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WBS DICTIONARY AND NNWSI PROJECT MILESTONE LISTING

In response to your request we are transmitting, with this letter, a copy of the draft WBS Dictionary (dated May 20, 1985) and a listing of milestones through FY 86.

In the case of the WBS Dictionary, please note that it is in draft form and will not be finalized ("baselined") until after the June PM-TPO meeting. Project participants are currently reviewing the draft, and the actual date for issuing a final document cannot be accurately estimated until we have had an opportunity to evaluate comments resulting from the review. Until the baselined dictionary is available we request that you treat the attached draft as preliminary and subject to revision.

The enclosed milestone listing reflects our current plans through FY 86. Future milestones will, of course, be based on issues and information needs outlined in the SCP, and the comments received on the SCP as a result of the review process. Provision of a milestone list covering the period beyond SCP submittal is, therefore, inappropriate at this time.

We hope the enclosed information satisfies your immediate needs. Please contact J. S. Szymanski of my office if you have any questions.

*Donald L. Vieth*  
Donald L. Vieth, Director  
Waste Management Project Office

WMPO:JSS-1082

Enclosures:

- 1. Draft WBS Dictionary (Dated May 20, 1985)
- 2. Milestones through FY 86

cc w/o encls:  
V. J. Cassella, DOE/HQ (RW-22), FORSTL  
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102/85/23

*see ltr to Preskhala  
from Viethe 6/24/85  
102*

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- 2.1 SYSTEMS
  - 2.1.1.S Systems Management and Integration
  - 2.1.2 Systems Engineering
    - 2.1.2.1.S System Description
    - 2.1.2.2.S System Studies
    - 2.1.2.3.S Cost Schedule
  - 2.1.3 Technical Data Base Management
    - 2.1.3.1.S Tuff Data Base
    - 2.1.3.2.S Computer Graphics
  - 2.1.4 Total Systems Performance Assessment
    - 2.1.4.1.S Flow & RN Transport
    - 2.1.4.2.S RN Source Term
    - 2.1.4.3.S Development & Certification of Computer Codes
    - 2.1.4.4.S RN Releases From Total System
- 2.2 WASTE PACKAGE
  - 2.2.1.L Waste Package Management and Integration
  - 2.2.2.L Package Environment
  - 2.2.3 Waste Form & Materials Testing
    - 2.2.3.1.L Waste Form Testing
    - 2.2.3.2.L Metal Barrier Testing
    - 2.2.3.3.L Other Materials
  - 2.2.4.L Design, Fabricate, and Prototype Testing
  - 2.2.5.L Performance Assessment
- 2.3 SITE INVESTIGATIONS
  - 2.3.1 Management & Integration
    - 2.3.1.A LANL
    - 2.3.1.G USGS
    - 2.3.1.S SNL
    - 2.3.1.T SAIC
  - 2.3.2 Geology

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- 2.3.2.1            Geologic Investigations
  - 2.3.2.1.1            Site Geology
    - 2.3.2.1.1.G            USGS
    - 2.3.2.1.1.S            SNL
  - 2.3.2.1.2.G            Topographic Analysis
- 2.3.2.2            Geophysical Investigations
  - 2.3.2.2.1.G            Gravity and Magnetics
  - 2.3.2.2.2.G            Seismic Investigations
  - 2.3.2.2.3.G            Rock Properties
  - 2.3.2.2.4.G            Heat Flow
- 2.3.2.3            Site Stability
  - 2.3.2.3.1            Tectonics and Volcanism
    - 2.3.2.3.1.A            LANL
    - 2.3.2.3.1.G            USGS
  - 2.3.2.3.2.G            Isotope Geology
  - 2.3.2.3.3.G            Seismicity & Strain
  - 2.3.2.3.4.S            Weapons-Test Seismicity
- 2.3.3            Hydrology
  - 2.3.3.1.G            Stream Flow
  - 2.3.3.2            Groundwater Flow Analysis
    - 2.3.3.2.B            LBL
    - 2.3.3.2.G            USGS
  - 2.3.3.3.G            Saturated Zone Hydrology
  - 2.3.3.4.G            Unsaturated Zone Hydrology
  - 2.3.3.5            Future Hydrologic Conditions
    - 2.3.3.5.1.G            Future Climates
    - 2.3.3.5.2.G            Future Groundwater
- 2.3.4            Geochemistry

