

ORDER FOR SUPPLIES OR SERVICES

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

BPA NO. NRC-33-01-183

1. DATE OF ORDER 8/27/04		2. CONTRACT NO. (if any) GS-35F-4366G		6. SHIP TO:	
3. ORDER NO. NRC-02-04-011		MODIFICATION NO.		7. NAME OF CONSIGNEE U.S. Nuclear Regulatory ATTN: Pat Smith	
4. REQUISITION/REFERENCE NO. 1/23/2004		NMS-04-011		8. STREET ADDRESS Mail Stop T-8A23	
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Division of Contracts ATTN: Joyce A. Fields, MS T-7-I-2 Contract Management Branch 1 Washington DC 20555				9. CITY Washington	
				10. STATE DC	
				11. ZIP CODE 20555	

7. TO:		f. SHIP VIA	
NAME OF CONTRACTOR PEC Solutions, Inc. ATTN: Stuart R. Lloyd Senior Vice President 12730 Fair Lakes Circle Fairfax VA 22033			
8. TYPE OF ORDER			
<input type="checkbox"/> a. PURCHASE ORDER		<input checked="" type="checkbox"/> b. DELIVERY/TASK ORDER	
Reference your Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.		Except for billing instructions on the reverse, this delivery/task order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	

9. ACCOUNTING AND APPROPRIATION DATA B&R No. 45015215163; Job Code J5505; BOC 252A; APPN. 31X0200; Obligated Amount \$1,880,000.00		10. REQUISITIONING OFFICE NMSS Pat Smith (301) 415-7352	
--	--	---	--

11. BUSINESS CLASSIFICATION (Check appropriate box(es))			
<input type="checkbox"/> a. SMALL	<input type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> d. WOMEN-OWNED

12. F.O.B. POINT Destination		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE See SOW		16. DISCOUNT TERMS N/A	
--	--	------------------------	--	--	--	----------------------------------	--

13. PLACE OF		FOR INFORMATION CALL: (No collect calls)					
a. INSPECTION		b. ACCEPTANCE		Carolyn Cooper (301) 415-6737			

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (A)	SUPPLIES OR SERVICES (B)	QUANTITY ORDERED (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)	QUANTITY ACCEPTED (G)								
	<p>The U.S. Nuclear Regulatory Commission accepts PEC's offer dated May 17, 2004, as revised July 26, 2004, for the performance of SafeSource Information Technology (IT) Acquisition (Phase I) requirements, in accordance with the Statement of Work (Attachment I) at the prices contained in the price schedule (Attachment II) for this order.</p> <p>(See Section 10. of the Statement of Work for terms, conditions, and requirements specific to this order.)</p> <p>(The Project Management Plan, first required deliverable, shall be incorporated into this order through a contract modification signed by both parties.)</p> <table border="0"> <tr> <td>Task One</td> <td>\$3,076,283.01</td> </tr> <tr> <td>Optional Task Two</td> <td>\$ 411,899.23</td> </tr> <tr> <td>Optional Task Three</td> <td>\$ 980,084.41</td> </tr> <tr> <td>TOTAL COSTS</td> <td>\$4,468,266.65</td> </tr> </table>	Task One	\$3,076,283.01	Optional Task Two	\$ 411,899.23	Optional Task Three	\$ 980,084.41	TOTAL COSTS	\$4,468,266.65					
Task One	\$3,076,283.01													
Optional Task Two	\$ 411,899.23													
Optional Task Three	\$ 980,084.41													
TOTAL COSTS	\$4,468,266.65													

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		SUBTOTAL	
21. MAIL INVOICE TO:							
a. NAME U.S. Nuclear Regulatory Commission Division of Contracts		17(h) TOTAL (Cont. pages)					
d. STREET ADDRESS (or P.O. Box) ATTN: Carolyn Cooper Mail Stop T-7-I-2		17(i) GRAND TOTAL					
e. CITY Washington		d. STATE DC		e. ZIP CODE 20555		\$4,468,266.65	

UNITED STATES OF AMERICA BY (Signature) 		23. NAME (Typed) Joyce A. Fields	
TITLE: CONTRACTING/ORDERING OFFICER			

ADM002

Delivery Order No. NRC-02-04-011
"SafeSource Information Technology
Information System (Phase I)"

Contractor: PEC Solutions, Inc.
12730 Fair Lakes Circle
Fairfax, Virginia 22033

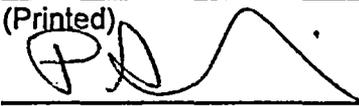
Official:

Name:

Paul G. Rice

(Printed)

Signature:



Title:

President

Date:

8/27/2004

ATTACHMENT I

STATEMENT OF WORK
"SAFESOURCE INFORMATION
TECHNOLOGY SYSTEM
(PHASE I)"

Delivery Order No.
NRC-02-04-011

Table of Contents

1.	BACKGROUND	-1-
2.	OBJECTIVE	-2-
3.	SCOPE	-3-
3.1	Scope of SafeSource Phase I	-3-
3.2	Scope of Interaction with Concurrent Projects	-3-
3.3	Scope of Interaction with Phase II Development	-4-
4.0	TECHNOLOGICAL ENVIRONMENT	-4-
4.1	Infrastructure Considerations and Requirements for Operational Implementation	-4-
4.1.1	Existing Infrastructure Parameters	-4-
4.1.2	Existing Clients and Tools	-5-
4.1.3	Existing Applications	-5-
4.1.4	Additional NMSS Desktop Software	-6-
4.1.5	Existing Email Environment	-6-
4.1.6	Handheld Computer Software Requirements	-6-
4.1.7	Server Requirements	-6-
4.1.8	External Hosting Requirements	-7-
4.2	Government Furnished Equipment	-8-
4.3	Mandatory Compliance with NRC's System Development Life Cycle Management (SDLCM) Methodology	-8-
4.4	NRC Criteria for COTS Products	-9-
5.0	CONTRACTOR PERFORMANCE REQUIREMENTS	-9-
5.1	System Concept	-9-
5.1.1	Major System Functions	-9-
5.1.2	Operational Architecture	-12-
5.1.3	System Interfaces	-14-
5.2	System Functional Requirements for Implementation in Task 1	-15-
5.2.1	Functional Requirements	-15-
5.2.1.1	Licensing Requirements	-16-
5.2.1.2	Inspection Requirements	-19-
5.2.1.3	System Administration and Reporting Requirements	-20-
5.2.1.4	Interfacing Requirements	-22-
5.2.1.5	Common Requirements	-23-
5.2.2	Performance Requirements	-25-
5.2.3	Operational Requirements	-27-
5.2.4	Programmatic Requirements	-28-
5.2.5	Special Requirements	-29-
5.2.6	Data Requirements	-29-
5.2.7	Extensibility Scenario	-30-
5.3	System Functional Requirements for Implementation in Task 3	-32-
5.3.1	Functional Requirements	-33-

	5.3.1.1	Licensing Requirements	-33-
	5.3.1.2	Inspection Requirements	-34-
	5.3.1.3	System Administration and Reporting Requirements	-36-
	5.3.1.4	Common Requirements	-36-
5.4		Non-Mandatory Product Features	-37-
	5.4.1	Functional Requirements	-37-
	5.4.1.1	Licensing Requirements	-37-
	5.4.1.2	Inspection Requirements	-38-
	5.4.1.3	System Administration and Reporting Requirements	-39-
	5.4.1.4	Common Requirements	-39-
	5.4.2	Performance Requirements	-39-
	5.4.3	Operational Requirements	-39-
6.0		DESIGN AND IMPLEMENTATION CONTROLS	-40-
	6.1	General Design and Implementation Controls	-40-
	6.2	Detailed Design and Implementation Controls for Security	-40-
	6.2.1	Identification and Authentication	-41-
	6.2.2	Auditing Control	-41-
	6.2.3	Discretionary Access Control	-42-
	6.2.4	Secure Web-based Administration	-42-
	6.2.5	System Backup and Recovery	-42-
	6.2.6	Other Security Considerations and Requirements	-42-
	6.2.7	References	-43-
	6.3	Detailed Controls for Engineering/Design, Development, and Testing	-43-
	6.3.1	Engineering the Solution (Design Phase)	-45-
	6.3.2	Development	-46-
	6.3.3	Unit and Integration Testing (White Box Testing)	-46-
	6.3.4	System Testing (Black Box Testing)	-47-
	6.3.5	Contractor's Test Report	-48-
	6.4	Detailed Controls for Training	-48-
	6.4.1	Training Plan	-48-
	6.4.2	On-Line Help System and Tutorials	-49-
	6.5	Detailed Controls for Ongoing Support	-49-
7.0		TASK 1 INFRASTRUCTURE AND LICENSING CORE (ACTIVITIES AND DELIVERABLE AND SCHEDULE)	-50-
	7.1	Task 1.1: Identify and Procure, Install, and Setup COTS and Infrastructure	-50-
	7.2	Task 1.2: Develop Project Plans	-50-
	7.3	Task 1.3: Develop - Quality Assurance Plan	-51-
	7.4	Task 1.4: Validate and Prioritize Requirements	-51-
	7.5	Task 1.5: Develop Tactical Integration Plan	-51-
	7.6	Task 1.6: Develop Configuration Management Plan	-51-
	7.7	Task 1.7: Develop Design Document: Logical & Physical Design	-52-
	7.8	Task 1.8: Conduct Design Review	-52-
	7.9	Task 1.9: Customize COTS (System Development)	-52-
	7.10	Task 1.10: Data Conversion Activity	-53-
	7.11	Task 1.11: Conduct Extensive Security Planning and Implementation	-53-

7.12	Task 1.12: Develop Risk Management Plan	-53-
7.13	Task 1.13: Develop System Security Plan	-54-
7.14	Task 1.14: Develop IT Contingency Plan	-54-
7.15	Task 1.15: Develop System Test Plan	-55-
7.16	Task 1.16: Conduct System Test	-55-
7.17	Task 1.17: Develop System Test Results	-55-
7.18	Task 1.18: Develop - System Documentation & Procedures	-55-
7.19	Task 1.19: Develop Acceptance Test Plan	-56-
7.20	Task 1.20: Develop Training Materials	-56-
7.21	Task 1.21: Develop Roll-Out Plan	-56-
7.22	Task 1.22: Conduct Engineer Review	-56-
7.23	Task 1.23: Support System Installation (Initial)	-56-
7.24	Task 1.24: Develop NRC Training (Initial)	-57-
7.25	Task 1.25: Support NRC System Test	-57-
7.26	Task 1.26: Support Development of Acceptance Test Report	-58-
7.27	Task 1.27: Conduct Readiness Review Demonstration	-58-
7.28	Task 1.28: Roll-Out (Including Install & Training)	-59-
7.29	Task 1.29: Develop Lessons Learned and Recommendations	-59-
7.30	Task 1.30: Conduct Ongoing System Assessment, and Provide Maintenance and Operations Support.	-59-
7.31	Task 1 Deliverables and Representative Schedule	-60-
8.0	OPTIONAL TASK 2: DEVELOP DEMONSTRATION OF SOURCE TRACKING APPROACH	-62-
8.1	Background	-62-
8.2	Task 2 Scope	-62-
8.3	Scope Boundaries for Task 2	-63-
8.4	Task 2 Activities and Deliverables	-63-
8.5	Task 2 Schedule	-63-
9.0	OPTIONAL TASK 3: REFINE AND ENHANCE SAFESOURCE	-64-
9.2	Scope of Task 3	-64-
9.3	Project Schedule	-64-
10.0	ORDER TERMS, CONDITIONS, AND REQUIREMENTS	-66-
10.1	Performance Requirements	-66-
10.2	Place of Performance	-66-
10.3	Personnel	-66-
10.4	Travel	-66-
10.5	Reporting Requirements	-66-
10.6	Security	-68-
10.7	Billing Instructions	-74-
10.8	Project Officer Responsibilities	-77-
10.9	Period of Performance	-79-
10.10	Consideration and Obligation	-79-
10.11	FAR 52.232-7, "Payments Under Time-and-Material and Labor-Hour Contracts.	-79-
10.12	FAR 52.232-1, "Payments"	-79-

10.13 FAR 52.232-19, "Availability of Funds for the Next Fiscal Year"..... -83-

10.14 FAR 52.232-18, "Availability of Funds"..... -83-

SAFESOURCE PHASE I STATEMENT OF WORK

1.0 BACKGROUND

The Nuclear Regulatory Commission (NRC) has a requirement to develop an IT system that will support the new SafeSource business practices needed to improve security for nuclear radioactive materials. This requirement entails developing a web-based interface for materials Licensees; and replacing while improving upon the functionality currently embodied in several of the NRC's legacy systems; namely, the License Tracking System (LTS), the Inspection Planning System (IPS), and the Reciprocity Tracking System (RTS). In addition, the NRC has a requirement for SafeSource to introduce the following major process improvements:

- Allow Licensees to provide online updates of time-sensitive data.
- Track individual nuclear sources not just the Licensee's possession limits.
- Bring together all relevant source and license data nationally, for licenses granted by NRC and for those granted by the Agreement States.
- Provide license and source inventory information to other government agencies with a role in nuclear materials safety.

A major impetus for SafeSource is the need to control nuclear materials that could be used in a radiological dispersal device (RDD) or "dirty bomb" -- a conventional explosive that carries nuclear materials and releases them on detonation. The NRC has established a two-phase approach for implementing SafeSource. SafeSource Phase I, which is embodied in this Statement of Work (SOW), will build the information technology environment required to support the overall SafeSource initiative. Therefore, this phase includes developing a web-based infrastructure, a modern licensing and inspection system, and a heuristic demonstration model of how source tracking will work. SafeSource Phase II, timed to follow changes in the regulations, will implement the full requirements of the source tracking process, and will be a separate effort. SafeSource Phase II will entail tracking individual nuclear sources that are designated as "materials of greatest concern" throughout their entire life-cycle from "cradle to grave" -- creation, storage, transfer, usage, and disposal of the nuclear sources. Some of the functionality identified for Phase II activities will be prototyped during Phase I to ensure the viability of the requirements already identified for SafeSource Phase II.

The sponsoring office for this project, the Office of Nuclear Material Safety and Safeguards (NMSS), conducted a comprehensive analysis to examine alternative solutions. As a result of this exhaustive analysis, NRC has developed a vision for SafeSource Phase I which uses a proven Commercial Off-the-Shelf (COTS) licensing package as a base and operates the system using a commercial Application Service Provider (ASP) whose core competency is Web-based secure systems. The combination of this vision and the ideas of business office representatives who participated in numerous Working Group sessions became the foundation for the agency's

Requirements Analysis (see Appendix A) and the System Operations Concept (see Appendix B).

NRC has identified an aggressive schedule for implementing this new IT system, due to the urgent need for a National Source Tracking System, which will be fully operational upon the completion of Phase II. Therefore, the schedule for this project will be a critical component of the contractor's performance evaluation, from initial planning and coordination activities through delivery and maintenance of an operational system. This first phase of the SafeSource project will require the contractor to provide a wide range of hardware, software, services, and web-based hosting to implement the system requirements envisioned for SafeSource Phase I, while laying the foundation for full implementation of SafeSource Phase II by demonstrating aspects of the requirements. SafeSource Phase I users will include NMSS staff, NRC regional materials staff, as well as materials Licensees around the country, and accommodate limited inquiries from the public. When the system is expanded during Phase II, the user community will expand to include Agreement States and other federal agencies, such as the Bureau of Customs and Border Protection; and a much wider range of new functional capabilities will be required, such as recording nuclear source transfers from one Licensee to another. The major expectation is that upon completion of these Phase I activities, the SafeSource System will be an operational system with expansion capabilities and a full understanding of the underlying technical approach for implementing those expansion requirements of Phase II.

2.0 OBJECTIVE

The objective is for a contractor to develop and deploy an IT system that will support the new SafeSource business practices needed to improve security for nuclear radioactive materials. The contractor shall provide all necessary personnel, materials, hardware, software, labor, supplies, equipment, travel, and other direct costs necessary to accomplish the performance of the tasks described below. This contract will be accomplished through the issuance of one mandatory task and two optional tasks.

Task 1 - Establish a SafeSource Infrastructure and Materials Licensing Core. In this task, the underlying secure web-based infrastructure that will be used to support SafeSource processing shall be established. A new system to provide web-based licensing and inspection planning and tracking will be implemented. This system shall include all of the functionality currently provided by LTS and the existing Inspection Planning System (IPS). Once the system is operational, the NRC will be able to decommission LTS and IPS.

Task 2 - Construct a National Source Tracking Demonstration Model (Optional). In this task, a demonstration model shall be constructed to show how a selected subset of source tracking functionality can be established and operated within the SafeSource infrastructure implemented under Task 1. This model shall demonstrate functionality related to high level requirements that span the system life-cycle of a nuclear source including: creation, transfer, intermediate use, and disposition. The model shall also demonstrate key system operational requirements including the ability to support highly secure role-based queries from other agencies such as the Bureau of Customs and Border Protection.

Task 3 - Complete Materials Licensing Enhancements (Optional). This task will enhance the materials licensing core capability and inspection planning functionality established in Task 1. This shall include the implementation of additional features such as Licensee correspondence generation and receipt that are not included in the current systems. Enhancements also will be made based on applicable lessons learned during the rollout of Task 1 and the demonstration activity conducted in Task 2. In addition, the functionality needed to replace an additional existing system, the Reciprocity Tracking System (RTS), will be implemented.

3.0 SCOPE OF WORK

3.1 Scope of SafeSource Phase I

SafeSource Phase I is a major IT system which NMSS is implementing to achieve the following benefits for the NRC and external stakeholders:

- Streamline the materials licensing processes for Licensees and NRC staff (Regional and HQ).
- Support related activities including inspections and reciprocity arrangements between the NRC and Agreement State Licensees.
- Establish an information technology architecture that can support Web-based communication with the Licensees.
- Be a first step towards integrating major NMSS systems into a common framework. This positions the NRC for Phase II, and implementing the National Source Tracking System (NSTS) which will offer "cradle-to-grave" tracking of radiological sources of highest concern.

3.2 Scope of Interaction With Concurrent Projects

Specifically excluded from this Statement of Work are the three capabilities described below that are provided by other NRC systems:

1. Electronic Information Exchange (EIE), which will be used by the public to submit documents to the NRC electronically;
2. ADAMS, which is the NRC's records management repository; and
3. FEE processing, the CFO's system for managing Licensee fees.

However, work under this contract does include these specific interactions with other NRC systems:

1. Providing on-line guidance to SafeSource users on how to submit supporting documents through EIE;

2. Creating 'official record' copies of documents generated by SafeSource, along with document metadata in a format prescribed by the ADAMS staff;
3. Providing a data field to store information allowing the user to find a document in ADAMS (e.g., an ADAMS accession number for an inspection report).
4. Providing data fields and file transfers to the various NRC fee systems;
5. Providing file transfers to the NRC Regulatory Information Tracking System (RITS); and
6. Providing file transfers to the NRC Reactor Programs System (RPS).

The contractor shall communicate with other project teams, including briefing those teams on SafeSource to ensure that related projects are aware of relevant technical and procedural details. Relevant project teams include the Agency Document Access and Management (ADAMS) records management system, the Electronic Information Exchange (EIE) team, the National Source Tracking Working Group, the Chief Financial Officer's FEES system team, and potentially others. The bidder should assume participating in one meeting per week for the purpose of communicating with other project teams; and delivering one briefing per month for the duration of the project.

3.3 Scope of Interaction With Phase II Development

The successful Phase I contractor is not precluded from bidding on subsequent Phase II efforts. However, to encourage competition and preclude any non-competitive issues, the Phase I contractor must agree to allow all work products (documentation, scripts, electronic files, etc.) to be reviewed by any contractor the government deems is qualified to bid on Phase II activities. In addition, there may be overlapping efforts when the Phase II contract is awarded. Therefore, the Phase I contractor must consent to permit the Phase II contractor to access any and all SafeSource Phase I hardware and software components at the ASP's site.

4.0 TECHNOLOGICAL ENVIRONMENT

4.1 Infrastructure Considerations and Requirements for Operational Implementation

In order to reduce integration problems and functional issues, contractors should be aware of the target environment for NRC IT projects, and development efforts should be focused on the environment as perceived for the installation date. The NRC practices a delayed mode of Information Technology (IT) implementation by allowing emerging technology to be exercised before deploying within the agency. This has led to a greatly reduced occurrence of compatibility issues and functional shortfalls by allowing the NRC to observe issues experienced by other similar government agencies and prepare the production operation environment (POE) for the upgrades.

4.1.1 Existing Infrastructure Parameters

To ensure accessibility for all users, the contractor shall deliver a software capability compatible with NRC's targeted desktop infrastructure, the laptop environment, and a non-NRC-desktop user environment. Specifically, any SafeSource components installed on NRC staff's computers shall operate on NRC's existing client desktop computers.

1. The current minimum standard NRC desktop hardware configuration is a Dell Optiplex 150 with an Intel Pentium 4 Processor (1.3 GHz or higher), 256 MB of RAM, a 20 GB hard drive, and a 10/100 network interface card (NIC). The architecture supports PCI and AGP video. In addition there are ~100 laptops with docking stations. These laptops have at least 1.4 Pentium 4 processors; 20 GB hard drive, and 256 MB of RAM.
2. NRC standard desktop operating system is a Windows XP Professional sp1 running in a mixed environment of Active Directory and Novell eDirectory using both IP and IPX. The following sections identify the applications, tools, and clients that are installed on most of the NRC desktops. Together the operating system and applications are referred to as the "NRC standard desktop image".

For non-NRC desktop users, such as materials Licensees or public users, the contractor shall support the use of current supported Microsoft Windows™ operating systems, applications software, and Internet Explorer™ 5.x, Netscape™ 4.x Internet browsers and any later versions. Operating systems such as Apple, Linux, Unix, or other non-Microsoft systems are not addressed in this document.

4.1.2 Existing Clients and Tools

The contractor shall ensure that the SafeSource software is compatible with the following clients and tools:

- XP Client Agent;
- Novell NetWare Client for Windows NT/XP/2000;
- LANDesk version 8
- ZENWorks for Desktops version 6
- Symantec Anti-virus agent version 8
- Executive Software Diskkeeper 8.0.459.0
- GroupWise 5.5.5
- WinZIP 8.1 SR-1 - NRC Licensed version
- QuickTime 6.3

4.1.3 Existing Applications

The contractor shall ensure that all SafeSource software will operate in an environment shared with the following existing applications that are part of the NRC Technical Reference Model:

- ADAMS 4.2 (agency document management system)
- Ensemble 1.22;
- Watermark 3.1.2

- FileNet Hotfix 4
- FileNet IDM Desktop 3.2a
- Inso Outside-In Viewer 7.0
- Internet Explorer 6
- Informs 4.3;
- Microshield v.5;
- HRMS Time and Attendance (PeopleSoft People Tools 7.57)
- Corel WordPerfect Suite 8
 - WordPerfect 8
 - Quattro Pro 8
 - Presentations 8
- FTP Corp's Onnet 32 tools suite (includes FTP, 3270, Telnet, ping, etc.).
- Adobe Acrobat Reader 5.05 (version 9/24/2001)\
- Macromedia Flash Player 6.0.79.0
- Microsoft DAO 3.5
- Microsoft Media Player 9.00.00.3008
- Microsoft Viewers: Word, Excel, and Power Point
- PowerBuilder 6.5 and later versions
- SQL Server 6.5 (Transact SQL)
- Sun Java 1.3.1.06
- Sybase ASE Adaptive Server Enterprise 11 and later versions
- Wang Imaging

4.1.4 Additional NMSS Desktop Software

In addition, there are various software packages which NMSS installs on the NRC standard desktop image. The contractor shall ensure that the SafeSource software is compatible with the following software:

- Microsoft Office XP (Word, Excel, Powerpoint, Access)¹

4.1.5 Existing Email Environment

The NRC's email system is Novell's GroupWise version 5.5.5 which includes an SMTP gateway and an API gateway. Email related functions shall be written so that standard SMTP and API calls are used.

4.1.6 Handheld Computer Software Requirements

The Palm OS based Personal Digital Assistants (PDAs) are commonly used by NRC headquarters staff. Still, NMSS is receptive to proposed solutions that might employ an alternate proven platform, such as the Windows Mobile operating system.

¹Although Microsoft Word is not on all NRC desktops, all NMSS desktops are configured with Word. If a Word interface is available off-the-shelf, the contractor shall not propose a custom WordPerfect interface.

4.1.7 Server Requirements

The contractor may propose any generally marketed server hardware and software for servers operating outside the NRC environment, though cost and soundness of technical approach will be evaluated. However, it is a requirement that all proposed hardware and software be available on the GSA Schedule. Therefore, the contractor is responsible for ensuring that components are available on the GSA Schedule and must include specific information about the GSA Schedule(s) as part of the contractor's cost proposal. The government will confirm that all components are available from the identified GSA Schedule(s) before the contract is awarded and at any time thereafter that the NRC authorizes the contractor to purchase hardware or software on behalf of the government.

4.1.8 External Hosting Requirements

In consideration of accessibility needs and current in-house hosting limitations, the NRC has determined that the SafeSource system must be hosted at a full-service site external to the NRC campus. This decision acknowledges current needs and the likelihood of eventual use by a far broader range of external users, including management of data contributed by Agreement States and other government agencies.

However, the government will arrange for installation and support of telecommunications lines and services to the external hosting site; and the NRC will pay appropriate recurring fees for these telecommunications lines (e.g., T1 or T3) between the hosting site and NRC Headquarters. The contractor shall provide communications among contractor sites and the host site as part of doing business.

The NRC expects the proposed solution to address the requirements for all three SafeSource tasks, as outlined in this solicitation, and will employ multiple interface types. It is likely that most end users will access the system through a web interface while more intensive work (e.g., system management, workflow management, data entry, and configuration) may utilize an alternate interface to desktop computers at NRC Headquarters and other sites where such functions are performed.

In support of the external hosting of the SafeSource system, the contractor shall:

- A. Propose a strategy to ensure responsive connectivity between the NRC wide area network and the contractor hosting site (e.g., T1, T3, Frame Relay, etc.);
- B. Support the government in making arrangements for installation and maintenance of telecommunications lines and services;
- C. Provide all necessary personnel, materials, hardware, software, labor, supplies, equipment, host facilities, travel, and services necessary to host the SafeSource system in compliance with the requirements and with design specifications;
- D. Provide all on-site support at NRC Headquarters, as needed to resolve issues related to connectivity with the contractor hosting site(s) and any other issues related to apparent malfunction of interface components;
- E. Conduct necessary planning activities and coordination with appropriate NRC organizations to ensure non-disruptive testing and implementation to any hardware or software upgrades;

F. Propose a strategy by which the contractor will plan and implement technology upgrades to ensure that SafeSource remains readily maintainable and compatible with industry standards and external stakeholders;

G. Perform database administration and ongoing operations activities such as testing and installing software patches;

H. Provide all resources and support needed for semi-annual disaster recovery testing and for review and testing of plans for continuity of operations;

I. Provide access, as needed for NRC staff or independent contractors to gather information related to facilities and other system security elements; and

J. Adhere to established Federal Government, international, and/or industry hardware and software standards, including, but not limited to the following:

- Network access shall be HTTP/1.1 [<http://www.faqs.org/rfcs/rfc2068.html>] over TCP (Transmission Control Protocol, [<http://www.faqs.org/rfcs/rfc793.html>]) over IP (Internet Protocol, [<http://www.faqs.org/rfcs/rfc791.html>]).
- Associating server names with IP addresses shall follow the DNS (Domain Name System), [<http://www.faqs.org/rfcs/rfc1034.html>] and [<http://www.faqs.org/rfcs/rfc1035.html>].

It is a requirement that all proposed hosting services be available on the GSA Schedule. Therefore, the contractor is responsible for ensuring that such services are available on the GSA Schedule and must include specific information about the GSA Schedule(s) as part of the contractor's cost proposal. The government will confirm that all hosting services are available from the identified GSA Schedule(s) before the contract is awarded and at any time thereafter that the NRC authorizes the contractor to procure such hosting services.

4.2 Government Furnished Equipment

The NRC will be responsible for furnishing the following resources related to the implementation of SafeSource Phase I:

- Providing a dedicated communication line(s) that connects the contractors hosting site to the NRC network
- Installing any client components of the SafeSource Phase I software on NRC desktops
- Providing space at NRC sites to conduct SafeSource training sessions

The contractor shall provide all necessary information (e.g., hosting site communications specifications, communications line capacity requirements, desktop software installation procedures, training room requirements) and support that is requested by the NRC in order to furnish these resources.

Servers and COTS software will be considered "government furnished equipment" even though the NRC will authorize the contractor to procure such hardware and software components on behalf of the government. The NRC will tag and maintain property control of this equipment and

the contractor is expected to notify the government within 48 hours after any equipment is received at the contractor's site or moved to another facility so that government staff can conduct inventory control, tracking, and monitoring activities. In addition, the contractor shall notify the government within 24 hours if the equipment sustains damage.

4.3 Mandatory Compliance with NRC's System Development Life Cycle Management (SDLCM) Methodology

A. NRC's Management Directive 2.5 "Application Systems Life-Cycle Management," establishes the policies for developing and maintaining application systems. The **SDLCM Methodology Handbook** and its companion volume of procedures, standards, and forms implement Directive 2.5 by providing life-cycle structure and guidance for all NRC Projects. Use of the **SDLCM Methodology Handbook**, Version 2.2, is mandatory. This handbook (1) defines the life cycle of an application system; (2) describes the structure of the methodology and each of the seven components; and (3) describes the processes for developing, enhancing, and maintaining systems. The handbook clearly discusses what activities a project team must perform within each of the seven components and what products a project must produce. The companion volume, **SDLCM Methodology Procedures, Standards, and Forms**, Version 1.2, contains the procedures that document various activities and the standards and forms that facilitate the preparation of all products.

B. Copies of these volumes are included in APPENDIX C. The contractor shall follow a Package-Based Life-Cycle Model, as described in Section 3.4 of the **SDLCM Methodology Handbook**.

4.4 NRC Criteria for COTS Products

For purposes of this acquisition, the NRC has defined the following specific criteria for determining that a vendor-proposed software package is classified as a "COTS" product during development and operation:

Must be able to perform the following functions through the general user interface and without need for re-compiling the product and without other vendor or expert programmer assistance:

- Addition of user-defined fields
- Formatting of data input screens/forms (e.g., location/sequence of fields and ability to remove unneeded standard fields)
- User defined validation of data entry fields (e.g., format, valid date, list lookup, validation table, etc.)
- Definition and management of user-defined rules for data processing (e.g., license process work flows and approval check points)
- Integration of user-defined reports into the standard user interface (e.g., externally defined crystal reports)

The COTS product must be identical to the version sold to a significant customer base as evidenced by one product version upgrade being distributed to all customers

Client configurations, as indicated above, are retained when each new version upgrade is deployed (e.g., table-driven configurations)

5.0 CONTRACTOR PERFORMANCE REQUIREMENTS

5.1 System Concept

This section provides a high-level description of the SafeSource Phase I system in terms of its major system functions, operational architecture, and interfaces with external systems.

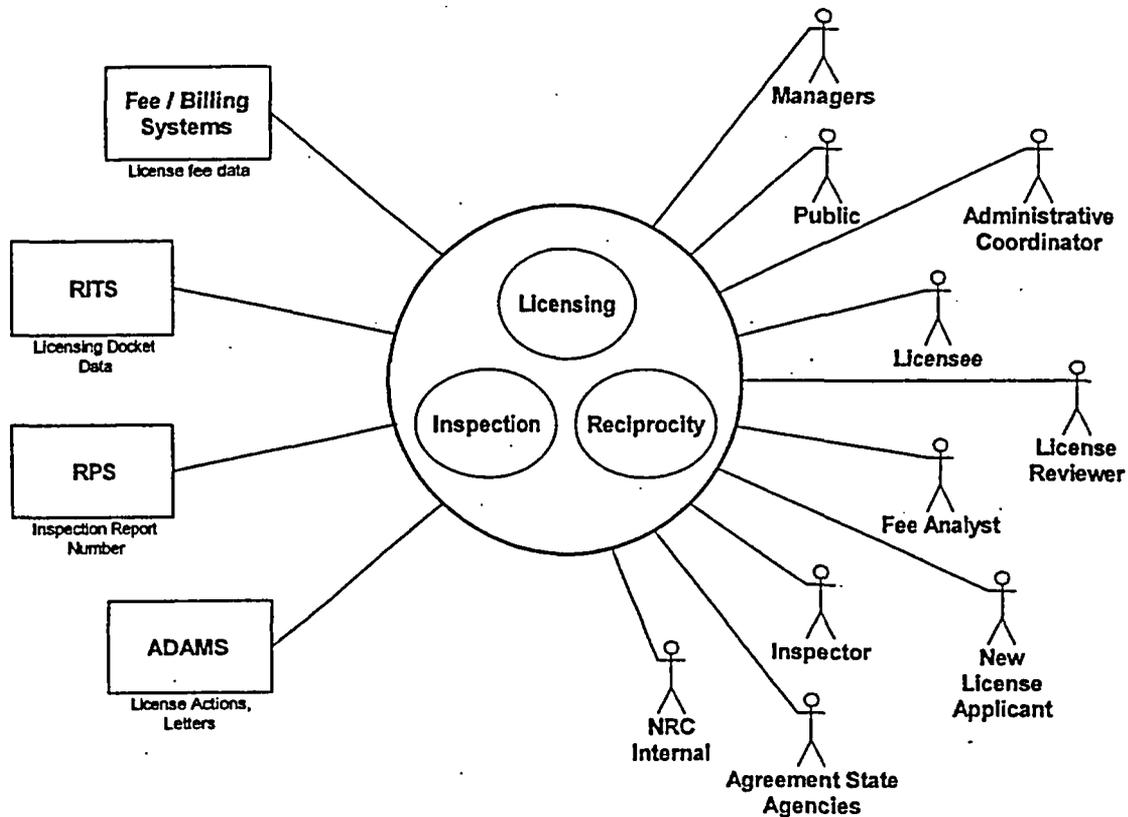
5.1.1 Major System Functions

Major functions of the SafeSource Phase I system shall include the following:

- New applicants and existing NRC Licensees will be able to establish a Web-based user account to submit and track requests to apply for, amend, renew, or terminate licenses to manufacture, distribute, and use nuclear materials in NRC-jurisdiction states (Appendix D provides a list of the major types of nuclear materials licenses. The NRC Web site, <http://www.nrc.gov/materials/medical.html> provides additional information on how the NRC regulates medical, industrial, and academic uses of nuclear materials.)
- Existing nuclear materials Licensees from Agreement States (states which are delegated authority by the NRC to issue such licenses in their jurisdictions) will be able to establish a Web-based user account to submit and track requests to apply for, amend, or renew temporary ("reciprocity") licenses to manufacture, distribute, and use nuclear materials in NRC-jurisdiction states.
- NRC managers and licensing staff will use the system to organize and track their work reviewing and approving licensing requests, including communication with new applicants and existing NRC Licensees and issuance of new and amended licenses.
- NRC managers and inspection staff will use the system to organize and track their work scheduling, preparing, executing, and following up on inspections of nuclear materials Licensees and their facilities.
- Various classes of users, including the public, will have selective access to these functions and to the information captured in the database. The system shall produce various standard queries, reports and interfaces to existing NRC systems as well as allow ad hoc query and reporting.
- The system shall be highly configurable to allow differing and easily changed business rules for various types of nuclear materials licenses, to manage access rules for various classes of users, and to facilitate automatic generation of correspondence.

