



Department of Energy
Washington, DC 20585

OCT 26 1992

The Honorable Ivan Selin
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Chairman:

In accordance with 10 CFR Part 1022, the U.S. Department of Energy (DOE) has completed a Floodplain Assessment and Statement of Findings (SOF) for the Exploratory Studies Facility (ESF) at the Yucca Mountain site in Nevada. Copies of these documents are enclosed for your information.

The Floodplain Assessment describes potential effects of the ESF on the 100-year floodplain and considers appropriate alternatives and mitigation measures. The SOF describes effects of ESF subsurface scientific investigations as well as the cumulative effects of both surface-based activities and the ESF activities within the 100-year floodplain.

The proposed locations and aerial extent of the surface components of the ESF have been selected to minimize harm to the floodplain. DOE has concluded that there are no practicable alternatives to the proposed action and that all actions will conform to applicable State floodplain protection standards.

If you have any questions, please contact Wendy Dixon of the Yucca Mountain Site Characterization Project Office at 702-794-7947.

Sincerely,

John W. Bartlett, Director
Office of Civilian Radioactive
Waste Management

2 Enclosures *on the shelf*

cc:
Wendy Dixon, YMPO

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DEPARTMENT OF ENERGY

Floodplain Statement of Findings for Site Characterization
Activities at Yucca Mountain, Nevada

AGENCY: Department of Energy, Office of Civilian Radioactive
Waste Management

ACTION: Statement Of Findings

SUMMARY: This Statement Of Findings (SOF) has been prepared in accordance with 10 CFR Part 1022 to support of a DOE decision to locate portions of the Exploratory Studies Facility (ESF) within the 100-year floodplain at the Yucca Mountain, Nevada site. The ESF will support sub-surface activities planned for characterizing the site for a potential geologic repository. An October 1, 1991, SOF addressed the surface-based investigations that are being undertaken to characterize this site. This SOF summarizes potential impacts of the ESF and the potential cumulative impacts of activities related to the surface-based investigations and the sub-surface ESF activities.

This SOF has been prepared pursuant to 10 CFR Part 1022, "Compliance with Floodplain/Wetlands Environmental Review Requirements." In accordance with this regulation, a Floodplain/Wetlands Notice of Involvement was published in the Federal Register on February 9, 1989 (54 FR 6318). At that time, the proposed action consisted of conducting surface-based investigations and constructing an underground facility, whose design has subsequently been modified, for sub-surface

investigations. A floodplain assessment for potential floodplain impacts from surface-based investigation activities was prepared in August 1991 and was followed by the floodplain SOF published in the Federal Register (56 FR 49765) on October 1, 1991. A supplemental floodplain assessment has been prepared for the ESF and associated facilities and cumulative impacts of the surface-based activities and the ESF.

For the dry washes located near the ESF facility, a United States Geological Survey study of the probable characteristics of the 100-year, 500-year, and regional maximum floods on the Nevada Test Site was used to assess impacts on the 100-year floodplain. ESF activities that will occur in the 100-year floodplain are limited to the excavated materials conveyer belt (0.25 acres), the borrow area (3.5 acres), and new access road construction (2.5 acres). The proposed action has no practicable alternatives; it is not expected to cause significant adverse effects to floodplains, people, or property, and has been designed to avoid or minimize potential harm to and within the floodplain.

For copies of this Floodplain Assessment and/or location map or for further information on this specific project, contact:

Ms. Wendy R. Dixon
Yucca Mountain Site Characterization Project Office
U.S. Department of Energy Nevada Field Office
P.O. Box 98518
Las Vegas, Nevada 89193-8513
(702) 794-7947
Fax: (702) 794-7907

For information on general DOE floodplain/wetlands environmental review requirements, contact:

Ms. Carol M. Borgstrom
Office of National Environmental Policy Act (NEPA) Oversight
EH-25
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-4600 or (800) 472-2756
Fax: (202) 586-7031

SUPPLEMENTARY INFORMATION:

I. Project Description

In accordance with the Nuclear Waste Policy Act of 1982, as amended (NWPA), Yucca Mountain, Nevada is being studied to determine its suitability as the first underground repository for the permanent disposal of the Nation's commercial spent fuel and high-level radioactive waste. Before a decision is made to locate the repository at Yucca Mountain, the geology and hydrology of the site must be investigated thoroughly to determine if the site is suitable to safely isolate the waste from the surrounding environment.

Investigations of the Yucca Mountain site will consist of both surface-based activities and sub-surface activities in an Exploratory Studies Facility (ESF). A Statement Of Findings (SOF) concerning surface-based investigation activities, (e.g. borehole drilling, construction of access roads and graded pads for deep drilling, excavation of trenches, and other minor surface disturbances) was published October 1, 1991. Information contained in the current SOF addresses the impacts of the ESF and associated facilities as well as the cumulative effects from surface-based investigations and sub-surface ESF activities. Included with the ESF are underground access ramps, drifts, ramp portals, conveyer belts, an excavated rock stockpile, topsoil stockpile, powerline, water distribution system, septic tanks and leach fields, waste water disposal system, surface support facilities and structures, and (possibly) a vertical entry shaft. Some of these facilities may be located in or near dry washes. These dry washes and bordering areas were designated as areas of probable inundation in a United States Geological Survey study of the probable characteristics of the 100-year, 500-year, and regional maximum floods on the Nevada Test Site.

