

**MANAGEMENT PLAN
CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES
REVISION 8, CHANGE 1**

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James Firth, NMSS
Charles Greene, NMSS
John Greeves, NMSS—letter only
Joe Holonich, NMSS—letter only
Janet Kotra, NMSS
Phil Justus, NMSS
Bret Leslie, NMSS
John Linehan, NMSS
Tim McCartin, NMSS
Alex Murray, NMSS
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Robert Pierson, NMSS
Jeffery Pohle, NMSS
William Reamer, NMSS
King Stablein, NMSS
Susan Shankman, NMSS
John Trapp, NMSS
Sandra Wastler, NMSS
Mike Weber, NMSS

CNWRA *A center of excellence in earth sciences and engineering*

A Division of Southwest Research Institute
6220 Culebra Road • San Antonio, Texas, U.S.A. 78228-5166
(210) 522-5160 • Fax (210) 522-5155

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U.S. Nuclear Regulatory Commission
ATTN: Mrs. Barbara D. Meehan
Division of Contracts
TWFN Mail Stop 712
Washington, D.C. 20555

Subject: CNWRA Management Plan, Revision 8, Change 1

Dear Mrs. Meehan:

The subject revision to the CNWRA Management Plan was prepared to reflect some recent organizational changes. Several changes were made as part of this update, and the document will be revised in FY2001 to fulfill a major milestone.

Please contact me or Henry F. Garcia if you have any questions on this matter.

Sincerely yours,


Wesley C. Patrick
President

/bsc

cc: Attached distribution
CNWRA Directors
CNWRA Element Managers
P. Maldonado
T. Nagy, SwRI

WPFIL\MGTPLAN\MGTPLANR-8-1.TRN



Washington Office • Twinbrook Metro Plaza #210
12300 Twinbrook Parkway • Rockville, Maryland 20852-1606

MANAGEMENT PLAN CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

Prepared for

**Nuclear Regulatory Commission
Contract NRC-02-97-009**

UNCONTROLLED

Prepared by

**Center for Nuclear Waste Regulatory Analyses
San Antonio, Texas**

**Revision 8
Change 1**

October 2000

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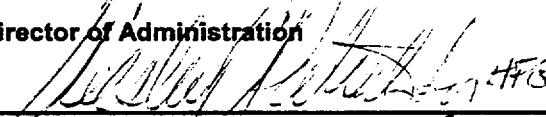



Title MANAGEMENT PLAN CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

EFFECTIVITY

Revision 8 of this document became effective on April 10, 2000. This document consists of the pages and changes listed below.

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Director of Administration 	Date: 10/19/2000	Assistant Director for SE&I 	Date: 10/18/2000
Director of QA 	Date: 10/18/2000	Technical Director 	Date: 10/15/2000

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ABBREVIATIONS (cont'd)

OFPP	Office of Federal Procurement Policy	TOP	Technical Operating Procedure
OMB	Office of Management & Budget	TPA	Total Performance Assessment
OPP	Operating Policies and Procedures	TQM	Total Quality Management
PA	Performance Assessment	TSAR	Topical Safety Analysis Report
PC	Personal Computer	TSPAI	Total System Performance Assessment and Integration
PEM	Program Element Manager	TWRS	Tank Waste Remediation Systems
PI	Principal Investigator	UMTRCA	Uranium Mill Tailings Radiation Control Act
PM	Project Manager	UR	Uranium Recovery
PMPR	Program Manager's Periodic Report	WBS	Work Breakdown Structure
PO	Project Officer	WFO	Work for Others
PFSF	Private Fuel Storage Facility	WSE&I	Waste Systems Engineering and Integration
PSFS	Private Spent Fuel Storage	WSS	Waste Solidification Systems
QA	Quality Assurance	WTSO	Washington Technical Support Office
QAP	Quality Assurance Procedure	WVDP	West Valley Demonstration Project
RDCO	Repository Design, Construction, and Operations	YMRP	Yucca Mountain Review Plan
RES	Office of Nuclear Regulatory Research		
RFP	Requests for Proposal		
RPD	Regulatory Program Database		
SPM	Senior Program Manager		
SDMP	Site Decommissioning Management Plan		
SFPO	Spent Fuel Project Office		
SE&I	Systems Engineering and Integration		
SRA	Systematic Regulatory Analysis		
SRS-AL	Savannah River Site Aluminum-based Spent Fuel		
SRS-HLW	Savannah River Site High-Level Waste		
SSI	Swedish Radiation Protection Institute		
SwRI	Southwest Research Institute		
TM	Technical Monitors		
TMI-2 ISFSI	Three Mile Island Unit 2 Independent Spent Fuel Storage Installation		

