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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

February 21, 1991

MEMORANDUM FOR: Robert Bernero, Director, NMSS

FROM: John S. Hoyle, Chairman, Licensing Support  
System Advisory Review Panel

SUBJECT: DRAFT REGULATORY GUIDE CONTAINING TOPICAL  
GUIDELINES

During the fourth meeting of the Licensing Support System Advisory Review Panel (Panel), October 10-11, 1990, we reviewed draft Regulatory Guide, "Topical Guidelines for the Licensing Support System," which was provided to the Panel for discussion by your memorandum of July 13, 1990. This draft Regulatory Guide reduces the scope of the interim topical guidelines set forth in the Supplementary Information for the final LSS rule published on April 14, 1989. The topical guidelines will be an important part of the program to implement the Licensing Support System (LSS) provided for in 10 CFR Part 2, Subpart J. The Panel appreciates this opportunity to offer comments on whether particular categories of documentary material should be included in the LSS.

Enclosure 3 to your July 13, 1990, memorandum indicates that the draft regulatory guide excludes from the LSS documents relating to transportation and certain environmental issues because those documents are "...outside the scope of what would be needed in the proceedings to license the HLW repository...". With regard to environmental material, the enclosure states that "environmental information required to be included in the LSS has been limited to those documents relevant to the Commission's adoption or modification of the DOE EIS."

Members of the Panel representing the nuclear industry, Department of Energy, site affected local governments, adjacent affected local government and the State of Nevada feel that NRC should provide additional rationale for the proposed exclusions. Some members are concerned that excluding environmental and transportation related documents (including socioeconomic) is unwarranted at this time because information could be excluded prematurely that might be relevant, or likely to lead to the discovery of information that is relevant to issues in the NRC licensing proceeding. These Panel members are particularly concerned that, without the availability of environmental information in the LSS, they will be unable to

provide independent comments to the NRC in the future on whether the NRC should adopt DOE's EIS. They also believe that to exclude such information at this point in the process would be based on the presumption that it would not later be relevant to NRC's adoption of the EIS, a presumption which they believe is premature. At the request of the District Attorney's Office for Clark County, Nevada, I have attached the views of the Board of County Commissioners of Clark County on the proposed exclusion of transportation and socioeconomic information from the LSS.

All members of the Panel, except NRC, strongly urge that if the NRC proposes to exclude documents dealing with transportation and environmental issues from the LSS, that decision should be made in a rulemaking proceeding so that a judicial determination can be obtained on the legality of such exclusions. Although the Panel did not attempt to reach a consensus on whether such exclusions were appropriate or legally supportable, all members of the Panel other than NRC believe that a final agency decision, challengeable on court, should be made now so that the validity of the exclusions will not become an issue at a time when the licensing process could be adversely affected by a determination that the exclusions were erroneous.

The Panel agrees that some revisions to the interim topical guidelines are appropriate, and indeed were contemplated during the negotiations leading up to the adoption of the LSS rule itself. Further, the interim topical guidelines needed to be refined and condensed so as to eliminate redundancy and repetition. With the exception of Panel members' concern relating to exclusion from the LSS of environmental (including socioeconomic) and transportation related documents discussed above, the draft regulatory guide accomplished the necessary revisions. We have attached specific comments on some suggested changes.

1. Memo of Bruce L. Woodbury,  
Clark County, Nevada
2. Panel's Specific Comments

cc: SECY



BRUCE L. WOODBURY  
Chairman

*Board of County Commissioners*

CLARK COUNTY BRIDGER BUILDING  
225 BRIDGER AVENUE  
LAS VEGAS, NEVADA 89166  
(702) 466-3600

Subject: TOPICAL GUIDELINE DISCUSSION AT THE OCTOBER 10-11, 1990  
MEETING OF THE LICENSING SUPPORT

Dennis Bechtel of my staff is a member representing affected local governments on the Nuclear Regulatory Commission's Licensing Support System Advisory Review Panel. At the October 10-11, 1990 meeting, there was discussion about the revised topical guidelines.

