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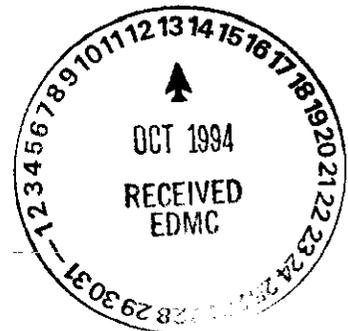
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NEPA ROADMAP

**Guide to NEPA Elements
in the
Remedial Investigation and
Feasibility Study
for the
Environmental Restoration
Disposal Facility**



October 1994



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1.0 INTRODUCTION

The United States Department of Energy (DOE) is considering the construction and operation of an Environmental Restoration Disposal Facility (ERDF) on the Hanford Site in south central Washington. The facility would be used for placement of wastes generated by remediation of *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) sites at Hanford. DOE is relying on the CERCLA process for its *National Environmental Policy Act* (NEPA) evaluation of the proposed facility. NEPA elements are addressed as part of the overall remedial investigation and feasibility study (RI/FS) report for the ERDF. This NEPA Roadmap serves as a guide to those portions of the RI/FS text which address key NEPA elements.

In 1989, the DOE, U.S. Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (Ecology) signed the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) to develop a plan for Hanford Site cleanup. The Tri-Party Agreement establishes a procedural framework and schedule for developing and implementing appropriate remedial actions. In January 1994, the Tri-Party Agreement was amended for the fourth time. The amended agreement includes a compliance schedule for the ERDF based on regulatory and design assumptions. The agreement states that a "pilot project concept to demonstrate NEPA/CERCLA integration (functional equivalency) will be utilized; additional or separate NEPA process and documentation will not be required." Instead, in accordance with the Tri-Party Agreement, NEPA elements are addressed in the CERCLA RI/FS. Because the ERDF is a pilot demonstration project, the relationship between NEPA and other environmental regulations such as CERCLA is deliberately maintained in a fluid, responsive manner, to ensure that duplication of paperwork and effort is minimized. The RI/FS forms the foundation of environmental information and analysis upon which regulatory decisions regarding the ERDF project will be based.

1.1 NEPA and CERCLA Statutes

NEPA reflects congressional intent to include environmental values in agency decisions at an early date and to provide opportunity for meaningful public participation. NEPA is a broad statute applicable to all federal agencies. NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) for major federal actions significantly affecting the quality of the human environment. The EIS must evaluate a reasonable range of alternatives, including the no action alternative, document the existing pre-project environment, assess the environmental consequences or impacts associated with the alternatives, and select mitigation options. A broad range of resource areas must be examined in the environmental documentation, encompassing the physical, social and human environments. Opportunity for public participation is incorporated throughout the process, with scoping early in the planning stage to identify the range of alternatives, circulation of a draft EIS for review and public comment, and incorporation of public comment into the final EIS. The agency's decision is documented in a Record of Decision (ROD). Major elements of the NEPA EIS process include:

Notice of Intent (published in Federal Register): The Notice of Intent (NOI) announces DOE's intent to prepare an EIS, begins the public scoping process, and invites comments and suggestions on the EIS scope. The NOI describes the proposed action and possible

alternatives, outlines the scoping process and meeting schedule, and identifies an agency point of contact.

Scoping and Public Comment: The scoping process allows the public and other agencies to suggest significant issues for analysis and to comment on the scope of an EIS. The scoping process also identifies issues which are not significant or have been addressed by prior environmental review.

Implementation Plan: An implementation plan provides guidance for the preparation of an EIS and records the results of the scoping process. The implementation plan is made available to the public.

Draft EIS: A draft EIS is a detailed written statement which states the purpose of and need for action, identifies the proposed action and reasonable alternatives including a no action alternative, describes the environment potentially affected by the proposed action and alternatives, and analyzes potential environmental impacts of the proposed action and alternatives.

Notice of Availability/Public Comment: The public comment period on the draft EIS begins when the Notice of Availability is published in the Federal Register. The comment period is usually at least 45 days in length. A minimum of one public hearing must be held. Governmental agencies and other groups potentially affected by the alternatives discussed in the draft EIS are requested to comment.

Final EIS: The final EIS includes responses to comments received on the draft. The final EIS must discuss responsible opposing views not adequately addressed in the draft EIS and indicate responses to issues raised during the public comment period.

Record of Decision: This public record presents information about all alternatives considered by the agency and identifies the decision made by the agency. There is a minimum 30-day waiting period following completion of the final EIS before issuance of the ROD.

Mitigation Action Plan: A mitigation action plan addresses mitigation measures an agency commits to implement in the ROD. A mitigation action plan explains how mitigation measures will be planned and implemented.

