

TECHNICAL AND MANAGEMENT SUPPORT SERVICES
QUALITY ASSURANCE PROGRAM DESCRIPTION

N-QA-093
1/90

NNA.920331.0030

TECHNICAL AND MANAGEMENT SUPPORT SERVICES

QUALITY ASSURANCE PROGRAM DESCRIPTION

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION (SAIC)

LAS VEGAS, NV

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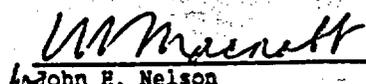
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TECHNICAL & MANAGEMENT SUPPORT SERVICES (T&MSS)
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APPROVAL/SIGNATURE PAGE


James B. Harper, Manager
T&MSS Quality Assurance

2-28-92
Date


John E. Nelson
T&MSS Project Manager

2-28-92
Date

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1.0 ORGANIZATION

The Technical and Management Support Services (T&MSS) organization consists of Science Applications International Corporation (SAIC), and its subcontractors: Harza Engineering Company and Westinghouse Electric Corporation. T&MSS has a participant role in the Yucca Mountain Site Characterization Project (YMP) as described in this section. T&MSS also has a support contractor role which is not within the scope of this document.

This section describes the T&MSS participant organization that executes the quality requirements in this program description. As work is assigned to T&MSS by the Yucca Mountain Site Characterization Project Office (YMPO), each T&MSS line manager and the T&MSS Quality Assurance (QA) Manager shall ensure that the quality-affecting participant scope of work assigned to them as delineated by the YMPO, is executed under the requirements of this QAPD. All T&MSS participant work is directed and controlled by T&MSS management from the T&MSS Las Vegas Office Location.

The T&MSS organizational components, consisting of the management positions listed below, are responsible for those functions assigned to T&MSS as a YMP participant.

T&MSS Project Manager
T&MSS Deputy Project Manager, Administrative Controls
T&MSS Deputy Project Manager, Technical Programs
Manager, Site Characterization Technical Support
Associate Manager, Site Characterization Technical Support
Assistant Project Manager, Field Testing Support
Assistant Project Manager, Technical Project Controls
Assistant Project Manager, Site Characterization Support
Assistant Project Manager, Regulatory Interactions and Training
Assistant Project Manager, Environmental and Regional Programs
Assistant Project Manager, Information and Resource Management
T&MSS Safety and Health Manager
T&MSS Quality Assurance Manager

The above managers shall establish and maintain QA program implementing procedures (see Section 2.0). The development and implementation of controlling procedures is based upon an integration of QA and line staff input for the determination of the QA controls applied to participant activities. In addition, these managers are responsible for the performance of quality-affecting activities by personnel who are appropriately trained and qualified.

An overview of the entire T&MSS organization is depicted in Exhibit 1. Exhibits 2 through 8 reflect the reporting relationships to the departmental level.

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The description of responsibilities and functional activities that follow is limited to participant activities. The QA responsibilities for Project Office support are defined in OCRM QAPD.

1.1 T&MSS Project Manager

The T&MSS Project Manager is the Technical Project Officer for T&MSS with overall responsibility for implementation of the T&MSS QA program and for T&MSS support of the YMF. This individual reports directly to the YMF Project Manager for technical direction and has authority over all T&MSS personnel assigned to work under the scope of services provided by T&MSS as a participant in support of the YMF. The T&MSS Deputy Project Managers, (Administrative Controls and Technical Programs) assist the T&MSS Project Manager as required and act in the capacity of the T&MSS Project Manager during the absence of, or at the explicit direction of the T&MSS Project Manager. The T&MSS Project Manager's responsibilities include, but are not limited to the following:

- a. Planning and directing work activities;
- b. Complying with quality requirements imposed by quality program documents;
- c. Satisfying staff resource needs, cost, and schedule objectives, and deliverable requirements;
- d. Approving and implementing the T&MSS QAPD and the T&MSS QA program implementing procedures;
- e. Implementing the YMF procedures as they apply to the T&MSS scope of work;
- f. Implementing corrective actions for deficiencies identified within T&MSS quality program;
- g. Providing periodic assessment to the YMFPO regarding the adequacy and effectiveness of the T&MSS quality program; and
- h. Approving and implementing Stop Work Orders.

1.2 Manager, Site Characterization Technical Support

The Manager, Site Characterization Technical Support (SCTS) reports directly to the T&MSS Project Manager. Reporting to this individual are: the Associate Manager, SCTS; the Assistant Project Managers (APMs) for Field Testing Support, Technical Project Controls, Site Characterization Support and Regulatory Interactions and Training; T&MSS Safety and Health Manager and staff members to the Manager, SCTS.

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The Associate Manager, SCTS assists the Manager, SCTS with management of SCTS functions.

It should be noted that most of the organizations reporting to the Manager, SCTS typically perform its activities under the OCRMM QA program, but the SCTS organization may be directed by OCRMM to perform some activities, as described in this section, under the T&MSS program.

