ASME)/American National Standards Institute (ANSI) piping schedule and must be entered into SNAP.

This task involves automating this process by allowing the analyst to construct piping components by simply selecting the type of pipe, (schedule, nominal diameter, and material) from a dialog displaying the standard ASME/ANSI piping schedule. The pipe component will then be created along with an optional pipe wall heat structure based on the entered pipe length and number of parallel pipes being modeled. As for all SNAP development work, the contractor shall document in SRS and SDID the requirements and design for this work and obtain PO approval of the documents, either through email or a letter, before proceeding to the implementation phase of the work.

Option year 2:
Completion date: 7 months after start of option year two

E.   DELIVERABLES AND DELIVERY SCHEDULE

The deliverables and delivery schedule set forth in this section are for reporting requirements as described in the individual tasks under Paragraph D, Scope of Work above, Other code deliverables are required as discussed under the individual task descriptions in Paragraph D, Scope of Work, above.

1.   Task 4 - SRS and SDID for the testing interface:
                             Due 3 months after award of contract

2.   Task 4 - Report documenting the content and use of the test suite/framework:
                             Draft due 4 months after award of contract
                             Final due 5 months after award of contract

3.   Task 5 - Status report for user interface tests:
                             Report due prior to each public release

4.   Task 6 - SRS and SDID and user's guide for 3D plotting additions:
                             Draft due 2 months after award of contract
                             Final due 3 months after award of contract

5.   Task 7 - SRS and SDID for lightweight plotting tools:
                             Draft due 11 months after award of contract
                             Final due 1 year after award of contract

6.   Task 8 - Requirement/Design/Completion document for each new "JavaBean":
                             Draft due 30 working days after requirement identified by
                             PO
                             Final due 1 year after award of contract

7.   Task 9 - User interface improvement recommendations and design report(s):
                             Recommendations as needed in monthly progress reports
                             Design report due 60 working days after request by PO

8.   Task 10 - SRS and SDID for AVScript Interface Plug-in:
                             Draft due 11 months after award of contract
                             Final due 1 year after award of contract

9.   Task 11 - SRS and SDID for Updated CONTAIN Plug-in:
                             Draft due 6 months after award of contract
                             Final due 7 months after award of contract

10.   Task 12 - SRS and SDID for RELAP5 to TRACE Vessel Conversion Tools:
                             Draft due 2 months after award of contract
                             Final due 3 months after award of contract

11.   Task 13 - SRS and SDID for Animation Export Tools:
                             Draft 4 months after award of contract
                             Final 5 months after award of contract

12.   Task 17 - Status report for user interface tests:
                             Report due prior to each public release

13.   Task 18 - SRS and SDID for lightweight plotting tools:
                        Documented in Monthly Technical Progress Report

14.   Task 19 - Requirement/Design/Completion document for each new "JavaBean":
                        Draft due 30 working days after requirement identified by
                        PO
                        Final due 1 year after start of option year one

15.   Task 20 - User interface improvement recommendations and design report(s):
                        Recommendations as needed in monthly progress reports
                        Design report due 60 working days after request by PO

16.   Task 21 - SRS and SDID for Modernized MELCOR Plug-in:
                        Draft due 11 months after start of option year one.
                        Final due 1 year after start of option year one.

17.   Task 22 - SRS and SDID for TRACE ECI Support in Model Editor:
                        Draft due 2 months after start of option year one.
                        Final due 3 months after start of option year one

18.   Task 23 - SRS and SDID for layout engine and model editor improvements:
                        Draft due 8 months after start of option year one.
                        Final due 10 months after start of option year one

19.   Task 24 - SRS and SDID for Advanced Renodalization Tool(s):
                        Draft due 5 months after start of option year one.
                        Final due 6 months after start of option year one

20.   Task 28 - Status report for user interface tests:
                        Report due prior to each public release

21.   Task 29 - SRS and SDID for lightweight plotting tools:
                        Documented in Monthly Technical Progress Report

22.   Task 30 - Requirement/Design/Completion document for each new "JavaBean":
                        Draft due 30 working days after requirement identified by
                        PO
                        Final due 1 year after start of option year two

23.   Task 31 - User interface improvement recommendations and design report(s):
                        Recommendations as needed in monthly progress reports
                        Design report due 60 working days after request by PO

24.   Task 32 - SRS and SDID for Modernized MELCOR Plug-in:
                        Documented in Monthly Technical Progress Report

25.   Task 33 - SRS and SDID for water properties and materials interface:
                                    Draft due 7 months after start of option year two
                                    Final due 1 year after start of option year two

26.   Task 34 - SRS and SDID for adding engineering data into SNAP:
                                    Draft due 5 months after start of option year two
                                    Final due 7 months after start of option year two

The contractor shall review technical reports to ensure their high quality. The content of format technical reports should follow generally accepted technical writing practices; see NUREG-650, Revision 1, "Publishing Documents in the NUREG Series." The author must consider the audience who will read the document; link ideas in sentences and paragraphs to create an easy-to-follow logical transition; and ensure consistency of terminology, format, and style throughout. The reports should be well focused; i.e., they should not be too wordy and the prose should flow in a logical manner. The author must provide necessary information to avoid prose where logic would be incomplete. Technical reports should not include policy, administrative, managerial, or fiscal information unsuitable for wide dissemination. They should not contain proposals for additional work and words should be carefully selected to avoid marketing of contractor capabilities.

