

# Low-Level Radioactive Waste Site Selection and Site Characterization Handbooks

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## ABSTRACT

Two resource documents have been developed to provide technical assistance to states and compact regions in selecting and characterizing sites for disposal of low-level radioactive wastes (LLW). The Site Selection Handbook provides background information and materials for a workshop on the components of a comprehensive site selection program. The Site Characterization Handbook is a reference document for identifying and collecting the data required to support a license application for a LLW disposal facility.

## INTRODUCTION

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) requires the Department of Energy to provide technical assistance to "...those compact regions, host States and nonmember States determined by the Secretary to require assistance." A need for technical assistance in site selection and characterization has been identified by states who are either currently in the process of implementing these tasks or who are in the planning stages. In response to this need, the EG&G Idaho, Inc., Nuclear Energy Low-Level Waste Management Program (NE LLWMP) has developed two technical resources: Site Selection Handbook - Workshop on Site Selection for Low-Level Radioactive Waste Disposal Facilities and the Site Characterization Handbook.

## SITE SELECTION HANDBOOK AND WORKSHOP

The Site Selection Handbook is a resource for technical guidance and information on selecting sites for LLW disposal facilities.

The major elements of the Handbook include:

- Laws and regulations
- Components of a site selection program (approaches, major participants, public participation, and contingency planning)
- Technical site suitability requirements
- Criteria development and site selection methodologies
- Data collection and management considerations
- Decision-aiding tools

- Quality assurance/quality control requirements.

Appendices to the Handbook include a glossary of terms and acronyms, an annotated reference list on site selection, detailed information on technical siting factors, examples of State siting legislation, and sources for technical data and information needed to support site selection.

The Handbook contains background information and materials needed to participate in a one-to-two-day interactive workshop presented by NE LLWMP staff at the request of states or compact regions. The workshop comprises lectures, group discussions, and exercises, all designed to encourage active participation by workshop attendees. The workshop focuses on the major elements of site selection and the tools that can be used to implement a site selection program. It is not, however, prescriptive and does not attempt to present a preferred methodology for selecting sites. The workshop is designed to encourage creative exchange and exploration of ideas and information among participants representing a spectrum of different viewpoints regarding site selection.

## SITE CHARACTERIZATION

The Site Characterization Handbook is currently under development with completion scheduled for early summer 1988. The Handbook will be published as a reference for use in developing and implementing a comprehensive site characterization program. The objectives of each state and/or site developer/licensee conducting site characterization will vary depending on licensing requirements, schedules/budgets, physical characteristics of the site, proposed facility design, and the specific concerns raised by government agencies and the public. The Handbook therefore does not attempt to be prescriptive.

The Handbook summarizes management planning techniques typical of any project of comparable magnitude and complexity with emphasis on those management planning and technical elements that are specific to a site characterization program. The elements discussed include: developing scopes of work for technical tasks; scheduling, with emphasis on critical path activities and phasing of technical studies; and basic elements of a quality assurance/quality control program.

The Handbook contains two appendices for use as references in identifying: (1) the technical data required to support a license application, and (2) supplemental information on collection of that data. To develop the appendices, a typical site characterization program was divided into eighteen technical disciplines or data types. These include geology, ground water, surface water, geochemistry/hydrochemistry, geotechnical investigations, water resources, natural resources, geography, demography, land use, meteorology, air quality (nonradiological), radiological assessment, ecology, socioeconomics, cultural resources, transportation, and aesthetics. Each data type is further subdivided into specific technical parameters for which data will be collected. For example, the data type "Geology" is broken down into geomorphology, stratigraphy, lithology, tectonics, structure, seismology, and

geologic hazards. Each of these technical parameters is fully described in the appendices.

Appendix A consists of a set of eighteen matrices developed to help program planners identify the data required to support a license application to the NRC or designated State licensing authority. Each matrix includes specific passages from pertinent NRC documents and lists technical parameters that are explicitly or implicitly treated in each passage.

Appendix B also contains a table for each of the eighteen data types. For each technical parameter associated with the data type, the tables provide information on technical activities/study methods that can be used to collect or analyze the data, typical data formats, sources of data, and references that provide additional information.

### CONCLUSION

The Site Selection Handbook and workshop are available to all states and compact regions upon request to the EG&G Idaho Inc. Nuclear Energy Low-Level Waste Management Program. The Site Characterization Handbook will be published upon completion and will be available through the National Technical Information Service.