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- 2.3.4.1            Geochemistry
  - 2.3.4.1.1.A        Groundwater Chemistry
  - 2.3.4.1.2.A        Natural Isotope Chemistry
  - 2.3.4.1.3.A        Hydrothermal Geochemistry
  - 2.3.4.1.4.A        Solubility Determination
  - 2.3.4.1.5.A        Sorption & Precipitation
  - 2.3.4.1.6.A        Dynamic Transport Process
  - 2.3.4.1.7.A        Retardation Sensitivity Analysis
  - 2.3.4.1.8.A        Applied Diffusion
  
- 2.3.4.2.A        Mineralogy & Petrology
  
- 2.3.5            Drilling
  - 2.3.5.1            Core Library
    - 2.3.5.1.A        LANL
    - 2.3.5.1.F        F & S
    - 2.3.5.1.G        USGS
    - 2.3.5.1.R        REECo
  
  - 2.3.5.2            Drilling, Construction, Engineering
    - 2.3.5.2.A        LANL
    - 2.3.5.2.F        F & S
    - 2.3.5.2.G        USGS
    - 2.3.5.2.H        H & N
    - 2.3.5.2.R        REECo
  
  - 2.3.5.3.F        Field Geology/Hydrology
  - 2.3.5.4.P        Site Photography (PAN AM)
  
- 2.3.6            Environment
  - 2.3.6.1            Environmental Surveys
    - 2.3.6.1.E        Ecology
    - 2.3.6.1.R        Environmental Monitoring
    - 2.3.6.1.S        Site Monitoring
    - 2.3.6.1.T        Environmental Monitoring
    - 2.3.6.1.U        Archaeology
  
  - 2.3.6.2.T        Transportation

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2.3.7.T Socioeconomic  
2.3.8 Performance Assessment

2.3.8.L Geochemical Modeling Code EQ3/6

2.3.9 Deferred Site Close Out

2.4 REPOSITORY INVESTIGATIONS

2.4.1.S Management and Integration  
2.4.2 Development and Testing

2.4.2.1 Rock Mechanics

2.4.2.1.1.S Rock Mass Analysis  
2.4.2.1.2.S Field Testing  
2.4.2.1.3 Laboratory Properties

2.4.2.1.3.A LANL  
2.4.2.1.3.S SNL

2.4.2.1.4.S Water Migration Analysis

2.4.2.2 Equipment & Instrumentation Development

2.4.2.2.1.S Equipment Engineering

2.4.2.3 Sealing

2.4.2.3.1.S Seal Performance Requirements  
2.4.2.3.2 Seal Materials Evaluation

2.4.2.3.2.A LANL  
2.4.2.3.2.S SNL

2.4.2.3.3.S Seal Concept Development

2.4.3 Facilities

2.4.3.1.S Site Preparation  
2.4.3.2.S Surface Facilities  
2.4.3.3.S Shafts/Ramps

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2.4.3.4.S	Underground Excavations
2.4.3.5.S	Underground Service Systems
2.4.4.S	Operations and Maintenance
2.4.5.S	Decommissioning
2.4.6	Repository Performance Assessment
2.4.6.1.S	Performance Code Dev. & Certif.
2.4.6.2.S	Design Analysis
2.4.6.3.S	Preclosure Safety Analysis
2.4.6.4.S	Performance Confirmation