CERCLA has a more specific focus - environmental protection from releases of hazardous substances through a comprehensive reporting system, and identification and cleanup of contamination from past activities at inactive or abandoned sites. Cleanup actions are administered by the EPA, which has promulgated regulations to guide the process known as the National Contingency Plan (NCP). In April of 1990, the EPA revised the NCP to expand the opportunity for public participation. CERCLA actions are documented in the RI/FS. The RI entails data collection and a baseline risk assessment. The FS is comprised of a comparative analysis of alternatives including no action, and analysis of environmental effects and mitigation effectiveness. A proposed plan is prepared and released for public comment. The final plan incorporates public comment submitted on the proposed plan and discloses the final remedy selected. This decision is documented in a ROD and made available for public review prior to implementing the remedial action.

A simplified description of the major elements of the CERCLA process is provided below.

Preliminary Assessment/Site Investigation: An initial screening step to determine whether a site should be added to the CERCLA National Priority List.

Work Plan: Addresses procedural parameters, such as quality assurance and quality control, sampling protocols, data management, health and safety requirements, and community relations.

Public Comment: Comments are solicited on the work plan.

Remedial Investigation: Defines the nature and extent of contamination, waste characteristics, waste migration routes, volumes, and concentrations. The remedial investigation can include various treatability tests.

Feasibility Study/Proposed Plan: Analyzes those remedial alternatives that are retained after initial screening. Criteria consider whether the alternatives: protect human health and the environment and attain applicable or relevant and appropriate requirements (ARAR); significantly and permanently reduce the toxicity, mobility, and volume of hazardous constituents; and are technically feasible and reliable. The proposed plan summarizes the feasibility study and presents the preferred alternative.

Public Comment: Comments are solicited on the RI/FS report.

Record of Decision: This public record, prepared by the lead CERCLA regulatory agency, describes the decision-making process for remedy selection and summarizes the evaluation of the alternatives considered. The ROD identifies which remedial alternative will be implemented.

Remedial Design: Remedial design includes completion of design drawings; specification of materials and construction procedures; specification of all constraints and requirements; development of construction budget estimates; and preparation of necessary and supporting documents.

Remedial Action: Remediation is initiated in accordance with a schedule agreed to by the Tri-Party Agreement project managers.

1.2 NEPA/CERCLA Procedural and Documentation Similarities and Differences

There are both similarities and differences between the NEPA and CERCLA statutes; several of the major points are presented in this section. The following information is summarized from a report titled, "Integrating NEPA and CERCLA Requirements During Responses at DOE Facilities" (Levine 1990). Procedural and documentation similarities of the CERCLA and NEPA processes are presented below. Both statutes:

- Require the identification and analysis of alternative courses of action
- Provide for public participation and input in the decision process
- Provide for the concurrent consideration of other environmental review and regulatory requirements

- Allow for a scoping phase
- Have a data collection phase
- Result in formally documented Records of Decision.

There are also differences in the underlying philosophy, scope, and procedures of the two statutes, as identified below.

- The NEPA evaluation process is usually started early in the design process and an agency may not commit substantial resources that might prejudice the selection of alternatives. The CERCLA RI/FS process starts later in the design process, and usually involves the comparison of detailed engineering alternatives. Resources are sometimes committed in the form of treatability investigations which can direct future actions before the RI/FS is complete.
- The NEPA regulations require that all actions associated with a proposal be evaluated in a single document. Under CERCLA, complex response actions may be separated into discrete pieces for purposes of the RI/FS analysis.
- The NEPA guidance directs that all reasonable alternatives be evaluated in a NEPA document. CERCLA guidance from EPA includes procedures to screen the universe of potential remedies to identify those alternatives that are reasonable for a particular situation. As a result, alternatives analyzed in a CERCLA RI/FS usually consist of the no-action alternative and different site-specific technical approaches.
- The scope of the environmental impacts to be considered under NEPA is broader than what is generally considered in an RI/FS. NEPA defines environmental effects broadly, including direct, indirect, and cumulative impacts associated with the proposal. A CERCLA evaluation usually considers direct impacts.
- The public participation goal of NEPA is to insure that environmental information is available before decisions are made and to solicit participation from the public. Public involvement generally begins at the scoping phase, when the public is involved in developing the range of alternatives to be considered in the NEPA document. The goal of CERCLA public participation activities focuses on providing information to the community and obtaining feedback on community interests and concerns. The CERCLA process provides the opportunity to comment on published RI/FS documents.
- In the NEPA process, public comments and the formal agency responses are usually published in a final EIS. In the CERCLA process, the responses to public comments are usually addressed in the ROD. Also, mandatory minimum comment periods are usually longer under NEPA (45 days) than under CERCLA (30 days).
- The NEPA ROD is approved and issued by the DOE, while the CERCLA ROD must be approved by EPA.