1 INTRODUCTION

1.1 PURPOSE OF THE CNWRA

The Center for Nuclear Waste Regulatory Analyses (CNWRA) has been established as a Center of Excellence to provide the necessary personnel, materials, equipment, facilities, and other services to conduct timely and cost-effective technical assistance and research for the Nuclear Regulatory Commission (NRC), its sponsor, in satisfying its licensing obligations under the Nuclear Waste Policy Act (NWPA), as amended. The CNWRA will also support the NRC staff as required by contributing to oral and written testimony for adjudicatory hearings.

The CNWRA technical assistance and research supporting the NRC relate to the storage, disposal, and isolation of nuclear wastes under the NWPA, including monitored retrievable storage (MRS), a central interim storage facility (CISF), or a private fuel storage facility (PFSF) (if such facilities are approved by Congress or developed by industry). In addition, CNWRA provides technical assistance in NWPA-related programs, as requested. The primary areas of technical assistance and research are defined in the principal NRC contract: (i) waste systems engineering and integration (WSE&I); (ii) long-term performance of the geologic setting (GS); (iii) long-term performance of the engineered barrier system (EBS); (iv) waste solidification systems (WSS); (v) interim storage and repository design, construction, and operations (RDCO); (vi) research; (vii) performance assessment (PA); (viii) external quality assurance (EQA); (ix) high-level waste (HLW) licensing support system (LSS) [more recently renamed the licensing support network (LSN)]; (x) transportation; (xi) tank waste remediation systems (TWRS); and (xii) the Spent Fuel Project Office (SFPO). Administration of the CNWRA and provision of certain information management systems (IMS) support to the NRC are accomplished through a CNWRA operations element (COPS). These areas may change from time to time to accommodate programmatic modifications in direction or orientation. The organization and associated work breakdown structure (WBS) that reflect current programmatic demands and funding are delineated in sections 3 and 5 of this plan, respectively.

As funding for NWPA and NWPA-related activities has become increasingly uncertain in recent years, NRC has authorized the CNWRA to provide technical assistance under the Industrial Mobilization Exception (IME) of the Federal Acquisition Regulations (FAR), as well as to non-NRC clients in the U.S. and abroad. Program areas currently or previously supported include Uranium Recovery (UR), the SFPO environmental assessments, Site Decommissioning Management Plan (SDMP), Savannah River Site High-Level Waste (SRS-HLW) Tank Closure and other projects within the Office of Nuclear Material Safety and Safeguards (NMSS). Other IME projects may be added as requested by NRC. A diverse research program has been developed to support domestic and international commercial clients, foreign government agencies, and other U.S. government agencies within the areas of special competency of the CNWRA.

1.2 PURPOSE AND SCOPE OF THE CNWRA MANAGEMENT PLAN

The primary purpose of the CNWRA Management Plan (CMP) is to define and establish the organizational authorities and responsibilities under which the CNWRA conducts its work and guides its relationships with any and all parties affected by its work. These relationships include interfaces with the NRC; among the CNWRA San Antonio, Washington Technical Support Office (WTSO), and potential

Nevada Office; with CNWRA subcontractors and consultants; with any other organizations that may be authorized by the NRC to use the CNWRA under work for others (WFO) provisions of the principal NRC contract; and with other divisions of Southwest Research Institute (SwRI). Furthermore, the CMP identifies areas in which procedures exist or will be required to provide specific guidance and control for CNWRA activities.