Exhibit 5-1 shows the major classes of users and the system interfaces that form the context for the SafeSource Phase 1 system.

Exhibit 5-1: SafeSource Phase 1 System Context



Classes of users shown in Exhibit 5-1 include:

- **Administrative Coordinator.** NRC staff member that performs basic administrative duties throughout the process life-cycle of license actions and inspections. This includes Licensing Assistants (LA) and other appropriate staff designated to perform LA duties and responsibilities.
- **Agreement State Agency.** Nuclear regulatory agency of a state that has signed an agreement with the NRC under which the state is authorized to regulate the use of by-product, source and small quantities of special nuclear material within the state.
- **Fee Analyst.** NRC staff member from the Office of the Chief Financial Officer (OCFO) that performs fee reviews and processes fee payments associated with the process life-cycle of license actions and inspections.
- **Inspector.** NRC staff member with technical expertise that performs material inspections.
- **License Reviewer.** NRC staff member with technical expertise that performs material technical reviews of license applications and associated requests.
- **Licensee.** Company or person authorized to use radioactive materials under a license issued by the NRC or an Agreement State.
- **Manager.** NRC staff member that is responsible for monitoring and controlling the process life-cycle of license actions and inspections.
- **New License Applicant.** Company or person that is applying for a new NRC license.

- **NRC Internal.** NRC staff member that has read-only access to the system but does not directly change the system data. This includes staff members from the operations center, the ADAMS group, the Office of the General Council, the Office of Enforcement, the Office of Investigations, etc.
- **Public.** A member of the general public.

5.1.2 Operational Architecture

The NRC vision is to develop and operate SafeSource Phase I using a proven Commercial Off-the-Shelf (COTS) licensing package as a base. NMSS has conducted market research and determined that there are viable commercial products that have been used as the base for developing operational licensing systems of a scope similar to that envisioned for SafeSource Phase I.

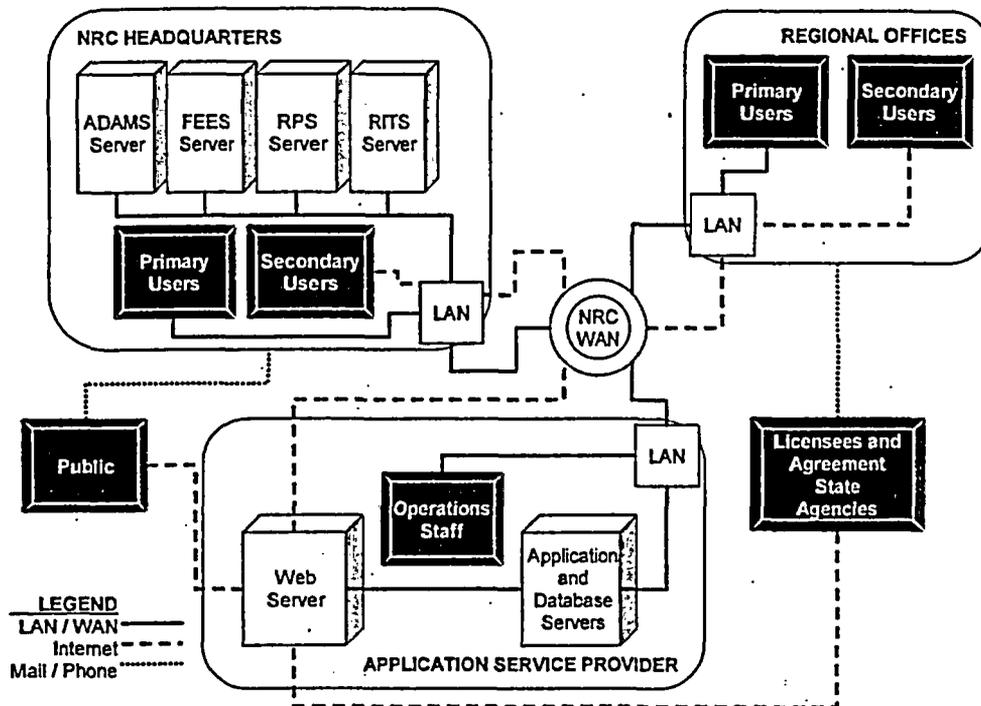
An Application Service Provider (ASP) shall host the system. The contractor is responsible for including these ASP services in the proposal, and note that all references to the "ASP" are synonymous with references to the "contractor." The ASP shall house servers purchased by the contractor on behalf of the NRC, as needed to provide the SafeSource Phase I platform, conduct initial efforts to provide server hardening and security scanning, and install the needed data base management software, any COTS licensing package, and any complimentary subsystems on these servers. The ASP shall provide a test environment that is comparable to the production environment. The contractor shall ensure that the production SafeSource environment (including, but not limited to servers, telecommunication links, etc.), and technical support resources are available between the hours of 7am - 6pm Eastern Standard Time; however, the production server should be available as specified in § 5.2.2. Backup/recovery and offsite data storage for SafeSource Phase I processing shall be provided as part of the normal services supplied by the ASP.

The SafeSource operational environment provided by the ASP shall include:

- Internet connectivity
- Secure Web-based front-end with back-end database and license processing applications
- Separate development, test, and production environments
- Backup and recovery
- Intrusion detection
- Firewall capabilities
- Security-data and privilege restrictions
- Interfaces with applications hosted on NRC platforms

Exhibit 5-2 presents a representative or conceptual high-level architectural view for the SafeSource Phase I system.

Exhibit 5-2 Representative SafeSource Operational Architecture



NRC users at Headquarters and in Regional Offices will access the system using LAN and WAN connectivity. Expansion of the current WAN will be required to add a high-speed WAN connection between the NRC and the ASP.

This core SafeSource Phase I user community will encompass 150 NRC specific individuals ("named users") with read-write capability:

- Administrative Coordinators--13
- License Reviewers--58
- Inspectors--41
- Managers--18
- Fee Analysts--5
- IT Support Staff--15

The breakdown of these users by location is shown in the exhibit below:

Exhibit 5-3: NRC SafeSource Users by Type and Location

User Type	Region I	R-I/R-II Atlanta	Region III	Region IV	HQ	Total
Administrative Coordinators	4	1	4	1	3	13
License Reviewers	20		15	13	10	58
Inspectors	7	11	14	6	3	41
Managers	4	2	3	3	6	18
Fee Analysts					5	5
IT Support Staff					15	15
Total	35	14	36	23	42	150

These users will receive specific training in the use of the SafeSource Phase I system.

External users including Licensees, Agreement State Agencies, and the Public will be able to access the system if desired using their local Internet connectivity or connectivity provided by the ASP. NRC Internal users also will access the system via the NRC Internet connectivity. Internet-based access will include:

- NRC Internal users-200 to 300
- Public-limited read-only access
- Licensees-limited read-write access

These users will not receive specific training but the SafeSource Phase I web interface shall include user-friendly navigation tools, online help, self-paced training tools, and other aids to facilitate access by these users. The system shall support simultaneous access of up to 50 web users along with 150 NRC specific users.

The NRC will continue to provide support to any external users who choose to interact via telephone or by mailing paper-based transactions.

5.1.3 System Interfaces

Batch extraction interfaces shall be established between the SafeSource Phase I system and the following existing NRC systems that are operated in the NRC internal computing environment:

- Agencywide Documents Access and Management System (ADAMS)
- Various NRC Fee Systems
 - Material Annual Fee System (MATANN)
 - Material Fee Billing System (MATFB)
 - License Fee Reporting System (FEES)
- Regulatory Information Tracking System (RITS)
- Reactor Programs System (RPS)

5.2 SYSTEM FUNCTIONAL REQUIREMENTS FOR IMPLEMENTATION IN TASK 1

Task 1 includes the implementation of the underlying secure web-based infrastructure that will be used to support the overall SafeSource initiative. It also includes the implementation of a new system hosted within this infrastructure to provide the core licensing and inspection functionality that is needed by the NRC. This new system will replace two NRC mainframe systems that are currently in use -- the Licensing Tracking System (LTS) and the Inspection Planning System (IPS).

Subsequent sub-sections provide a summary of the detailed requirements of the new system that represent the minimum functionality required to be implemented in Task 1. However, the contractor may move functionality from Task 3 to Task 1 if such functionality is available in the COTS software. These requirements are organized within the following categories: Functional Requirements, Performance Requirements, Operational Requirements, Programmatic Requirements, Special Requirements, and Data Requirements. Appendix A contains the detailed requirements of SafeSource Phase I. Appendix E contains a listing of each individual requirement and the associated Task that it is implemented in. In the use case summaries below, an asterisk is used at the end of the requirement name to designate that part of the use case functionality is implemented in one task and the rest is implemented in another task (i.e. Task 1 or Task 3) or that the functionality may be desirable but non-mandatory.

Following the Task 1 requirements, an Extensibility Scenario is presented that lists potential requirements that may be implemented in SafeSource Phase II. The contractor shall ensure that the technical approach proposed for this part of the SafeSource project can be expanded or augmented to transition to SafeSource Phase II.

5.2.1 Functional Requirements

The Functional Requirements define the intended behavior of the system from the NRC business point-of-view and describe what actions and processes will exist in the system and how they will behave.

The Functional Requirements have been documented using industry standard, object-oriented analysis and design techniques. In particular, the Unified Modeling Language (UML) 'use-case' technique has been used to elicit and document the functional requirements of the system. The use-case technique is a way of describing the behavior of a system from the viewpoint of the users that interact with the system. The two primary documents used with this technique are the 'use-case diagram' and the 'use-case specification'. The use-case diagram is a graphical representation of the interaction between the users and the functional processes. The use-case specification is a textual description of each use-case (functional process) in the diagram. The requirements listed in this section are a summary of the detailed use-case diagrams and specifications that are listed Appendix A². Requirements have been grouped into five functional

²A use-case identifier appears in parenthesis at the end of each requirement's name as an easy reference to the full use-case specification details located in Appendix A.

areas: Licensing, Inspection, System Administration and Reporting, Interfacing, and Common. The Common functional area is not a discrete functional area like the others; it is used to simply list the common functions that are used throughout the system by other use-cases.

5.2.1.1 Licensing Requirements

The Licensing functional area contains requirements that primarily support the NMSS licensing processing.

Obtain Licensing Information (UC1)*

This functional capability shall provide the user with a list of references to informational documents that provide assistance to the user in completing licensing activities. This includes licensing documents such as: application instructions, application forms, guidance, and regulations. It also includes guidance about what information the NRC requires before considering a Licensee for exemption; guidance that describes the financial assurance requirements; and guidance that describes the requirements for designating certain information as proprietary.

Search for License (UC2)

This functional capability shall enable the user to query and view license information. The query and view options will be determined by the role(s) the user possesses. The NRC staff roles shall be able to use advanced search criteria and view all license information; the Agreement State Agency role shall be able to use basic search criteria and view licensing information that normally appears on the actual license; and the Public role shall be able to use a very limited set of search criteria and view licensing information that normally appears on the actual license.

Obtain NRC Contact Information (UC3)

This functional capability shall provide the user with a list of names, mailing addresses, e-mail addresses, and phone numbers of important contacts at NRC Headquarters and in each of the Regions.

Enter a New License Application (UC4)*

This functional capability shall enable the Licensee to request a new materials license from the NRC. This request can be submitted either electronically or with a paper-based application. If submitted electronically, the Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system), save draft versions of the application, and generate hard-copy and soft-copy versions of the application. If a paper application is used, the NRC staff will enter the application's information into the system. The system shall support multiple license types each with its own set of NRC-configurable business rules and it shall automatically calculate the application fee based on the chosen fee category.

Enter a License Amendment Request (UC5)*

This functional capability shall enable the Licensee to request an amendment to change a materials license. This request can be submitted either electronically or with a paper-based application. If submitted electronically, the Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system), save draft versions of the application, and generate hard-copy and soft-copy versions of the application. If a paper application is used, the NRC staff will enter the application's information into the system. The system shall support multiple license types each with its own set of NRC-configurable business rules and it shall automatically calculate any change to the application fee based on the proposed amendment changes.

Enter a License Renewal Request (UC6)*

This functional capability shall enable the Licensee to request a renewal for a materials license. This request can be submitted either electronically or with a paper-based application. If submitted electronically, the Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system), save draft versions of the application, and generate hard-copy and soft-copy versions of the application. If a paper application is used, the NRC staff will enter the application's information into the system. The system shall support multiple license types each with its own set of NRC-configurable business rules and it shall automatically calculate any change to the application fee based on the proposed renewal changes.

Enter a License Termination Request (UC7)

This functional capability shall enable the Licensee to request a termination of a materials license. This request can be submitted either electronically or with a paper-based application. If submitted electronically, the Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system), save draft versions of the application, and generate hard-copy and soft-copy versions of the application. If a paper application is used, the NRC staff will enter the termination information into the system.

Enter Fee Information (UC8)

This functional capability shall enable the NRC Fee Analyst to enter fee-related information such as general fee related notes, fee categories, and the refusal-to-pay indicator. The Fee Analyst examines new and amended licenses after each license action is completed in order to determine and record the appropriate fee categories for the license. If the fee is not paid in full, then the Fee Analyst records that the Licensee has refused to pay the fee.

Obtain Fee Payment Information (UC9)

This functional capability shall enable the Licensee to view information about the available payment options for paying a fee. This includes detailed instructions and address information needed for mailing in the fee payment and a link to external payment systems that will process the fee payment.

Maintain External User Account (UC10)

This functional capability shall enable the Licensees to create and maintain preferences for their NRC licensing account. This includes identification information such as user id, password, name, mailing address, etc... A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Validate Licensing Request (UC11)*

This functional capability shall enable the NRC to perform and track functions that are needed to complete the administrative review for a license action. This shall include validating that the request has been filled-out correctly and completely, confirming that all the attachments referenced by the request have been included, assigning the appropriate tracking numbers to the request and recording payment check information.

Enter License Action Process Status (UC15)

This functional capability shall enable the NRC staff to record the various steps of the formal license action approval process as a way to measure the progress of the licensing action from its request to its completion. The list of steps to be completed, the relationships between those steps, and the response due date of the steps will be configurable by the NRC. In addition, the steps may be configured to be automatically completed by the system and to start or stop the 'licensing clock'. The step rules may be configured differently by license action type and by NRC Region. The system shall also provide the ability for different individuals to work concurrently on different processing steps of the same license action.

Check License Action Process Status (UC16)*

This functional capability shall enable the user to see certain steps of the license action approval process and their associated completion status. The query and view options shall be determined by the role(s) the user possesses. The NRC staff roles will be able to see all of the detailed information about the process status; the Licensee role shall be able to view basic information about the process status of their own license actions; and the Public role shall be able to view minimal information about the licensing process status of an individual license.

Assign Reviewer to License Action (UC17)

This functional capability shall enable a Manager to assign a Reviewer to a license action or to un-assign a Reviewer from a license. It shall also enable a Reviewer to self-assign a license action. The user will be able to view the license action details before assignment so that the relative complexity and difficulty of the license action review work can be determined. The system shall also notify a Reviewer (or group of Reviewers) that a license action has been assigned to him/her.

Enter Technical Review Information (UC18)*

This functional capability shall assist the Reviewer in tracking the numerous activities that are part of the technical review process. This includes providing an electronic checklist that displays the steps of the technical review process and whether or not the steps have been completed. The Reviewer shall also have the ability to attach supporting documents (via a link to the appropriate electronic submission system) related to the review process.

Amend License Information (UC20)

This functional capability shall enable the NRC staff to make a change to the license information. If the change affects the requirements of the license that are noted in the licensing conditions, then it is considered a formal amendment to the license and must undergo a technical review process. Otherwise, the change is considered a correction and can be made directly to the license. The NRC staff will be able to indicate that the change to the license is an amendment or a correction.

Generate Bulk Licensee Correspondence (UC21)*

This functional capability shall enable the user to generate bulk mailings. The system shall enable the NRC staff to use advanced search criteria to obtain a list of Licensees to notify. The system shall merge Licensee and license information that is stored in the system with a chosen bulk mailing template. The document itself will be sent to the Licensee using the Licensee's preferred correspondence method (i.e. postal mail or email). The system shall be able to generate notices of license expiration and mailing labels as specified in Appendix A.

5.2.1.2 Inspection Requirements

The Inspection functional area contains requirements that primarily support the NMSS inspection processing.

Setup a New Inspection (UC22)

This functional capability shall create a new inspection record. This shall generate a unique inspection report number that is used by the back-end time and labor system to enable the inspectors to bill their time against specific inspections. This shall also create an inspection process step to mark that the inspection was created.

Assign Inspector to Inspection (UC23)

This functional capability shall enable a Manager to assign an Inspector to an inspection or to unassign an Inspector from an inspection. It shall also enable an Inspector to self-assign an inspection. The user shall be able to view the license and inspection details before assignment so that the relative complexity and difficulty of the inspection can be determined. The system shall also notify an Inspector (or group of Inspectors) that an inspection has been assigned to him/her.

Generate Inspection Due List (UC25)

This functional capability shall assemble a list of Licensees who will be due for a routine inspection. The system shall generate the inspection due list using various criteria such as: licensing Region, inspection Region, inspection priority, program codes, zip code, state code, date range. The user shall be able to save the criteria used for generating the listing and shall be able to output the results to a printer or a file.

Search for Inspection (UC26)*

This functional capability shall enable the user to query and view inspection information. The query and view options will be determined by the role(s) the user possesses. The NRC staff roles shall be able to use advanced search criteria and view all inspection information.

Enter Inspection Process Status (UC28)

This functional capability shall enable the NRC staff to record the various steps of the formal inspection process as a way to measure the progress of the inspection from its start to its completion. The list of steps to be completed and the relationships between those steps will be configurable by the NRC. In addition, the steps may be configured to be automatically completed by the system and to start or stop the 'inspection clock'. The step rules may be configured differently by NRC Region. The system shall also provide the ability for different individuals to work concurrently on different processing steps of the same inspection.

Check Inspection Process Status (UC31)*

This functional capability shall enable authorized users to see certain steps in the inspection process and their associated completion status. The query and view options will be determined by the role(s) the user possesses. The NRC staff roles shall be able to see all of the detailed information about the process status.

5.2.1.3 System Administration and Reporting Requirements

The System Administration and Reporting functional area contains requirements that primarily support the system administration and reporting needs of the system.

Generate Standard Reports (UC33)*

This functional capability shall enable users to generate numerous standard reports that are needed by the NRC. The user shall be able to specify retrieval criteria and view the entered criteria values on the report itself. The reports will provide filtering, sorting, and grouping capabilities and in some cases, the ability to drill-down into supporting information via navigational links embedded in the report. The user shall also have the choice to print the report or save it to file. The following reports will be available: Reviewer Report, Actions Completed, Actions at Same Step, Actions Past Tickler Date, Active NRC Licenses, Statistical Report, Fiscal YTD Report, Pending Assigned Actions, Actions Assigned to Regions/HQ, Number of Pending

Actions, Number of Cases Received or Completed, Expired Licenses, Licenses within 30 Days of Expiration, LTS License and Fee Worksheet, Days Since Report of Pending Items, List of Licensees, Financial Assurance and Inspections Coming Due. A detailed list of data elements and data filtering, grouping, and sorting capabilities is included for each report in Appendix A.

Generate Ad-Hoc Reports (UC34)

This functional capability shall enable the user to design, generate, and save ad-hoc reports. The user shall be provided with design tools to expedite and ease the report creation process. These design tools shall enable the user to choose tables and columns, specify table relationships, create derived/computed data elements, create summary calculations, position report elements within the report (i.e. visual layout), and specify criteria and arguments for refining the result set. Once the results have been generated, the user will have the option to output the report in hard-copy or soft-copy formats. A user that creates and saves an ad-hoc report will also be able to grant another user the permission to execute the saved ad-hoc report.

Configure Business Rules (UC35)*

This functional capability shall enable the NRC to dynamically configure the business rules needed for the licensing and inspection features of the system. This shall allow the NRC to change the functionality of the system to accommodate changes in business rules over time without requiring changes to the system code. The following types of rules will be configurable: Data Validation, Custom Calculations, Process Steps, Clock Rules, Workflows, User Account Removal, Alerts, Archival, and External System Interfaces.

Maintain Code Tables (UC36)

This functional capability shall enable the NRC to store and modify the various NRC business-specific values (codes) used for lookups, defaults, and other validations. It shall also enable the NRC user to search for specific codes, inactivate specific codes, and set up relationships between multiple code tables.

Maintain Internal User Accounts (UC37)

This functional capability shall enable the user to modify his/her own internal user account information; this includes the ability to change the account password. In addition, the System Administrator shall be able to create new internal user accounts, set up role-based privileges for internal users, and modify any internal user's account information. The system shall be configurable to force password changes after a specified elapsed time or at the request of the System Administrator.

Remove User Account (UC38)*

This functional capability shall provide a mechanism for removing both internal and external user accounts once they are no longer needed. The System Administrator shall be able to remove user accounts as needed.

Generate Alerts (UC39)

This functional capability shall allow the system to automatically generate and distribute alerts based on various system events, as configured by the System Administrator. Alerts shall notify one or more system users via both email and a list of current alerts when they login to the system. After login, the user shall be able to review and dismiss their alerts from an alert list. Alerts will persist, popping up at every login, until the user dismisses them. The system shall provide a way to identify the factors that should trigger an alert and the list of users that should receive an alert via NRC-configurable business rules. Some known alerts include: license action assigned, license action coming due, license action past due, Licensee response past due, license expiration coming soon, license expired, financial assurance instrument expiration coming soon, financial assurance instrument expired, inspection assigned, inspection coming due, and inspection past due.

Apply Time-Based Changes (UC40)

This functional capability shall provide a mechanism for making changes to system data that are triggered by the passage of time. The system shall provide a way to dynamically specify NRC-configurable business rules that describe the type of change that should be made and the type of time-based criteria that should trigger that change. One known time-based change is that the license status is automatically changed to 'Expired' when the system date is greater than the license's expiration date.

5.2.1.4 Interfacing Requirements

The Interfacing functional area contains requirements that primarily support the system's ability to interface with other NRC systems.

Interface - ADAMS (I1)

This functional capability shall format certain generated output and other information stored within the system in a way that is suitable for submission to the NRC records management system - the Agency-wide Documents Access and Management System (ADAMS). The information shall be formatted as a Portable Document Format (PDF) file and submitted to the document processing group within the NRC along with a suggested set of meta-data information used to properly categorize the submission within ADAMS. The user submitting the document shall have the opportunity to review the document and react to any proprietary or privacy considerations before submitting it to ADAMS. A formal Interface Control Document (ICD) shall be developed during the project design phase to finalize the appropriate specifications for this interface and to coordinate these changes with all affected internal NRC groups.

Interface - Fees (I2)

This functional capability shall provide a mechanism for sending basic docket, licensing, and fee category information from the new system to various NRC fee-related systems - the Material Annual Fee System (MATANN), the Material Fee Billing System (MATFB), and the License Fee Reporting System (FEES). The system shall generate the licensing export file in an agreed

upon format on a periodic basis according to a NRC-configurable schedule. A formal Interface Control Document (ICD) shall be developed during the project design phase to finalize the appropriate specifications for this interface and to coordinate these changes with all affected internal NRC groups.

Interface - RITS (I3)

This functional capability shall provide a mechanism for sending basic docket, licensing, and fee category information from the new system to the Regulatory Information Tracking System (RITS). The system shall generate the licensing export file in an agreed upon format on a periodic basis according to a NRC-configurable schedule. A formal Interface Control Document (ICD) shall be developed during the project design phase to finalize the appropriate specifications for this interface and to coordinate these changes with all affected internal NRC groups.

Interface - RPS (I4)

This functional capability shall provide a mechanism for sending inspection information from the new system to the Reactor Programs System (RPS). The new system shall have the ability to generate its own inspections (and associated inspection report numbers). The system shall generate the inspection export file in an agreed upon format on a periodic basis according to a NRC-configurable schedule. A formal Interface Control Document (ICD) shall be developed during the project design phase to finalize the appropriate specifications for this interface and to coordinate these changes with all affected internal NRC groups.

5.2.1.5 Common Requirements

The Common functional area contains functions that are used by other use-cases.

Archive Changes (C1)

This functional capability is addressed in the 'Data Quality, Integrity, and Accuracy' section of the Performance Requirements section of Appendix A.

Maintain Inspection (C3)

This functional capability shall provide a way to create and modify various types of information about an inspection. This includes 'basic' inspection information such as the inspection type, inspection report number, inspection date, etc.; information about inspection 'issues' which are problem areas that need to be addressed by the Licensee as a result of an inspection; and information about inspection 'locations-of-use' which are the addresses of the sites visited as part of the inspection. A detailed list of data elements, data entry rules, and processing rules is included in the Appendix A.

Maintain Inspection Process Steps (C4)

This functional capability shall provide a way to create and modify the steps / milestones of an inspection process. The inspection process includes a series of steps such as: inspection created, inspection assigned to inspector, inspection scheduled, inspection report started, inspection report completed, inspection completed, etc. The inspection process steps are auto-generated by the system whenever possible. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Maintain Licensee (C5)

This functional capability shall provide a way to create and modify information about a Licensee. This captures, in one place, the data elements of the unique institution (entity) that has one or more licenses. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Maintain License Action (C6)

This functional capability shall provide a way to create and modify information about a license action. A license action is essentially a request to receive a new license or change an existing license. The major license actions are: new license, amendment, correction, renewal, and termination. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Maintain License Action Process Steps (C7)

This functional capability shall provide a way to create and modify the steps /milestones of a license action review process. There are several steps involved in the formal licensing review process. There are steps that mark the major processing stages such as: initial request, start of the technical review, and end of technical review; there are steps that mark formal contacts between the NRC and the applicant such as: deemed timely letter sent, deficiency letter sent, and deficiency response received; there are steps that mark the fee processing status such as: request for additional fees, abandonment for non-payment, and initial fee review complete; and there are steps to indicate the outcome of a license action such as: completed (approved), denied, abandoned, or voided. The license action process steps are auto-generated by the system whenever possible. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Maintain License (C8)*

This functional capability shall provide a way to create and modify various types of information about a license. This includes 'basic' license information such as license type, docket number, license number, license status, etc...; a list of states that have been authorized by the license to use nuclear materials; a list of users that have been authorized by the license to use the nuclear material; a list of standard and non-standard conditions that describe the type of activities that are authorized under the license; a list of exemptions to portions of the CFR regulations; license 'fee information' such as general fee notes, the refusal-to-pay indicator, and

one or more fee categories; 'financial assurance' information that describes the ability for a Licensee to pay for future decommissioning activities; a list of locations where licensed nuclear material can be possessed or used; and 'possession limit' information which specifies the maximum activity amount of one or more radioactive materials that the Licensee is allowed to possess or use. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A. The parts related to reciprocity licensing are not included in Task 1.

Maintain License Application (C9)*

This functional capability shall provide a way to create and modify information pertaining to a license application. A license application includes nearly all the data elements that eventually become part of the license record plus some additional data elements solely related to the license application itself. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A. The parts related to reciprocity licensing are not included in Task 1.

5.2.2 Performance Requirements

The Performance Requirements define non-behavioral attributes of the system that cover overall system performance and robustness. This includes characteristics such as response time, workloads, data integrity, data capacity, reliability, maintainability, and expandability.

5.2.2.1 External Workloads

The system shall provide the capability to perform a bulk load of existing license data on a periodic basis. This would be used for the initial data load and for subsequent testing loads. The number of license records uploaded during a load will not exceed the total license count which is initially expected to be 5,000.

5.2.2.2 Throughput, Response Time, and Internal Function Workload

The system shall provide acceptable response times for all functions of the system. In particular, the system shall: a) present screens to the user within 10 seconds of the user request; b) complete sort operations within 10 seconds of the sort request; c) save data to the database within 10 seconds of the save request; d) display the results of a search operation within 30 seconds of the search request; and e) present the user with a measurable indication of progress if there is more than a 10 second processing delay.

5.2.2.3 Data Quality, Integrity, and Accuracy

The system shall utilize the data integrity and transactional capabilities available in commercial database software to ensure data integrity. This includes referential integrity features (i.e. primary key / foreign key relationship constraints) and logical unit-of-work features (i.e. atomic rollback or commit).

The system shall provide the capability to maintain a history of data changes to facilitate auditing activities. This includes automatically recording the date and time the data changed and the user that changed the data as part of the history record. This also includes providing the NRC with the ability to specify which tables and associated data elements should be audited and what types of changes should cause a history record to be created (i.e. insert, update, and delete). The historical data must be formatted in a way that facilitates the simple visual comparison of current data to historical data. The ability to configure or view audit records will be restricted by user role.

5.2.2.4 Data Retention, System Capacity, and Communications Capacity

The operational system shall retain all operational and historical data for the life of the system. Initially, the system shall provide the system capacity to support 5,000 licenses. Additional storage space will be added to the system as needed to meet growth requirements. The system shall provide a minimum of 3 megabit/second network bandwidth for NRC users of the system. There will initially be 200 named user accounts - 150 internal NRC users and 50 simultaneous web users. Note: The data retention, system capacity, and communications capacity requirements are for the Operational/Production environment only; contractor can propose a development environment and a test environment suitable for these purposes.

5.2.2.5 Reliability, Maintainability, and Availability

The operational system shall be available 99.9% of the time 24 hours a day/7 days a week except during planned maintenance or repair activities. Planned maintenance shall not be performed during the hours of 6AM to 10PM Eastern Time, Monday through Friday and must not last for more than 3 hours in any 24 hour period without a waiver from the government. The system shall employ an architecture that utilizes multiple types of redundancy to ensure automatic failover (i.e., hardware component redundancy, server clusters, data mirroring, load balancing, uninterruptible power supplies, etc.). The system shall provide the ability to monitor for software and hardware component failures and be able to automatically transition to a redundant system or set of sub-components within 30 minutes.

5.2.2.6 Growth, Flexibility, and Expandability *

The system shall provide a scalable architecture that allows system resources to be easily added as needed. This includes providing the ability to share the system processing duties across clusters of servers in order to provide load balancing and high availability advanced features. This also includes providing 'hot-swap' features that enable easy replacement or upgrade of entire system servers or their hardware sub-components without interrupting overall system operation.

The system shall provide an easily extensible modular architecture that facilitates the enhancement of the system via properly encapsulated custom modules that are only loosely coupled to the main system. The system shall support upgrades to the software that are not affected by custom modules and do not lose any previously entered system configuration

information³.

The system shall enable the NRC to customize certain screen elements through the system's administrative functions. In particular, the system shall provide the ability for the NRC to change the textual labels associated with an existing data element and to add a completely new data element to the screen.

The system shall provide the capability for the NRC to dynamically create and enforce custom business rules globally and by Region. This includes: data entry rules used to specify data elements that are required, have default values, use code lookups, follow particular formatting rules, and/or are subject to specific validation rules; workflow rules used to specify the hand-offs between various user roles during the processing of licensing actions and inspections; processing rules used to specify special calculations or formulas; code tables used to add, modify, and delete entries in the various application code lookup tables; and scheduled actions used to dynamically schedule system batch jobs (i.e. imports, exports, etc.).

5.2.2.7 Backup and Recovery

The system shall provide robust backup and recovery capabilities. This includes performing an online backup without requiring system down time, storing backups at an off-site storage facility, and restoring from a full backup within one hour. The system shall provide the ability to perform full and incremental backups on a scheduled basis as defined by the system administrator. Full backups shall be performed at least weekly and incremental backups will be performed at least daily.

5.2.3 Operational Requirements

The Operational Requirements define non-behavioral attributes of the system that cover the operational environment of the system. This includes characteristics such as human interaction guidelines, physical environment standards, configuration control practices, security needs, and documentation deliverables.

5.2.3.1 Human Factors

The system shall conform to industry standard conventions for common usability. This includes the IBM published Common User Access advanced interface design standards, the Microsoft published Windows interface design standards, and the Section 508 standards of the Rehabilitation Act as it applies to Internet web applications and client / server applications. Of particular importance, are the areas of consistency, visual cues, navigational assistance, and user preferences.

³See the Extensibility Scenario section of this document for activities to be performed to demonstrate the system's extensibility features.

The system shall provide a high degree of user interface consistency with regard to screen layouts, graphics, reserved words, text font and styles, text meanings, and navigational metaphors.

The system shall provide visual cues to help the user interact with the system. Some examples include: an hourglass for a short wait, a 'progress box' for a long wait, a warning message prior to a destructive action, an error message if an error occurs, etc. The system must not use color as the only way of signifying something.

The system shall provide simple methods for navigating through the application's functions. This includes: providing a quick way to access frequently used or essential tasks (i.e. accelerator keys or key combinations); providing complete and equal access to all application functions from both the mouse and the keyboard; and providing a mechanism for indicating the user's position within the system (i.e. traceable path).

The system shall enable the user to adapt the application to his/her work patterns via user-defined application preferences (i.e. functional options, toolbar placement, color choices, etc.)

5.2.3.2 Facilities, Environment, Safety, System Monitoring, and Support Capabilities

The system shall be 'housed' in an appropriate computer data center environment. The servers shall be maintained in a properly climate-controlled facility that meets all appropriate safety standards for a data center and there must be sufficient production control support staff available to proactively monitor the system for potential problems and bottlenecks.

The system shall support the following server, client, and web platforms. The server platform shall be either a Windows, LINUX, or UNIX-based operating system. The client platform shall be the standard NRC desktop environment in effect at the time of deployment (currently Windows NT but soon moving to Windows XP). The web portion of the system shall support, at a minimum, version 5.0 or greater of both Microsoft Internet Explorer and Netscape Navigator web browsers. The system shall provide a mechanism for the system's web interface to be branded with a NRC-specific look and feel (i.e. logos, colors, headers, etc.) as required by NRC Management Directive 3.14.

The system shall support access from Crystal Reports and MS Access tools for ad-hoc reporting (i.e. via data extraction).

5.2.3.3 Configuration Control

The production system shall employ formal change management and version control practices via automated configuration control software. The Rational Suite Enterprise is currently used by the NRC to support and manage all phases of software development.