F.   MEETINGS AND TRAVEL REQUIREMENTS

The contractor will plan on attending four meetings at the NRC office in Rockville, Maryland, per year, for the base year, option year 1 and option year 2. Also, for planning purposes, the contractor will attend one domestic technical society meeting and present a paper per year, for the base year, option year 1 and option year 2. Each meeting will involve one person and last for two days. Any domestic travel must be approved in advance by the PO.

G.   NRC-FURNISHED MATERIAL

As stated in task descriptions

H.   COPYRIGHT CLAUSE

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 additional 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 Section I of the contract, 52.227-14 – Rights in Data-General, paragraph (c), the contractor grants the NRC and other 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 facilities involving nuclear technology, or other Government purposes, 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 2052.209-72 – 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 of 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 determines are of use for nuclear health and safety purposes. Further, the contractor agrees to include 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 software as described above and as limited by the U.S. Departments of Commerce and State concerning foreign sales.

SECTION D - PACKAGING AND MARKING

D.1 PACKAGING AND MARKING (MAR 1987)

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 Interstate Commerce Commission Regulations, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation. On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.246-9	INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM)	APR 1984

E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)

Inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the Project Officer at the destination.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.242-15	STOP-WORK ORDER	AUG 1989
	ALTERNATE I (APR 1984)	

F.2 2052.211-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)

All technical reports required by Section C and all Technical Progress Reports required by Section F are to be prepared in accordance with the attached Management Directive 3.8, "Unclassified Contractor and Grantee Publications in the NUREG Series." Management Directive 3.8 is not applicable to any Contractor Spending Plan (CSP) and any Financial Status Report that may be included in this contract. (See List of Attachments).

F.3 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)

The contractor shall provide a monthly Technical Progress Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, appropriate financial tracking code specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task/task order:

(a) A listing of the efforts completed during the period, and milestones reached or, if missed, an explanation provided;

(b) Any problems or delays encountered or anticipated and recommendations for resolution. If the recommended resolution involves a contract modification, e.g., change in work requirements, level of effort (cost) or schedule delay, the contractor shall submit a separate letter to the contracting officer identifying the required change and estimated cost impact.

(c) A summary of progress to date; and

(d) Plans for the next reporting period.

F.4 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)

The contractor shall provide a monthly Financial Status Report (FSR) to the project officer and the contracting officer. The FSR shall include the acquisition of, or changes in the status of, contractor-held property acquired with government funds valued at the time of purchase at $50,000 or more. Whenever these types of property changes occur, the contractor shall send a copy of the report to the Chief, Property and Acquisition Oversight Branch, Office of Administration. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, the appropriate financial tracking code (e.g., Job Code Number or JCN) specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task:

(a) Total estimated contract amount.

(b) Total funds obligated to date.

(c) Total costs incurred this reporting period.

(d) Total costs incurred to date.

(e) Detail of all direct and indirect costs incurred during the reporting period for the entire contract or each task, if it is a task ordering contract.

(f) Balance of obligations remaining.

(g) Balance of funds required to complete contract/task order.

(h) Contractor Spending Plan (CSP) status: A revised CSP is required with the Financial Status Report whenever the contractor or the contracting officer has reason to believe that the total cost for performance of this contract will be either greater or substantially less than what had been previously estimated.

(1) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.

(2) Indicate significant changes in the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the change, whether there is any projected overrun, and when additional funds would be required. If there have been no changes to the original NRC-approved CSP projections, a written statement to that effect is sufficient in lieu of submitting a detailed response to item "h".

(i) Property status:

(1) List property acquired for the project during the month with an acquisition cost between $500 and $49,999. Give the item number for the specific piece of equipment.

(2) Provide a separate list of property acquired for the project during the month with an acquisition cost of $50,000 or more. Provide the following information for each item of property: item description or nomenclature, manufacturer, model number, serial number, acquisition cost, and receipt date. If no property was acquired during the month, include a statement to that effect. The same information must be provided for any component or peripheral equipment which is part of a "system or system unit."

(3) For multi-year projects, in the September monthly financial status report provide a cumulative listing of property with an acquisition cost of $50,000 or more showing the information specified in paragraph (i)(2) of this clause.

