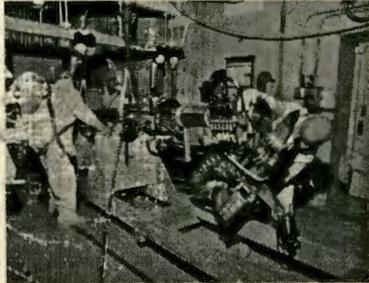


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Hanford Site Cleanup



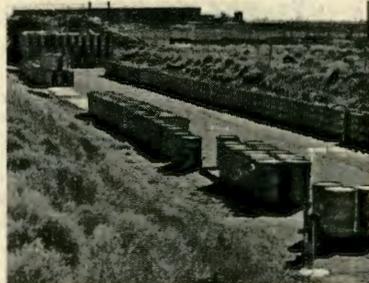
Reactor Safe Storage and D&D of Surplus Facilities



Retrieve and Store Spent Nuclear Fuel



Remove and Dispose of Contaminated Soils



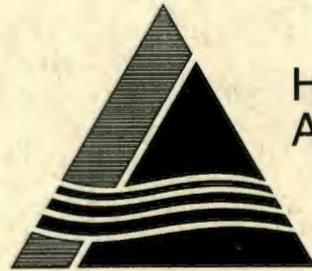
Manage Solid Wastes



Stabilize Plutonium



Tank Waste, Retrieval, Treatment, Disposal



Tri-Party Agreement

Hanford Federal Facility
Agreement and Consent Order

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Community Relations Plan

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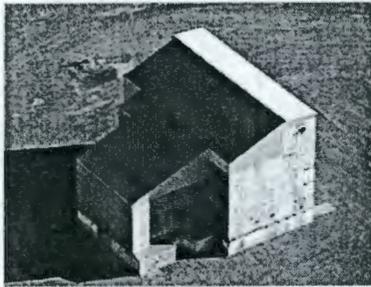
- United States Department of Energy
- United States Environmental Protection Agency
- Washington State Department of Ecology

August 2001

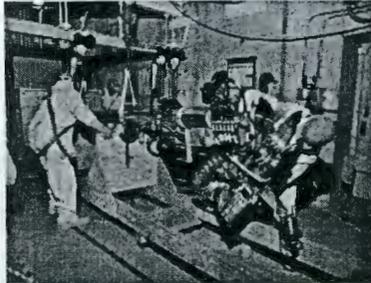
Prepared by: U.S. Department of Energy • Richland Operations Office

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Hanford Site Cleanup



Reactor Safe Storage and D&D of Surplus Facilities



Retrieve and Store Spent Nuclear Fuel



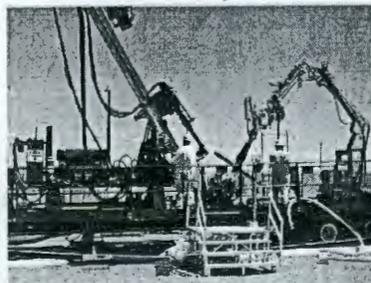
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INTRODUCTION

WHAT IS HANFORD?

Hanford is a 586-square mile site in southeastern Washington State that was created in 1943 as part of the Manhattan Project to produce plutonium for nuclear weapons. A total of nine nuclear reactors were eventually built along the banks of the Columbia River as the defense mission continued throughout the Cold War years. The weapons material production mission ended in the late 1980s and the Site's mission shifted from production to waste cleanup. However, more than 40 years of plutonium production created an enormous challenge in terms of hundreds of square miles of contaminated soil and groundwater and millions of gallons of highly radioactive waste stored in underground tanks.

WHO'S WHO AT HANFORD?

The U.S. Department of Energy (USDOE) Richland Operations Office and the Office of River Protection manage and operate the Hanford Site. The Richland Operations Office oversees management of the the Hanford Site, including restoration of the Columbia River corridor and transition of the central part of the Hanford Site for waste treatment and long-term storage. Richland Operations Office is responsible for moving 1,200 metric tons of spent fuel away from the River Corridor; stabilizing 4 tons of plutonium; restoring land; placing reactors in safe storage; demolishing old facilities along the Columbia River; providing site infrastructure; remediating groundwater, and doing a host of other cleanup activities. The Office of River Protection was created in 1998 by the U.S. Congress to manage the USDOE's largest, most complex environmental cleanup project – Hanford's tank waste retrieval, treatment, and disposal project. Office of River Protection's mission is to retrieve the tank waste, and build and operate a waste treatment complex that converts the radioactive waste into a glass form for disposal.

The Washington State Department of Ecology (Ecology), and the U.S. Environmental Protection Agency (EPA) regulate USDOE's activities. The regulatory agencies divide authority for different aspects of Hanford Site cleanup. Ecology's Nuclear Waste Program is responsible for oversight of the tank waste treatment and storage, waste management activities and implementing the state's cleanup regulations. EPA has lead oversight for *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* cleanup activities that include removal and transfer of spent nuclear fuel from the corroding storage pools to safer storage areas. These two regulatory agencies oversee other multiple cleanup activities as well.

WHAT IS THE TRI-PARTY AGREEMENT?

The *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement), was signed in 1989 by USDOE, EPA, and Ecology. The original Tri-Party Agreement outlined a 30-year cleanup schedule to bring the Hanford Site into compliance with state and federal environmental laws. The Tri-Party Agreement is made up of legal agreement and action plans that include milestones, or deadlines, for specific cleanup actions to be completed. Additionally, each major milestone series consists of interim milestones guiding cleanup activities through the course of the project.

The Tri-Party Agreement also outlines the process for changing, removing or adding milestones; the conditions under which penalties may be issued; and the requirements for public participation activities pertaining to Hanford cleanup actions. Changes can be made to the Tri-Party Agreement with the approval of all three agencies. The change request process can be initiated by any of the Tri-Parties, and a public participation process must be followed prior to any changes being implemented.

Introduction

WHAT IS THE COMMUNITY RELATIONS PLAN?

This Community Relations Plan outlines the public participation processes implemented by the Tri-Parties under authority of the Tri-Party Agreement, and identifies several ways the public can participate in the Hanford Site cleanup decision-making process.

In many cases, Hanford public involvement goes beyond what is required by law because the Tri-Parties believe public involvement is essential to cleanup success. The Tri-Parties conduct public involvement and information activities both cooperatively and independently.

This Community Relations Plan intends to fulfill applicable state and federal laws regarding development of community involvement and public participation plans. The plan also serves as one of the overall public participation plans guiding public involvement at the Hanford Site. Additional project-specific, public participation plans will be developed as needed.

The Tri-Parties recognize that people nationwide are concerned and affected by the Hanford Site. Some primary reasons for public involvement include the following:

- When members of the public are involved in the decision-making process at the Hanford Site, they help ensure that better long-term decisions are made.
- Better decisions are made if the public is involved early, frequently, and regularly.
- Continued public support in the cleanup process will help maintain political support for cleanup funding.
- If the public is not informed or involved in the decision-making process, it has reason to doubt, criticize, or stop the cleanup process.

This is the fourth revision to the Community Relations Plan. (The plan was originally issued in 1990.) The primary changes in the 2001-revised Community Relations Plan include updated information, a better explanation of Hanford Site public participation plans, and a new format for improved readability.

Section 1

INFORMATION RESOURCES AND PUBLIC PARTICIPATION OPPORTUNITIES

The main objective of the Tri-Parties is to inform and involve by providing clear and comprehensive information to the public. This section addresses the various ways to receive information from and provide comments to the USDOE, Ecology, and EPA about Hanford Site activities. This section also presents information about other public organizations that closely follow Hanford Site issues and how the Tri-Parties work with them.