1.2.1 Staff to Manager, SCTS

The Staff members are responsible for management, integration and/or multi-participant activities, e.g., Early Site Suitability Evaluation, involving technical, engineering and scientific studies and/or regulatory and licensing assessment as assigned by DOE.

1.2.2 APM, Field Testing Support

The APM, Field Testing Support reports directly to the Manager, SCTS. This organization provides field testing support to the YMP. This work may be performed under the T&MSS QA program when directed by the DOE.

1.2.3 APM, Technical Project Controls

The APM, Technical Project Controls reports directly to the Manager, SCTS. The Manager, Requirements Deployment, reports to this individual.

1.2.3.1 Requirements Deployment Department

The Requirements Deployment Department is responsible for the following:

- a. Performance and review of technical evaluations of data and related reports, technical reports, and conclusions relative to site characterization of the Yucca Mountain Mined Geologic Disposal System as assigned by the DOE;
- b. Performance of technical and scientific studies in support of the site characterization programs as assigned by DOE;
- c. Preparation of technical requirements documents for structure systems, components and site characterization as assigned by the DOE; and
- d. Development of systems engineering plans and procedures as assigned by DOE.

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1.2.4 APM, Site Characterization Support

The APM Site Characterization Support reports directly to the Manager, SCTS. Reporting to this individual for participant site characterization activities are managers for the following departments:

1.2.4.1 Geotechnical Department

The Geotechnical Department is responsible for the following:

- a. Performance of technical evaluations of data and related reports, technical reports, and conclusions relative to site characterization of the Yucca Mountain Mined Geologic Disposal System as assigned by the DOE;
- b. Performance of technical and scientific studies in support of the site characterization programs as assigned by DOE;
- c. Preparation of technical requirements documents for structures, systems, components and site characterization as assigned by DOE; and
- d. Development of Geotechnical plans and procedures as assigned by DOE.

1.2.4.2 Engineering Department

The Engineering Department is responsible for the following:

- a. Performance of technical evaluations of data and related reports, technical reports, and conclusions relative to site characterization of the Yucca Mountain Mined Geologic Disposal System as assigned by DOE;
- b. Performance of technical and scientific studies in support of the site characterization programs as assigned by DOE;
- c. Preparation of technical requirements documents for structures, systems, components and site characterization as assigned by DOE; and
- d. Development of engineering plans and procedures as assigned by DOE.

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1.2.5 APM, Regulatory Interactions and Training

The APM Regulatory Interactions and Training reports directly to the Manager, SCTS. Reporting to this individual for participant site characterization activities are managers for the following departments:

1.2.5.1 Regulatory Interactions Department

The Regulatory Interactions Department has responsibility for the following:

- a. Performing evaluations of site data and related reports as assigned by DOE;
- b. Preparing technical reports as assigned by DOE; and
- c. Developing conclusions relative to regulatory and licensing requirements of the Yucca Mountain Mined Geologic Disposal System, as assigned by DOE.

1.2.5.2 Training Department

The Training Department is responsible for providing training support to T&MSS as requested.

1.2.6 T&MSS Safety and Health Manager

The Manager, T&MSS Safety and Health reports directly to the Manager, SCTS. This person is responsible for the following:

- a. Developing programs to ensure compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, Department of Energy (DOE) orders, Project Office plans and procedures; and the SAIC Corp. Environmental Compliance Safety & Health Programs.
- b. Conducting inspections and abatement of identified safety and health deficiencies, and T&MSS record keeping and reporting; and
- c. Reviewing and documenting, as required, unplanned non-radiological events that have potential for safety or health impact.

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1.3 APM, Environmental and Regional Programs

The APM, Environmental and Regional Programs reports directly to the Project Manager. Reporting to this individual are managers of the following departments:

1.3.1 Regional Studies Department

The Regional Studies Department is responsible for:

- a. Assessing the socioeconomic structure of the region and communities;
- b. Identifying potential socioeconomic effects related to the YMP and transportation.
- c. Developing strategies to mitigate adverse socioeconomic impacts;
- d. Supporting implementation of the Payments-Equal-to-taxes program and financial assistance programs; and
- e. Assessing regional population density and distribution, agricultural characteristics, and cultural characteristics.
- f. Coordinating and supporting public interaction involving transportation issues.
- g. Coordination between the Project and the State universities regarding grants.

1.3.2 Radiological and Environmental Field Programs Department

The responsibilities of the Radiological and Environmental Field Programs Department include the following:

- a. Program planning, coordination, and implementation;
- b. Operation, calibration and maintenance of radiological, meteorological and air quality field monitoring equipment;
- c. Data collection, analysis and reporting;
- d. Radiological analysis;
- e. Radiological protection (safety);

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- f. Radiological and environmental engineering requirements, implementation and support; and
- g. Site reclamation planning and coordination.

1.3.3 Environmental Compliance and Permitting Department

The Environmental Compliance and Permitting Department has responsibility for supporting the T&MSS organization with regulatory surveillance assistance to ensure compliance with federal, state, and local environmental and land access requirements, as they apply to T&MSS activities.

