

**PRESENTATION TO THE
NUCLEAR WASTE TECHNICAL REVIEW BOARD**

**Status and Implementation of
Nuclear Waste Management System
Programmatic Functional Analysis**



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PROGRAMMATIC FUNCTIONAL ANALYSIS

OCRWM Commitment to Systems Engineering

"Programmatic functions are required to bring into being the Physical elements, subsystems, and components of an operational system... reflect [ing] the unique requirements of the program".

"[OCRWM] will conduct a functional analysis to identify all programmatic functions and subfunctions, and the dependencies among them".

Management System Improvement Strategy, 1990

**Management System
Improvement Strategy**

Physical System
Functions

**Programmatic
Functions**

**System
Configuration**

System
Engineering
Design
Characterize
Sites
Evaluate
System
Confirmatory
Testing

**System
Implementation**

Construct NWMS
Operate NWMS
Decommission

**External
Interactions**

Regulatory
Compliance
External
Relations
International
Programs

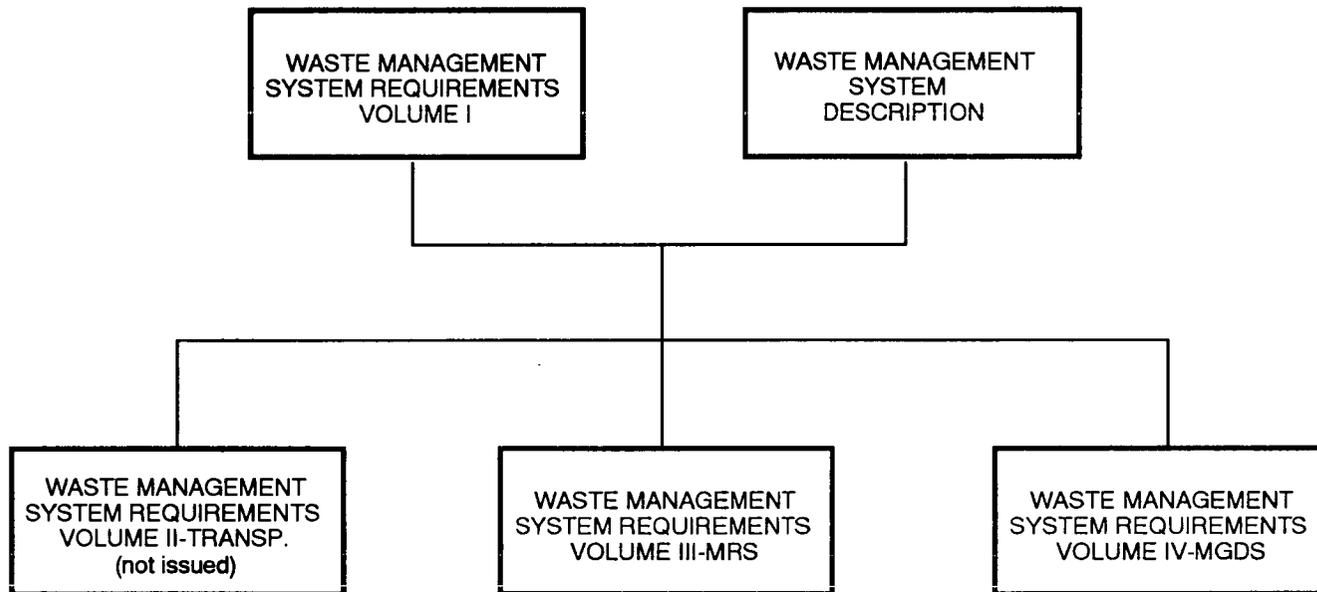
**Management
Support**

Strategic
Planning
Contract
Management
Administrative
Services
Program Control
Quality
Assurance

PROGRAMMATIC FUNCTIONAL ANALYSIS

Conducted to Date

- **"Provide Systems Engineering"**
- **"Design Engineered System"**
- **"Identify and Characterize Sites"**
- **"Evaluate Integrated System"**
- **"Provide Confirmation and Operations Testing"**
- **"Ensure Regulatory Compliance"**
- **"Provide Program Control"**



Current Program Technical Baseline

FUNCTION DEFINITION

Physical System Functions

Pertain to the physical elements of the Nuclear Waste Management System which satisfy the waste management and disposal mission

Programmatic Functions

Pertain to OCRWM activities in order to bring the Nuclear Waste Management System into being