HANFORD CLEANUP LINE

1-800-321-2008

Call the Hanford Cleanup Line to request information about Tri-Party Agreement cleanup and compliance activities at the Hanford Site. Ecology personnel monitor all calls and forward requests for information to the appropriate Tri-Party agency. The Tri-Parties strive to provide a timely response to all requests. The Hanford Cleanup Line is advertised frequently in a variety of ways, including all Tri-Party Agreement newspaper notices, brochures, meeting notices, fact sheets, etc.

INTERNET ADDRESSES

Internet web sites are updated regularly with information that include schedules for public involvement on Hanford Site activities.

Ecology: <http://www.ecy.wa.gov/programs/nwp>

EPA: <http://yosemite.epa.gov/r10/cleanup.nsf/webpage/Hanford,+Washington>

USDOE: <http://www.hanford.gov/pubinvolve.html>

Hanford Advisory Board:
<http://www.hanford.gov/hab/>

Community Relations Plan:
<http://www.hanford.gov/crp/toc.htm>

Hanford Happenings:

<http://www.ecy.wa.gov/programs/nwp/pdf/happenings.pdf>

Hanford Update:

<http://www.hanford.gov/rl/programs.asp.html>

Link to Stakeholder Addresses:

http://www.hanford.gov/misc_info/stakehld.htm

Tri-Party Agreement:

<http://www.hanford.gov/tpa/tpahome.htm>

MAILING LISTS

The Tri-Parties maintain two mailing lists tailored to different levels of interest on Hanford Site activities. The lists distinguish between 1) those individuals who are "highly interested" and would like to be involved with cleanup and compliance decision-making, and 2) those individuals who would only like to be informed about Hanford Site activities. Individuals on the "highly interested" list could receive 25 or more mailings per year including fact sheets, meeting notices, and schedules, as well as the bi-monthly *Hanford Update* newsletter and the monthly *Hanford Happenings* calendar. Individuals on the general list primarily receive the bi-monthly *Hanford Update* newsletter and the monthly *Hanford Happenings* calendar. If you would like your name to be added to either list, call the Hanford Cleanup Line at **1-800-321-2008** and please specify your mailing list preference.

TRI-PARTY AGREEMENT PUBLICATIONS

A continuing goal of the Tri-Parties is to improve the readability of Hanford Site publications. These publications include the *Hanford Update* newsletter, fact and focus sheets, and other summary publications. The Tri-Parties understand that providing accurate, up-to-date and descriptive information is fundamental for active participation by the public in Tri-Party Agreement decisions.

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Hanford Update Newsletter

The *Hanford Update* newsletter is published bi-monthly and provides general information about Tri-Party Agreement cleanup and compliance activities. The *Hanford Update* also contains information on public meetings, workshops, and other opportunities to participate in Hanford Site decisions. The newsletter is available on the Internet at <http://www.hanford.gov/tpa/updates.html>.

Hanford Happenings Calendar

The *Hanford Happenings* calendar is published monthly and provides the locations and dates for upcoming meetings, public comment periods, and other Hanford Site cleanup activities. The calendar is available on the Internet at <http://www.ecy.wa.gov/programs/nwpl/pdf/happenings.pdf>.

Fact and Focus Sheets

Fact and focus sheets provide information on Hanford Site issues, cleanup activities, and opportunities for public involvement. The Tri-Parties send out fact and focus sheets throughout the year.

Meeting Summaries

Summaries of certain public meetings are available upon request and are located in the Public Information Repositories (see the Hanford Tri-Party Agreement Public Information Repositories section).

Comment and Response Documents

Following a Tri-Party Agreement public comment period, a Comment and Response document is developed by the Tri-Parties to record the public comments received on an issue. Comment and Response documents are distributed to those members of the public who request copies. The documents are also placed in the Public Information Repositories and Administrative Records as part of the decision documentation.

To receive any of the above referenced publications, call the Hanford Cleanup Line at 1-800-321-2008.

HANFORD TRI-PARTY AGREEMENT PUBLIC INFORMATION REPOSITORIES

The purpose of the Public Information Repositories is to give the public access to information on Tri-Party Agreement activities and provide documents for public comment. This information may include work plans, transcripts, and summaries of public meetings and workshops, copies of the Tri-Party Agreement, and other related documents.

The Public Information Repositories also have copies of the Administrative Record index. Table 1 in Appendix B lists the Tri-Party Agreement-related documents normally placed in the repositories. A checkout service is not available for documents; however, each library has a copying service.

To review information on Hanford Site Tri-Party Agreement issues and the Administrative Record index, visit the Public Information Repository nearest you:

University of Washington
Suzzallo Library
Government Publications Division
Box 352900
Seattle, WA 98195
(206) 543-4664

Portland State University
Branford Price Millar Library
Science and Engineering Floor
934 SW Harrison
P.O. Box 1151
Portland, OR 97207
(503) 725-3690

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USDOE Public Reading Room

Washington State University, Tri-Cities
Consolidated Information Center, Room 101-L
2770 University Drive
Richland, WA 99352
(509) 372-7443

Gonzaga University

Foley Center
East 502 Boone
Spokane, WA 99258
(509) 323-6548

In addition to the Tri-Party Agreement Administrative Records, all information is available on the following Internet web site:

Tri-Party Agreement Administrative Record and Public Information Repository:

<http://www2.hanford.gov/arpir/>

NEWS MEDIA ACTIVITIES

To keep the public informed, the Tri-Parties conduct a variety of activities to ensure that the media has timely, complete, and accurate information about Hanford Site cleanup and compliance activities. Information is distributed through news releases, public service announcements, editorial boards, Hanford Site tours, and individual contact with reporters.

The Tri-Parties strive to provide advance notice of planned media interactions, notifying each other with at least 48 hours to review any Tri-Party Agreement materials prior to distribution to the media.

HANFORD SITE TOURS

One of the best ways to become more informed about Hanford is by touring the Site. The Hanford Site Saturday Road Tour Program is a series of public bus tours around the 586-square mile Site. Tour participants can see the retired nuclear reactors, the old town sites of Hanford and White Bluffs, and the Central Plateau where chemical separations facilities and underground waste

storage tanks are located. The Saturday tours are coordinated through USDOE and eight to ten tours are usually scheduled throughout the summer months, beginning in late April. The tours are free, but pre-registration is required. Participants must be at least 16 years old (18 years of age for tours that include B Reactor), be a U.S. citizen, and bring legal photo identification to obtain a required badge.

Specialized program tours are also offered through the Tri-Parties in coordination with USDOE. These tours are tailored to specific areas of interest for specialized audiences such as congressional representatives, local and national media, and other groups and individuals. Agendas for the program tours are designed to address the interests of the visitors.

For more information on Hanford Site tours, visit our web site at www.hanford.gov.tours/index.cfm or call the Hanford Cleanup Line at 1-800-321-2008.

PUBLIC INVOLVEMENT OPPORTUNITIES

Public Comment Periods on Documents Related to the Tri-Party Agreement

All public comment periods on Tri-Party Agreement documents are announced in regional newspapers. The Tri-Parties also notify individuals through the *Hanford Update* and *Hanford Happenings*.

The length of public comment periods vary according to requirements for permits or actions related to the Tri-Party Agreement; typically, a public comment period ranges from 30 to 45 days. All public comment periods will be determined in accordance with applicable state and federal regulations. Documents available for public comment are kept at the Public Information Repositories or are available on the Administrative Record and Public Information Repository web site (<http://www2.hanford.gov/arpir/>). Documents for

Section 1 – Information Resources and Public Participation Opportunities

public comment may also be requested by contacting the Hanford Cleanup Line at 1-800-321-2008. Immediate notification will be sent to the requestor if a printing fee will be charged for the document.

