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: THERMAL MANAGEMENT IN THE PROGRAM APPROACH

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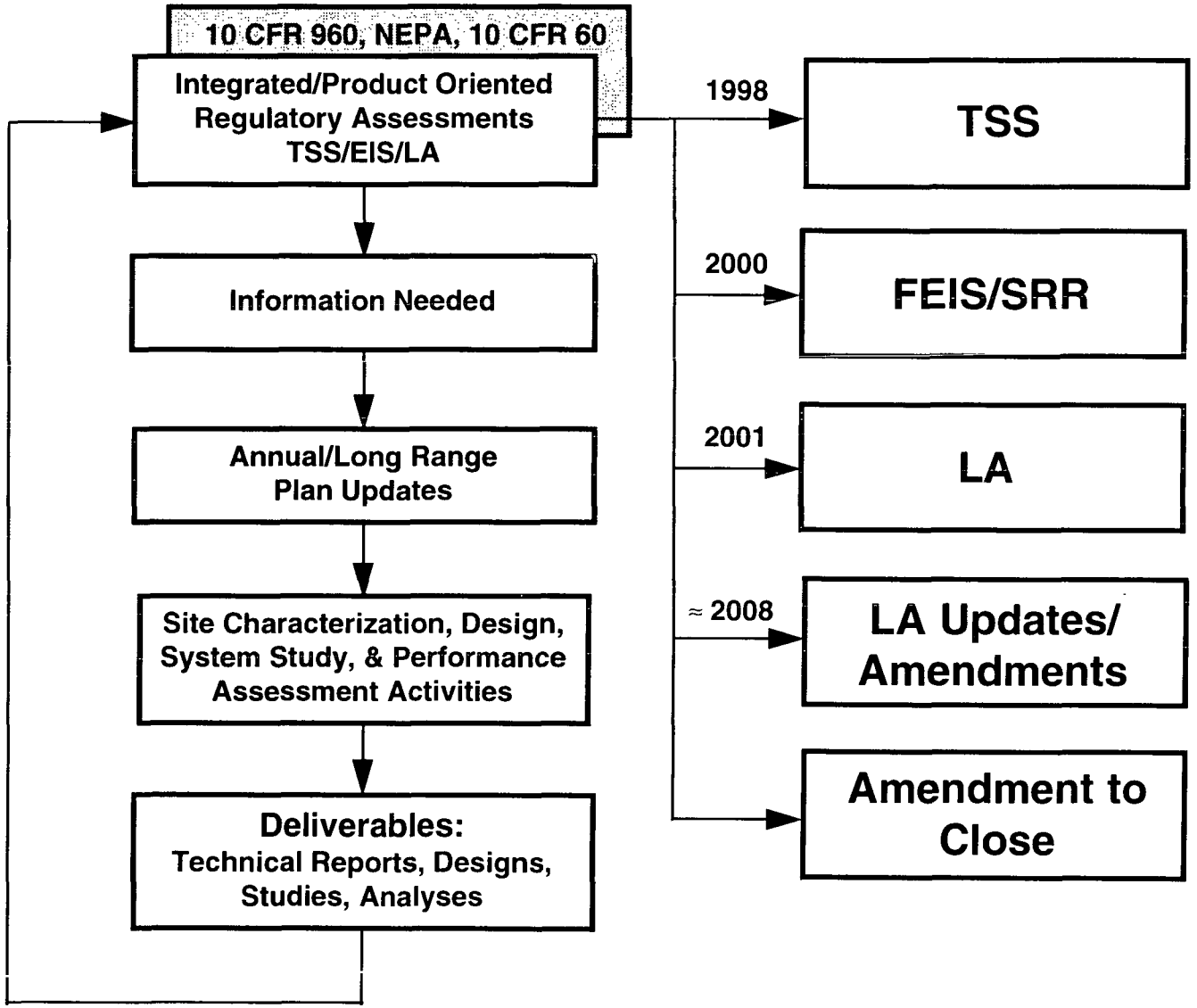
Thermal Management in the Program Approach

- Five Year Plan
- Program Approach Implementation
- Summary of Thermal Management Strategy
- Thermal Management Options
- Thermal Management Decision Framework

Draft Five Year Plan (Volume 2)

- Describes major activities necessary to implement the Program Approach
- Defines progress with interim milestones and products
- Clarifies relationship among activities, products and budgets by program
  - Site Suitability
  - National Environmental Policy Act
  - Licensing
  - Management and Compliance