In addition, the CMP specifically addresses the following subjects:

- Description of work-related objectives (section 2)
- Organization of and relationships within the CNWRA, including management responsibilities (section 3)
- Plans to acquire and retain staff in areas of special competency (section 4)
- Work and organization breakdown structures (section 5)
- Management and control of technical and fiscal resources including methods for addressing potential conflicts of interest (COI) (section 6)
- Resource management, including human resource motivation and administration, and access to facilities and equipment (section 7)
- Records, information, and technical data management (section 8)
- Methodologies for technology transfer (section 9)
- Relationship of quality assurance (QA) (section 10)
- Nature of and responsibilities for award fee determination (section 11)
- Authorization and administration of performing work for other organizations (section 12)

1.3 RELATIONSHIP OF THE CNWRA MANAGEMENT PLAN TO OTHER DOCUMENTATION

Subsections 1.3.1 through 1.3.5 briefly define the relationships of this CMP to the CNWRA charter, SwRI Operating Policies and Procedures (OPP) Manual, the CNWRA Quality Assurance Manual (CQAM), the CNWRA Five-Year Strategic Plan (FYSP), and other CNWRA procedures, including administrative procedures (APs), quality assurance procedures (QAPs), and technical operating procedures (TOPs).

3 ORGANIZATION

3.1 THE CNWRA AS A SEPARATE OPERATING UNIT OF SOUTHWEST RESEARCH INSTITUTE

The CNWRA was established as a clearly identifiable separate operating unit, with SwRI as its parent organization and the SwRI president providing oversight (see figure 3-1). It is a functionally autonomous entity, identified within SwRI as Division 20. The SwRI president offers general direction in matters relating to overall CNWRA administrative and operational activities and necessary support for CNWRA products and recommendations. The president monitors the performance of CNWRA senior management.