After a public comment period closes, the Tri-Parties consider the comments received before finalizing the document or decision. When a Comment and Response document is prepared, it is sent to all individuals who request it. The Tri-Parties strive to publish a Comment and Response document within 60 days or notify the public if the publication date is extended.

Final documents, final milestone changes or final decisions, and Comment and Response documents are available through the Public Information Repositories and Administrative Record web site at <http://www2.hanford.gov/arpir/>.

For documents not undergoing public comment, EPA follows the requirements set forth in the *Freedom of Information Act* (Title 40 Code of Federal Regulations, Part 2). For more information, contact the EPA at 1-800-424-4372.

Requests for public records from Ecology concerning Hanford Site cleanup activities and compliance must be made in accordance with state law. Ecology may fill requests received by telephone or fax. Public review of records requires a signed "Request For Public Record" form. There is no fee for viewing records. Copy fees are as follows: 1-24 pages, no charge; 25 pages or more, 20 cents per page. Postage charges may be added if the postage exceeds \$4. State sales tax will be added to the total copy charges. Pre-payment is required. For electronic media requests (microfilm, diskettes, photos, etc.), call the Hanford Cleanup Line at 1-800-321-2008.

TRI-PARTY AGREEMENT PUBLIC MEETINGS

In an effort to provide broad and timely perspectives to the public on Hanford Site cleanup priorities and budget decisions, the Tri-Parties regularly conduct public information meetings. To

improve effectiveness and efficiency of these meetings, the Tri-Parties strive to use innovative outreach techniques to involve the public.

Specific Public Meetings

All Tri-Party Agreement quarterly public involvement planning meetings, semi-annual meetings, special meetings, and workshops are open to the public. In addition, the Tri-Parties welcome opportunities for co-sponsorship of meetings by local, state and tribal governments, and members of citizen groups.

The Tri-Parties assess public interest and areas of public concern regarding specific actions based on consultations with tribal governments, the Hanford Advisory Board, stakeholders, and the interested public. A member of the public also may request a public hearing on a permit action or a public meeting on a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* action. If significant interest is demonstrated, the Tri-Parties will conduct a formal public process.

If the Tri-Parties determine that public interest on an issue is minimal based on feedback and/or the number of requests received, they may conduct informal workshops, briefings, meetings, or informational exchanges instead of holding formal public meetings. The Tri-Parties strive to include a wide variety of viewpoints in all Hanford Site public involvement activities. When feasible, space is made available for citizens to meet before scheduled public involvement activities.

Annual Budget Meetings

At least one public meeting is held in the spring to involve the public and stakeholders in the USDOE budget formulation, a USDOE commitment reflected in the Tri-Party Agreement (paragraphs 148 and 149). An optional meeting in the fall may be conducted to further discuss and evaluate budget issues. At these meetings, the Tri-Parties discuss the impact of budget decisions and take public comment and questions on cleanup priorities, as well as outline any changes to Hanford Site cleanup objectives and decisions.

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One of the meetings may be conducted at the discretion of the Tri-Parties in conjunction with the Hanford Advisory Board. Other meetings will be conducted at public meeting facilities (when available) in key cities in Washington and Oregon.

TRI-PARTY AGREEMENT QUARTERLY PUBLIC INVOLVEMENT PLANNING MEETINGS

The Tri-Parties meet quarterly with the Hanford Advisory Board, the state of Oregon, local government officials, and interested members of the public to discuss current and future public involvement activities. These public involvement planning meetings are open to the public.

At these Tri-Party Agreement public involvement planning meetings recommendations are made in the following areas:

- Current and upcoming public involvement activities
- Level and type of public involvement needed for activities
- Public outreach activities
- Coordination of multiple public involvement activities
- Enhancement of communication
- Cost efficiencies in public involvement
- Feedback on public involvement activities.

The Tri-Parties are responsible for coordinating these planning meetings. In addition, twice yearly, the Tri-Parties revise the *Hanford Site Public Involvement Activities* document to provide an overview of anticipated public involvement opportunities for the coming months. The revised document identifies which activities the Tri-Parties believe are most important to the public and how they intend to involve the public in the decision-making process. To request a copy

of the current *Hanford Site Public Involvement Activities* document, call the Hanford Cleanup Line at **1-800-321-2008** or visit the web site at <http://www.hanford.gov/pubinvolve.html>.

OTHER TRI-PARTY AGREEMENT PUBLIC OUTREACH ACTIVITIES

The Tri-Parties conduct other forms of public outreach in Washington and Oregon. Informal public outreach activities are usually conducted on request and include public meetings, focus groups, workshops, open houses, and meetings with local governments and civic organizations. Public outreach activities promote public awareness, education, and involvement with Hanford Site cleanup and compliance decisions. The Tri-Parties also conduct regularly scheduled meetings with public interest group representatives to discuss Hanford Site issues and concerns.

If you would like to have a presentation made to your group by one of the Tri-Parties, call the Hanford Cleanup Line at 1-800-321-2008.

TRI-PARTY AGREEMENT PUBLIC NOTIFICATION PROCESS

Public meetings, hearings, and workshops are announced in the *Hanford Update*, *Hanford Happenings* calendar, and are posted on the USDOE web site, or with other public notices. All members on the Hanford Site mailing list will receive notices on significant public meetings or workshops. In addition, other methods of announcing public participation opportunities may include:

- Advertisements in regional and local newspapers
- Public service announcements on radio and television stations
- News releases

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- Trade newsletters
- Direct mailings to interested parties
- Telephone notification
- Public access television announcements
- Internet postings and calendars
- Notices in the Federal Register
- Electronic distribution lists
 - E-mail discussion sites.
- Provide meeting leaders who listen to public comment and consider input to decisions
- Develop creative and innovative ways to communicate meeting information to the public
- Conduct effective meetings
- Provide stakeholder access to the design of public involvement activities
- Ensure meeting locations are convenient, easily accessible and cost-effective
- Provide timely feedback after meetings

The Tri-Parties strive to notify stakeholders 30 to 45 days before the start of the public comment period.

TRI-PARTY AGREEMENT PUBLIC INVOLVEMENT EVALUATION PROCESS

Creating opportunities for the public to provide meaningful and useful input to Hanford Site decisions is an ongoing activity. The Tri-Parties work with the Hanford Advisory Board and its committees, stakeholders, and the interested public continually to improve the process of evaluating public involvement activities and events. The Tri-Parties strive to accomplish the following:

- Publish effective advertisements and meeting notices
- Provide sufficient advance meeting notice
- Provide factual written material that is easily understood by the public
- Obtain knowledgeable speakers who are sensitive to different views and opinions, and who provide concise, easily-understood presentations

The evaluation process consists of two parts. Part 1: Evaluation forms are distributed at all Tri-Party Agreement meetings, hearings, workshops, seminars, etc., to gather timely feedback on the effectiveness of specific events and activities. The comment cards include a space for participants to rate the effectiveness of the event and how the participant heard about the event.

Part 2: Ecology leads an annual evaluation of the overall effectiveness of public involvement activities for the Tri-Parties. The evaluation process begins in October of each year. Surveys are distributed to members of the Hanford Advisory Board, and other members of the public who have indicated a willingness to participate, as well as to Tri-Parties' management and staff. Feedback received on public involvement activities held throughout the year is also included in this annual evaluation. Ecology coordinates distribution of the surveys and compilation of the information, and publishes a final report on the evaluation results no later than the end of each calendar year. The final report has a list of activities conducted during the evaluation period, including the purpose of the activity and lead agency; a summary of comments received; a summary of efforts taken by each agency to reach new audiences; a description of changes made or planned in response to comments received; and a summary of issues raised during the previous

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evaluation process and how they were implemented. The report will be provided to the full Hanford Advisory Board as well as any survey participant.