DOE recognizes that there are procedural and document duplications when NEPA and CERCLA are both implemented. On June 13, 1994, DOE Secretary Hazel O'Leary issued the "Secretarial Policy on the National Environmental Policy Act." This policy strengthens the NEPA procedural process within DOE and streamlines the NEPA process in areas where

duplication or inefficiencies have been identified. The Secretarial Policy states that DOE will rely on the CERCLA process for review of actions to be taken under CERCLA and will address NEPA values and public involvement procedures by incorporating NEPA values in CERCLA documents, to the extent practicable. DOE commits to taking steps to ensure opportunities for early public involvement in the CERCLA process and will make CERCLA documents available to the public as early as possible.

2.0 RI/FS TEXT ADDRESSING NEPA REQUIREMENTS

The following discussion lists the elements that usually comprise an EIS and the locations of these elements in the ERDF RI/FS text. The format of the NEPA elements are drawn from the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 CFR 1500-1508) and from the DOE NEPA Implementing Procedures (10 CFR 1021).

2.1 Initial Sections

The initial sections of an EIS contain general information on responsibility for and status of the document, comment times, content and organization, the identification of the agency's purpose and need for action, and a summary of the environmental analysis.

A list of the initial elements of an EIS and the location of corresponding text in the ERDF RI/FS report are presented in Table 1.

Table 1. Initial NEPA Sections and Location of Corresponding ERDF RI/FS Text

NEPA Element	RI/FS Section
Cover Sheet <ul style="list-style-type: none"> • list of responsible agencies • title • name, address, and telephone number of agency personnel who can supply further information • document designation (draft, final, supplement) • one paragraph abstract • date by which comments must be received 	Cover Sheet Section 1.0 - Introduction Proposed Plan
Table of Contents	Table of Contents This NEPA Roadmap
Document Summary	Executive Summary
Purpose and Need for Action	Section 1.2

For reader convenience, the DOE's Purpose and Need for Action as presented in the ERDF RI/FS is included below:

The purpose of the proposed action is to support the removal of contaminants from portions of the Hanford Site (including near the Columbia River) in a timely manner, to

allow those remediated portions of the Site to be released for other productive uses. Several Tri-Party Agreement milestones exist for near-term remediation efforts, including issuance of CERCLA operable unit Records of Decision (ROD) in 1995. The remedies to be selected in the operable unit RODs are expected to require excavation and management of large volumes of remediation-generated waste, which will require disposition.

2.2 Alternatives Including Proposed Action

In NEPA documents, this section presents the range of reasonable alternatives under consideration. CEQ's regulations direct that agencies use the NEPA process to identify and comparatively analyze the alternatives to proposed actions that will avoid or minimize adverse effects on the quality of the human environment. Alternatives include all reasonable alternatives, including the alternative of no action. If alternatives are eliminated from detailed evaluation, the reasons are briefly explained. The actions should be described in sufficient detail so that potential pre-operational, operational, and post-operational impacts can be identified, investigated, and compared. Mitigation measures are also discussed in this section.

The proposed action is to construct and operate a CERCLA landfill on the central plateau of the Hanford Site. Three different sites located on or near the central plateau were evaluated against human health, safety, and environmental criteria. Based on this comparative evaluation, one site was chosen for consideration. Nine technical alternatives were developed by selecting combinations of three surface barrier designs and three liner technologies. The no action alternative was also considered.

Following is a brief overview of the project.

Location - The ERDF is planned to be located southeast of the existing 200 West Area of the Hanford Site. The location includes the majority of a 1,000-acre tract previously leased to the State of Washington.

Construction - As currently planned, the ERDF would consist of a single large trench and support units. The trench would be approximately 1,000 feet wide across the floor, 70 feet deep, and up to 9,000 feet in length. The side slopes of the trench would be 3 horizontal to 1 vertical, resulting in an overall trench width of 1,420 feet and a length of up to 9,420 feet. The trench will be oriented in an east-west direction. Support units would probably include: rail and tractor/trailer container handling capability; equipment and personnel decontamination facilities; maintenance facilities; fencing; roads; utilities; inventory control systems; communication systems; administrative offices; and other units necessary to support the development and operation of the facility. Construction of the ERDF would disturb up to 1.6 square miles of the proposed site.

The ERDF would be used for placement of solid waste generated by the remediation of the Hanford Site. Waste placed in the ERDF may consist of hazardous waste, mixed waste, or low-level radioactive waste.

