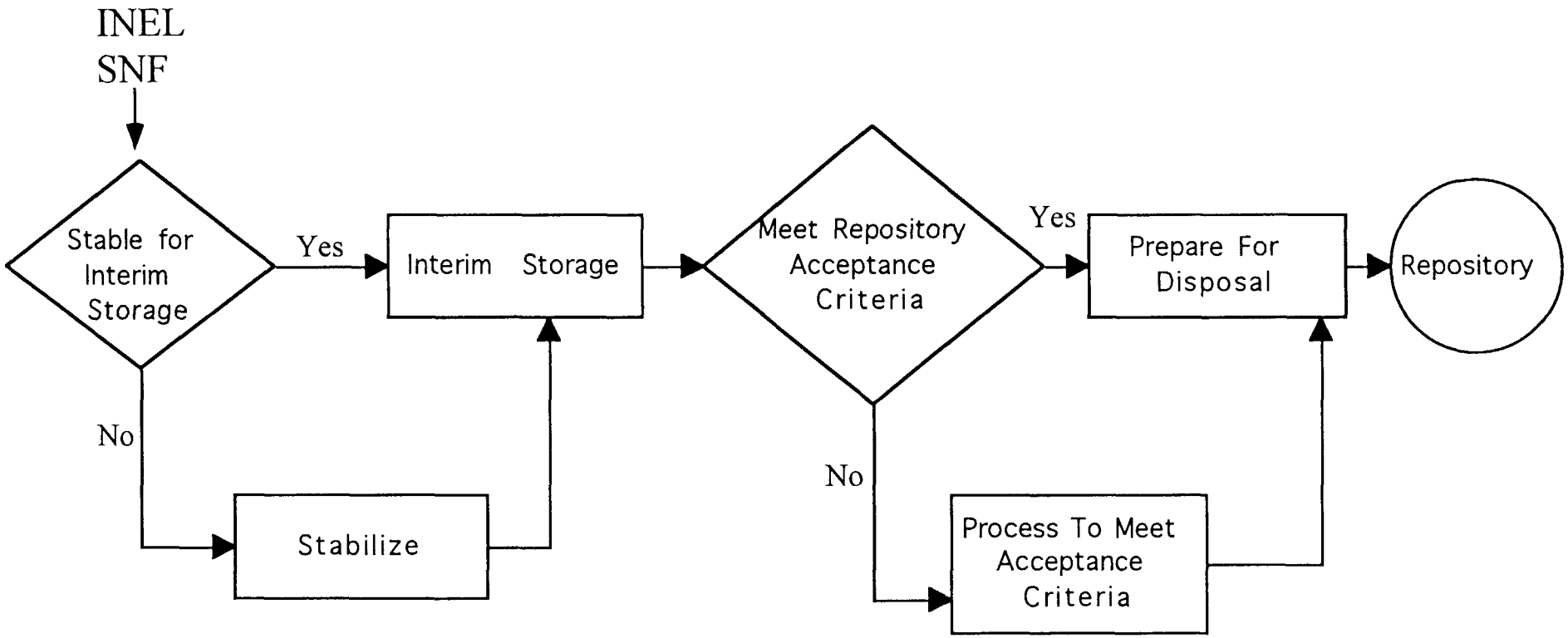
INEL SNF SYSTEMS ENGINEERING & FINAL DISPOSITION

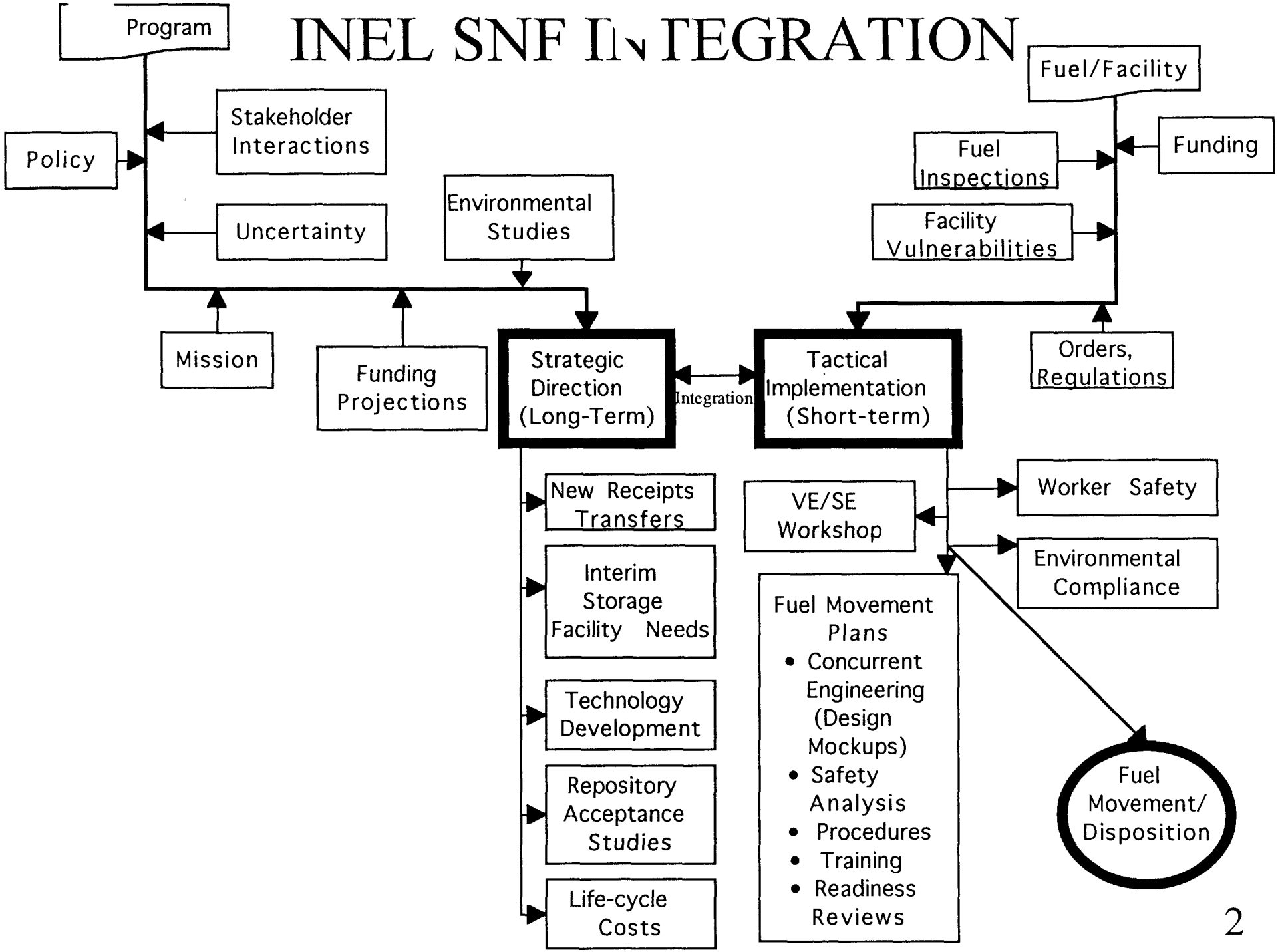
June 6, 1995
NWTRB

Gary E. McDannel

INEL STRATEGY/LOGIC



INEL SNF INTEGRATION



OBJECTIVES

- Ensure safe conduct of operations
- Achieve cost-effectiveness in short-term and life-cycle
- Use sound, systematic decision making
- Ensure compliance with court orders, regulations and negotiated (graded-approach) DOE Orders
- Consider stakeholder concerns
- Prepare for Interim Storage and Final Disposition (consistent and completed only one time)

CONSTRAINTS

- EIS ROD June, 1995
- Idaho Court Order
  - Remove all SNF from CPP-603 Dec, 2000
- Vulnerability Action Plan Commitments
- Termination of Reprocessing for Uranium Recovery at INEL in April, 1992
- INEL SNF must meet Repository Acceptance Criteria
- Repository License Application in 2001
- Repository Opening in 2010 (INEL Fuel Road-Ready)

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EVALUATION CRITERIA

- Risk (ES&H)
- Cost
  - Short-term (5yrs)
  - Flattened Profile
  - Life Cycle
- Effectiveness (Achieve Final Disposition)
- Stakeholder Acceptance
- Program Risk (Robust)
- Mission
- Technology
- Safeguards & Security