The evaluation report is available on the Ecology web site at <http://www.ecy.wa.gov/programs/nwp/pdf/eval.pdf>, or by mail by calling the Hanford Cleanup Line at 1-800-321-2008.

TRIBAL GOVERNMENT INVOLVEMENT

The Hanford Site is located on land at one time ceded to the United States under separate treaties with Indian nations. As a result of treaties with the United States, the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, and the Nez Perce Tribe retained certain rights at the Hanford Site. The policies of both the United States and Washington State commit to maintaining a government-to-government relationship with tribal governments. The USDOE consults with tribal governments prior to taking action, making decisions, or implementing programs that may affect tribal governments. In addition, USDOE consults with the Wanapum (a nonfederally recognized tribal government) who live adjacent to the Hanford Site and the Confederated Tribes of the Colville Reservation on cultural resource issues.

The Tri-Parties take a proactive approach to soliciting input from tribal governments on Tri-Party Agreement policies and issues. Specifically, the Tri-Parties conduct periodic briefings for the affected tribal governments. USDOE routinely provides copies of Tri-Party Agreement documents concurrently to tribal governments, Ecology, and EPA.

LOCAL INVOLVEMENT

Several public and private organizations in the Tri-Cities area work closely with the Tri-Parties on Hanford cleanup issues. These organizations include the Tri-City Industrial Development Council; Central Washington Building Trades Council; Hanford Atomic Trades Council; Hanford Communities; Benton, Franklin, and Grant County governments; and the city governments of Richland, West Richland, Pasco, and Kennewick. For more information about local organizations involved in the Hanford Site cleanup, call the Hanford Cleanup Line at 1-800-321-2008.

Briefings for Elected and Appointed Officials and Agency Representatives

Many people receive their information about the Hanford Site from elected or appointed officials, or from agencies other than USDOE, Ecology, or EPA. The Tri-Parties strive to keep public officials informed through publications, mailings, and periodic briefings. These officials are also on the "highly interested" mailing list to receive timely notification of significant findings or decisions. The Tri-Parties strive to respond to questions from officials and other agency representatives in a timely manner. The Tri-Parties also welcome requests for information or comments on public involvement activities from officials or agency representatives.

STAKEHOLDER INVOLVEMENT

Hanford Advisory Board

The Hanford Advisory Board was created in 1994 by the Tri-Parties to advise all three agencies on major cleanup policy decisions. The Hanford Advisory Board is composed of 31 members and their alternates who represent a broad range of stakeholder interests including environmental, cultural and socio-economic; Hanford Site employees; public interest; local government; higher education; other Federal and state agencies, and the state of Oregon. Two of three affected

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tribal governments are represented on the Hanford Advisory Board. One other tribal government participates on the Hanford Advisory Board in an ex-officio status.

The Hanford Advisory Board has researched and provided consensus advice on topics ranging from spending and budget priorities to technical recommendations on removing tank waste. The Hanford Advisory Board has also advised the Tri-Parties on the principle to build the Environmental Restoration Disposal Facility, on groundwater pump-and-treat programs, and on privatizing Hanford's tank waste cleanup. The Hanford Advisory Board has issued several pieces of advice on public involvement including public involvement in the budget process and how the Tri-Parties respond to advice.

Included within the Hanford Advisory Board membership are four standing committees: Budgets and Contracts; River and Plateau; Tank Waste; and Health, Safety, and Environmental Protection Committees. Although the Public Involvement and Communication Committee is not a standing committee, it can convene when the Hanford Advisory Board deems it necessary.

The Hanford Advisory Board's Charter describes the Hanford Advisory Board as "...an independent, non-partisan, and broadly representative body consisting of a balanced mix of the diverse interests that are affected by Hanford cleanup issues." The Hanford Advisory Board's mission "...is to provide informed recommendations and advice to the U.S. Department of Energy, U.S. Environmental Protection Agency, and the Washington Department of Ecology ...on selected major policy issues related to the cleanup of the Hanford Site." Some of the major policy issues considered by the Hanford Advisory Board include the following:

- Protection of worker and public health and safety
- Budget access and analysis
- Treatment, storage and disposal of hazardous waste

- Future land use
- Transportation of hazardous wastes and emergency response
- Recognition of tribal government treaty rights
- Protection of groundwater and restoration of contaminated groundwater
- Impacts on the Columbia River
- Community impact plans
- Technology development
- Strategies for effective public involvement.

USDOE funds the Hanford Advisory Board. The Hanford Advisory Board's Charter states that USDOE "commits to provide funding levels adequate to cover" the Hanford Advisory Board's needs for technical assistance, facilitation, meeting costs, members' travel costs, and administrative support. (The Charter states that the Hanford Advisory Board will determine adequacy of funding and will have independent authority to approve expenditures in its budget.)

For a copy of the Hanford Advisory Board Charter, meeting agendas, and other information, call the Hanford Cleanup Line at 1-800-321-2008 or visit the Hanford Advisory Board web site at <http://www.hanford.gov/boards/hab/index.htm> or <http://www.hanford.gov/boards/hab/calendar/calendar.htm>

Other Agencies Involved in Hanford Site Cleanup

Washington State Department of Health. The Washington State Department of Health's Division of Radiation Protection regulates Hanford radioactive air emissions. The Division conducts environmental radiation monitoring to fulfill its public health responsibilities and verifies the results of monitoring performed by USDOE

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and its contractors. The Division also conducts joint investigations with Ecology into practices at Hanford. For more information, contact the Department of Health at (206) 753-3934 or in Washington State at 1-800-525-0127.

Washington Department of Fish and Wildlife. The Washington Department of Fish and Wildlife monitors and documents Hanford Site activities in regard to restoration and mitigation programs to prevent injury to fish, wildlife, and their habitats. The Department also issues state permits for cleanup work involving the disturbance of the Columbia River and its shoreline. For more information contact the Washington Department of Fish and Wildlife at (360) 902-2250 or visit the web site at www.wa.gov/wdfw.

U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service manages the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge for the USDOE. The land managed by the U.S. Fish and Wildlife Service includes all Hanford Site lands north of the Columbia River and those in the Fitzner-Eberhardt Arid Lands Ecology Reserve. Other lands, as they are cleaned up, may be added to the U.S. Fish and Wildlife Service management scope. For more information, contact the U.S. Fish and Wildlife Service at (509) 371-1801 or visit the web site at <http://www.fws.gov/>.

Oregon Office of Energy. The Oregon Office of Energy is the lead Oregon agency on Hanford Site issues. This office monitors cleanup and other activities at the Hanford Site and the downstream Columbia River environment. Oregon office staff work with USDOE and local governments on safe transport of Hanford nuclear wastes through Oregon. Staff also support the Oregon Hanford Waste Board, which recommends policy and gives advice to the Oregon Governor on Hanford Site issues. The Oregon Office of Energy is also the lead for Hanford emergency planning and response and public involvement in Oregon. For more information, contact the Oregon Office of Energy at (503) 378-4040 or in Oregon at 1-800-221-8035, or visit the web site at <http://www.energy.state.or.us/>

Organizations Involved with Hanford Cleanup

For organizations actively involved in Hanford Site cleanup issues, see the Hanford Advisory Board web site at <http://www.hanford.gov/boards/hab/index.htm>.

