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QA:NA
3/8/05

U.S. Department of Energy
Office of Civilian Radioactive Waste Management

www.ocrwm.doe.gov

Status of the Yucca Mountain Project, License Application, and Repository Design Update

Presented to:
Affected Units of Government

Presented by:
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Deputy Director
OCRWM Office of Repository Development

March 23, 2005
Las Vegas, NV

OCRWM Mission and Priorities

- **Mission**:
  - Our mission is to manage and dispose of high-level radioactive waste and spent nuclear fuel in a manner that protects health, safety, and the environment; enhances national and energy security; and merits public confidence
- **Priorities**:
  - After 20 years and $7 billion of scientific study, Congress passed a joint resolution in 2002 to designate the Yucca Mountain site for repository development and enable the Department of Energy (DOE) to move ahead to submit a license application for repository construction authorization
  - Protecting public health, safety, and the environment remain our top priorities

Current locations of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) destined for geologic disposal:

125 sites in 39 states

As of July 2004

Geologic Disposal Addresses Multiple Missions

Support Nuclear Navy Mission

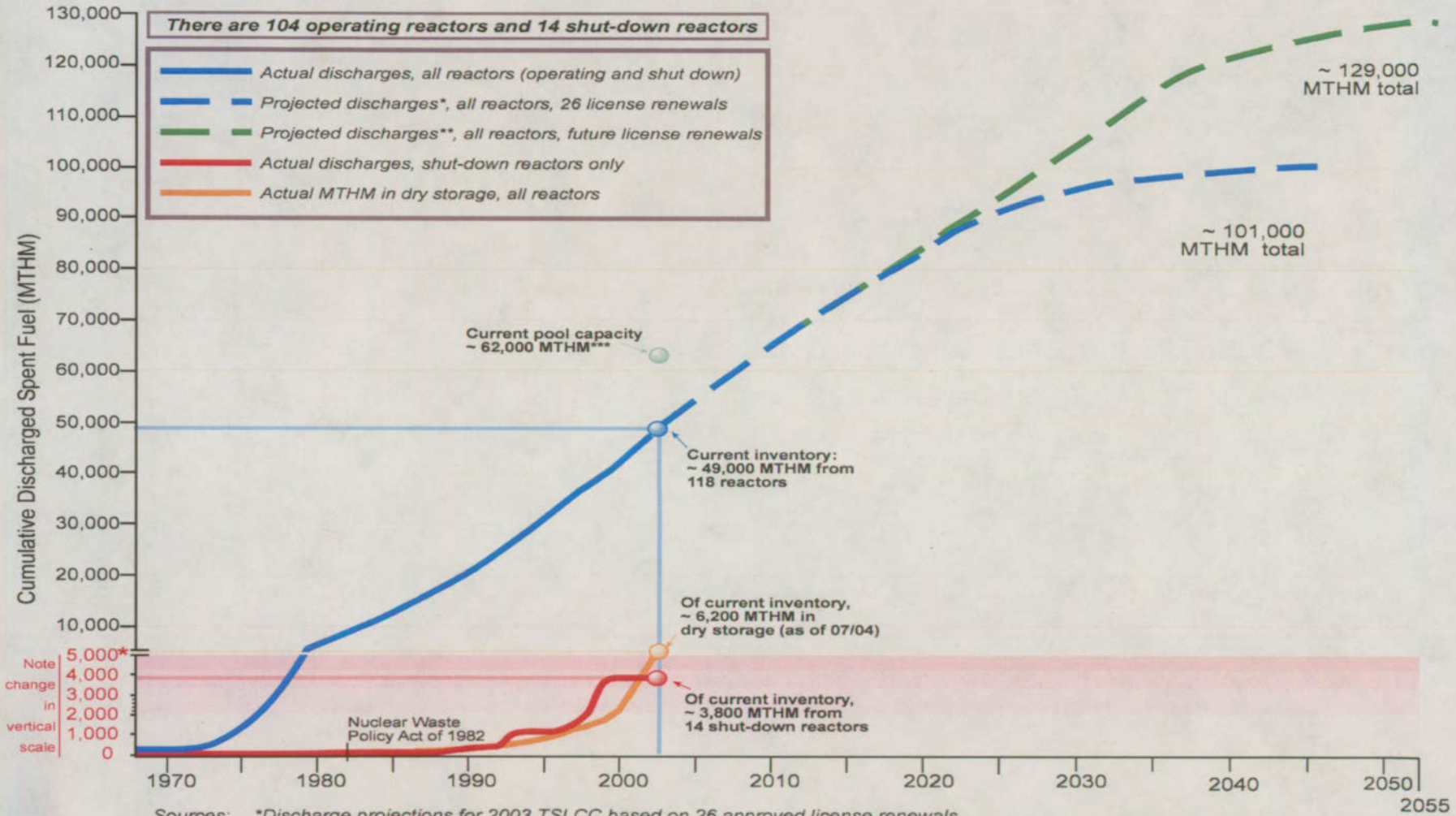
- Dispose of commercial spent nuclear fuel to ensure that nuclear power remains an important part of domestic energy production
- Consolidate nuclear wastes at one underground location to enhance protection against terrorist attacks
- Support effective operations of nuclear Navy by providing a secure place to dispose of its spent nuclear fuel
- Protect the environment by providing for disposal of defense site cleanup wastes
- Advance nonproliferation goals by providing secure disposal of U.S.-origin foreign research reactor spent fuel