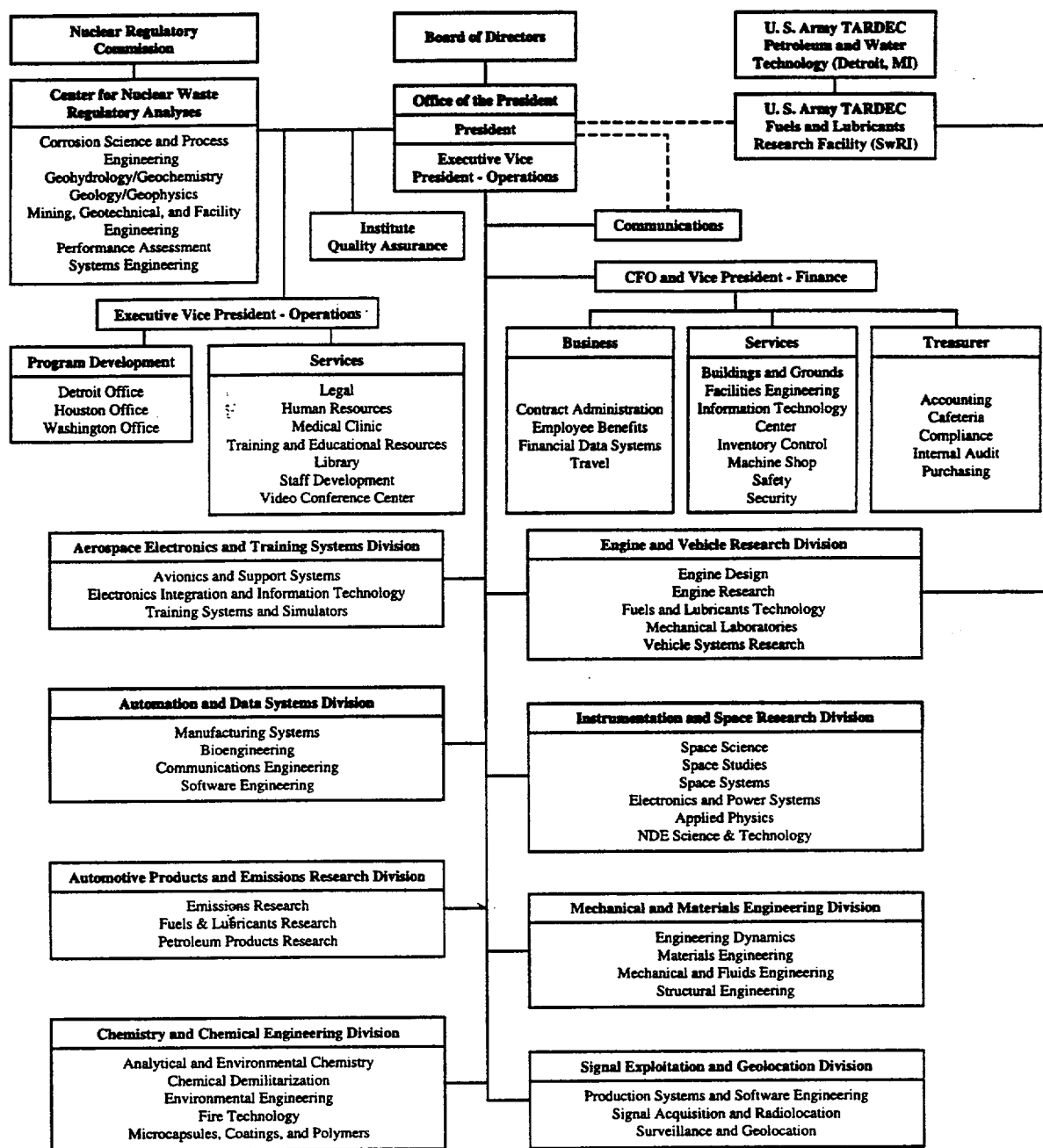
The SwRI president, with the endorsement of the SwRI board of directors, acknowledges the special and direct relationship of the NRC to the CNWRA and, accordingly, delegates to the CNWRA president the necessary authority and responsibility for its successful operation. The CNWRA president and staff communicate directly with appropriate technical and contractor personnel in the NRC headquarters to receive technical guidance and directives for task accomplishment. SwRI supports the CNWRA, as required, with services, facilities, laboratories, and equipment.

3.2 THE CNWRA ORGANIZATION

The flexible organizational structure of the CNWRA allows rapid response to sponsor and client needs. Its matrix staffing arrangements focus on the efficient and cost-effective execution of operations and project plans. Briefly, the CNWRA is organized as outlined in the following sections (see figure 3-2).

- The CNWRA president's office, located at the CNWRA headquarters in San Antonio, Texas, is supported with expertise in systems engineering and integration, QA, administration, and information management systems.
- The CNWRA WTSO, in Rockville, Maryland, conducts technical activities for NRC projects and maintains daily interface with the NRC. The office is managed by a director who represents the CNWRA president in the Washington area and, in addition, is responsible for the day-to-day administration of the office to ensure that staff is responsive to the other CNWRA directors and EMs. He also manages the SDMP project. CNWRA personnel assigned for periods of time in the Washington area are also provided working space in the office, as necessary.
- The CNWRA principal operating groups are located at the CNWRA headquarters. The technical director assigns EMs and PIs for the technical elements and specific research projects within the NRC-funded programs. The Senior Program Manager assigns project managers (PM) and PIs for all non-NRC projects. A strong technical base in earth sciences and engineering disciplines is used by EMs and PIs in a flexible matrix organizational structure (see figure 3-3). This concept assures economy in personnel assets and the highest degree of staff use. Further, it facilitates total integration of the CNWRA technical work and unified control over resources, accomplishing sustained performance of all related operations.