As an "affected unit of local government," the County of Clark feels it is important that the topical guidelines not be limited from those defined in the negotiated rulemaking, attached. It would be our strong recommendation not to have an abridged topical guideline. However, if there is to be one, it is important that transportation and socioeconomic issues not be excluded from an abridged guideline. Inclusion of these topics were, as you are aware, the subject of much debate during the course of rulemaking. The inclusion of these attributes is especially needed during the evaluations of the Environmental Impact Statement. The Yucca Mountain Project comprises more than just the site, as you are well aware. We are confident that the transportation and socioeconomic aspects will not be deleted from a modified topical guideline list.

If you have any questions, please contact Dennis Bechtel of my staff.

Sincerely,

A handwritten signature in cursive script that reads "Bruce L. Woodbury".

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Bruce L. Woodbury  
Chairman  
Board of County Commissioners of  
Clark County, Nevada

BLW/kab

Attachment

Day	Regulation (19 CFR)	Action
648		2nd Preliminary Conference Order rules on proposed construction, site site, the discovery schedule and site schedule for graded territory and hearing.
658	2.1015(b)	Access from 2nd Preliminary Conference Order, w/ brief.
668	2.1015(b)	Brief in opposition to appeal.
698		AS order ruling on appeal from 2nd Preliminary Conference Order.
700	2.749 (last by LB)	First motions for summary decision.
720	2.749	Response to first motions for summary decision.
730	Supp. info.	Discovery conference.
740		LB order on first motions for summary decision.
750	2.1015(b)	Access from first summary decision order, w/ brief.
780	2.1015(b)	Evidentiary hearing begins. Brief in opposition to appeal from the summary decision order.
790		AS order on appeal from first summary decision order.
850		Evidentiary hearing ends.
860	2.754(a)(1)	Applicant's proposed findings.
890	2.754(a)(2)	Other parties' (except NRC staff) proposed findings.
900	2.754(a)(2)	NRC staff's proposed findings.
905	2.754(a)(3)	Applicant's reply to proposed findings.
995	2.780	Final decision.
1005	2.782(a), 2.782(b), 2.1015(c)	Stay motions to AS. Notices of Appeal.
1015	2.780(d)	Response to stay motions.
1035	2.782(b)	AS ruling on stay motion.
1045	2.780(b)	Applicant's brief.
1055	2.780(c)	Stay motions to Commission.
1065	2.780(c)	Response to stay motions.
1065	2.782(c)	Applicant's brief.
1075	2.782(c)	NRC staff brief.
1095	2.1023 Supp. info.	Completion of NRCSS and Commission supplementary review. Commission ruling on any stay motions, evidence of construction authorization, NTPA 3-year period table.
1105	2.783	Order argument on appeal.
1165		Appellate Board's decision.
1180	2.1015(e), 2.785(b)(1)	Petition for Commission review.
1190	2.785(b)(2)	Response to petition.
1230		Commission decision.

LSS during the pre-license application phase under § 2.1003.

**I. Categories of Documents**

- Technical reports and analyses including those developed by contractors
- QA/QC records including qualification and training records
- External correspondence
- Internal memoranda
- Meeting minutes, including DOE/NRC meetings, Commission meetings
- Drafts (i.e., those submitted for decision beyond the first level of management or similar criteria)
- Congressional Q's & A's
- "Regulatory" documents related to HLW site selection and licensing, such as:
  - Draft and final environmental assessments
  - Site characterization plans
  - Site characterization study plans
  - Site characterization progress reports
  - Issue resolution reports
  - Rulemakings
  - Public and agency comments on documents
  - Response to public comments
  - Environmental Impact Statement, Comment Response Document, and related references
  - License Application (LA), LA data base, and related references
  - Topical reports, data, and data analysis
  - Recommendation Report to President
  - Notice of Disapproval, if submitted

**II. General Topics**

1. Any document pertaining to the location and potential of valuable natural resources, hydrology, geophysics, tectonics (including volcanism), geomorphology, seismic activity, atomic energy defense activities, proximity to water supplies, proximity to populations, the effect upon the rights of users of water, proximity to components of the National Park System, the National Wildlife Refuge System, the National Wildlife and Scenic River System, the National Wilderness Preservation System, or National Forest Lands, proximity to sites where high-level radioactive waste and spent nuclear fuel is generated or temporarily stored, spent fuel and nuclear waste transportation, safety factors involved in moving spent fuel or nuclear waste to a repository, the cost and impact of transporting spent fuel and nuclear waste to a repository site, the advantages of regional distribution in siting of repositories, and various

geologic media in which sites for repositories may be located.