Support Commercial Nuclear Energy Option

Advance Nonproliferation Goals

Support Defense Complex Clean-Up

Historical and Projected Commercial Spent Nuclear Fuel Discharges

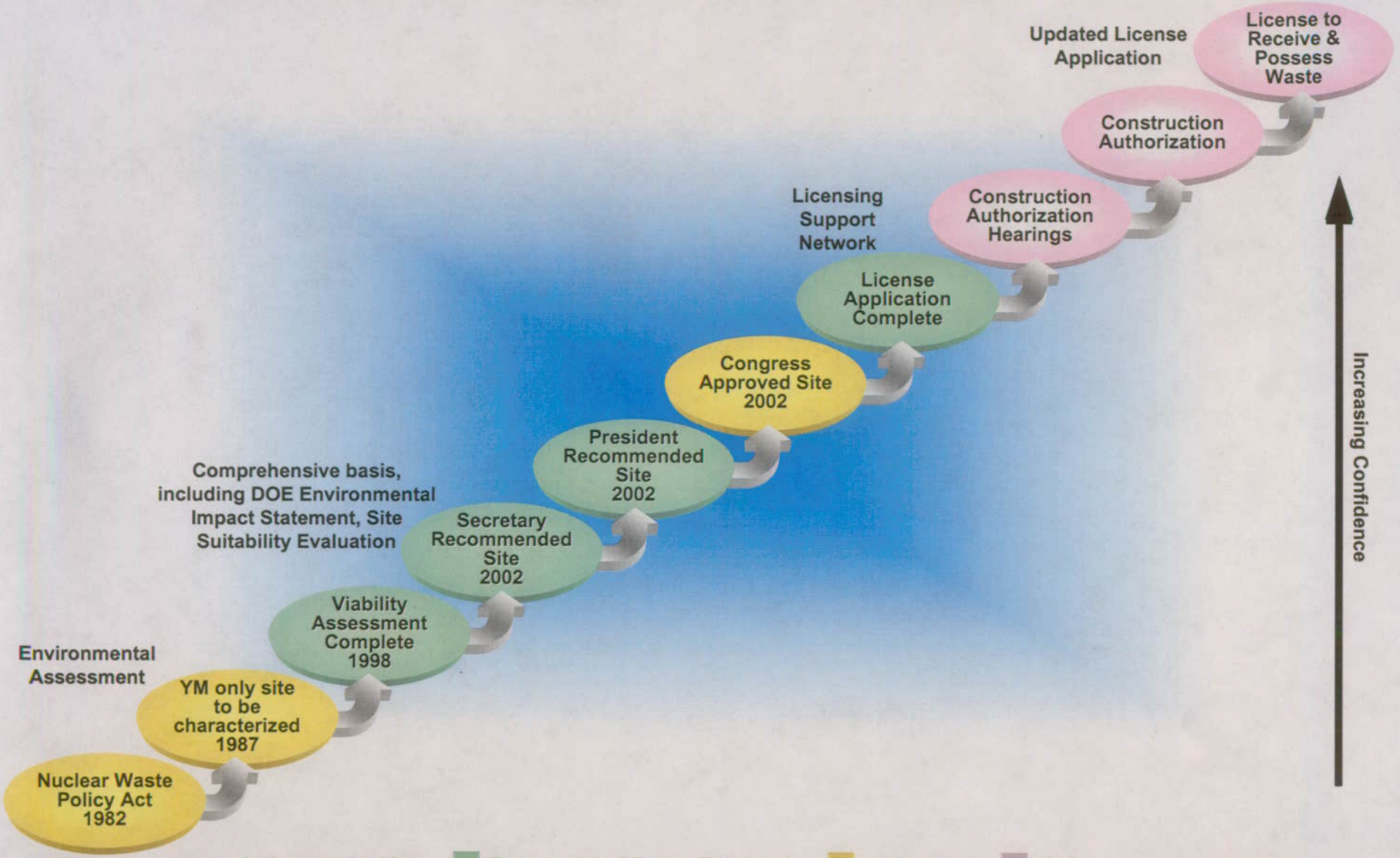


Sources: *Discharge projections for 2003 TSLCC based on 26 approved license renewals
**Projected Discharges from 2002 Waste Stream Projections Report, TDR-CRW-SE-000022 Rev. 1, March 2003
***Based on licensed pool capacities provided in 1998 RW-859 and supplemented by utility storage plans.

Discharge Curves 072704.FH10

As of July 2004

Repository Program Steps

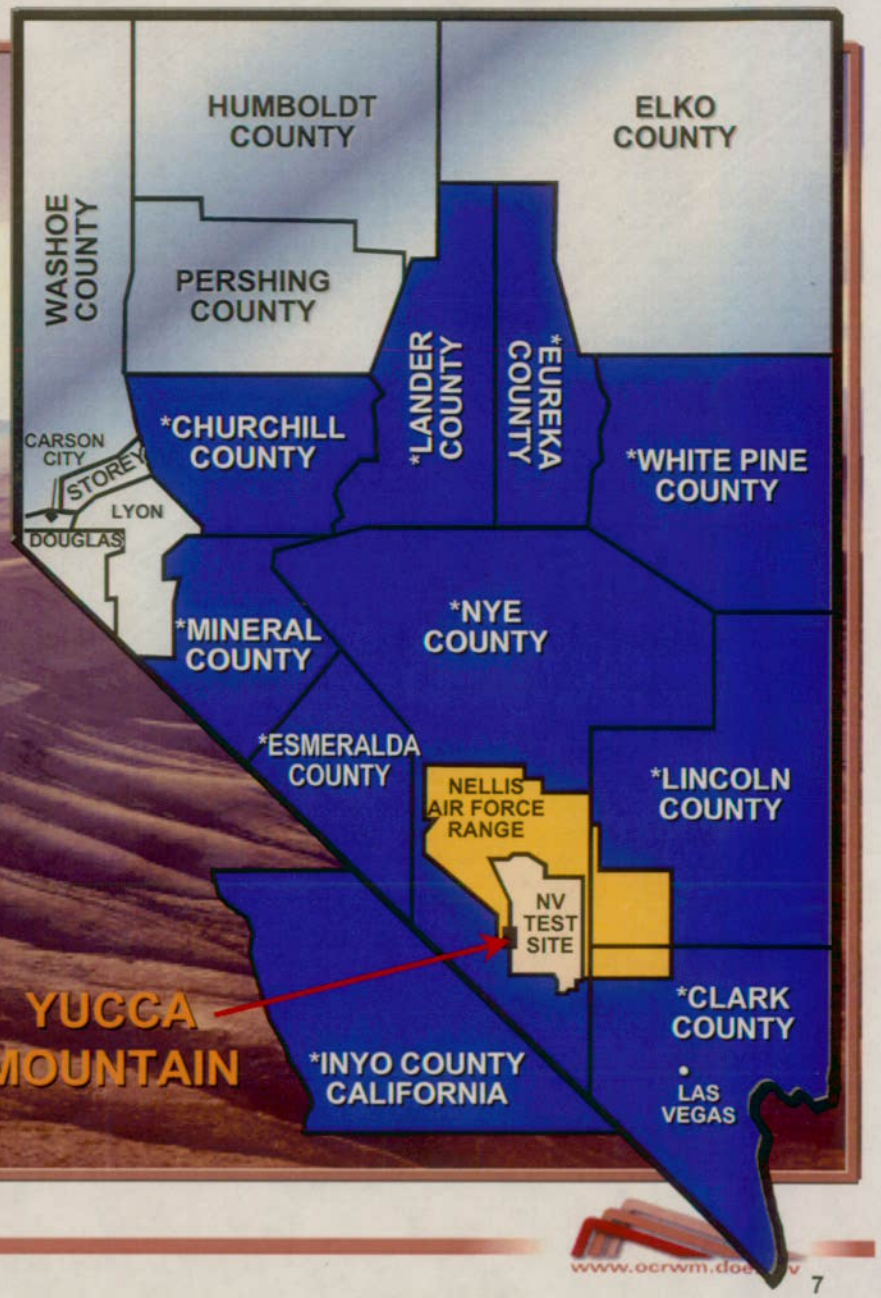


Program Status

- Significant progress in preparation of License Application (LA) and restart of transportation program
- High momentum over past couple of years
- Significant issue concerning stability of long-term budget
- D.C. Court of Appeals ruling on Environmental Protection Agency (EPA) radiation protection standard