Because the remediation waste placed in the trench would be generated over a relatively long time, the entire trench would not be constructed at one time. Instead, the construction

of the trench and the installation of the liner system would be conducted in stages as additional waste placement capacity is required. The trench floor would be subdivided into approximately 30 cells, each measuring 500 feet by 500 feet. Individual cells would be excavated incrementally within the trench footprint as required by the volume of remediation waste requiring disposal. Although preliminary, it is estimated that up to 28 million cubic yards of material could be placed in the ERDF over its life.

The remediation waste placed in the ERDF trench would be managed and contained to minimize future releases during operations and after closure through the use of a liner system, a leachate collection system, a leak detection and monitoring system, and a run-on/run-off control system. The proposed RCRA-compliant liner system is designed to minimize the release of hazardous or radioactive wastes, leachate, or waste decomposition products from the ERDF trench. In general terms, the liner system would (from the bottom up) consist of:

- A low-permeability soil layer
- A secondary liner consisting of a geomembrane material
- A leak detection/secondary leachate collection layer
- A primary liner consisting of a geomembrane textured to prevent slipping
- A primary leachate collection layer similar to the leak detection/secondary leachate collection system previously described
- An operations layer consisting of a 3-ft thick soil layer to prevent mechanical damage to the liner system from equipment movement and to protect the low-permeability soil layer from frost damage.

Operation - Containers of bulk waste would arrive at the proposed ERDF either on flatbed railcars or over-the-road flatbed tractor/trailers. It is expected that up to 150 containers per 8-hour work shift would arrive by rail and up to 65 containers per 8-hour work shift would arrive by tractor/trailer. Containers would be off-loaded in the railhead area near the north end of the trench. Handlers would place containers on flatbed tractor/trailers for transport to the burial trench. After dumping, tractor/trailers would transport the containers to the decontamination facility where the container would be removed and the exterior would be decontaminated. Containers would then be stored until loaded onto railcars or tractor/trailers for return to the remediation site.

After waste is deposited in the trench, tractor dozers would spread and compact the material on a continual basis. As the trench is filled and the working face advances, the top of the trench fill would be covered with clean cover material so that equipment would operate on uncontaminated fill material.

Closure - Closure of the ERDF would be accomplished by placing a final cover over the trench and its contents. The trench final cover would be a multilayer system consisting of soil and geosynthetic materials. Each layer would perform a different function, that when combined, would minimize the infiltration of liquids into the waste and minimize the need

for long-term maintenance. The analysis of a series of liner/final cover alternatives and their impacts are a major focus of the RI/FS. The final cover evaluation is based on the following criteria:

- Overall protection of human health and the environment
- Compliance with ARARs determined in Chapter 7.0 of the RI/FS
- Long term effectiveness and permanence as measured in terms of future risk to human health and the environment and qualitative assessments of reliability
- Short term effectiveness, including risks to workers, the public, and the environment during construction and operation
- Ability to implement (determined by complexity of trench liner and surface barrier designs)
- Cost
- Community and regulatory acceptance: assessment of this criteria may not be completed until comments on the proposed plan are received. Public comments would be considered for remedy selection in the ROD.

Post Closure Activities - Maintenance and monitoring of the facility would continue throughout the postclosure care period. Such care would include maintaining the integrity and effectiveness of the final cover, maintaining and monitoring the leak detection system, continuing to operate the leachate collection and removal system until leachate is no longer detected, maintaining and monitoring the groundwater monitoring system, preventing run-on and run-off from eroding or otherwise damaging the final cover, and protecting and maintaining the surveyed benchmarks used to locate the ERDF. An evaluation of the data collected during postclosure monitoring and inspections would be made to determine whether the frequency of postclosure inspections and monitoring can be reduced.

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Alternatives and the locations in the ERDF Regulatory Package where they are described are listed in Table 2.

Table 2. Location of RI/FS Text Describing Alternatives

NEPA Element	RI/FS
Proposed Action, including Connected Actions	Section 2.1.1 - Regional Setting Section 2.9 - Characteristics of Fine-Grained Soils Borrow Site Section 2.10 - Characteristics of Basalt Borrow Site Chapter 3.0 - Waste Characteristics - provides the general characteristics of remediation wastes that may be placed in the ERDF Section 7.2 - Remedial Action Objectives - provides the objectives that have been identified for the ERDF Chapter 8.0 - Identification and Screening of Technologies - identifies and screens technologies and process options that are potentially applicable to the ERDF Section 9.1 - Assembly of Alternatives - provides descriptions of each of the alternatives Section 9.3 - Common Elements - design elements common to all alternatives Section 9.3.9 - Surface Barriers - provides information about volumes required from borrow sources Section 9.5 - Detailed Evaluation - provides an evaluation of each alternative using the applicable CERCLA criteria
Alternatives	Section 1.4 - Site Selection Section 7.2 - Remedial Action Objectives Chapter 8.0 - Identification and Screening of Technologies Section 9.1 - Assembly of Alternatives Section 9.3 - Common Elements Section 9.5 - Detailed Evaluation
No Action	Section 9.5.1 - Alternative 1 - No Action

