

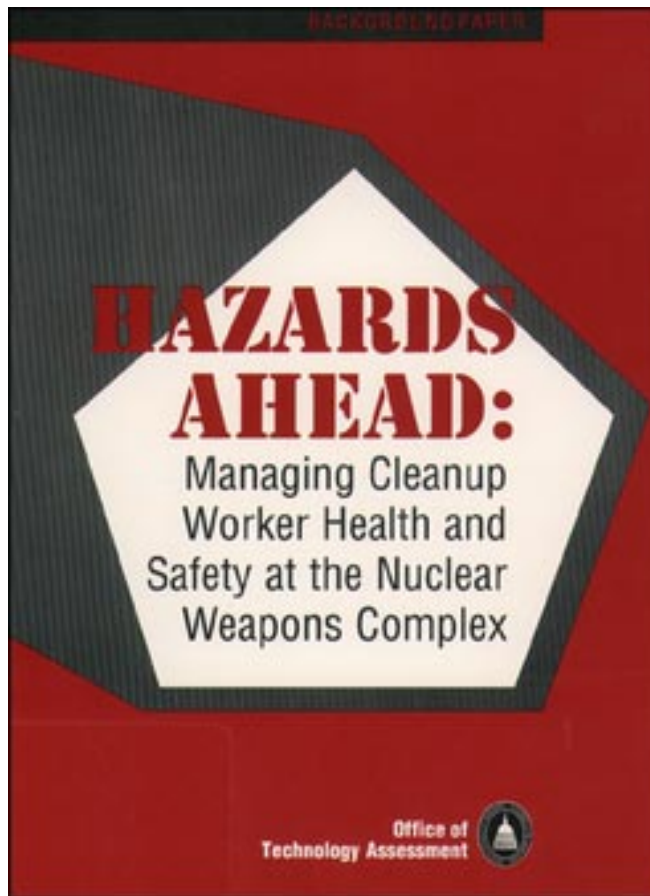
*Hazards Ahead: Managing Cleanup  
Worker Health and Safety at the Nuclear  
Weapons Complex*

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# Foreword

Old War nuclear weapons production has left a legacy of environmental contamination that is unprecedented in scope and complexity. The Department of Energy has begun cleaning up pollution at the Nuclear Weapons Complex (NWC)-an expensive, decades-long task that will require a workforce numbering tens of thousands of scientists, technicians, and laborers. Protecting their health and safety must be a major goal of this cleanup effort. Achieving this goal will require DOE to successfully confront significant technical and managerial challenges, but it also poses a unique opportunity to advance state-of-the-art occupational health and safety technologies and practices.

The Senate Committee on Armed Services asked OTA to undertake this project as part of OTA's evaluation of environmental restoration and waste management at the DOE Nuclear Weapons Complex. The Committee directed OTA to examine risks workers might face in cleaning up contamination at the Complex and to evaluate the effectiveness of DOE's occupational safety and health programs for cleanup workers.

This background paper concludes that, thus far, DOE and its contractors have devoted little attention to cleanup worker health and safety. They have not convinced workers and managers that a "new culture" of accountability in environment, safety, and health is truly ascendent. DOE's plans call for ambitious increased capability in occupational safety and health matters, but DOE has devoted few resources to these efforts. Policies and programs needed to protect cleanup workers are not yet in place.

Yet DOE could apply to great advantage both its own technical strengths and the lessons learned by the Nation's experience with protecting cleanup workers at non-Federal waste sites. If the Department aggressively addresses its organizational problems, it could become a major force in establishing the principles, practices, and technologies needed to restore contaminated environments to safe conditions-in a manner that ensures that the "cure" for contaminated environments does not do more harm than the pollution itself.

In the course of preparing this background paper, OTA received important assistance from many individuals and organizations. Workshop participants, employees of OSHA, EPA, and DOE, and numerous contributors and reviewers from academia, industry, and organized labor gave generously of their advice and time. In the absence of such expert advice and guidance, OTA would have been unable to accomplish this study. The analysis and conclusions of this background paper are, of course, OTA's, and OTA assumes full responsibility for the paper and the accuracy of its contents.



Roger Herdman, Acting Director

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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the workshop participants. The participants do not, however, necessarily approve, disapprove, or endorse this background paper. OTA assumes full responsibility for the background paper and the accuracy of its contents.

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# List of Abbreviations

ACE-United States Army Corps of Engineers	NIOSH—National Institute of Occupational Safety and Health
DOE-United States Department of Energy	NWC-nuclear weapons complex
EH—DOE Office of Environment, Safety and Health	OSH-occupational safety and health
EM—DOE Office of Environmental Restoration and Waste Management	OSHA-Occupational Safety and Health Administration
ERMC-Environmental Restoration Management Contractor	PEL—permissible exposure limit
GAO-United States General Accounting Office	PPE-personal protective equipment
HASP-Health and Safety Plan	RCRA—Resources Conservation and Recovery Act
HAZWOPER-Hazardous Waste Operations and Emergency Response Standard	RFI-Remedial Facility Investigation
HWAC-Hazardous Waste Action Contractors	RIFS-Remedial Investigation/Feasibility Study
LANL--Los Alamos National Laboratory	USCG—United States Coast Guard
M+O-Management and Operation Contractor	WAS—Westinghouse Hanford Corporation