Location of Yucca Mountain, Nevada

* Counties designated as Affected Units of Local Government



- 100 miles northwest of Las Vegas in Nye County
- Located on western boundary of the Nevada Test Site, a U. S. Department of Energy (DOE) facility

Funding to Affected Units of Government*

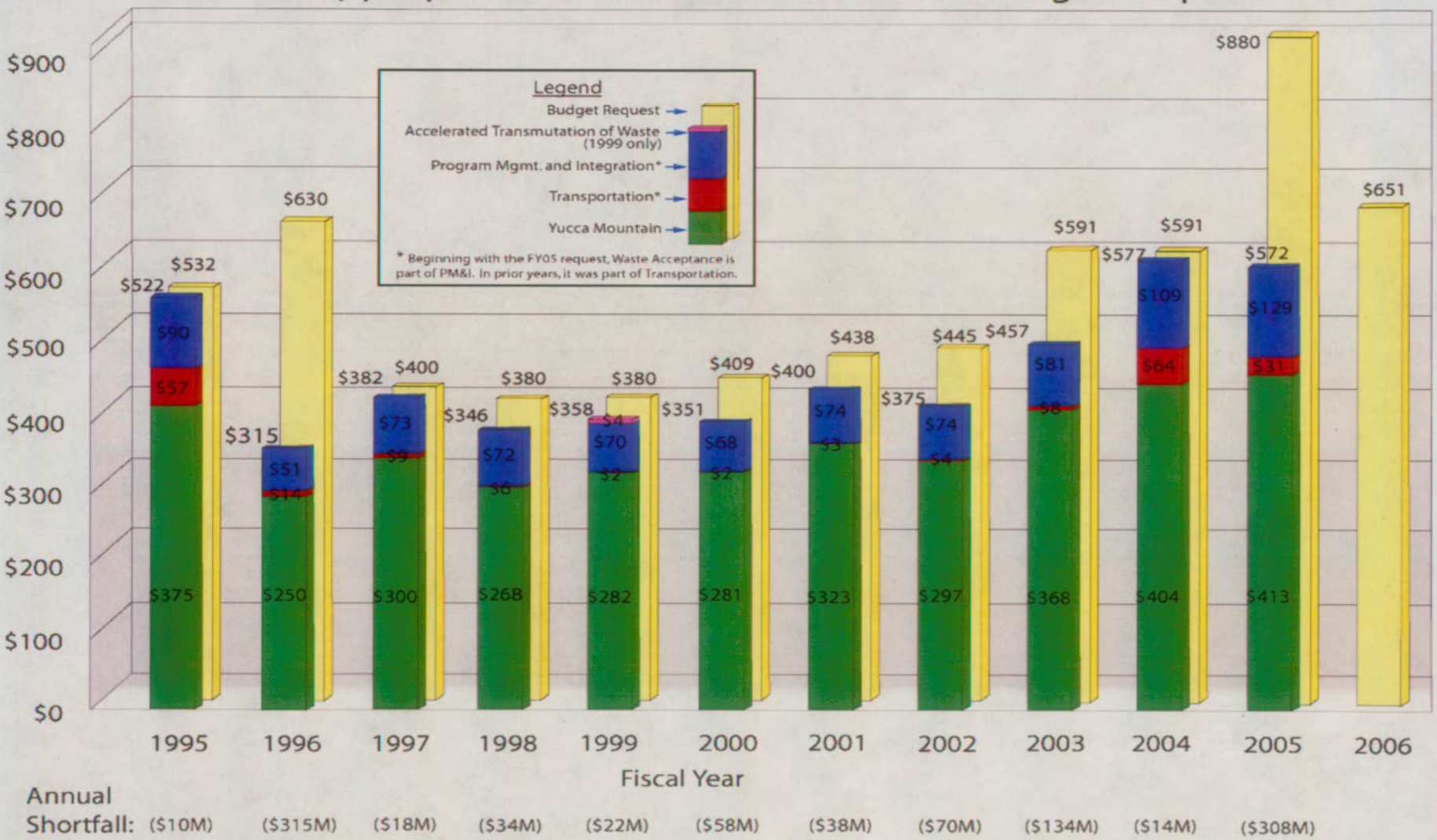
As of 2/15/2005

	Year Initiated	Total to Date (Actual)
Affected Units of Local Government - Oversight	1989	$76,439,826
State of Nevada - Oversight	1983	$81,718,109
Payments Equal to Taxes	1983	$105,383,496
University & Community College System of Nevada	1984	$93,575,763
Clark County, NV Transportation Grant	2004	$2,000,000
Inyo County, CA Death Valley Regional Ground Water Monitoring Program	2002	$1,989,750
Nye County, NV Science & Verification Program	1996	$22,873,409
Nye County, NV Transportation Cooperative Agreement	2004	$430,000
Total Funding to the Affected Units of Government and the University & Community College System of Nevada since 1983	All Years	$384,410,353

*The Affected Units of Government are the State of Nevada and the ten counties designated "affected" under the Nuclear Waste Policy Act.

Annual Budget (1995-2006)

