

U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

**NUCLEAR WASTE TECHNICAL REVIEW BOARD  
JOINT PANELS ON HYDROGEOLOGY & GEOCHEMISTRY  
AND STRUCTURAL GEOLOGY & GEOENGINEERING**

**SUBJECT: UNDERGROUND  
TEST COORDINATION**

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**WASHINGTON, D.C.  
NOVEMBER 17-18, 1994**

- **SCP test program was the basis for the Program Approach testing strategy**
- **DOE is in the process of further refining the Program Approach testing strategy**

# Underground Test Coordination

- **Components**
  - **Pre-test Planning**
  - **Test Planning**
  - **Test Implementation**
- **Process**
- **Where & When**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 1. Project management approval of test program component with schedule requirements**
- 2. Preliminary definition of each test component**
- 3. Formal determination of facility design linkages and A/E notification**
- 4a. Review and revision, as necessary, of test program baseline**
- 4b. Initiation of study plan revisions incorporating approved program considerations (study plan approval required prior to field initiation)**
- 5. Revision of ESFDR Appendix B requirements for each test component**
- 6. Conceptual (preliminary) facility design (design package or revision) and procurement initiations or scheduling**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 1. Project management approval of thermal test program component (with schedule requirements)**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 2. Preliminary definition of each test component**
  - Location (rock type, need for replication, orientation)**
  - Configuration (spatial requirements, installation logistics)**
  - Determination of major (high-level) facility requirements (utility estimates, construction/excavation requirements)**
  - Preliminary constraint determinations (stand-off, zone of influence)**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 3. Formal determination of facility design linkages and A/E notification**
  - Design Package(s) Inclusion**
  - Timing of test support construction against ESF construction schedule**
  - Initiation of design and construction planning**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 4a. Review and revision, as necessary, of test program baseline**
- 4b. Initiation of study plan revisions incorporating approved program considerations (study plan approval required prior to field initiation)**



# **ESF Thermal Test Program Pre-Test Planning Activities**

- 5. Revision of ESFDR Appendix B requirements for each test component of consolidated components**
  - Definition of TEST**
  - Functional Requirements**
  - Performance Criteria (Facility)**
  - Constraints (High Level)**
  - Interface Requirements**
  - Assumptions**

# **ESF Thermal Test Program Pre-Test Planning Activities**

- 6. Conceptual (preliminary) facility design (design package or revision) and procurement initiations or scheduling**

# Thermal Program Test Planning Process

## I. Development of Test Planning Packages

- Principal Investigator criteria for test components
- Finalization of facility requirements (A/E)
  - Alcove (spatial) requirements
  - Power and utility requirements
- Construction support definition (construction management)
- Other test support requirements (e.g. sample handling, data collection)
- Review and incorporation of other program requirements (regulatory flowdown, health/environmental/safety)
- Evaluation of test interference/waste isolation impacts
- Finalization of test and facility constraints based on test planning and analysis of potential impacts