(4) In the final financial status report provide a closeout property report containing the same elements as described above for the monthly financial status reports, for all property purchased with NRC funds regardless of value unless title has been vested in the contractor. If no property was acquired under the contract, provide a statement to that effect. The report should note any property requiring special handling for security, health, safety, or other reasons as part of the report.

(j) Travel status: List the starting and ending dates for each trip, the starting point and destination, and the traveler(s) for each trip.

(k) If the data in this report indicates a need for additional funding beyond that already obligated, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

F.5 PLACE OF DELIVERY--REPORTS (JUN 1988)

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

(a) Project Officer (1 copy)

U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research,
11545 Rockville Pike
Rockville, MD 20852

(b) Contracting Officer (1 copy)

F.6 DURATION OF CONTRACT PERIOD (MAR 1987) ALTERNATE 2 (MAR 1987)

This contract shall commence on Day of Award (See Block 19c.) and will expire on One year from Award Date. The term of this contract may be extended at the option of the Government for an additional two, 1-year options.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 PROJECT OFFICER AUTHORITY (FEB 2004)

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

   Name: Chester Gingrich

   Address: Mail Stop: T10-K8
                11555 Rockville Pike
                Rockville, MD 20852

   Telephone Number: 301-415-6780

(b) Performance of the work under this contract is subject to the technical direction of the NRC project officer. 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 (SOW) or changes to specific travel identified in the SOW), fills in details, or otherwise serves to accomplish the contractual SOW.

(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 project officer 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 project officer or must be confirmed by the project officer 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 project officer in the manner prescribed by this clause and within the project officer's authority under the provisions of this clause.

(f) If, in the opinion of the contractor, any instruction or direction issued by the project officer 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 project officer 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 project officer 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 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.

(6) 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.2 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

(a) Total expenditure for travel may not exceed $4,000.00 (Per Contract Year) 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.

G.3 2052.216-71 INDIRECT COST RATES (JAN 1993)

(a) Pending the establishment of final indirect rates which must be negotiated based on audit of actual costs, the contractor shall be reimbursed for allowable indirect costs as follows:

INDIRECT COST POOL	RATE	BASE	PERIOD
Fringe Benefit	███	Day of Award	Contract Expiration
Overhead Cost	███	Day of Award	Contract Expiration
General & Administrative	███	Day of Award	Contract Expiration

(b) The contracting officer may adjust these rates as appropriate during the term of the contract upon acceptance of any revisions proposed by the contractor. It is the contractor's responsibility to notify the contracting officer in accordance with FAR 52.232-20, Limitation of Cost, or FAR 52.232-22, Limitation of Funds, as applicable, if these changes affect performance of work within the established cost or funding limitations.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 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.

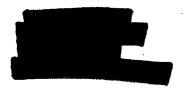## H.2 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)

(a) The principal investigator(s)/contractor shall comply with the provisions of NRC Management Directive 3.8 (Vol. 3, Part 1) and NRC Handbook 3.8 (Parts I-IV) regarding publication in refereed scientific and engineering journals or dissemination to the public of any information, oral or written, concerning the work performed under this contract. Failure to comply with this clause shall be grounds for termination of this contract.

(b) The principal investigator(s)/contractor may publish the results of this work in refereed scientific and engineering journals or in open literature and present papers at public or association meetings at interim stages of work, in addition to submitting to NRC the final reports and other deliverables required under this contract. However, such publication and papers shall focus on advances in science and technology and minimize conclusions and/or recommendations which may have regulatory implications.

(c) The principal investigator(s) shall coordinate all such publications with, and transmit a copy of the proposed article or paper to, the NRC Contracting Officer or Project Officer, prior to publication. The NRC agrees to review and provide comments within thirty (30) days after receipt of a proposed publication.

However, in those cases where the information to be published is (1) subject to Commission approval, (2) has not been ruled upon, or (3) disapproved by the Commission, the NRC reserves the right to disapprove or delay the publication. Further, if the NRC disagrees with the proposed publication for any reason, it reserves the right to require that any publication not identify the NRC's sponsorship of the work and that any associated publication costs shall be borne by the contractor.

Management Directive 3.8 is superceded by 3.7 can be furnished upon request or found on the NRC public website: http://www.nrc.gov/reading-rm/doc-collections/management-directives/volumes/vol-3.html

H.3 2052.215-70 KEY PERSONNEL (JAN 1993)

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

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 con-currence 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.

H.4 2052.235-71 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)

The contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of its employees and of members of the public, including NRC employees and contractor personnel, and to minimize danger from all hazards to life and property. The contractor shall comply with all applicable health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission and the Department of Labor. If the contractor fails to comply with these regulations or requirements, the contracting office may, without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work. Thereafter, a start work order for resumption of work may be issued at the discretion of the contracting officer. The contractor may not make a claim for an extension of time or for compensation or damages by reason of, or in connection with, this type of work stoppage.

