

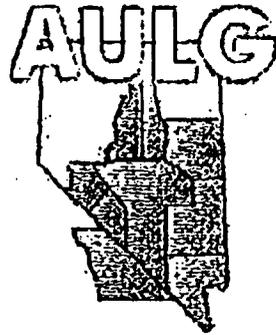
# Affected Units of Local Government

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**Nuclear Regulatory Commission  
Presentation**

**January 21, 2000**

*Lagay/Min. 70*



## **INTRODUCTION**

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**JANUARY 21, 2000  
ROCKVILLE, MD**

**MIKE BAUGHMAN, PhD.**

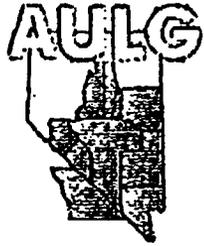


## **INTRODUCTION - WHO WE ARE**

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- **AULG designated by Secretary of Energy pursuant to NWPA**
- **Collectively, AULG represent over 1.5 million people in Nevada and California**





## **INTRODUCTION - WHO WE ARE (cont.)**

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- **The AULG's are in areas with multiple sources of potential radiation exposure including: historic weapons tests, current LLW disposal, and ongoing transportation of radioactive materials and wastes through the region.**
- **The AULGs' represent one of the fastest growing population centers in the United States.**



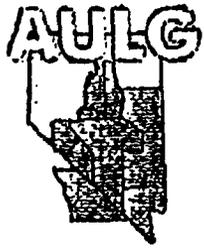


## **INTRODUCTION - ACCOMPLISHMENTS**

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- **Capacity building: county staff, consultants, advisory committees, data processing capabilities, tours of nuclear facilities**
- **Independent research: use of University of Nevada, Las Vegas; University of Nevada, Reno; independent consultants**
  - **Geotechnical/Geohydrology (Nye County Early Warning Drilling Program)**
  - **Risk assessment (RADTRAN evaluations of transportation risk)**
  - **Cooperative Hydrologic Studies with Inyo County**
  - **Socioeconomic impact assessment and monitoring**

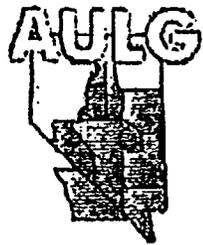




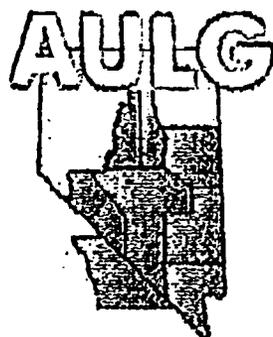
## **INTRODUCTION - ACCOMPLISHMENTS (cont.)**

- **Extensive public involvement**
- **Provided DOE with copies of technical reports, data and computer models reflecting local conditions and concerns**
- **Provided DOE with extensive comments to the scope of the Draft EIS for Yucca Mountain**
- **Participated in public hearings providing extensive initial comments on the sufficiency of the Draft EIS for Yucca Mountain**





## INTRODUCTION - NRC AND THE DEIS



**PROCEDURAL REQUIREMENTS OF NEPA  
FOR THE YUCCA MOUNTAIN DEIS**

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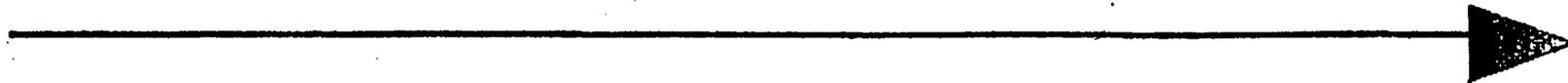
**JANUARY 21, 2000  
ROCKVILLE, MD**

