

## Department of Energy

## § 960.3-1-4-2

of site characterization and nongeologic data gathering, the recommendation of a candidate site for the development of a repository. Each of these decisions will be supported by the evidence specified below.

### § 960.3-1-4-1 Site identification as potentially acceptable.

The evidence for the identification of a potentially acceptable site shall be the types of information specified in appendix IV of this part. Such evidence will be relatively general and less detailed than that required for the nomination of a site as suitable for characterization. Because the gathering of detailed geologic data will not take place until after the recommendation of a site for characterization, the levels of information may be relatively greater for the evaluation of those guidelines in subparts C and D that pertain to surface-identifiable factors for such site. The sources of information shall include the literature in the public domain and the private sector, when available, and will be supplemented in some instances by surface investigations and conceptual engineering design studies conducted by the DOE. Geologic surface investigations may include the mapping of identifiable rock masses, fracture and joint characteristics, and fault zones. Other surface investigations will consider the aquatic and terrestrial ecology; water rights and uses; topography; potential offsite hazards; natural resource concentrations; national or State protected resources; existing transportation systems; meteorology and climatology; population densities, centers, and distributions; and general socioeconomic characteristics.

### § 960.3-1-4-2 Site nomination for characterization.

The evidence required to support the nomination of a site as suitable for characterization shall include the types of information specified in appendix IV of this part and shall be contained or referenced in the environmental assessments to be prepared in accordance with the requirements of the Act. The source of this information shall include the literature and related studies in the public domain and the

private sector, when available, and various meteorological, environmental, socioeconomic, and transportation studies conducted by the DOE in the affected area; exploratory boreholes in the region of such site, including lithologic logging and hydrologic and geophysical testing of such boreholes, laboratory testing of core samples for the evaluation of geochemical and engineering rock properties, and chemical analyses of water samples from such boreholes; surface investigations, including geologic mapping and geophysical surveys, and compilations of satellite imagery data; in situ or laboratory testing of similar rock types under expected repository conditions; evaluations of natural and man-made analogs of the repository and its subsystems, such as geothermally active areas, underground excavations, and case histories of socioeconomic cycles in areas that have experienced intermittent large-scale construction and industrial activities; and extrapolations of regional data to estimate site-specific characteristics and conditions. The exact types and amounts of information to be collected within the above categories, including such details as the specific types of hydrologic tests, combinations of geophysical tests, or number of exploratory boreholes, are dependent on the site-specific needs for the application of the guidelines of subparts C and D, in accordance with the provisions of this subpart and the application requirements set forth in appendix III of this part. The evidence shall also include those technical evaluations that use the information specified above and that provide additional bases for evaluating the ability of a site to meet the qualifying conditions of the guidelines of subparts C and D. In developing the above-mentioned bases for evaluation, as may be necessary, assumptions that approximate the characteristics or conditions considered to exist at a site, or expected to exist or occur in the future, may be used. These assumptions will be realistic but conservative enough to underestimate the potential for a site to meet the qualifying condition of a guideline; that is, the use of such assumptions should not lead to an

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exaggeration of the ability of a site to meet the qualifying condition.

**§ 960.3-1-4-3 Site recommendation for characterization.**

The evidence required to support the recommendation of a site as a candidate site for characterization shall consist of the evaluations and data contained or referenced in the environmental assessment for such site, unless the Secretary certifies that such information, in the absence of additional preliminary borings or excavations, will not be adequate to satisfy applicable requirements of the Act.

**§ 960.3-1-5 Basis for site evaluations.**

(a) Evaluations of individual sites and comparisons between and among sites shall be based on the postclosure and preclosure guidelines specified in subparts C and D of this part, respectively. Except for screening for potentially acceptable sites as specified in § 960.3-2-1, such evaluations shall place primary significance on the postclosure guidelines and secondary significance on the preclosure guidelines, with each set of guidelines considered collectively for such purposes. Both the postclosure and the preclosure guidelines consist of a system guideline or guidelines and corresponding groups of technical guidelines.

(b) The postclosure guidelines of subpart C of this part contain eight technical guidelines in one group. The preclosure guidelines of subpart D of this part contain eleven technical guidelines separated into three groups that represent, in decreasing order of importance, preclosure radiological safety; environment, socioeconomics, and transportation; and ease and cost of siting, construction, operation, and closure.

(c) The relative significance of any technical guideline to its corresponding system guideline is site specific. Therefore, for each technical guideline, an evaluation of compliance with the qualifying condition shall be made in the context of the collection of system elements and the evidence related to that guideline, considering on balance the favorable conditions and the potentially adverse conditions identified at a site. Similarly, for each

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system guideline, such evaluation shall be made in the context of the group of technical guidelines and the evidence related to that system guideline.

(d) For purposes of recommending sites for development as repositories, such evidence shall include analyses of expected repository performance to assess the likelihood of demonstrating compliance with 40 CFR part 191 and 10 CFR part 60, in accordance with § 960.4-1. A site shall be disqualified at any time during the siting process if the evidence supports a finding by the DOE that a disqualifying condition exists or the qualifying condition of any system or technical guideline cannot be met.

(e) Comparisons between and among sites shall be based on the system guidelines, to the extent practicable and in accordance with the levels of relative significance specified above for the postclosure and the preclosure guidelines. Such comparisons are intended to allow comparative evaluations of sites in terms of the capabilities of the natural barriers for waste isolation and to identify innate deficiencies that could jeopardize compliance with such requirements. If the evidence for the sites is not adequate to substantiate such comparisons, then the comparisons shall be based on the groups of technical guidelines under the postclosure and the preclosure guidelines, considering the levels of relative significance appropriate to the postclosure and the preclosure guidelines and the order of importance appropriate to the subordinate groups within the preclosure guidelines. Comparative site evaluations shall place primary importance on the natural barriers of the site. In such evaluations for the postclosure guidelines of subpart C of this part, engineered barriers shall be considered only to the extent necessary to obtain realistic source terms for comparative site evaluations based on the sensitivity of the natural barriers to such realistic engineered barriers. For a better understanding of the potential effects of engineered barriers on the overall performance of the repository system, these comparative evaluations shall consider a range of