## II. Development of Job Packages

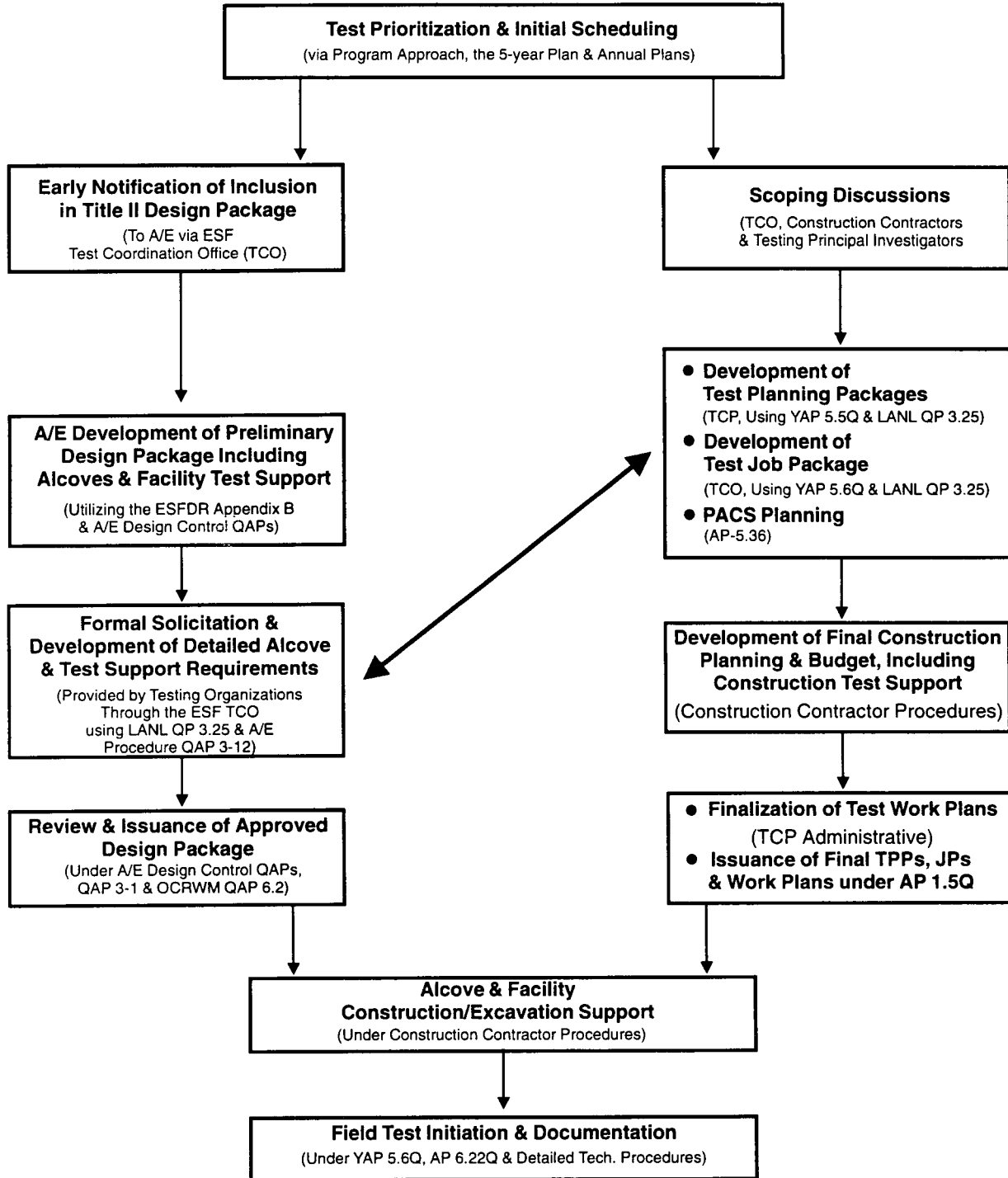
- Final determination of participant involvement and responsibilities (scope)
- Determination of test support and implementation schedule/sequence
- Inclusion of scoping estimates into PACS planning (all participants)
- Formal assignment of reporting requirements, hold points, close-out requirements

# Test Implementation

- **With input and approval of field testing participants and support organizations, an administrative work plan is developed which provides comprehensive field-level recommendations of implementation logistics (implementation steps, interactions, overall coordination). The work plan provides the administrative "recipe" for test implementation consistent with the requirements and constraints developed under the TPP and JP.**
- **The ESF test coordination office establishes field communications with construction management, test program management, and participant organizations prior to construction start**
- **Test construction, set-up, and test implementation are initiated upon closure of all prerequisites and determination of field readiness**