5.2.3.4 Security *

The system shall provide the ability to control access to the system's objects (i.e. menu options, screens, specific functions, data groupings by Region, etc.) via role-driven permissions.

The system shall provide a password authentication mechanism that ensures that only authorized users of the system have access to it. The System Administrator shall be able to configure the password requirements for all users. This includes characteristics such as minimum length, maximum age, formatting rules, grace logins, and encryption.

The system shall provide the capability to perform audit tracking on modifications to the security permissions for users and roles.

The system shall provide the ability to encrypt data in transit to prevent eavesdropping.

5.2.3.5 Documentation

The system shall include a full set of electronic and hard-copy documentation that describes all aspects of the system. This includes: user documentation to assist the user with completion of all application functional tasks; deployment documentation that describes system deployment activities; administrative documentation for the technical staff that describes system administration and configuration; security documentation; and training documentation to assist with the training of the new users of the system.

5.2.4 Programmatic Requirements

The Programmatic Requirements define non-behavioral attributes of the system that cover the other system environments needed for development and testing activities.

5.2.4.1 Development Facilities and Support Requirements or Constraints

The system shall include a development and test environment that is comparable to the production server environment and is supported by system personnel during normal business hours.

5.2.5 Special Requirements

The Special Requirements define non-behavioral attributes of the system that are not appropriate for inclusion in any of the previous sections.

5.2.5.1 Accessibility Requirements for Individuals with Disabilities

The system shall comply with section 508 of the Rehabilitation Act as it applies to Internet web applications and client / server applications.

5.2.5.2 Records Management Requirements

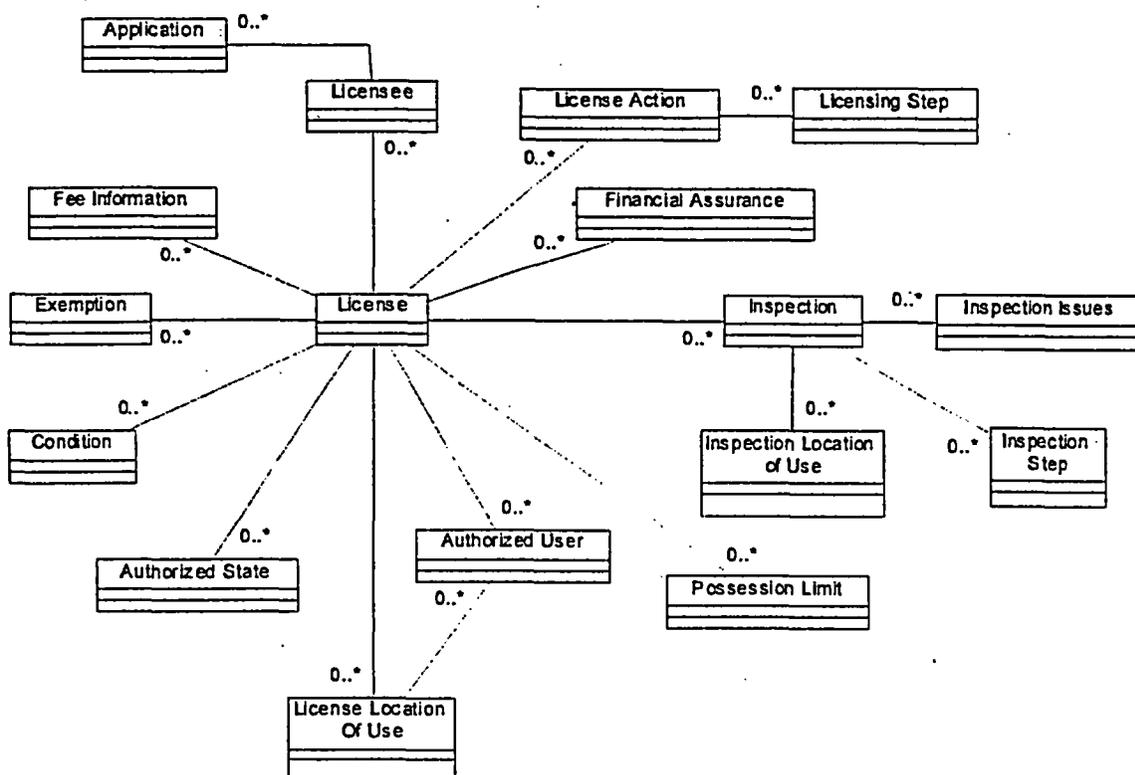
The system shall format system-generated documents in a way that is suitable for ADAMS submission. The system shall not store any document images itself. The use case entitled,

"Interface - ADAMS", describes a preliminary approach for how the licensing system may interact with ADAMS. A formal Interface Control Document will be developed during the design phase with input from the OCIO to determine the appropriate interface specifications.

5.2.6 Data Requirements

The Data Requirements define the top-level data entities and their relationships. Below is a graphical representation of the top-level data entities – additional details about each entity are provided in Appendix A.

Exhibit 5-4: Business Object Model



5.2.7 Extensibility Scenario

It is envisioned that in SafeSource Phase II, significant additional functionality will be added to the system to support the NRC's overall mission and goals. It is therefore vitally important that the chosen system be easily extensible without adversely affecting the system's core functionality.

This section lists potential requirements that may be implemented in SafeSource Phase II. These requirements are not expected to be included in SafeSource Phase I. They are presented here so that the contractor can include a description in their technical proposal of the extensibility approach that would be used to implement these requirements.

5.2.7.1 Potential Phase II Features

The NRC envisions that Phase II of the SafeSource project will add requirements primarily focused on tracking individual nuclear sources that are designated as containing "materials of greatest concern" throughout their entire life-cycle from "cradle to grave" – creation, storage, transfer, usage, and disposal of the nuclear sources . Below are some potential features for source tracking.

A. Tracking the life-cycle of nuclear sources.

- 1) Provide the ability for Licensees and NRC employees to record source "births", including input of a unique source identifier. A source birth is its origination as a record in the system. Different types of source births can have different business rules. Types of births include:
 - Import (a two-sided transaction: pending import, and actual import)
 - Manufacture
 - Orphan recovery (recording a source which is not attributable to a Licensee)
 - Breakdown of an existing source into smaller nuclear sources (recycling)
 - Batch entry of source serial numbers and other identifying information

- 2) Provide the ability for Licensees and NRC employees to record source transfers. Different types of source transfers can have different business rules. Types of transfers include:
 - Shipping (Includes verification of the recipient, includes shipper inventory decrement after receipt)
 - Receipt (Includes alert if not received in given timeframe; includes recipient inventory increment after receipt)
 - Storage in transit
 - Trans-shipment across the U.S., from one country to another, with no NRC Licensee involved

- 3) Provide the ability for Licensees and NRC employees to record/report information about nuclear sources during their use, including:
 - Physical inventory reconciliation
 - Loss or theft of a source
 - Change of source location of use
 - The desire to dispose of a source
 - The storage of nuclear sources under contract at a second Licensee's facility

- 4) Provide the ability for Licensees and NRC employees to record source "death." A source death is its final disposition as a record in the system. Different types of source death can have different business rules. Types of death include:
 - Export
 - Loss
 - Decay
 - Recycle
 - Breakdown of an existing source into smaller nuclear sources -Disposal (e.g., burial)

B. Calculation and Query

- 1) Provide the ability to show detailed history of the life cycle of transactions for a given source
- 2) Provide the ability to dynamically change business rules (for example, timing of alerts)
- 3) Provide advanced geographically-based query capabilities
- 4) Provide highly secure role-based query capabilities (e.g., for other agencies: Customs, law enforcement)
- 5) Provide algorithms such as calculating isotope activity decay

C. Licensee access to Web-based account source tracking

- 1) Provide the ability for NRC Licensees to fulfill source tracking requirements from their Web-based Licensee account.
- 2) Provide the ability to upload Licensee and license information (new, changed, deleted) in a standard format to be used by Agreement States and DOE facilities to bridge their data into the national system.
- 3) Provide the ability for these Agreement States Licensees and DOE facilities to fulfill source tracking requirements from a Web-based account, while disallowing change to their uploaded information.

In addition, contractor should explain their proposed technical approach for accommodating a mixture of sensitive and classified data, e.g., the license information will be available to the public while the source inventory information may be "classified" and require special IT security.

5.3 System Functional Requirements for Implementation in Task 3

This task further enhances the licensing and inspection capabilities of the new system that were implemented in Task 1. A major goal of Task 1 was to replace two existing NRC legacy systems (LTS and IPS) so it primarily included functionality that already existed in these systems. Task 3

adds new functionality that generally did not exist in the legacy systems. Task 3 also includes functionality that replaces a third NRC legacy system -- the Reciprocity Tracking System (RTS).

Subsequent sub-sections provide a summary of the detailed requirements of the new system that are to be implemented in Task 3. These requirements all fall within the Functional Requirement category. Appendix A contains the detailed requirements of SafeSource Phase I. Appendix E contains a listing of each individual requirement and the associated Task where it is expected to be implemented, although some of the functionality may never be implemented, since the functionality is desirable but non-mandatory and therefore, that functionality would only be implemented if the COTS product could do so at a minimal cost to the government. In the use case summaries below, an asterisk (*) is used at the end of the requirement name to designate that part of the use case functionality is implemented in one task and the rest is implemented in another task (Task 1 or Task 3) or non-mandatory.

5.3.1 Functional Requirements

The Functional Requirements define the intended behavior of the system from the NRC business point-of-view. They describe what actions and processes will exist in the system and how they will behave.

5.3.1.1 Licensing Requirements

The Licensing functional area contains requirements that primarily support the NMSS licensing processing.

Obtain Licensing Information (UC1)*

This functional capability shall provide the user with a list of references to informational documents that provide assistance to the user in completing inspection activities. This includes inspection documents such as: inspection manuals (i.e. IMC2800), guidance, regulations, and inspection procedures. It also includes guidance for determining the federal jurisdiction status of a geographic area.

Validate Licensing Request (UC11)*

This functional capability shall enable the NRC to perform and track functions that are needed to complete the administrative review for a license action. This shall include the assignment of the location reference number for reciprocity licenses.

Generate Licensee Correspondence (UC12)

This functional capability shall handle the generation of all licensing, inspection, and fee related correspondence to Licensees in the form of either a printed or softcopy document to be sent by

postal mail, fax, or email. The system shall merge Licensee, license, and inspection information that is stored in the system with the chosen correspondence template which may then be customized by the user outside of the system. The user shall also be able to choose standard boilerplate phrases for inclusion in the correspondence document. The document itself will be sent to the Licensee using the Licensee's preferred correspondence method (i.e. postal mail or email) and will be submitted to the ADAMS group in the appropriate format (i.e. PDF).

Receive Licensee Correspondence (UC13)

This functional capability shall enable the tracking of correspondence received from a Licensee. This shall include administrative and technical deficiency responses, reciprocity start notifications and any other formal Licensee inputs received by postal mail, faxes, emails and phone calls. The user documents these correspondences in the system by entering text from postal mail and email or typing up transcripts of phone conversations with Licensees. The correspondence entry shall be submitted to the ADAMS group in the appropriate format (i.e. PDF).

Enter a Deficiency Response (UC14)

This functional capability shall enable the Licensee to respond directly to the NRC via a system data entry screen instead of having to send the response through external means such as phone, mail, or fax. The Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system) and the deficiency response will be submitted to the ADAMS group in the appropriate format (i.e. PDF). The system shall also warn the Licensee that the information being submitted may be made publicly accessible.

Check License Action Process Status (UC16)*

This functional capability shall enable the user to see certain steps of the license action approval process and their associated completion status. The query and view options shall be determined by the role(s) the user possesses. The Agreement State Agency role shall be able to view basic information about the process status of any of its Licensees (i.e. Licensees requesting reciprocity).

Generate Official License (UC19)

This functional capability shall generate the official license that indicates what the Licensee is authorized to possess and use. The system shall generate the appropriate amendment number when a license is re-issued. It shall then merge Licensee and license information that is stored in the system with the chosen license template which may then be customized by the user outside of the system. The user shall also be able to choose standard boilerplate phrases for inclusion in the license document. The license can be output in hard-copy or soft-copy formats.

Generate Bulk Licensee Correspondence (UC21)*

This functional capability shall enable the user to generate bulk mailings. The system shall be able to generate reciprocity procedure letters as specified in Appendix A.

5.3.1.2 Inspection Requirements

The Inspection functional area contains requirements that primarily support the NMSS inspection processing.

Generate Inspection Schedule (UC24)

This functional capability shall enable the Manager to generate and modify the inspection schedule. The system shall automatically generate potential inspection dates for routine inspections based on the license's inspection priority. The user can then add non-routine inspections (reactive and reciprocity), move inspections from one date to another, or remove inspections from the schedule. The system shall provide a calendar view of the inspections for a given timeframe. The system shall be able to emphasize (highlight) certain inspections in the calendar based on various factors such as: zip code, state code, Licensee, inspection type, complexity, urgency, assignment status, and potential reciprocity inspection dates. The system shall also be able to generate a listing of inspections within a given date range (i.e. an inspection itinerary).

Search for Inspection (UC26)*

This functional capability shall enable the user to query and view inspection information. The query and view options will be determined by the role(s) the user possesses. The Agreement State Agency role shall be able to use advanced search criteria and view licensing information that normally appears on the actual inspection report and the Public role shall be able to use a very limited set of search criteria and view inspection information that normally appears on the actual inspection report.

Prepare for Inspection (UC27)*

This functional capability shall provide the Inspector with a collection of pertinent information about the Licensee who is the subject of the inspection. This includes information such as current license information, past inspection results, pertinent regulations and guidance, and current and past enforcement actions. This information shall be organized and formatted into a single unit for the Inspector's use and can be either printed or saved to a file. The system shall also provide the ability to generate a pre-filled inspection form using existing license information.

Enter Inspection Report Information (UC29)*

This functional capability shall enable the Inspector to input and modify inspection report information of an inspection that has been assigned to him/her. The Inspector shall also have the ability to attach supporting documents (via a link to the appropriate electronic submission system) related to the inspection.

Generate Inspection Report (UC30)

This functional capability shall generate both checklist-style and narrative-style inspection reports using the chosen template. For the checklist-style, the user may generate a checklist form (i.e. Form 591) ahead of time with all known information pre-filled. For the narrative-style, the user may fill-in the narrative text within the system and generate the inspection report after the inspection is performed. The inspection report can be saved as a draft or output in hard-copy or soft-copy formats.

Check Inspection Process Status (UC31)*

This functional capability shall enable authorized users to see certain steps in the inspection process and their associated completion status. The query and view options will be determined by the role(s) the user possesses. The Agreement State Agency role shall be able to view basic information about the process status of any of its Licensees (i.e. Licensees requesting reciprocity).

Enter Response to Inspection Findings (UC32)

This functional capability shall be used to enable the Licensee to respond to inspection findings directly to the NRC via a system data entry screen instead of through external means such as phone, mail, or fax. The Licensee shall have the ability to attach supporting documents (via a link to the appropriate electronic submission system) and the response will be submitted to the ADAMS group in the appropriate format (i.e. PDF). The system shall also warn the Licensee that the information being submitted may be made publicly accessible.

5.3.1.3 System Administration and Reporting Requirements

The System Administration and Reporting functional area contains requirements that primarily support the system administration and reporting needs of the system.

Generate Standard Reports (UC33)*

This functional capability shall enable users to generate numerous standard reports that are needed by the NRC. The following reports will be available: Reciprocity Inspection Completion Report and Assist Inspection Report.

Remove User Account (UC38)*

This functional capability shall provide a mechanism for removing both internal and external user accounts once they are no longer needed. The system shall provide the ability to automatically remove user accounts via a periodic batch process if these accounts have not had any activity within a specified timeframe. The NRC shall be able to dynamically specify the factors that should trigger the user account to be removed via NRC-configurable business rules.

5.3.1.4 Common Requirements

The Common functional area contains functional units that are used throughout the system by numerous other use-cases.

Maintain License (C8)*

This functional capability shall provide a way to create and modify various types of information about a license. The system shall provide data elements and processing rules that handle the specific needs of reciprocity licensing. This includes the 'Days Worked' and 'Agreement State License' data elements. This includes the 'Reciprocity Calculations' and '180-Day Limit Warning Message' processing rules. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

Maintain License Application (C9)*

This functional capability shall provide a way to create and modify information pertaining to a license application. The system shall provide data elements and processing rules that handle the specific needs of reciprocity licensing. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A. Only the section of use case C9 that is labeled 'Reciprocity License Application' is included in Task 3.

5.4 Non-Mandatory Product Features

This section describes additional functional capabilities that are desirable, but not mandatory. It is not expected that these capabilities will be included in the first phase of the system. However, it is expected that the NRC be informed if a proposed solution already has one or more of these capabilities built-in to the product and implementing the subject functionality would incur little or no impact on the cost or schedule for SafeSource.

Subsequent sub-sections provide a summary of these non-mandatory features. They are organized within the following categories: Functional Requirements, Performance Requirements, and Operational Requirements. Appendix A contains the detailed requirements currently envisioned for SafeSource Phase I. Appendix E contains a listing of each individual requirement and the associated Task where the functionality could be implemented; although the contractor is expected to re-validate these requirements in Task 1, so there may be shifting among the tasks. In addition, the contractor's proposed solution may include a COTS product and a technical approach for implementing functionality in a different order. Therefore, these use cases are intended to provide the contractor with a detailed overview of the government's requirements, but the implementation is not pre-determined. Therefore, in the use case summaries below, an asterisk is used at the end of the requirement name to designate that the government envisions that part of the use case functionality is implemented in one task and the rest is implemented in other tasks (i.e. Task 1 or Task 3) or that the functionality is desirable but non-mandatory.

5.4.1 Functional Requirements

The Functional Requirements define the intended behavior of the system from the NRC business point-of-view. They describe what actions and processes should exist in the system and how they should behave.

5.4.1.1 Licensing Requirements

The Licensing functional area contains requirements that primarily support the NMSS licensing processing.

Enter a New License Application (UC4)*

This functional capability should enhance the automatic checking that the system performs when processing a request for a new materials license from the NRC. The system should check the complexity of the licensing request. It should provide the Licensee with an indication of whether a request requires an additional / more complex review. The system should check whether financial assurance information is needed. It should create a worksheet that displays the factors and calculations used to determine whether or not financial assurance is needed. The system should check if the request is eligible for automatic issuance (self-licensing). It should provide the ability to issue an automated simple license if the request meets a set of NRC-configurable licensing criteria.

Enter a License Amendment Request (UC5)*

This functional capability should enhance the automatic checking that the system performs when processing a request for an amendment to a materials license. The system should check whether financial assurance information is needed based on the proposed amendment changes. It should create a worksheet that displays the factors and calculations used to determine whether or not financial assurance is needed. The system should check if the request is eligible for automatic issuance of an amended self-license. It should provide the ability to issue an amended self-license if the request meets a set of NRC-configurable licensing criteria. This functional capability should also provide the ability to associate a single amendment request with multiple licenses belonging to the same Licensee. The system should track these internally as separate license actions.

Enter a License Renewal Request (UC6)*

This functional capability should enhance the automatic checking that the system performs when processing a request for a renewal to a materials license. The system should check whether financial assurance information is needed based on the proposed renewal changes. It should create a worksheet that displays the factors and calculations used to determine whether or not financial assurance is needed.

Enter Technical Review Information (UC18)*

This functional capability should assist the Reviewer in tracking the numerous activities that are part of the technical review process. The system should display a warning to the Reviewer if the same legal entity submits multiple reciprocity requests to perform the same licensed activity.

5.4.1.2 Inspection Requirements

The Inspection functional area contains requirements that primarily support the NMSS inspection processing.

Prepare for Inspection (UC27)*

This functional capability should provide the Inspector with a collection of pertinent information about the Licensee who is the subject of the inspection. This information should be organized and formatted into a single unit for the Inspector's use and can be electronically downloaded to an Inspector's portable device (i.e. tablet PC, Personal Digital Assistant, laptop).

Enter Inspection Report Information (UC29)*

This functional capability should enable the Inspector to input and modify inspection report information of an inspection that has been assigned to him/her. The system should enable the Inspector to upload inspection report information from a portable device.

5.4.1.3 System Administration and Reporting Requirements

The System Administration and Reporting functional area contains requirements that primarily support the system administration and reporting needs of the system.

Configure Business Rules (UC35)*

This functional capability should enable the NRC to dynamically configure the business rules needed for the licensing and inspection features of the system. The system should provide the ability to specify the criteria that must be met for issuance of a self-license.

5.4.1.4 Common Requirements

The Common functional area contains functional units that are used throughout the system by numerous other use-cases.

Maintain Correspondence Log (C2)

This functional capability should provide a way to record certain interactions between the NRC staff and external entities that occur in a form that is not normally captured by the system. This provides a way for the NRC staff to enter a summary description of important telephone, fax, postal mail, and email interactions that occur between the NRC and external entities. A detailed list of data elements, data entry rules, and processing rules is included in Appendix A.

5.4.2 Performance Requirements

The Performance Requirements define non-behavioral attributes of the system that cover overall system performance and robustness.

Growth, Flexibility, and Expandability *

The system should provide a published application programming interface (API) to allow other systems to access information programmatically.

The system should provide the ability for the NRC to show or hide a data element on a screen and to change or move a data element from one place on the screen to another.

5.4.3 Operational Requirements

The Operational Requirements define non-behavioral attributes of the system that cover the operational environment of the system.

Security *

The system should provide the capability to authenticate users with an external system such as a Lightweight Directory Access Protocol (LDAP) repository or Windows domain controller.

The system should give the System Administrator the ability to designate what algorithm should be used to encrypt data for transmission.

6.0 DESIGN AND IMPLEMENTATION CONTROLS

6.1 General Design and Implementation Controls

During the detailed design phase of the project, the contractor shall adhere to the NRC's SDLCM Methodology.

The government believes that a Commercially Off-the-Shelf (COTS) implementation may offer a significant opportunity for lowering costs, decreasing risks, and minimizing the attendant schedule delays that frequently accompany projects with a large amount of customization required.

Regardless of whether COTS or custom development is proposed, the contractor shall establish a requirements map (traceability matrix) to the proposed solution for use in the design review process. This requirements map shall address each task independently, except where there is

an overlapping relationship, such as when the basic functionality is developed in Task 1 and refined in Task 3. The mapping will identify the instances of each requirement and the way the operation is implemented for each instance, as appropriate. The purpose of this mapping is to ensure that all requirements are met and that the mechanisms to meet those requirements are identified either as products that are "as is," or as tailored or customized solutions.

The contractor shall use the Rational Suite Enterprise which is currently used by the NRC to support and manage all phases of software development.

The contractor shall establish a configuration management capability (e.g., software/ procedures) compatible with the configuration management plan that will be provided by the government. The configuration management plan is based on Chapter 5, "Configuration Management" of the SDLCMM. Any system changes to satisfy the requirements shall be entered into the configuration management system.

6.2 Detailed Design and Implementation Controls for Security

NRC Management Directives (MD), Office of Management and Budget (OMB) Circulars, National Institute of Standards and Technology (NIST) Special Publications, the Federal Information Security Management Act of 2002 (FISMA) and other federal publications and laws, outline specific requirements and guidance for ensuring that system security controls are included in the design of a system such as SafeSource Phase I. SafeSource Phase I is classified by the NRC as a "Major Application". (See References at §6.2.7)

The full SafeSource system will be implemented in two distinct phases. Each of the phases has specific security issues that must be taken into account. While SafeSource Phase I may appear to be a modernization or technological refresh of an existing system that requires minimal security, it is important that the contractor understand that Phase I does present new security challenges and is intended to lead directly to the Phase II capabilities. With the Phase I introduction of interactive applications via the Internet additional security issues are imposed upon the system. The contractor should anticipate that a fully functional SafeSource system, encompassing both Phases I and II, with the expected capabilities to track individual sources that are designated as "materials of greatest concern" throughout their life-cycle, could hold data that may have National Security implications and therefore could be classified. The contractor in proposing for Phase I shall ensure that all components proposed will be capable of and approved for supporting classified processing should the overall SafeSource requirements ultimately dictate such processing.

The contractor shall provide identification and authentication controls, auditing controls, access controls, secure systems administration capabilities, system backup capabilities, and the capability to reliably recover in the event of a component failure among the security components that the NRC requires. The NRC also requires that the contractor shall develop the appropriate security documentation for the SafeSource Phase I to ensure compliance with current federal guidelines (see References at §6.2.7). These guidelines require that the following items be developed: a Risk Management Plan, a System Security Plan (SSP), a Security Test & Evaluation (ST&E) Plan, security controls testing, an ST&E Report, an IT Contingency Plan, IT Contingency Plan training, IT Contingency Plan testing, an IT Contingency Plan Test Report, a

System Certification and Accreditation Report, and a Security Self-Assessment. The contractor shall also support the NRC in the accomplishment of a disaster recovery test of the system, which will validate the backup and recovery capabilities defined in the Contingency Plan. Major deficiencies and vulnerabilities that are identified during any of the system or security testing or during the system certification process shall be corrected and/or mitigated by the contractor.

6.2.1 Identification and Authentication

Under SafeSource Phase I the NRC anticipates multiple classes of users who are afforded access to differing levels of detailed information based upon identity and authority (roles). A user from the general public may access the system without identification but will be restricted to certain very limited data query capabilities. Authentication focuses on confirming a person's identity, based on the reliability of his or her credential. OMB E-Authentication Guidance (available at <http://www.whitehouse.gov/omb/memoranda/fy04/m04-04.pdf>) instructs on how to implement e-authentication by assessing risk and determining the appropriate level of required identify assurance.

The contractor shall conduct and document a risk assessment specific to authentication, following the OMB guidance, that will identify risks, map those risks to the required assurance level, and recommend an authentication technology solution appropriate for attaining the required assurance level. The proposed solution shall provide appropriate Identification and Authentication controls, described in NRC Management Directive (MD) 12.5, for each class of user. Upon implementation the contractor shall have user identification and authentication controls in place to ensure only authorized (registered) persons (or processes) are able to obtain access and only to the levels authorized. Specifics on classes of users will be defined after contract award.

6.2.2 Auditing Control

The contractor shall ensure that controls, described in NRC MD 12.5, which specifically monitor or allow auditing of system activity are in place and implemented. These controls will record events such as: user logon attempts; attempts to access data or perform functions for which the user is not authorized; changes to the system security configuration; changes to a user's privileges; creation or deletion of accounts, records or data; etc. These audited events must be logged and available for routine periodic review. Automated rules shall be available to issue administrator alerts when particular unauthorized activities occur.

6.2.3 Discretionary Access Control

The solution for SafeSource Phase I shall provide NRC systems administrators the capability to qualify the access privileges of each user ensuring that authenticated, registered users can only access data and perform operations for which they have been authorized. Specifics on access authority will be defined after contract award.

6.2.4 Secure Web-based Administration

The NRC anticipates that the proposed application will reside on servers housed at a location remote to the NRC which is maintained by a commercial Application Service Provider (ASP). Understanding that application and system administration functions will be the responsibility of the system owner (NRC), the contractor shall propose a means for NRC to securely access the application. Identification and Authentication controls, Auditing and Access controls shall apply. The contractor shall propose connectivity for this purpose via a high speed dedicated link and be prepared to provide and implement a communication capability managed by a government approved security software solution (for example, SSH).

Per NRC MD 12.5, written management authorization shall be obtained from the OCIO before establishing a connection between the NRC IT infrastructure and any other system that is not NRC controlled. Depending upon the contractor's proposed solution such authorization may be necessary before any connection can be established.

6.2.5 System Backup and Recovery

The contractor shall deliver a reliable and comprehensive solution to ensure easy and rapid recovery of SafeSource Phase I functionality in the event of component failure. The solution shall include a comprehensive backup and recovery capability. The contractor shall also support the NRC in the accomplishment of a disaster recovery test of the system, which shall validate the backup and recovery capabilities.

6.2.6 Other Security Considerations and Requirements

The contractor shall propose a methodology for handling and tracking damaged media or decommissioned equipment to ensure the integrity of any information that may have been contained or processed by the media or equipment.

Implementation of the system shall include an appropriate Warning Banner, a User Responsibilities (Terms and Conditions) link and a Privacy Policy link. NRC will work with the contractor to develop the content for these items.

The contractor shall arrange for and deposit all software source code for applications employed in this solution into an account held by a third party escrow agent for the purpose of ensuring for the NRC that the licensed software will remain available.

6.2.7 References

- Computer Security Act of 1987; (http://www.cio.gov/documents/computer_security_act_jan_1998.html)
- Department of Commerce (DOC) Abbreviated Certification Methodology Worksheets 1 through 6; (<http://csrc.nist.gov/publications/secpubs/doc-cert.txt>)
- Federal Information Processing Standards Publication (FIPS PUB) 102, "Guidelines for Computer Security Certification and Accreditation." (<http://csrc.nist.gov/publications/fips/index.html>)
- Federal Information Security Management Act of 2002 (FISMA), (<http://csrc.nist.gov/policies/HR2458-final.pdf>)

- General Accounting Office (GAO) Federal Information Systems Control Audit Methodology (FISCAM), (<http://www.gao.gov/special.pubs/ai12.19.6.pdf>)
- National Institute of Standards and Technology (NIST) Special Publication 800-18, "Guide for Developing Security Plans for Information Technology Systems."; (all NIST Special Pubs are available at <http://csrc.nist.gov/publications/nistpubs/index.html>)
- NIST Special Publication 800-26, "Security Self-assessment Guide for Information Technology Systems.";
- NIST Special Publication 800-30, "Risk Management Guide for Information Technology Systems.";
- NIST Special Publication 800-34, "Contingency Planning Guide for Information Technology Systems.";
- NIST Special Publication DRAFT 800-37, "Guidelines for the Security Certification and Accreditation of Federal Information Technology Systems."; (<http://csrc.nist.gov/publications/drafts/sp800-37-Draftver2.pdf>)
- NIST Special Publication 800-47, "Security Guide for Interconnecting Information Technology Systems.";
- NRC Management Directive (MD) 12.2, "Classified Information Security Program.";
- NRC MD 12.4, "Telecommunications Systems Security Program.";
- NRC MD 12.5, "Automated Information Security Program.";
- NRC MD 12.6, "Sensitive Unclassified Information Security Program.";
- Office of Management and Budget (OMB) Circular A-130, Appendix III, "Security of Federal Automated Information Resources"; (http://www.whitehouse.gov/omb/circulars/a130/a130appendix_iii.html)
- OMB E-Authentication Guidance; (<http://www.whitehouse.gov/omb/memoranda/fy04/m04-04.pdf>)

6.3 Detailed Controls for Engineering/Design, Development, and Testing

The Rational Suite Enterprise is currently used by the NRC to support and manage all phases of software development. Key Rational Suite products used by the NRC are:

- Rational Rose - creation and management of Unified Modeling Language (UML)
- RequisitePro - requirements management
- ClearQuest - change management and defect tracking
- ClearCase - configuration management
- Robot and Test Manager - functional testing and test log management
- SoDA - integrated reporting

For purposes of requirements management and change tracking, the NRC considers Commercial Off-The-Shelf (COTS) products to be equivalent to the initial release of a custom built system. Specifically, each configuration to a COTS product, even if performed through the standard user interface (e.g., system administrator or "super user" mode), must be logged, approved, tracked, and tested.

The SafeSource project will use a Configuration Control Board (CCB) beginning in the design phase. This group will have representatives from the system sponsor, NRC Headquarters and Regional offices, and NRC information technology specialists.

The NRC uses central configuration management (CM) for all systems under development or maintenance. This function is currently supported by Rational ClearCase with replicated servers.

The NRC maintains a Consolidated Testing Facility (CTF). On the SafeSource project this facility will be used for integration testing, acceptance testing and demonstrations, as determined by the SafeSource project manager.

The contractor shall:

- A. Perform software and system engineering required to address and comply with all documented NRC requirements and specifications;
- B. Deliver pre-production release versions of all COTS products and complimentary subsystems until the conditions of the NRC Acceptance Test Plan are satisfied;
- C. Support and be responsive to an Independent Verification & Validation (IV&V) contractor in its assessment of product testing and evaluation;
- D. Utilize the Rational Suite Enterprise point products as required by the SafeSource project manager and in compliance with the prevailing NRC System Development Life Cycle Management Methodology (SDLCMM);
- E. Provide all staff training required to ensure effective use of ClearCase and any other Rational Suite products that the contractor is to use, as directed by the SafeSource Project Manager;
- F. Document all proposed configurations and changes to any proposed COTS product either in Rational ClearQuest or in a format acceptable to the SafeSource project manager and capable of being readily importing into the NRC SafeSource ClearQuest change management database;
- G. Accommodate an NRC-provided server that will host the contractor-site replicated SafeSource ClearCase database and provide capable staff to manage the server and ClearCase database;
- H. Provide a connectivity strategy, acceptable to the NRC, for supporting ClearCase replication;
- I. Provide support, as needed, for NRC testing within the CTF; and
- J. Host at their facility all testing not performed within the CTF.

6.3.1 Engineering the Solution (Design Phase)

During the software engineering phase of each SafeSource task, the contractor shall refine and continuously update and maintain a **Software Development Plan (SDP)**. The **Software Development Plan** will detail the activities and schedules for designing, coding, integrating, and testing any COTS and complimentary custom subsystems to provide the full functionality of the software for each phase of the SafeSource project. Any design updates or changes require approval from the SafeSource CCB.

The contractor shall provide briefings to the CCB as needed for presentation of recommended design specifications or changes. In requesting concurrence with design specifications or permission for changes, the contractor shall address impacts to the system, in terms of changes to the schedule, operational effectiveness, and maintainability. The contractor shall also provide detailed descriptive materials for NRC review when proposing any design specifications or changes (e.g., UML diagrams and screen prototypes).

Based on the updated SDP, the design documents, and the results of the walk through sessions, the contractor shall design the system engineering solution that integrates the operational capabilities. The preferable engineering solution will:

- A. Emphasize one or more COTS products that can be configured without assistance from a programmer and without need to re-compile the product; and
- B. Implement any functionality not provided by COTS products through one or more subsystems that in no way alter the COTS products or otherwise interfere with the ability to deploy subsequent COTS version upgrades.

The contractor shall provide detailed information on all methodologies and standards to be employed during development and integration of the proposed solution. The contractor shall provide specific details of standards that will ensure a consistent interface appearance and behavior within each COTS product and, to the extent practical, across COTS products and custom subsystems.

Throughout the process of design refinement, the contractor shall maintain ongoing documentation in the form of a **Software Engineering Notebook (SEN)** (equivalent to systems documentation file) which will become part of the overall system documentation. As a logical check, during the design activities for each task within the SafeSource project, the contractor shall revisit the data models, physical models, logical models and entity-relationship diagrams (ERD) to ensure that any variances and all inconsistencies that occur during code development are identified, resolved, and documented.