Annual Appropriations and Administration's Budget Request



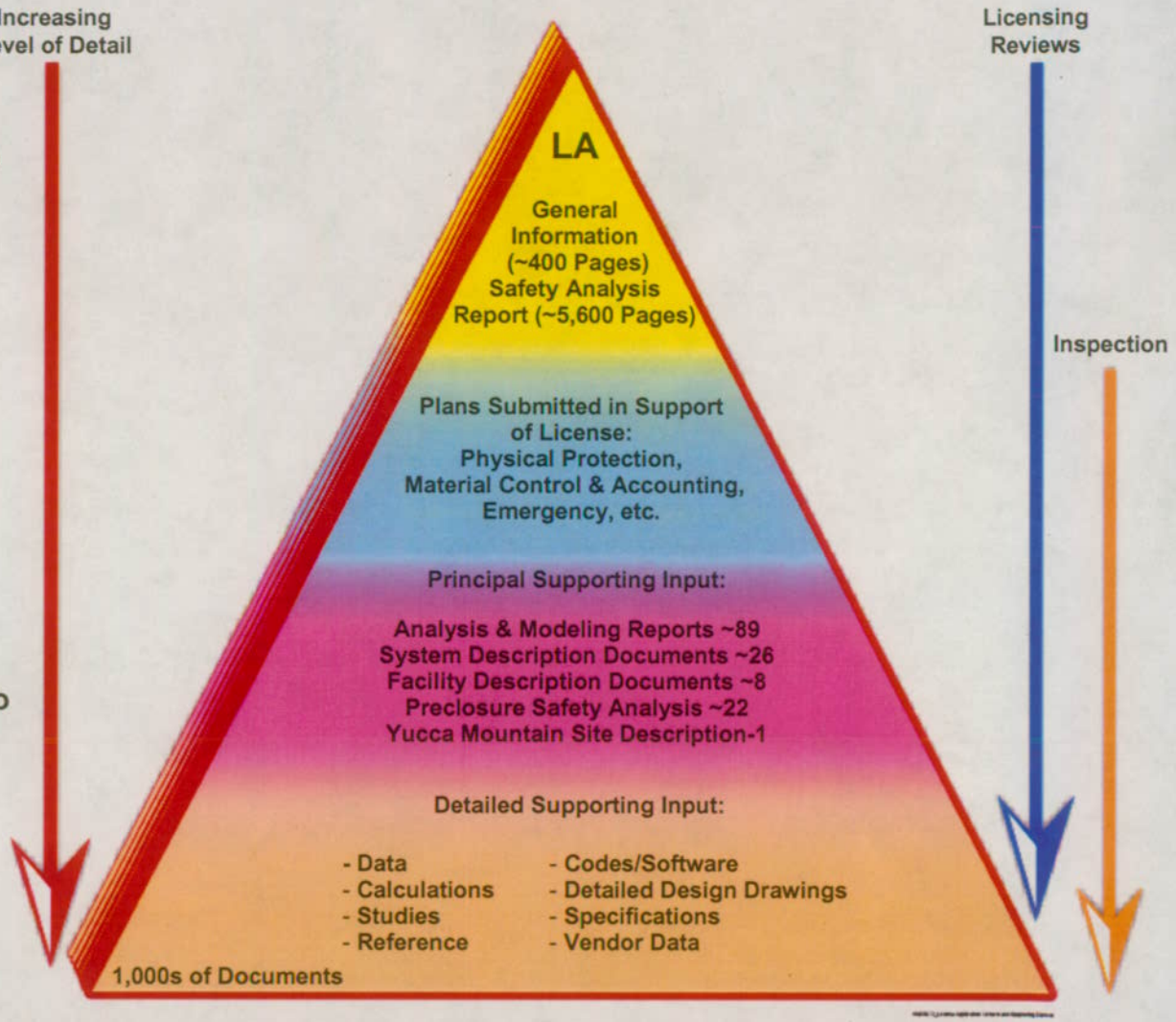
Annual Shortfall: ($10M) ($315M) ($18M) ($34M) ($22M) ($58M) ($38M) ($70M) ($134M) ($14M) ($308M)