REQUIREMENT ALLOCATION

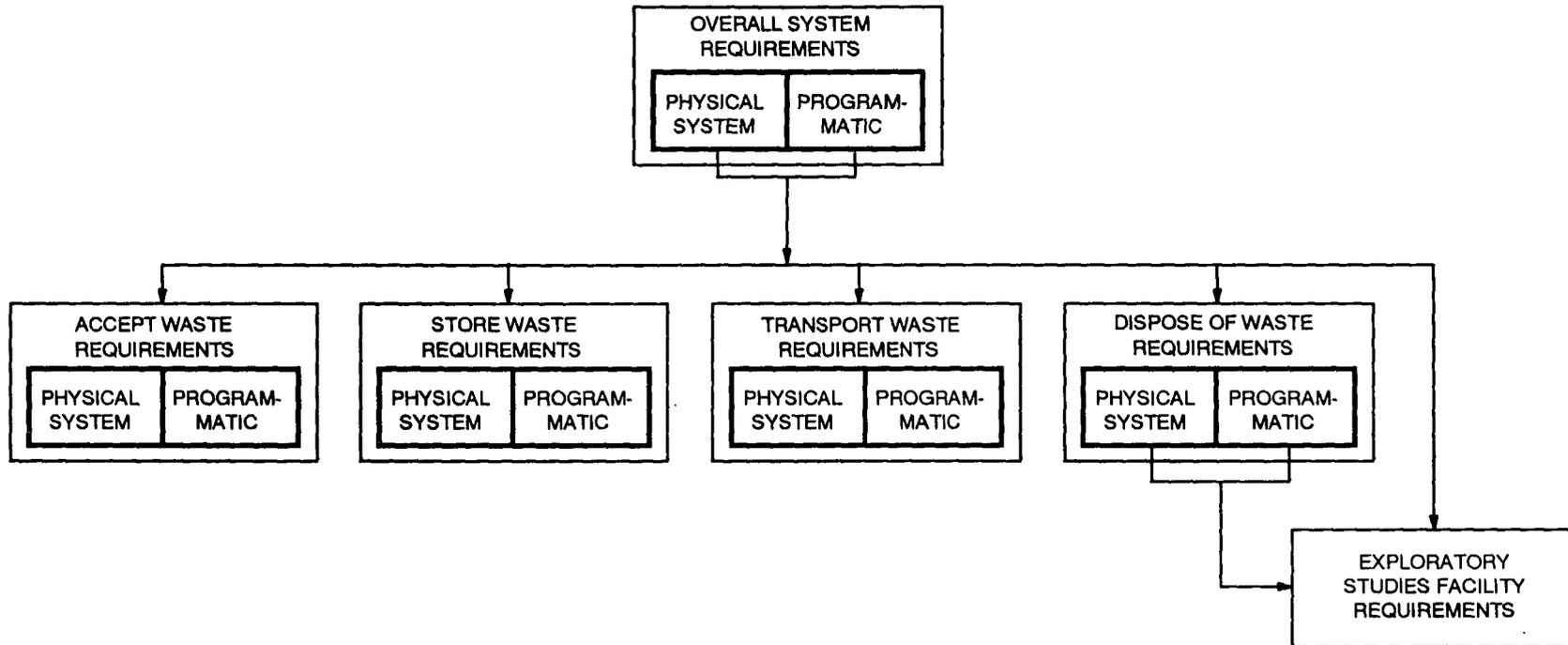
Physical System or Programmatic?

Physical System Requirements

Requirements pertaining to the operation and decommissioning of an item, structure, component, or used in the management of nuclear waste or its their interfaces.

Programmatic Requirements

Requirements on activities performed to develop, acquire, coordinate, or construct the physical system elements.