2. Any document related to repository design, siting, construction, or operation, or the transportation of spent nuclear fuel and high-level nuclear waste, not categorized as an "excluded document", generated by or in the possession of any contractor of the Department of Energy, the Nuclear Regulatory Commission, or any other party to the HLW licensing proceeding.

3. All documents related to the physical attributes of the Basin and Range Province of the continental United States.

4. Any document listing and/or considering any site or location other than Yucca Mountain as a possible location for a high level nuclear waste repository, or any alternative technology to deep geologic disposal.

5. Any document analyzing the effect of the development of a repository at Yucca Mountain on the rights of users of water in the Amargosa ground-water basin in Nevada.

6. Any document analyzing the health and safety implications to the people and environment of the transportation of spent fuel between locations where spent fuel is generated or stored and Yucca Mountain, Nevada, or any other site nominated for repository characterization on May 24, 1988, including, but not limited to:

- a. Any analysis of possible human error in the manufacture of spent fuel casks;
- b. Any analysis of the actual population density along all of any specific projected routes of travel;
- c. Any analysis of releases from any actual radioactive material transportation incidents;
- d. Any analysis of the emergency response time in any actual radioactive materials transportation incident;
- e. Any actual accident data on any specific projected routes of travel;
- f. Any calculations or projections on the probabilities of accidents on any specific projected routes of travel;
- g. Any data on the physical properties or containment capabilities of spent fuel casks which have been used or which are projected to be used at any hypothetical or actual projected repository;
- h. Any analysis of modeling of the containment capabilities of spent fuel casks under a stress scenario;
- i. Any analysis or comparison of spent fuel casks projected to be used against the spent fuel cask certification standards of the Nuclear Regulatory Commission;

**Topical Guidelines**

The following topical guidelines are to be used for identifying the documentary material that should be submitted by LSS participants for entry into the LSS under section 2.1003. The topical guidelines will also be used by the Pre-License Application Licensing Board for evaluating petitions for access to the

j. Any analysis of the containment capabilities of spent fuel casks containing spent fuel which has been burned up over an extended period.

7. Any document analyzing or comparing Yucca Mountain, Nevada, with any other site in the same geohydrologic setting.

8. Any document relating to potential interference or incompatibility between a Yucca Mountain, Nevada, high-level nuclear waste repository and atomic energy activities at the Nevada Test Site and Nellis Airforce base.

9. Any document related to the land status, use or ownership of Yucca Mountain, Nevada.

10. Any document considering or analyzing the attributes or detriments of any engineered barrier upon the radionuclide isolation capability of Yucca Mountain, Nevada, or any other site considered.

11. Any document evaluating the effect of extended fuel burn-up on Yucca Mountain, Nevada's adequacy as a repository site for disposal of spent fuel or upon the design of any such theoretical repository.

12. Any document analyzing or investigating the potential for discharge or radionuclides into the Death Valley National Monument.

13. Any document analyzing the recharge of the underlying saturated zone or the hydroconductivity of the unsaturated zone at Yucca Mountain.

14. Any document containing any data or analysis of volcanism in the geologic setting of which Yucca Mountain is a part.

15. Any document containing any data or analysis of tectonic events at Yucca Mountain, or pertaining to the tectonic framework of the Yucca Mountain area or any document containing any data or analysis of faults with or without surface expression in the area of Yucca Mountain.

16. Any document containing instructions or other limitations on the scope of work to be performed by Department of Energy personnel or contractor's personnel.