H.5 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY - NONE PROVIDED (JUN 1988)

The Government will not provide any equipment/property under this contract.

H.6 SEAT BELTS

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

H.7 Annual and Final Contractor Performance Evaluations

Annual and final evaluations of contractor performance under this contract will be prepared in accordance with FAR 42.15, "Contractor Performance Information," normally at 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 (state time for annual evaluation). 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 Project Officer's 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. The contractor may concur without comment, submit additional information, or request a meeting to discuss the performance evaluation. The Contracting Officer may request the contractor's Project Manger to attend a meeting to discuss the performance evaluation.

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 "For Official Use Only," 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(a) and 42.1503(c). 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.

H.8 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 and Naturalization (INS) 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 Alien Registration Receipt Card Form 1-151 or must present other evidence from the Immigration and Naturalization Services that employment will not affect his/her immigration status. The INS Office of Business Liaison (OBL) provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on the INS website, http://www.ins.usdoj.gov/graphics/services/employerinfo/index.htm#obl.

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.

(End of Clause)

H.9 2052.204.70 SECURITY (MAR 2004)

(a) Contract Security and/or Classification Requirements (NRC Form 187). The policies, procedures, and criteria of the NRC Security Program, NRC Management Directive (MD) 12 (including MD 12.1, "NRC Facility Security Program;" MD 12.2, "NRC Classified Information Security Program;" MD 12.3, "NRC Personnel Security Program;" MD 12.4, "NRC Telecommunications Systems Security Program;" MD 12.5, "NRC Automated Information Systems Security Program;" and MD 12.6, "NRC Sensitive Unclassified Information Security Program"), apply to performance of this contract, subcontract or other activity. This MD is incorporated into this contract by reference as though fully set forth herein. 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 Restricted Data or National Security Information or matter, access to sensitive unclassified information (e.g., Safeguards), access to sensitive Information Technology (IT) systems or data, unescorted access to NRC controlled buildings/space, or unescorted access to protected and vital areas of nuclear power plants.

(b) It is the contractor's duty to protect 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 protecting 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, upon completion or termination of this contract, 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. If retention by the contractor of any classified matter is required after the completion or termination of the contract and the retention is approved by the contracting officer, the contractor shall complete a certificate of possession to be furnished to the Commission specifying the classified matter to be retained. 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, safeguards information, 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 shall ensure that information protected from public disclosure is maintained as required by NRC regulations and policies, as cited in this contract or as otherwise provided by the NRC. The contractor will not directly or indirectly duplicate, disseminate, or disclose the information in whole or in part to any other person or organization except as may be 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 (DFS) and the Contracting Officer. These changes will be under the authority of the FAR Changes clause referenced in this document.

The contractor agrees to comply with the security requirements set forth in NRC Management Directive 12.1, NRC Facility Security Program which is incorporated into this contract by reference as though fully set forth herein. Attention is directed specifically to the section titled "Infractions and Violations," including "Administrative Actions" and "Reporting Infractions."

(e) Definition of National Security Information. The term National Security Information, as used in this clause, 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. The term Restricted Data, as used in this clause, 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 pursuant to Section 142 of the Atomic Energy Act of 1954, as amended.

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

(h) Definition of Safeguards Information. Sensitive unclassified information that specifically identifies the detailed security measures of a licensee or an applicant for the physical protection of special nuclear material; or security measures for the physical protection and location of certain plant equipment vital to the safety of production of utilization facilities. Protection of this information is required pursuant to Section 147 of the Atomic Energy Act of 1954, as amended.

(i) Security Clearance. 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.

(j) Criminal Liabilities. It is understood that 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.)

(k) 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.

(l) In performing the 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 hereunder involving the origination or generation of classified documents, material, and equipment must provide that the subcontractor or supplier assign classification to all documents, material, and equipment in accordance with guidance furnished by the contractor.

H.10 SECURITY REQUIREMENTS FOR INFORMATION TECHNOLOGY ACCESS APPROVAL
(FEB 2004)

The proposer/contractor must identify all individuals and propose the level of Information Technology (IT) approval for each, using the following guidance. The NRC sponsoring office shall make the final determination of the level, if any, of IT approval required for all individuals working under this contract.

The Government shall have and exercise full and complete control over granting, denying, withholding, or terminating building access approvals for individuals performing work under this contract.

SECURITY REQUIREMENTS FOR LEVEL I

Performance under this contract will involve prime contractor personnel, subcontractors or others 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. Such contractor personnel shall be subject to the NRC contractor personnel security requirements of NRC Management Directive (MD) 12.3, Part I and will require a favorably adjudicated Limited Background Investigation (LBI).