EPA Technical Assistance Grants

The EPA's Technical Assistance Grant program can provide funds to citizen groups affected by Superfund sites. These funds can be used by citizen groups to hire technical advisors to help them interpret and understand the complex technical materials produced as part of the Superfund process. Grants can be up to \$50,000 for the life of the project and require a local share contribution of 20 percent of the total program cost. The local share can be cash or in the form of in-kind services. Because Hanford now has three Superfund sites, three Technical Assistant Grants could be made available. EPA has a *Citizen's Guidance Manual* and videos that explain the program and illustrate the ways in which such a grant can help the community participate in the Superfund process. For more information, please contact:

TAG Coordinator
U.S. Environmental Protection Agency
1200 6th Ave. ECO-081
Seattle, WA 98101
(206) 553-6919

Washington State Public Participation Grants

Washington State Public Participation Grants promote public involvement and education on Hanford Site cleanup activities. The grants facilitate active participation by persons and citizen groups in the investigation and remedial action required due to releases or threatened releases of a hazardous substance. For more information, please contact:

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Solid Waste Financial Assistance Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
(360) 407-6061

For more information and contacts for organizations involved in Hanford Site cleanup activities, see the "Hanford Contacts Handbook." To obtain a copy, call the Hanford Cleanup Line at 1-800-321-2008.

Section 2

HANFORD DECISION PROCESS

Many decisions are made at the Hanford Site. This section addresses decisions made within the scope of the Tri-Party Agreement. Those decisions are made pursuant to the Tri-Party Agreement; the *Resource Conservation and Recovery Act of 1976*; the *State of Washington Hazardous Waste Management Act*; and the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*. The Tri-Party Agreement provides the processes for making cleanup decisions. The *Resource Conservation and Recovery Act of 1976* and the *State of Washington Hazardous Waste Management Act* govern the management (treatment, storage, and disposal) of hazardous and dangerous wastes to minimize threat to human health and the environment. These regulations provide "cradle-to-grave" controls by imposing management requirements on generators and transporters of hazardous and dangerous wastes, and upon owners and operators of treatment, storage and disposal facilities that generate and manage hazardous and dangerous wastes. The *Comprehensive Environmental Response, Compensation and Liability Act of 1980*, commonly referred to as the "Superfund," was designed to respond to situations involving the past disposal of hazardous substances. As such, it compliments *Resource Conservation and Recovery Act of 1976* and the *State of Washington Hazardous Waste Management Act* which regulate ongoing hazardous and dangerous waste handling and disposal.

HANFORD TRI-PARTY AGREEMENT DECISIONS

The Tri-Party Agreement provides the legal framework for Hanford Site cleanup and compliance schedules. Tri-Party Agreement decisions cover a wide range of issues. *Resource Conservation and Recovery Act of 1976* and *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* decisions are made under the umbrella of the Tri-Party Agreement.

Since 1989, new information has been obtained about the Hanford Site and advanced technologies

are being developed to address Site contamination problems. Therefore, periodically decisions made as part of the 1989 Tri-Party Agreement must be revisited in light of new information, and advanced technology.

For this reason, the Tri-Parties developed a system called the change request process. This process allows changes to the Tri-Party Agreement cleanup and compliance schedule by mutual agreement of the Tri-Parties. Any of the Tri-Parties can initiate a proposed change, although as implementor of cleanup, USDOE initiates most changes. This process provides a formal mechanism for reaching agreement among all the Tri-Parties. If agreement cannot be reached, a formal dispute process is outlined in the Tri-Party Agreement.

Some of the changes and decisions must include public involvement and public comment, while others can be made by the Tri-Parties in a routine manner, and do not require public involvement. All schedule changes, which must be for good cause, are documented in the Tri-Party Agreement work schedule.

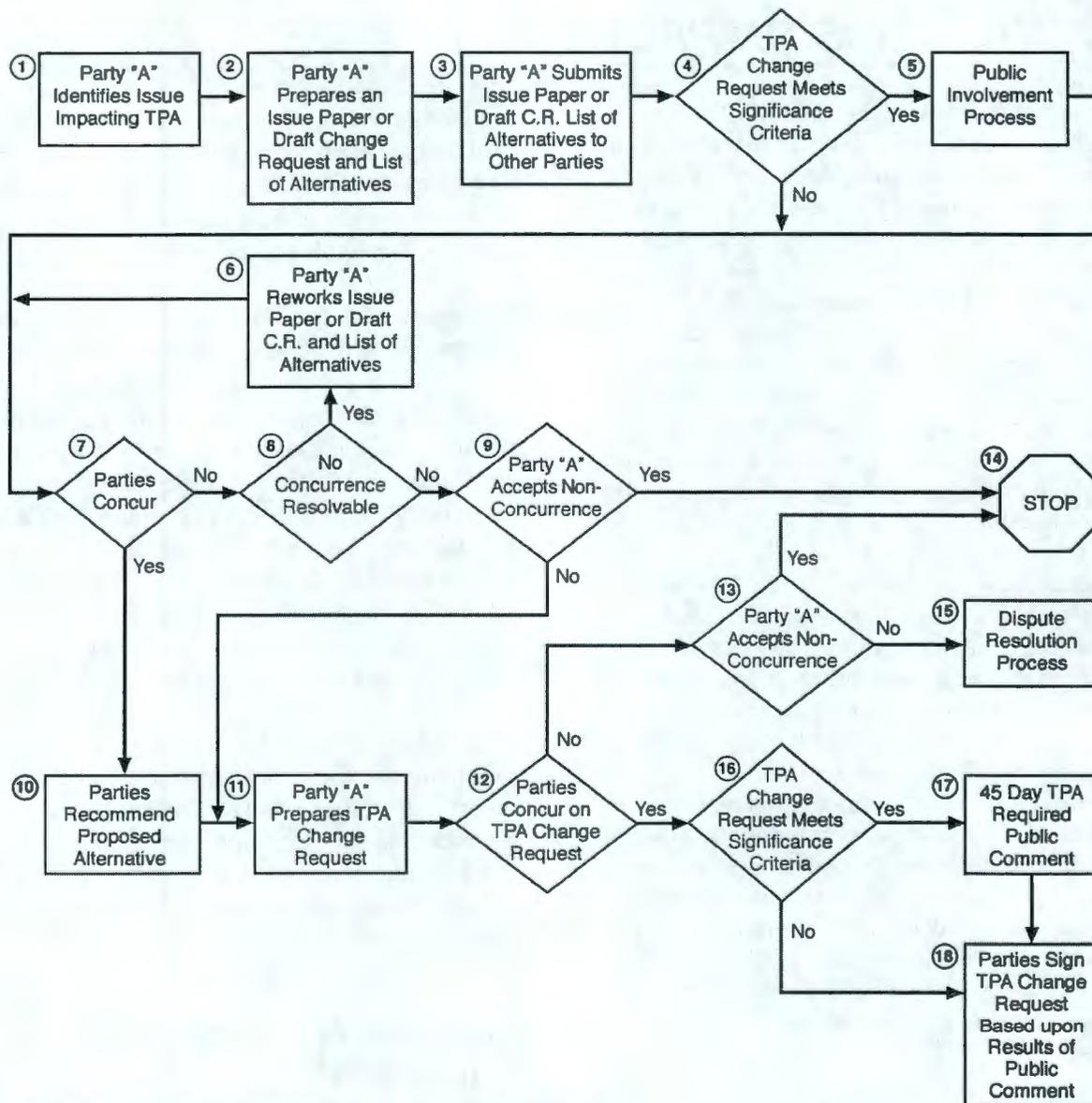
CHANGES IN THE TRI-PARTY AGREEMENT

Change Request Process

Proposed wording or milestone changes in the Tri-Party Agreement can be very modest or they can be significant changes in strategy. The process for making a change gives the Tri-Parties some discretion in what kind of public involvement process will take place. A flow diagram of the change request process is on page 12.