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2.3 AFFECTED ENVIRONMENT

An EIS includes a succinct description of the physical and human environment of the area potentially affected by the alternatives under consideration. The extent of the affected environment is determined by the nature and significance of ecological, cultural, health and economic impacts associated with the proposed action and alternatives. Potential energy requirements and conservation potential of each alternative may also be discussed. The descriptions are to discuss "data and analyses in a statement ... commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced." Table 3 presents elements of the affected environment together with locations in the ERDF Regulatory Package where the elements are described and discussed.

Table 3. Elements of the Affected Environment/Locations of Descriptive Text

Elements of the Affected Environment	RI/FS Descriptive Text Locations
Meteorology - Atmospheric phenomena, air quality, and weather	Section 2.2 - Meteorological Characteristics
Hydrology - Surface and subsurface water	Section 2.3 - Surface Hydrological Characteristics
	Section 2.6 - Hydrogeological Characteristics
Geology - Sediments, rocks, and subsurface structure	Section 2.4 - Geological Characteristics
	Section 2.5 - Pedological Characteristics
	Section 2.9.2 - Characteristics of Site Sediments and Fine-Grained Sediment Volume Estimates
Ecological Resources - Wildlife and plant species and habitat of concern	Section 2.8 - Ecology
	Section 2.9.4 - Wildlife Ecology - for the borrow area
Cultural Resources - Historical and archaeological resources, and resources of religious significance to Native Americans	Section 2.7.3 - Historical, Archaeological and Cultural Resources
	Section 2.9.3 - Archaeological and Cultural Characteristics - for the borrow area
Land use and Socioeconomics - Current land use and regional socioeconomic information	Section 2.7.1 - Land Use
	Section 2.7.4 - Socioeconomics
Energy Availability and Requirements	Section 2.7.10 - Utilities
Existing Transportation Systems	Section 2.7.5 - Transportation
Visual Resources and Noise	Section 2.7.11 - Visual Resources
	Section 2.7.12 - Noise

2.4 Environmental Consequences

This section forms the scientific and analytic basis for comparisons among alternatives. Discussion of environmental consequences focuses on the environmental impacts of alternatives including the proposed action, any adverse effects that cannot be avoided should the ERDF be implemented, the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, any irreversible or irretrievable commitments of resources that would be involved if the ERDF were implemented, and mitigation of adverse environmental effects. Impacts of alternatives are evaluated in comparative form, defining issues and providing a basis for choice by decision-makers and the public.

Environmental consequences are addressed in RI/FS Chapters 6.0 *Risk Assessment* and 9.0 *Assembly and Detailed Evaluation of Remedial Alternatives*. The location of the discussion of the impacts of the alternatives and mitigation of the impacts of the proposed action are presented in Table 4.

Table 4. Location of RI/FS Potential Environmental Impacts and Mitigation Discussions

Alternative	RI/FS Section
Proposed Action	Chapter 4.0 - Contaminant Fate and Transport Model
	Chapter 6.0 - Risk Assessment
	Section 9.3 - Common Elements
	Section 9.4 - Common Impacts Associated with the Alternatives
	Section 9.5 - Detailed Evaluation
Other Alternatives	Chapter 4.0 - Contaminant Fate and Transport Model
	Section 9.3 - Common Elements
	Section 9.4 - Common Impacts Associated with the Alternatives
	Section 9.5 - Detailed Evaluation
Impacts of the No Action Alternative	Section 9.5.1 - No Action Alternative
Mitigation Measures	Section 9.3 - Common Elements
	Section 9.4.11 - Mitigation of Impacts from the ERDF

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The following discussion summarizes potential environmental impacts:

