



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SEP 20 1996

Science & Engineering Associates, Inc.

ATTN: Ms. Ilene Colina

Contract Administrator

SEA Plaza

6100 Uptown Boulevard, N.E.

Albuquerque, New Mexico 87110

SUBJECT: TASK ORDER NO. 60, ENTITLED "HUMAN FACTORS INFORMATION SYSTEM (HFIS) FOR WINDOWS DETAILED REQUIREMENTS ANALYSIS AND SYSTEM DESIGN" UNDER CONTRACT NO. NRC-03-93-036

Dear Ms. Colina:

In accordance with Section G.5(c) of the subject contract, entitled "Task Order Award," this letter definitizes the subject task order. This effort shall be performed in accordance with the enclosed Statement of Work.

Task Order No. 60 shall be in effect from September 20, 1996 through December 15, 1996 with a cost ceiling of \$48,513.00. The amount of [REDACTED] represents the total estimated reimbursable costs, the amount of [REDACTED] represents the fixed fee, and the amount of [REDACTED] represents the facility's capital cost of money.

The accounting data for the subject task order is as follows:

B&R No.:	620-15-11-20-0
Job Code No.:	J-2015-6
Appropriation No.:	31X0200.620
BOC No.:	252A
NRR Unique Identifier:	NRR9303660
Obligated Amount:	\$48,513.00

The following individual is considered to be essential to the successful performance of the work hereunder: Laura Comes.

The Contractor agrees that such personnel shall not be removed from the effort under the task order without compliance with Contract Clause H.1, Key Personnel.

Your contacts during the course of this task order are:

Technical Matters: Ms. Mary Ann Biamonte
Project Officer
(301) 415-1073

Contractual Matters: Ms. Anita Hughes
Contract Specialist
(301) 415-6526

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NRC-03-93-036 PDR

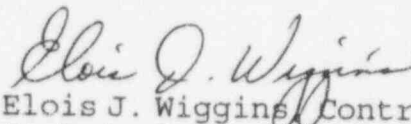
CONFIDENTIAL

The issuance of this task order does not amend any terms or conditions of the subject contract.

Please indicate your acceptance of this task order by having an official, authorized to bind your organization, execute three (3) copies of this document in the space provided and return two (2) copies to the U.S. Nuclear Regulatory Commission, ATTN: Ms. Anita Hughes, Division of Contracts, T-712, ADM/DC/TAB2, Washington, D.C. 20555. You should retain the third copy for your records.

Since we are rapidly approaching September 30, our fiscal year ending date, you should expedite the execution and return of this document. Unless the signed documents are returned to me prior to that date, I cannot assure you of the continued availability of these funds.

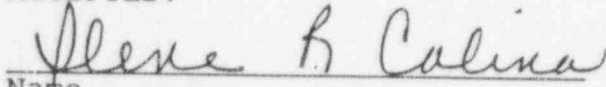
Sincerely,



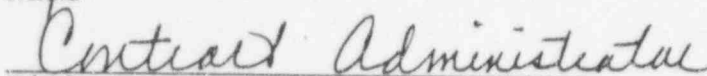
Elois J. Wiggins Contracting Officer
Technical Acquisition Branch No. 2
Division of Contracts
Office of Administration

Enclosure:
As stated

ACCEPTED:



Name



Title

9/23/96

Date

Statement of Work
Contract No. NRC-03-93-036
Task Order No. 60 Under FIN J-2015-3

Task Order Title - Human Factors Information System for WINDOWS
Development
Project Manager Mary Ann Biamonte 301-415-1073

Background

The Human Factors Information System (HFIS) is an information management system that contains databases, or modules, on areas of interest to the NRC and maintained by the Human Factors Assessment Branch and its contractor. The system contains information on the status of regulatory programs, such as DCRDR, SPDS, EOP, and Training, and also contains summary information on human performance from LERs and inspection reports. The system can generate a variety of standardized reports as well as accommodate ad hoc sorting of stored information. The database was developed using Clipper program (summer 1987 version).

An upgrade of the computer code used to execute all the functions and capabilities of HFIS from Clipper 1.0 to Clipper 5.0 was completed in August 1993. This upgrade allowed for more reliable operation with a greater number of records in the databases and improved the operating speed of the databases.

Other improvements made to HFIS during 1993 included updating the plant lists to reflect accurately the operating plants at that time, modifying the LER fields to incorporate reactor power level, and improving the indexing to allow for more direct access to specific entries. Useability improvements made in 1993 included improving the information filters for the Training, EOP, and Regulatory Programs modules; modifying the method used to enter LER data; and improving menu screen overlays.

Two new modules were added to HFIS in the 1993-1994 timeframe. The Inspection Reports module was developed to categorize and store information from NRC inspection reports. An NRR User Need led to the development of the HFIS Human Performance Investigation Process (HPIP) Module by the NRC Office of Research (RES). NRC/RES contracted separately with SEA to develop the HPIP module. The HPIP module became functional in early 1994. Usability improvements were also made concurrent with the development of the Inspection Report and HPIP modules and included improved capability for executing filters and printing filter results.

Major problems with the current system include:

- HFIS cannot take advantage of the Windows environment.
- The system has reached the limits on the size of the executable program making it difficult to add new information and additional capabilities.
- In order to make the information available to staff at headquarters and the regions, the data must be copied to multiple locations.