1.4 APM, Information and Resource Management

The APM, Information and Resource Management reports directly to the T&MSS Project Manager. Reporting to this individual for participant site characterization activities are managers for the following departments:

1.4.1 Records Management Department

The Records Management Department's responsibilities include the following:

- a. Operation of the YMPO Document Control Center; and
- b. Operation of the YMPO Central Records Facility (CRF).

1.4.2 Information Systems Department

The Information Systems Department's responsibilities include the following:

- a. Computer software development and maintenance;
- b. Computer software life cycle planning;
- c. Computer software documentation;
- d. Computer software verification and validation;
- e. Computer software configuration management;
- f. Computer software qualification and acquisition; and
- g. Computer software access and use.

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1.4.3 Personnel and Contract Support Department

The Personnel and Contract Support Department's responsibilities include the following:

- a. Procurement of items and services;
- b. Verifying the education and experience of T&MSS personnel; and
- c. Contracts administration.

1.5 T&MSS Quality Assurance Manager

The T&MSS quality assurance responsibilities are executed through the T&MSS Quality Assurance (QA) Manager. The T&MSS Manager reports directly to the T&MSS Project Manager and has a specific interface responsibilities with the YMPO QA organization. This individual shall have unencumbered access to higher levels of management on quality issues. The T&MSS QA Manager is at the same or higher organizational level as the highest line manager responsible for quality-related activities. The reporting relationship of the T&MSS QA Manager is illustrated in Exhibits 1 and 8. This individual shall have knowledge and experience in the areas of quality assurance and management. This position has the appropriate organizational position, responsibilities and authority to exercise proper control over the T&MSS QA program. The QA organization is involved in all portions of the T&MSS participant programs that affect safety and waste isolation. Controls include complete responsibility and authority for the following:

- a. Identify quality problems;
- b. Initiate, recommend or provide solutions to these problems;
- c. Verify implementation of solutions;
- d. Exercise stop work authority through established channels as required.
- e. Assure control of processing, delivery, installation or operation until proper disposition of a condition adverse to quality has been achieved;
- f. Direct and manage the T&MSS QA program;
- g. Review, approve, and issue the QAPD including revisions, and review and approval of the associated implementing procedures.

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- h. Verify the adequacy and effectiveness of the implementation of quality assurance requirements by conducting audits, surveillances, reviews, and performing trend analyses;
- i. Coordinate T&MSS QA activities;
- j. Initiate, review, verify, and approve those documents used to identify QA program deficiencies; and
- k. Indoctrinate and train the QA staff.

1.6 Independence of the QA Organization

The QA organization shall have sufficient authority, organizational freedom, independence from cost and schedule (regarding quality issues) and access to work areas to carry out the duties and responsibilities previously described. The organizational independence of the T&MSS QA organization is illustrated in Exhibits 1 and 8.

1.7 DOE Contracted Support Organizations

Selected DOE contracted support organizations, at the direction of the DOE, may perform their work scope activities under the provisions of the T&MSS QA program. Under such an arrangement those organizations receive functional direction from T&MSS management and administrative direction from DOE. Organizational relationships between T&MSS, DOE and DOE contracted support organizations are illustrated in Exhibit 9. For example, Desert Research Institute (DRI) conducts paleoclimatology activities under the T&MSS QA program.

1.8 Interfaces

Interfaces between T&MSS, the YMPO and other participants shall be described in procedures, plans, or instructions as appropriate.

1.9 Delegation of Work

The T&MSS organization may delegate work under the T&MSS QA program to others as directed by OCRWM, but shall retain the responsibility for that work. If work is delegated, the work and associated QA Program requirements shall be described and documented. T&MSS shall be responsible for evaluating any delegated work by audits and surveillances.

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1.10 Resolution of Disputes

T&MSS shall identify in procedures the methodology for elevating disputes regarding differences of opinion involving quality issues at any given organizational level where such disputes cannot be resolved at the work level.

1.11 Quality Concerns

Allegations of inadequate quality shall be resolved in accordance with procedures established by the YMPO.

1.12 Stop Work Orders

The T&MSS organization shall identify procedures for issuing and lifting Stop Work Orders. Provisions shall include the following:

- a. Criteria and methodology for stopping work and for lifting Stop Work Orders.
- b. Exact definition of work being stopped; and
- c. Authorities and responsibilities.

The T&MSS QA organization has the authority to issue a Stop Work Order to line management.