As the primary outputs of this phase, the contractor shall deliver for each task of the SafeSource project:

- A. A thorough and complete **Software Engineering Notebook** which will be added to the system documentation library developed and maintained by the contractor for delivery as requested by the NRC; and

- B. Comprehensive documentation, in Rational RequisitePro, ClearQuest, and Rose, of all COTS configurations, design specifications for custom subsystems, and clarifications to NRC requirements identified during this SafeSource task.

6.3.2 Development

Using the design materials noted above, the contractor shall establish a system that satisfies the design specifications for the given task within the SafeSource project. In configuring any COTS products and development of any complimentary subsystems, the contractor shall comply with and satisfy all functional, performance, and design specifications defined at the end of the Design Phase.

The contractor shall be responsible for all activities associated with system development including, but not limited to, building the database structures, associated tables, validation routines, and data dictionaries. The contractor shall develop additional program code, as necessary, with the understanding that customization of COTS products is to be limited to configuration that is supported through the COTS standard user interface unless explicitly approved by the SafeSource Project Manager. The contractor shall be responsible for all integration activities including, but not limited to, the integration of software units into software modules, integrating modules into subsystems and systems, and integrating those systems.

6.3.3 Unit and Integration Testing (White Box Testing)

In responding to this solicitation, the contractor shall provide detailed descriptive information on their methodology for unit and integration testing. This descriptive information shall describe but not be limited to how the proposed methodology ensures independence of testing from development personnel and activities.

Any automated testing shall be conducted using the Rational Robot and Test Manager tools and all scripts and test logs shall be delivered to the NRC upon request from the SafeSource project manager. Testing shall be performed by the contractor following an established software quality assurance methodology of the contractor's choosing, contingent on NRC's approval of the recommended methodology. The government may audit tests as part of its own Test and Acceptance Program.

Working with the NRC to obtain necessary example data, the contractor shall develop a standard database for use in all levels of SafeSource testing. The contractor shall also maintain under NRC CM all scripts needed to create and refresh the testing database.

The output products and deliverables of this task are unit and integration test plans, related test result reports, and scripts for creation and refreshing of the standard testing database. The contractor shall ensure that all test plans, test logs, and test result reports are entered into the project CM library.

6.3.4 System Testing (Black Box Testing)

The contractor shall provide all support necessary to develop draft and final versions of the SafeSource Acceptance Test Plan (SATP) for each SafeSource task. In these

comprehensive plans, the contractor shall provide explicit scenarios or test cases for demonstration of the correct and complete fulfillment of all requirements and design specifications. The (SATP) shall address testing of the backup and recovery capabilities under at least two scenarios: a partial recovery and a complete rebuild/recovery.

The contractor shall provide all support needed to implement each (SATP) as a suite of automated scripts using Rational Robot and Test Manager. Where the functionality to be tested precludes automation, the contractor shall include manual Robot test scripts within the suite, to ensure unified reporting of test results. The test suite shall include comprehensive testing of all COTS configurations. Any Robot scripts created by the contractor shall comply with the applicable NRC standards for automated testing and the prevailing NRC SDLCMM. If the contractor does not have access to the necessary Rational software, the contractor shall arrange to have staff perform test script development work at NRC Headquarters. At the discretion of the SafeSource project manager, the NRC may provide Rational Robot and Test Manager software for use at the contractor site.

Drawing on the (SATP) each SafeSource task, the contractor shall create a (SATP) for that SafeSource task. The NRC expects that the contractor will make full use of (SATP) test cases and scripts. The contractor shall provide both draft and final deliveries of each (SATP), with time allowed for NRC review and comment. In the final draft, the contractor shall address all draft comments to the satisfaction of the SafeSource Project Manager.

During the Development Phase, the contractor shall implement the (SATP). The government will audit these tests as part of its own test and acceptance program. Testing should be iterative with scheduled Pre-final and Final Testing. The purpose of these two separate test periods is to allow time for the contractor to make corrections identified during the Pre-final Test and incorporate all necessary changes prior to completing the Final Testing. The contractor shall run the entire system test suite against each new system build that is created.

The NRC will subject the completed system to its own system test and acceptance process prior to accepting delivery of the product. All hardware and software components will be tested against the defined functional requirements and design specifications. The government will implement detailed code review against developed code, scripts, CGIs, etc. The detailed code review will not be routinely performed against the "out-of-the-box" functionality of packaged software (operating system, RDBMS, etc.) unless customization (previously identified by the contractor and approved by the government at the design review) is performed by the contractor on the software packages.

As referenced in 7.26 of this document, the Certification and Accreditation Report must result in at least an interim accreditation before the system will be accepted. NRC MD 12.5 provides guidelines for accomplishing the Certification and Accreditation.

After NRC Pre-final acceptance testing has been completed and required changes have been addressed by the contractor and sufficiently tested in the Final Test, the contractor shall conduct a readiness review session with NRC and present the results of all activities, findings, and products developed during the engineering phase. The Readiness Review Demonstration shall be scheduled immediately upon completion of the Engineering phase. The Readiness Review Demonstration shall group topics as logically as possible to facilitate comprehensive yet succinct

issue coverage, as this will be the first major checkpoint in the system development life cycle. Based on a successful review, NRC will issue a go/no go decision on deployment of the web-based licensing system.

6.3.5 Contractor's Test Report

The contractor shall develop and deliver an overall test report document for each SafeSource project task, entitled **SafeSource Comprehensive Software & System Test Results (SCSSTR)**. This report shall cover unit, integration, and system testing, with separate sections as appropriate for testing of each COTS product or major subsystem. For the system testing and any other testing using automated tools, the contractor shall deliver the electronic test log files and script databases and include hard copy of these logs, including verification point screen images, in the entitled **SCSSTR** report. The contractor shall also include in this report sections covering test result analysis, remediation, work-arounds, unresolved issues, and enhancements recommended for future releases.

The output products and deliverables of this task are fully tested software modules and subsystems which are stored in the NRC central CM library, including the **SCSSTR** report, and electronic files containing all test scripts and logs.

6.3.6 Contractor's Software and Third Party Software Repository Account

The SafeSource system is of vital importance to the NRC. Therefore, to protect the NRC in case a COTS vendor becomes defunct, the NRC requires that the source code of any COTS products used for this project be held in escrow by a trusted third-party. This extends to any upgrades to the COTS products that are deployed at the NRC in the future

6.4 Detailed Controls for Training

6.4.1 Training Plan

For SafeSource Tasks 1 and 3, the contractor shall develop and implement comprehensive training and support plans that address all user roles relating to the software products provided under the task. Specifically, the contractor plan should address the training needs of the following user groups:

- A. External users such as Licensees and other persons who might be permitted to query the database through a web interface;
- B. NRC users who will process licensing actions, for example, license reviewers, administrative coordinators (Licensing Assistants) and fees personnel; and
- C. NRC users who will perform administration and configuration of any COTS products.

The contractor shall grant to the NRC unlimited rights to copy and distribute all training materials including CBT modules.

The contractor shall ensure that all files and program code related to training modules are maintained using the same configuration management guidance described in Subsection 6.3 of this statement of work.

The deliverables related to training, for each SafeSource task requiring training, are:

- A. Draft and final versions of the SafeSource Training Plans for each SafeSource task; and
- B. Electronic versions of all training materials for use in the hands-on training sessions;
- C. All files and program code and materials related to CBT, both portable (CD/DVD) and web-based training modules.

6.4.2 On-Line Help System and Tutorials

The contractor shall:

- A. Ensure that all modules of the SafeSource system have online help available through a consistent interface;
- B. Provide all support needed to add NRC-specific information to online help screens; and
- C. Ensure that all online help files and program code are maintained using the same configuration management guidance described in §6.3.

6.5 Detailed Controls for Ongoing Support

The contractor shall be responsible for providing ongoing support for the core system after it becomes operational and the enhanced system after it becomes operational. Activities shall include:

- Refreshing all servers with models that employ current technology in FY 2006
- Providing access to and support for DBMS and licensing COTS packages that underlie the SafeSource Phase I applications
- Providing continuous infrastructure services (server hosting, dedicated and Internet connectivity, backup and recovery, intrusion detection etc.)
- Ensuring that SafeSource Phase I software applications continue to provide needed functionality and interfaces with other systems
- Providing data base administration services
- Ensuring that the SafeSource Phase I software applications are interoperable with current COTS releases

- Providing training as needed to ensure that NRC personnel can effectively use new releases of the SafeSource Phase I software applications

7.0 INFRASTRUCTURE AND LICENSING CORE (ACTIVITIES AND DELIVERABLES AND SCHEDULE) (TASK 1)

The NRC uses a clearly defined approach to designing, developing, deploying, maintaining, and decommissioning information systems. Within this framework, the SDLCM Methodology, there are specific requirements for activities, products, tools and techniques. In addition, there are other factors that must be considered in determining the sequence for each deliverable, such as contractual requirements and agency checkpoints. After considering all of these factors, the government has determined a *representative* technical approach with activities, deliverables, and due dates for Task 1. The contractor shall propose a *final* technical approach which reflects the contractor's activities and proposed work methodology, but still includes all of the identified activities and deliverables; complies with all applicable policy, guidance, and standards; conforms to the "Design and Implementation Controls" identified in section 6.0; and meets the government's goal for launching a fully operational system by September 30, 2005, so that the NRC's existing LTS and IPS systems can be decommissioned before the end of FY 05. The contractor's *final* technical approach and schedule, if accepted by the government, shall be incorporated into the award contract, and the contractor will be held to the terms, conditions, and dates of the contractor's proposed technical approach.

7.1 Identify and Procure, Install, and Setup COTS and Infrastructure (Task 1.1)

The contractor shall identify any COTS software products and Infrastructure products (servers, and connectivity) and hosting services (housing for servers) that will be required as the basis for developing and testing the SafeSource Phase I system. All items must be from the GSA Schedule, and the contractor must present to the government a detailed list of the products, prices, quantities, and schedule. This detailed product list will be approved by the government, and upon such approval, the contractor shall purchase, install, and setup those products at the hosting facility so that system development activities can commence. The setup activity includes any initial NRC-specific COTS configuration necessary to make the COTS product(s) basically operational for SafeSource Phase I (with further, full customization expected later in the project in Task 1.9), as well as establishing connectivity and hardening the servers to meet the external hosting requirements.

7.2 Develop Project Plans (Task 1.2)

The contractor shall develop project plans for NRC review and acceptance. These shall include both an overall Project Management Plan, and a Software Development Plan. The Project Management Plan shall expand upon the basic plan submitted in the contractor's written portion of the proposal, and any significant changes or deviations from the technical approach identified in the proposal shall be clearly marked and identified.

Deliverable: Project Management Plan & Software Development Plan

7.3 Develop - Quality Assurance Plan (Task 1.3)

The contractor shall propose a plan for measuring the System Performance Requirements identified in § 5.2.2, which will become part of the Quality Assurance (QA) Plan, as required by the NRC's SDLCM.

Deliverable - Quality Assurance Plan

7.4 Validate and Prioritize Requirements (Task 1.4)

Appendix A contains the detailed functional requirements documentation for the SafeSource project developed by the NRC's Working Group and the Requirements contractor, AEGIS.net, Inc., during the project approval phase. These requirements provide the design basis for SafeSource Phase I, and these detailed requirements, which are presented in the Rational Software "Use Case" format, will become the implementation basis – subject to validation and prioritization – for all subsequent system development efforts in Phase I. The contractor may propose to adjust requirements identified for implementation in Task 3 to implementation in Task 1 if the COTS software necessitates such a movement, but otherwise, the contractor should assume that these requirements will be implemented in the phases indicated. One output of this activity should be a Requirements Traceability Matrix that the contractor's staff and the Government can use to track the implementation efforts throughout this development project (e.g., development, testing, and acceptance).

7.5 Develop Tactical Integration Plan (Task 1.5)

The contractor shall develop an overall deployment plan entitled the ***Tactical Integration Plan (TIP)***. The contractor shall address how it intends to manage transition between phases of the project to minimize disruptions in work, retain key staff, address potential technical or schedule issues, and ensure overall program continuity. Additionally, this deliverable shall present an overall deployment plan including roles and responsibilities, schedules, and risk mitigation for products and for integration difficulties within project phases and between project phases (e.g., addressing means of accomplishing the activities in Task 2 without disrupting the progress on Task 1), and shall address the integration with other systems (e.g., ADAMS and FEES), and effective linking of all users throughout the NRC Regions and Headquarters.

Deliverable: Tactical Integration Plan

7.6 Develop Configuration Management Plan (Task 1.6)

The contractor shall develop an overall ***Configuration Management (CM) Plan***. In this plan, the contractor shall address how it intends to interface with the NRC central CM function and repository, perform CM on all phases of COTS customization, COTS configuration, and subsystem development. Where the contractor proposes to use alternate CM technologies for day-to-day work not directly related to NRC deliverables, the contractor shall describe in-depth the proposed approach, processes, and compatibility with NRC CM technologies.

Deliverable: Configuration Management Plan

7.7 Develop Design Document: Logical & Physical Design (Task 1.7)

The contractor shall compile a detailed design using the re-validated functional requirements and building upon the concept design found in the NRC's Requirements Analysis (see Attachment A) and shall deliver a formal Design document containing both a Logical Design Document (LDD), and a Physical Design Document (PDD). Elements of the Design Document shall include, if and as appropriate to a Package-Based Life-Cycle Model, the following elements: Data Model; Process Model; Context Diagram; Data Flow Diagram; Data Dictionary; User Interface Designs; and External Systems Interface Diagrams (with Processes, External Agents, External Interfaces, etc.). These elements may be developed as separate products or as sections of the LDD and the PDD, depending on the contractor's proposed implementation schedule. However, each of these final documentary products shall be in compliance with the Rational Unified Process (RUP) methodology, as well (e.g., Unified Modeling Language (UML) diagrams and related narrative) and implemented in the Rational Software suite, as appropriate (e.g., Rational Rose). Each of these documents shall, as needed, be updated throughout the design and implementation phases.

Deliverable: Design Document: Logical & Physical Design

7.8 Conduct Design Review (Task 1.8)

The contractor shall develop and deliver a comprehensive detailed design review for NRC's senior management and SafeSource Stakeholders that covers the entire system capability, including those requirements to be implemented in a subsequent task (e.g., Task 3); and a plan or approach for accommodating the functionality to be addressed in Task 2 and Phase II.

The desired outcome of this task is that the contractor receive a "GO" decision from the NRC, since this "GO" decision is required before any further work can commence.

Deliverable: Detailed Design Review

7.9 Customize COTS (System Development) (Task 1.9)

The contractor shall configure any COTS product to incorporate NRC-specific business rules. It is expected that the chosen COTS product offers significant configuration capabilities that provide a high level of flexibility for incorporating different clients' business requirements. The term "configuration", in this context, represents the ability to change the COTS product's behavior without assistance from a programmer and without the need to re-compile the product. It is expected that many of the NRC business rules will be implemented through configuration of the COTS product. The contractor shall follow the NRC standard Configuration Management (CM) procedures described in section 6.3, to document, track, and control each configuration change of the COTS product, even if performed through the standard user interface (e.g. system administrator or "super user" mode).

The contractor shall construct custom sub-systems that are needed to implement required system functionality that is not provided by the COTS product. Any proposed custom programming must first be explicitly approved by the SafeSource project manager. The custom sub-systems must be implemented in a way that does not interfere with the ability to deploy subsequent COTS version upgrades. The custom sub-systems shall therefore be encapsulated in modules that are only loosely coupled to the main system. The contractor shall follow the

NRC standard Configuration Management (CM) procedures described in section 6.3, to document, track, and control all custom programming; this includes providing the NRC with a copy of the custom programming source code and related integration and deployment documentation.

7.10 Data Conversion Activity (Task 1.10)

The contractor shall organize, transform, package (or otherwise preformat), and migrate structured and unstructured data to establish the fully-functional database of historical and active records using the agency's existing systems (e.g., LTS and IPS) as input. This data conversion activity shall be fully documented, and tested to ensure that all data elements and records are retrieved and integrated.

7.11 Conduct Extensive Security Planning and Implementation (Task 1.11)

The NRC SDLCMM is scalable to the project, but due to recent OMB and agency concerns about meeting security requirements for IT projects, and the nature of the information to be contained in the SafeSource database, IT Security Planning and Implementation will be a major focus of this project. The contractor shall develop numerous security deliverables that address the processes and procedures to be employed to ensure adequate data and system security. The contractor may propose adding other key elements to these Plans, based on the contractor's experience with other systems, but at a minimum, the contractor shall develop and deliver a comprehensive security plan that includes the following: Risk Management Plan, System Security Plan, and Contingency Management Plan. The requirements for each deliverable are described in detail in the following three sections.

7.12 Develop Risk Management Plan (Task 1.12)

The contractor shall conduct a risk assessment of the SafeSource Phase I operating environment and shall develop Draft and Final Risk Management Reports for SafeSource Phase I. The Risk Management Report shall be completed following the guidance provided in NIST Special Publication 800-30, "Risk Management Guide for IT Systems." The objectives of this risk assessment shall be to: 1) Identify potential undesirable or unauthorized events; 2) Identify risks that could have a negative impact on the integrity, confidentiality, or availability of information processed or stored by, or transmitted through the system; 3) Identify potential controls to reduce or eliminate the impact of risk events; and 4) Establish responsibilities and milestones for the implementation of mitigating controls. The contractor shall document the results of the process. This shall include documenting the risk number, a description of each risk, the type of risk (i.e., impacting the confidentiality, integrity, or availability), the level of risk (i.e., low, medium, or high), the associated controls, and the action(s) required to minimize each risk.

Deliverable: Risk Assessment Report and Risk Management Plan

7.13 Develop System Security Plan (Task 1.13)

The contractor shall develop a Draft System Security Plan (SSP) for SafeSource Phase I to be used on an interim basis until security testing is completed. This plan shall follow the format of NIST Special Publication 800-18, "Guide for Developing Security Plans for Information

Technology Systems” and shall be used as a foundation for the analysis and presentation of essential security plan information. SSP development shall also include a preliminary estimation of the status of necessary safeguards.

One component of this plan shall address Security Test & Evaluation. The contractor shall develop a Security Test & Evaluation (ST&E) program for SafeSource Phase I. The contractor shall utilize the Department of Commerce (DOC) Abbreviated Certification Methodology Worksheets 1 through 4 to document the system description, identified vulnerabilities, security features, and security tests (available on the NIST Computer Security website, (<http://csrc.nist.gov/publications/secpubs/doc-cert.txt>)). Additionally, the contractor shall conduct security testing for the management, operational, and technical security control measures and safeguards for SafeSource Phase I. The contractor shall utilize the DOC Abbreviated Certification Methodology Worksheet 5 to document the security test results. The recommendations for mitigating identified system risks shall be categorized according to low, medium, or high. The contractor shall then develop a Security Test & Evaluation (ST&E) Report for SafeSource Phase I. (Note: NIST has developed a second draft of guidance for conducting systems security certification and accreditation, NIST Special Publication 800-37, “Guidelines for the Security Certification and Accreditation of Federal Information Technology Systems”, June 2003 <http://csrc.nist.gov/publications/drafts/sp800-37-Draftver2.pdf>. This revised guidance has not yet been finalized, however the contractor should review the draft guidance and use it as a technical resource, to help assist in certification and accreditation planning.)

Following the completion of security testing, the contractor shall update the Draft System Security Plan for SafeSource Phase I to include lessons learned from security testing and shall submit a Final System Security Plan.

Deliverable: System Security Plan

7.14 Develop IT Contingency Plan (Task 1.14)

The contractor shall develop a Draft IT Contingency Plan for SafeSource Phase I to be used on an interim basis until contingency plan testing is completed. The IT Contingency Plan shall be prepared in accordance with NIST Special Publication 800-34, “Contingency Planning Guide for Information Technology Systems.”

Following the completion of contingency plan testing, the contractor shall update the Draft IT Contingency Plan for SafeSource Phase I to include lessons learned from testing and shall submit a Final IT Contingency Plan.

7.14.1 IT Contingency Plan Training

The contractor shall develop IT Contingency Plan Training for SafeSource Phase I. The IT Contingency Plan Training shall include the team members' specific roles and responsibilities in the execution of the plan; a thorough understanding of the team checklists of procedures, including notification procedures; interdependencies of individual team checklists of procedures; and on-going evaluation of the effectiveness of the team checklists of procedures.

7.14.2 IT Contingency Plan Testing

The contractor shall conduct structured walk-through and checklist testing with identified key NRC personnel familiar with SafeSource Phase I. Recommendations for improvements to the SafeSource Phase I IT Contingency Plan shall be made upon evaluation of the IT Contingency Plan test results and shall be incorporated into an IT Contingency Plan Test Report for SafeSource Phase I.

Deliverable: IT Contingency Plan and Test Report

7.15 Develop System Test Plan (Task 1.15)

The contractor shall develop a System Test Plan in accordance with § 6.3.4. The contractor shall provide both draft and final deliveries of each **SafeSource System Test Plan**, with time allowed for NRC review and comment. In the final draft, the contractor shall address all drafts comments to the satisfaction of the SafeSource project manager. The contractor's comprehensive Test Plan should include a section for government acceptance testing which will be conducted in Task 1.26.

Deliverable: System Test Plan

7.16 Conduct System Test (Task 1.16)

The contractor shall provide all necessary facilities and resources needed to conduct system testing. The NRC and other independent NRC contractors may observe part of all of this testing process.

7.17 Develop System Test Results (Task 1.17)

The contractor shall provide both draft and final deliveries of a **System Test Result** report for each SafeSource task, with time allowed for NRC review and comment. Test results shall be tracked back to the original requirements, using the Traceability Matrix, with each requirement and its test results uniquely identified. In the final draft, the contractor shall address all comments to the satisfaction of the SafeSource project manager.

Deliverable: System Test Results

7.18 Develop System Documentation & Procedures (Task 1.18)

The contractor shall develop and maintain ongoing documentation as described in §6.3.1. This documentation and procedures shall include any and all documentation provided by the COTS vendor, with appropriate changes or modifications for SafeSource Phase I identified.

Deliverable: Software Engineering Notebook

7.19 Develop Acceptance Test Plan (Task 1.19)

The NRC will have an IV&V contractor and/or other experts assist in preparing the **SATP** for SafeSource Phase I. The contractor shall support the development of the plan for the SafeSource Phase I system by providing comments and feedback on the draft version; and

present alternative approaches, if necessary; and meet with the NRC Project Manager to discuss these comments.

Deliverable: Acceptance Test Plan Review

7.20 Develop Training Materials (Task 1.20)

The contractor shall submit all training plans and materials to the government for review and approval. The contractor shall address all NRC comments to the satisfaction of the SafeSource project manager in producing the final version of the training plans, materials, and CBT modules.

For the external users, the contractor shall create, maintain and update computer-based training (CBT) modules available through a web interface and for distribution on appropriate media such as compact disk or DVD.

Deliverable: Training Materials

7.21 Develop Roll-Out Plan (Task 1.21)

The contractor shall identify the steps and procedures which the contractor will employ to transition the NRC from the LTS to SafeSource Phase I. For planning purposes, the contractor should assume that the rollout starts within 14 days after the contractor conducts the Readiness Review Demonstration. The Roll-Out Plan shall include any issues regarding labor and other resources, timing, sequence and schedules, and any other contingencies and ensure these items are incorporated in the Plan.

Deliverable: Roll-Out Plan

7.22 Conduct Engineer Review (Task 1.22)

The contractor shall develop and deliver a comprehensive detailed engineer review for NRC's senior management and SafeSource Stakeholders that fully describes the system development and integration activities which the contractor has completed.

The desired outcome of this task is that the contractor receive a "GO" decision from the NRC, since this "GO" decision is required before any further work can commence.

Deliverable: Engineer Review

7.23 Support System Installation (Initial) (Task 1.23)

Contractor staff shall work with the NRC's NMSS and OCIO staff as well as Regional staff to ensure that the System Installation activities are accomplished. The contractor shall provide System Installation instructions and other information to government staff, as only OCIO representatives are permitted to install software on the desktop. This support may include providing diskettes of the system, or other utilities in electronic media, as necessary. In addition, contractor staff may be required to work with NMSS staff during non-standard work hours to ensure that software installation activities do not compromise the government staff's productivity.

7.24 Develop NRC Training (Initial) (Task 1.24)

For the NRC users, the contractor shall provide four initial hands-on training sessions, for the approximately 150 users of the system. The contractor shall assume 10 sessions with 10 users per session; and of these 10 sessions, no more than 7 sessions will be conducted at Regional Offices, and the remaining 3 sessions will be conducted at the NRC HQ. The agency's Regional Offices are located as follows:

Region I - 475 Allendale Road
King of Prussia, PA 19406-1415

Region II - Atlanta Federal Center, 23 T85
61 Forsyth Street, S.W.
Atlanta, GA 30303-8931

Region III - 801 Warrenville Road
Lisle, IL 60532-4351

Region IV - 611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Training shall be conducted at times and dates agreeable to the SafeSource Project Officer. In addition, the contractor shall create, maintain, and update CBT modules for use by new staff needing to learn about their SafeSource role after the initial training sessions have ended. For the COTS configuration users, the contractor shall propose to initially provide hands-on training for three users for this role.

The contractor shall include IT Contingency Plan Training as a component of the NRC initial training, and identify any travel and training requirements for the contractor and/or government staff, based upon the location of the ASP, and whether such training is to be conducted at the ASP site.

Deliverable: NRC Training (Initial)

7.25 Support NRC System Test (Task 1.25)

The contractor shall support all NRC System Test activities. The contractor shall provide five copies of a formal Test Plan that tests the functionality of each requirement and incorporates role-based testing. The contractor shall provide NRC staff with access to a test version of the software that allows staff to reset the parameters for repeated testing. Upon completion of the NRC's testing, the contractor shall update the Test Plan, if necessary, and the contractor shall provide similar support to the NRC's IV&V contractor who will conduct independent testing.

7.26 Support Development of Acceptance Test Report (Task 1.26)

7.26.1 Support the IV&V Activity to Develop the System Acceptance Report

The NRC will have an IV&V contractor and/or other experts assist in preparing the Acceptance Test Report for SafeSource Phase I. The contractor shall support the assessment of the SafeSource Phase I system that will be conducted by the separate (IV&V) contractor by ensuring that the delivered suite continues to be operational throughout the assessment effort, and by responding to requests for clarification or explanation that are submitted by the IV&V contractor, as directed by the government's technical representative.

7.26.2 Support the IV&V Activity to Develop the System Certification Report

The contractor shall support the NRC's IV&V Contractor tasked to develop a System Certification and Accreditation Report for SafeSource Phase I in accordance with the Computer Security Act of 1987, FIPS PUB 102, as well as various NRC Management Directives. The IV&V Contractor shall utilize the DOC Abbreviated Certification Methodology Worksheets 1 through 6 to document the system description, identified vulnerabilities, security features, security tests, security test results, and evaluation and recommendations and a certification statement for SafeSource Phase I. The NRC Office of Nuclear Materials Safety and Safeguards (NMSS) is the system owner and will sign the certification statement. The certification statement will be submitted to the NRC Senior IT Security Officer (SITSO), who will review it and provide a recommendation for an approval to operate to the NRC Chief Information Officer, who is the Designated Approving Authority (DAA). Guidance in NRC MD 12.5 and the NRC SDLCMM (MD 2.5) indicates that all required security documentation previously described in this SOW must be in place for a certification effort to be successful and for a system acceptance test to be approved leading to the system being accredited for operation. Therefore, the SafeSource Contractor shall provide support required to ensure that all documentation is adequate to ensure that the NRC receives full certification and accreditation. The Certification and Accreditation process requires SITSO and OCIO reviews, and can take substantial time for complex major applications. The contractor will be required to deliver approximately two briefings (but no more than four) to the IV&V Contractor, as well as one briefing the SITSO and OCIO staff charged with reviewing the SafeSource Project.

Deliverable: Acceptance Test Report Assessment Briefings

7.27 Conduct Readiness Review Demonstration (Task 1.27)

After NRC Pre-final acceptance testing has been completed and required changes have been addressed by the contractor and sufficiently tested in the Final Test, the contractor shall conduct a readiness review session with NRC and present the results of all activities, findings, and products developed during the engineering phase. The Readiness Review Demonstration shall group topics as logically as possible to facilitate comprehensive yet succinct issue coverage, as this will be a significant checkpoint in the system development life cycle. Based on a successful review, NRC will issue a "GO/NO GO" decision for full deployment.

Deliverable: Readiness Review Demonstration

7.28 Roll-Out (Including Install & Training) (Task 1.28)

The contractor shall perform all activities required to Roll-Out the SafeSource Phase I system to the user community, with the features identified for this task fully implemented. The contractor shall identify Infrastructure products (servers, and connectivity) and expanded hosting services (housing for servers, etc.) that will be required as the basis for operating the SafeSource Phase I system. All items must be purchased from the GSA Schedule, and the contractor shall present to the government a detailed list of the products, prices, quantities, and schedule. This detailed product list will be approved by the government, and upon such approval, the contractor shall purchase, install, and setup those products at the hosting facility so that system roll-out activities can commence.

The contractor shall conduct all training to ensure that users and stakeholders are trained just-in-time to ensure there is no loss of time between completion of the training and availability of the system.

The contractor shall work with NRC staff to facilitate a smooth and efficient installation; and prepare a detailed schedule that addresses the installation requirements for the NRC's HQ and Regional Staff.

Deliverable: Rollout (Including Install Production Environment & Conduct Training)

7.29 Develop Lessons Learned and Recommendations (Task 1.29)

The contractor shall provide a report containing its recommendations for changes to be made to the SafeSource infrastructure, operational system that have been implemented. The recommendations shall include, but not be limited to, the IV&V contractor's assessment; feedback from the users and stakeholders; "Lessons Learned" from the implementation effort; and Security enhancements suggested by independent evaluators such as NSA or the NRC IT Security Managers. In addition, the SafeSource contractor shall identify changes required, if any, to each of the delivered products from this Task. The enhanced operational system that is developed in Optional Task 3 shall contain those revisions which the government approves from the Contractor's Lessons Learned and Recommendations Report. Therefore, the report shall include an estimate of the delta hardware, software, and labor effort required to implement the enhanced system, and a proposed schedule for incorporating those changes Optional Task 3.

Deliverable: Lessons Learned and Recommendations Report

7.30 Conduct Ongoing System Assessment and Provide Maintenance and Operations Support (Task 1.30)

The contractor shall provide ongoing maintenance and operations support for the SafeSource Phase I system and infrastructure to ensure that SafeSource Phase I infrastructure and applications are reliable and available to users on a continuous basis. The contractor shall monitor availability of all parts of the production SafeSource system and report up time statistics to the SafeSource project manager on a monthly basis. Should any part of the production SafeSource system experience unacceptable down time as defined in § 5.2.2 of this statement of work, the contractor shall submit to the SafeSource Project Officer a proposed plan to prevent recurrence of the problem. Upon NRC acceptance, the contractor shall implement necessary

actions to address the cause of the down time. The contractor shall incur all costs related to addressing issues of unacceptable down time.

In addition to general system availability, the contractor shall ensure that all security aspects of the system are monitored. The contractor shall complete the Security Self-Assessment (Appendix A of NIST Special Publication 800-26, "Self-Assessment Guide for Information Technology Systems") for SafeSource Phase I. The contractor shall review the SafeSource Phase I Risk Assessment Reports and System Security Plans, other related documentation, and interview up to five (5) NRC employees to determine the status of each of the 17 control topic areas. The contractor shall also determine the status of each control by quantifying the level of maturity of the control in one of the following categories:

- Level 1 - Control objective documented in a security policy
- Level 2 - Security controls documented as procedures
- Level 3 - Procedures have been implemented
- Level 4 - Procedures and security controls are tested and reviewed
- Level 5 - Procedures and security controls are fully integrated into a comprehensive program

The contractor shall use the General Accounting Office (GAO) Federal Information Systems Control Audit Methodology (FISCAM) as a guide when categorizing each of the controls into the appropriate maturity level. The contractor shall analyze the results of the self assessment and document action plans that management can then use to remediate all controls that are categorized below level 5.

Deliverable: Security Self Assessment Report

7.31 Task 1 Deliverables and Representative Schedule

The contractor shall provide all of the deliverables identified Table 7.31. The column labeled "Estimated Date Due" represents the dates which the government used in planning this project. The contractor shall propose dates for this task as part of the contractor's Technical Approach, and in accordance with the guidance in §7.0.

Table 7.31 - Representative Schedule for Task 1 Deliverables

Task 1 Deliverables	Estimated Date Due
1. Documentation: Project Management Plan (PMP) & Software Development Plan (SDP)	Task 1 Start (TS1) + 15 workdays
2. Documentation: Quality Assurance Plan	TS1 + 15 workdays
3. Documentation: Tactical Integration Plan	TS1 + 45 workdays

Task 1 Deliverables	Estimated Date Due
4. COTS & Infrastructure Installation	Within 30 days following authorization from the Contracting Officer, which will be authorized approximately 15 days after Task 1 Starts (TS1 + 45 workdays)
4. Documentation: Configuration Management Plan	TS1 + 60 workdays
5. Documentation: Design Document: Logical & Physical Design	TS1 + 60 workdays
6. Detailed Design Review	TS1 + 67 workdays
7. Documentation: Risk Assessment and Risk Management Plan	TS1 + 110 workdays
8. Documentation: System Security Plan	TS1 + 151 workdays
9. Documentation: IT Contingency Plan and Test Report	TS1 + 188 workdays
10. Documentation: System Test Plan	TS1 + 168 workdays
11. Documentation: System Test Results	TS1 + 189 workdays
12. Documentation: Software Engineering Notebook	TS1 + 189 workdays
13. Documentation: Acceptance Test Plan Review	TS1 + 188 workdays
14. Documentation: Training Materials	TS1 + 188 workdays
15. Documentation: Roll-Out Plan	TS1 + 188 workdays
16. NRC Training (Initial)	TS1 + 212 workdays
17. Documentation: Acceptance Test Report Assessment Briefings	TS1 + 235 workdays
18. Readiness Review Assessment Demonstration	TS1 + 234 workdays
19. Rollout (Including Install Production Environment & Conduct Training)	Required by 10/31/05 Performance incentive is paid if Rollout occurs NLT October 3, 2005
20. Documentation: Lessons Learned and Recommendations Report	TS1 + 465 workdays
21. Documentation: Security Self-Assessment Report	September 30, 2006

Task 1 Deliverables	Estimated Date Due
22. Briefings: Briefings for Working Group Members and/or NMSS Staff	Monthly
23. Briefings: Briefings for NRC Senior Managers and/or Stakeholders	Quarterly or As Required for "GO / NO GO" Decisions

Each deliverable, whether documentation or IT services, hardware or software, must comply with the applicable standards, controls, and guidance specified in the applicable sections of this Task description. The estimated level of effort for this task is 11,084 hours. If the final system meets or exceeds the appropriate specifications, and is delivered by October 31, 2005, it will be deemed acceptable. However, if the contractor delivers before the Roll-Out date, October 3, 2005, and does not exceed the total ceiling amount negotiated for Task 1, the contractor will receive a Performance Incentive in the amount of \$100,000.00. If the final system does not meet the applicable standards, or does exceed the total ceiling amount negotiated for Task 1 or is not delivered by October 3, 2005, the contractor will not be eligible for the Performance Incentive. If the final system is not delivered by 5:00 PM local time, October 31, 2005, at the discretion of the government, a disincentive of \$7,500.00 per week, or apart thereof, will be assessed to the contractor. Payment of the Performance Incentive will be made on or about January 1, 2006, depending on the availability of funds. Any disincentive will be deducted from pending invoices.