Twice in the process, the Tri-Parties determine whether the proposed change is significant. Each time, if they conclude the change is significant, they will initiate a process for public involvement.

Section 2 – Hanford Decision Process



Tri-Party Agreement Change Request Decision Process

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The criteria reviewed by the Tri-Parties to determine whether a change is significant include the following:

- The draft change could have substantial adverse impact on the environment.
- The draft change involves a major milestone.
- The draft change could have a significant impact on maintaining and fulfilling important Hanford Site cleanup objectives and Tri-Party Agreement milestones.
- The draft change could have an impact on interested parties, including Native Americans, labor unions, the Tri-Cities community, and Hanford public interest groups.
- The draft change is proposed under a law or regulation that stipulates public involvement.

Each of the criteria is evaluated to determine the suitable level of public involvement.

The first opportunity for public involvement allows the interested public to help clarify the

Section 2 – Hanford Decision Process

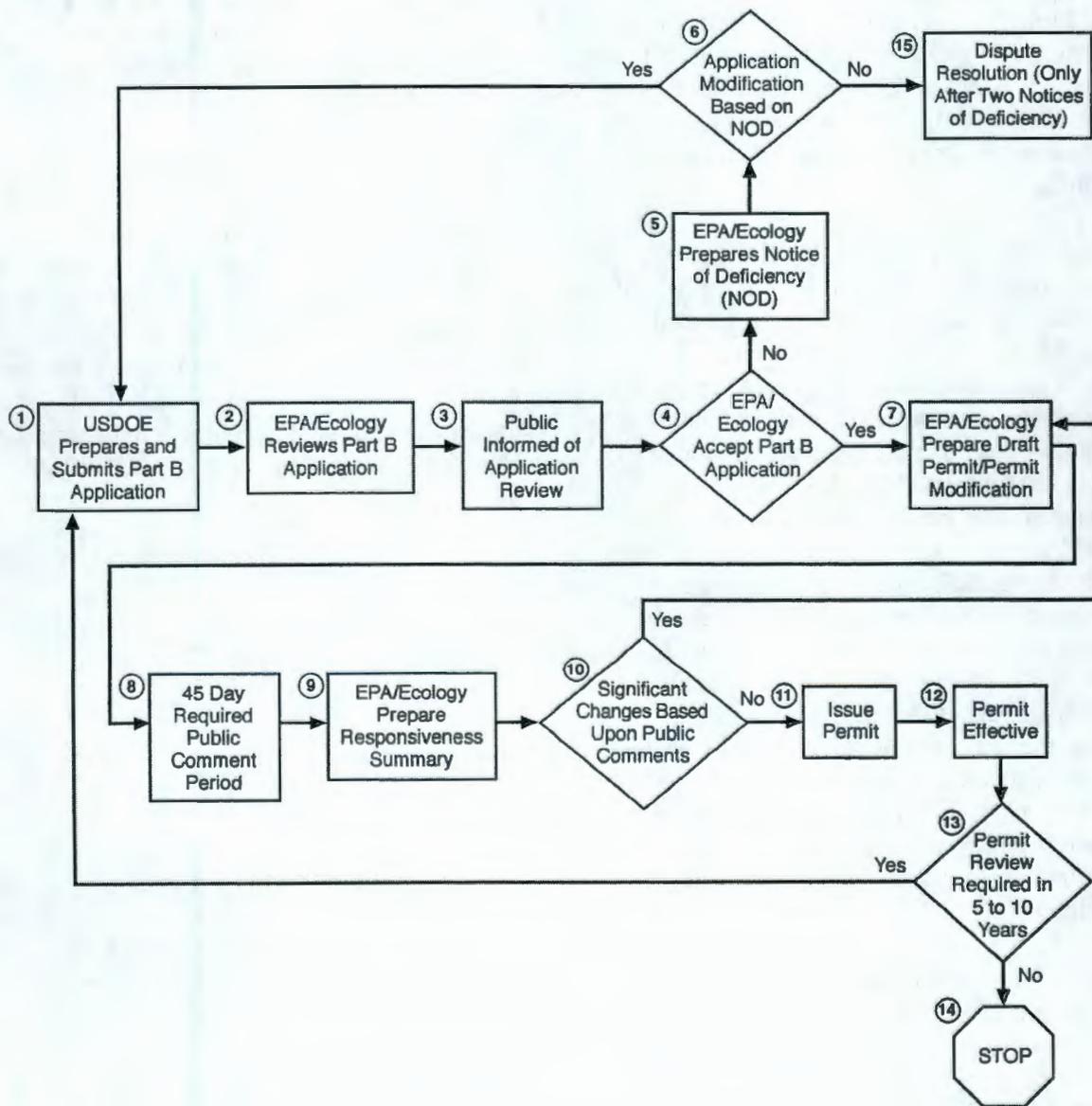
issue with USDOE and regulators and offer suggestions for alternatives to be considered. The second public involvement opportunity focuses on the proposed change to the Tri-Party Agreement.

A significant Tri-Party Agreement change requires a 45-day public comment period. Before approving the change, the Tri-Parties consider all public comments as well as summarize and respond to the comments. One copy of the final Tri-Party Agreement change and a Comments and Responses document is sent to all individuals who request them. Focus groups or individual meetings may be used to clarify comments or responses.

Also, the milestone change and Comments and Responses document are distributed to the Public Information Repositories and Administrative Record (see page 2). The Tri-Parties may schedule public meetings to discuss the proposed change.

Resource Conservation and Recovery Act of 1976-Related Decisions

The *Resource Conservation and Recovery Act of 1976* was enacted by Congress. It requires "cradle-to-grave" (from the first point of waste generation until final disposal) management of hazardous wastes by all generators, transporters,



E0107061.2

Tri-Party Agreement Resource Conservation and Recovery Act of 1976 Decision Process

Section 2 – Hanford Decision Process

and owners/operators of treatment, storage, and disposal facilities that handle hazardous waste. A major goal of the *Resource Conservation and Recovery Act of 1976* is to reduce the generation of hazardous waste.

The EPA delegated authority to Ecology to carry out the base *Resource Conservation and Recovery Act of 1976* program (ongoing waste management) in Washington State through its own dangerous waste program, the *Washington State Hazardous Waste Management Act*. Washington State regulations for dangerous waste management are similar to, but more restrictive in some cases than, the *Resource Conservation and Recovery Act of 1976* regulations. A Hazardous Waste Permit was issued in August 1994 for the entire Hanford Site by the EPA and Ecology. The permit outlined general conditions for the operation and closure of hazardous waste treatment, storage, and disposal sites at Hanford.

The *Resource Conservation and Recovery Act of 1976* covers the treatment, storage, and disposal of hazardous waste, such as tank waste. In general, Ecology is the regulator for current waste management operations under the *Resource Conservation and Recovery Act of 1976*. The decision outline for this process is shown above. There are several informal points of communication with the public during the *Resource Conservation and Recovery Act of 1976* permit process. As described in the *Resource Conservation and Recovery Act* decision outline, draft permits require a 45-day public comment period. All public comments are considered before issuing the final permit. All individuals who comment on the draft permit receive a copy of the final permit (without attachments) and the Response Summary, which is a summary of the public's comments, responses by Ecology and EPA, and changes to the permit as a result of public comment.