17. Any document pertaining to prevention or control of human intrusion at the Yucca Mountain site.

**III. Specific Topics** - *hand wr EA*

**1. The Site**

A. Location, General Appearance and Terrain, and Present Use

**B. Geologic Conditions**

1. Stratigraphy and volcanic history of the Yucca Mountain area

a. Caldera evolution and genesis of ash flows

b. Timber Mountain Tuff

c. Paintbrush Tuff

d. Tuffaceous beds of Calico Hills

e. Crater Flat Tuff

f. Older tuffs

g. Sedimentary units

h. Basalts

2. Structure

1. Seismicity

4. Energy and mineral resources

a. Energy resources

b. Metals

c. Nonmetals

5. Paleontology

6. Mineralogy

7. Cosmochemistry

8. Tectonics

a. Faulting

b. Stress

c. Uplift/subsidence

d. Volcanism

C. Hydrologic Conditions

1. Surface water

2. Ground water

a. Ground water movements

b. Ground water quality

3. Present and projected water use in the area

4. Groundwater resources

5. Climatology

6. Meteorology

D. Geochemistry

1. Rock chemistry of the overlying and underlying host units

2. Water chemistry of unsaturated or saturated zones

3. Alteration

4. Retardation and transport

E. Environmental Setting

1. Land use

a. Federal use

b. Agricultural

i. Grazing land

ii. Cropland

c. Mining

d. Recreation

e. Private and commercial development

2. Terrestrial and aquatic ecosystems

a. Terrestrial vegetation

i. Larrea-Ambrosia

ii. Larrea-Ephedra or Larrea-Lycium

iii. Coleogyne

iv. Mixed transition

v. Grassland-burn site

b. Terrestrial wildlife

i. Mammals

ii. Birds

iii. Reptiles

c. Special-interest species

d. Aquatic ecosystems

3. Air quality and weather conditions: Air quality

4. Noise

5. Aesthetic resources

6. Archaeological, cultural, and historical resources

7. Radiological background

a. Monitoring program

b. Dose assessment

F. Transportation

1. Highway infrastructure and current use

2. Railroad infrastructure and current use

G. Socioeconomic Conditions

1. Economic conditions

a. Nye County

b. Clark County

c. Lincoln County

d. Methodology

2. Population density and distribution

a. Populations of the State of Nevada

b. Population of Nye County

c. Population of Clark County

d. Population of Lincoln County

3. Community services

a. Housing

b. Education

c. Water supply

d. Waste-water treatment

e. Solid waste

f. Energy utilities

g. Public safety services

h. Medical and social services

i. Library facilities

j. Parks and recreation

4. Social conditions

a. Existing social organization and structure

i. Rural social organization and social structure

ii. Social organization and structure in urban Clark County

b. Culture and lifestyle

i. Rural culture

ii. Urban culture

c. Community attributes

d. Attitudes and perceptions toward the repository

5. Fiscal and governmental structure

2. Expected Effects of the Site Characterization Activities

A. Site Characterization Activities

1. Field studies

a. Exploratory drilling

b. Geophysical surveys

c. Geologic mapping

d. Standard operating practices for reclamation of areas disturbed by field studies

e. trenching

2. Exploratory shaft facility

a. Surface facilities

b. Exploratory shaft and underground workings

c. Secondary egress shaft

d. Exploratory shaft testing program

e. Final disposition

f. Standard operating practices that would minimize potential environmental damage