8.0 OPTIONAL TASK 2: DEVELOP DEMONSTRATION OF SOURCE TRACKING APPROACH

(NOTE: This is an Optional Task, subject to NRC exercising the option; and NRC reserves the right not to exercise this option. Option subject to availability of funds and management approval to proceed. Task 2, if exercised, shall be a fixed-price type task, and the estimated level of effort is 3,160 hours.)

8.1 Background

The functionality required in Task 1 and Task 3 relates to current business practices in which a license to possess nuclear material is granted. It is anticipated that a new business practice known as 'source tracking' will soon be developed which will track the actual inventory of material on-hand. It is likely that the new information will be significantly sensitive and may be classified. The new information will include select Licensees from Agreement States, with the states reporting license level information.

8.2 Scope of Work for Optional Task 2

In Task 2, a demonstration model shall be constructed to show how a selected subset of the source tracking requirements can be established and operated within the SafeSource infrastructure implemented in Task 1. This demonstration model shall be used by the NRC to investigate and validate requirements for the eventual "National Source Tracking System" to be

developed and deployed in SafeSource Phase II. Potential features of source tracking are listed in the Extensibility Scenario section of Task 1.

The demonstration model shall include, at a minimum:

- A. Associating a serialized source with a Licensee, allowing for transfer and disposal;
- B. Providing a robust security environment in which a Licensee can change their own data but cannot access other data;
- C. Associating a source with appropriate radiological information and providing highly secure query based on that information (e.g., which Licensees have more than ten curies of tritium?); and
- D. A working demonstration of an approach for receiving licensing information (e.g., new license, change to license, license termination) from a state with appropriate security.

Task 2 requires the contractor to evaluate the COTS product and develop a prototype to demonstrate an approach to implementing the new business practice. The contractor shall:

- A. Interview NRC staff to document assumptions about the new potential process;
- B. Propose a project plan;
- C. Acquire additional hardware and software, if needed;
- D. Develop a working prototype solution;
- E. Demonstrate the solution;
- F. Document remaining issues; and
- G. Continue to operate the prototype for NRC staff access during the performance period.

8.3 Scope Boundaries for Task 2

The concept of developing a demonstration model or prototype, is to demonstrate the concept of source tracking before the NRC implements a national system, as a means of mitigating the risk of implementing such a system. The purpose of this task is to fully understand the capabilities or limitations of proposed COTS products or other solutions, and the IT security issues that may arise when handling nuclear source data. The nature of this type of task implies that there are inherent limitations, and a further understanding of the scope boundaries is useful to defining the parameters of Task 2. Because this Demonstration Model is not intended to become an operational system, there will be no requirement to rigidly follow the SDLCMM; merely a requirement to follow the overarching principles of sound project management and implementation that are identified within that methodology. The system should be "robust" but not fully-operational; the government will supply test data but there is no requirement for dynamic updates or even regular updates; the system may employ navigational cues without complete links; there may be futuristic messages indicating a particular section would be developed at a later time; and there will be no formal certification or accreditation of the system; but there will be regular demonstrations, so the system should be capable of being "reset" for repeated usage.

8.4 Task 2 Activities and Deliverables

Task 2 activities and deliverables include the following:

- A. Project Management Plan
- B. High Level Design of Prototype
- C. Demonstration of Prototype
- D. Documentation of system and remaining issues

8.5 Task 2 Schedule

Task 2 Deliverables	Date Due
1. Documentation: Project Management Plan	Task 2 Start (TS2) + 15 workdays
2. Documentation: High Level Design of Prototype	TS2 + 40 workdays
3. Security Planning	TS2 + 122 workdays
4. System Testing	TS2 + 122 workdays
5. Demonstration of Prototype	TS2 + 122 workdays
6. Documentation: Documentation of system and remaining issues	TS2 + 165 workdays

9.0 **OPTIONAL TASK 3: REFINE AND ENHANCE SAFESOURCE**

(NOTE: This is an Optional Task, subject to NRC exercising the option; and NRC reserves the right not to exercise this option. This Option is subject to availability of funds, and management approval to proceed. Task 3, if exercised, shall be a time-and-materials type task, and the estimated level of effort is 4,460 hours.)

9.1 Scope of Work for Optional Task 3

The contractor shall assume that many of the activities completed in Task 1 will be performed again for the purpose of implementing the enhancements and improvements identified in Section 9.1. The outcome of the activities will be updated deliverables, and the contractor shall revisit all of the deliverables completed in Task 1 for this purpose.

Two activities that require further clarification are the two that address the infrastructure and training. Specifically, for Task 3, the contractor shall address the need to upgrade the infrastructure with a technology refresh. For Training, the Contractor shall assume the requirement is for five new training sessions. All five training sessions will be in the Regions; so contractor travel is required.

9.2 Project Schedule

Task 3 Deliverables	Estimated Date Due
1. Documentation: Update Project Management Plan (PMP) & Software Development Plan (SDP)	Task 3 Start (TS3) + 10 workdays
2. Documentation: Update Quality Assurance Plan	TS3 + 10 workdays
3. Documentation: Update Tactical Integration Plan	TS3 + 15 workdays
4. Refresh Infrastructure	TS1 + 45 workdays
5. Documentation: Update Configuration Management Plan	TS3 + 35 workdays
6. Documentation: Update Design Document: Logical & Physical Design	TS3 + 34 workdays
7. Updated Detailed Design Review	TS3 + 41 workdays
8. Documentation: Update Risk Assessment and Risk Management Plan	TS3 + 84 workdays
9. Documentation: Update System Security Plan	TS3 + 125 workdays
10. Documentation: Update IT Contingency Plan and Test Report	TS3 + 164 workdays
11. Documentation: Update System Test Plan	TS3 + 125 workdays
12. Documentation: Update System Test Results	TS3 + 144 workdays
13. Documentation: Update Software Engineering Notebook	TS1 + 144 workdays
14. Documentation: Review Updated Acceptance Test Plan	TS3 + 121 workdays
15. Documentation: Update Training Materials	TS3 + 121 workdays
16. Documentation: Update Roll-Out Plan	TS3 + 121 workdays
17. Updated NRC Training	TS3 + 164 workdays
18. Documentation: Update Acceptance Test Report Assessment Briefings	TS3 + 186 workdays
19. Updated Readiness Review Assessment Demonstration	TS3 + 186 workdays
20. Rollout (Training)	TS3 + 293 workdays
21. Briefings: Briefings for Working Group Members and/or NMSS Staff	Monthly

Task 3 Deliverables	Estimated Date Due
22. Briefings: Briefings for NRC Senior Managers and/or Stakeholders	Quarterly or As Required for "GO / NO GO" Decisions

10. ORDER TERMS, CONDITIONS, AND REQUIREMENTS

10.1 PERFORMANCE REQUIREMENTS

The deliverables required under this order must conform to the standards contained, or referenced, in the statement of work. All deliverables required under this order must be delivered to the NRC in electronic format (Word) and ADOBE Acrobat Portable Document Format (PDF). At the same time, the contractor shall provide 3 printed copies of each deliverable, and any Rational Suite files, if applicable. The contractor shall deliver draft versions of all deliverables required under this order.

10.2. PLACE OF PERFORMANCE

Place of performance shall be primarily at the contractor site for all tasks. Contractor staff shall be required to be at the NRC Headquarters offices during each Task to conduct interviews, deliver presentations, and attend status meetings, as well as any and all other NRC-specific activities that occur during the period of performance. Training requires that the contractor travel to Regional offices and conduct 12 training sessions; seven of these training sessions are during performance of Task 1 and the remaining five training sessions are expected to occur during performance of Optional Task 3. In addition, the contractor may be required to work at the NRC on an intermittent basis when conducting Integration tests at the NRC's Consolidated Test Facility.

10.3. PERSONNEL

The following positions are considered "Key" positions under this contract:

- 0.1 Project Manager
- 0.2 Task Area Leads for Each Task
- 0.3 Senior Analyst
- 0.4 Senior Software Engineer
- 0.5 Senior Database Analyst

Qualifications for the individuals providing support are as stated in the Schedule Contract.

10.4. TRAVEL

Travel includes Local Travel as well as Travel to the Regions to conduct Training.

10.5. REPORTING REQUIREMENTS

Weekly Reports and Meetings

The contractor shall provide weekly Activity Reports to include any exceptions or changes from the existing plans. The weekly report will be delivered by Tuesday COB for review prior to a regular Wednesday Project Meeting. The weekly will include a proposed agenda for the meeting to cover management issues and any technical issues that would impact schedule, cost, or technical risk.

Project Management Plan

The contractor shall submit a detailed Project Management Plan to cover tasks under each of the above noted Tasks. The plan will show tasking and subtasking, milestones, labor categories and/or staff assigned and the projected number of hours estimated to complete each task/subtask by staff member. This plan will be maintained in Microsoft Project® 4.0 format. This plan will be progressed at the above level of detail on a monthly basis for the duration of the task. The Project Management Plan will also include dollars by labor category/assigned personnel which will support the contractor's estimate for each task executed under this contract.

Monthly Reports and Meetings

The contractor shall provide a Monthly Status Report to the NRC Project Officer and the Contracting Officer by the 15th of each month. Each monthly report will include updates to the Project Management Plan (Work Breakdown Schedule) listing the reasons for changes, proposed adjustments and justification, cost and schedule impacts. The Project Management Plan will be progressed with the latest hours/costs and submitted as part of the monthly report. All phases and tasks in the Work Breakdown Schedule must be updated with % completion statistics at a sufficient level to allow the contractor to report the "Earned Value" Statistics for the overall project. If at any time the project deviates from 5% in cost or schedule from the project management plan, the contractor shall schedule an update with the NRC task manager immediately. The report shall also contain the BPA number, order number, and task; the period covered by the report; a summary of work performed during the reporting period for each task, including appropriate statistics and plans for the next reporting period; a discussion of project plans, hardware problems, current operational problems, and the proposed corrective action, and analysis of the impact on other tasks within the scope of the SOW; and a status of expenditures under the order for the reporting period, cumulative expenditures to date, funds obligated to date, and balance of funds required to complete the order; any project risks and appropriate risk mitigation strategies especially those which require NRC management action; and a list of any deliverables completed during the prior month as well as deliverables scheduled for completion during the next month and the schedule and cost variances, if any, for those upcoming deliverables. The contractor shall attend a monthly status meeting in conjunction with the next regularly-scheduled weekly meeting and review the project status for the prior month.

10.6 2052.204-70 SECURITY

(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 MD12.1, "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 Attachment 5) 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 (Safeguards, Official Use Only, and Proprietary information) 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, proprietary data (trade secrets) or confidential or privileged technical, business, or financial information, including Commission plans, policies, reports, financial plans, other (Official Use Only) 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.

SECURITY REQUIREMENTS FOR INFORMATION TECHNOLOGY ACCESS APPROVAL

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. 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."

Badge Requirements for Unescorted Building Access to NRC Facilities

During the life of this contract, the rights of ingress and egress for contractor personnel must be made available, as required, provided that the individual has been approved for unescorted access after a favorable adjudication from the Security Branch, Division of Facilities and Security (SB/DFS). In this regard, all contractor personnel whose duties under this contract require their presence on-site shall be clearly identifiable by a distinctive badge furnished by the NRC. The Project Officer shall assist the contractor in obtaining badges for the contractor personnel. It is the sole responsibility of the contractor to ensure that each employee has a proper NRC-issued identification/badge at all times. All photo-identification badges must be immediately (no later than three days) delivered to SB/DFS for cancellation or disposition upon the termination of employment of any contractor personnel. Contractor personnel must display any NRC issued

badge in clear view at all times during on-site performance under this contract. It is the contractor's duty to assure that contractor personnel enter only those work areas necessary for performance of contract work, and to assure the protection of any Government records or data that contractor personnel may come into contact with."

SECURITY REQUIREMENTS FOR BUILDING ACCESS APPROVAL

The contractor shall ensure that all its employees, including any subcontractor employees and any subsequent new employees who are assigned to perform the work herein, are approved by the Government for building access. 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.

A contractor employee shall not have access to NRC facilities 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. Final access will be approved based on favorably adjudicated background checks by General Services Administration in accordance with the procedures found in NRC Management Directive 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. When an individual receives final access, the individual will be subject to a reinvestigation every five years.

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. Individuals performing work under this contract shall be required to complete and submit to the contractor representative an acceptable GSA Form 176 (Statement of Personal History), and two FD-258 (Fingerprint Charts). Non-U.S. citizens must provide official documentation to the DFS/SB, as proof of their legal residency. This documentation can be a Permanent Resident Card, Temporary Work Visa, Employment Authorization Card, or other official documentation issued by the U. S. Citizenship and Immigration Services. Any applicant with less than two years residency in the U. S. will not be approved for building access. The contractor representative will submit the documents to the Project Officer who will give them to the SB/DFS. SB/DFS may, among other things, grant or deny temporary unescorted building access approval to an individual based upon its review of the information contained in the GSA Form 176. Also, in the exercise of its authority, GSA may, among other things, grant or deny permanent building access approval based on the results of its investigation and adjudication guidelines. This submittal requirement also applies to the officers of the firm who, for any reason, may visit the work sites for an extended period of time during the term of the contract. In the event that SB/DFS and GSA are unable to grant a temporary or permanent building access approval, to any individual performing work under this contract, the contractor is responsible for assigning another individual to perform the necessary function without any delay in the contract's performance schedule, or without adverse impact to any other terms or conditions of the

contract. The contractor is responsible for informing those affected by this procedure of the required building access approval process (i.e., temporary and permanent determinations), and the possibility that individuals may be required to wait until permanent building access approvals are granted before beginning work in NRC's buildings.

The contractor will immediately notify the Project Officer when a contractor employee terminates. The Project Officer will immediately notify SB/DFS (via e-mail) when a contractor employee no longer requires building access and return any NRC issued badges to the SB/DFS within three days after their termination.

10.7 BILLING INSTRUCTIONS

General: The contractor shall prepare vouchers or invoices as prescribed herein. **FAILURE TO SUBMIT VOUCHERS/INVOICES IN ACCORDANCE WITH THESE INSTRUCTIONS WILL RESULT IN REJECTION OF THE VOUCHER/INVOICES AS IMPROPER.**

Form: Claims shall be submitted on the payee's letterhead, voucher/invoices, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other than Personal," and Standard Form 1035, "Public Voucher for Purchases Other than Personal-Continuation Sheet." These forms are available from the U.S. Government Printing Office, 710 North Capitol Street, Washington, DC 20401.

Number of Copies: An original and three copies shall be submitted. Failure to submit all the required copies will result in rejection of the voucher/invoice as improper.

Designated Agency Billing Office: Vouchers/Invoices shall be submitted to the following address:

U.S. Nuclear Regulatory Commission
Division of Contracts and Property Management - T-7-I-2
Washington, DC 20555-0001

A copy of any invoice which includes a purchase of property valued at the time of purchase at \$5,000 or more, shall additionally be sent to:

Chief, Property Management Branch
Division of Facilities and Property Management
Mail Stop - T-7-D-27
Washington, DC 20555-0001

HAND-DELIVERY OF VOUCHERS/INVOICES IS DISCOURAGED AND WILL NOT EXPEDITE PROCESSING BY THE NRC. However, should you choose to deliver vouchers/invoices by hand, including delivery by any express mail service or special delivery service which uses a courier or other person to deliver the vouchers/invoices in person to the NRC, such vouchers/invoices must be addressed to the above Designated Agency Billing Office and will only be accepted at the following location:

U.S. Nuclear Regulatory Commission
One White Flint North - Mail Room
11555 Rockville Pike
Rockville, MD 20852

HAND-CARRIED SUBMISSIONS WILL NOT BE ACCEPTED AT OTHER THAN THE ABOVE ADDRESS

Note that the official receipt date for hand-delivered vouchers/invoices will be the date it is received by the official agency billing office in the Division of Contracts.

Agency Payment Office: U.S. Nuclear Regulatory Commission
Division of Accounting and Finance GOV/COMM
Mail Stop T-9H4
Washington, DC 20555

Frequency: The contractor shall submit a voucher or invoice monthly only after the NRC's acceptance of services rendered or products delivered in performance of the delivery order unless otherwise specified in the contract.

Preparation and Itemization of the Voucher/Invoice: To be considered a proper voucher/invoice, all of the following elements must be included:

1. BPA/Contract number and delivery order number.
2. Sequential voucher/invoice number.
3. Date of voucher/invoice.
4. Payee's name and address. (Show the name of the contractor and its correct address. In addition, when an assignment of funds has been made by the contractor, or a different payee has been designated, include the name and address of the payee). Indicate the name and telephone number of the individual responsible for answering questions which the NRC may have regarding the voucher/invoice.
5. Description of articles or services, quantity, unit price, total amount, and cumulative amount.

For labor-hour delivery orders with a ceiling, provide a breakdown by task of labor hours by labor category, hours, fixed rate, current period dollars, and cumulative hours and dollars billed to date as authorized under the delivery order. For example:

Category	Current Hours	Fixed Rate	Current Billed	Cumulative	
				Hours	Total Billed

Category	Current Hours	Fixed Rate	Current Billed	Cumulative
Sr. Scientist				\$ 17,500.00
Engineer				\$ 2,500.00
Totals:				\$ 20,000.00

Invoices for the order shall be broken down by task. You must also provide a consolidated summary (cover sheet) of the total amount billed inclusive of all tasks. The summary must contain the cumulative amount invoiced to date.

6. For contractor acquired property list each item purchased costing \$50,000 or more and having a life expectancy of more than 1 year and provide: (1) an item description, (2) manufacturer, (3) model number, (4) serial number, (5) acquisition cost, (6) date of purchase, and (7) a copy of the purchasing document.
7. Weight and zone of shipment, if shipped by parcel post.
8. Charges for freight or express shipments. Attach prepaid bill if shipped by freight or express.
9. Instructions to consignee to notify the Contracting Officer of receipt of shipment.
10. Travel Reimbursement (if applicable)

The contractor shall submit claims for travel reimbursement as a separate item on its fixed-price invoice/voucher in accordance with the following:

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

<u>Start Date</u>	<u>Destination</u>	<u>Costs</u>
From:	From:	
To:	To:	\$

Provide supporting documentation (receipts) for travel expenditures in excess of \$75.00 in an attachment to the invoice/voucher.

Billing of Cost After Expiration of Order: If costs are incurred during the delivery order period and claimed after the order has expired, the period during which these costs were incurred must be cited. To be considered a proper expiration voucher/invoice, the contractor shall clearly mark it "EXPIRATION VOUCHER" or "EXPIRATION INVOICE."

Currency: Billings may be expressed in the currency normally used by the contractor in maintaining his accounting records and payments will be made in that currency.

However, the U.S. dollar equivalent for all vouchers/invoices paid under the order may not exceed the total U.S. dollars authorized under the order.

Supersession: These instructions supersede any previous billing instructions.

10.8 PROJECT OFFICER AUTHORITY

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

Name:	Pat Smith
Address:	U.S. Nuclear Regulatory Commission Mail Stop T-8A23 Washington, DC 20555
Telephone Number:	(301) 415-7352

(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.

10.9 PERIOD OF PERFORMANCE

This order shall be effective from August 31, 2004 through September 30, 2006.

10.10 CONSIDERATION AND OBLIGATION

The total estimated amount (ceiling) of this order is \$4,468,266.65.

In the event that the option to extend services to include Optional Task 2 is exercised, the total estimated amount for Optional Task 2 is \$411,899.23.

In the event that the option to extend services to include Optional Task 3 is exercised, the total estimated amount for Optional Task 3 is \$980,084.41.

The amount presently obligated with respect to this order is \$1,880,000.00. The Contracting Officer may increase this amount from time to time by unilateral modification to the order. The obligated amount shall, at no time, exceed the order ceiling. When and if the amount(s) paid and payable to the Contractor hereunder shall equal the obligated amount, the Contractor shall not be obligated to continue performance of the work unless and until the Contracting Officer shall increase the amount obligated. Any work undertaken by the Contractor in excess of the obligated amount specified above is done so at the Contractor's sole risk.

It is estimated that the amount currently allotted will cover performance of the effort through July 31, 2005.

10.11 FAR 52.232-7, "PAYMENTS UNDER TIME-AND-MATERIAL AND LABOR-HOUR CONTRACTS"

FAR 52.232-7 is applicable and hereby incorporated into this order.

10.12 FAR 52.232-1, "PAYMENTS"

FAR 52.232-1 is applicable and hereby incorporated into this order.

10.13 FAR 52.232-19 "AVAILABILITY OF FUNDS FOR THE NEXT FISCAL YEAR"

FAR 52.232-19 is applicable and hereby incorporated into this order.

10.14 FAR 52.232-18 "AVAILABILITY OF FUNDS"

FAR 52-232-18 is applicable and hereby incorporated into this order.

ATTACHMENT II

SCHEDULE OF ITEMS/PRICES (Alternative Approach)

Delivery Order No.
NRC-02-04-011

PEC SOLUTIONS, INC.
Proposal to the United States Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards (NMSS)
Safesource Phase 1 Procurement
RFQ #NMS-04-011
Final Proposal Revisions (FPRs)
July 26, 2004

SCHEDULE OF ITEMS/PRICES - Alternative Approach

TASK ONE

ITEM	EST. QUANT.	UNIT	UNIT PRICE*	TOTAL PRICE
ASP Infrastructure				\$279,244.00
Hardware Purchase				\$22,840.76
COTS Licenses				\$434,916.41
Material Handling Fee/G&A FCCOM				\$91,066.31
Travel				\$93,160.00
Other Direct Costs				\$2,255.00
TOTAL HARDWARE, SOFTWARE, INFRASTRUCTURE & ODCs				\$923,482.48

*See task cost sheets for detailed information on quantity, unit of issue, and unit price

FUNCTION	EST. QUANT.	HOURS	HOURLY RATE**	TOTAL PRICE
Identify and Procure, Install, and Setup COTS and Infrastructure				\$72,000.80
Develop Project Plans				\$119,409.14
Develop Quality Assurance Plan				\$5,822.40
Validate and Prioritize Requirements				\$129,074.10
Develop Tactical Integration Plan				\$16,087.46
Develop Configuration Management Plan				\$17,005.50
Develop Design Document: Logical & Physical Design				\$171,236.42
Conduct Design Review				\$11,276.04
Customize COTS (System Development)				\$728,470.02
Data Conversion Activity				\$194,957.16
Conduct Extensive Security Planning and Implementation				\$13,663.90
Develop Risk Management Plan				\$19,776.36

TASK ONE CONTINUED

FUNCTION	EST. QUANT.	HOURS	HOURLY RATE**	TOTAL PRICE
Develop System Security Plan				\$16,394.40
Develop IT Contingency Plan				\$36,822.96
Develop System Test Plan				\$21,834.38
Conduct System Test				\$34,555.36
Develop System Test Results				\$22,968.78
Develop System Documentation & Procedures				\$18,544.86
Develop Acceptance Test Plan				\$18,114.80
Develop Training Materials				\$117,899.96
Develop Roll-Out Plan				\$28,705.94
Conduct Engineer-Review				\$16,104.68
Support System Installation (Initial)				\$14,868.24
Develop NRC Training (Initial)				\$50,138.78
Support NRC System Test				\$23,639.36
Support Development of Acceptance Test Report				\$16,494.62
Conduct Readiness Review Demonstration				\$8,912.12
Roll-Out (Including Install & Training)				\$99,768.00
Develop Lessons Learned and Recommendations				\$18,590.82
Conduct Ongoing System Assessment, and Provide Maintenance and Operations Support				\$89,663.17
TOTAL LABOR	17,447			\$2,152,800.53
TOTAL HARDWARE, SOFTWARE, INFRASTRUCTURE, LABOR AND OTHER DIRECT COSTS - TASK ONE				\$3,076,283.01

**See task cost sheets for detailed information on estimated hours and hourly rate by labor category

SCHEDULE OF ITEMS/PRICES

OPTIONAL TASK TWO

FUNCTION	EST. QUANT.	HOURS	HOURLY RATE**	TOTAL PRICE
Detailed Requirements/Design (See Note 1)	1,067	HOURS		\$116,302.24
COTS Customization (See Note 2)	1,962	HOURS		\$196,590.88

Roll-Out Refresh (See Note 9)		\$15,508.80
TOTAL LABOR		\$917,462.68

**See task cost sheets for detailed information on estimated hours and hourly rate by labor category

Notes

- (1) Includes Subtasks 3.1 - 3.7
- (2) Includes Subtasks 3.8 and 3.10
- (3) Includes Subtasks 3.9, 3.11 and 3.12
- (4) Includes Subtasks 3.13 and 3.14
- (5) Includes Subtasks 3.15 - 3.17, 3.19, 3.24 and 3.27
- (6) Includes Subtask 3.21
- (7) Includes Subtasks 3.18 and 3.22
- (8) Includes Subtasks 3.20, 3.23 and 3.25
- (9) Includes Subtask 3.26

OPTIONAL TASK THREE CONTINUED

ITEM	EST. QUANT.	UNIT	UNIT PRICE*	TOTAL PRICE
Other Direct Costs				\$2,055.00
Travel				\$54,391.50
Hardware Refresh				\$0.00
Material Handling/G&A FCCOM				\$6,175.23
TOTAL HARDWARE & ODCs				\$62,621.73
TOTAL LABOR, HARDWARE & ODCs - TASK THREE				\$980,084.41

*See task cost sheets for detailed information on quantity, unit of issue, and unit price

Security Planning/Implementation (See Note 3)				\$45,245.60
System Test (See Note 4)				\$14,967.20
Demonstration (See Note 5)				\$35,948.82
TOTAL LABOR				\$409,054.74

**See task cost sheets for detailed information on estimated hours and hourly rate by labor category

Notes

- (1) Includes Subtasks 2.1 and 2.2
- (2) Includes Subtask 2.3
- (3) Includes Subtask 2.4
- (4) Includes Subtask 2.5
- (5) Includes Subtasks 2.6 , 2.7 and 2.8

ITEM	EST. QUANT.	UNIT	UNIT PRICE*	TOTAL PRICE
Other Direct Costs				\$2,564.00
Material Handling/G&A FCCOM				\$280.49
TOTAL OTHER DIRECT COSTS				\$2,844.49
TOTAL LABOR & OTHER DIRECT COSTS - TASK TWO				\$411,899.23

*See task cost sheets for detailed information on quantity, unit of issue, and unit price

SCHEDULE OF ITEMS/PRICES

OPTIONAL TASK THREE

FUNCTION	EST. QUANT.	HOURS	HOURLY RATE**	TOTAL PRICE
Detailed Requirements/Design (See Note 1)				\$277,355.46
COTS Customization (See Note 2)				\$345,308.22
Security Planning/Implementation (See Note 3)				\$53,715.80
System Test (See Note 4)				\$18,911.40
Documentation/Procedures (See Note 5)				\$53,059.10
Installation (Initial) (See Note 6)				\$17,409.52
User Training (See Note 7)				\$114,030.82
Acceptance Test (See Note 8)				\$22,163.56
Ongoing Labor Support				\$0.00

APPENDICES
(A, B, C, D, E, F, G)

**“SAFESOURCE INFORMATION
TECHNOLOGY SYSTEM
(PHASE I)”**

**Delivery Order No.
NRC-02-04-011**

APPENDIX A
Requirements Analysis

APPENDIX B
System Operations Concept



SafeSource

System Operations Concept for SafeSource Phase I

Version 1.2

December 2003

Nuclear Regulatory Commission
Office of Nuclear Materials Safety and Safeguards



Table of Contents

1.	INTRODUCTION	1-1
	1.1 Background	1-1
	1.2 Objectives	1-1
	1.3 Scope	1-2
	1.4 Assumptions	1-2
	1.5 Applicable Documents	1-3
	1.6 Overview	1-3
2.	APPROACH	2-1
3.	SYSTEM OPERATIONS CONCEPT (SOC)	3-1
	3.1 System Description	3-1
	3.1.1 Top-Level System View	3-1
	3.1.2 Functional and Operational Capabilities	3-3
	3.1.3 System Characteristics	3-5
	3.1.4 Reference Architecture	3-5
	3.1.5 System Interfaces	3-5
	3.2 System Environment	3-5
	3.2.1 Organizational Environment	3-5
	3.2.2 Operational Environment	3-6
	3.2.3 User Environment	3-6
	3.2.4 Development Environment	3-7
	3.3 System Operations	3-7
	3.3.1 Operational Description	3-7
	3.3.2 Significant Operational Requirements	3-8
	3.3.3 Operational Interfaces	3-9
	3.3.4 Operational Scenarios	3-9
	3.3.5 Personnel Requirements	3-13
Appendix A.	ACRONYMS AND REFERENCES	A-1
	A.1 Acronyms	A-1
	A.2 References	A-1

1. INTRODUCTION

This document provides a System Operations Concept (SOC) for the SafeSource Phase I investment.

1.1 Background

SafeSource is the overall name for a project that provides Information Technology (IT) support for the Nuclear Regulatory Commission's initiative to improve licensing and security of nuclear materials. A major impetus for SafeSource is the need to control nuclear materials that could be used in a radiological dispersal device (RDD) or "dirty bomb" – a conventional explosive that carries nuclear materials and releases them on detonation.

The NRC has established a two-phase strategy for implementing SafeSource. SafeSource Phase I will build the information technology environment required to support the overall SafeSource initiative. This includes a web-based infrastructure, a modern licensing and inspection system, and a heuristic demonstration model of how source tracking will work. SafeSource Phase II, timed to follow changes in the regulations, will implement the full requirements of the source tracking process. This includes tracking individual sources that are designated as "materials of greatest concern" throughout their entire life-cycle from "cradle to grave" – creation, storage, transfer, usage, and disposal of the sources.

NRC's current IT systems will not support the new SafeSource business practices needed to improve security. Therefore, SafeSource will replace the License Tracking System (LTS), the Inspection Planning System (IPS), and the Reciprocity Tracking System (RTS). In addition, SafeSource will introduce the following major process improvements:

- The system will allow licensees to provide online updates of time-sensitive data.
- The system will track individual nuclear sources not just the licensee's possession limits.
- The system would bring together all relevant source and license data nationally, for licenses granted by NRC and for those granted by the Agreement States.
- The system will provide license and source inventory information to other government agencies with a role in nuclear materials safety.

1.2 Objectives

The following objectives have been established for the SafeSource Phase I effort:

- To streamline the materials licensing process for licensees and NRC staff (regional and HQ).
- To support related activities including inspections and reciprocity arrangements between the NRC and Agreement State licensees.
- To establish an information technology architecture that can support Web-based communication with the licensees.
- To be a first step towards integrating major NMSS systems into a common framework. The most important new system will be the National Source Tracking System (NSTS) which will offer "cradle-to-grave" tracking of radiological sources of highest concern.

1.3 Scope

The SafeSource Phase I project will include the following three modules:

- Module 1-Establish a SafeSource Infrastructure and Materials Licensing Core
- Module 2-Construct a National Source Tracking Demonstration Model
- Module 3-Complete Materials Licensing Enhancements

NMSS will prepare a separate SOC for the SafeSource Phase II project. This future effort will encompass the comprehensive activities NMSS must conduct to establish a complete National Source Tracking System.

1.4 Assumptions

A detailed list of assumptions is included in the document entitled "SafeSource Phase I Alternatives Analysis". The following is a summary of the assumptions that are applicable for this SOC.

- The SOC is based on the Sponsor's Recommended Alternative which is built around the use of a Commercial Off-the-Shelf (COTS) licensing package. The system will be operated by a commercial Application Service Provider (ASP) whose core competency is Web-based secure systems.
- The SafeSource Phase I base user community will encompass 150 NRC specific individuals ("named users") with read-write capability. The SafeSource Phase I web user community will include; 200 to 300 NRC users with read-only access, public users with limited read-only access, licensee users with limited read-write access.
- The strategy employed to establish an initial repository of materials licensing data will involve conversion of existing data contained in LTS and IPS. The estimated conversion volume is as follows:
 - License records from LTS: 5,000
 - License records from IPS: 2,000
 - Open and closed inspection records from IPS: 10,000
- A five-month period of parallel operations at the end of Module 1 is assumed. At the end of this period, the current LTS and IPS would be decommissioned. A three-month period of parallel operations at the end Module 3 is assumed. At the end of this period, the current RTS would be decommissioned.
- Interfaces will have to be established between SafeSource Phase I and the following existing NRC systems as part of the Module 1 development effort:
 - Agencywide Documents Access and Management System (ADAMS)
 - Various NRC Fee Systems
 1. Material Annual Fee System (MATANN)
 2. Material Fee Billing System (MATFB)
 3. License Fee Reporting System (FEES)
 - Regulatory Information Tracking System (RITS)
 - Reactor Programs System (RPS)

- An interface will have to be established between SafeSource Phase I and the new FEES system as part of the Module 3 development effort.

1.5 Applicable Documents

The following documents have been prepared as part of the SafeSource Phase I Business Case in accordance with the guidance provided in Management Directive 2.2 "Capital Planning and Investment Control (CPIC)".

- Needs Analysis
- System Requirements Specification
- Alternatives Analysis
- Project Management Plan

1.6 Overview

The following sections document the approach that was used to develop the SOC, present a system description, and define the system environment and system operations. These sections are provided in accordance with the guidance presented in the NRC System Development and Life-Cycle Management (SDLCM) Methodology Standard S-3053.

2. APPROACH

This SOC was produced based on the results of previous documents prepared as part of the SafeSource Phase I Business Case activity in accordance with the guidance provided in Management Directive 2.2 "Capital Planning and Investment Control (CPIC)".

- Needs Analysis
- System Requirements Specification
- Alternatives Analysis

These Business Case documents were prepared using a variety of approaches, tools, and techniques.

