



Department of Energy
Washington, DC 20585

JUN 1 1993

Mr. Joseph J. Holonich, Director
Repository Licensing & Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Holonich:

The 1993 level of detail agreement (LODA) on study plans requires that the U.S. Department of Energy provide a list of study plans that will be written using the new format included in the 1993 agreement. The enclosed list identifies the study plans that will be submitted to the Nuclear Regulatory Commission (NRC) written to the new format, as well as the study plans that will be submitted to the NRC written to the old format in the 1986 LODA agreement.

If you have any questions, please contact Ms. Sheila Long at 202-586-1447 or Mr. Chris Einberg of my office at 202-586-8869.

Sincerely,

Dwight E. Shelor
Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

Enclosure:
Study Plans to be Written
to New Format

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STUDY PLANS TO BE WRITTEN TO NEW FORMAT

- 8.3.1.3.3.1 Natural Analog Hydrothermal System in Tuff/LLNL**
- 8.3.1.3.3.2 Kinetics and Thermodynamics of Mineral Evolution/LANL**
- 8.3.1.3.3.3 Conceptual Model of Mineral Evolution/LANL**
- 8.3.1.3.7.2 Demonstration of the Applicability of Laboratory Data to Repository Transport Calculations/LANL**
- 8.3.1.3.8.1 Gaseous Radionuclide Transport Calculations and Measurements/LANL**
- 8.3.1.4.2.3 Three-Dimensional Geologic Model/USGS**
- 8.3.1.4.3.2 Three-Dimensional Rock Characteristics Model/SNL**
- 8.3.1.5.1.5 Paleoclimate-Paleoenvironment Synthesis/USGS**
- 8.3.1.5.1.6 Characterization of Future Regional Climates and Environments/SNL**
- 8.3.1.6.1.1 Distribution and Characterization of Present and Past Erosion/USGS**
- 8.3.1.6.2.1 Influence of Future Climatic Conditions on the Location and Rates of Erosion/USGS**
- 8.3.1.6.3.1 Evaluation of the Effects of Future Tectonics on Erosion at Yucca Mountain/USGS**
- 8.3.1.6.4.1 Develop Topical Report on Effects of Erosion on the Hydrologic, Geochemical, and Rock Characteristics at Yucca Mountain/USGS**
- 8.3.1.8.3.1 Analysis of the Effects of Tectonic Processes and Events on the Average Percolation Flux Rates over the Repository/USGS**
- 8.3.1.8.3.2 Analysis of the Effects of Tectonic Processes and Events on Changes of the Water Table Elevation/USGS**
- 8.3.1.8.3.3 Analysis of the Effects of Tectonic Processes and Events on Local Fracture Permeability and Effective Porosity/USGS**
- 8.3.1.8.4.1 Analysis of the Effects of Tectonic Processes and Events on Rock Geochemical Properties/USGS**
- 8.3.1.8.5.3 Investigation of Folds in Miocene and Younger Rocks in the Region/USGS**
- 8.3.1.9.1.1 Evaluation of Natural Processes that Could Affect the Long-Term Survivability of the Surface Marker System at Yucca Mountain/SAIC**