A contractor employee shall not have access to sensitive information technology systems or data until he/she is approved by Security Branch, Division of Facilities and Security (SB/DFS). Temporary access may be approved based on a favorable adjudication of their security forms and checks. Final access will be approved based on a favorably adjudicated LBI in accordance with the procedures found in NRC MD 12.3, Part I. However, temporary access authorization approval will be revoked and the employee may subsequently be removed from the contract in the event the employee's investigation cannot be favorably adjudicated. Such employee will not be authorized to work under any NRC contract without the approval of SB/DFS. Timely receipt of properly completed security applications is a contract requirement. Failure of the contractor to comply with this condition within the ten work day period may be a basis to void the notice of selection. In that event, the Government may select another firm for award. When an individual receives final access, the individual will be subject to a reinvestigation every 10 years.

The contractor shall submit a completed security forms packet, including the SF-86, "Questionnaire for National Security Positions," and fingerprint charts, through the Project Officer to SB/ DFS for review and favorable adjudication, prior to the individual performing work under this contract. The contractor shall assure

that all forms are accurate, complete, and legible (except for Part 2 of the questionnaire, which is required to be completed in private and submitted by the individual to the contractor in a sealed envelope), as set forth in MD 12.3 which is incorporated into this contract by reference as though fully set forth herein. Based on SB review of the applicant's security forms and/or the receipt of adverse information by NRC, the individual may be denied access to NRC facilities, sensitive information technology systems or data until a final determination is made of his/her eligibility under the provisions of MD 12.3. Any questions regarding the individual's eligibility for IT Level I approval will be resolved in accordance with the due process procedures set forth in MD 12.3 and E. O. 12968..

In accordance with NRCAR 2052.204.70 "Security," IT Level I contractors shall be subject to the attached NRC Form 187 (See Section J for List of Attachments) which furnishes the basis for providing security requirements to prime contractors, subcontractors or others (e.g., bidders) who 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 of 30 days) to NRC Headquarters controlled buildings; or otherwise requires issuance of an NRC badge.

SECURITY REQUIREMENTS FOR LEVEL II

Performance under this contract 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. Such contractor personnel shall be subject to the NRC contractor personnel requirements of MD 12.3, Part I, which is hereby incorporated by reference and made a part of this contract as though fully set forth herein, and will require a favorably adjudicated Access National Agency Check with Inquiries (ANACI).

A contractor employee shall not have access to sensitive information technology systems or data until he/she is approved by SB/DFS. Temporary access may be approved based on a favorable review of their security forms and checks. Final access will be approved based on a favorably adjudicated ANACI in accordance with the procedures found in MD 12.3, Part I. However, temporary access authorization approval will be revoked and the employee may subsequently be removed from the contract in the event the employee's investigation cannot be favorably adjudicated. Such employee will not be authorized to work under any NRC contract without the approval of SB/DFS. Timely receipt of properly completed security applications is a contract requirement. Failure of the contractor to comply with this condition within the ten work.day period may be a basis to void the notice of selection. In that event, the Government may select another firm for award. When an individual receives final access, the individual will be subject to a reinvestigation every 10 years.

The contractor shall submit a completed security forms packet, including the SF-86, "Questionnaire for National Security Positions," and fingerprint charts, through the Project Officer to the NRC SB/DFS for review and favorable adjudication, prior to the individual performing work under this contract. The contractor shall assure that all forms are accurate, complete, and legible (except for Part 2 of the questionnaire, which is required to be completed in private and submitted by the individual to the contractor in a sealed envelope), as set forth in MD 12.3. Based on SB review of the applicant's security forms and/or the receipt of adverse information by NRC, the individual may be denied access to NRC facilities, sensitive information technology systems or data until a final determination is made of his/her eligibility under the provisions of MD 12.3. Any questions regarding the individual's eligibility for IT Level II approval will be resolved in accordance with the due process procedures set forth in MD 12.3 and E.O.Â 12968.

In accordance with NRCAR 2052.204.70 "Security," IT Level II contractors shall be subject to the attached NRC Form 187 (See Section J for List of Attachments) which furnishes the basis for providing security requirements to prime contractors, subcontractors or others (e.g. bidders) who 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 30 days) to NRC Headquarters controlled buildings; or otherwise requires issuance of an NRC badge.

CANCELLATION OR TERMINATION OF IT ACCESS/REQUEST

When a request for investigation is to be withdrawn or canceled, the contractor shall immediately notify the Project Officer by telephone in order that he/she will immediately contact the SB/DFS so that the investigation may be promptly discontinued. The notification shall contain the full name of the individual, and the date of the request. Telephone notifications must be promptly confirmed in writing to the Project Officer who will forward the confirmation via email to the SB/DFS. Additionally, SB/DFS must be immediately notified when an individual no longer requires access to NRC sensitive automated information technology systems or data, including the voluntary or involuntary separation of employment of an individual who has been approved for or is being processed for access under the NRC "Personnel Security Program."