The Office of Nuclear Material Safety and Safeguards (NMSS) submitted OMB Circular A-11 Exhibit 300 packages that encompass components of the SafeSource Phase I project as part of the FY 2005 budget request process. The submissions, which are entitled License Tracking System (LTS) Replacement and National Source Tracking System, were recently approved by OMB. The contents of the Needs Analysis reflect the contents of the OMB Circular A-11 Exhibit 300 packages with only minor updates incorporated to refine the contents of the approved submission.

NMSS also completed an Integration Planning Study that provides a detailed assessment of the current LTS and all related applications in March 2003. NMSS initiated its efforts in April 2003 to conduct a comprehensive requirements analysis for the LTS Replacement, including Web-based access, inspection support, and reciprocity tracking. A Web-based Licensing Working Group that includes representatives from Headquarters and all NRC Regional Offices and reports to the SafeSource Steering Committee was established to accomplish this requirements analysis and provide business expertise during system development and implementation.

Concurrent with the requirements analysis efforts, NMSS conducted market research into off-the-shelf licensing software, used in numerous states' professional licensing applications. As a result of this market research, NMSS has determined that viable off-the-shelf options exist, and these should be considered in the eventual replacement for LTS. The Alternatives Analysis examined these options in detail.

3. SYSTEM OPERATIONS CONCEPT (SOC)

3.1 System Description

The following sections describe the SafeSource Phase I system and discuss its capabilities and other characteristics.

3.1.1 Top-Level System View

A conceptual top-level system view for SafeSource Phase I is shown in Exhibit 3-1 which is presented on the next page. As shown in this exhibit, the NRC will develop and operate SafeSource Phase I using a proven Commercial Off-the-Shelf (COTS) licensing package as a base. NMSS has conducted market research and determined that there are at least two commercial products that have been used as the base for developing operational licensing systems for multiple state agencies.

Under the selected technical approach, an Application Service Provider (ASP) will host the system. The ASP will house the servers purchased by the NRC as needed to provide the SafeSource Phase I platform, conduct initial efforts to provide server hardening and security scanning, and install the needed data base management software and COTS licensing package on these servers. Backup/recovery and offsite data storage for SafeSource Phase I processing will be provided as part of the normal services supplied by the ASP.

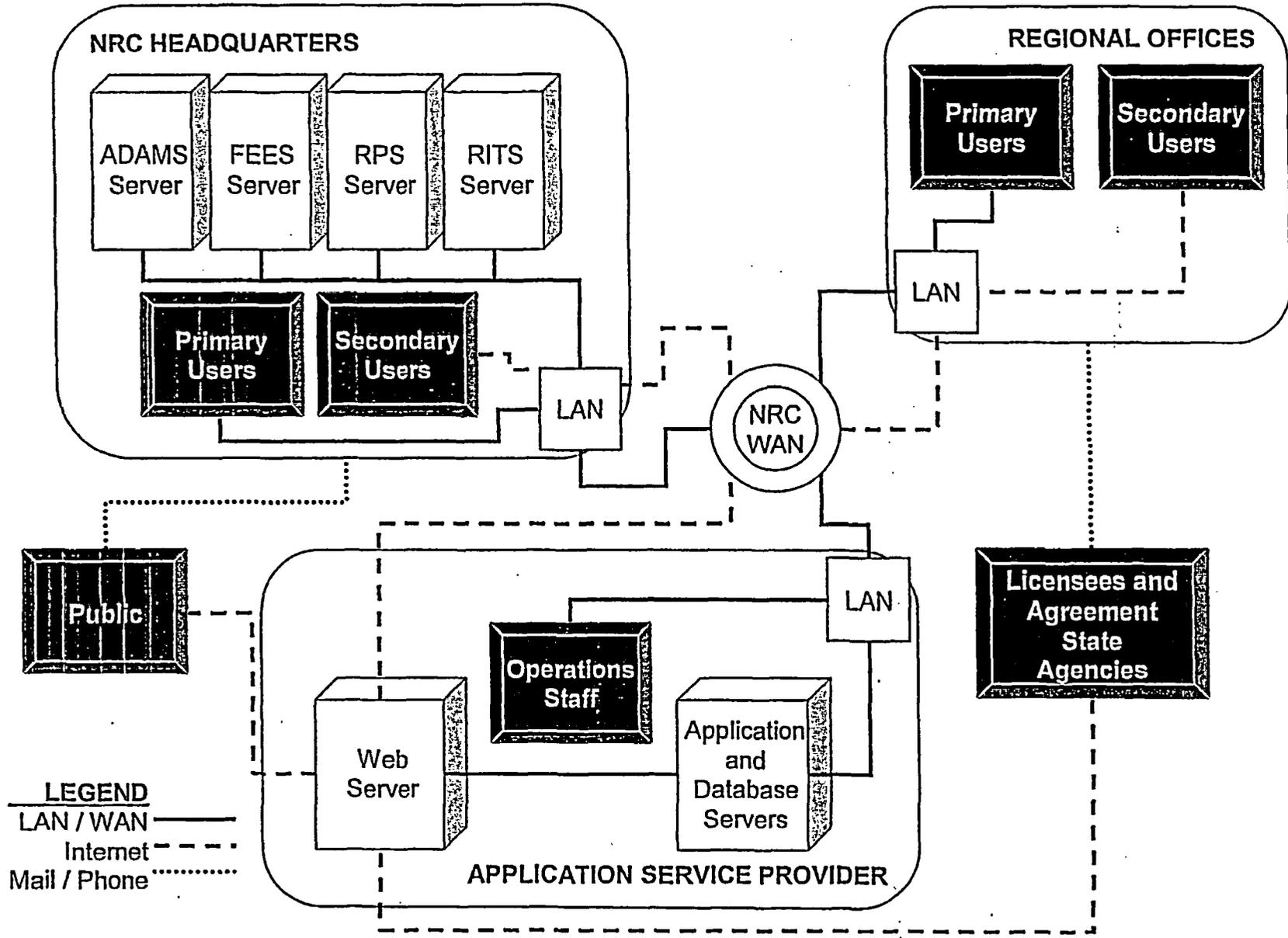
NRC users at Headquarters and in Regional Offices will access the system using LAN and WAN connectivity. Expansion of the current WAN will be required to add a high-speed WAN connection between the NRC and the ASP. Internal users also will access the system via the NRC Internet connectivity.

External users including licensees, Agreement State Agencies, and the public will be able access the system if desired using their local Internet connectivity or connectivity provided by the ASP. The NRC will continue to provide support to any external users who chose to interact via telephone or by mailing paper-based transactions.

Interfaces will be established between SafeSource Phase I and the following existing NRC systems that are operated in the NRC internal computing environment:

- Agencywide Documents Access and Management System (ADAMS)
- Various NRC Fee Systems
 - Material Annual Fee System (MATANN)
 - Material Fee Billing System (MATFB)
 - License Fee Reporting System (FEES)
- Regulatory Information Tracking System (RITS)
- Reactor Programs System (RPS)

Exhibit 3-1: SafeSource Phase I Conceptual Top-Level System View



3.1.2 Functional and Operational Capabilities

The requirements for SafeSource Phase I have been documented using the “use case technique” which is a way of describing the behavior of a system from the viewpoint of users that interact with the system.

The use cases for SafeSource Phase I are grouped into the following four functional areas:

- Licensing
- Inspection
- System Administration and Reporting
- Common

The Licensing functional area defines use cases that mainly support NMSS licensing processing. The Inspection functional area defines use cases that mainly support the NMSS inspection processing. The System Administration and Reporting functional area contains use cases that mainly support the system administration, reporting, and interface processing of the system. The Common functional area is used to define the common functional units that are used throughout the system by numerous other use cases. Exhibit 3-2 lists the use cases defined for each functional area.

Exhibit 3-2: SafeSource Phase I Capabilities

Licensing Functionality	Inspection Functionality	System Administration and Reports Functionality	Common Functionality
Obtain Licensing Information	Setup a New Inspection	Generate Standard Reports	Archive Changes
Search for License	Assign Inspector to Inspection	Generate Ad Hoc Reports	Maintain Correspondence Log
Obtain NRC Contact Information	Generate Inspection Schedule	Configure Business Rules	Maintain Inspection
Enter a New License Application	Generate Inspection Due List	Maintain Code Tables	Maintain Inspection Process Steps
Enter a License Amendment Request	Search for Inspection	Maintain Internal User Accounts	Maintain Licensee
Enter a License Renewal Request	Prepare for Inspection	Remove User Account	Maintain License Action
Enter a License Termination Request	Enter Inspection Process Status	Generate Alerts	Maintain License Action Process Steps
Enter Fee Information	Enter Inspection Report Information	Apply Time-based Changes	Maintain License
Obtain Fee Payment Information	Generate Inspection Report	Interface-ADAMS	Maintain License Application
Maintain External Use Account	Check Inspection Processing Status	Interface-Fees	
Validate Licensing Request	Enter Response to Inspection Findings	Interface-RITS	
Generate Licensee Correspondence		Interface-RPS	
Receive Licensee Correspondence			
Enter a Deficiency Response			
Enter License Action Process Status			
Check License Action Process Status			
Assign Reviewer to License Action			
Enter Technical Review Information			
Generate Official License			
Amend License Information			
Generate Bulk Licensee Correspondence			

3.1.3 System Characteristics

A complete and detailed description of system characteristics is provided in the SafeSource System Requirements Specification.

3.1.4 Reference Architecture

The SafeSource Phase I software architecture will be built around a COTS licensing package. The SafeSource technical architecture will be provided by a commercial ASP whose core competency is Web-based secure systems.

3.1.5 System Interfaces

The SafeSource Phase I system will have interfaces with the following NRC applications.

- **ADAMS:** Provide the capability to allow incoming documents to go to ADAMS as they do now. Documents generated by SafeSource (e.g., requests for additional information) would be saved in PDF, per E-Rule specifications, for entry into ADAMS. If SafeSource permits an applicant to avoid creating a document by directly entering the information into the database, NMSS will review whether SafeSource should generate the document for public information dissemination per Management Directive 2.4 "Release of Information to the Public".
- **FEES:** Create output files in the format currently used to provide license information needed by various fee systems. Provide an interface to the current fee-related systems – the Material Annual Fee System (MATANN), the Material Fee Billing System (MATFB), and the License Fee Reporting System (FEES) – in Module 1 and to the new FEES system in Module 3.
- **RITS and RPS:** Create output files in the format currently used to provide basic licensing and inspection information needed by these systems.

3.2 System Environment

The following sections describe the various environments associated with SafeSource Phase I.

3.2.1 Organizational Environment

The SafeSource organizational environment will include both NRC and contractor entities with the following roles during the development and operational phases:

The Program Management, Policy Development and Analysis within NMSS will be responsible for overall management of the SafeSource Phase I project during both the development and operational phases.

The Division of Industrial and Medical Nuclear Safety (IMNS) within NMSS will manage the business aspects of the SafeSource Phase I project during both the development and operational phases. This organization also will be responsible for providing staff for short periods of time to support specific activities during the development phase including conversion, acceptance test, roll-out, and demonstration. In addition, the staff from this organization who provide system administration activities for the current LTS system will provide similar functions for SafeSource Phase I once the new system becomes operational.

The Office of the Chief Information Officer (OCIO) will be responsible for managing the technical aspects of the SafeSource Phase I during the development and operational phases.

The Regional Offices will provide staff as needed to support the Division of Industrial and Medical Nuclear Safety within NMSS in managing the business aspects of the SafeSource Phase I project during both the development and operational phases. The Regional Offices also will be responsible for providing staff for short periods of time to support specific activities during the development phase including conversion, acceptance test, roll-out, and demonstration. In addition, the Regional Office staff from this organization who provide support for the current LTS system will provide user support functions for the new system.

Under the direction of the NRC, the SafeSource Contractor will be responsible for housing and operating the SafeSource processing facility and will be responsible for design, development, test, implementation, and operation of the SafeSource Phase I system.

Under the direction of the NRC, the Independent Verification and Validation (IV&V) Contractor will be responsible for providing an independent assessment of the SafeSource Contractor's products and will support the NRC in specific areas including acceptance testing.

3.2.2 Operational Environment

The SafeSource operational environment provided by the ASP will include:

- Internet connectivity
- Secure Web-based front-end with back-end data base and license processing applications
- Separate development, test, and production environments
- Backup and recovery
- Intrusion detection
- Firewall capabilities
- Security-data and privilege restrictions
- Interfaces with applications hosted on NRC platforms

3.2.3 User Environment

The following classes of users have been identified for SafeSource Phase I:

- **Administrative Coordinator** – This class of user represents a NRC staff member that performs basic administrative duties throughout the process life-cycle of license actions and inspections. This includes Licensing Assistants (LA) and other appropriate staff designated to perform LA duties and responsibilities.
- **Agreement State Agency** – This class of user represents a nuclear regulatory agency of a state that has signed an agreement with the NRC under which the state is authorized to regulate the use of by-product, source and small quantities of special nuclear material within the state.
- **Fee Analyst** – This class of user represents a NRC staff member from the Office of the Chief Financial Officer (OCFO) that performs fee reviews and processes fee payments associated with the process life-cycle of license actions and inspections.
- **Inspector** – This class of user represents a NRC staff member with technical expertise that performs material inspections.
- **License Reviewer** – This class of user represents a NRC staff member with technical expertise that performs material technical reviews of license applications and associated requests.

- Licensee – This class of user represents the company or person authorized to use radioactive materials under a license issued by the NRC or an Agreement State.
- Manager – This class of user represents a NRC staff member that is responsible for monitoring and controlling the process life-cycle of license actions and inspections.
- New License Applicant – This class of user represents the company or person that is applying for a new NRC license.
- NRC Internal – This class of user represents a NRC staff member that has read-only access to the system but does not directly change the system data. This includes staff members from organizations such as the operations center, the ADAMS group, the Office of the General Council, the Office of Enforcement, and the Office of Investigations.
- Public – This class of user represents a member of the general public.
- System Administrator – This class of user represents a NRC staff member that is responsible for maintaining the NRC-specific configuration information in the system. This includes such activities as maintaining user accounts, business rules, and lookup values.

3.2.4 Development Environment

The ASP will house the servers purchased by the NRC as needed to provide the SafeSource Phase I platform. Using NRC servers, the ASP will provide a development and test environment that is comparable to the production server environment and is supported by system personnel during normal business hours.

3.3 System Operations

The following sections describe the system operations associated with SafeSource Phase I.

3.3.1 Operational Description

The SafeSource Phase I system must be available to support user activity that will occur on an ad hoc rather than scheduled basis. Therefore, the system will be available 99.9% of the time 24 hours a day/7 days a week except during planned maintenance or repair activities. The system will not be off-line due to planned maintenance or repair for more than 3 hours in any 24 hour period. Planned maintenance will not be performed during the core business hours of 6AM to 10PM EST Monday through Friday. The system will provide acceptable response times for all functions of the system as noted below. (The times mentioned below assume LAN or Broadband connection speeds and do not apply to dial-up internet connections):

- Processing Indicator: The system will present the user with an indication of progress if there is more than a 10 second processing delay.
- Window Open: The system shall present screens, windows or dialogs to the user within 10 seconds of the user request.
- Data Sort: The system will complete sort operations within 10 seconds of the sort request.
- Data Search: The system shall display the results of a search operation within 30 seconds of the search request.
- Data Save: The system shall save data to the database within 10 seconds of the save request.

3.3.2 Significant Operational Requirements

The SafeSource Phase I operational environment must be highly reliable. The system will employ an architecture that utilizes multiple types of redundancy to ensure automatic failover (i.e. hardware component redundancy, server clusters, data mirroring, load balancing, power conditioning, and supplemental/emergency power). The system will provide the ability to monitor for software and hardware component failures and will be able to automatically transition to a redundant system or sub-components within 30 minutes.

The system also will provide several options for backing up and restoring its data including:

- **Scheduled Backups:** The system will provide the capability to perform full and incremental backups on a scheduled basis as defined by the System Administrator. Full backups will be performed at least weekly and incremental backups will be performed at least daily.
- **Online Backups:** The system will provide the capability to perform an online backup without requiring system down time.
- **Off-Site Backup:** The system will provide the ability to store backups at an off-site backup storage facility.
- **Full Restore:** The system will provide the ability to restore all its data within one hour. The restore capabilities will be tested periodically as defined by the System Administrator.

The SafeSource Phase I operational environment must include robust security features that include:

- **Role Driven Permissions:** The system will provide capability to support role driven permissions for determining access to objects (i.e. menu options, screens, specific functions, data groupings by region, etc...) in the system.
- **Authentication:** The system will provide authentication to ensure that only authorized users of the system have access to it.
- **Passwords:** The system will provide the System Administrator with the capability to configure the password requirements for all users. This includes characteristics such as minimum length, maximum age, formatting rules, grace logins, and encryption.
- **External Authentication Systems:** The system will provide the capability to authenticate users with an external system such as an LDAP repository or Windows domain controller.
- **Security Auditing:** The system will provide the capability to perform audit tracking on modifications to the security permissions for users and roles.
- **Encryption:** The system will provide the ability to encrypt data in transit to prevent eavesdropping.
- **External Data Transmission:** The system will have the ability to encrypt non-public data for transmission over various media, locally and remotely. Encryption should be assignable based on the contents of the record.
- **Encryption Algorithms:** The system will give the System Administrator the ability to designate what algorithm should be used to encrypt data for transmission.

3.3.3 Operational Interfaces

During the operational phase, the SafeSource Contractor will provide applications maintenance, data base administration, and system operations services (e.g., monitoring, backup, and troubleshooting).

During the operational phase, NRC staff will provide user support services.

3.3.4 Operational Scenarios

The tables on the following pages present operational scenarios that show the interaction between user classes and SafeSource Phase I functionality. It should be noted that the User Class shown as "System Timer" does not actually represent a person. Rather it represents the concept of the passage of time and the triggering of time-based events in the system which cause certain actions to be performed.

Exhibit 3-3: Licensing Operational Scenario

**Licensing
Roles and Use Case Matrix**

Use Cases	Roles								
	Public	New License Applicant	Licensee	Administrative Coordinator	License Reviewer	Manager	Fee Analyst	NRC Internal	Agreement State Agency
1. Obtain Licensing Information	✓	✓	✓		✓				
2. Search for License	✓			✓	✓	✓	✓	✓	✓
3. Obtain NRC Contact Information	✓	✓	✓						
4. Enter New License Application		✓	✓	✓					
5. Enter a License Amendment Request			✓	✓					
6. Enter a License Renewal Request			✓	✓					
7. Enter a License Termination Request			✓	✓					
8. Enter Fee Information						✓			
9. Obtain Fee Payment Information		✓	✓						
10. Maintain External User Account		✓	✓						
11. Validate Licensing Request				✓	✓	✓			
12. Generate Licensee Correspondence				✓	✓		✓		
13. Receive Licensee Correspondence				✓	✓	✓	✓		
14. Enter a Deficiency Response		✓	✓						
15. Enter License Action Process Status				✓	✓	✓	✓		
16. Check License Action Process Status	✓	✓	✓	✓	✓	✓	✓	✓	✓
17. Assign Reviewer to License Action					✓	✓			
18. Enter Technical Review Information					✓				
19. Generate Official License					✓				
20. Amend License Information				✓	✓				
21. Generate Bulk Licensee Correspondence				✓					
26. Search for Inspection					✓				

Exhibit 3-4: Inspection Operational Scenario

**Inspection
Roles and Use Case Matrix**

Use Cases	Roles						
	Public	Licensee	Administrative Coordinator	Inspector	Manager	NRC Internal	Agreement State Agency
1. Obtain Licensing Information				✓			
2. Search for License	✓		✓	✓	✓	✓	
10. Maintain External User Account		✓					
12. Generate Licensee Correspondence			✓	✓			
13. Receive Licensee Correspondence			✓	✓	✓		
16. Check License Action Process Status				✓			
21. Generate Bulk Licensee Correspondence			✓				
22. Setup New Inspection			✓		✓		
23. Assign Inspector to Inspection				✓	✓		
24. Generate Inspection Schedule			✓		✓		
25. Generate Inspection Due List			✓	✓	✓		
26. Search for Inspection	✓	✓	✓	✓	✓	✓	✓
27. Prepare for Inspection				✓			
28. Enter Inspection Process Status			✓	✓	✓		
29. Enter Inspection Report Information				✓			
30. Generate Inspection Report				✓			
31. Check Inspection Process Status			✓	✓	✓	✓	✓
32. Enter Response to Inspection Findings		✓	✓				

Exhibit 3-5: System Administration and Reporting Operational Scenario

System Administration and Reporting Roles and Use Case Matrix

Use Cases	Roles							
	Manager	Licensing Reviewer	Administrative Coordinator	Inspector	Fee Analyst	NRC Internal	System Administrator	System Timer
33. Generate Standard Reports	✓	✓	✓	✓	✓	✓		
34. Generate Ad-Hoc Reports	✓	✓	✓	✓	✓	✓		
35. Configure Business Rules							✓	
36. Maintain Code Tables							✓	
37. Maintain Internal User Accounts	✓	✓	✓	✓	✓	✓	✓	
38. Remove User Account							✓	✓
39. Generate Alerts								✓
40. Apply Time-based Changes								✓
I1. Interface - ADAMS								✓
I2. Interface - Fees								✓
I3. Interface - RITS								✓
I4. Interface - RPS								✓

3.3.5 Personnel Requirements

The SafeSource Phase I base user community will encompass 150 NRC specific individuals (“named users”) with read-write capability:

- Licensing Assistants-13
- License Reviewers-58
- Inspectors-41
- Materials Managers-18
- Fee Analysts-5
- IT Support Staff Staff-15

The breakdown of these users by location is shown in the table below:

Exhibit 3-6: SafeSource Users by Type and Location

User Type	Region I	R: I/R: II Atlanta	Region III	Region IV	HQ	Total
Licensing Assistants	4	1	4	1	3	13
License Reviewers	20		15	13	10	58
Inspectors	7	11	14	6	3	41
Material Managers	4	2	3	3	6	18
Fee Analysts					5	5
IT Support Staff					15	15
Total	35	14	36	23	42	150

All of these users will receive specific training in the use of the SafeSource Phase I system.

In addition there will be a web user community that will include:

- 200 to 300 NRC users with read-only access
- public users with limited read-only access
- licensee users with limited read-write access

These users will not receive specific training but the SafeSource Phase I web interface will include user-friendly navigation tools, online help, and other aids to facilitate access by these users. The system will support simultaneous access by up to 50 web users along with 150 NRC specific users.

A. ACRONYMS AND REFERENCES

A.1 Acronyms

ADAMS	Agencywide Documents Access and Management System
ASP	Applications Service Provider
CPIC	Capital Planning and Investment Control
COTS	Commercial Off-the-Shelf Software
EST	Eastern Standard Time
FEES	License Fee Reporting System
HQ	Headquarters
IPS	Inspection Planning System
IV&V	Independent Verification and Validation
IT	Information Technology
LA	Licensing Assistant
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LTS	License Tracking System
MATANN	Material Annual Fee System
MATFB	Material Fee Billing System
NMSS	Nuclear Material Safety and Safeguards
NRC	Nuclear Regulatory Commission
NSTS	National Source Tracking System
OCFO	Office of the Chief Financial Officer
OCIO	Office of the Chief Information Officer
OMB	Office of Management and Budget
RDD	Radiological Dispersal Device
RITS	Regulatory Information Tracking System
RPS	Reactor Programs System
RTS	Reciprocity Tracking System
SDLCM	System Development and Life-Cycle Management
SOC	System Operations Concept
WAN	Wide Area Network

A.2 References

Integration Planning Study: March 2003
Management Directive 2.2: Capital Planning and Investment Control (CPIC)
Management Directive 2.4 "Release of Information to the Public"
OMB Circular A-11 Exhibit 300: Capital Asset Plan and Business Case
System Development and Life-Cycle Management (SDLCM) Methodology

APPENDIX C
NRC System Development Life Cycle Management (SDLCM)
Methodology

ADAMS Accession Number for the SDLCM Methodology is:

ML013440472

APPENDIX D

Sample of Major Types of Nuclear Materials Licenses

[MEDICAL & ACADEMIC]

- Academic
- Medical - Institution
- Medical - Private Practice
- Eye Applicators Strontium-90
- Mobile Nuclear Medicine Service
- High Dose Rate Remote Afterloader
- Mobile Therapy
- Teletherapy
- Stereotactic Radiosurgery - Gamma Knife
- Veterinary Non-Human
- Nuclear Pharmacies
- Manufacturing and Distribution - Prepared Radio Pharmaceuticals
- Research and Development
- Pacemaker

[URANIUM & WASTE]

- Waste Disposal (Burial)
- Waste Disposal (Incineration)
- Waste Disposal Service (Treatment, Processing, Packaging)
- Byproduct Material Possession (Permanent Shutdown / Standby)
- Decommissioning of Byproduct Material Facilities
- Low Level Waste Storage
- Uranium Recovery (Mill & Solution Mining)
- Fuel Cycle (UF6 Production, Enrichment, Processing)
- Uranium Fuel R & D and Pilot Plants
- Heap Leach, Ore Buying Stations and Byproduct Recovery
- Rare Earth Extraction and Processing
- Source Material

[INDUSTRIAL]

Industrial - Broad
In Vitro Testing Laboratories
Manufacturing and Distribution - Sources and/or Devices
Manufacturing and Distribution - Other
Distribution Only
Tracer & Field Flood Studies ? Oil Well
Well Logging
Fixed Gauges
Portable Gauges
X-Ray Fluorescence Analyzers
Gas Chromatographs
Nuclear Laundry
Decontamination Services
Leak Test Service Only
Instrument Calibration Service Only
Other Services
Industrial Radiography Fixed Location
Industrial Radiography Temporary Job Sites
Irradiator
Research and Development
Civil Defense

[OTHER]

Source Material
Decommissioning of Source Material Facilities
Hot Cell Operations
Critical Mass Material
Power Sources With Byproduct and/or Special Nuclear Material
Special Nuclear Material
Transport - Private Carriage
Independent Spent Fuel Storage Installation - ISFSI

APPENDIX E
Requirements Matrix

Requirements Matrix

Requirement *	Task When Implemented **
UC1 Obtain Licensing Information	
UC1.1 Licensing Information	Task 1
UC1.1.1 Exemption Information	Task 1
UC1.1.2 Financial Assurance Information	Task 1
UC1.1.3 Proprietary Information	Task 1
UC1.2 Inspection Information	Task 3
UC1.3 Federal Jurisdiction Information	Task 3
UC2 Search for License	
UC2.1 Configurable Search Criteria	Task 1
UC2.2 License Query	Task 1
UC2.2.1 NRC Staff Query	Task 1
UC2.2.1.1 Wildcard Search	Task 1
UC2.2.1.2 History Search	Task 1
UC2.2.2 Agreement State Agency Query	Task 1
UC2.2.2.1 Wildcard Search	Task 1
UC2.2.3 Public Query	Task 1
UC2.2.3.1 Wildcard Search	Task 1
UC2.2.3.2 Exact Search	Task 1
UC2.3 License Query Results	Task 1
UC2.3.1 NRC Staff View Results	Task 1
UC2.3.2 Agreement State Agency View Results	Task 1
UC2.3.3 Public View Results	Task 1
UC3 Obtain NRC Contact Information	
UC3.1 Contact Information Details	Task 1
UC4 Enter a New License Application	
UC4.1 Multiple License Types	Task 1
UC4.1.1 Configurable License Types	Task 1
UC4.1.2 List Fee Categories	Task 1
UC4.1.3 Auto-Calculate Fee	Task 1
UC4.2 Applicable Data-Entry Forms	Task 1
UC4.3 Configurable License Rules	Task 1
UC4.4 Request Complexity	Non-Mandatory
UC4.5 Financial Assurance Requirements	Non-Mandatory
UC4.5.1 Financial Assurance Worksheet	Non-Mandatory
UC4.5.1.1 Auto-Calculate Limits	Non-Mandatory
UC4.5.1.2 Hard Copy	Non-Mandatory
UC4.5.1.3 Soft Copy	Non-Mandatory
UC4.5.1.4 Submit to ADAMS	Non-Mandatory
UC4.6 Supporting Documents	Task 1
UC4.7 Proprietary Information	Task 1
UC4.8 Submit Request	Task 1
UC4.8.1 Submit to ADAMS	Task 1
UC4.9 Save Draft	Task 1
UC4.9.1 Resume	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC4.9.2 Cancel	Task 1
UC4.10 Documentation	Task 1
UC4.10.1 Hard Copy	Task 1
UC4.10.1.1 Paper Form	Task 1
UC4.10.2 Soft Copy	Task 1
UC4.11 New Self-License	Non-Mandatory
UC4.11.1 Configurable Criteria	Non-Mandatory
UC4.11.2 Generate License	Non-Mandatory
UC5 Enter a License Amendment Request	
UC5.1 Multiple Licenses	Non-Mandatory
UC5.2 Self-License Amendments	Non-Mandatory
UC5.3 Applicable Data-Entry Forms	Task 1
UC5.4 Configurable License Rules	Task 1
UC5.5 Auto-Calculate Fee	Task 1
UC5.5.1 Warnings	Task 1
UC5.6 Financial Assurance Requirements	Non-Mandatory
UC5.6.1 Warnings	Non-Mandatory
UC5.6.2 Financial Assurance Worksheet	Non-Mandatory
UC5.6.2.1 Auto-Calculate Limits	Non-Mandatory
UC5.6.2.2 Hard Copy	Non-Mandatory
UC5.6.2.3 Soft Copy	Non-Mandatory
UC5.6.2.4 Submit to ADAMS	Non-Mandatory
UC5.7 Supporting Documents	Task 1
UC5.8 Submit Request	Task 1
UC5.8.1 Submit to ADAMS	Task 1
UC5.9 Save Draft	Task 1
UC5.9.1 Resume	Task 1
UC5.9.2 Cancel	Task 1
UC5.10 Documentation	Task 1
UC5.10.1 Hard Copy	Task 1
UC5.10.2 Soft Copy	Task 1
UC6 Enter a License Renewal Request	
UC6.1 Renewal Statement	Task 1
UC6.2 Applicable Data-Entry Forms	Task 1
UC6.3 Configurable License Rules	Task 1
UC6.4 Auto-Calculate Fee	Task 1
UC6.4.1 Warnings	Task 1
UC6.5 Financial Assurance Requirements	Non-Mandatory
UC6.5.1 Warnings	Non-Mandatory
UC6.5.2 Financial Assurance Worksheet	Non-Mandatory
UC6.5.2.1 Auto-Calculate Limits	Non-Mandatory
UC6.5.2.2 Hard Copy	Non-Mandatory
UC6.5.2.3 Soft Copy	Non-Mandatory
UC6.5.2.4 Submit to ADAMS	Non-Mandatory
UC6.6 Supporting Documents	Task 1
UC6.7 Submit Request	Task 1
UC6.7.1 Submit to ADAMS	Task 1
UC6.8 Save Draft	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC6.8.1 Resume	Task 1
UC6.8.2 Cancel	Task 1
UC6.9 Documentation	Task 1
UC6.9.1 Hard Copy	Task 1
UC6.9.2 Soft Copy	Task 1
UC7 Enter a License Termination Request	
UC7.1 Termination Statement	Task 1
UC7.2 Supporting Documents	Task 1
UC7.3 Submit Request	Task 1
UC7.3.1 Submit to ADAMS	Task 1
UC7.4 Save Draft	Task 1
UC7.4.1 Resume	Task 1
UC7.4.2 Cancel	Task 1
UC7.5 Documentation	Task 1
UC7.5.1 Hard Copy	Task 1
UC7.5.2 Soft Copy	Task 1
UC8 Enter Fee Information	
UC8.1 Enter License Fees	Task 1
UC9 Obtain Fee Payment Information	
UC9.1 Mail-in Payment Option	Task 1
UC9.2 Electronic Payment Option	Task 1
UC10 Maintain External User Account	
UC10.1 Data Elements	Task 1
UC10.2 Data Entry Rules	Task 1
UC10.2.1 Required Values	Task 1
UC10.2.2 Default Values	Task 1
UC10.2.3 Lookup	Task 1
UC10.2.4 Validation	Task 1
UC10.2.4.1 User ID	Task 1
UC10.2.4.2 Email Address	Task 1
UC10.2.4.3 Digital Signature	Task 1
UC10.3 Processing Rules	Task 1
UC10.3.1 Password Maintenance	Task 1
UC10.3.2 User ID	Task 1
UC11 Validate Licensing Request	
UC11.1 Assign Docket Number	Task 1
UC11.2 Assign Institution Code	Task 1
UC11.3 Assign Action Control Number	Task 1
UC11.4 Assign Location Reference Number	Task 3
UC11.5 Check Refusal-To-Pay	Task 1
UC11.6 Re-Classify License Action Type	Task 1
UC12 Generate Licensee Correspondence	
UC12.1 Licensing Related Correspondences	Task 3
UC12.2 Fees Related Correspondences	Task 3
UC12.3 Inspection Related Correspondences	Task 3
UC12.4 Templates	Task 3
UC12.5 Mail Merge	Task 3
UC12.6 Boilerplate phrases	Task 3