3. Other studies

a. Geologic surveys

b. Horizontal core drilling

c. Studies of past hydrologic conditions

d. Studies of tectonics, seismicity, and volcanism

e. Studies of seismicity induced by weapons testing

f. Field experiments in G-Tunnel facilities

g. Laboratory studies

h. Waste package design, testing, and analysis

B. Expected Effects of Site Characterization

1. Expected effects on the environment

a. Geology, hydrology, land use and surface soils

i. Geology

ii. Hydrology

iii. Land use

iv. Surface soils

b. Ecosystems

c. Air quality

d. Noise

e. Aesthetics

1. Archaeological, cultural, and historical resources
2. Socioeconomic and transportation conditions
- a. Economic conditions
1. Employment
- ii. Materials
- b. Population density and distribution
- c. Community services
- d. Social conditions
- e. Fiscal and governmental structure
- f. Transportation
3. Worker safety
4. Irreversible and irretrievable commitment of resources
- C. Alternative Site Characterization Activities
1. Regional and Local Effects of Locating a Repository at the Site
- A. The Repository
1. Construction
- a. The surface facilities
- b. Access to the subsurface
- c. The subsurface facilities
- d. Other constructions
- i. Access route
- ii. Railroad
- iii. Mined rock handling and storage facilities
- iv. Shafts and other facilities
- e. Utilities
2. Operations
- a. Emplacement phase
- i. Waste receipt
- ii. Waste emplacement
- b. Caretaker phase
3. Retrieval
4. Decommissioning and closure
5. Schedule and labor force
6. Material and resource requirements
- B. Expected Effects on the Physical Environment
1. Geologic impacts
2. Hydrologic impacts
3. Land use
4. Ecosystems
5. Air quality
- a. Ambient air-quality regulations
- b. Construction
- c. Operations
- d. Decommissioning and closure
6. Noise
- a. Construction
- b. Operations
- c. Decommissioning and closure
7. Aesthetic resources
8. Archaeological, cultural, and historical resources
9. Radiological effects
- a. Construction
- b. Operation
- i. Worker exposure during normal operation
- ii. Public exposure during normal operation
- iii. Accidental exposure during operation
- C. Expected Effects of Transportation Activities
1. Transportation of people and materials
- a. Highway impacts
- i. Construction
- ii. Operations
- iii. Decommissioning
- b. Railroad impacts
2. Transportation of nuclear wastes
- a. Shipment and routing nuclear waste shipments
1. National shipment and routing
- ii. Regional shipment and routing
- b. Radiological impacts
- i. National impacts
- ii. Regional impacts
- iii. Maximally exposed individual impacts
- c. Nonradiological impacts
- i. National impacts
- ii. Regional impacts
- d. Risk summary
1. National risk summary
- ii. Regional risk summary
- e. Costs of nuclear waste transportation
- f. Emergency response
- D. Expected Effects on Socioeconomic Conditions
1. Economic conditions
- a. Labor
- b. Materials and resources
- c. Cost
- d. Income
- e. Land use
- f. Tourism
2. Population density and distribution
3. Community services
- a. Housing
- b. Education
- c. Water supply
- d. Waste-water treatment
- e. Public safety services
- f. Medical services
- g. Transportation
4. Social conditions
- a. Social structure and social organization
- i. Standard effects on social structure and social organization
- ii. Special effects on social structure and social organization
- b. Culture and lifestyle
- c. Attitudes and perceptions
5. Fiscal conditions and government structure
6. Suitability of the Yucca Mountain Site for Site Characterization and for Development as a Repository
- A. Suitability of the Yucca Mountain Site for Development as a Repository: Evaluation Against the Guidelines That Do Not Require Site Characterization
1. Technical guidelines
- a. Postclosure site ownership and control
- i. Data relevant to the evaluation
- ii. Favorable condition
- iii. Potentially adverse condition
- iv. Evaluation and conclusion for the qualifying condition on the postclosure site ownership and control guidelines
- b. Population density and distribution
- i. Data relevant to the evaluation
- ii. Favorable condition
- iii. Potentially adverse condition
- iv. Disqualifying condition
- v. Evaluation and conclusion for the qualifying condition on the population density and distribution guideline
- c. Preclosure site ownership and control
- i. Data relevant to the evaluation
- ii. Favorable condition
- iii. Potentially adverse condition
- iv. Evaluation and conclusion for the qualifying condition on the preclosure site ownership and control guideline
- d. Meteorology
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Evaluation and conclusion for the qualifying condition on the meteorology guideline
- e. Offsite installations and operations
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Disqualifying conditions
- v. Evaluation and conclusion for the qualifying condition on the offsite installations operations guideline
- f. Environmental quality
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Disqualifying conditions
- v. Evaluation and conclusion for the qualifying condition on the environmental quality guidelines
- g. Socioeconomic impacts
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Disqualifying conditions
- v. Evaluation and conclusion for the qualifying condition on the socioeconomic guideline
- h. Transportation
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Evaluation and conclusion for the qualifying condition on the transportation guideline
2. Preclosure System
- a. Preclosure system: radiological safety
- i. Data relevant to the evaluation
- ii. Evaluation of the Yucca Mountain site
- iii. Conclusion for the qualifying condition on the preclosure system guideline radiological safety
- b. Preclosure system: environment, socioeconomic, and transportation
- i. Data relevant to the evaluation
- ii. Evaluation of the Yucca Mountain site
- iii. Conclusion for the qualifying condition on the preclosure system guideline environment, socioeconomic, and transportation
3. Postclosure technical
- a. Geohydrology
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Disqualifying conditions
- v. Evaluation and conclusion for the qualifying condition on the postclosure geohydrology guideline
- b. Geochemistry
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Evaluation and conclusion for the qualifying condition on the postclosure geochemistry guideline
- v. Plans for site characterization
- c. Rock characteristics
- i. Data relevant to the evaluation
- ii. Favorable conditions
- iii. Potentially adverse conditions
- iv. Evaluation and conclusion for the qualifying condition on the postclosure rock characteristics guideline
- d. Climatic changes
- i. Data relevant to the evaluation
- ii. Favorable conditions