2.5 REGULATORY AND INSTITUTIONAL INVESTIGATIONS

2.5.1 Management and Integration

2.5.1.A	LANL
2.5.1.G	USGS
2.5.1.S	SNL
2.5.1.T	SAIC

2.5.2 Licensing

2.5.2.1 Regulatory Interactions

2.5.2.1.A	LANL
2.5.2.1.G	USGS
2.5.2.1.L	LLNL
2.5.2.1.S	SNL
2.5.2.1.T	SAIC

2.5.2.2 Site Characterization Plan

2.5.2.2.A	LANL
2.5.2.2.G	USGS
2.5.2.2.L	LLNL
2.5.2.2.S	SNL
2.5.2.2.T	SAIC

2.5.2.3	Construction Authorization Application
2.5.2.4	Preliminary Safety Analysis Report

2.5.3 Environmental Compliance

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- 2.5.3.1                    Environmental Assessment
  - 2.5.3.1.A                LANL
  - 2.5.3.1.G                USGS
  - 2.5.3.1.L                LLNL
  - 2.5.3.1.S                SNL
  - 2.5.3.1.T                SAIC
  
- 2.5.3.2                    Environmental Impact Statement
- 2.5.3.3.T                Environmental Regulatory Interactions
  
- 2.5.4                     Communication and Liason
  - 2.5.4.1                   Institutional Studies
    - 2.5.4.1.S                SNL
    - 2.5.4.1.T                SAIC
  
- 2.5.5                     Technology and Financial Assistance
  
- 2.6                        EXPLORATORY SHAFT INVESTIGATIONS
  - 2.6.0                     Decommissioning
  - 2.6.1                     Management and Integration
    - 2.6.1.1                  Exploratory Shaft Management, Planning and Design Review
      - 2.6.1.1.A                LANL
      - 2.6.1.1.F                F&S
      - 2.6.1.1.G                USGS
      - 2.6.1.1.H                H&N
      - 2.6.1.1.L                LLNL
      - 2.6.1.1.R                REECO
      - 2.6.1.1.S                SNL
  
    - 2.6.1.2                  Safety & Quality Assurance
      - 2.6.1.2.A                LANL
      - 2.6.1.2.F                F&S
      - 2.6.1.2.G                USGS
      - 2.6.1.2.H                H&N

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2.6.1.2.L	LLNL
2.6.1.2.R	REECo
2.6.1.2.S	SNL
2.6.1.2.T	SAIC
2.6.2	Site Preparation
2.6.2.1	Site & Roads
2.6.2.1.H	H&N
2.6.2.1.R	REECo
2.6.2.2	Utilities & Communications Systems
2.6.2.2.H	H&N
2.6.2.2.R	REECo
2.6.3	Surface Facilities
2.6.3.1	Buildings
2.6.3.1.H	H&N
2.6.3.1.R	REECo
2.6.4	First Shaft
2.6.4.1	Shaft and Liner
2.6.4.1.F	F&S
2.6.4.1.H	H&N
2.6.4.1.R	REECo
2.6.4.2	Hoist and Headframe
2.6.4.2.F	F&S
2.6.4.2.H	H&N
2.6.4.2.R	REECo
2.6.5	Second Shaft
2.6.5.1	Shaft and Liner
2.6.5.1.F	F&S
2.6.5.1.H	H&N



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2.6.5.1.R	REECo
2.6.5.2	Hoist and Headframe
2.6.5.2.F	F&S
2.6.5.2.H	H&N
2.6.5.2.R	REECo
2.6.6	Subsurface Excavations
2.6.6.F	F&S
2.6.6.H	H&N
2.6.6.R	REECo
2.6.7	Underground Service Systems
2.6.7.1	Utilities & Communications
2.6.7.1.F	F&S
2.6.7.1.H	H&N
2.6.7.1.R	REECo
2.6.7.2	Mine Plant
2.6.7.2.F	F&S
2.6.7.2.H	H&N
2.6.7.2.R	REECo
2.6.7.3	Shaft Internals & Conveyances-First Shaft
2.6.7.3.F	F&S
2.6.7.3.H	H&N
2.6.7.3.R	REECo
2.6.7.4	Shaft Internals & Conveyances-Second Shaft
2.6.7.4.F	F&S
2.6.7.4.H	H&N
2.6.7.4.R	REECo
2.6.8	Operations
2.6.8.1.R	Site & Equipment Maintenance
2.6.8.2.R	Project Operations