Cumulative Shortfall FY 1995-FY 2005: $1.016B

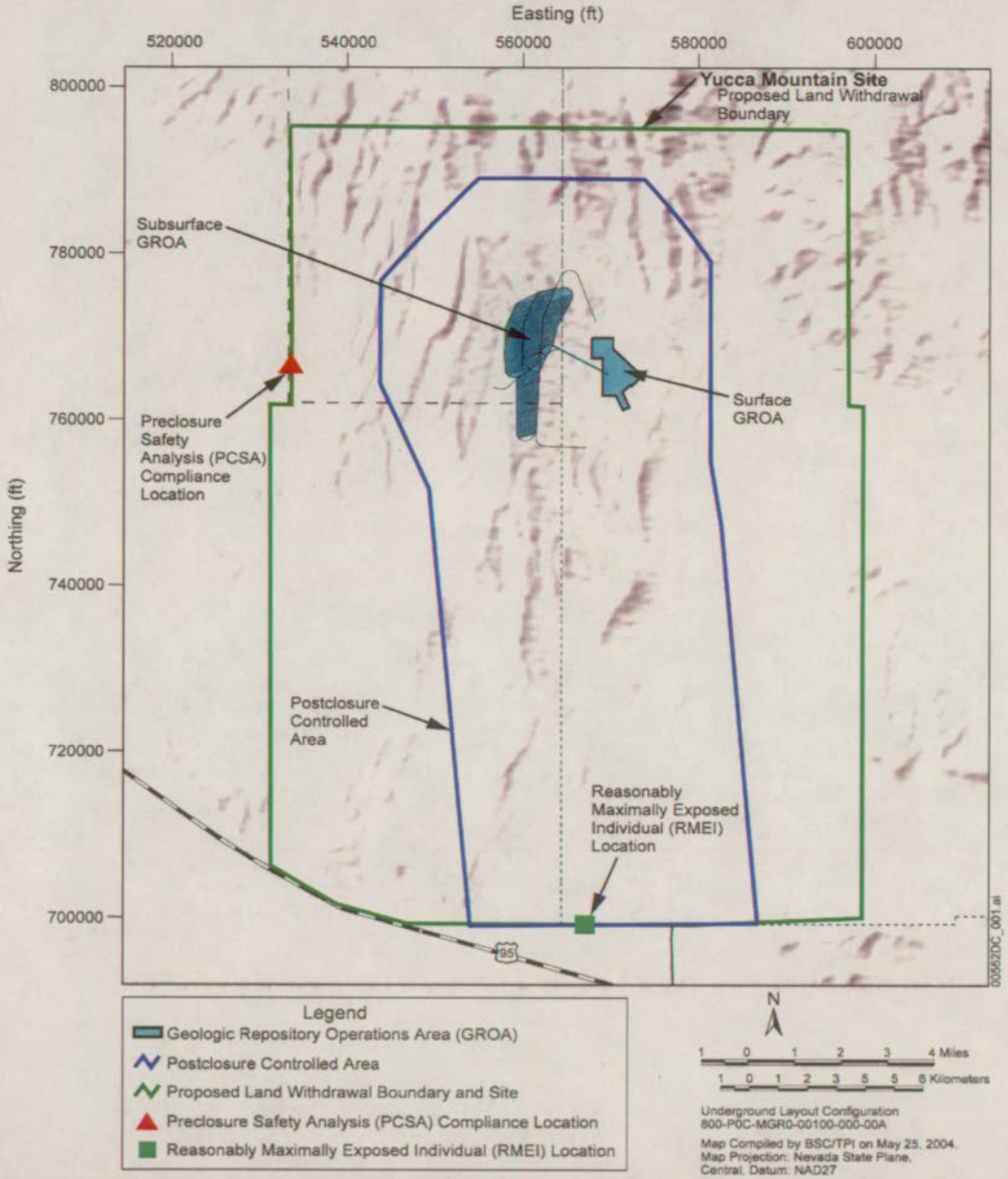
*Totals may not add up due to rounding

License Application Content and Supporting Documents

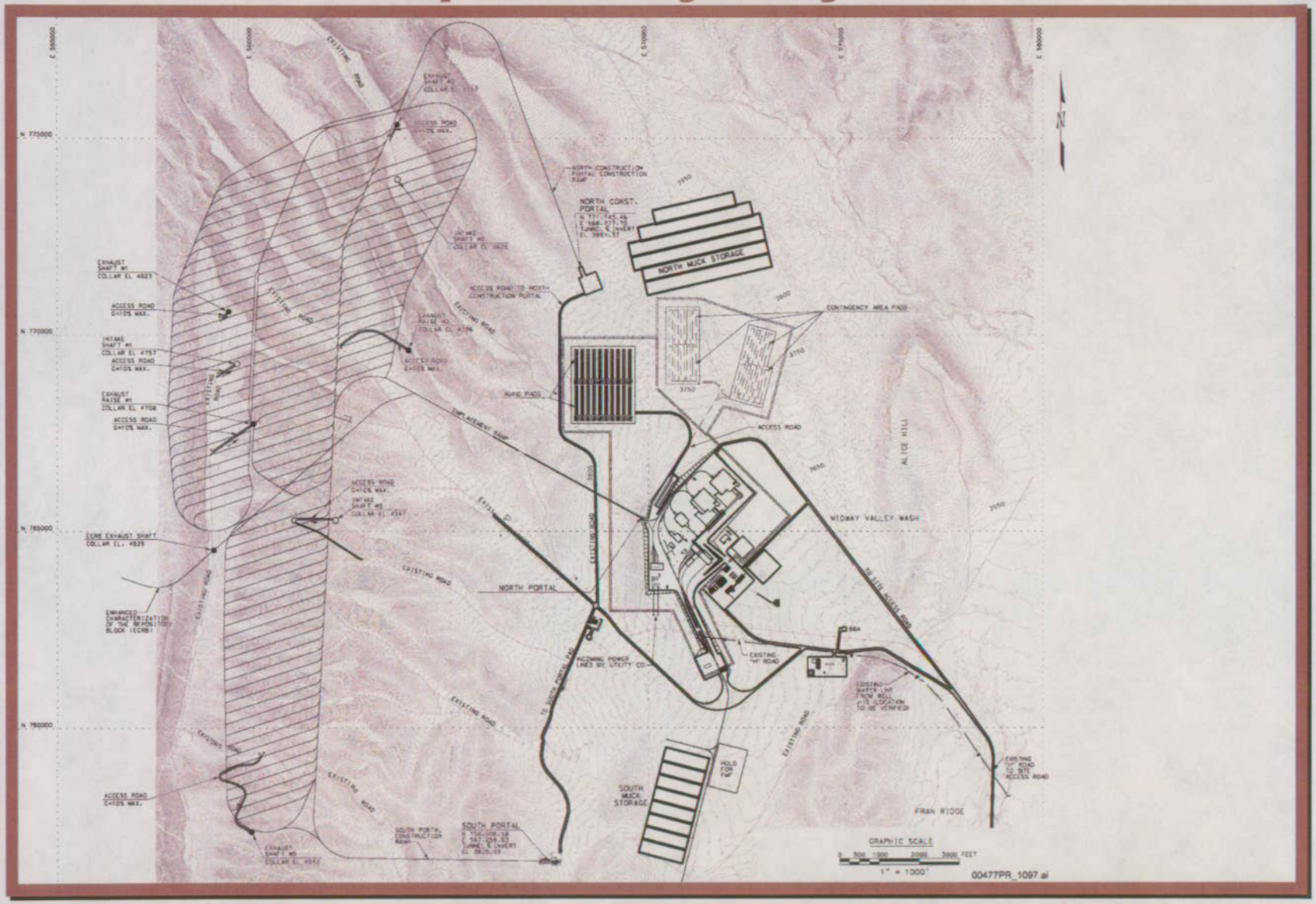
- **General Information (GI)**
  - General Description
  - Proposed Schedules for Construction, Receipt and Emplacement of Waste
  - Physical Protection Plan
  - Material Control and Accounting Program
  - Site Characterization
- **Safety Analysis Report (SAR)**
  - Repository Safety Before Permanent Closure
  - Repository Safety After Permanent Closure
  - Research and Development Program to Resolve Safety Questions
  - Performance Confirmation Program
  - Administrative and Programmatic Requirements



Site Overview

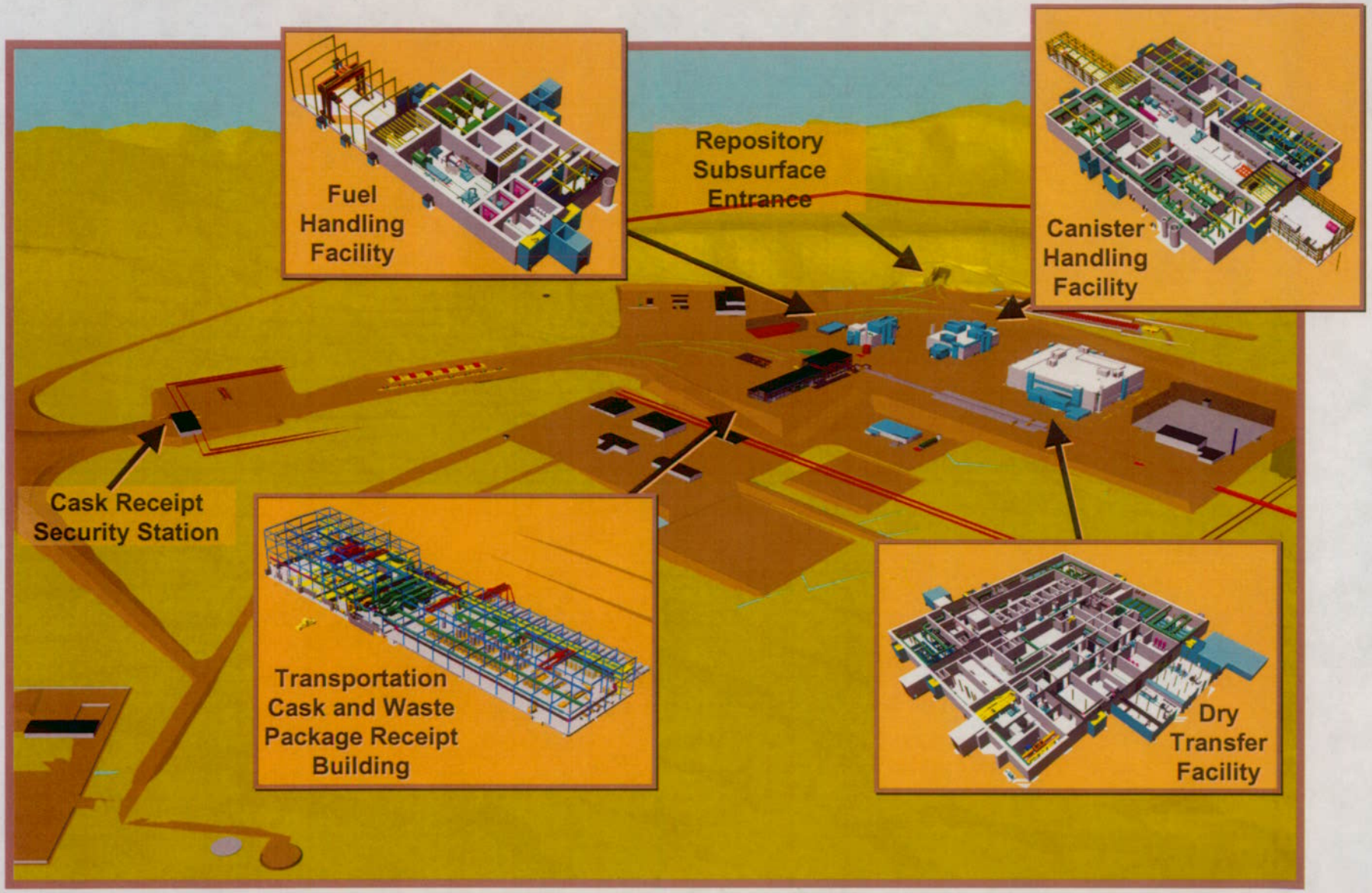


Repository Layout



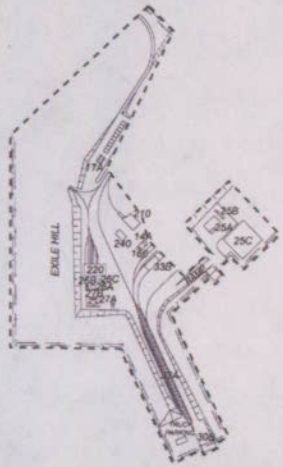
This drawing is preliminary and not intended for construction, procurement, or fabrication.