Scope of Work

The contractor shall provide comprehensive systems integration services to HHFB to perform all phases of the design of a fully integrated HFIS for HHFB using client-server technology. The HFIS system shall provide concurrent access from multiple NRC office locations via the Agency Upgrade of Technology for Office Systems (AUTOS). The implemented system will have inherent characteristics of client-server computing such as, but not limited to, the following:

- The client and server functions shall be implemented on a single computer or can be segmented over several systems.
- Distributed clients are connected to servers via local area networks (LANs) and/or wide area networks (WANs).
- A server shall handle multiple clients concurrently.
- The entire enterprise network shall be perceived by each individual user as a single system.
- Networking hardware and software shall provide the interconnectivity to make the accessing of resources appear transparent without showing the complexity of different data formats and protocols.

Work Requirements

It is the responsibility of the contractor to assign technical staff, employees or specialists who have the required educational background, experience, or combination thereof to meet both the technical and regulatory objectives of the work specified in this statement of work. The NRC will rely on representations made by the contractor concerning the qualification of the personnel

assigned to this task order including assurance that all information contained in the technical and cost proposals, including resumes, is accurate and truthful.

The contractor shall perform requirements analysis, data modeling, hardware/software platform configuration, document and data conversion process details, and documentation related to all phases of the design of a fully integrated HFIS for HHFB using client-server technology.

The contractor shall provide a system design schedule and provide time and staffing estimates and major milestone for completion of the design.

The contractor shall hold discussions with Task Manager and HHFB personnel as needed to determine additional data requirements. The contractor shall review and resolve any data modeling issues raised by IRM.

The contractor shall design the HHFB application so that it has a look and feel consistent with the other IRM client/server applications, namely, RPS and DETS.

The contractor shall design HFIS in a manner such that it can exchange data with other client/server systems being developed by IRM, namely DETS and RPS.

The contractor shall develop by legacy system, the data conversion plan to include, but not limited to, a mapping of each of the legacy system fields to the HFIS physical database, and all the validation rules (field, referential integrity etc.). Fields not carried forward into HFIS should be noted. The plan should define how the physical database is built from each legacy system, including business rules to maintain referential integrity and the default values for new/additional fields. The completed data conversion plan should be submitted to the NRC Task Order Manager for review.

The contractor shall design security for HFIS. This will include several classes of users with varying rights. System security procedures represent a complete description of the system features implemented to protect the data from unauthorized access. This shall include password protection and all processing for system administration that involves granting new users access rights and removing users from access who no longer require it. Where appropriate, access authority shall include providing levels of access such as read-only access. In addition, the contractor shall provide the System Administrator the capability to maintain user access to HFIS.

The contractor shall design HFIS based on the client-server infrastructure that includes, but is not limited to the following:

Client-Server Hardware/Software Platform

- Workstation: 486/20MHz or better workstation with a minimum of 16 MB of RAM and 200 MB hard disk.
- Server: IBM RS/6000 models 370/62MHz and 570/50MHz with 32MB/1GB system memory and 400MB/7.2 GB fixed disk storage scalable to 36.2GB/58.6GB with external disk expansion unit.
- RDBMS: Sybase SQL Server RDBMS.
- Document Management Software: PC Docs Open
- Graphical User Interface: Windows 3.1
- Software Engineering: Powerbuilder and Micro Focus COBOL.
- DSS/EIS: Microsoft Access
- Data Communications: Novel Netware supporting multiple concurrent protocols, (TCP/IP, IPX/SPX), and Sybase (DLL, Netlib) using AIX.

Travel and Meetings

The Contractor will make approximately 15 roundtrips to NRC Headquarters in Rockville, Maryland to:

- Hold discussions with the NRC Task Manager and HHFB personnel, as needed, to determine additional data requirements,
- Attend work session meetings with HHFB staff and IRM to present and discuss the draft logical model and draft design (which includes proposed reprots and data conversion plans), and
- Attend a final meeting with HHFB management to present the final logical model and design.

Milestones

Listed below are the milestones associated with the performance of this task order. Estimates are made as to the completion of each milestone relative to the startup date of the task order.

ps = project start

cdays = calendar days

Milestone	Due Date
Analysis Schedule	ps + 10 cdays
Draft requirements document submitted to NRC for review	ps + 30 cdays
Final requirements document due	ps + 40 cdays
Design Schedule	ps + 35 cdays
Draft logical model presented at a working meeting with HHFB and IRM at NRC headquarters	ps + 50 cdays
Draft design presented at a working meeting with HHFB and IRM at NRC headquarters (includes proposed reports and data conversion plans)	ps + 70 cdays
Final logical model and design presented at a formal meeting to HHFB management.	ps + 90 cdays

Reporting Requirements

The contractor shall submit all required documents, unless otherwise mutually agreed to, in draft form to the NRC for review and comment. The NRC will have five (5) working days after receipt of the draft document to provide written comments. All draft documents shall be submitted to the NRC with sufficient time to meet the scheduled final due date, allowing for NRC five (5) working days review time and contractor time sufficient to prepare the final document. The following documents are required:

- System design schedule for a complete turn key system
- Software engineering (design) for client-server based decisions support and full process applications, client-server based executive information systems and an

integrated distributed print facility. Design should be table driven so that the user can update the tables to increase functionality

- Logical model consisting of a diagram showing the logical relationships between the entities and the associated cardinality. Model should also show the proposed attributes and field lengths , including look-up tables. The attribute names should conform to NRC standards and use enterprise entities (i.e., Docket, facility) as appropriate.
- Requirements document consisting of a detailed description of the functional requirements that the proposed system will perform as discovered from analyzing the current system and meeting with HHFB personnel.
- Detail Data conversion plans and procedures;
- Report descriptions with specific fields

Period of Performance

Task Order No. 60 shall commence on September 20, 1996 and expire on December 15, 1996.

Other Applicable Information

The work specified in this statement of work is not licensee fee recoverable.