**REX MASSEY, CHURCHILL/LANDER COUNTY**



## **PROCEDURAL REQUIREMENTS - DEIS**

- **PRIMARY AREAS OF CONCERN:**
  - **Inability to Determine Potential Impacts associated with Long-term Repository Performance**
  - **Incomplete Proposed Action and Alternatives**
  - **Cumulative Impacts Analysis**
  - **Selection of Preferred Alternatives for Repository Design and Mode of Transportation**
  - **DEIS does not Adequately address Transportation and Socioeconomic Impacts.**
  - **Failure to Adequately Consult with Federal, State and Local Agencies and Governments**

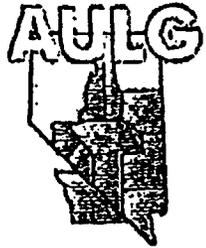




## **PROCEDURAL REQUIREMENTS - DEIS**

- **INABILITY TO DETERMINE POTENTIAL IMPACTS ASSOCIATED WITH LONG-TERM REPOSITORY PERFORMANCE**
  - **Proposed Action- To construct, operate, monitor, and close a geologic repository.**
  - **Performance assessment is critical to the impact analysis for the proposed and cumulative impacts.**
  - **With current performance assessment limitations, the impact analysis in Chapter 5 and Chapter 8 appears questionable.**
  - **As a result, a decision to recommend the Yucca Mountain site for geologic disposal cannot be supported at this time.**





## **PROCEDURAL REQUIREMENTS - DEIS**

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- **INABILITY TO DETERMINE POTENTIAL IMPACTS ASSOCIATED WITH LONG-TERM REPOSITORY PERFORMANCE (CONT.)**
  - **Regions of influence are too restrictive and do not include potentially affected areas.**
  - **DEIS methodologies are too restrictive, unable to identify most indirect impacts**
  - **The cumulative analysis does not consider the collective impact of all actions.**

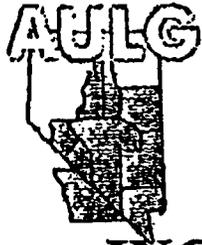




## **PROCEDURAL REQUIREMENTS - DEIS**

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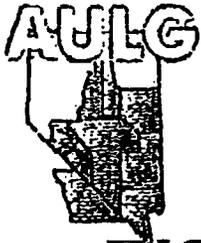
- **INABILITY TO DETERMINE POTENTIAL IMPACTS ASSOCIATED WITH LONG-TERM REPOSITORY PERFORMANCE.**
  - **Recommendations:**
    - **Prepare a Worst Case Scenario for gaps in relevant information or scientific uncertainty.**
    - **Reissue the draft EIS or prepare a supplement. 40 CFR 1502.22(a) -Essential information, if it is obtainable, must be included in the EIS.**
    - **Methods, models, and data used in the evaluation should be accepted, defensible, and accurate.**



## **PROCEDURAL REQUIREMENTS - DEIS**

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- **INCOMPLETE PROPOSED ACTION AND ALTERNATIVES**
  - **Final repository design is not known (thermal scenarios).**
  - **It is not known whether the proposed action or action alternatives are capable of being implemented.**
  - **The DEIS uses unproven “conceptual designs” to evaluate a possible range of impacts.**
  - **In the DEIS, “boundary analysis” is used as a substitute for an incomplete proposed action.**

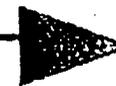


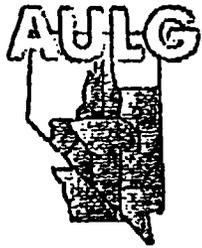
## **PROCEDURAL REQUIREMENTS - DEIS**

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- **INCOMPLETE PROPOSED ACTION AND ALTERNATIVES**

- **40CFR1508.23 Proposal- “Proposal” exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated.**
- **DEIS fails to include a mitigated action proposal.**
- **The No-Action Alternative is not credible; the no-action construct is not similar to the proposed action and it does not contain a reasonable set of assumptions and scenarios.**