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC12.7 Correspondence Methods	Task 3
UC12.8 Submit to ADAMS	Task 3
UC13 Receive Licensee Correspondence	
UC13.1 Record Free-Form Text	Task 3
UC13.2 Notification of Response	Task 3
UC13.3 Submit to ADAMS	Task 3
UC14 Enter a Deficiency Response	
UC14.1 Response Warning	Task 3
UC14.2 Response Review	Task 3
UC14.3 Response Form	Task 3
UC14.3.1 Submit to ADAMS	Task 3
UC14.4 Supporting Documents	Task 3
UC15 Enter License Action Process Status	
UC15.1 Configurable Steps	Task 1
UC15.2 Automatic Completion	Task 1
UC15.2.1 Configurable Auto-Complete	Task 1
UC15.3 Licensing Clock	Task 1
UC15.3.1 Starting and Stopping Clock	Task 1
UC15.3.2 Configurable Clock Rules	Task 1
UC15.3.3 Configurable Clock by Region	Task 1
UC15.4 Configurable Step Relationship Rules	Task 1
UC15.5 Configurable Steps by Region	Task 1
UC15.6 Configurable Response Due Offsets	Task 1
UC15.7 Work Flow	Task 1
UC15.7.1 Assignment Notifications	Task 1
UC15.7.2 Concurrent Work	Task 1
UC16 Check License Action Process Status	
UC16.1 License Action Process Status Query	Task 1
UC16.1.1 NRC Staff Query	Task 1
UC16.1.2 Agreement State Agency Query	Task 3
UC16.1.3 Licensee Query	Task 1
UC16.1.4 Public Query	Task 1
UC16.2 License Action Process Status Query Results	Task 1
UC16.2.1 NRC Staff View Results	Task 1
UC16.2.1.1 License Action Info	Task 1
UC16.2.1.2 Step Progress Info	Task 1
UC16.2.2 Agreement State Agency View Results	Task 3
UC16.2.2.1 License Action Info	Task 3
UC16.2.2.2 Steps	Task 3
UC16.2.2.3 Step Progress Info	Task 3
UC16.2.3 Licensee View Results	Task 1
UC16.2.3.1 License Action Info	Task 1
UC16.2.3.2 Steps	Task 1
UC16.2.3.3 Step Progress Info	Task 1
UC16.2.4 Public View Results	Task 1
UC16.2.4.1 License Action Info	Task 1
UC17 Assign Reviewer to License Action	
UC17.1 View License Action Details	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC17.2 Assign License Action	Task 1
UC17.2.1 Previous Reviewers	Task 1
UC17.2.2 Notify Assignee	Task 1
UC17.2.3 Expected Completion	Task 1
UC17.3 Unassign License Action	Task 1
UC17.4 Special Permissions	Task 1
UC17.4.1 Assigning	Task 1
UC17.4.2 Unassigning	Task 1
UC18 Enter Technical Review Information	
UC18.1 Checklist	Task 1
UC18.1.1 List Items	Task 1
UC18.1.2 Mark Items	Task 1
UC18.2 Attach Supporting Documents	Task 1
UC18.3 Same-Type Reciprocity Request	Non-Mandatory
UC19 Generate Official License	
UC19.1 Templates	Task 3
UC19.1.1 Default Template	Task 3
UC19.2 Boilerplate phrases	Task 3
UC19.2.1 Types of Phrases	Task 3
UC19.2.2 Adding Phrases	Task 3
UC19.2.3 Choosing Phrases	Task 3
UC19.3 Amendment Number	Task 3
UC19.3.1 Confirm Generation	Task 3
UC19.3.2 License Action Tracking	Task 3
UC19.3.3 Issuance Date	Task 3
UC19.4 Mail Merge	Task 3
UC19.5 Output License	Task 3
UC19.5.1 Send to Printer	Task 3
UC19.5.2 Save to File	Task 3
UC20 Amend License Information	
UC20.1 Modification Types	Task 1
UC20.2 Amendment Flag	Task 1
UC20.3 Correction Flag	Task 1
UC21 Generate Bulk Licensee Correspondence	
UC21.1 Mail Merge	Task 1
UC21.2 Correspondence Methods	Task 1
UC21.3 Correspondence Types	Task 1
UC21.4 Notice of License Expiration	Task 1
UC21.4.1 Search Criteria	Task 1
UC21.4.2 Enclosure List	Task 1
UC21.4.2.1 Licensee Enclosures	Task 1
UC21.4.2.2 Total Enclosures	Task 1
UC21.4.3 Enclosure Packet	Task 1
UC21.5 Reciprocity Procedures	Task 3
UC21.6 Mailing Labels	Task 1
UC21.6.1 Search Criteria	Task 1
UC21.6.2 Postal Bar Code	Task 1
UC21.6.3 Renewal Notice Mailing Labels	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC21.6.4 Other Mailing Labels	Task 1
UC21.7 Softcopy	Task 1
UC21.8 Hardcopy	Task 1
UC21.9 Submit to ADAMS	Task 1
UC22 Setup a New Inspection	
UC22.1 Inspection Report Number	Task 1
UC22.2 Inspection Process Status	Task 1
UC23 Assign Inspector to Inspection	
UC23.1 View Inspection Details	Task 1
UC23.2 View License Details	Task 1
UC23.3 Group of Inspections	Task 1
UC23.4 Assign Inspection	Task 1
UC23.4.1 Previous Inspectors	Task 1
UC23.4.2 Notify Assignee	Task 1
UC23.4.3 Expected Completion Date	Task 1
UC23.5 Unassign an Inspection	Task 1
UC23.6 Special Permissions	Task 1
UC23.6.1 Assigning	Task 1
UC23.6.2 Unassigning	Task 1
UC24 Generate Inspection Schedule	
UC24.1 Generation Criteria	Task 3
UC24.2 Next Inspection Date Algorithm	Task 3
UC24.3 Configurable Scheduling Rules	Task 3
UC24.4 Inspection Types	Task 3
UC24.5 Add an Inspection	Task 3
UC24.6 Move an Inspection	Task 3
UC24.7 Remove an Inspection	Task 3
UC24.8 Calendar Display	Task 3
UC24.8.1 Display Filters	Task 3
UC24.8.2 Display Reciprocity Ranges	Task 3
UC24.9 Generate an Itinerary	Task 3
UC25 Generate Inspection Due List	
UC25.1 Due List Criteria	Task 1
UC25.1.1 Save Criteria	Task 1
UC25.2 Due List Display	Task 1
UC25.3 Output List	Task 1
UC25.3.1 Send to Printer	Task 1
UC25.3.2 Save to File	Task 1
UC26 Search for Inspection	
UC26.1 Configurable Search Criteria	Task 1
UC26.2 Inspection Query	Task 1
UC26.2.1 NRC Staff Query	Task 1
UC26.2.1.1 Wildcard Search	Task 1
UC26.2.1.2 History Search	Task 3
UC26.2.1.3 Assist Inspections	Task 1
UC26.2.2 Agreement State Agency Query	Task 3
UC26.2.2.1 Wildcard Search	Task 3
UC26.2.3 Public Query	Task 3

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC26.2.3.1 Wildcard Search	Task 3
UC26.2.3.2 Exact Search	Task 3
UC26.3 Inspection Query Results	Task 1
UC26.3.1 NRC Staff View Results	Task 1
UC26.3.2 Agreement State Agency View Results	Task 3
UC26.3.3 Public View Results	Task 3
UC27 Prepare for Inspection	
UC27.1 Assigned Inspection Preparation Query	Task 3
UC27.2 Manual Inspection Preparation Query	Task 3
UC27.3 Data Sources	Task 3
UC27.4 Pre-Filled Inspection Form	Task 3
UC27.5 Output Inspection Preparation Information	Task 3
UC27.5.1 Send to Printer	Task 3
UC27.5.2 Save to File	Task 3
UC27.5.3 Send to Portable Device	Non-Mandatory
UC28 Enter Inspection Process Status	
UC28.1 Configurable Steps	Task 1
UC28.2 Automatic completion	Task 1
UC28.2.1 Configurable Auto-Complete	Task 1
UC28.3 Inspection Clock	Task 1
UC28.3.1 Starting and Stopping Clock	Task 1
UC28.3.2 Configurable Clock Rules	Task 1
UC28.3.3 Configurable Clock by Region	Task 1
UC28.4 Configurable Step Relationship Rules	Task 1
UC28.5 Configurable Steps by Region	Task 1
UC28.6 Work Flow	Task 1
UC28.6.1 Assignment Notifications	Task 1
UC28.6.2 Concurrent Work	Task 1
UC29 Enter Inspection Report Information	
UC29.1 Supporting Documents	Task 3
UC29.2 Upload Inspection Report	Non-Mandatory
UC29.3 Special Permissions	Task 3
UC29.3.1 Modifying Inspection	Task 3
UC30 Generate Inspection Report	
UC30.1 Narrative Text	Task 3
UC30.2 Templates	Task 3
UC30.2.1 Default Template	Task 3
UC30.3 Mail Merge	Task 3
UC30.4 Save Draft	Task 3
UC30.4.1 Resume	Task 3
UC30.4.2 Cancel	Task 3
UC30.5 Output Inspection Report	Task 3
UC30.5.1 Send to Printer	Task 3
UC30.5.2 Save to File	Task 3
UC31 Check Inspection Process Status	
UC31.1 Inspection Process Status Query	Task 1
UC31.1.1 NRC Staff Query	Task 1
UC31.1.2 Agreement State Agency Query	Task 3

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC31.2 Inspection Process Status Query Results	Task 1
UC31.2.1 NRC Staff View Results	Task 1
UC31.2.1.1 Inspection Info	Task 1
UC31.2.1.2 Step Progress Info	Task 1
UC31.2.2 Agreement State Agency View Results	Task 3
UC31.2.2.1 Inspection Info	Task 3
UC31.2.2.2 Steps	Task 3
UC31.2.2.3 Step Progress Info	Task 3
UC32 Enter Response to Inspection Findings	
UC32.1 Response Warning	Task 3
UC32.2 Response Review	Task 3
UC32.3 Response Form	Task 3
UC32.3.1 Submit to ADAMS	Task 3
UC32.4 Supporting Documents	Task 3
UC33 Generate Standard Reports	
UC33.1 Execute Report	Task 1
UC33.1.1 Specify Criteria	Task 1
UC33.1.2 Criteria Display	Task 1
UC33.2 View Output	Task 1
UC33.2.1 Drill-down	Task 1
UC33.3 Print Output	Task 1
UC33.4 Save to File	Task 1
UC33.5 Reviewer Report	Task 1
UC33.6 Actions Completed	Task 1
UC33.7 Actions At Same Step	Task 1
UC33.8 Actions Past Tickler Date	Task 1
UC33.9 Active NRC Licenses	Task 1
UC33.10 Statistical Report	Task 1
UC33.11 Fiscal YTD Report	Task 1
UC33.12 Pending Assigned Actions	Task 1
UC33.13 Actions Assigned to Regions/HQ	Task 1
UC33.14 Number of Pending Actions	Task 1
UC33.15 Number Cases Received or Completed	Task 1
UC33.16 Expired Licenses	Task 1
UC33.17 Licenses within 90 Days of Expiration	Task 1
UC33.18 LTS License and Fee Worksheet	Task 1
UC33.19 Days Since Report of Pending Items	Task 1
UC33.20 Reciprocity Inspection Completion Report	Task 3
UC33.21 Assist Inspection Report	Task 3
UC33.22 List of Licensees	Task 1
UC33.23 Financial Assurance	Task 1
UC33.24 Inspections Coming Due	Task 1
UC34 Generate Ad-Hoc Reports	
UC34.1 Design Report	Task 1
UC34.1.1 Design Aids	Task 1
UC34.2 Execute Report	Task 1
UC34.2.1 Specify Criteria	Task 1
UC34.3 Save Reports	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC34.3.1 Categorize Reports	Task 1
UC34.4 View Output	Task 1
UC34.5 Print Output	Task 1
UC34.6 Save to File	Task 1
UC34.7 Grant Permissions	Task 1
UC35 Configure Business Rules	
UC35.1 NRC Specified	Task 1
UC35.2 Ease of Use	Task 1
UC35.3 Types of Rules	Task 1
UC35.3.1 Data Validation Rules	Task 1
UC35.3.2 Custom Calculation Rules	Task 1
UC35.3.3 Process Step Rules	Task 1
UC35.3.3.1 Required Steps	Task 1
UC35.3.3.2 Optional Steps	Task 1
UC35.3.3.3 Displayed Steps	Task 1
UC35.3.3.4 Auto-Complete Steps	Task 1
UC35.3.3.5 Step Relationships	Task 1
UC35.3.4 Clock Rules	Task 1
UC35.3.5 Workflow Rules	Task 1
UC35.3.5.1 Workflow Notification	Task 1
UC35.3.6 Self-Licensing Rules	Non-Mandatory
UC35.3.7 User Account Removal Rules	Task 1
UC35.3.8 Alert Rules	Task 1
UC35.3.9 Archival Rules	Task 1
UC35.3.10 External System Interface Rules	Task 1
UC35.4 Multiple Rules	Task 1
UC35.5 Scope	Task 1
UC36 Maintain Code Tables	
UC36.1 Code Table List	Task 1
UC36.2 Data Elements	Task 1
UC36.2.1 Code ID	Task 1
UC36.2.2 Code Description	Task 1
UC36.3 Data Entry Rules	Task 1
UC36.3.1 Required Values	Task 1
UC36.4 Processing Rules	Task 1
UC36.4.1 Validate Delete	Task 1
UC36.4.2 Inactivate Codes	Task 1
UC36.4.3 Delete	Task 1
UC36.4.4 Update	Task 1
UC36.5 Relate Code Tables	Task 1
UC36.5.1 Relating Elements	Task 1
UC36.5.2 Default Table Relations	Task 1
UC36.6 Search Code Tables	Task 1
UC36.6.1 Wildcard Search	Task 1
UC37 Maintain Internal User Accounts	
UC37.1 Data Elements	Task 1
UC37.2 Data Entry Rules	Task 1
UC37.2.1 Required Values	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

UC37.2.2 Lookup	Task 1
UC37.2.3 Validation	Task 1
UC37.2.3.1 User ID	Task 1
UC37.2.3.2 Email Address	Task 1
UC37.3 Processing Rules	Task 1
UC37.3.1 Password Maintenance	Task 1
UC37.3.2 User ID	Task 1
UC37.4 Special Permissions	Task 1
UC37.4.1 New Account	Task 1
UC37.4.2 Role Privileges	Task 1
UC37.4.3 Data Element Access	Task 1
UC38 Remove User Account	
UC38.1 Configurable Removal Rules	Task 3
UC38.2 Manual Removal	Task 1
UC38.3 Automatic Removal	Task 3
UC38.3.1 Scheduled Check	Task 3
UC38.4 Archive Account	Task 1
UC39 Generate Alerts	
UC39.1 Login Alerts	Task 1
UC39.1.1 Alert Persistence	Task 1
UC39.2 Alert Indicator	Task 1
UC39.3 Alert View	Task 1
UC39.4 Alert Dismissal	Task 1
UC39.5 Email Alert Notification	Task 1
UC39.6 Configurable Alert Rules	Task 1
UC39.7 Known Alerts	Task 1
UC39.7.1 Assign License Action Alert	Task 1
UC39.7.2 License Action Status Alerts	Task 1
UC39.7.2.1 License Action Due Soon Alert	Task 1
UC39.7.2.2 License Action Past Due Alert	Task 1
UC39.7.2.3 Licensee Response Past Due Alert	Task 1
UC39.7.3 License Expiration Alerts	Task 1
UC39.7.3.1 License Expires Soon Alert	Task 1
UC39.7.3.2 License Expired Alert	Task 1
UC39.7.4 Financial Assurance Expiration Alerts	Task 1
UC39.7.4.1 Financial Assurance Expires Soon Alert	Task 1
UC39.7.4.2 Financial Assurance Expired Alert	Task 1
UC39.7.5 Assign Inspection Alert	Task 1
UC39.7.6 Inspection Status Alerts	Task 1
UC39.7.6.1 Inspection Due Soon Alert	Task 1
UC39.7.6.2 Inspection Past Due Alert	Task 1
UC40 Apply Time-Based Changes	
UC40.1 Configurable Change Rules	Task 1
UC40.2 Known Rules	Task 1
UC40.2.1 License Expiration	Task 1
I1 Interface - ADAMS	
I1.1 Configurable Schedule	Task 1
I1.2 Profile Meta-Data	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

I1.2.1 Profile Adjustment	Task 1
I1.3 PDF Generation	Task 1
I1.4 Sending Documents	Task 1
I1.5 ADAMS Accession Numbers	Task 1
I2 Interface - Fees	
I2.1 Configurable Schedule	Task 1
I2.2 Configurable Location	Task 1
I2.3 Configurable Criteria	Task 1
I2.4 File Format	Task 1
I3 Interface - RITS	
I3.1 Configurable Schedule	Task 1
I3.2 Configurable Location	Task 1
I3.3 Configurable Criteria	Task 1
I3.4 File Format	Task 1
I4 Interface - RPS	
I4.1 Configurable Schedule	Task 1
I4.2 Configurable Location	Task 1
I4.3 Configurable Criteria	Task 1
I4.4 File Format	Task 1
C1 Archive Changes	
C1.1 Specify Data Elements	Task 1
C1.2 Crucial Data	Task 1
C1.3 Deleted Records	Task 1
C1.4 Audit Data	Task 1
C1.5 Archive Formatting	Task 1
C1.6 Archive Viewing	Task 1
C1.7 On-going History	Task 1
C2 Maintain Correspondence Log	
C2.1 Data Elements	Non-Mandatory
C2.2 Data Entry Rules	Non-Mandatory
C2.3 Processing Rules	Non-Mandatory
C3 Maintain Inspection	
C3.1 Basic	Task 1
C3.1.1 Data Elements	Task 1
C3.1.2 Data Entry Rules	Task 1
C3.1.3 Processing Rules	Task 1
C3.2 Inspection Issues	Task 1
C3.2.1 Data Elements	Task 3
C3.2.2 Attach Supporting Documents	Task 1
C3.2.3 Data Entry Rules	Task 1
C3.2.4 Processing Rules	Task 1
C3.3 Inspection Location of Use	Task 1
C3.3.1 Data Elements	Task 1
C3.3.2 Data Entry Rules	Task 1
C3.3.3 Processing Rules	Task 1
C4 Maintain Inspection Process Steps	
C4.1 Data Elements	Task 1
C4.2 Data Entry Rules	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

C4.3 Processing Rules	Task 1
C4.4 Special Permissions	Task 1
C5 Maintain Licensee	
C5.1 Data Elements	Task 1
C5.2 Data Entry Rules	Task 1
C5.3 Processing Rules	Task 1
C5.4 Special Permissions	Task 1
C6 Maintain License Action	
C6.1 Data Elements	Task 1
C6.2 Data Entry Rules	Task 1
C6.3 Processing Rules	Task 1
C7 Maintain License Action Process Steps	
C7.1 Data Elements	Task 1
C7.2 Data Entry Rules	Task 1
C7.3 Processing Rules	Task 1
C7.4 Special Permissions	Task 1
C8 Maintain License	
C8.1 Basic	Task 1
C8.1.1 Data Elements	Task 1
C8.1.2 Data Entry Rules	Task 1
C8.1.3 Processing Rules	Task 1
C8.1.4 Reciprocity Processing Rules	Task 3
C8.2 Authorized State	Task 1
C8.2.1 Data Elements	Task 1
C8.2.2 Data Entry Rules	Task 1
C8.2.3 Processing Rules	Task 1
C8.3 Authorized User	Task 1
C8.3.1 Data Elements	Task 1
C8.3.2 Data Entry Rules	Task 1
C8.3.3 Processing Rules	Task 1
C8.4 Conditions	Task 1
C8.4.1 Data Elements	Task 1
C8.4.2 Data Entry Rules	Task 1
C8.4.3 Processing Rules	Task 1
C8.5 Exemptions	Task 1
C8.5.1 Data Elements	Task 1
C8.5.2 Data Entry Rules	Task 1
C8.5.3 Processing Rules	Task 1
C8.6 Fee Information	Task 1
C8.6.1 Data Elements	Task 1
C8.6.2 Data Entry Rules	Task 1
C8.6.3 Processing Rules	Task 1
C8.7 Financial Assurance	Task 1
C8.7.1 Data Elements	Task 1
C8.7.2 Data Entry Rules	Task 1
C8.7.3 Processing Rules	Task 1
C8.8 Location of Use	Task 1
C8.8.1 Data Elements	Task 1

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

C8.8.2 Data Entry Rules	Task 1
C8.8.3 Processing Rules	Task 1
C8.9 Possession Limit	Task 1
C8.9.1 Data Elements	Task 1
C8.9.2 Data Entry Rules	Task 1
C8.9.3 Processing Rules	Task 1
C9 Maintain License Application	
C9.1 Materials License Application	Task 1
C9.1.1 Data Elements	Task 1
C9.1.2 Data Entry Rules	Task 1
C9.1.3 Processing Rules	Task 1
C9.2 Reciprocity License Application	Task 3
C9.2.1 Data Elements	Task 3
C9.2.2 Data Entry Rules	Task 3
C9.2.3 Processing Rules	Task 3

* The full specifications are found in Appendix A.

** A requirement marked as 'Non-Mandatory' indicates that it is desired, but not required in either Task 1 or Task 3

Note: A Task 3 or Non-Mandatory requirement can be moved to Task 1 if the proposed solution already has this capability built into the product.

APPENDIX F
RATIONAL Test Script Standards

Standards for Functional Testing
Using
Rational Robot and Rational Test Manager

**U. S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards**

Revised 4/17/03

Table of Contents

Purpose	1
Option settings	1
Naming and formatting	1
Script names	1
Test log names	1
Comments	1
Test recording	2
Navigation	2
Object recognition	2
Verification points	2
Selection of object and properties	2
Initial Focus	3
Examining pop-up windows	3
Examining data windows	3
Examining report preview windows	3
Shell scripts	4
Appendix A - Required option settings for Rational Robot	5
Windows Settings	5
Robot General options	5
Robot GUI Record options	6
Robot GUI Playback options	6

1.0 Purpose

This document provides guidance on application of the Rational Robot and Test Manager tools to functional testing of systems owned by the Office of Nuclear Material Safety and Safeguards (NMSS). The primary focus is on the testing approach and is not to replace the Rational Robot User's Guide or Rational Testing Products SQABasic Language Reference.

Most current NMSS systems are deployed using Powerbuilder or Microsoft Access. As a result, this guidance is currently focused on the testing of two-tier client server systems with graphical user interfaces (GUIs).

2.0 Option settings

All persons using the Rational tools for testing of NMSS systems shall set the options as shown in Appendix A. This will ensure consistent use of the products and will enable more efficient script maintenance.

3.0 Naming and formatting

3.1 Script names

Begin script name with the letter prefix designated for the system under test. If none has been designated, contact the appropriate NMSS project manager for direction.

Use two-digit numbers for each part of a test plan number, including leading zeros (e.g., G07_02_11). Use only underscore characters in the number part of the script name.

3.2 Test log names

When playing back test scripts, modify the default test log name, adding the date and time started (MMDDYYYYHHMM) to the end of the log name. If this results in the name being too long, delete characters from the end of the default name to allow space for the date and time.

Ensure that the proper build is selected.

3.3 Comments

When a script exceeds a length of 50 lines, divide the script into major functional areas, making an effort to keep each section under 50 lines. Begin each section with a double blank line followed by a comment indicating the general function of the following section of the script.

More frequent descriptive comments may also be inserted throughout the script.

Avoid creating scripts exceeding a length of 150 lines. This will enable more efficient script debugging and potential reuse.

4.0 Test recording

4.1 Navigation

To improve the playback reliability of scripts, use tabbing and keystrokes where possible and where mouse clicks are not critical to functionality under testing. Specific examples are:

- Tabbing between objects on a window
- Using the [Shift]+[Home] keystroke combination to position the cursor to the beginning of a text string
- Using the [Ctrl]+C and [Ctrl]+V keystroke combinations for copy and paste
- Using a keystroke to locate the desired entry on a drop down list

In each series of tests for a given window, include at least one set of tests that use mouse click navigation, to confirm that this method works as well as tabbing. To ensure proper selection from a list on playback, edit DataWindow Click statements in the script, removing selection references to columns such as "updated by" or "date of last update". Instead, substitute "Column Name = " parameters for more stable selection parameters such as key fields.

To add a column name parameter to a list selection mouse click, use the Record->Insert at Cursor feature to begin recording an Object Data VP on the subject list. This will show the names for all columns, including those not automatically recorded as selection/identification criteria. Note the desired column name(s) and value(s), but do not save the VP.

4.2 Object recognition

In some cases, the Robot recorder identifies a window as a Childwindow in a SetWindowContext script statement. If the script stalls or otherwise fails at this point, take the following steps in an effort to address the issue:

- Copy the script line containing the context statement with ChildWindow
- Comment out one copy of the line
- In the other copy of the line, remove the following characters:
;ChildWindow""

VP errors "Unable to read object data file"

Mouseclick errors "Object not found" or "Object found, but not enabled"

4.3 Verification points

4.3.1 Selection of object and properties

When recording Vps it is critical to ensure that the correct object is selected. This is particularly important on the Object Data Vps. In many cases, Object Data Vps are used to examine data related to a data window. While moving the selection cursor over the window, ensure that the DataWindow object is selected rather than a lower level object such as a DataColumn.

Once the VP object is selected, it is equally important to select the appropriate object properties

or data content to examine.

For Object Data Vps, avoid selecting columns that are sensitive to time, location or the tester's login ID. Specifically, do not select system-populated columns for time/date stamps or for the ID of the last person to update a given record.

For Object Property Vps on simple objects such as text boxes, typically only the Text and Visible properties shall be selected. An exception is when the test is examining the systems capabilities for upper case conversion or whether a given box is enabled for update. In these cases, the appropriate properties shall be selected.

4.3.2 Initial Focus

Except for informational windows or simple windows with one or two buttons (e.g., OK and Cancel), include a verification point to ensure that the appropriate object has initial focus when the window is opened.

4.3.3 Examining pop-up windows

The following verification points (VPs) shall be recorded for each pop-up window that is displayed while recording the functions under test. In this case, pop-up window refers to message boxes or any other window that appears and is not maximized.

Record:

- Window existence VP
- Object properties VP

For simple message boxes (e.g., for confirming changes or displaying status or error-related information), only the properties of Visible and Text shall be selected. For more elaborate windows, containing text boxes, drop downs, and multiple buttons, select/check one level of the object hierarchy and select several properties that will uniquely identify the window. For complex pop-up windows, substitute an Object Data VP, examining the source data for the entire window.

4.3.4 Examining data windows

The most efficient method for examining the data on a data window is the Object Data VP. Unless properties other than the data are to be examined as part of the subject test, only the Object Data VP shall be recorded.

4.3.5 Examining report preview windows

Use are image not window image. Note that only what is visible is captured in the baseline image. Take care not to include in the selected image area any information that is sensitive to time, location or the tester's login ID (e.g., date report is run). If the report is wider than the window, set multiple verification points to capture views after scrolling to extreme margins.

5.0 Shell scripts

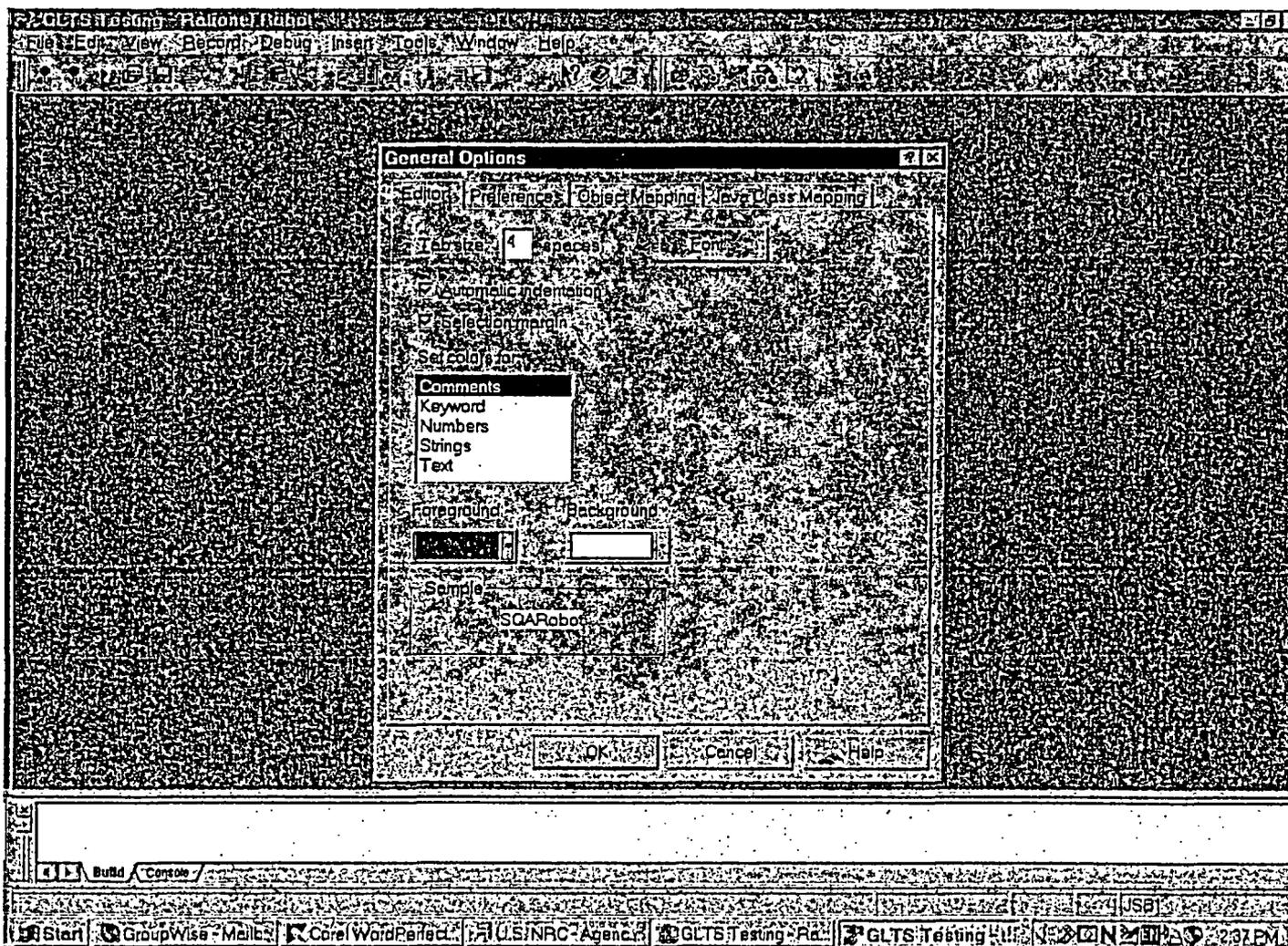
To facilitate efficient script playback, create a shell script for each logical collection of scripts. Where the shell script includes a contiguous series of elementary scripts, the shell script name shall reflect the numeric prefixes and topics(s) of those scripts. For example a shell script including a series of scripts for testing features related to Device data, with names like G02_01enter gen info, G02_02 enter isotopes, etc, might be named "Shell 02x devices".

Appendix A - Required option settings for Rational Robot

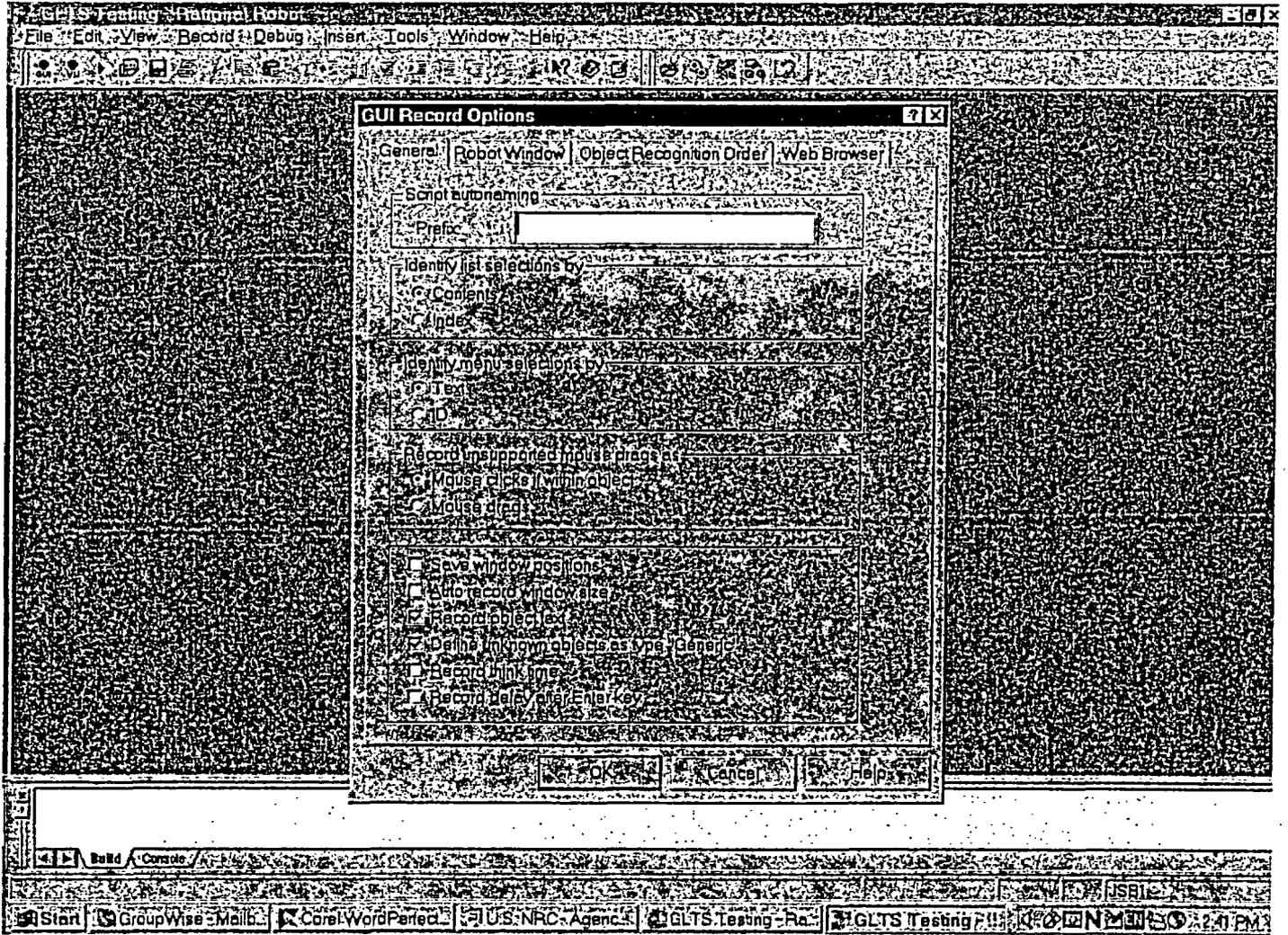
Windows Settings

While each system under test may use a different standard, the current standard resolution for automated GLTS test scripts is 1024x768, Large Fonts.

