

Summary

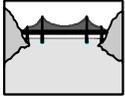
As the screening assessment documented in Part I was being conducted, the assessment specified in Part II was developed by the Columbia River Comprehensive Impact Assessment (CRCIA) Team. Active participants on the CRCIA Team have been representatives from the Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, Yakama Indian Nation, Hanford Advisory Board, Oregon State Department of Energy, Washington State Department of Ecology, U.S. Environmental Protection Agency, and, acting as host in a non-negotiating role, the U.S. Department of Energy (DOE). (See the Part II disclaimer for a definition of DOE's role.) The CRCIA Team developed Part II to explicitly require that any future assessment of Hanford Site impact on the Columbia River embody, at a minimum, the methods, characteristics, and controls described here. Analyses involving the Columbia River that adhere to the spirit and substance of these requirements are far more likely to be acceptable to the governments and institutions involved and far more meaningful in guiding cleanup decisions.

This is the only composite assessment of how effective the cleanup of the Hanford Site will be in terms of impact to the Columbia River. Other analyses address only some of the elements of the needed assessment. This is a composite assessment partly because all potentially harmful radioactive and chemical materials within the Hanford Site boundary (those planned at the completion of cleanup) are included in a single evaluation of impacts. The purpose of the CRCIA is to assess the effects of Hanford-derived materials and contaminants on the Columbia River environment, river-dependent life, and users of river resources for as long as these contaminants remain intrinsically hazardous. This purpose is envisioned to be carried out by developing a suite of integrated analysis tools, which would be used for each revision of DOE's intended waste disposal plans that define the Hanford Site's final end state. As such, CRCIA becomes a major, critical part of the Hanford Site's final baseline risk assessment. CRCIA is also a tool for estimating the effectiveness of each alternative considered in strategic planning exercises, environmental impact statements, and various projects' studies. This assessment was defined and this part of the document was prepared by the CRCIA Team (not DOE or its contractors) under a new public involvement paradigm described later in this summary, in Section II-4.0 and in Appendix II-D.

HOW TO USE THIS DOCUMENT

Part II consists of narrative sections (Sections 1-4) and specification sections (Appendixes II-A-D). The specification sections specify the technical and management requirements for conducting the assessment. The appendixes are for the analysts who will perform the technical work. The narrative sections supplement the specification sections with general guidance and non-technical explanations of the requirements. While each section is complete in its own right, the reader may find it useful to study the narrative and appendixes in parallel.

In facing the question of what constitutes a comprehensive assessment, a serious problem soon became apparent: How can the assessment include all of the factors significant to potential river impacts while keeping the effort to a manageable size that can be funded? Using expert judgment to "assume the assessment down-to-size" was rejected as an acceptable solution to this problem. Instead, a principle (specified as a requirement in Part II) was borrowed from other industries that routinely deal with large, complex problems yet have limited resources. This principle requires the study's planning process to be



based on sensitivity analyses and parametric analyses that sort the dominating factors from the smaller contributors to impact. Consequently, for any given level of resources allocated to this assessment, the biggest contributors to potential river impact will always be addressed. The challenge for both analysts and managers is not to arbitrarily discard parts of the assessment to cut it down to size but rather to ensure that no factor that would dominate the study results is left out.

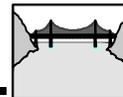
Part II has been developed to be fiscally responsible in defining the requirements for the technical work that must be conducted regardless of speculations on probable funding availability or limits presumed to exist in analytical methods, data collection techniques, or related technologies. Every effort was made to ensure that the assessment will always focus on major contributors in such a way as to avoid confusion and misdirection of efforts by the many smaller considerations.

Since the screening assessment in Part I of this document was scoped to be a less than comprehensive limited-resource effort focused on identifying the most significant existing effects on the Columbia River, the comprehensive assessment in Part II subsumes the screening assessment in identifying both existing and future effects from the composite of all Hanford activities. In spite of the care in developing this document, it is recognized that it can and should be improved upon, especially in view of inevitable changes in waste disposal plans and experience gained in conducting this and similar assessments. This is intended to be a living document with changes controlled by the authoring institutions.

Part II defines a new paradigm for predecisional participation by those affected by Hanford cleanup decisions. The CRCIA Team developed the requirements in Part II as well as the approach and structure for conducting and managing future assessment work. Appendix II-D describes this new paradigm and the associated management requirements. It is recognized that some time may be needed to make the adaptations in existing Hanford practices this new paradigm calls for. An implementation period is expected, during which special attention will be given to working within existing policies and procedures while adaptations are being made. The CRCIA Team believes that early participation by affected groups, during the formative period of decisions, is necessary for an effective and responsive cleanup of the Hanford Site.

Following the “Introduction” and the discussion of principles and general requirements, Part II is divided into four key sections: *WHAT* is to be analyzed, *HOW WELL* the results must represent actual and future impact to the Columbia River, technically *HOW* the assessment is to be performed, and what the *MANAGEMENT* structure is to be for the analysis work. Explanations and descriptions of these four areas are in the sections below. Lists of the technical requirements in Appendixes II-A through II-D parallel this structure in this introduction. The parallel sections/appendixes are as follows:

- ◆ Section 1.0/Appendix II-A, “What the Assessment Must Include.” These sections specify *what* factors must be included in assessing river impact. They include the extent of Hanford Site activities and materials to be addressed, transport mechanisms and travel times, and contaminant introduction into the river. The requirements also address the distribution of the contaminants within the Columbia River as well as identification of habitat or other water uptake locations. The requirements specify potential



species, ecosystems, human populations, and cultures that could be affected by Hanford-derived contaminants in the Columbia River. This section also includes probable scenarios for the time frame of interest in which substantive change occurs to the river or ecosystem and cultural dependency on the river.

- ◆ Section 2.0/Appendix II-B, “How Good the Impact Assessment Results Must Be.” Requirements in these sections prescribe how complete the assessment results must be and *how good* the analysis must be to produce the needed results.
- ◆ Section 3.0/Appendix II-C, “Analytical Approach and Methods.” Given the factors specified in the first two sections (1.0 and 2.0), these sections stipulate *how* the technical analyses are to be planned to ensure no dominant contributor is overlooked. Analytical methods, modeling requirements, data quality, uncertainty, and verification requirements are among the specifications included. While these requirements avoid specifying what tasks must be done or in what sequence work is to be performed, it is clear that this section must heavily influence how the assessment work is to be defined and what preparatory work must precede the start of the analysis.
- ◆ Section 4.0/Appendix II-D, “Conducting and Managing the Assessment.” These sections address the *management* requirements, including methods to determine funding prioritization, sequence of technical work, the roles of peer reviewers, integration with Hanford Site strategic planning and other analyses, and support of environmental impact statement preparations. These sections also address the continuing involvement and authority of affected people and groups.