ENCLOSURE

- 8.3.1.9.3.1 Evaluation of the Data Needed to Support an Assessment of the Likelihood of Future Inadvertent Human Intrusion as Yucca Mountain as a Result of Exploration and/or Extraction of Natural Resources/SAIC**
- 8.3.1.9.3.2 Evaluation of the Potential Effects of Exploration for, or Extraction of, Natural Resources on the Hydrologic Characteristics at Yucca mountain/SAIC**
- 8.3.1.15.1.6 In-Situ Thermomechanical Properties/SNL**
- 8.3.1.15.1.7 In-Situ Mechanical Properties/SNL**
- 8.3.1.16.2.1 Location of Adequate Water Supply for Construction, Operation, Closure, and Decommissioning of a Mined Geologic Disposal System at Yucca Mountain/SAIC**
- 8.3.1.16.3.1 Determination of the Preclosure Hydrologic Conditions of the Unsaturated Zone at Yucca Mountain/USGS**
- 8.3.1.17.1.1 Potential for Ash Fall at the Site/LANL**
- 8.3.1.17.2.1 Faulting Potential at the Repository/SNL**
- 8.3.1.17.3.2 Underground Nuclear Explosion Sources/SNL**
- 8.3.1.17.3.3 Ground Motion from Regional Earthquakes and UNE's/USGS/SNL**
- 8.3.1.17.3.6 Probabilistic Seismic Hazard Analyses/SNL**
- 8.3.1.17.4.7 Subsurface Geometry and Concealed Extensions of Quaternary Faults at Yucca Mountain/USGS**
- 8.3.1.17.4.8 Stress Field Within and Proximal to the Site Area/USGS**
- 8.3.1.17.4.9 Tectonic Geomorphology of the Yucca Mountain Area/USGS**
- 8.3.1.17.4.11 Characterization of Regional Lateral Crustal Movements/USGS**
- 8.3.3.2.2.1 Seal Material Properties Development/SNL**
- 8.3.4.2.4.1 Characterization of Chemical and Mineralogic Changes in the Postemplacement Environment/LLNL**
- 8.3.4.2.4.2 Hydrologic Properties of the Waste Package Environment/LLNL**
- 8.3.4.2.4.4 Engineered Barrier System Field Tests/LLNL**
- 8.3.4.2.4.5 Effects of Man-Made Materials on Water Chemistry in the Waste Package Environment/LLNL**

STUDY PLANS TO BE WRITTEN TO THE OLD FORMAT

- 8.3.1.2.2.4 R2 Characterization of the Yucca Mountain Unsaturated Zone in the ESF/USGS**
- 8.3.1.2.2.6 R1 Characterization of Gas-Phase Movement in the Unsaturated Zone/USGS**
- 8.3.1.2.2.7 R1 Hydrochemical Characterization of the Unsaturated Zone/USGS**
- 8.3.1.2.2.8 R1 Fluid Flow in Unsaturated, Fractured Rock/USGS**
- 8.3.1.2.2.9 Site Unsaturated Zone Modeling and Synthesis/USGS**
- 8.3.1.3.1.1 Ground-Water Chemistry Model/LANL**
- 8.3.1.3.4.1/3 Batch Sorption Studies and the Development of Sorption Models/LANL**
- 8.3.1.3.5.1/2 Dissolved Species Concentration Limits and Colloid Behavior/LANL**
- 8.3.1.3.6.1 Dynamic Transport Column Experiments/LANL**
- 8.3.1.3.6.2 Diffusion/LANL**
- 8.3.1.5.1.1 Charcterization of Modern Regional Climate/USGS**
- 8.3.1.8.1.2 Physical Processes of Magmatism and Effects on the Potential Repository/LANL**
- 8.3.1.8.5.2 Characterization of Igneous Intrusive Features/USGS**
- 8.3.1.12.2.1 R1 Meteorological Data Collection at the Yucca Mountain Site/SAIC**
- 8.3.1.15.1.1 R1 Laboratory Thermal Properties/SNL**
- 8.3.1.15.1.2 R1 Laboratory Thermal Expansion Testing/SNL**
- 8.3.1.15.1.4 Laboratory Determination of the Mechanical Properties of Fractures/SNL**
- 8.3.1.15.1.5 R1 Excavation Investigations/SNL**
- 8.3.1.15.2.2 Charcterization of the Site Ambient Thermal Conditions/USGS**
- 8.3.1.17.3.5 Ground Motion at the Site from Controlled Seismic Events/USGS**
- 8.3.1.17.4.12 Tectonic Models and Synthesis/USGS**

cc w/enclosure:

C. Gertz, YMPO

T. J. Hickey, Nevada Legislative Committee

R. Loux, State of Nevada

D. Bechtel, Las Vegas, NV

Eureka County, NV

Lander County, Battle Mountain, NV

P. Niedzielski-Eichner, Nye County, NV

L. Bradshaw, Nye County, NV

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J. Hayes, Esmeralda County, NV

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