Robot General options



Robot GUI Record options



GLTS Testing - Rational Robot [? X]

File Edit View Record Debug Insert Tools Window Help

GUI Record Options [? X]

General Robot Window Object Recognition Order Web Browser

During record:

- Minimize Robot
- Put Robot in background
- Display script only
- Display menus and toolbars only

Hot keys:

- Hide Robot window: CTRL+SHIFT+H
- Bring Robot to front: CTRL+SHIFT+F
- Low level record toggle: CTRL+SHIFT+R

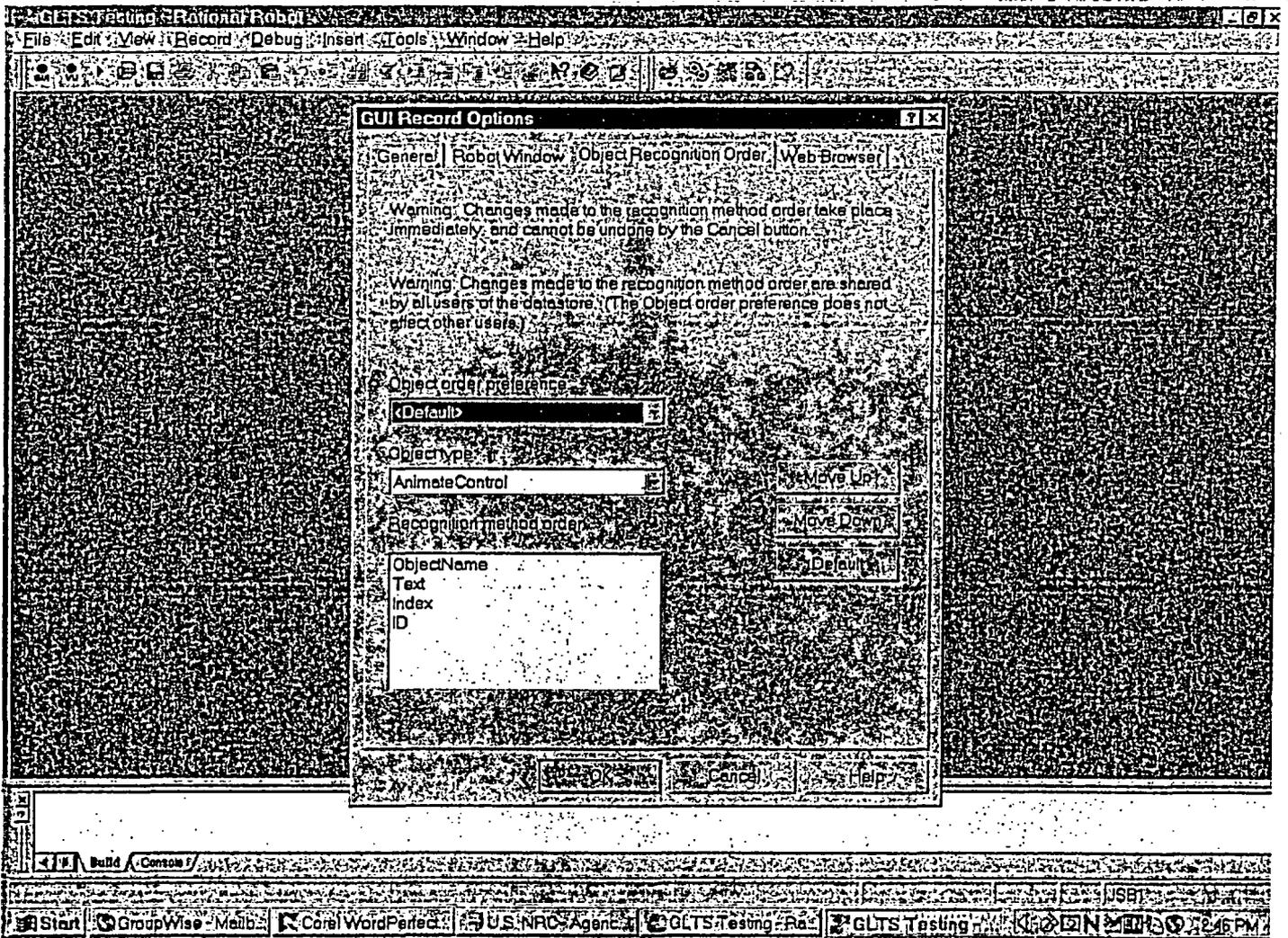
OK Cancel Help

Build Console

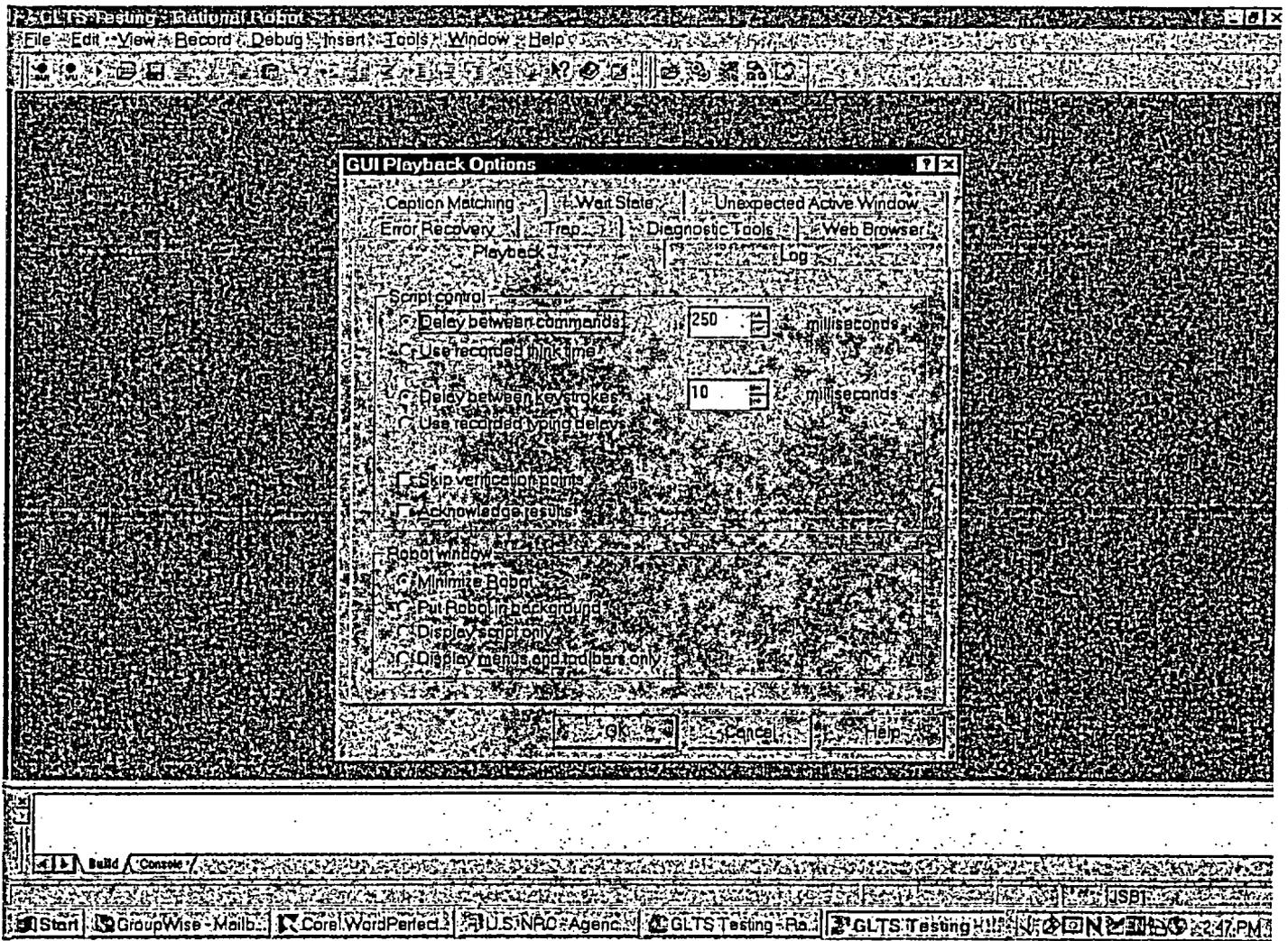
Start GroupWise - Mail Corel WordPerfect U.S. NRC - Agency GLTS Testing - Rat GLTS Testing - Rat USB

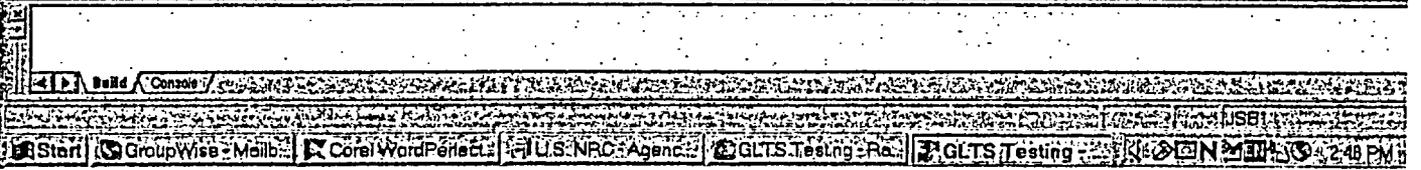
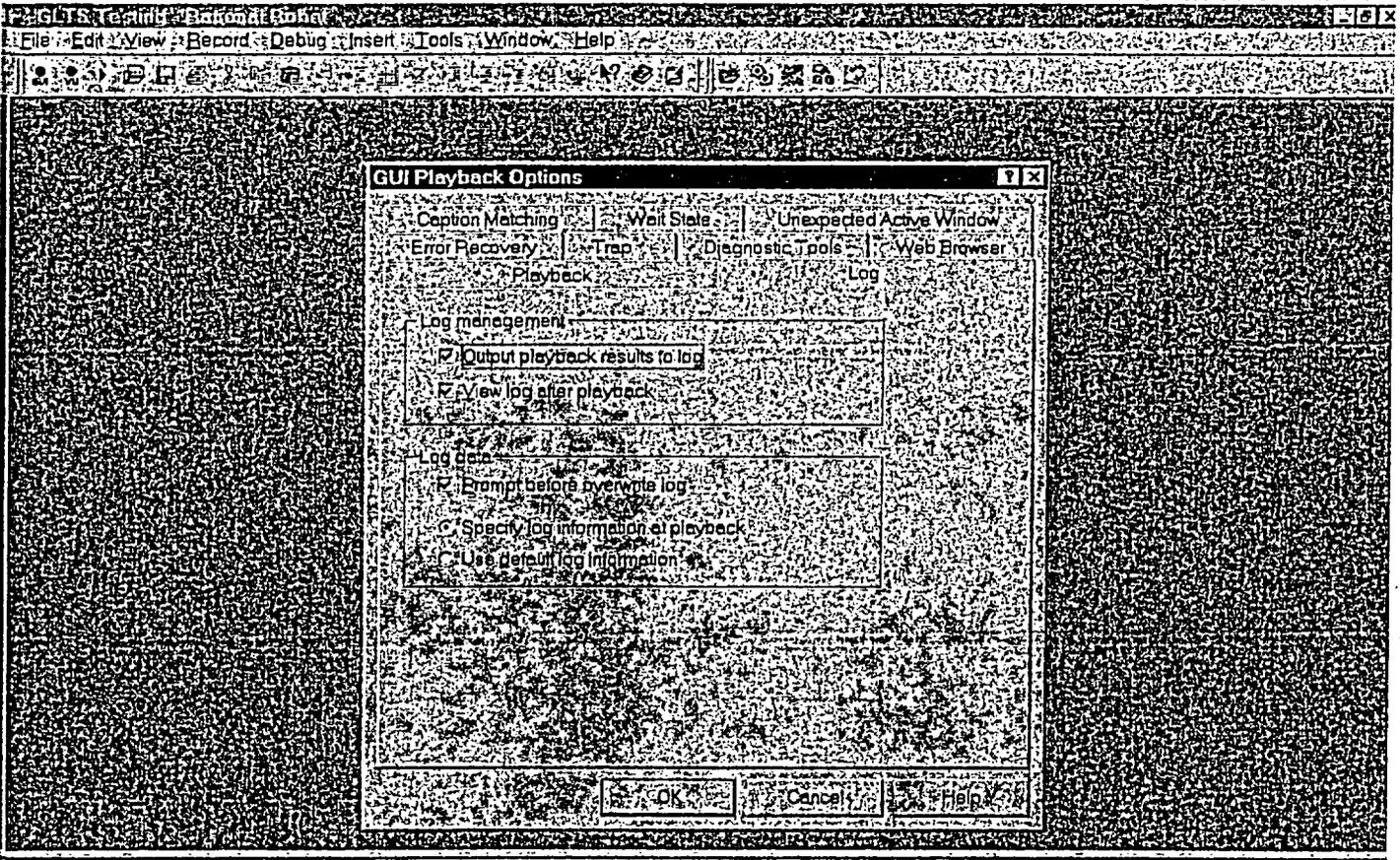
Start GroupWise - Mail Corel WordPerfect U.S. NRC - Agency GLTS Testing - Rat GLTS Testing - Rat USB

Start GroupWise - Mail Corel WordPerfect U.S. NRC - Agency GLTS Testing - Rat GLTS Testing - Rat USB



Robot GUI Playback options





GLTS Testing - RunAndRecord - [X]

File Edit View Record Debug Insert Tools Window Help

GUI Playback Options [X]

Caption Matching Wait State Unexpected Active Window

Playback Log

Error Recovery Trap Diagnostic Tools Web Browser

On script command failure

Continue execution

Skip current script

Abort playback

On verification point failure

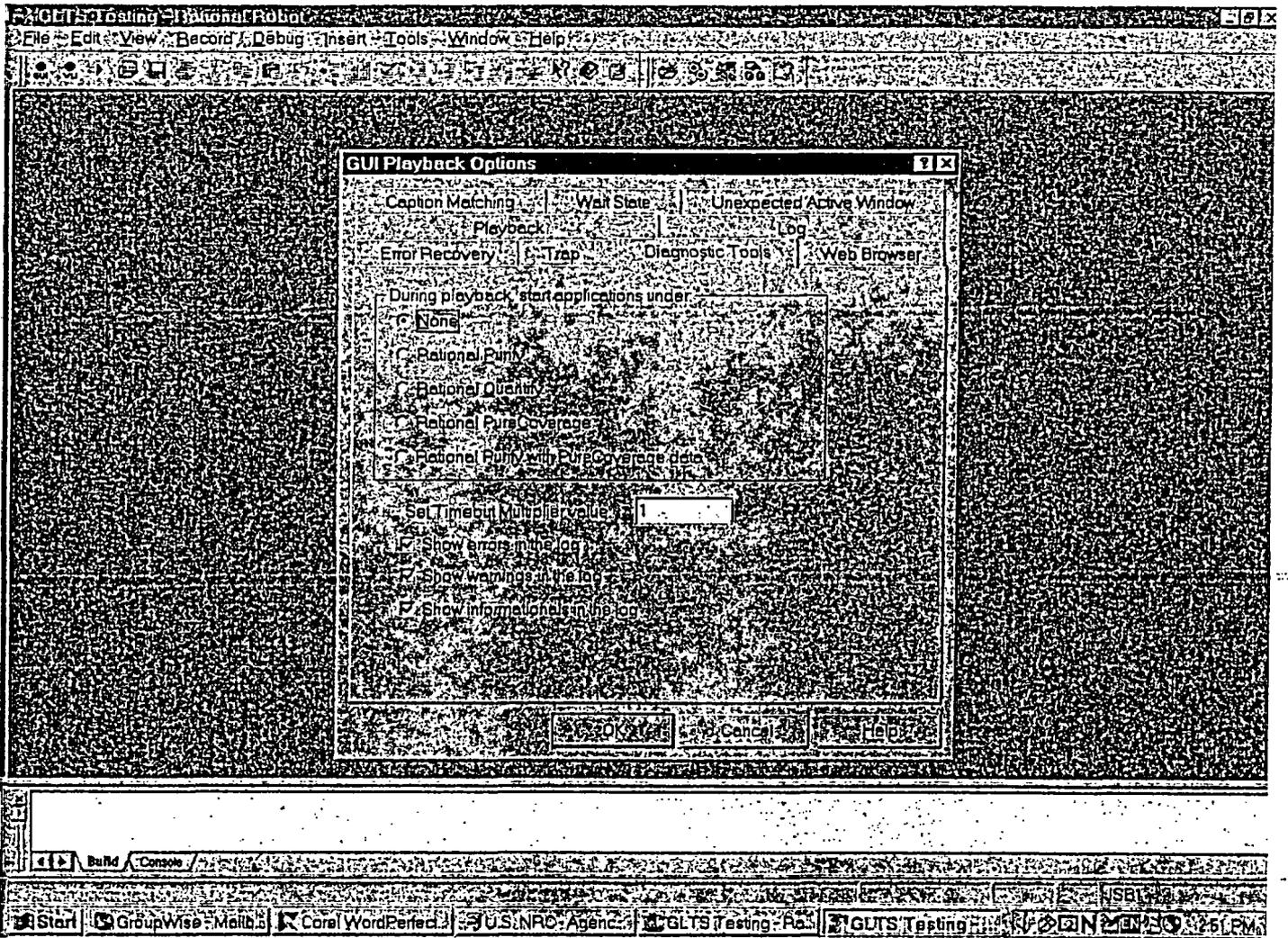
Continue execution

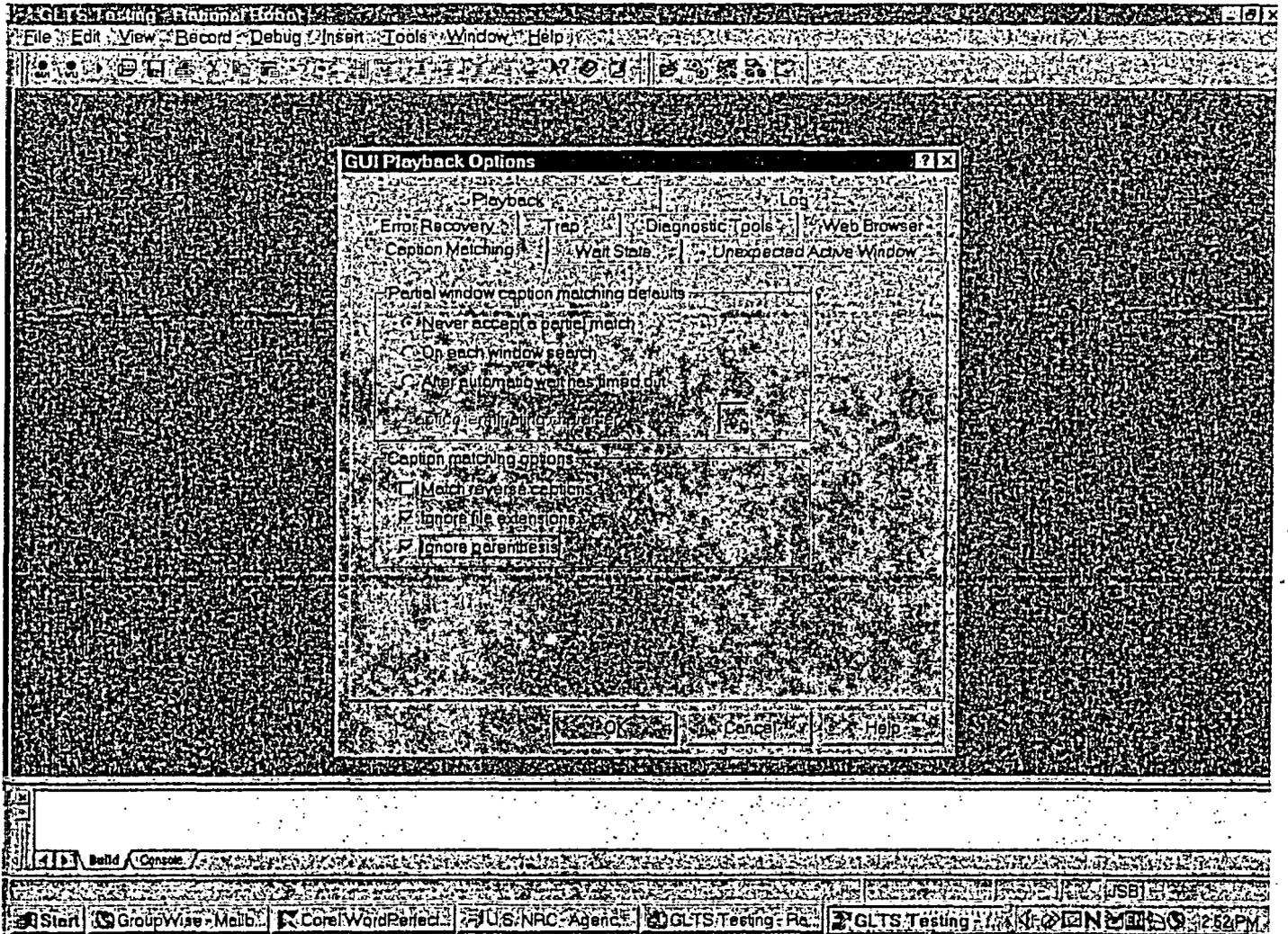
Skip current script

Abort playback

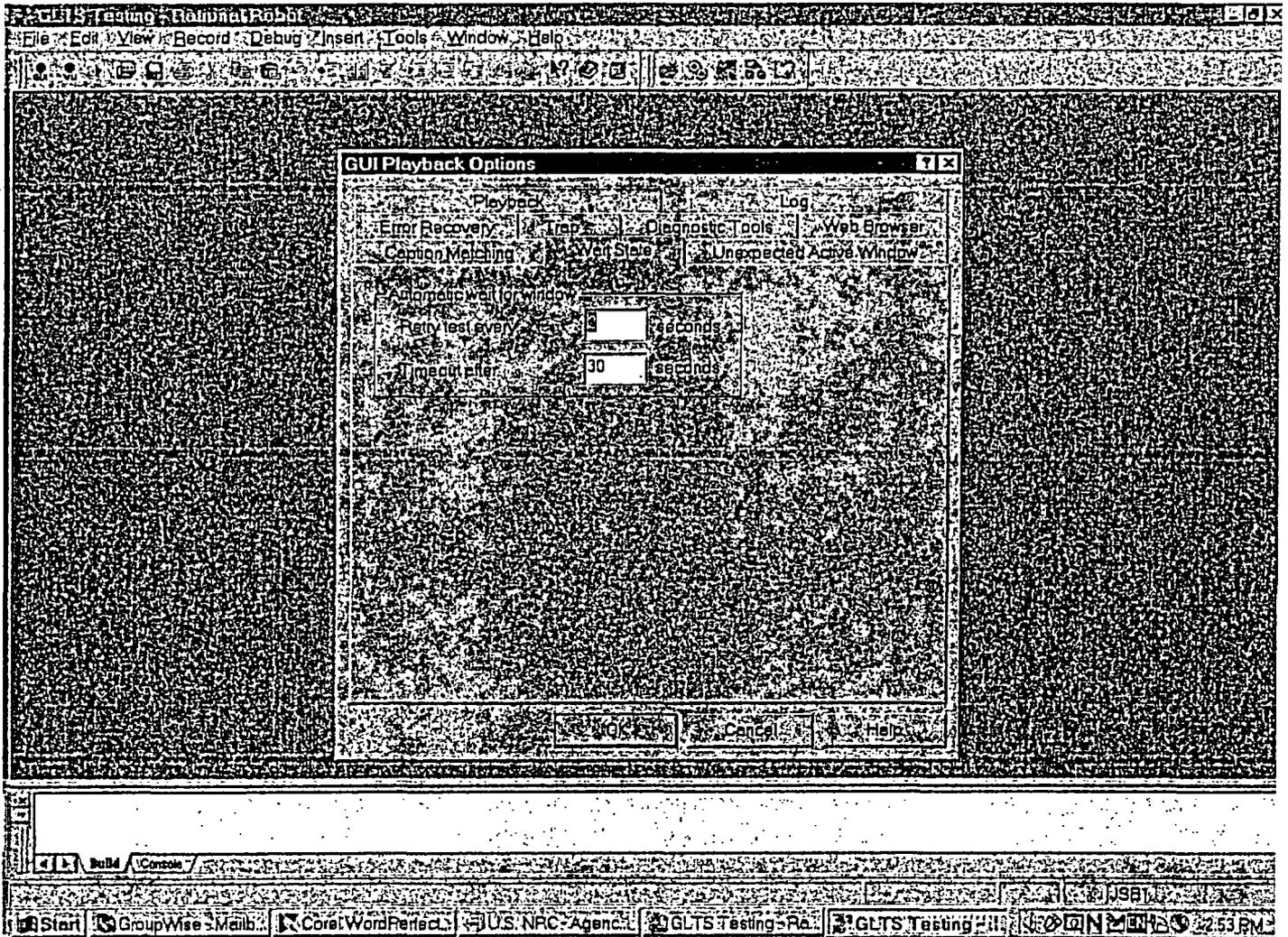
OK Cancel Help

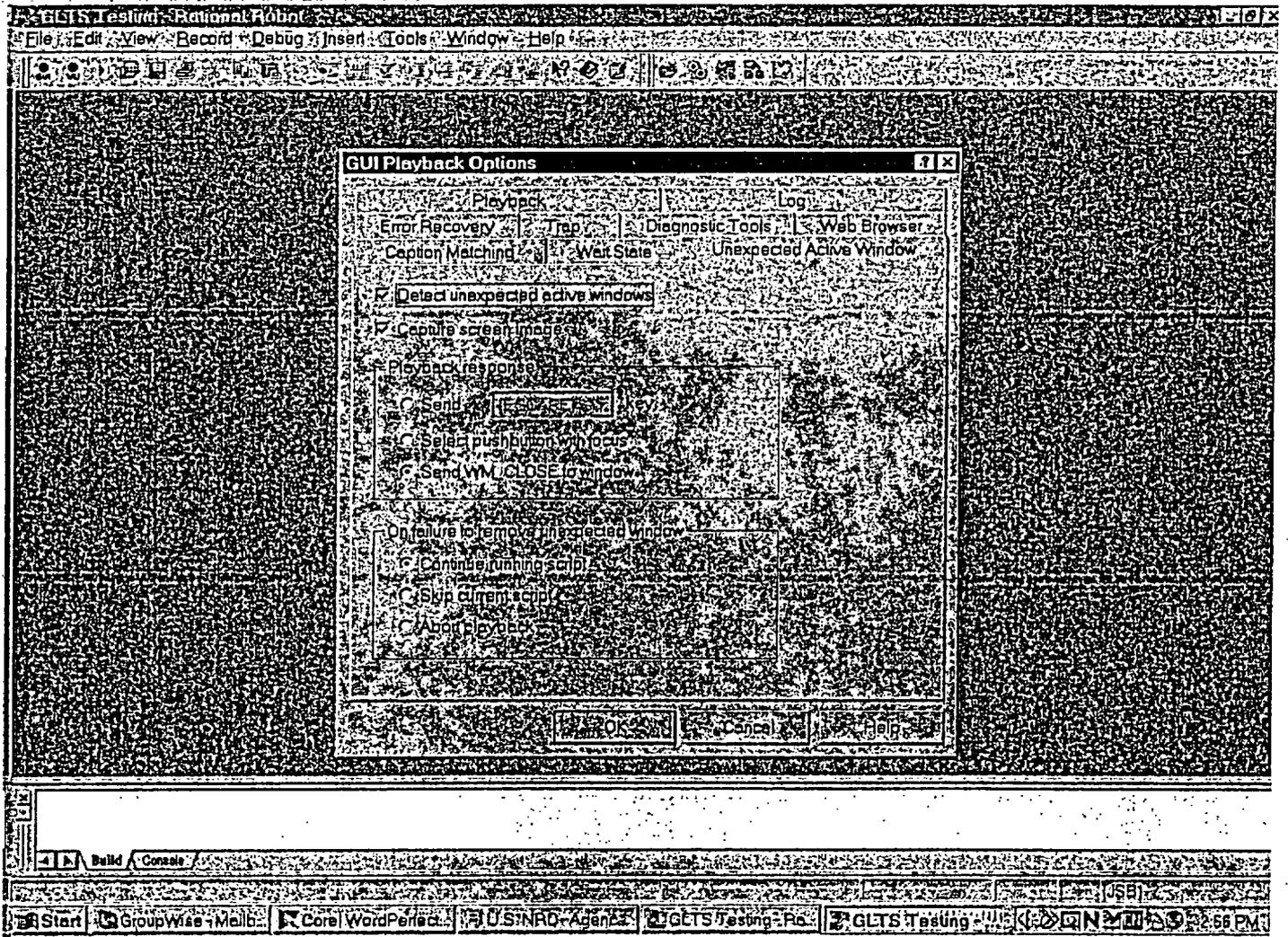
Start GroupWise Mail Corel WordPerfect US-NRC-Agency GLTS-Testing-Rec GLTS-Testing N ME 2:50 PM





Note: The wait state may be edited and changed from this default value, as appropriate in each script. For example, if a given pop-up window either appears promptly/immediately or not at all, there is no need to waste playback time having the wait state set to wait long and retry.





APPENDIX G
NRC Form 187

AUTHORITY
The policies, procedures, and criteria of the NRC Security Program, NRCMD 12, apply to performance of this contract, subcontract or other activity.

CONTRACT SECURITY AND/OR CLASSIFICATION REQUIREMENTS

COMPLETE CLASSIFIED ITEMS BY SEPARATE CORRESPONDENCE

1. CONTRACTOR NAME AND ADDRESS

TBD

A. CONTRACT NUMBER FOR COMMERCIAL CONTRACTS OR JOB CODE FOR DOE PROJECTS (Prime contract number must be shown for all subcontracts.)

N33-01-183, J5505

B. PROJECTED START DATE

05/28/2004

C. PROJECTED COMPLETION DATE

09/30/2006

2. TYPE OF SUBMISSION

- A. ORIGINAL
- B. REVISED (Supersedes all previous submissions)
- C. OTHER (Specify)

3. FOR FOLLOW-ON CONTRACT, ENTER PRECEDING CONTRACT NUMBER AND PROJECTED COMPLETION DATE

A. DOES NOT APPLY

B. CONTRACT NUMBER

DATE

4. PROJECT TITLE AND OTHER IDENTIFYING INFORMATION

Title: SafeSource Phase I

The NRC has a requirement to develop an IT system that will support the new SafeSource business practices needed to improve security for nuclear radioactive materials. A major impetus for SafeSource is the need to control nuclear materials that could be used in a radiological dispersal device (RDD) or "dirty bomb" - a conventional explosive that carries nuclear materials and releases them on detonation. The NRC has established a two-phase approach for implementing SafeSource. SafeSource Phase I will build the IT environment required to support the overall SafeSource initiative.

5. PERFORMANCE WILL REQUIRE

A. ACCESS TO CLASSIFIED MATTER OR CLASSIFIED INFORMATION

- YES (If "YES," answer 1-7 below)
- NO (If "NO," proceed to 5.C.)

NOT APPLICABLE

NATIONAL SECURITY

RESTRICTED DATA

SECRET

CONFIDENTIAL

SECRET

CONFIDENTIAL

1. ACCESS TO FOREIGN INTELLIGENCE INFORMATION

2. RECEIPT, STORAGE, OR OTHER SAFEGUARDING OF CLASSIFIED MATTER. (See 5.B.)

3. GENERATION OF CLASSIFIED MATTER.

4. ACCESS TO CRYPTOGRAPHIC MATERIAL OR OTHER CLASSIFIED COMSEC INFORMATION.

5. ACCESS TO CLASSIFIED MATTER OR CLASSIFIED INFORMATION PROCESSED BY ANOTHER AGENCY.

6. CLASSIFIED USE OF AN INFORMATION TECHNOLOGY PROCESSING SYSTEM.

7. OTHER (Specify)

B. IS FACILITY CLEARANCE REQUIRED? YES NO

C. UNESCORTED ACCESS IS REQUIRED TO PROTECTED AND VITAL AREAS OF NUCLEAR POWER PLANTS.

D. ACCESS IS REQUIRED TO UNCLASSIFIED SAFEGUARDS INFORMATION.

E. ACCESS IS REQUIRED TO SENSITIVE IT SYSTEMS AND DATA.

F. UNESCORTED ACCESS TO NRC HEADQUARTERS BUILDING.

FOR PROCEDURES AND REQUIREMENTS ON PROVIDING TEMPORARY AND FINAL APPROVAL FOR UNESCORTED ACCESS, REFER TO NRCMD 12.

6. INFORMATION PERTAINING TO THESE REQUIREMENTS OR THIS PROJECT, EVEN THOUGH SUCH INFORMATION IS CONSIDERED UNCLASSIFIED, SHALL NOT BE RELEASED FOR DISSEMINATION EXCEPT AS APPROVED BY:

NAME AND TITLE <p style="text-align: center;">Pat Smith, Project Officer Senior IT Specialist NMSS/PMDA/ITBPT</p>	SIGNATURE 	DATE <p style="text-align: center;">11/23/04</p>
---	---	---

7. CLASSIFICATION GUIDANCE

NATURE OF CLASSIFIED GUIDANCE IDENTIFICATION OF CLASSIFICATION GUIDES

NRC Management Directive 12.3, "Personnel Security Program"
NRC Management Directive 12.5, "NRC Automated Information Systems Security Program"
NRC Management Directive 12.6, "Sensitive Unclassified Information Security Program"

8. CLASSIFIED REVIEW OF CONTRACTOR / SUBCONTRACTOR REPORT(S) AND OTHER DOCUMENTS WILL BE CONDUCTED BY:

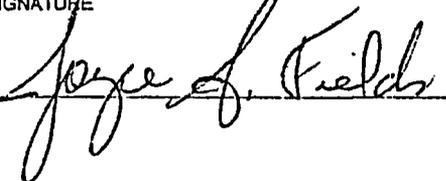
<input checked="" type="checkbox"/> AUTHORIZED CLASSIFIER (Name and Title) Charles Cox, Technical Assistant NMSS/IMNS/MSIB	<input type="checkbox"/> DIVISION OF FACILITIES AND SECURITY
--	--

9. REQUIRED DISTRIBUTION OF NRC FORM 187 Check appropriate box(es)

<input checked="" type="checkbox"/> SPONSORING NRC OFFICE OR DIVISION (Item 10A)	<input checked="" type="checkbox"/> DIVISION OF CONTRACTS AND PROPERTY MANAGEMENT
<input checked="" type="checkbox"/> DIVISION OF FACILITIES AND SECURITY (Item 10B)	<input checked="" type="checkbox"/> CONTRACTOR (Item 1)
<input checked="" type="checkbox"/> SECURITY/CLASSIFICATION REQUIREMENTS FOR SUBCONTRACTS RESULTING FROM THIS CONTRACT WILL BE APPROVED BY THE OFFICIALS NAMED IN ITEMS 10B AND 10C BELOW.	

10. APPROVALS

SECURITY/CLASSIFICATION REQUIREMENTS FOR SUBCONTRACTS RESULTING FROM THIS CONTRACT WILL BE APPROVED BY THE OFFICIALS NAMED IN ITEMS 10B AND 10C BELOW.

NAME (Print or type)	SIGNATURE	DATE
A. DIRECTOR, OFFICE OR DIVISION Melvyn N. Leach, Director, PMDA/NMSS	SIGNATURE 	DATE <p style="text-align: center;">1/23/04</p>
B. DIRECTOR, DIVISION OF FACILITIES AND SECURITY Thomas O. Martin, Director, DFS/ADM	SIGNATURE 	DATE <p style="text-align: center;">2/4/04</p>
C. DIRECTOR, DIVISION OF CONTRACTS AND PROPERTY MANAGEMENT (Not applicable to DOE agreements) <input checked="" type="checkbox"/> Kathryn O. Greene, Director, DC/ADM	SIGNATURE 	DATE <p style="text-align: center;">2/10/04</p>

REMARKS