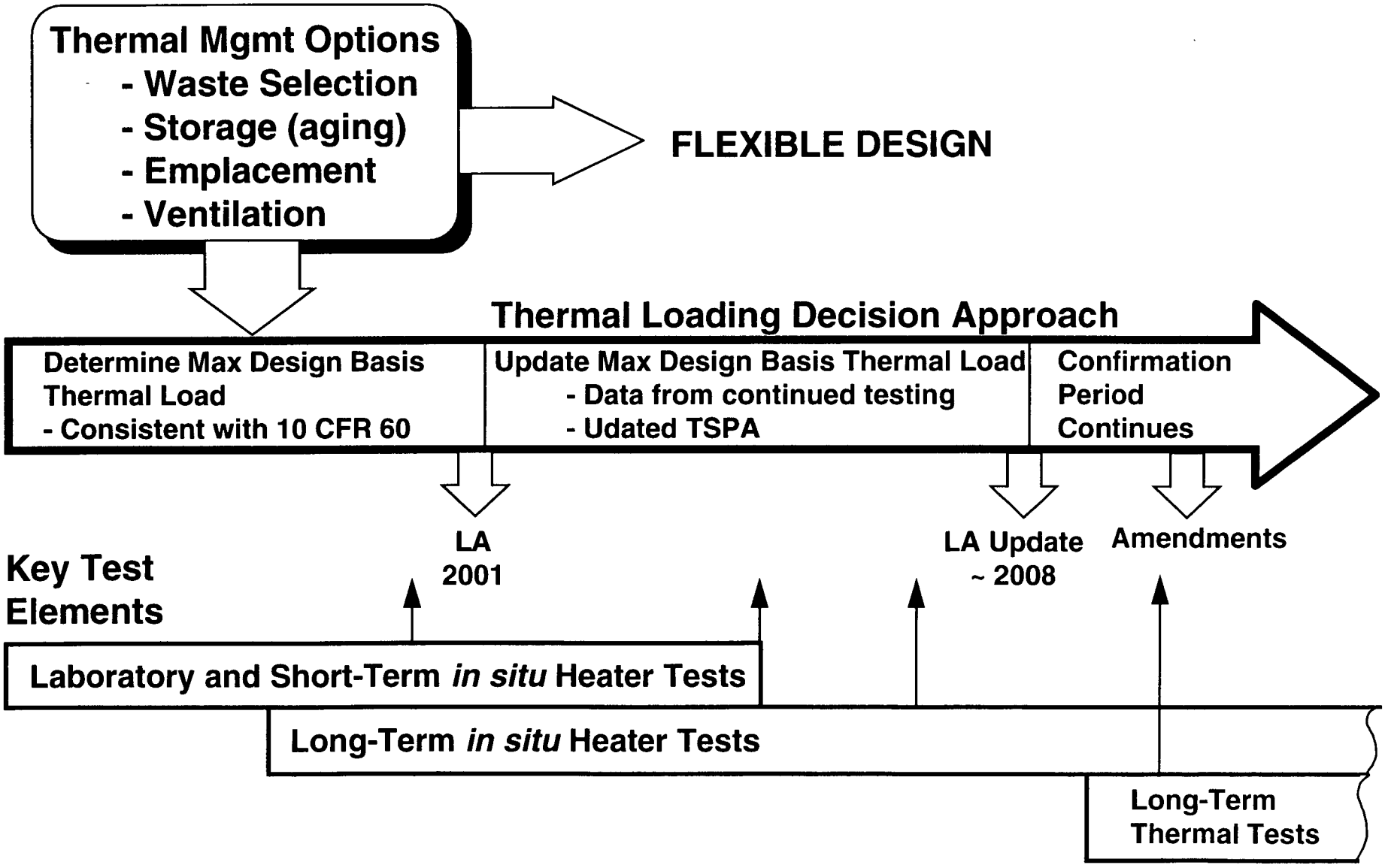
Program Approach Implementation



Summary of Thermal Management Strategy

- Thermal management is a key element of Program Approach implementation
- Thermal management options provide the necessary flexibility to facilitate a phased site characterization program focused initially on a site suitability determination
- Reference thermal loads are selected initially to support
  - High confidence in the safety of repository operations and waste package containment
  - Reasonable assurance findings related to postclosure performance
  - Comprehensive plans for performance confirmation
- Flexible system element design maintains the option to take advantage of alternate thermal loads

Thermal Management Options

- Fuel age/burnup history when emplaced
  - Fuel identification and selection
  - Off-repository storage
  - Repository lag storage
- Spatial arrangement of fuel ages/types in repository
- Limit capacity in primary area
- Expansion areas
- Waste package size
- Ventilation

Thermal Management Decision Framework