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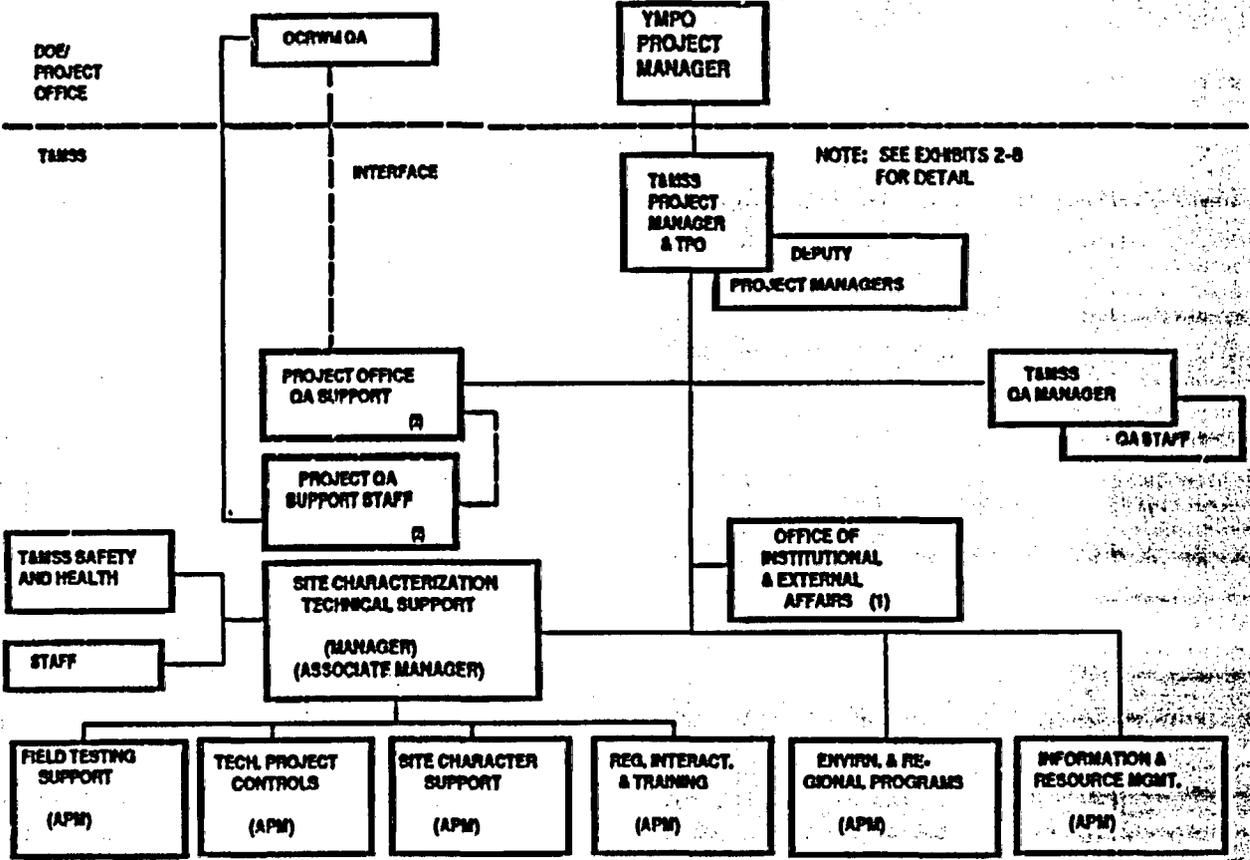
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**EXHIBIT 1
 T&MSS ORGANIZATION**