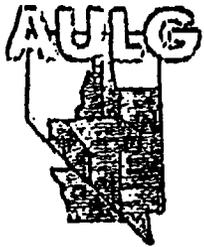


## **PROCEDURAL REQUIREMENTS - DEIS**

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- **INCOMPLETE PROPOSED ACTION AND ALTERNATIVES**
  - **Recommendations:**
    - **Performance assessment models must be strengthened and a near final design selected for the FEIS.**
    - **A total radiological inventory scenario should be evaluated as an action proposal.**
    - **Additional waste volumes (105,000 mthm inventory modules I and II) should be included as the part of the proposed action.**

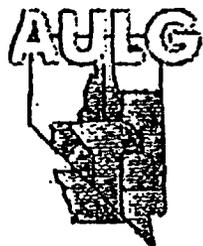




## **PROCEDURAL REQUIREMENTS - DEIS**

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- **CUMULATIVE IMPACTS**
  - **DOE is obligated to consider all past, present and reasonably foreseeable actions.**
  - **The approach in the DEIS does not consider the collective impact of all actions.**
  - **40CFR1508.7 ...Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.**

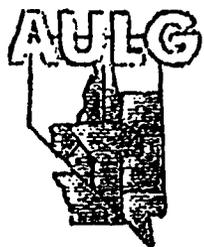


## **PROCEDURAL REQUIREMENTS - DEIS**

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- **SELECTION OF PREFERRED ALTERNATIVES**
  - **40CFR1502.14 (e)-requires an agency to identify a preferred alternative or alternatives.**
  - **Two potentially important choices for preferred alternatives include:**
    - **Transportation Mode**
    - **Repository Design**

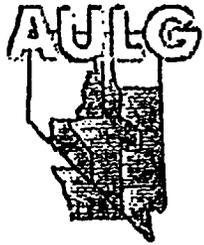




## **PROCEDURAL REQUIREMENTS - DEIS**

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- **DEIS DOES NOT ADEQUATELY ADDRESS TRANSPORTATION AND SOCIOECONOMIC IMPACTS**
  - **DEIS uses outdated demographic and census data.**
  - **DEIS does not evaluate or address route specific impact; instead it relies upon “compliance with DOE regulations” to fulfill NEPA requirements.**
  - **DEIS methodologies are too restrictive, unable to identify most indirect impacts.**



## **PROCEDURAL REQUIREMENTS - DEIS**

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- **FAILURE TO ADEQUATELY CONSULT WITH FEDERAL, STATE AND LOCAL AGENCIES AND GOVERNMENTS**
  - **DOE did not conduct effective consultations with federal agencies having significant and/or statutory roles in the implementation of the NWPA.**
  - **DOE did not address the concerns of state and local governments and agencies.**
  - **DOE did not include data and information collected by local governments for use in DEIS**



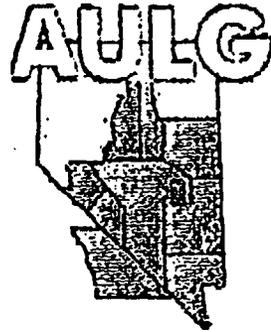
## **PROCEDURAL REQUIREMENTS - DEIS**

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- **FAILURE TO ADEQUATELY CONSULT WITH FEDERAL, STATE AND LOCAL AGENCIES AND GOVERNMENTS**

- **Recommendations**

- **DOE should engage in meaningful consultation with BLM, DOT, EPA and actively pursue comment on DEIS**
- **DOE should conduct meaningful consultation with AULG; use recent data collected by AULG; or where DOE disagrees with AULG identify AULG position/perspective as opposing technical viewpoint.**

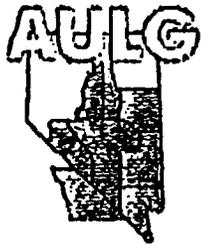


**GEOTECHNICAL CONCERNS WITH  
THE YUCCA MOUNTAIN DEIS**

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**JANUARY 21, 2000  
ROCKVILLE, MD**