Yucca Mountain Surface Overview

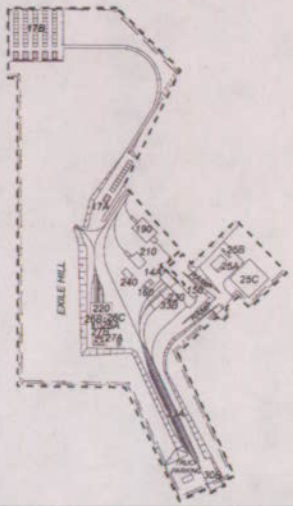


Geologic Repository Operations Area

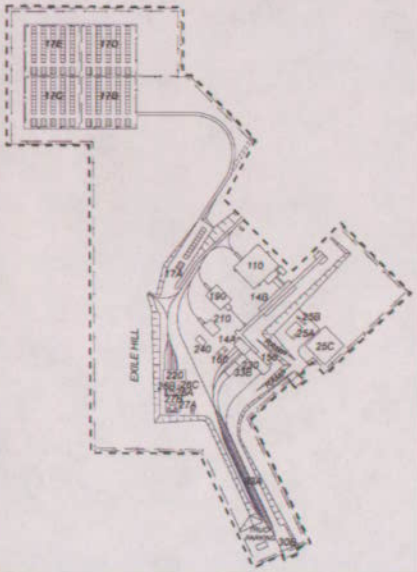
Initial Operating Capacity
(Fuel Handling Facility)



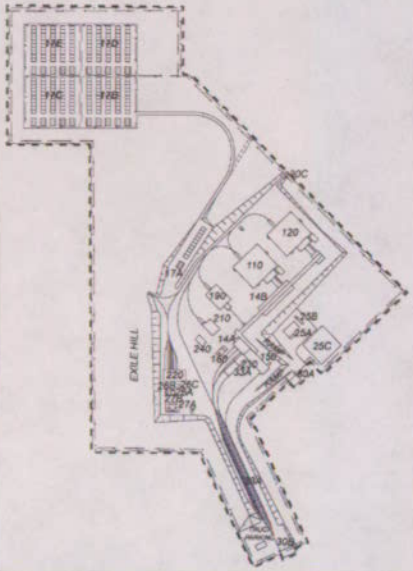
Expanded Capability –
Canister Handling Facility



Expanded Operational Capability –
Dry Transfer Facility 1



Full Operational Capability



LEGEND

14A	Transportation Cask Receipt/Return Facility	26B	Standby Generator Facility	150	Waste Package Receipt Facility
14B	Transportation Cask Buffer Area	26C	Emergency Generator Facility	160	Low-Level Waste Handling Facility
17A	Aging Facility (1,000 MTHM)	27A and 27B	Switchyard	190	Canister Handling Facility
17B, 17C, 17D, and 17E	Aging Facilities (5,000 MTHM each)	30A	Central Security Station	210	Fuel Handling Facility
25A	Utility Facility	30B	Cask Receipt Security Station	220	Heavy Equipment Maintenance Facility
25B	Cooling Tower	30C	North Perimeter Security Station	230	Warehouse and Non-nuclear Receipt Facility
25C	Evaporation Pond	33A and 33B	Railcar and Truck Staging Areas	240	Central Control Center Facility
25D	Service Gases Storage Area	110	Dry Transfer Facility #1		Security Fence
26A	Switchyard	120	Dry Transfer Facility #2	- - - - -	GROA Boundary

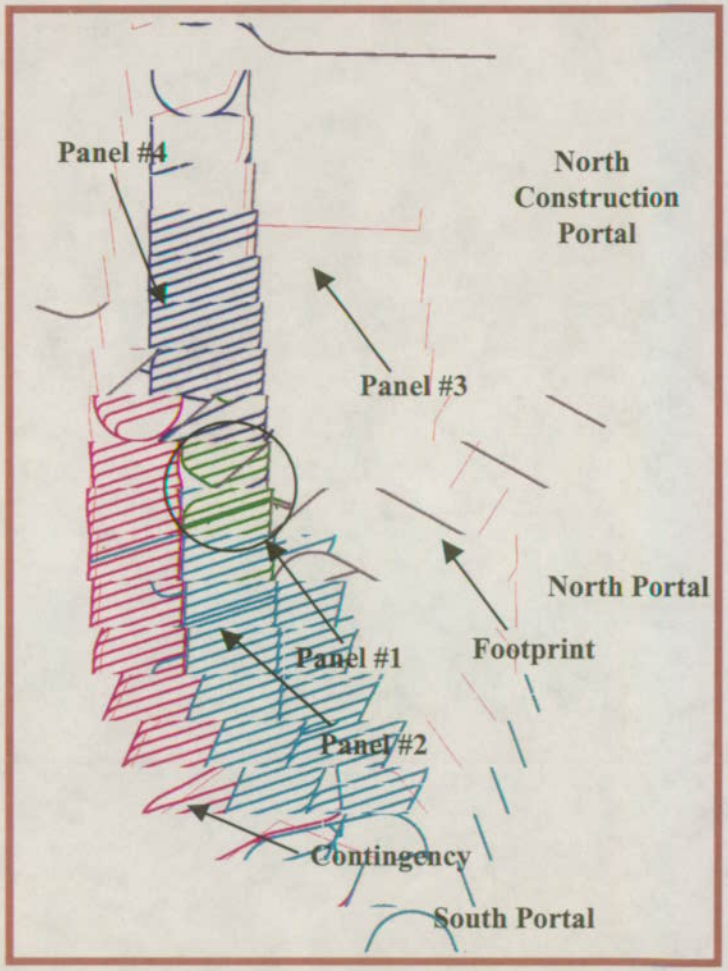
N

GRAPHIC SCALE
0 400 800 1,200 Feet

00249DC_LA_1083d.ai

Subsurface Configuration

- Panel numbers represent the proposed emplacement sequence
- Sequence:
  - Panel 1, Initial development
    - Develop 3 emplacement drifts
    - Develop 1 Performance Confirmation drift (below drift 3)
  - Complete remaining drifts
    - Panel 1 - 8 total (5 remaining drifts)
    - Panel 2 - 17 total (excludes contingency)
    - Panel 3 - 41 total (19 East & 22 West)
    - Panel 4 - 30 total
- Total emplacement length available is approximately 41 miles (65 km)
- Available contingency of 11 - 13.5 percent for the 70,000 metric tons of heavy metal



