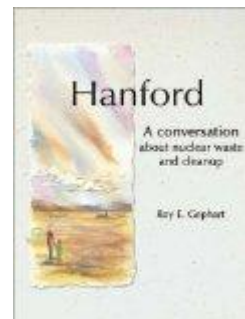


Roy E. Gephart. *Hanford: A Conversation about Nuclear Waste and Cleanup.*
Columbus: Battelle Press, 2003. xii + 388 pp. \$34.95, paper, ISBN 978-1-57477-134-3.



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A Primer for Public Involvement

In *Hanford*, Roy E. Gephart has provided a detailed, accessible, and wide-ranging primer on Hanford, the "largest and most complex environmental cleanup project in the United States" (p. ix). Scrupulously even-handed, Gephart chooses not to advance his own argument concerning the creation and cleanup of waste at the United States's nuclear weapons production site at Hanford, Washington, instead offering a calm and controlled recitation of the issues and events surrounding the site. Following this path has produced a useful and informative primer for legislators, policymakers, journalists, students of environmental science, and activists. But the completed work is more of a policy overview than a definitive work of scholarship, and there is room here for many more analytical and historical approaches to the available archival material.

Perhaps Gephart's motivation for writing this book is reflected in the imposing size of the text itself. The large-print, large-format textbook boasts 7 maps, 12 tables, 46 illustrations, and 55 photos in its 388 pages. This is not to mention the included

glossary, resource guide, references, and appendices (complete with their own illustrations and references). But this text is exhaustive for a reason: Gephart wishes to encourage constructive public involvement in a technologically, scientifically, and politically complex problem. Successful policy planning will depend, Gephart says, upon "the public receiving information without spin or bias" (p. 12.8). Furthermore, Gephart is justifiably convinced that the task of cleaning, containing, or stabilizing the Hanford site will continue for decades and generations, if not centuries and eons. With that time frame in mind, the preservation of "data, records, and interpretation" related to the site is particularly important. "Today's knowledge is tomorrow's historical record," says Gephart (p. 8.43), and without an active attempt to maintain historical explanations of current decision-making, future generations dealing with radioactive waste and today's state legislators alike might need access to the very type of summary *Hanford* offers. (For example, Gephart helpfully informs us

that uranium-238's half-life is 4.46 billion years; plutonium-239's is 24,000 years.)

The first six chapters of *Hanford* offer a detailed summary of the site's history, an explanation of the organizations and institutions related to the site, an overview of the physics and medical science involved, and a description of the disposition and composition of nuclear waste on the site. It is in this section that Gephart's encyclopedic knowledge of the Hanford site (as well as Battelle Press's commitment to producing a heavily illustrated and informative text) is most clearly visible. With the help of a number of excellent graphics, Gephart clearly explains the provenance and activities of Hanford's nine nuclear reactors, five reprocessing plants, one plutonium finishing plant, and various related facilities.

A clear theme for Gephart in these first six chapters is the transition from a goal-oriented culture of secrecy (emerging from the wartime Manhattan Project) to a new emphasis on medical and science-based decision-making that eventually superseded the political and military importance of plutonium production. "Secrecy ... concealed potential hazards from the public and health officials" even after the end of World War II, argues Gephart (p. 2.4). This initial culture of secrecy at the Hanford site unnecessarily burdened future generations of activists with a legacy of distrust (pp. 6.1, 9.8). Gephart notes that in the case of Hanford, "as the public became more informed, frequently from non-industry and non-government sources, their confidence in institutions and traditional experts eroded" (p. 2.17). There is a bit of irony here for a non-industry and non-government writer intent on informing the public in order to improve decision-making. Still, it is clearly Gephart's hope to provide the sort of publicly available, politically neutral information source that will ameliorate this legacy of distrust.