- **Impacts to Air** - Should ERDF be implemented, small amounts of air emissions would likely be generated. In addition, fugitive dust might be generated in the immediate area during construction and operations. See Sections 9.3.1, 9.3.2, and 9.4.3.
- **Impacts to Water** - Should ERDF be implemented, it is unlikely that surface water would be adversely affected. Appendix A presents a model that identifies contaminants of potential concern that could eventually reach the groundwater. See Chapter 4.0, and Sections 9.3.1, 9.3.3, 9.3.4, and 9.4. As described in Chapter 2.0, there are no perennial or ephemeral streams or wetlands at the ERDF site, and neither the proposed action nor the alternatives would affect floodplains or wetlands. See Section 2.3.3.
- **Impacts to Ecological Resources** - Should ERDF be implemented, shrub-steppe habitat would be lost at the ERDF site, the borrow sites, and along the new rail spur, although revegetation efforts during closure would partially mitigate this loss. Ecological surveys indicate that implementation of ERDF would not adversely impact federal threatened or endangered species. DOE commits to mitigate habitat loss in accordance with agreements to be reached with the U.S. Fish and Wildlife Service and the Washington State Department of Fish and Wildlife. See Sections 9.3.9 and 9.4.2.
- **Impacts to Cultural Resources** - Although significant cultural resources have not been identified at the ERDF site, the rail line could adversely affect a portion of the historic White Bluffs Road. The action would be mitigated in accordance with procedures in the *National Historic Preservation Act*; the mitigation plan would be reviewed by the State Historic Preservation Office and the Advisory Council on Historic Preservation. If substantial volumes of borrow materials are required for barrier construction, there could be adverse impacts to as-yet unidentified borrow sites in the future. See Sections 9.3.9 and 9.4.4.
- **Socioeconomic Impacts** - Should ERDF be implemented, construction and operations jobs would be provided to the Tri-City Area. This would represent a small percentage of the total Hanford Site employment. See Section 9.4.5.
- **Impacts to Visual Resources and Noise** - The ERDF would be a low-lying facility placed in the center of the Hanford Site, and would result in minimal visual impact from the ground. Excavation activities at ERDF and transport of waste from source operable units would result in an increase in noise on the Hanford Site. Workers would wear protective devices as required. Activities would not occur near residential communities and noise impacts are not expected to affect off-site personnel. See Section 9.4.6.
- **Transportation Impacts** - The ERDF is expected to receive 150 rail or truck shipments of waste per 8-hour work shift. Additional traffic would be generated by commuting workers, shipments of clean fill to excavated waste sites, and shipments of borrow materials from the borrow sites to ERDF. A maximum of 310 additional vehicles per day on Hanford roads would be associated with ERDF. See Section 9.4.1.

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- **Human Health Impacts** - Chapter 6.0 estimates the human and environmental health threats posed by contaminants likely to be received in the ERDF. Section 9.4.7 presents information on worker and public health risks associated with exposure to radionuclide or chemical constituents, and an estimate of potential worker injuries and fatalities due to physical hazards during construction and operation of the ERDF.
- **Accident Analyses** - Chapter 6.0 and section 9.4.7 present an evaluation of reasonably foreseeable accidents associated with the implementation of the ERDF.
- **Direct Impacts** - Should ERDF be implemented, direct impacts will include habitat loss, commitment of economic resources, potential fugitive dust and leachate generation and the permanent placement of waste containing dangerous, radioactive and mixed contaminants in the ERDF landfill.
- **Indirect Impacts** - Should ERDF be implemented, indirect impacts could include loss of habitat at one or more material borrow sites, and an increase in traffic flow and noise between the ERDF site, borrow sites, and source operable units. See Section 9.4.9.
- **Cumulative Impacts** - Information is provided in the RI/FS about potential cumulative effects of ERDF and other projects in the 200 Areas that are operational, under construction, or in early conceptual phases. See Section 9.4.10.
- **Commitments of Resources** - Should ERDF be implemented, resources in the form of dollars, liner material, surface barrier materials, shrub-steppe habitat, and construction materials would be committed. See Section 9.4.8.
- **Unavoidable Adverse Effects** - Should ERDF be implemented, there would be a temporary loss of a part of the overall Hanford Site shrub-steppe habitat, and the permanent disposal of low-level and mixed waste on the central plateau.
- **Closure Impacts** - Although detailed information regarding the closure of ERDF is not available at this time, the RCRA closure and post-closure requirements would be applicable. See Sections 9.3.9 and 9.3.10.
- **Relationship between Short-term Use and Long-Term Productivity of the Environment** - Evaluates and compares the local short-term use represented by the construction and operation of the ERDF, and the maintenance of long-term productivity on the Hanford Site. See Section 9.4.12.
- **Mitigation and Resource Conservation Measures** - Measures to mitigate adverse impacts would include institutional controls, procedures to prevent hazards, habitat mitigation efforts, and the development of detailed construction and operation procedures. Measures to conserve and/or recycle resources include Site-wide measures to recycle paper and to minimize use of hazardous chemicals. See Section 9.4.11.

