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

SUBJECT: UNDERGROUND TEST COORDINATION

PRESENTER: WILLIAM J. BOYLE

PRESENTER'S TITLE AND ORGANIZATION: PHYSICAL SCIENTIST
ASSISTANT MANAGER FOR SCIENTIFIC PROGRAMS
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
LAS VEGAS, NEVADA

TELEPHONE NUMBER: (702) 794-7595

WASHINGTON, D.C.
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• 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

Test Prioritization & Initial Scheduling
(via Program Approach, the 5-year Plan & Annual Plans)

Early Notification of Inclusion in Title II Design Package
(To A/E via ESF Test Coordination Office (TCO))

Scoping Discussions
(TCO, Construction Contractors & Testing Principal Investigators)

• Development of Test Planning Packages
(TCP, Using YAP 5.5Q & LANL QP 3.25)

• Development of Test Job Package
(TCO, Using YAP 5.6Q & LANL QP 3.25)

• PACS Planning
(AP-5.36)

A/E Development of Preliminary Design Package Including Alcoves & Facility Test Support
(Using the ESFDR Appendix B & A/E Design Control QAPs)

Development of Final Construction Planning & Budget, Including Construction Test Support
(Construction Contractor Procedures)

Formal Solicitation & Development of Detailed Alcove & Test Support Requirements
(Provided by Testing Organizations Through the ESF TCO using LANL QP 3.25 & A/E Procedure QAP 3-12)

• Finalization of Test Work Plans
(TCP Administrative)

• Issuance of Final TPPs, JPs & Work Plans under AP 1.5Q

Review & Issuance of Approved Design Package
(Provided by Testing Organizations Through the ESF TCO using LANL QP 3.25 & A/E Procedure QAP 3-12)

• Finalization of Test Work Plans
(TCP Administrative)

• Issuance of Final TPPs, JPs & Work Plans under AP 1.5Q

Alcove & Facility Construction/Excavation Support
(Under Construction Contractor Procedures)

Field Test Initiation & Documentation
(Under YAP 5.6Q, AP 6.22Q & Detailed Tech. Procedures)
FAULT ZONE
RAMP CONFIGURATION
REFERENCE GRID
BOREHOLE LOCATION

TO NORTH PORTAL

CS 12+00
PLANNED EXCAVATION DATE: SEPT. '95

CS 17+00

CS 21+50

CS 28+00
PLANNED EXCAVATION DATE: MARCH '96

TIP ENTERING TSW2

DRILL HOLE WASH STRUCTURE

DIP DIR: N 42 DEGREES
DIP: 42 DEGREES

TSW1
NON-LITHOPHYSAL

TSW2
HIGH-LITHOPHYSAL

185 m DRIFT TO REACH TSW2 AT 2 DEGREES

TSW2 DIPPING AT 42 DEGREES

E566000

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 4 OR 60-PA V 3.

TIP: NORTH RAMP X-SECTION ALONG RAMP FROM 0+00 TO 28+030 M OPTION.

NOTE: THIS EXAMPLE ASSUMES THE DRIFT IS IN THE DIRECTION OF THE DIP AND TANGENT TO THE NORTH RAMP. ANY UPHILL DIRECTION INCREASES THE LENGTH OF THE DRIFT.

IF THE SLOPE OF THE DRIFT INCREASES FROM 2 DEGREES TO 10 DEGREES, ITS LENGTH BECOMES 72 m TO REACH THE TOP OF TSW2.