The last six chapters of the text take a variety of approaches to understanding the challenges of cleanup. The site itself is the largest single cleanup

problem facing the nation today, and will likely continue to be so for centuries, housing 80 percent of the entire nation's spent fuel rods and 60 percent of all radioactive tank and solid waste (p. 8.1). As such, Hanford has received a great deal of political attention, journalistic coverage, and public concern over potential health or environmental impacts. But throughout these final chapters, Gephart is careful to place Hanford and its remediation tasks in context with environmental issues across the nation. Thus, discussion of congressional initiatives to clean up Hanford leads to a wide-ranging and accessible description of CERCLA, a.k.a. "Superfund" (p. 7.3); a discussion of cleanup at Hanford broadens into a chapter on "Exploring Choices and Decisions" across the nation (p. 9.1); a chapter on risk assessment spends more time describing the concept than on applying it to Hanford (p. 11.1). These broad discussions of coalition building, risk analysis, and policymaking are as applicable to sites across the nation as they are to Hanford itself.

This latter half of the book showcases Gephart's diplomatic approach. He splits the difference on the precautionary principle (pp. 8.39, 8.41, 9.24), refuses to judge decisions related to N Reactor and Purex plant shutdown (p. 9.12), avoids discussion of the recently reduced budget for Superfund sites (p. 8.18), remarks that the quality of relations between the United States and Native American tribes is "open to debate" (p. 7.6), definitively states that "there are merits to both sides of the argument" in lawsuits concerning the reclassification of hazardous waste (p. 8.5), and straddles the fence on evaluating Hanford's formal cleanup plan (pp. 7.10-7.14). The first half of the book has some similar fence-sitting; Gephart does not wish to "justify any single belief or negate any concerns" about radiation, but rather intends to encourage discussion about radiation and its effects (p. 4.5). Similarly, Gephart does not comment on the ethically suspect logic of Cold War environmental monitoring, instead simply reporting that when "Hanford officials ... recognized that the

'revelation of a regional iodine-131 problem would have had a tremendous public relations impact,'" it simply followed that "therefore, any monitoring of live animals or sampling of their tissues was done in secret" (p. 3.7).

While he is careful to avoid placing blame for past policymaking failures, Gephart would clearly like to see a more rational cleanup plan for Hanford. "The whole process screams for simplification," says Gephart. "There is a growing belief that Hanford needs a firmer path, a course biased towards action, streamlined work practices, joint accountability, flexibility, and sustained commitment" (p. viii). The issue of nuclear waste at Hanford and around the world is far from settled, and Gephart would prepare an entirely new generation to tackle the problem.[1] What that new generation should do at Hanford is not entirely clear; Gephart offers a number of broad principles to improve the cleanup process (pp. 12.5-12.8), but these are "bridge-building philosophies," not specific recommendations.

Hanford relies on a variety of published reports, journalistic stories, technical articles, secondary works on the history of the site, and some archival materials. Throughout the book, Gephart draws from an exhaustive collection of reports from the U.S. Department of Energy, the Environmental Protection Agency, and the General Accounting Office. To these materials Gephart adds references to journalistic coverage and published works in risk assessment and epidemiology. Gephart's mastery of arcane government reports, both as information sources and as historical documents, is evident, and any individual who does not wish to read these reports in their entirety owes him a debt of gratitude. Most historical background in the text comes from Richard Rhodes's two widely read works on the creation of the atomic and hydrogen bombs, Michele Gerber's history of the Hanford site, and M. Joshua Silverman's dissertation on the topic of risk in nuclear weapons production.[2] That said, there is a wide-

-ranging body of historical literature concerning the "Atomic West" that Gephart has not addressed. Finally, archival materials used in *Hanford* are largely limited to Herbert M. Parker's letters, collected in the consolidated libraries grouped around Washington State University's Tri-Cities location in Richland, Washington. From the correspondence discussed here, Parker's observations appear to be a significant resource worthy of further analysis.

It should be noted that Gephart might be his own best resource. He has written an award-winning handbook on the Hanford waste tanks, demonstrating his ability to explain complex technical and political issues in a clear, evenhanded manner.[3] From his position as a geohydrologist at the Pacific Northwest National Laboratory, Gephart leads tour groups on the Hanford site, has previously been employed by Hanford contractors, and consults on Hanford-related issues with government agencies. His mastery of the subject matter in *Hanford* is particularly evident in his personal observations about the site and its surrounding communities. Gephart is our local guide to this bewildering, but often beautiful, landscape.