2.5 Applicable Laws and Guidelines

The laws and guidelines applicable to the ERDF project are identified in Chapter 7.0 *Development of Remedial Action Objectives*.

2.6 List of RI/FS Preparers

The names and qualifications of those primarily responsible for preparing an EIS are usually included in the document. Because the RI/FS normally does not include the names of the preparers, this information is included below.

The interdisciplinary effort was led by B. L. Foley, Physical Scientist with the Environmental Remediation Branch, DOE-RL. Other DOE staff providing reviews of the draft materials were P. F. X. Dunigan, Jr., RL NEPA Compliance Officer, R. M. Carosino, RL Assistant Chief Counsel, and K. M. Thompson, Acting Director of Environmental Remediation. Tri-Party Agreement regulatory staff included P. S. Innis of EPA and N. T. Hepner of Ecology. The draft RI/FS was prepared by staff from Golder Associates, contracted by Bechtel Hanford, Incorporated (BHI). Names of Golder Associates staff and their qualifications are provided in Table 5. BHI team personnel provided background information and reviews of draft documents. Principal staff include V. R. Dronen, F. V. Roeck, J. H. Dunkirk, G. C. Evans, R. S. Weeks, D. E. Gilkeson, and M. A. Casbon.

Table 5. Golder Associates Personnel

Responsibility	Qualification
Douglas Dunster Project Manager	B.S., Environmental Studies; M.S., Biology - 13 years experience in a variety of environmental regulatory programs
J. Scott Kindred Task Leader	B.S., Geology; M.S., Civil Engineering - Water Resource 7 years experience in hazardous waste site investigation and remediation technology and a variety of CERCLA RI/FS projects
Walt (H.A.) Haerer EIS Oversight	MBA B.S., Zoology and Anthropology - 19 years experience in EIS management, risk assessment, and environmental monitoring
Erik Still Waste Characteristics and Risk Assessment	B.S., Physics and Mathematics; M.S., Radiological Sciences 5 years experience in conducting human health and environmental risk assessments for CERCLA, RCRA, and other hazardous waste projects
Frank S. Shuri Landfill Design	B.S., Geology - 19 years experience in geotechnical engineering, including planning and design of RCRA-compliant hazardous and municipal waste facilities
John S. Velimesis Technology and Alternative Development and Evaluation	B.S., Environmental Science and Resource Management, Geology; M.S.E., Civil Engineering - Hydraulics and Water Resources 8 years experience in geotechnical and environmental services for RCRA compliance and CERCLA RI/FS projects
Craig R. Hunter Risk Assessment	Ph.D., Soil Science; M.S., Soil Science; B.S., Forest Resources - 6 years experience in soil science, environmental chemistry of soils and sediments, and preparation of RI/FS reports
Joseph P. Eckhoff ARARs	B.S., Environmental Science - 6 years experience in analysis and evaluation of environmental regulations
Li Fu Fate and Transport Modeling	B.S., Hydrogeology and Engineering Geology; M.A., Hydrogeology - 5 years experience in geological engineering and 3 years experience in site investigation and groundwater modeling
Diana Tener Cultural Resources Assessment and Fate and Transport Modeling	B.S., Civil Engineering - 7 years experience in site investigation and groundwater modeling
Sandra Sutton-Schildt Ecological Assessment	B.A., Biology - 3 years experience in environmental science
Gregory C. Moon Physical Site Characterization	B.S., Civil Engineering - 3 years experience in site assessment and hydrology

2.7 Distribution

Included below is a list of organizations and individuals who received copies of the draft RI/FS and/or proposed plan.

- DOE, Headquarters and Richland Operations Office
- EPA, Region X
- Yakama Indian Nation
- Confederated Tribes of the Umatilla Indian Nation
- Nez Perce Tribe
- Wanapum Indian Band
- U.S. Army Corps of Engineers
- Washington State Department of Ecology
- Oregon State Department of Energy
- Washington State Department of Health
- Hanford Advisory Board; delegates and alternates
- Heart of America Northwest
- Hanford Education Action League
- Columbia River United
- Hanford Watch
- Westinghouse Hanford Company
- Bechtel Hanford, Incorporated.

In addition, during the public review period, the Regulatory Package will be available to anyone who requests a copy.

2.8 References

Although CEQ guidance does not explicitly require that references be provided in NEPA documents, it is customary to include them. The RI/FS contains a reference list.

2.9 Index

The table of contents appears to adequately inform the readers of the location of various elements of the RI/FS. An index was not included.

2.10 Appendices

The RI/FS contains appendices with detailed information regarding a variety of subjects related to the ERDF project.