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SNF ALTERNATIVES

- Use of Existing Facilities
  - Upgrades, Expansions, etc.
- Use of New Facilities
- Wet vs. Dry Storage
- Modular vs. Stand-alone Facility
- Transportable vs. Stationery
- Conditioning for Disposal
  - Direct
  - Process

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ALTERNATIVES ANALYSIS

INEL SNF Overall - Systems Solutions

Critical Decision Points:

- EIS ROD 6/1/95
- Ability to Meet Disposal Criteria & Pedigree
- MPC Availability

Issues:

- Existing Dry Storage Capacity
- Existing Facility Vulnerabilities
- MPC/Repository EIS
- Multiple Fuel Transfers

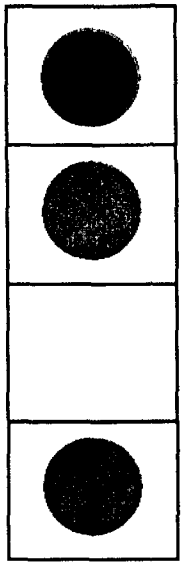
LEGEND

Meets or Exceeds Criteria

Meets Criteria

Partially Meets Criteria

Does Not Meet Criteria



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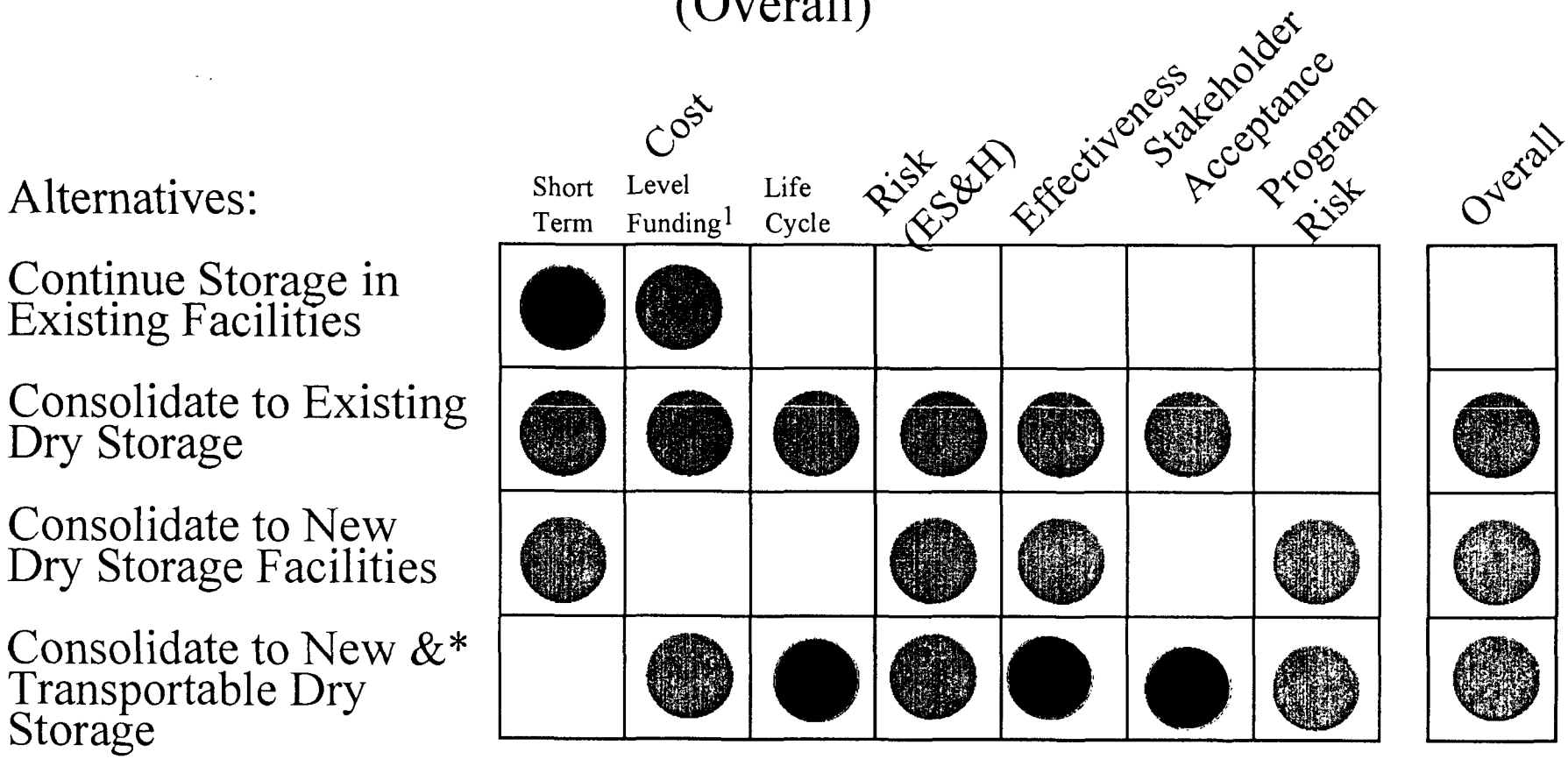
ALTERNATIVES COMPARISON