This text cannot really be criticized as a historical monograph, for that is not its goal. As a textbook it is hugely informative, as has already been noted. But, as a textbook, there are some minor shortcomings that may have profitably been rectified. In particular, editorial choices in format and layout have had unintentionally confusing results. For example, the book follows a chapter and section numbering scheme familiar to textbook users, which is fine, but also chooses to use the same scheme for page numbering. Thus chapter 4 begins on page 4.1, section 4.1 begins on page 4.5, and section 4.5 begins on page 4.25. This is unnecessarily complex. On a different issue, Gephart uses both parenthetical references and footnotes to provide commentary and bibliographical citation; it is possible that more judicious editing could allow the text to stick to one or the other

format. As a devotee of the *Chicago Manual of Style*, I would certainly recommend footnote or endnote format for any work with this many explanatory notes and references to primary documents. Finally, the textbook-like section and page layout, with frequent section breaks and a separate column on every page for summaries or quotations, makes for some jumbled reading. Observations or quotations in the separate column are frequently highlights from the accompanying text, but occasionally are entirely new and somewhat disconnected from the text. Thus page 8.26 features brief quotations from a newspaper article and a National Research Council report that appear, without explanation or context, only in the separate column and without explicit connection to the text itself. Similarly, while every one of the seventy-one chapter and section divisions has its own epigraph, some of these are a bit random. Page 9.1's inclusion of Charles de Gaulle's observations on France's diversity of cheeses is humorous, but not necessarily enlightening. This quotation and others are probably meaningful to Gephart, but readers might not understand the author's intent in including them, or might come to interpretations entirely contradictory to the author's intent.

But these are truly minor criticisms; as a convenient and accessible information resource *Hanford* is highly successful. Somewhat like the many popular primers offered by the League of Women Voters, *Hanford* does not specifically recommend any political affiliation or action. While these works themselves are not indictments of unhealthy, unsafe, or environmentally suspect practices, they provide the information and perspective for citizen activists to knowledgeably intervene in often complex public policy.[4] Now it is time for full disclosure: I come to this work both as a scholar interested in the subject of citizen activism, and as a former member of the Snake River Alliance ("Idaho's Nuclear Watchdog"), a group which appears in Gephart's work from time to time. From the perspective of citizen activism, *Hanford* is a truly revolutionary document. It puts

useful information in the hands of the public, the sort of information that can make groups like the Snake River Alliance a powerful and dynamic force in environmental policymaking. What the public does with that information might surprise even Gephart.

Notes

[1]. A federal appeals court decision, which was announced just as this book reached stores, shows the dynamic nature of the issue. See Matthew L. Wald, "Judge Voids Cleanup Plan for Wastes at Bomb Plants," *The New York Times*, July 4, 2003.

[2]. Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986); Rhodes, *Dark Sun: The Making of the Hydrogen Bomb* (New York: Simon & Schuster, 1995); Michele S. Gerber, *On the Home Front: The Cold War Legacy of the Hanford Nuclear Site* (Lincoln: University of Nebraska Press, 1997); and M. Joshua Silverman, "No Immediate Risk: Environmental Safety in Nuclear Weapons Production, 1942-1985" (Ph.D. dissertation, Carnegie Mellon University, 2000).

[3]. Roger E. Gephart and Regina E. Lundgren, *Hanford Tank Cleanup: A Guide to Understanding the Technical Issues* (Columbus: Battelle Press, 1998).

[4]. Many of these LWV primers are now available online. See <http://www.lwv.org/elibrary/publications.html>. The use of scientific and technical information by environmental activists has been much discussed; for examples see Sylvia Noble Tesh, *Uncertain Hazards: Environmental Activists and Scientific Proof* (Ithaca: Cornell University Press, 2000); and Frank Fischer, *Citizens, Experts, and the Environment: The Politics of Local Knowledge* (Durham: Duke University Press, 2000).

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