SOUTHWEST RESEARCH INSTITUTE™ ORGANIZATION CHART



Standing Groups

Advisory Committee for Research
Architectural Committee
Computer & Telecommunications Committee
DFWP/EAP Committee

Facilities Review Panel
Institute Quality Assurance Committee
Library Committee
Management Advisory Committee

Medical Benefits Committee
Patent Committee
Planning Council
Proposal Panel

Radiological Health & Safety Committee
Safety Committee
Services Committee
Total Quality Management Committee

April 2000

Figure 3-1. Organization of SwRI and relationship with the CNWRA

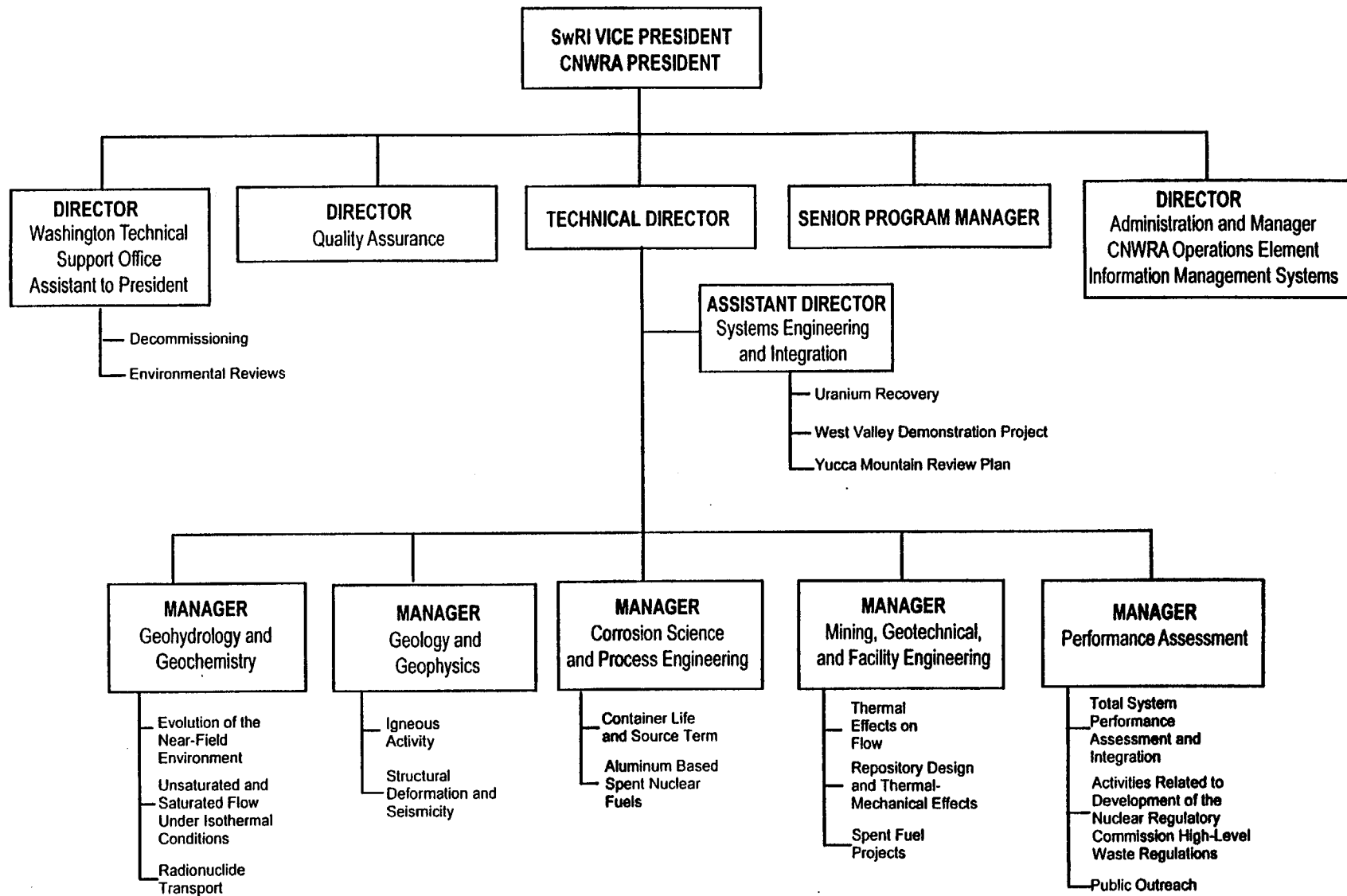


Figure 3-2. Organization of the CNWRA

3.3 DUTIES, AUTHORITIES, AND RESPONSIBILITIES OF CNWRA PERSONNEL

Duties, responsibilities, and lines of authority of the CNWRA personnel are described in the following sections.

3.3.1 President of the CNWRA

As its chief executive officer, the CNWRA president receives technical direction from the NRC, reports directly to the NRC CNWRA program manager, and has responsibility for

- Managing and operating the CNWRA
- Staffing the CNWRA
- Establishing, under SwRI guidelines, salary levels and adjustments and implementing required personnel actions
- Negotiating agreements with the NRC and others as required
- Establishing budgets for and approving business development activities, including proposal preparation related to WFO
- Directing activities of the CNWRA in compliance with the NRC rules and regulations and those of appropriate federal agencies
- Preparing required operations plans and project plans
- Reporting in a timely fashion to the NRC and other clients
- Arranging required technical assistance from SwRI or, as required, from subcontractors and consultants

3.3.2 Technical Director

The technical director is second in command of the CNWRA. Under the supervision of the technical director, EMs and PIs are supported by the combined staffs of the program elements and the WTSO to form a matrix organization capable of pursuing operations plans, project plans, and task orders for NRC-funded programs (see figure 3-3). The technical director is responsible for