3.0 PROCEDURAL COMPARISON

In addition to the documentation requirements, NEPA requires certain procedural steps to fulfill the intent and purpose of the law. A comparison of the NEPA procedural requirements and the ERDF regulatory schedule is presented in Table 6. As with any major project, this preliminary schedule is subject to change. As noted below, the ERDF project will comply with most of the substantive NEPA procedural requirements.

Table 6. NEPA Procedural Requirements.

CEQ NEPA Requirements	ERDF Schedule & Procedures
The agency will publish a Notice of Intent in the Federal Register of the intention to prepare an EIS. The agency will provide public notice and invite the participation of federal, state and local agencies, affected Indian tribes, and other interested persons in the scoping process (40 CFR 1501.7 and 40 CFR 1506.6).	An expanded Public Notice was sent to all interested parties on the Tri-Party Agreement mailing list, including tribal nations, states, and local governments. Advertisements were placed in newspapers. Two public scoping meetings were held.
The agency shall allow 45 days for comments on the draft EIS (40 CFR 1506.10).	Comments on the Regulatory Package will be accepted from October 17, 1994 through November 30, 1994.
The agency shall request the comments of appropriate state and local agencies, affected Indian tribes, and any agency which has requested that it receive statements of the kind proposed (40 CFR 1503.1).	A request for comments from appropriate individuals and agencies was made during the scoping process. DOE will also ask for comments on the draft ERDF Regulatory Package in the Fall of 1994.
The agency should make the statement available to the public at least 15 days in advance of a public hearing or public meeting (40 CFR 1506.6).	The draft ERDF Regulatory Package will be made available at least 15 days before the first scheduled public meeting.
An agency preparing a final EIS shall assess and consider comments both individually and collectively, and shall respond to comments (40 CFR 1503.4).	Comments received during the scoping process were considered, and responses were prepared for all substantive comments. As comments on the draft ERDF Regulatory Package are received, comments and responses will be compiled in a responsiveness summary, which will be available to the public before the CERCLA ROD is issued.
An agency shall cooperate with state and local agencies to the fullest extent possible to reduce duplication between NEPA and state requirements (40 CFR 1506.2).	The draft ERDF Regulatory Package contains information regarding the substantive requirements of other environmental regulations. These regulations form the ARARs under the CERCLA process.
All substantive comments should be attached to the final statement (40 CFR 1503.4).	Public comments and responses will be published and available to the public before the CERCLA ROD is issued.
An agency shall prepare a concise Record of Decision (40 CFR 1505.2).	The ERDF project complies with the <i>Secretarial Policy on the National Environmental Policy Act</i> . It is the intent of DOE that the CERCLA process be relied upon to address NEPA values and public involvement procedures. Although a NEPA ROD will not be prepared, a CERCLA ROD will be issued by the EPA.

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4.0 ADDITIONAL INFORMATION

Information about DOE NEPA procedures or the status of NEPA reviews may be obtained from:

Carol M. Borgstrom, Director
Office of NEPA Oversight, EH-25
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
(202) 586-4600 or (800) 472-2756

Additional DOE NEPA information can also be found in the following documents and implementing procedures:

National Environmental Policy Act of 1969, 42 USC 4321, approved January 1, 1970.

CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR 1500-1508, 43 FR 55978-56007.

Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 46 FR 18026, March 23, 1981.

DOE NEPA Implementing Procedures, 10 CFR 1021, 57 FR 15122.

DOE Order 5440.1E, *National Environmental Policy Act Compliance Program*, November 10, 1992.

Secretarial Policy on the National Environmental Policy Act, U.S. Department of Energy, June 1994.

DOE-EH, *Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements*, May 1993.

DOE-EH, *Directory of Potential Stakeholders for Department of Energy Actions Under the National Environmental Policy Act*, January 1994.

DOE-EH, *Draft Guidance Manual for Department of Energy Compliance with the National Environmental Policy Act and Related Federal Environmental Statutes*, Volumes I and II, October 1988.

RL Order 5440.1A, *Implementation of the National Environmental Policy Act at the Richland Operations Office* (being replaced by RLIP 5440.1B).

Richland Operations Office, *Interim Richland Operations Office National Environmental Policy Act Detailed Procedures*, June 1992, and updates.

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Richland Operations Office, *Internal Scoping Procedures for Environmental Assessments*, August 1994.

Richland Operations Office, *National Environmental Policy Act Environmental Assessment Public Participation Plan Addendum*, August 1994.

Levine, M. B., Smith, E. D., Sharples, F. E., and Eddleton, G. K., *Integrating NEPA and CERCLA Requirements During Remedial Responses at DOE Facilities*, Oak Ridge National Laboratory, ORNL/TM-11564, July 1990.

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