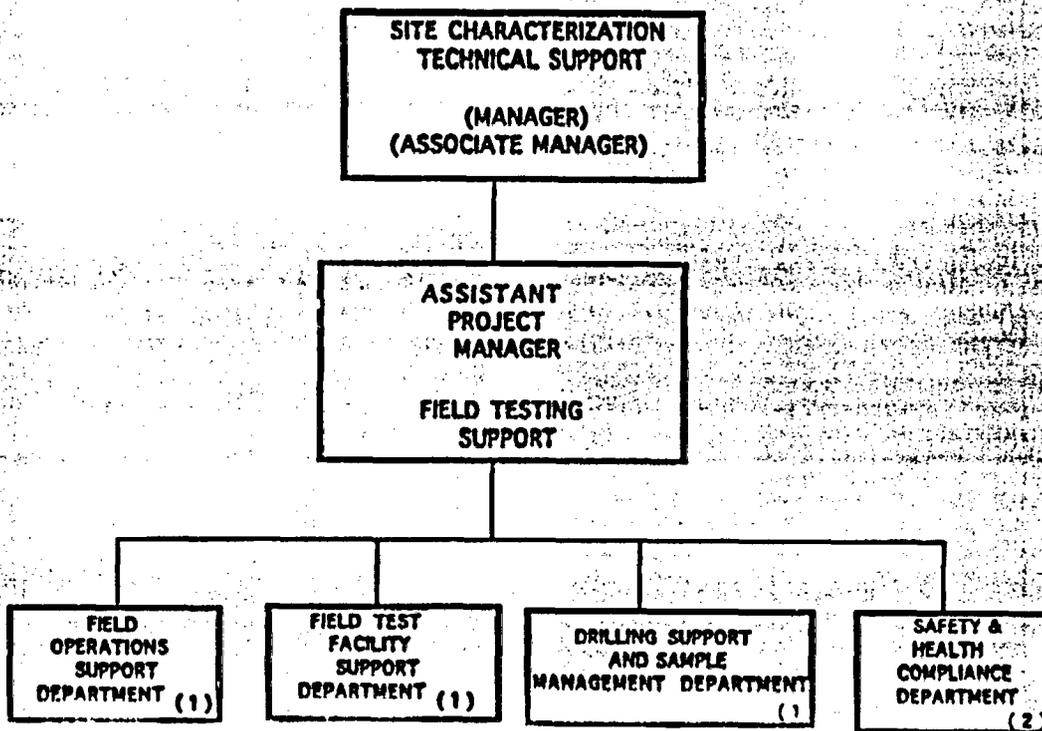
NOTE: SEE EXHIBITS 2-8 FOR DETAIL

NOTES
 (1) NO QUALITY AFFECTING ACTIVITIES PERFORMED BY THIS DEPARTMENT
 (2) ALL QUALITY AFFECTING ACTIVITIES PERFORMED UNDER OCRM QA PROGRAM

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EXHIBIT 2 ORGANIZATION FOR FIELD TESTING SUPPORT



NOTE:

- (1) ALL QUALITY AFFECTING ACTIVITIES PERFORMED UNDER THE OCRWM QA PROGRAM.
- (2) NO QUALITY AFFECTING ACTIVITIES PERFORMED BY THIS DEPARTMENT

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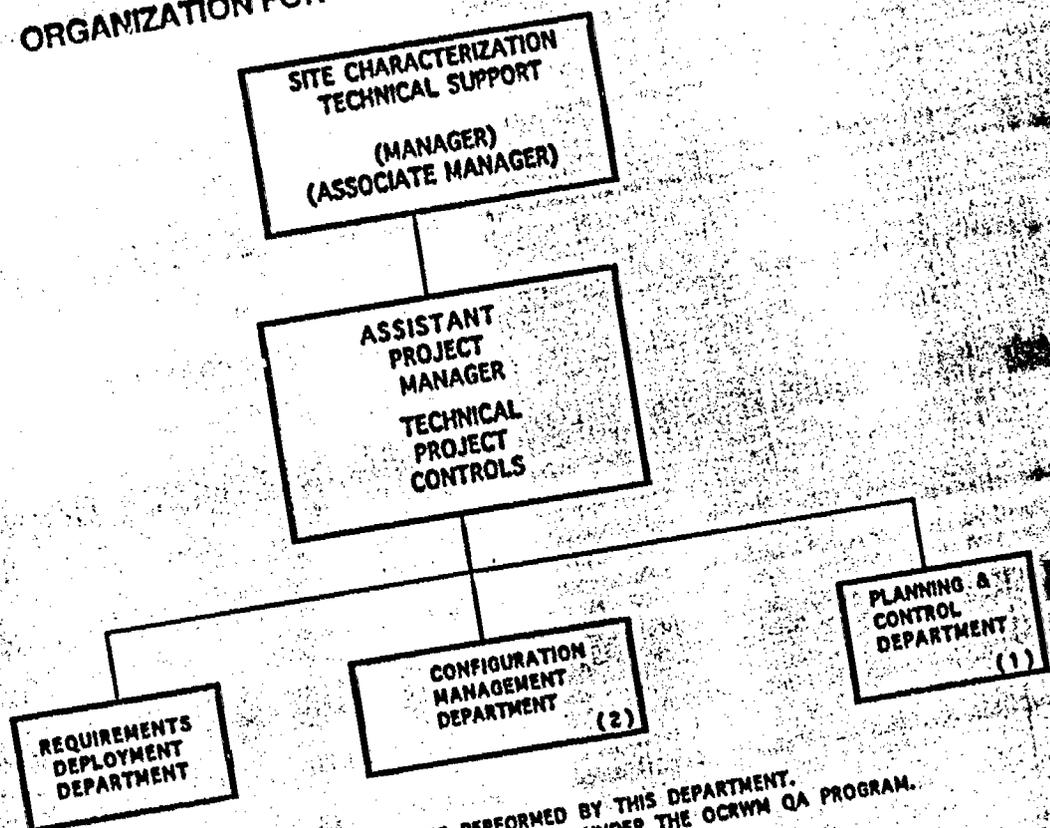
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EXHIBIT 3 ORGANIZATION FOR TECHNICAL PROJECT CONTROLS



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NOTE:
 (1) NO QUALITY AFFECTING ACTIVITIES PERFORMED BY THIS DEPARTMENT.
 (2) ALL QUALITY AFFECTING ACTIVITIES PERFORMED UNDER THE OCRWM QA PROGRAM.

