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***Nuclear Waste Policy Act***  
***(Section 113)***

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# **Site Characterization Plan**

***Yucca Mountain Site, Nevada Research  
and Development Area, Nevada***

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***Volume IV, Part B***

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***Chapter 8, Section 8.3, Planned Tests, Analyses, and Studies***

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### 8.3 PLANNED TESTS, ANALYSES, AND STUDIES

This section describes the planned site characterization studies, and the design and performance assessment activities to be conducted during site characterization at the Yucca Mountain site. Additional details on the planned field tests and laboratory tests will be provided in study plans. The current list of study plans with estimated dates for completion is provided in Section 8.5.1.

For the repository, seal, and waste package programs, only those activities requiring site data are described in detail in this document. Additional detail will be provided in appropriate design-related documents. In the case of performance assessment activities, sufficient detail is provided to document the site-data requirements. As described in Sections 8.1 and 8.2, performance allocation was used to identify both design and performance assessment data needs.

Table 8.3-1 provides an overview of the structure of Section 8.3 showing the order of the specific site programs in Section 8.3.1, and the performance and design issues covered in Sections 8.3.2 through 8.3.5.

Table 8.3-1. Overview of contents of Section 8.3 showing order of presentation of site programs and performance and design issues within major programs

Section 8.3.1 Site Program	Section 8.3.2 Repository Program	Section 8.3.3 Seal Program	Section 8.3.4 Waste Package Program	Section 8.3.5 Performance Assessment Program
8.3.1.2 Geohydrology	8.3.2.2 Configuration of underground facilities (postclosure), Issue 1.11	8.3.3.2 Seal characteristics (postclosure), Issue 1.12	8.3.4.2 Waste package characteristics (postclosure) Issue 1.10	8.3.5.2 Waste retrievability, Issue 2.4
8.3.1.3 Geochemistry				8.3.5.3 Public radiological exposures--normal conditions, Issue 2.1
8.3.1.4 Rock characteristics			8.3.4.3 Waste package characteristics (preclosure), Issue 2.6	8.3.5.4 Worker radiological safety--normal conditions, Issue 2.2
8.3.1.5 Climate	8.3.2.3 Repository design criteria for radiological safety, Issue 2.7			8.3.5.5 Accidental Radiological releases, Issue 2.3
8.3.1.6 Erosion			8.3.4.4 Waste package production technologies, Issue 4.3	8.3.5.6 Higher level findings--preclosure radiological safety, Issue 2.5
8.3.1.7 Rock dissolution	8.3.2.4 Nonradiological health and safety, Issue 4.2			8.3.5.7 Higher level findings--preclosure system and technical guidelines, Issue 4.1
8.3.1.8 Postclosure tectonics				8.3.5.9 Waste package containment, Issue 1.4
8.3.1.9 Human interference	8.3.2.5 Preclosure design and technical feasibility, Issue 4.4			8.3.5.10 Engineered barrier system release rates, Issue 1.5
8.3.1.10 Population density				8.3.5.12 Ground-water travel time, Issue 1.6
8.3.1.11 Site ownership				8.3.5.13 Total system performance, Issue 1.1
8.3.1.12 Meteorology				8.3.5.14 Individual protection, Issue 1.2
8.3.1.13 Offsite installations				8.3.5.15 Ground-water protection, Issue 1.3
8.3.1.14 Surface characteristics				8.3.5.16 Performance confirmation, Issue 1.7
8.3.1.15 Thermal and mechanical rock properties				8.3.5.17 NRC Siting Criteria, Issue 1.8
8.3.1.16 Preclosure hydrology				8.3.5.18 Higher level findings--postclosure system and technical guidelines, Issue 1.9
8.3.1.17 Preclosure tectonics				

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### 8.3.1 SITE PROGRAM

This section describes the site characterization investigations currently thought to be necessary to adequately characterize the Yucca Mountain site. The investigations are subdivided into studies and activities. The studies will be described in further detail in study plans; a list of study plans is provided in Section 8.5.1. The site data base developed by the planned studies will be used to meet the requirements specified in the issue resolution strategies for the performance and design issues presented in Sections 8.3.2 through 8.3.5. The site information to be collected in this program will serve as a part of the basis for determining if the regulatory requirements for licensing a geologic repository can be met at the Yucca Mountain site.

The exact locations where the site investigations described in this section will be conducted are tentative. Specific boundaries for the Yucca Mountain site have not been determined and site boundaries shown on maps in this document should be considered preliminary and subject to change. Because Section 8.3.1 was completed before Section 8.4, some activity descriptions in Section 8.3.1 may not be totally consistent with the descriptions in Section 8.4. Some inconsistencies may not have been identified, such as drilling locations and the general approach to surface-based drilling. Changes to the affected activities will be described in the study plans and semiannual progress reports.

The schedule information provided in this section includes the sequencing, interrelationships, and durations of the site program studies and should be regarded as a snapshot in time. Section 8.5 presents the major milestones, decision points, and summary schedule information for the repository program.