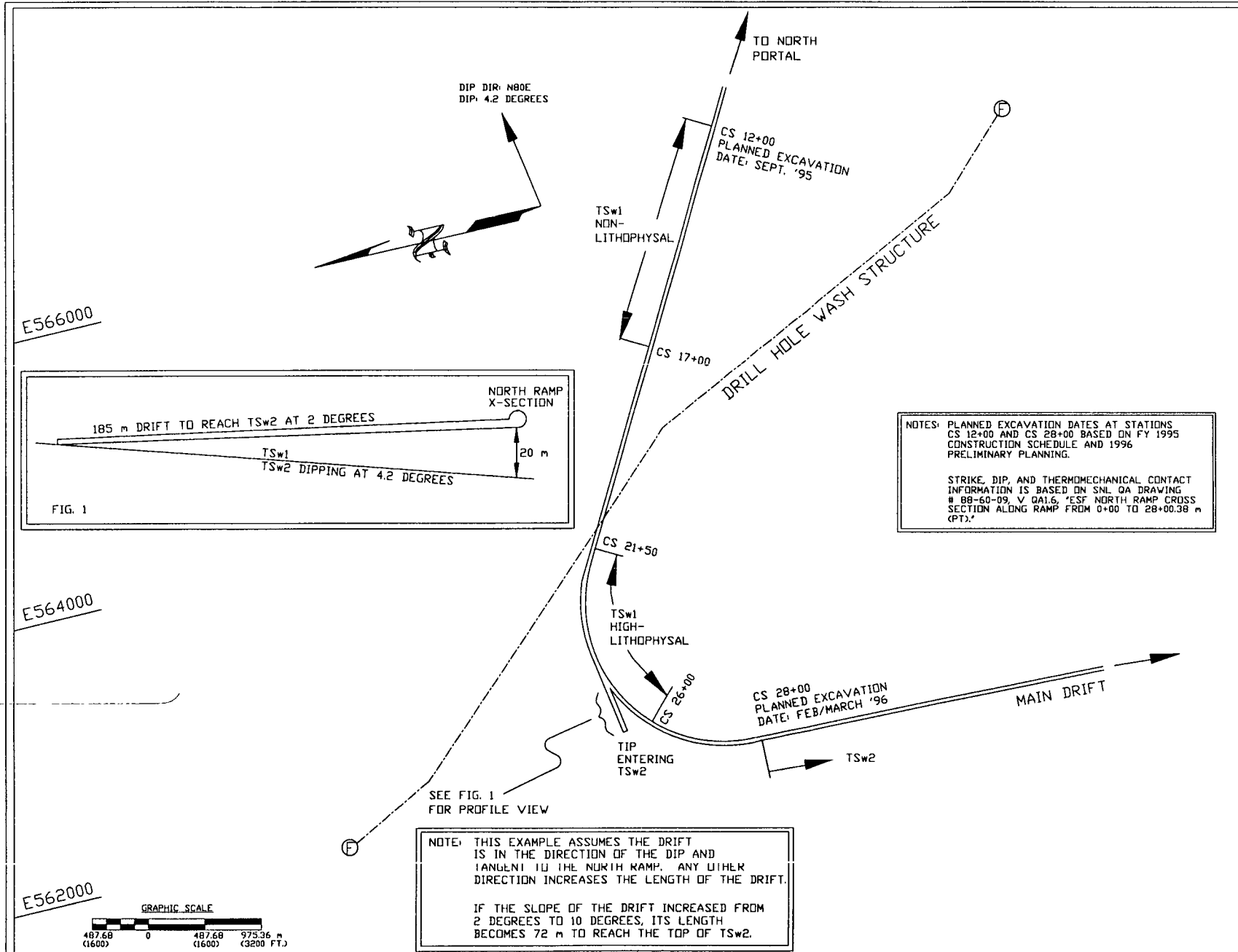
# ESF TEST PROGRAM IMPLEMENTATION

## Facility Design Integration and Construction Support Planning for Non-Deferred Alcoves and Test Locations



LEGEND:

- FAULT ZONE \_\_\_\_\_
- RAMP CONFIGURATION \_\_\_\_\_
- REFERENCE GRID \_\_\_\_\_
- BOREHOLE LOCATION \_\_\_\_\_



NOTES: PLANNED EXCAVATION DATES AT STATIONS CS 12+00 AND CS 28+00 BASED ON FY 1995 CONSTRUCTION SCHEDULE AND 1996 PRELIMINARY PLANNING.

STRIKE, DIP, AND THERMOMECHANICAL CONTACT INFORMATION IS BASED ON SNL QA DRAWING # 88-60-09, V. 0A1.6, 'ESF NORTH RAMP CROSS SECTION ALONG RAMP FROM 0+00 TO 28+00.38 m (PT).'

LOS ALAMOS NATIONAL LABORATORY			
TEST COORDINATION OFFICE - YUCCA MOUNTAIN PROJECT			
PROJECT: LITHOLOGIC CONTACT AND FAULT LOCATION ILLUSTRATION - THERMAL TESTING REGIONS			
CAD FILE: MR-TRM-LVNG	AUTOCAD R12	SCALE	AS SHOWN
DRN BY: J. L. WEAVER	APPROVED BY: N. Z. ELKINS/R.D. OLIVER	DATE DRN: 11/14/94	REVISION: A1
NOTES: ADMINISTRATIVE/ILLUSTRATIVE USE ONLY	PLT DATE: 11/14/94		

CONTENTS:

ILLUSTRATION BASED ON AND INCORPORATES INFORMATION FROM THE FOLLOWING REFERENCES: SNL/USGS, BASE DATA, AND OTHER INFORMATION FROM THE YUCCA MOUNTAIN PROJECT. GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT, GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT, GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT.

ALSO SEE: APPROXIMATELY LOCATED AT CS 0+00 (1+00)

TWO THOUSAND FEET GRID, ENGLISH COORDINATES ARE BASED ON THE NEVADA STATE COORDINATE SYSTEM, CENTRAL ZONE. DIMENSIONS AND ELEVATIONS ARE SHOWN IN METERS. METERS ARE ROUNDED TO TWO DECIMAL PLACES. WHERE DISCREPANCIES BETWEEN ELEVATIONS AND GRADIENTS OCCUR DUE TO ROUNDING, ELEVATIONS WILL GOVERN.

THIS DRAWING IS BASED ON THE FOLLOWING REFERENCES: SNL/USGS, BASE DATA, AND OTHER INFORMATION FROM THE YUCCA MOUNTAIN PROJECT. GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT, GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT, GENERAL INFORMATION FROM THE YUCCA MOUNTAIN PROJECT.

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