**LES BRADSHAW, NYE COUNTY**

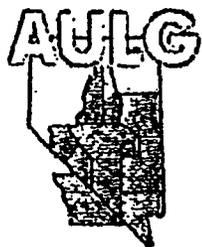


## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **Cumulative Impacts on Water Resources**
- **Waterborne Radiological Consequences**
- **Well Concentration of Chemically Toxic Constituents**
- **Uncertainty**



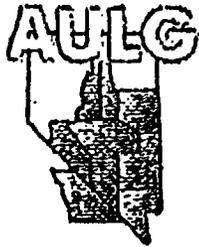


## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **CUMULATIVE IMPACTS ON WATER RESOURCES**
  - **Reduced region of influence limits analysis and ignores documented impacts that are occurring over a broader region. (Inconsistent with 40 CFR 1508.25)**
  - **Approach is inconsistent with EIS findings that proposed action could potentially affect water supply in Death Valley.**
  - **Region of influence cannot be smaller than the region over which impacts occur.**
  - **DEIS Methodology unable to identify previously documented impacts, especially those identified in the Special Nevada Report**



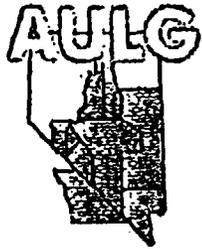


## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **CUMULATIVE IMPACTS ANALYSIS FAILS TO ADEQUATELY CONSIDER:**
  - **Cumulative direct and indirect impacts of the total radiologic burden that will be imposed;**
  - **Cumulative impacts of federal land withdrawals on water resource availability;**
  - **Cumulative impacts of federal policies regarding nuclear weapons testing, waste disposal, and environmental protection;**
  - **Water resource use and management practices on both private and federal lands.**



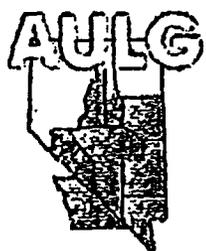


## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **WATERBORNE RADIOLOGIC CONSEQUENCES**
  - **DEIS (and the TSPA/VA) does not contain sufficient information to verify the accuracy of the numbers presented in the DEIS.**
  - **DEIS does not explain why long-lived radionuclides Americium 243, Cesium 135, Curium 245 and 246, Nickel 59, Plutonium 240, Neptunium 239, Uranium 233, 235, 236, and 238 were excluded from analysis.**
  - **Because of lack of information, the calculations presented in the DEIS cannot be verified.**





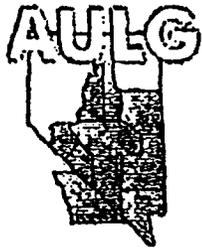
## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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### **• WELL CONCENTRATION OF CHEMICALLY TOXIC CONSTITUENTS**

- **DEIS does not account for all sources of chemically toxic constituents in groundwater, including documented background conditions (e.g., barium, manganese), and contributions from the Nevada Test Site.**
- **Using “series of simple calculations” rather than appropriate tools (ie. chemical models) fails to account for multiple contaminant sources, different receiving waters, geochemical variations along flow path, and contribution of non-radiologic constituents from decay.**



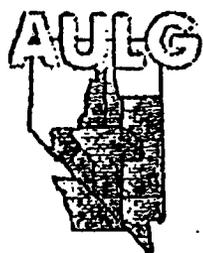


## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **WELL CONCENTRATION OF CHEMICALLY TOXIC CONSTITUENTS (CONT.)**
  - **Assumptions regarding removal of technitium through precipitation, dilution with uncontaminated recharge over the NTS, and aquifer mixing during transport result in diluted dose, and are not conservative, as stated in the DEIS.**
  - **Incorrect release limits are used for some radiological and chemical constituents, incorrect source terms are used for others, and incorrect dilution factors are applied that result in flawed risk calculations.**



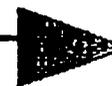


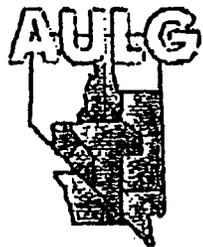
## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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- **UNCERTAINTY**