For the ESF support facilities, new access roads are to be located in approximately 2.5 acres of areas of probable inundation due to runoff from a 100-year storm event. The excavated materials conveyer belt will affect less than 0.25 acres of areas of probable inundation. The borrow area located

in the bottom of Drillhole Wash will be located in approximately 3.5 acres of an area of inundation from a 100-year storm event. Therefore, a total of 6 acres of the 100-year floodplain are estimated to be disturbed from the ESF activities.

Surface-based investigation support facilities proposed for construction in or near dry washes include approximately 10 new borehole drill pads, a limited number of small trench excavations, and approximately 8 miles of dirt and gravel access roads. A total of 74 acres are estimated to be disturbed from surface-based investigations, as identified in the August 1991 Floodplain Assessment. Therefore, the total cumulative floodplain area affected by surface and sub-surface activities is 80 acres.

II. Floodplain Impacts

The base floodplain considered in this SOF is the 100-year floodplain. Flood Insurance Rate Maps and Flood Hazard Boundary Maps are not available for Yucca Mountain and vicinity. The delineation of the 100-year and 500-year floodplains was based on available USGS and Bureau of Reclamation reports.

The 500-year floodplain was considered to be the critical-action floodplain. Critical-action is defined in the Section 1022.4 of the floodplain regulations as any activity for which even a slight chance of flooding would be too great, such as storage of

highly volatile, toxic, or water-reactive materials. The critical action floodplain was considered for the ESF surface support facilities located on the north and south portal pads because petroleum, oil, and lubricants will be stored for use; both the north and south portal pads are located above the critical action floodplain.

Sub-surface based investigations will involve the construction of access roads, surface support facilities, utility services, excavation of an aggregate borrow area, and underground access ramps. During construction, some vegetation will be lost and surface soils will be disturbed; however, siltation is not expected to be much above that which is normal, and impact to vegetation and wildlife is not expected to be significant. The slight disturbances attributable to the sub-surface based investigations proposed in the floodplain area are not expected to result in any significant effects on lives and property downstream.

A survey performed by the Desert Research Institute has identified two sites in the floodplain that contain cultural resources. Activities in these areas will proceed under provisions of a Programmatic Agreement between the DOE and the Advisory Council on Historic Preservation.

All activities will conform with applicable state floodplain protection standards.

III. Alternatives

The proposed action, development of the ESF, is necessary to develop information to complete site characterization as required by NWPAA. The proposed ESF location, configuration, and method of construction were selected based on a comparative evaluation of ESF-repository design options that identified 34 ESF-repository alternatives. This evaluation included potential impacts from flood events as one of the evaluation criteria. The proposed locations, configurations, and methods of construction were compared and ranked to determine the best alternative. The current choice was ranked as the best option based on the total set of evaluation criteria considered.

If preactivity site surveys reveal that the activities may adversely affect the floodplain, alternative locations for specific activities will be considered. However, there may be situations where alternative locations may be unsuitable due to conflicts with other resources; those situations will be evaluated on a location-by-location basis and the area that would create the least adverse impact, while enhancing long-term ecological stability, will be selected.

While the proposed action alternative is not expected to cause any significant adverse effects to the floodplain, people, or property, the potential for adverse impacts will be minimized by ensuring that mitigation measures, as described below, are undertaken.