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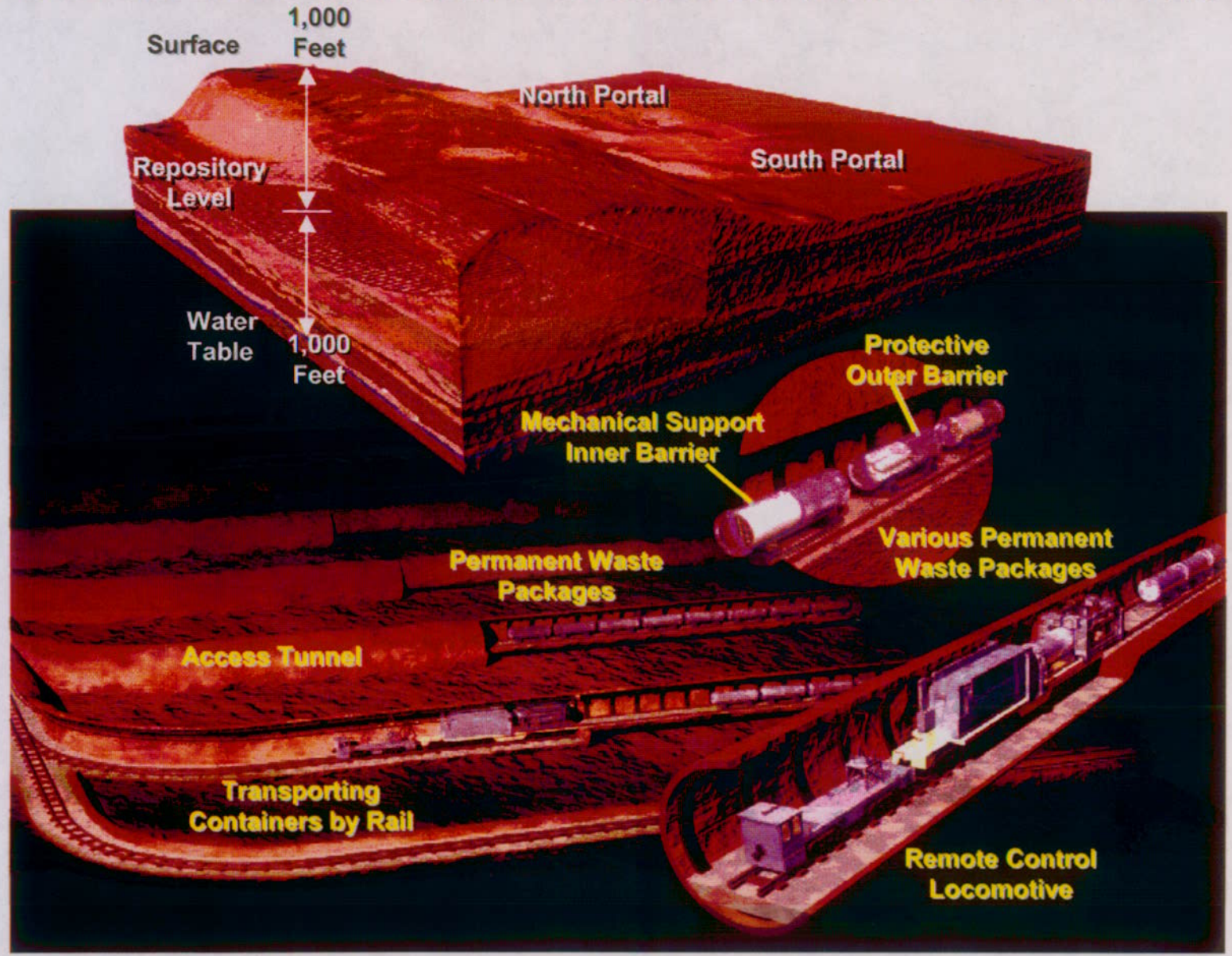
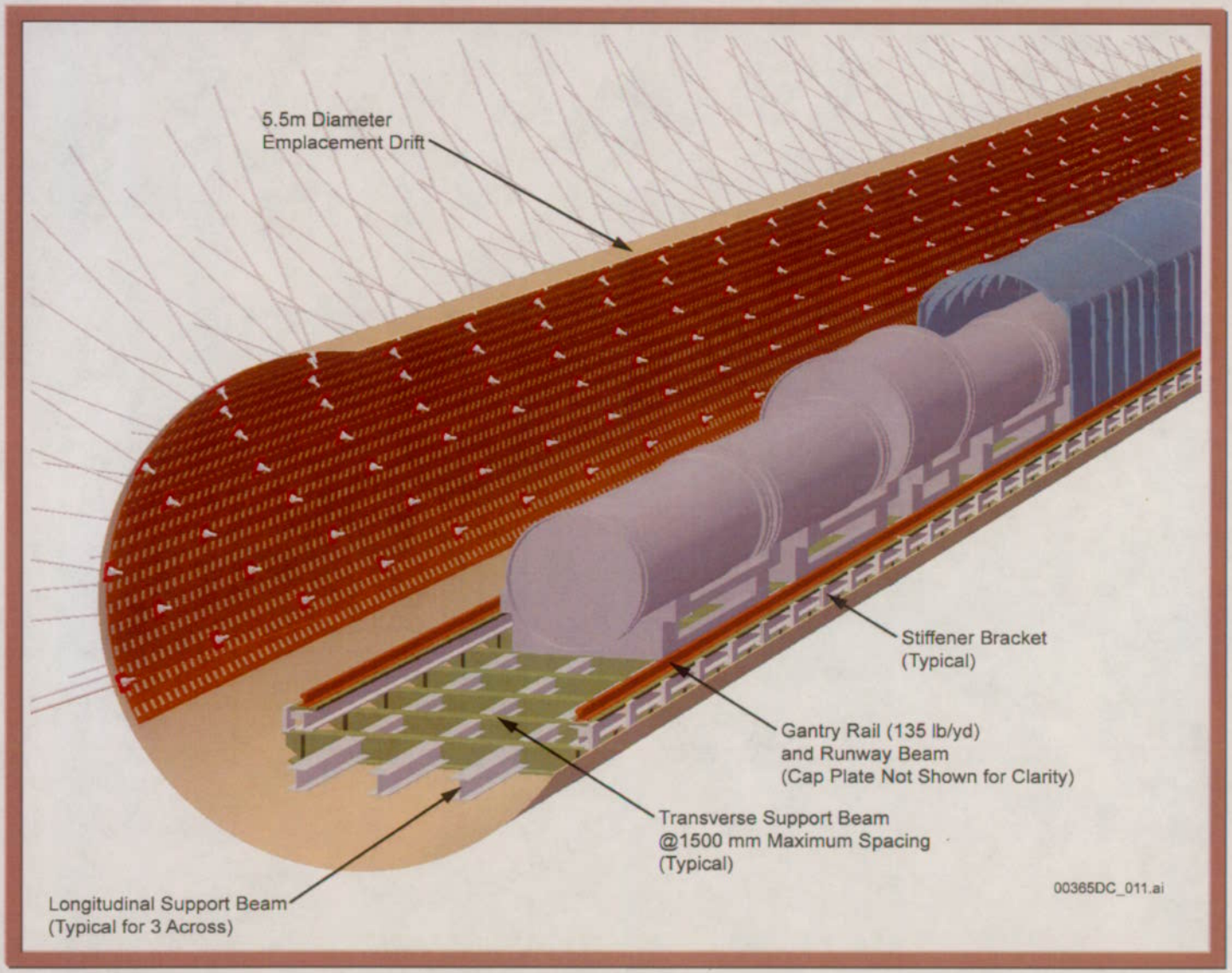
Yucca Mountain Subsurface Overview