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2.6.8.3.R	Training
2.6.9	Testing
2.6.9.1	Exploratory Shaft Test Plan
2.6.9.1.A	LANL
2.6.9.1.G	USGS
2.6.9.1.L	LLNL
2.6.9.1.S	SNL
2.6.9.2	Exploratory Shaft Testing
2.6.9.2.1	Geologic Testing
2.6.9.2.1.F	F&S
2.6.9.2.1.G	USGS
2.6.9.2.1.H	H&N
2.6.9.2.1.P	Pan Am
2.6.9.2.1.R	REEC <sub>o</sub>
2.6.9.2.2	Hydrologic Testing
2.6.9.2.2.F	F&S
2.6.9.2.2.G	USGS
2.6.9.2.2.H	H&N
2.6.9.2.2.R	REEC <sub>o</sub>
2.6.9.2.3	Geomechanical Testing
2.6.9.2.3.F	F&S
2.6.9.2.3.G	USGS
2.6.9.2.3.H	H&N
2.6.9.2.3.R	REEC <sub>o</sub>
2.6.9.2.3.S	SNL
2.6.9.2.4	Geochemical Testing
2.6.9.2.4.A	LANL
2.6.9.2.4.F	F&S
2.6.9.2.4.G	USGS
2.6.9.2.4.H	H&N
2.6.9.2.4.R	REEC <sub>o</sub>
2.6.9.2.4.S	SNL

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2.6.9.2.5            Engineered Barrier Design Testing

2.6.9.2.5.F	F&S
2.6.9.2.5.H	H&N
2.6.9.2.5.L	LLNL
2.6.9.2.5.R	REEC <sub>o</sub>

2.6.9.3            Integrated Data System

2.6.9.3.A	LANL
2.6.9.3.H	H&N
2.6.9.3.R	REEC <sub>o</sub>

2.7            TEST FACILITIES

2.7.1            Management & Integration

2.7.1.F	F&S
2.7.1.H	H&N
2.7.1.R	REEC <sub>o</sub>

2.7.2            Testing

2.7.2.1           Climax

2.7.2.1.F	F&S
2.7.2.1.H	H&N
2.7.2.1.L	LLNL
2.7.2.1.R	REEC <sub>o</sub>

2.7.2.2           E-MAD

2.7.2.2.H	H&N
2.7.2.2.R	REEC <sub>o</sub>
2.7.2.2.W	Westinghouse

2.7.2.3           G-Tunnel

2.7.2.3.F	F&S
2.7.2.3.H	H&N
2.7.2.3.R	REEC <sub>o</sub>

2.7.3            New Facility Acquisitions

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2.8 LAND ACQUISITION

2.9 PROJECT MANAGEMENT

2.9.1 Management and Integration

2.9.1.1 Management

2.9.1.1.A	LANL
2.9.1.1.G	USGS
2.9.1.1.I	Security/WSI
2.9.1.1.L	LLNL
2.9.1.1.R	REECo
2.9.1.1.S	SNL
2.9.1.1.T	SAIC

2.9.1.2 Interface Activities

2.9.1.2.A	LANL
2.9.1.2.G	USGS
2.9.1.2.L	LLNL
2.9.1.2.S	SNL
2.9.1.2.T	SAIC

2.9.1.3 Geologic Repository Program Support

2.9.1.3.A	LANL
2.9.1.3.G	USGS
2.9.1.3.L	LLNL
2.9.1.3.S	SNL
2.9.1.3.T	SAIC

2.9.2 Project Control

2.9.2.A	LANL
2.9.2.G	USGS
2.9.2.L	LLNL
2.9.2.S	SNL
2.9.2.T	SAIC

2.9.3 Quality Assurance

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2.9.3.A	LANL
2.9.3.F	F&S
2.9.3.G	USGS
2.9.3.H	H&N
2.9.3.L	LLNL
2.9.3.R	REECo
2.9.3.S	SNL
2.9.3.T	SAIC

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TOTAL WBS ITEMS IN BUDGET TABLE FOR FY-1985: 332