H.11 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.

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.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.202-1	DEFINITIONS	JUL 2004
52.203-3	GRATUITIES	APR 1984
52.203-5	COVENANT AGAINST CONTINGENT FEES	APR 1984
52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	JUL 1995
52.203-7	ANTI-KICKBACK PROCEDURES	JUL 1995
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	SEP 2005
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	AUG 2000
52.204-7	CENTRAL CONTRACTOR REGISTRATION (OCT 2003)	OCT 2003
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	JAN 2005
52.215-2	AUDIT AND RECORDS--NEGOTIATION	JUN 1999
52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT 1997
52.215-17	WAIVER OF FACILITIES CAPITAL COST OF MONEY	OCT 1997
52.216-7	ALLOWABLE COST AND PAYMENT	DEC 2002
52.216-8	FIXED-FEE	MAR 1997
52.219-4	NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS	JUL 2005
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	MAY 2004
52.219-25	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM--DISADVANTAGED STATUS AND REPORTING	OCT 1999

52.222-3	CONVICT LABOR	JUN 2003
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB 1999
52.222-26	EQUAL OPPORTUNITY	APR 2002
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	DEC 2001
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	JUN 1998
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	DEC 2001
52.223-6	DRUG-FREE WORKPLACE	MAY 2001
52.223-14	TOXIC CHEMICAL RELEASE REPORTING	AUG 2003
52.225-1	BUY AMERICAN ACT--SUPPLIES	JUN 2003
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	FEB 2006
52.227-1	AUTHORIZATION AND CONSENT ALTERNATE I (APR 1984)	JUL 1995
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	AUG 1996
52.227-11	PATENT RIGHTS -- RETENTION BY THE CONTRACTOR (SHORT FORM)	JUN 1997
52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR 1996
52.230-3	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES	APR 1998
52.230-6	ADMINISTRATION OF COST ACCOUNTING STANDARDS	APR 2005
52.232-17	INTEREST	JUN 1996
52.232-18	AVAILABILITY OF FUNDS	APR 1984
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-33	PAYMENT BY ELECTRONIC FUNDS--CENTRAL CONTRACTOR REGISTRATION	OCT 2003
52.233-3	PROTEST AFTER AWARD ALTERNATE I (JUN 1985)	AUG 1996
52.233-4	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	OCT 2004
52.242-1	NOTICE OF INTENT TO DISALLOW COSTS	APR 1984
52.242-3	PENALTIES FOR UNALLOWABLE COSTS	MAY 2001
52.242-4	CERTIFICATION OF FINAL INDIRECT COSTS	JAN 1997
52.242-13	BANKRUPTCY	JUL 1995
52.243-2	CHANGES--COST REIMBURSEMENT ALTERNATE V (APR 1984)	AUG 1987
52.244-2A	SUBCONTRACTS ALTERNATE I (JAN 2006)	JAN 2006
52.244-5	COMPETITION IN SUBCONTRACTING	DEC 1996
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS	FEB 2006
52.246-23	LIMITATION OF LIABILITY	FEB 1997
52.246-25	LIMITATION OF LIABILITY--SERVICES	FEB 1997
52.248-1	VALUE ENGINEERING	FEB 2000
52.249-6	TERMINATION (COST-REIMBURSEMENT) (MAY 2004)	MAY 2004
52.249-14	EXCUSABLE DELAYS	APR 1984

I.2 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 15 days; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least 30 days 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.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed 3 years.

I.3 52.232-25 PROMPT PAYMENT (OCT 2003)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer (EFT). Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(4) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--

(1) Due date.

(i) Except as indicated in paragraphs (a)(2) and (c) of this clause, the due date for making invoice payments by the designated payment office is the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(ii) of this clause).

(B) The 30th day after Government acceptance of supplies delivered or services performed. For a final invoice, when the payment amount is subject to contract settlement actions, acceptance is deemed to occur on the effective date of the contract settlement.

(ii) If the designated billing office fails to annotate the invoice with the actual date of receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Certain food products and other payments.

(i) Due dates on Contractor invoices for meat, meat food products , or fish; perishable agricultural commodities; and dairy products, edible fats or oils, and food products prepared from edible fats or oils are--

(A) For meat or meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)), and as further defined in Pub. L. 98-181, including any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, as close as possible to, but not later than, the 7th day after product delivery.

(B) For fresh or frozen fish, as defined in section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 4003(3)), as close as possible to, but not later than, the 7th day after product delivery.

(C) For perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(D) For dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, and food products prepared from edible fats or oils, as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received. Liquid milk, cheese, certain processed cheese products, butter, yogurt, ice cream, mayonnaise, salad dressings, and other similar products, fall within this classification. Nothing in the Act limits this classification to refrigerated products. When questions arise regarding the proper classification of a specific product, prevailing industry practices will be followed in specifying a contract payment due date. The burden of proof that a classification of a specific product is, in fact, prevailing industry practice is upon the Contractor making the representation.