IV. Mitigation

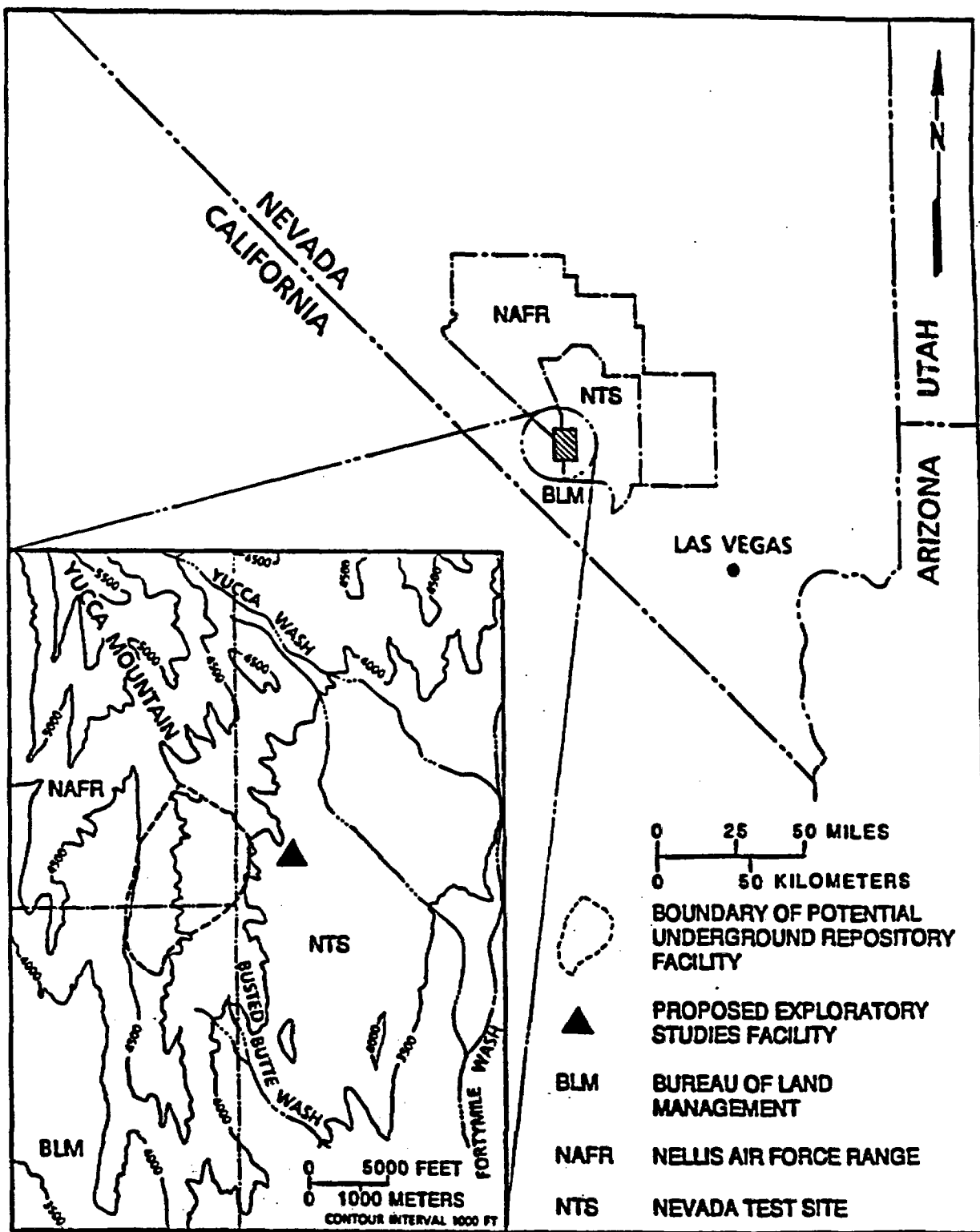
As required in Section 1022.12(a)(3) of the floodplains regulation, DOE has adopted a program to mitigate the potential adverse effects of activities occurring in the floodplain. Site-specific mitigation measures based on the findings from pre-activity surveys of individual locations will be incorporated into the design of activity locations. Mitigation measures such as construction of diversion channels, rip-rap, and berms will be incorporated into facility designs, when appropriate. Before clearing undisturbed land, installing new facilities or equipment, or performing experiments in a previously untested area, DOE will review the proposed activity to ensure that it conforms with environmental compliance requirements, land access requirements, and environmental monitoring and mitigation program requirements. Approval will not be granted unless (1) the pre-activity survey indicates that the proposed work will not significantly affect biological or archaeological resources; (2) it can be determined that the work is not expected to conflict with commitments to environmental safeguards set forth in the Environmental Monitoring and Mitigation Plan; and (3) the land

access and environmental compliance reviews verify that all applicable regulations have been satisfied.

Additionally, reclamation guidelines have been developed in conjunction with DOE's Reclamation Program Plan and Reclamation Implementation Plan, which discusses DOE policy for reclaiming disturbed areas and describes how reclamation practices will be implemented at the Yucca Mountain site. The reclamation guidelines include (1) procedures for site clearance, topsoil salvage, erosion control, drainage control, recontouring, revegetation, and road siting, construction, and maintenance; and (2) measures designed to minimize impacts on the floodplain and mitigate effects associated with construction activities in the floodplain.

V. Determination

The benefits resulting from locating some of the proposed surface and ESF sub-surface based site investigation activities in the 100-year floodplain at the Yucca Mountain site outweigh potential adverse environmental impacts on the floodplain. Alternatives have been reviewed, environmental impacts have been evaluated, and comments received on the Yucca Mountain Site Characterization Plan and Floodplain Notice of Involvement (54 FR 6318) have been considered. The proposed action has no practicable alternatives; it is not expected to cause significant adverse effects to

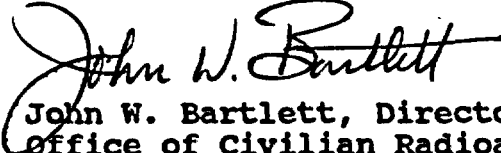


Location of Yucca Mountain Site in Southern Nevada.

floodplains, people, or property and has been designed to avoid or minimize harm to and within the floodplain.

DOE shall endeavor to allow at least 15 days for public review after publication of this Statement of Findings.

Issued in Washington, D.C., Oct. 19., 1992.


John W. Bartlett, Director,
Office of Civilian Radioactive
Waste Management