- **Human Health Assessment assumptions regarding population are not valid, and introduces high level of uncertainty.**
- **National Research Council (1995) recommendation regarding “societal conditions” taken out of context.**
- **DEIS misuses NRC (1995) as basis to ignore current population levels and short term future growth (50 years), which is very predictable.**
- **DEIS concludes that population in 10,000 years will be the same as in 1990. Information is misleading, arbitrary, and not based on sound science.**





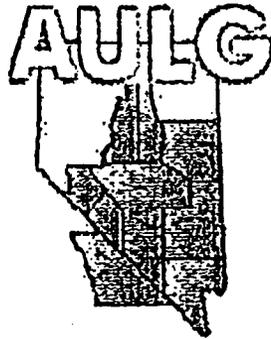
## **GEOTECHNICAL - DEIS TECHNICAL CONCERNS**

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### **• RECOMMENDATIONS**

- DOE should revise Cumulative Impact Analysis to include previously documented impacts and currently proposed federal and private actions.**
- Include rationale for assumptions, data selection, and methods used in analyses.**
- Delete DEIS tables and discussion regarding population-based impacts**
- Add discussion “Uncertainty Associated with Currently Available Data;” this DEIS section only addresses plans to collect data.**



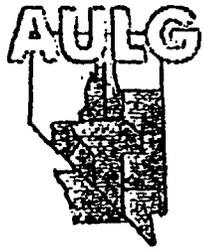


**TRANSPORTATION CONCERNS  
WITH THE YUCCA MOUNTAIN DEIS**

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**JANUARY 21, 2000  
ROCKVILLE, MD**

**DENNIS BECHTEL, CLARK COUNTY**



## **TRANSPORTATION**

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- **SIGNIFICANCE OF NUCLEAR WASTE TRANSPORTATION ISSUES**
  - **Nuclear waste transportation is a major element of the Yucca Mountain Program and requires comprehensive analysis in the DEIS**
  - **Nuclear waste destined for Yucca Mountain will be transported through 43 states and potentially impact millions of people**
  - **The possible risks associated with the transportation of nuclear waste will be of the most concern to the public**
  - **Risk associated with the transport of nuclear waste can result in a multitude of potential impacts**



## **TRANSPORTATION**

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### **• MAJOR TRANSPORTATION CONCERNS IN THE DEIS:**

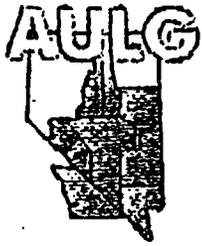
- Too narrowly defines the role of the DEIS in considering transportation impacts**
- Fails to analyze transportation issues traditionally evaluated in an EIS**
- Inaccurately and incompletely assesses a host of risk issues associated with the transportation of the waste**
- Fails to comparatively analyze routes and modes (e.g., truck versus rail alternatives)**
- Does not address the cumulative impacts of other nuclear waste destined for the Nevada Test Site**



## **TRANSPORTATION**

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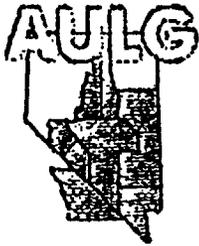
- **IMPACT TOO NARROWLY DEFINED IN THE DEIS**
  - **The purpose of an EIS is to provide a basis to assess impact and determine potential mitigation requirements**
  - **By choosing to adopt a narrow definition of impact in the DEIS DOE ensured that no impacts are identified**
  - **The DEIS fails to provide specific information to define impact and enable mitigation requirements to be negotiated**



## **TRANSPORTATION**

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- **THE DEIS DOES NOT EVALUATE TRANSPORTATION IMPACTS**
  - Needs an “Implementing Alternative” to analyze issues such as route, mode, etc. to test the system and determine potential impacts
  - Does not address transportation issues traditionally evaluated in an EIS (e.g., congestion, infrastructure, accident rates)
  - Avoids discussion of the construction, operation, and maintenance of the transportation system
  - Doesn't discuss schedule particularly when transportation system issues will be considered and resolved