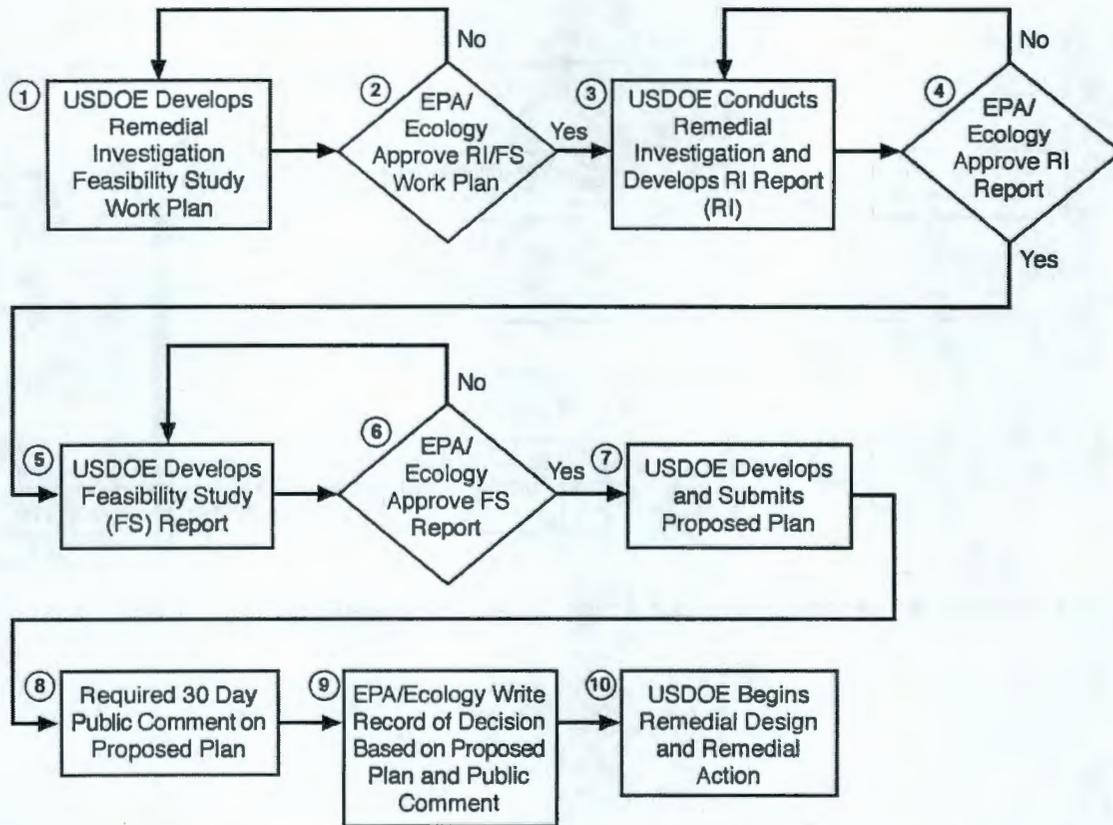
According to Washington State Dangerous Waste Regulations, you may also send a written request for a public hearing to the director of the Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600. Your request must state the nature of the issue to be raised at the

hearing. Decisions on the need for public hearings will be made on an individual basis, at the discretion of Ecology. If a hearing is held, it will be in the community where the interest in the issue is greatest.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 Decisions

Under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, a plan is developed for remediation of each waste site. The best technology is selected after a thorough study of the characteristics of that site. In general, EPA is the regulator for decisions about historical waste sites. The decision process is defined under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*. The decision outline for this process is shown on the right side of the decision process flowchart on page 15. In the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* process, the proposed cleanup plan must undergo a 30-day public comment period before a decision is made. A public meeting may be requested on the plan during the comment period by contacting the Hanford Cleanup Line at **1-800-321-2008**.

Section 2 – Hanford Decision Process



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Tri-Party Agreement *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* Remedial Investigation/Feasibility Study Decision Process

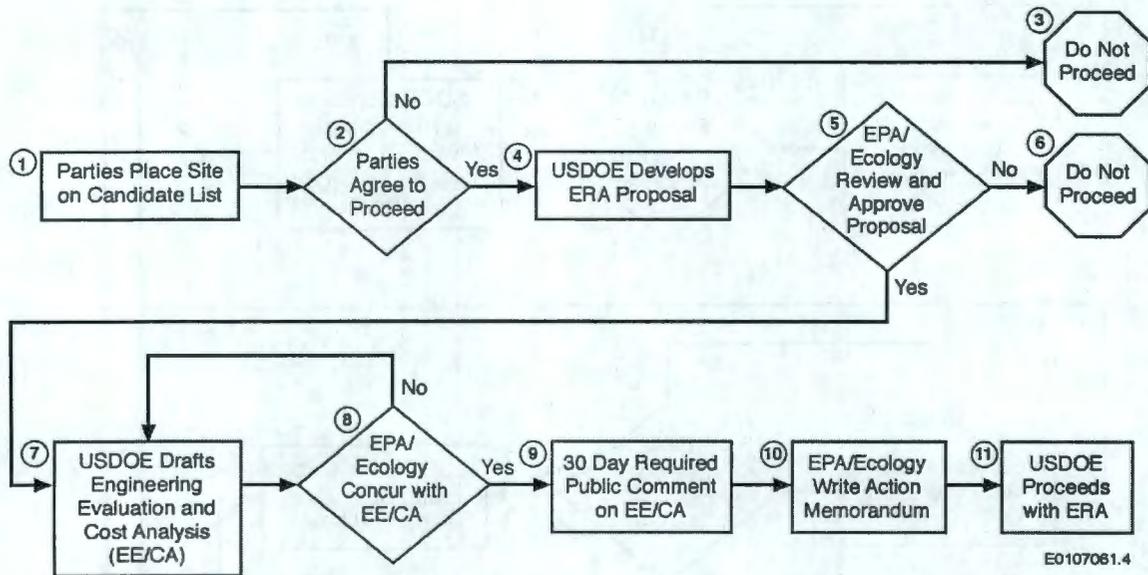
Expedited Response Actions

In cases where the waste could pose a threat to human health or the environment, the Tri-Parties may use an Expedited Response Action process, also known as removal actions, to reach a quicker decision. At the Hanford Site, Expedited Response Actions are being used where timely action has resulted in overall cost effectiveness for cleanup of historical waste sites. Section 104 of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* outlines the Expedited Response Action guidelines.

The decision process for an Expedited Response Action is shown on the flowchart on page 16. Step 9 is the one point at which there is a 30-day public comment period on an Expedited Response Action, if the action is not time-critical. In the event of a time-critical Expedited Response Action, no public comment period is provided before an action is taken. There are two reasons

for this: 1) concerns about health and safety push toward an expedited action, and 2) time-critical Expedited Response Actions are only stop-gap measures taken to protect health and safety, and provide time to make a longer-term decision in which the public will be consulted more extensively. In some situations, if time is not urgent, the Tri-Parties may offer opportunities for public involvement beyond those steps shown.