Interim Requirements Document Hierarchy

OCRWM PROGRAMMATIC REQUIREMENTS DOCUMENTS

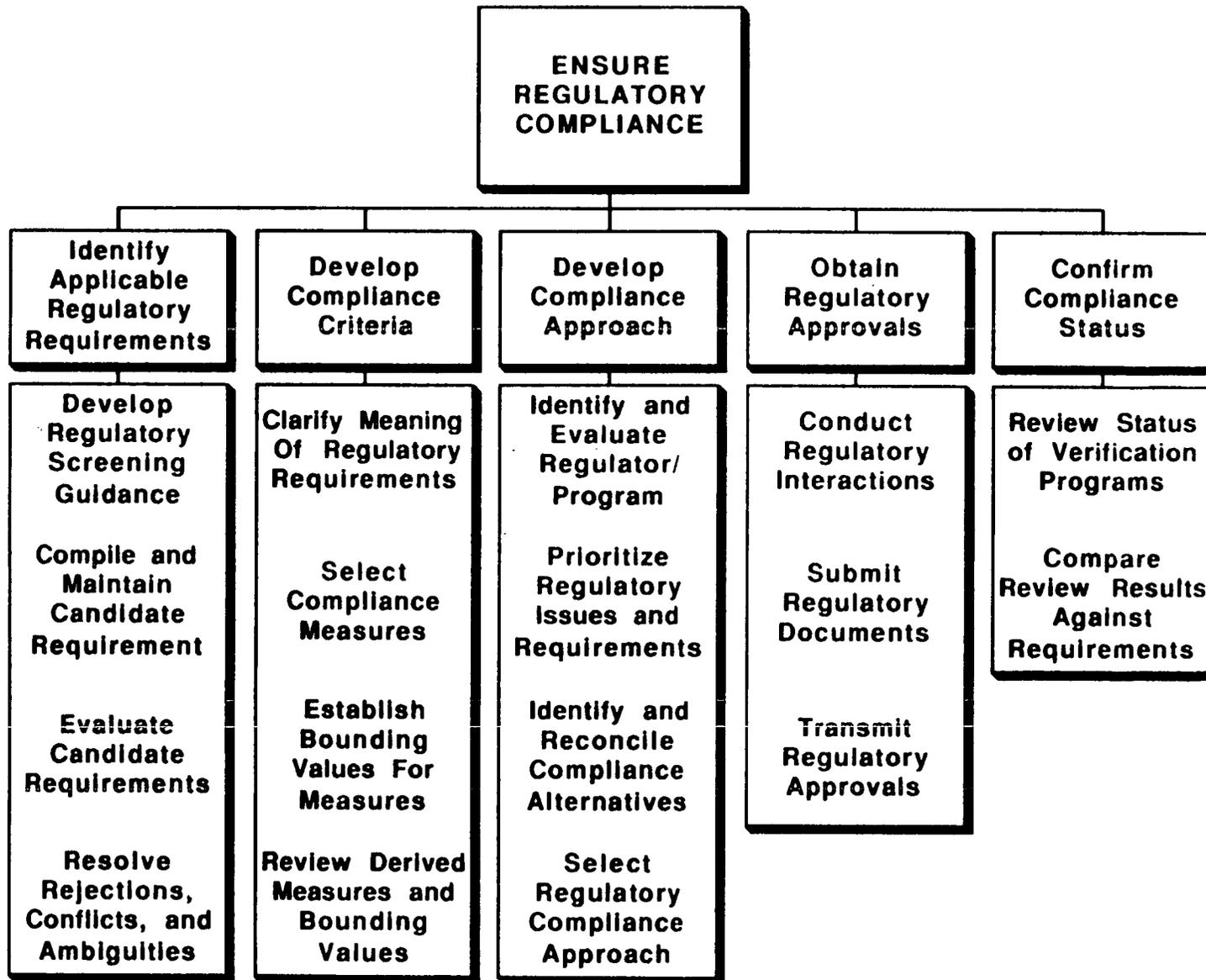
Purpose:

- **The Programmatic Requirements Documents complement the Physical System Requirements**
- **Allocate programmatic requirements to the 16 top-level programmatic functions**
- **Allow for transition from current technical baseline to System Requirements baseline**
- **Identify specific requirements text applicable to OCRWM programmatic functions**

OCRWM PROGRAMMATIC REQUIREMENTS DOCUMENTS

Status:

- **Programmatic Requirements Documents issued for Technical Document Review on August 26**
- **Over 5000 programmatic requirements from over 200 source documents are allocated to the 16 top-level programmatic functions**
- **Issued consistent with physical system functions**
i.e. Overall System volume
Accept Waste volume
Transport Waste volume
Store Waste volume
Dispose of Waste volume



Sample Function Hierarchy

OCRWM PROGRAMMATIC FUNCTIONAL ANALYSIS

Evaluation of Results

The functional process flows are evaluated to:

- Analyze process flows using dynamic modeling**
- Compare to existing program processes**
- Make and document improvements**

All technical documents are reviewed under QA procedures for documents review

All program documents are approved by Program Change Control Board

PROGRAMMATIC FUNCTIONAL ANALYSIS

Next Steps

Following completion of the remaining programmatic functional analyses:

OCRWM will refine allocation of requirements to physical system and programmatic functions

Programmatic requirements will be further allocated to lowest-level programmatic functions

Programmatic functions process flows will be developed for all functions which:

- Define programmatic functions at all levels**
- Establish functional hierarchies**
- Provide information flows and dependencies**
- Allocate requirements to all functions**

PROGRAMMATIC FUNCTIONAL ANALYSIS

Next Steps (Continued)

Programmatic functions and requirements will be documented through OCRWM Program Policies, Plans, and Procedures

The Program Policies, Plans, and Procedures are established or referenced in the Program Management System Manual (PMS)

In addition the PMS identifies:

- Organizational responsibilities for performing program functions**
- Document preparation and review requirements**
- Programmatic functional interfaces**

OCRWM PROGRAMMATIC FUNCTIONAL ANALYSIS

Plans for Fiscal Year 1992

- **Complete Functional Analysis Workshops for remaining programmatic functions**
- **Complete documentation of Integrated Functional Analysis**
- **Incorporate analysis results into program documents**