- Assisting the president in conduct of the CNWRA overall administrative and operational matters
- Acting as the president's primary technical representative with the NRC and other clients

3.3.8 Senior Program Manager

The Senior Program Manager is responsible for developing and executing all non-NRC projects at the CNWRA. The Senior Program Manager is responsible for

- **Leading development and implementation of an effective business development strategy**
- **Directing the successful accomplishment of WFO through project managers and principal investigators using a matrix management approach**
- **Participating as a senior technical staff member on selected NRC and WFO projects**
- **Identifying and stimulating others to identify opportunities for new business development utilizing the spectrum of CNWRA technical expertise**
- **Establishing business development plans, in coordination with other management staff, for specific market areas**
- **Coordinating the evaluation and pursuit of WFO opportunities, including establishing and implementing effective bid/no-bid criteria, establishing interdivisional and interorganizational teams, and preparing proposals and associated cost estimates**
- **Stimulating development, management, and effective exploitation of intellectual property**
- **Recommending, allocating, and managing effective use of division overhead funds for non-NRC business development**
- **Providing input, in coordination with element managers, on equipment, space, and staffing needs related to WFO**
- **Serving as liaison for interdivisional marketing and project execution**
- **Coordinating with the SwRI Program Development Office on external marketing**

3.3.9 Element Managers and Principal Investigators

Within the CNWRA matrix management structure, EMs serve the dual roles of administrative supervisor for staff members in the allied technical disciplines and project manager for one or more KTIs, program elements, or projects in the overall CNWRA program. Coordinating with the ADSEI for matters related to integration and programmatic direction (as delineated in section 3.3.7) and reporting to the technical director in all other matters, EMs are responsible for