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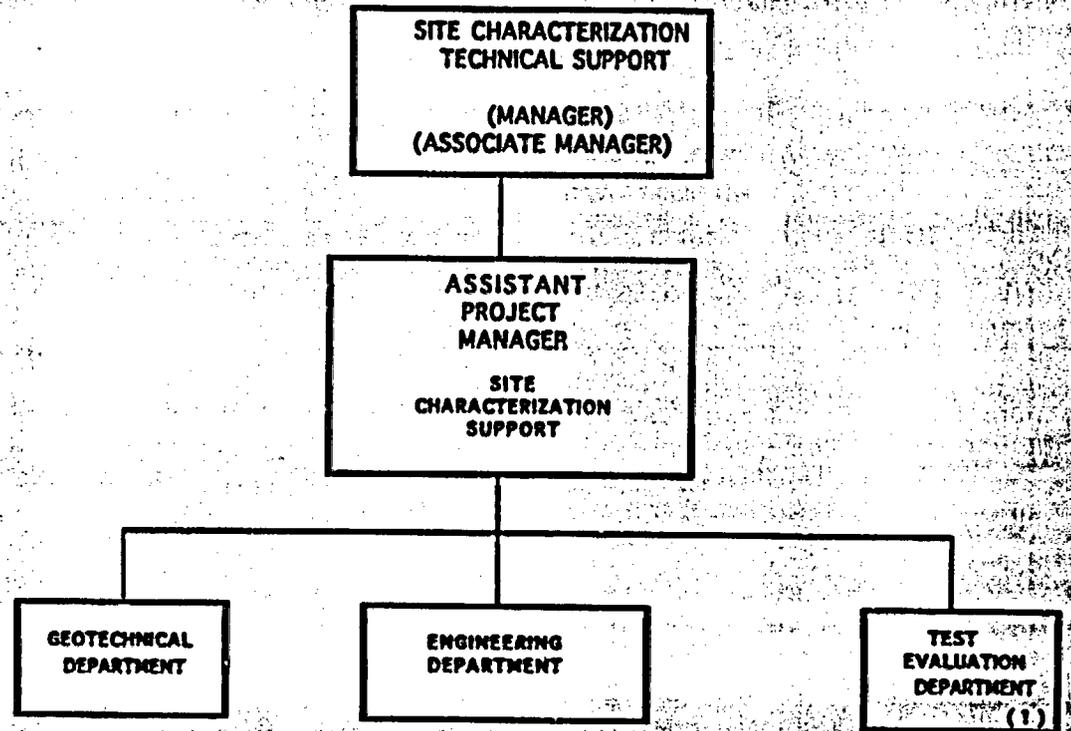
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EXHIBIT 4 ORGANIZATION FOR SITE CHARACTERIZATION SUPPORT



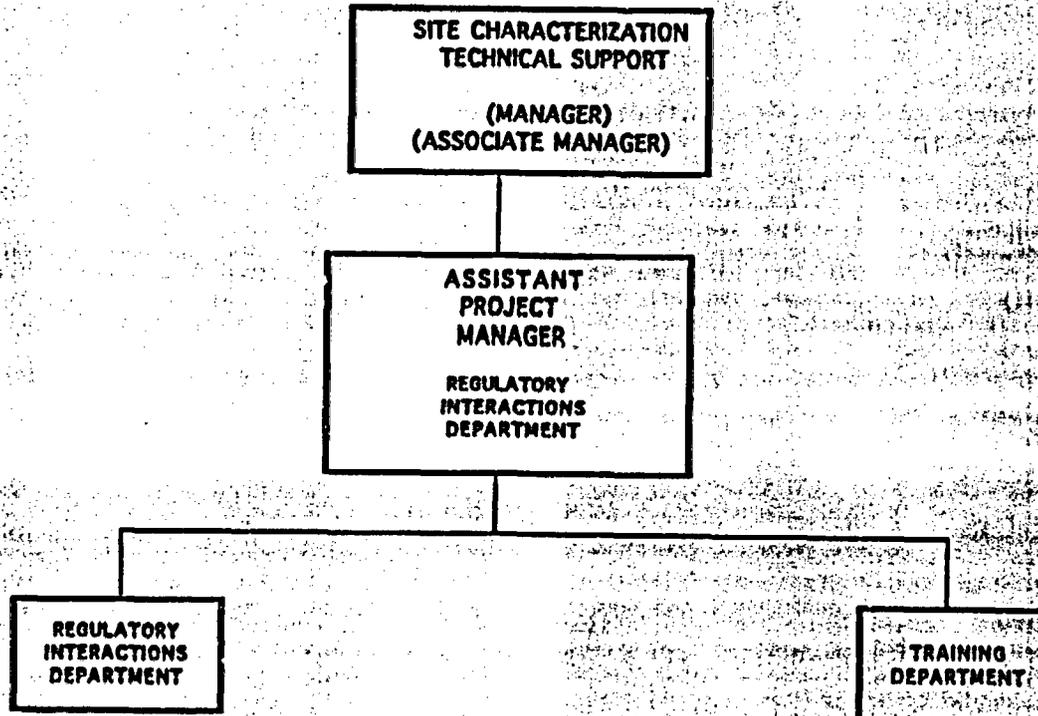
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EXHIBIT 5