(ii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

(3) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(3)(i) through (a)(3)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils), with the reasons why it is not a proper invoice. The Government will take into account untimely notification when computing any interest penalty owed the Contractor.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of the mailing or transmission.)

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, discount for prompt payment terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232- 38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract (e.g., evidence of shipment).

(4) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(4)(i) through (a)(4)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment, and there was no disagreement over quantity, quality, or Contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(5) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance is deemed to occur constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivers the supplies or performs the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. If actual acceptance occurs within the constructive acceptance period, the Government will base the determination of an interest penalty on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained

in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(6) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(7) Additional interest penalty.

(i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(7)(ii) of this clause, postmarked not later than 40 days after the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payment. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Fast payment procedure due dates. If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

(d) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

I.4 52.227-14 RIGHTS IN DATA--GENERAL (JUN 1987) ALTERNATE III (JUN 1987)

(a) DEFINITIONS.

"Computer software," as used in this clause, means computer programs, computer data bases, and documentation thereof.

"Data," as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

"Form, fit, and function data," as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, as well as data identifying source, size, configuration, mating, and attachment characteristics, functional characteristics, and performance requirements; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulas, and flow charts of the software.

"Limited rights," as used in this clause, means the rights of the Government in limited-rights data as set forth in the Limited Rights Notice of subparagraph (g)(2) if included in this clause.

"Limited rights data," as used in this clause, means data (other than computer software) that embody trade secrets or are commercial or financial and confidential or privileged, to the extent that such data pertain to items, components, or processes developed at private expense, including minor modifications thereof.

"Restricted computer software," as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or privileged; or is published copyrighted computer software; including minor modifications of such computer software.

"Restricted rights," as used in this clause, means the rights of the Government in restricted computer software, as set forth in a Restricted Rights Notice of subparagraph (g)(3) if included in this clause, or as otherwise may be provided in a collateral agreement incorporated in and made part of this contract including minor modifications of such computer software.

"Technical data," as used in this clause, means that data (other than computer software) which are of a scientific or technical nature.

"Unlimited rights," as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose; and to have or permit others to do so.

(b) ALLOCATIONS OF RIGHTS.

(1) Except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights in--

(i) Data first produced in the performance of this contract;

(ii) Form, fit, and function data delivered under this contract;

(iii) Data delivered under this contract (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this contract; and

(iv) All other data delivered under this contract unless provided otherwise for limited rights data or restricted computer software in accordance with paragraph (g) of this clause.

(2) The Contractor shall have the right to--

(i) Use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, unless provided otherwise in paragraph (d) of this clause;

(ii) Protect from unauthorized disclosure and use those data which are limited rights data or restricted computer software to the extent provided in paragraph (g) of this clause;

(iii) Substantiate use of, add, or correct limited rights, restricted rights, or copyright notices and to take other appropriate action, in accordance with paragraphs (e) and (f) of this clause; and

(iv) Establish claim to copyright subsisting in data first produced in the performance of this contract to the extent provided in subparagraph (c)(1) of this clause.

(c) COPYRIGHT.

(1) DATA FIRST PRODUCED IN THE PERFORMANCE OF THIS CONTRACT. Unless provided otherwise in paragraph (d) of this clause, the Contractor may establish without prior approval of the Contracting Officer, claim to copyright subsisting in scientific and technical articles based on or containing data first produced in the performance of this contract and published in academic, technical or professional journals, symposia proceedings or similar works. The prior, express written permission of the Contracting Officer is required to establish claim to copyright subsisting in all other data first produced in the performance of this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For data other than computer software the Contractor grants to the Government and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Contractor grants to the Government and others acting in its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government.

(2) DATA NOT FIRST PRODUCED IN THE PERFORMANCE OF THIS CONTRACT. The Contractor shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract and which contains the copyright notice of 17 U.S.C. 401 or 402, unless the Contractor identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause; PROVIDED, HOWEVER, that if such data are computer software the Government shall acquire a copyright license as set forth in subparagraph (g)(3) of this clause if included in this contract or as otherwise may be provided in a collateral agreement incorporated in or made part of this contract.

(3) REMOVAL OF COPYRIGHT NOTICES. The Government agrees not to remove any copyright notices placed on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) RELEASE, PUBLICATION AND USE OF DATA. (1) The Contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the

performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided in this paragraph of this clause or expressly set forth in this contract.

(2) The Contractor agrees that to the extent it receives or is given access to data necessary for the performance of this contract which contain restrictive markings, the Contractor shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(e) UNAUTHORIZED MARKING OF DATA.