- u. Potentially adverse conditions
- v. Evaluation and conclusion for the climate changes qualifying condition
- 2. Erosion
  - a. Data relevant to the evaluation
  - ii. Favorable conditions
  - iii. Potentially adverse conditions
  - iv. Disqualifying conditions
- 3. Dissolution
  - i. Data relevant to the evaluation
  - ii. Favorable conditions
  - iii. Potentially adverse conditions
  - iv. Disqualifying conditions
  - v. Evaluation and Conclusion for the qualifying condition on the postclosure and dewatering guideline
- g. Tectonics
  - i. Data relevant to the evaluation
  - ii. Favorable condition
  - iii. Potentially adverse condition
  - iv. Disqualifying condition
  - v. Evaluation and conclusion for the qualifying condition on the postclosure tectonics guideline
- h. Human interference, natural resources and site ownership and control
  - i. Data relevant to the evaluation
  - ii. Favorable conditions
  - iii. Potentially adverse conditions
  - iv. Disqualifying conditions
  - v. Evaluation and conclusion for the qualifying condition on the postclosure human interference and natural resources technical guideline
- 4. Postclosure system
  - a. Evaluation of the Yucca Mountain Site
    - i. Quantitative analysis
    - ii. Qualitative analysis
  - b. Summary and conclusion for the qualifying condition on the postclosure system guideline
- 5. Preclosure technical
  - a. Surface characteristics
    - i. Data relevant to the evaluation
    - ii. Favorable conditions
    - iii. Potentially adverse conditions
    - iv. Disqualifying conditions
    - v. Evaluation and conclusion for the qualifying condition on the postclosure surface characteristics guideline
  - b. Rock characteristics
    - i. Data relevant to the evaluation
    - ii. Favorable conditions
    - iii. Potentially adverse conditions
    - iv. Disqualifying conditions
    - v. Evaluation and conclusion for the qualifying condition on the postclosure rock characteristics guideline
  - c. Hydrology
    - i. Data relevant to the evaluation
    - ii. Favorable conditions
    - iii. Potentially adverse conditions
    - iv. Disqualifying conditions
    - v. Evaluation and conclusion for the qualifying condition on the postclosure hydrology guideline
- 6. Tectonics
  - i. Data relevant to the evaluation
  - ii. Favorable condition
  - iii. Potentially adverse conditions
  - iv. Disqualifying conditions
  - v. Evaluation and conclusion for the qualifying condition on the postclosure tectonics guideline
- 7. Ease and cost of siting, construction, operation, and closure