ORGANIZATION FOR REGULATORY INTERACTIONS AND TRAINING

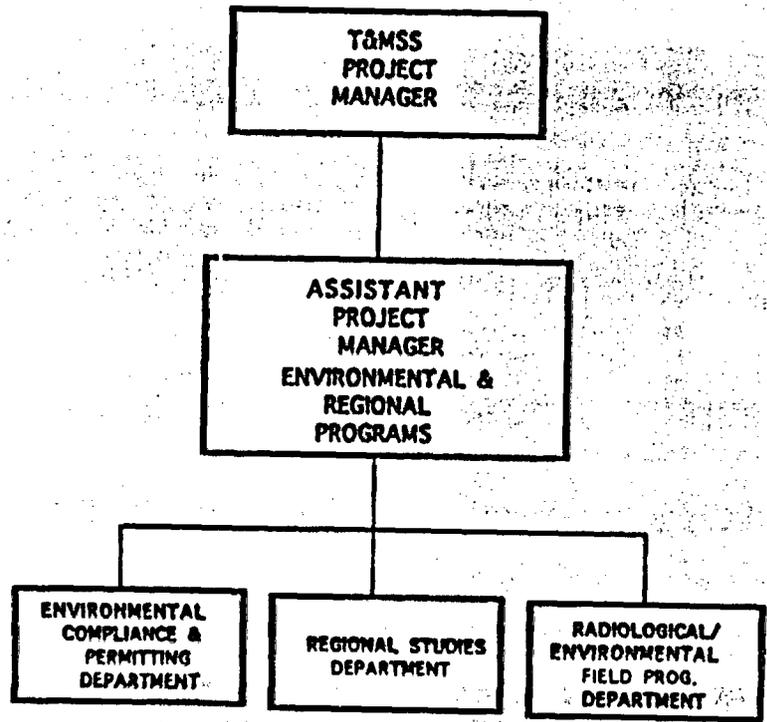


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EXHIBIT 6 T&MSS ORGANIZATION



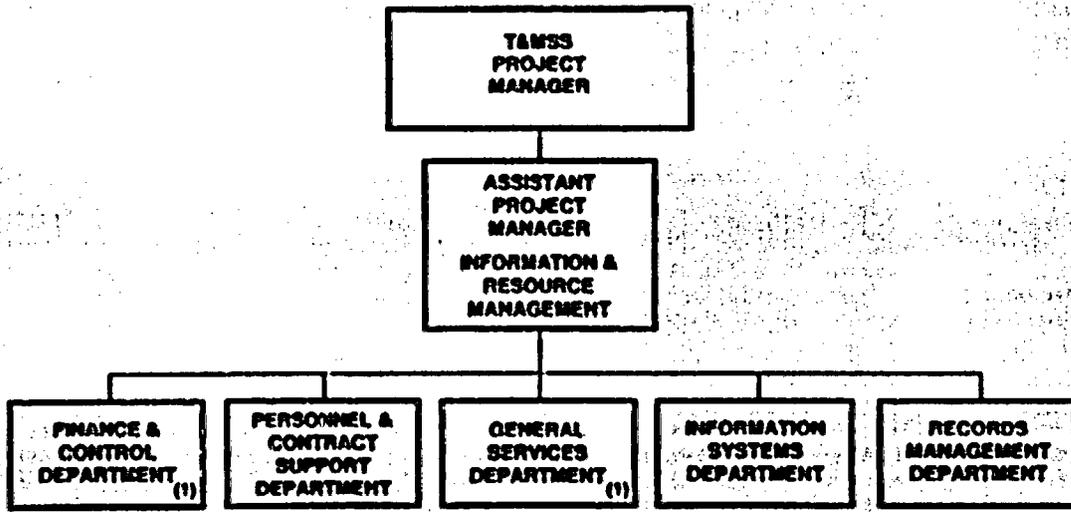
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EXHIBIT 7 ORGANIZATION FOR INFORMATION AND RESOURCE MANAGEMENT

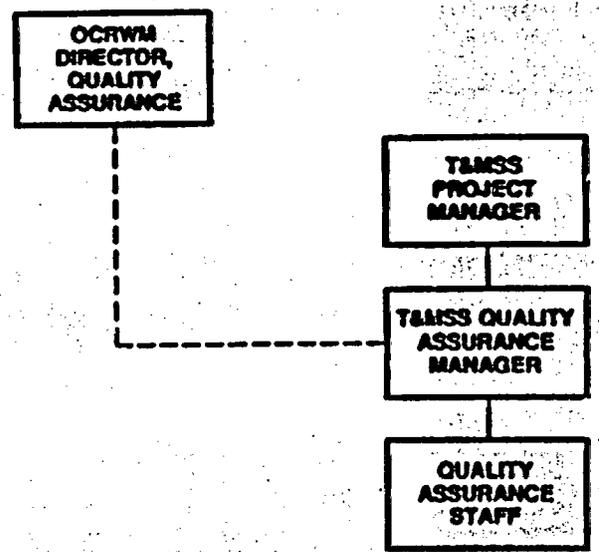


NOTE:
(1) NO QUALITY AFFECTING ACTIVITIES PERFORMED BY THIS DEPARTMENT.