Emplacement Drift Isometric



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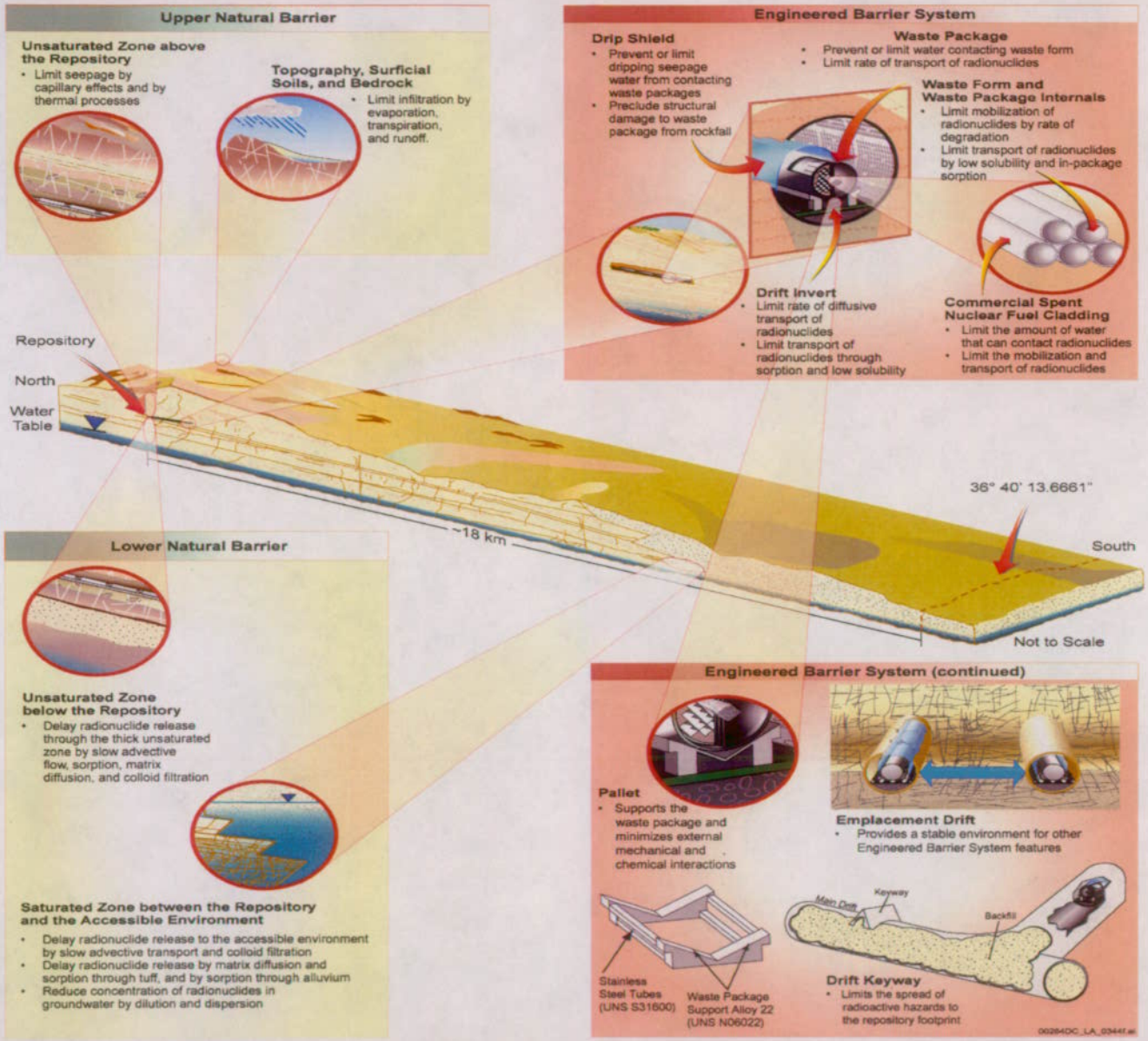
Post- closure Barrier Systems



Recent Progress

- In August 2004, DOE submitted information on the last 17 out of 293 Key Technical Issue agreements (KTIs) to the Nuclear Regulatory Commission
  - All 293 KTIs have now been addressed by DOE
  - NRC has closed 221 of the agreements and is reviewing the rest
  - Any NRC questions or concerns will be addressed as part of the licensing proceeding
- DOE completed a project-wide Safety Conscious Work Environment survey in October
  - 65% response rate
  - Results are being analyzed
- Significant improvements in Quality Assurance (QA) implementation:
  - Closing the last of several longstanding Corrective Action Reports
  - Resolving Nuclear Regulatory Commission (NRC) comments to Revision 17 of the Quality Assurance Requirements Document
  - Increased self identification of issues and improved Corrective Action Program
  - Developing additional QA plans for transportation and other program activities
- We completed a draft License Application in July 2004 and a second draft in November 2004

Status of the License Application

- DOE is evaluating the draft License Application:
  - Science and design work for the LA is technically sound and supports robust safety analyses for the preclosure (operational) period through 10,000 years after permanent closure
  - We have thoroughly cross-referenced this work against the requirements in 10 CFR Part 63 and the guidance in the Yucca Mountain Review Plan
  - We are using available time to refine the treatment of uncertainty
- Additionally, DOE is proceeding with the Licensing Support Network (LSN) certification by mid-summer
- We are preparing to address potential changes due to the ruling on the EPA standard by the U.S. Court of Appeals
- DOE is revising the original goal of delivering the License Application at the end of December 2004; we anticipate completing the License Application by the end of 2005

Summary

- We have made significant progress toward completing the License Application
- Radiation protection standard is being revised by EPA
- DOE is addressing work required for Licensing Support Network Certification
- We are committed to the safe disposal of U.S. spent nuclear fuel and high-level radioactive waste