## **TRANSPORTATION**

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- **INACCURATE AND INCOMPLETE ASSESSMENT OF THE RISK INVOLVED IN TRANSPORTING THE NUCLEAR WASTE**

- **The DEIS fails to address how human health risk will enter into decision-making and the uncertainties of the risk**
- **The analysis of transportation risks does not include performance data for the casks, trucks (or rail) used to implement the proposed action**
- **Inaccurate demographics used to evaluate risk**
- **Fails to address the impact of human and institutional factors on risk**
- **Avoids consideration of other “risks” by which the public makes decisions (e.g., economy, property values, quality of life)**

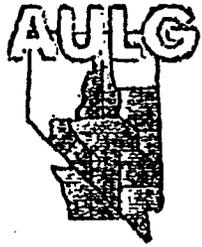




## **TRANSPORTATION**

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- **FAILS TO CONDUCT A COMPARATIVE ANALYSIS AMONG ROUTES AND MODES (E.G., TRUCK VERSUS RAIL ALTERNATIVES)**
  - **Fails to address the complex problems associated with the transportation of the waste nationally**
  - **Fails to describe a process by which an implementing alternative could be selected**
  - **DOE assumes a “single-route” strategy for national transportation and does not compare mode alternatives**
  - **Does not provide a thorough description of intermodal handling operations**
  - **The DEIS does not evaluate a full range of modal alternatives**

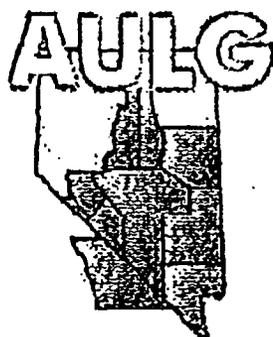


## **TRANSPORTATION**

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### **• DEIS TRANSPORTATION RECOMMENDATIONS**

- The DEIS needs an “Implementing Alternative” to analyze a whole range of issues associated with the transportation of the waste**
- A comparative analysis of the Nevada mode and routing alternatives is needed in the DEIS**
- The DEIS must reevaluate the health risk to the public by using more accurate local demographics**
- The DEIS needs to include an evaluation of other “risks” by which the public makes decisions (e.g., economy, property values, quality of life)**

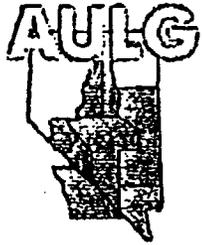


## **SUMMARY CONCLUSIONS/RECOMMENDATIONS**

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**JANUARY 21, 2000  
ROCKVILLE, MD**

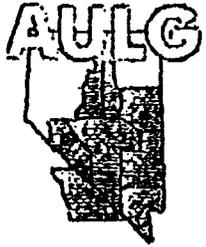
**MIKE BAUGHMAN, PhD.**



## **SUMMARY CONCLUSIONS & RECOMMENDATIONS**

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- **NRC comments to the DEIS should seek to encourage DOE to prepare a Final EIS which is responsive to concerns of AULG's and can support major federal decisions.**
- **NRC should encourage DOE to make better use of locally provided information in producing a Final EIS which more accurately reflects local conditions and concerns.**
- **NRC should encourage DOE to identify preferred modes and routes of transportation through Nevada within the Final EIS so that comparatively significant risks to public health and safety can be effectively mitigated through the NEPA/NRC licensing process.**
- **NRC should encourage DOE to reduce uncertainties within the Draft Yucca Mountain Environmental Impact Statement.**



## **SUMMARY CONCLUSIONS & RECOMMENDATIONS (cont.)**

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- **NRC should encourage DOE to address mitigation/compensation of impacts within the Final EIS in a comprehensive fashion.**