- a. Data relevant to the evaluation
- b. Evaluation
- c. Conditions for the qualifying condition on the ease and cost of siting, construction, operation, and closure guideline
- 7. Conclusion regarding suitability of the Yucca Mountain Site for the characteristics
  - B. Performance Analyses
    - 1. Preclosure radiological safety assessments
      - a. Preclosure radiation protection standards
      - b. Methods for preclosure radiological assessment
    - i. Radiological assessment of construction activities
    - ii. Radiological assessment of normal operations
    - iii. Radiological assessment of accidental releases
  - 2. Preliminary analysis of postclosure performance
    - a. Subsystem description
      - i. Engineered barrier subsystem
      - ii. The natural barrier subsystem
    - b. Preliminary performance analyses of the major components of the system
  - 3. The waste package lifetime
    - i. Release rate from the engineered barrier subsystem
  - c. Preliminary system performance description and analysis
  - d. Comparisons with regulatory performance objectives
  - e. Preliminary evaluation of disruptive events disruptive natural processes
- f. Conclusions
- 3. Transportation
  - A. Regulations Related to Safeguards
    - 1. Safeguards
    - 2. Conclusion
  - B. Packaging
    - 1. Packaging design, testing, and analysis
    - 2. Types of packaging
      - a. Spent fuel
      - b. Casks for defense high-level waste and West Valley high-level waste
    - c. Casks for use from an MRS to the repository
  - 3. Possible future developments
    - a. Mode-specific regulations
    - b. Overweight truck casks
    - c. Rod consolidation
    - d. Advanced handling concepts
    - e. Combustion storage/shipping casks
  - C. Potential Hazards of Transportation
    - 1. Potential consequences to an individual exposed to a maximum extent
      - a. Normal transport
      - b. Accidents
    - 2. Potential consequences to a large population from very severe transportation accidents
    - 3. Risk assessment
      - a. Outline of method for estimating population risks
      - b. Computational models and methods for population risks
      - c. Changes to the analytical models and methods for population risks
      - d. Transportation scenarios evaluated for risk analysis
      - e. Assumption about wastes
  - 4. Operational considerations for use in risk analysis

- g. Values for factors needed to calculate population risks
- h. Results of population risk analyses
- j. Uncertainties
- k. Risks associated with defective cost construction, lack of quality assurance, inadequate maintenance and human error
- D. Cost Analyses
  - 1. Outline method
  - 2. Assumptions
  - 3. Models
  - 4. Cost estimates
  - 5. Limitations of results
- E. Barge Transport to Repositories
- F. Effect of a Monitored Retrievable Storage Facility on Transportation Estimates
- G. Effect of At-Reactors Rod Consolidation on Transportation Estimates
- H. Criteria for Applying Transportation Guideline
  - 1. DOE Responsibilities for Transportation Safety
    - 1. Presentation
    - 2. Emergency response
    - 3. Insurance coverage for transportation accidents
  - J. Modal Mix
    - 1. Train shipments
      - a. Ordinary
      - b. Dedicated train
    - 2. Truck shipments
      - a. Legal weight
      - b. Overweight

**Environmental Impact: Categorical Exclusions**

The NRC has determined that this final rule is the type of action described in categorical exclusion 10 CFR 91.22(c)(1). Therefore, neither an environmental impact statement nor an environmental impact assessment has been prepared for this final rule.

**Paperwork Reduction Act Statement**

This rule does not contain information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.).

**Regulatory Analysis**

The DOE analysis of the costs and benefits of the LSS (U.S. Department of Energy, "Licensing Support System Benefit-Cost Analysis" July, 1988) and companion DOE reports ("Preliminary Needs Analysis;" "Preliminary Data Scope Analysis;" and "Conceptual Design Analysis;") are available for inspection in the NRC Public Document Room, 2120 L Street NW., Washington, DC. Single copies may be obtained from Francis X. Cameron, Office of General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC, 20555; Telephone: (301)-492-4823.

**Regulatory Flexibility Analysis**

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)),

PANEL'S SPECIFIC COMMENTS

**A - Draft Regulatory Guide**

1. On page 1, there should be a statement of position for excluding transportation information from the LSS in addition to the current statement of position for excluding environmental information.
2. Since the regulatory guide is an informative document, it should contain the scope of the LSS document submission requirements including the exclusions provided in 10 CFR 2.1005 and the provisions for claims of privilege in 10 CFR 2.1006.

**B - Enclosure 3 - Disposition of the Interim Topical Guidelines**

1. Delete phrase "by all parties to the negotiated rulemaking" in first paragraph.
2. Use full statement of the discovery standard rather than shorthand statement of information that is "relevant to the licensing proceeding" in second paragraph.
3. In discussion relating to excluding environmental information, address the issues of how and who determines now, about 10 years in advance, what environmental information pertaining to the Department of Energy's EIS is or is not necessary for the NRC's decision to adopt or not to adopt the EIS.
4. Responses to Questions 4 and 7 do not address the concern that documents related to alternative sites and alternative technologies might have within them information that was relevant to the technology for Yucca Mountain, and the Yucca Mountain site, even though information in those documents relative to other sites or other technologies wouldn't be relevant.
5. Response to Question 11 requires grammatical clarification.