(1) Notwithstanding any other provisions of this contract concerning inspection or acceptance, if any data delivered under this contract are marked with the notices specified in subparagraphs (g)(2) or (g) (3) of this clause and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this contract, the Contracting Officer may at any time either return the data to the Contractor, or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer shall make written inquiry to the Contractor affording the Contractor 30 days from the receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Contractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.

(iii) If the Contractor provides written justification to substantiate the propriety of the markings within the period set in subdivision (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be cancelled or ignored. If the Contracting Officer determines that the markings are authorized, the Contractor shall be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer shall furnish the Contractor a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Contractor files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (e)(1)(iii) until final resolution of the matter either by the Contracting Officer's determination becoming final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(2) The time limits in the procedures set forth in subparagraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(3) This paragraph (e) does not apply if this contract is for a major system or for support of a major system by a civilian agency other than NASA and the U.S. Coast Guard agency subject to the provisions of Title III of the Federal Property and Administrative Services Act of 1949.

(4) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Contractor is not precluded by this paragraph (e) from bringing a claim under the Contract Disputes Act, including pursuant to the Disputes clause of this contract, as applicable, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this contract.

(f) OMITTED OR INCORRECT MARKINGS.

(1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Contractor may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Contractor's expense and the Contracting Officer may agree to do so if the Contractor--

(i) Identifies the data to which the omitted notice is to be applied;

(ii) Demonstrates that the omission of the notice was inadvertent;

(iii) Establishes that the use of the proposed notice is authorized; and

(iv) Acknowledges that the Government has no liability with respect to the disclosure, use or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) The Contracting Officer may also (i) permit correction, at the Contractor's expense, of incorrect notices if the Contractor identifies the data on which correction of the notice is to be made and demonstrates that the correct notice is authorized, or (ii) correct any incorrect notices.

(g) PROTECTION OF LIMITED RIGHTS DATA AND RESTRICTED COMPUTER SOFTWARE.

(1) When data other than that listed in subdivisions (b)(1)(i), (ii), and (iii) of this clause above are specified to be delivered under this contract and qualify as either limited rights data or restricted computer software if the Contractor desires to continue protection of such data, the Contractor shall withhold such data and not furnish it to the Government under this contract. As a condition to this withholding, the Contractor shall identify the data being withheld and furnish form, fit, and function data in lieu thereof. Limited rights data that are formatted as a computer data base for delivery to the Government are to be treated as limited rights data and not restricted computer software.

(2) (Reserved)

(3)(i) Notwithstanding subparagraph (g)(1) of this clause, the contract may identify and specify the delivery of restricted computer software, or the Contracting Officer may require by written request the delivery of restricted computer software that has been withheld or would otherwise be withholdable. If delivery of such computer software is so required, the Contractor may affix the following "Restricted Rights Notice" to the computer software and the Government will thereafter treat the computer software, subject to paragraphs (e) and (f) of this clause, in accordance with the Notice:

RESTRICTED RIGHTS NOTICE (JUN 1987)

(a) This computer software is submitted with restricted rights under Government Contract No........ (and subcontract ...., if appropriate). It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (b) of this Notice or as otherwise expressly stated in the contract.

(b) This computer software may be -

(1) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;

(2) Used or copied for use in a backup computer if any computer for which it was acquired is inoperative;

(3) Reproduced for safekeeping (archives) or backup purposes;

(4) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating restricted computer software are made subject to the same restricted rights;

(5) Disclosed to and reproduced for use by support service Contractors in accordance with subparagraphs (b)(1) through (4) of this clause, provided the Government makes such disclosure or reproduction subject to these restricted rights; and

(6) Used or copied for use in or transferred to a replacement computer.

(c) Notwithstanding the foregoing, if this computer software is published copyrighted computer software, it is licensed to the Government, without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause.

(d) Any other rights or limitations regarding the use, duplication, or disclosure of this computer software are to be expressly stated in, or incorporated in the contract.

(e) This Notice shall be marked on any reproduction of this computer software, in whole or in part.

(End of Notice)

(h) SUBCONTRACTING. The Contractor has the responsibility to obtain from its subcontractors all data and rights therein necessary to fulfill the Contractor's obligations to the Government under this contract. If a subcontractor refuses to accept terms affording the Government such rights, the Contractor shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subcontract award without further authorization.

(i) RELATIONSHIP TO PATENTS. Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government.

I.5 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://www.arnet.gov/far

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

ATTACHMENT NUMBER	TITLE	DATE	NO. PAGES
1	Billing Instructions – Cost Reimbursement Type Contract		
2	NRC Form 187		
3	Contractor Spending Plan		
4	NRC Management Directive 3.7		

Management Directive 3.8 is superceded by 3.7; can be furnished upon request or found on the NRC public website: http://www.nrc.gov/reading-rm/doc-collections/management-directives/volumes/vol-3.html