- Conducting recruiting efforts and providing recommendations regarding acquisition of core staff, subcontractors, and consultants
- Evaluating continuously performance of core staff, subcontractors, and consultants and making recommendations for personnel actions
- Developing proposals and projects for funding under the various NRC programs
- Assisting the Senior Program Manager in developing non-NRC governmental and commercial projects to maintain an adequate backlog of work
- Developing cost estimates and detailed scopes of work for tasks, projects, and activities—including WFO—within the area of responsibility as noted in chapter 2 of this document, the CNWRA operations plans, and WFO contracts
- Assisting in the development and implementation of element- and project-specific procedures and instructions needed to assure compliance with QA and quality control requirements of the CNWRA
- Assuring development of high quality regulatory products in accordance with assigned scopes of work, within the constraints of available resources and schedules
- Providing oversight of costs incurred and progress achieved versus established cost/schedule baselines, taking direct management action to ensure compliance and, where necessary, providing timely notification in those cases in which these baselines may be exceeded
- Serving as principal contact with the NRC PEM in technical and fiscal matters related to the KTIs, program elements, and projects assigned

Where appropriate, the EM may identify key staff members for assignment as PIs on particular tasks, subtasks, or projects. In such cases, the EM will clearly define the areas of responsibility and authority delegated to the PI, who will report to the cognizant EM. Although the PI may assist in such matters, the personnel management responsibilities of the EM cannot be delegated.

3.3.10 Additional Resources

As may be required by work assignments, the CNWRA will use additional resources such as SwRI staff as well as subcontractors and consultants in several specialty areas. When employed to accomplish the work of the CNWRA, these additional resources are administered through the technical director and the cognizant EM.

3.4 ORGANIZATIONS USED IN SUPPORT OF THE CNWRA

3.4.1 Southwest Research Institute

The SwRI president, assisted by his executive staff, assures that the CNWRA president receives all necessary services and support available through SwRI resources. These support services reduce the need for establishing specialized in-house services for the CNWRA. Such services include, but are not limited to the following

- Support from the SwRI Human Resources Department in recruiting and hiring personnel for the CNWRA, as requested and approved by the CNWRA president
- Annual oversight review of CNWRA activities by the SwRI QA Department, which is independent of the CNWRA (the results of such reviews are reported to the presidents of SwRI and the CNWRA)
- Legal counsel and general administrative services including payroll processing and employee benefits, business auditing and accounting, program development, contracting, purchasing, inventory control, and mail collection and distribution (all SwRI policies pertaining to its employees, including general salary structure and employee benefits, apply equally to the CNWRA staff)
- Professional support services including access to the library, photographic laboratory, machine shop, buildings and grounds maintenance, publications processing services, and computer and telecommunications support
- Assistance in public affairs matters, as may be desired, by the SwRI Communications Department, based on prior NRC approval
- Access to SwRI laboratories and physical assets as well as the talents of the entire professional staff

All SwRI facilities and equipment are available for CNWRA use as needed. With respect to certain technical services, a cost-for-services policy has been established at SwRI under the guidance of U.S. Government auditors. Price lists for these services are promulgated and reviewed each year. Support services costed in this manner are the machine shop, photographic laboratory, and publications processing services. Other services, such as the library, business support services, purchasing, etc., are included in General and Administrative (G&A) costs and provide support to the CNWRA without specific charge.

Table 4-1. CNWRA areas of concentration (cont'd)

Concentration	Expertise
Systems Engineering (cont'd)	Transportation Analysis
	Environmental Sciences