(Overall)



[1]Privatization Could Level Funding for New Facilities

Note: Some hybrid combination may be optimum where SNF that likely will require treatment is stored in a dry storage facility with the other fuel put in new, transportable dry storage.

* Preferred Alternative (Assuming Repository Accepts DOE SNF)

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PROS & CONS OF INEL PATH FORWARD

Pros:

- Lower Life Cycle Cost
- Accomplish Interim Storage and Preparation for Final Disposition (e.g., MPCs)
- Stronger Stakeholder Support - "Road-Ready"
- Consistent with Commercial and Navy Direction
- Level Funding with Modular Concept or Privatized Funding
- Doesn't Preclude Future Alternatives

Cons:

- Potentially Higher Interim Storage Costs (e.g., MPCs)
- Uncertainty with Repository - HEU, SNF Qualification
- Delays INEL SNF Consolidation

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FUTURE ACTIONS

(Overall)

- Negotiate Time Frame for Continued use of Existing Facilities Until New Storage On-line
- Evaluate Existing Dry Capacity and Upgrade Costs Against New Facility Cost
- Determine Which Fuels can be Direct Disposed
- Ensure DOE Fuels Considered in Future Repository EISs
- Identify Impediments to Privatization
- Integrate INEL SNF Path Forward with Critical Decision Points
- Perform Sensitivity Analysis of Evaluation Criteria

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AFFECT OF SYSTEMS SOLUTION ON FUEL/FACILITY SPECIFIC ALTERNATIVES

- Increased Focus on Final Disposition
  - Achieving Concurrent Interim Storage & Staging for Final Disposition (e.g., MPC)
  - Processing of Fuels Unlikely to be direct Disposed (e.g., Sodium-bonded)
  - Integration with Other Sites (e.g., Aluminum Fuel to SRS)

ULTIMATE DISPOSITION CHALLENGES

Issues	Technical	Regulatory	Programmatic
Primary	•Canisterization •Criticality Control	•RCRA Determination •Safeguards and Accounting	•Repository Schedule Impact and Consequences •Interagency Agreement/Fees
Secondary	•Material Incompatibilities •Waste Characteristics for Performance Assessment •Waste Form Constraints •Physical Integrity •Physical Characteristics and Quantity •Standardization •Radiation Shielding •Corrosion Product Control •Decay Heat Removal	•NEPA Coordination	•MTHM Equivalence •Management of Classified Information •Quality Assurance •Transportation Design and Operations (including Cask Subsystem Certification) •Future Materials for Repository Disposal

ALLEVIATING DISPOSITION CHALLENGES

Canisterization - MPC concept consistent with Navy and commercial fuels. Doesn't preclude subsequent conditioning options.

Criticality Control - PA analyzing the performance of DOE fuels in a Yucca-like repository and MPC.

RCRA - Characterization studies underway, major issue appears to be with Na bonded fuel.

Safeguards & Accounting - HEU issue will be solved consistent with Navy fuel.

Repository Schedule - Finalize WAC. Characterize and package once prior to disposal.

Interagency Agreements - EM/RW Steering Committee working to establish fees and criteria for DOE fuels.

CONCLUSIONS

- INEL SNF Path Forward has evolved and is Based on a Systems Approach to Achieve Final Disposition
- INEL SNF Path Forward Must Continue Forward While Additional Alternatives are Quantified
- INEL SNF Path Forward will Allow Future Perturbations
- INEL SNF Path Forward can overcome challenges to Achieve Final Disposition

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