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EXHIBIT 8 REPORTING RELATIONSHIPS FOR T&MSS QUALITY ASSURANCE MANAGER



--- ACCESS TO OCRWM QA MANAGEMENT ON QUALITY ISSUES

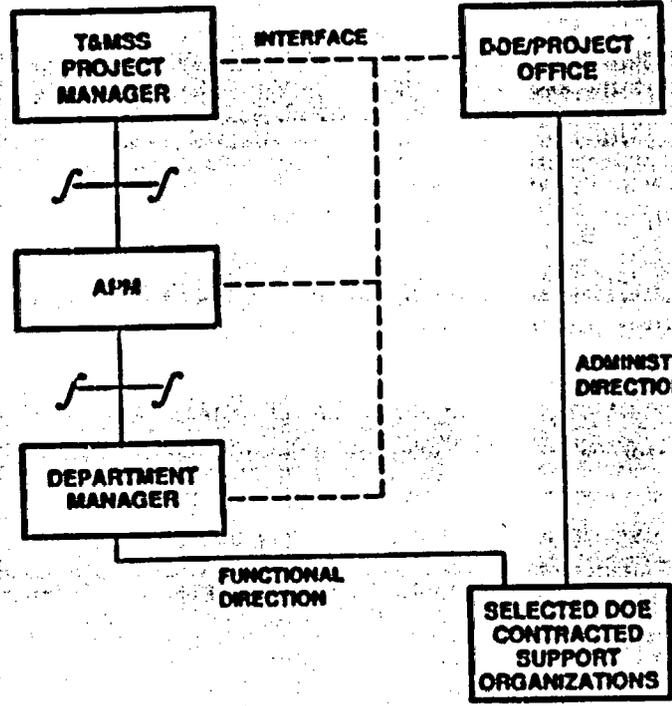
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EXHIBIT 9

T&MSS INTERFACE WITH SELECTED DOE SUPPORT ORGANIZATIONS



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17.0 QUALITY ASSURANCE RECORDS

T&MSS shall generate QA records to furnish evidence of activities affecting quality. The following provisions apply to T&MSS and shall be reflected in procedures and instructions.

17.1 Generation of Records

T&MSS procedures and instructions, scientific investigation plans, procurement documents, and other quality-related documents shall identify the quality records to be generated, supplied, or maintained. QA records include: scientific, engineering, and operational data and logs; Geotechnical data; results of review; inspection; test; audits and material analysis; monitoring of work performance; qualification of personnel, procedures, and equipment; and other documentation such as drawings, specifications; procurement documents, calibration procedures and reports; design review reports; peer review reports; nonconformance reports; and corrective action reports. QA records shall be legible, identifiable, accurate, retrievable, and completed appropriately for the work or activity.

17.2 Records Validation

T&MSS documents that furnish documentary evidence of quality become a valid QA record only if stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated in accordance with approved procedures or instructions. Authentication may take the form of a statement by the responsible individual or organization. Originals or copies may be furnished as records.

17.3 Identification and Distribution

T&MSS QA records shall be identified so as to provide sufficient information to permit identification between the record and the item(s) or activity(ies) to which it applies. Procedures and instructions shall control in-process records and provide for the timely submittal of complete records into the records system. T&MSS records shall be transmitted to the Las Vegas LRC (LV LRC) for subsequent processing and storage in accordance with procedures.

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17.4 Records Correction

Provisions for correcting records (and documents that will become records) shall ensure that corrected records are reviewed and approved by the originating organization. Such corrections shall include the date and the identification of the person making the correction. Previous information shall not be obliterated by the correction. Provisions shall be established for supplementing or amending records. Controls shall be established for transcribing and authenticating illegible or un-reproducible data or documents.

17.5 Protection of Records

Procedures shall provide for the temporary storage of records by responsible T&MSS management until such time that they are submitted to the Las Vegas LRC. T&MSS shall store records in dual facilities or in a one-hour fire rated container. Where dual facilities are used, such facilities are located sufficiently remote from each other to eliminate the chance of exposure to a simultaneous hazard. Measures shall preclude the access of unauthorized personnel and shall implement OCRWM preservation requirements.

17.6 Central Records Facility

17.6.1 The CRF shall be established and maintained by T&MSS in accordance with the OCRWM QARD.

17.6.2 The CRF shall receive and process records in accordance with written procedures.

17.6.3 Indexing of all project records shall be done in accordance with procedures or instructions that are consistent with OCRWM direction and instructions. Procedures and instructions shall define a receipt control system which will permit a current and accurate assessment of the status of records during the receiving process.

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17.6.4 Records received by the CRF shall be stored in accordance with procedures and instructions. The procedures and instructions shall include the following, as a minimum:

- a. description of the storage facility;
- b. filing system to be used;
- c. method for verifying records received are in agreement with the transmittal and the records are legible;
- d. a method for verifying the records received are those designated as required records;
- e. rules governing access to and control of the records files;
- f. a method for maintaining control and accountability of records removed from the storage facility;
- g. a method for filing supplemental information and disposing of superseded records.

17.6.5 The CRF storage system shall provide for retrieval of information in accordance with planned retrieval times based upon the record type. A list shall be maintained designating those personnel who shall have access to the files.

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