4.3 STAFFING PLAN

Based on the general requirements delineated in section 4.1, the five criteria described in section 4.2, and a detailed evaluation of technical support to accomplish the work in the KTI plans, SFPO and TWRS work plans, required core staffing levels were defined for the NRC-NWPA program in each of 27 areas of expertise and experience (appendix C). These areas directly relate to the nine areas of concentration given in table 4.1 (i.e., in the terms of the Federal Acquisition Regulation, the areas of special competency of the CNWRA). An authorized staffing level was established for the minimum charter program at the time of this revision. The need for additional staff was identified to support the other NMSS projects. Following a reduction in force in FY1996 and FY1997, partial restoration of budgets beginning in FY1999 and success in commercial WFO allowed hiring to commence in an effort to rebalance the mix of technical experience. The requirement for staff to support the charter program is consistent with previous staffing plans, which have been revised on at least an annual basis since the establishment of the CNWRA. This level was confirmed for this planning horizon through a three-step analysis. First, the current staff mix was evaluated in the context of the five criteria discussed earlier. All areas of technical expertise were confirmed as needed for long-term support of the NRC-NWPA program. However, the staffing level in several areas (e.g., QA, regulatory analysis, and database management) was reduced or eliminated because of programmatic changes that occurred beginning in FY1996. Second, the "above-the-line" scope of work (i.e., the scope constrained by the budget and assigned highest priority by the HLW Management Board) and associated staff mix identified in the NRC planning process were carefully evaluated to determine whether both the scope and mix were likely to be consistent over the planning horizon. This confirmed the level and mix of staff currently funded. Third, the additional staff needed to execute the highest priority activities falling "below the line" because of budget constraints were identified by number and technical discipline. In this manner, the proper mix of core staff needed to execute the long-term scope of work of the NRC repository program was identified. A similar approach was used to estimate the long-term staffing needs for NWPA-related (i.e., other charter) work. The results of this analysis are also included in appendix C.

It is important to note that funding for the charter program does not currently support the authorized staffing level. However, analysis of the NWPA and NWPA-related plans revealed that skills from each of the 27 areas of expertise and experience are needed to conduct the highest priority work that is currently funded. As a result, substantial effort is required from each of the core staff to support the repository program. The staff acquisition plan provided in appendix C assumes (i) continued use of the IME, which allows other programs of the NRC and other U.S. Government agencies to secure the services of the CNWRA and (ii) success in securing WFO. WFO—inside NRC, for other U.S. Government agencies, for foreign governments, and for both domestic and foreign private industry—is being aggressively pursued in an effort to secure funding to establish and maintain the critical core staff. Although IME is only approved to the extent needed to support the minimum repository program staff, staffing beyond this minimum permits other charter work and commercial WFO to be undertaken. The CNWRA FYSP addresses business development efforts to achieve stable staffing in these areas.

APPENDIX C
CNWRA CORE STAFFING PLAN

EXPERTISE/EXPERIENCE	CURRENT CNWRA STAFF	MINIMUM CHARTER	FY2001 PLAN
ADMINISTRATION	4	4	4
CHEMICAL PROCESSING ENGNG./PHYS CHEM.	2	1	2
CODE ANALYSIS/DEVELOPMENT	1	2	2
DATA MANAGEMENT/PROCESSING, INCLUDING FINANCIAL	1	1	1
DOSE/RISK/HAZARD ANALYSIS	0	1	1
ELECTROCHEMISTRY	1	1	1
ENGINEERING GEOLOGY/GEOLOGICAL ENGNG.	2	2	2
ENVIRONMENTAL SCIENCES	1	1	1
GEOCHEMISTRY	7	7	7
GEOHYDROLOGY/HYDROGEOLOGY	6	6	7
GEOLOGY	3	3	3
HYDROLOGIC TRANSPORT	2	3	3
INFORMATION MANAGEMENT SYSTEMS	1	1	1
MATERIAL SCIENCES	5	5	6
MECHANICAL, INCLUDING DESIGN & FABRICATION	1	1	1
MINING ENGINEERING	1	1	1
NUCLEAR ENGINEERING	1	1	1
OPERATIONAL HEALTH PHYSICS	2	2	3
PERFORMANCE ASSESSMENT	4	4	4
QUALITY ASSURANCE	1	1	1
RADIOISOTOPE GEOCHEMISTRY	1	1	1
ROCK MECHANICS, INCLUDING CIVIL/STRUCTURAL ENGR.	2	3	3
SEISMOLOGY	0	0	0
SOURCE-TERM/SPENT FUEL DEGRAD.	1	1	1
STRUCTURAL GEOLOGY/SEISMO-TECTONICS	3	3	3
SYSTEMS ENGINEERING	1	1	1
VOLCANOLOGY/IGNEOUS PROCESSES	2	2	2
TOTAL REQUIRED	56	59	63