Section 2 – Hanford Decision Process



Tri-Party Agreement Expedited Response Action Decision Process (Non-Time Critical)

Section 3

DESCRIPTION OF THE HANFORD SITE AND ACTIVITIES CARRIED OUT ON THE SITE

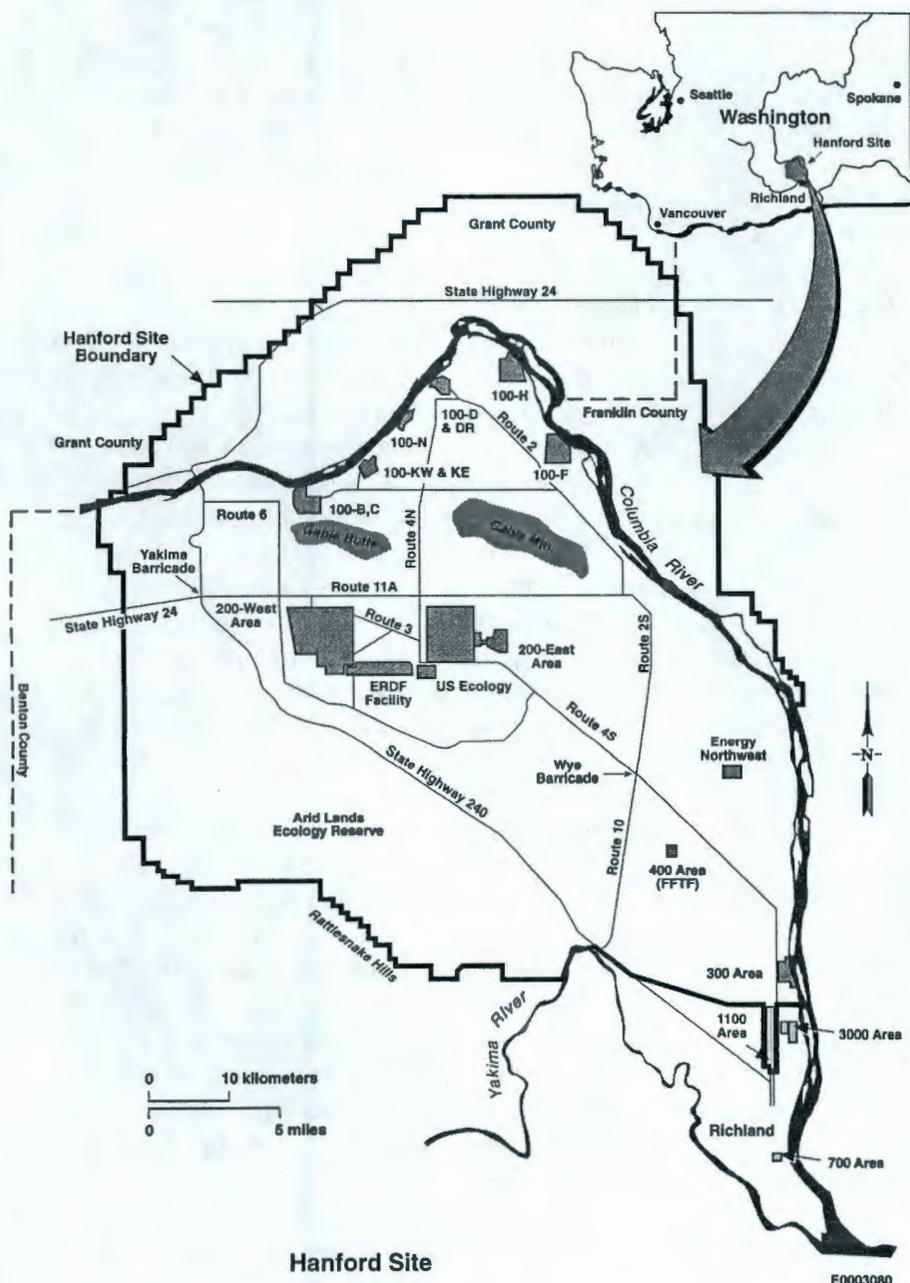
This section provides a general description of the Hanford Site, its activities and past practices. It is not a complete description of all that is known about the Hanford Site, its operations, or its waste management history. More recent data on environmental contamination and groundwater plumes may be found in several documents publicly available at the USDOE Public Reading Room in Richland, or by searching the Reading

Room's catalog on the Internet at <http://rrcatalog.pnl.gov>.

SITE DESCRIPTION

Hanford is a 586-square mile site in southeastern Washington State, situated north and west of the cities of Richland, Kennewick, and Pasco, an area commonly known as the Tri-Cities. Hanford is approximately 140 miles southwest of Spokane, Washington; 200 miles southeast of Seattle, Washington; and 200 miles northeast of Portland, Oregon. (Refer to Hanford Site map.) The Columbia River runs through the northern portions of the Site, then turns south to form part of the eastern boundary.

The geologic structure beneath the Hanford Site consists of three distinct formations. The deepest level is a thick series of basalt flows that have been warped and folded, resulting in extensions that crop out as rock ridges in some places. Layers of silt, gravel, and sand form the middle level, known as the Ringold formation. The uppermost level is known as the Hanford formation and consists of gravel and sands deposited by catastrophic floods. Both confined and unconfined aquifers can be found beneath the Hanford Site. Confined aquifers consist of water-saturated, porous material confined by layers of basalt. Unconfined aquifers consist of water-saturated, porous material located above the first confining basalt layer. The depth



Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

of the water table ranges from 60 to 250 feet below ground surface.

Semi-arid land with a sparse covering of cold desert shrubs and drought-resistant grasses dominates the Hanford Site landscape. Forty percent of the Site's annual 6.25 inches of rain occurs between November and January. The land surrounding the Hanford Site is used primarily for agriculture and livestock grazing. The major population center near the Site is the Tri-Cities, with a combined population of nearly 120,000. The southwest area of the Hanford Site, covering 120 square miles, is designated as the Fitzner-Eberhardt Arid Lands Ecology Reserve. The Arid Lands Ecology Reserve is managed for the USDOE by the U.S. Fish and Wildlife Service, part of the Department of the Interior, and is used for ecological research and preservation. The Site's Wahluke Slope area, also known as the North Slope, located across the Columbia River, is also managed for the USDOE as a wildlife refuge by the U.S. Fish and Wildlife Service. The Wahluke Slope and Arid Lands Ecology Reserve, which comprise 45 percent of the 586-square-mile Site, have been cleaned and removed from the EPA Superfund list.

In 2000, a Hanford Reach National Monument was created by President William Clinton, encompassing a 0.25-mile corridor on each side of the Columbia River for a 51-mile stretch through the Hanford Site. This 51-mile stretch covers nearly all of the distance of the Columbia River's flow through the Hanford Site. The Hanford Reach National Monument is also managed by the U.S. Fish and Wildlife Service.

Non-USDOE facilities within Hanford Site boundaries include three nuclear plants owned by Energy Northwest, a public utility. Only one of the nuclear reactors operates the Columbia Generating Plant (formally WNP-2) to make electricity. The other two units are only partially complete. Construction was stopped on units WNP-1 and WNP-4 during the 1980s, but in 2001 Congress funded a study to investigate the feasibility of completing WNP-1. This study has not been completed.

Another non-USDOE facility on the Hanford Site is a low-level radioactive waste disposal facility operated by US Ecology, a private firm licensed by Washington State. Additionally, the Laser Interferometer Gravitational Observatory project, a joint endeavor of the California Institute of Technology, the Massachusetts Institute of Technology, and the National Science Foundation, has been located on the Hanford Site since 1994. The Laser Interferometer Gravitational Observatory is an advanced scientific observatory, designed to team with similar projects in Louisiana and Italy, for detecting gravity waves. Findings are expected to aid in understanding the workings of the universe, including Einstein's theories of gravity. The Laser Interferometer Gravitational Observatory is not a USDOE project, but the Hanford Site location was selected because of its available space and seismic stability.

USDOE facilities are located throughout the Hanford Site and the city of Richland. The Site is divided into six administrative areas, known as the 100, 200, 300, 400, 600, and 1100 Areas. The first four areas contained most of the nuclear operations at the Hanford Site. The 100 Area includes nine deactivated nuclear production reactors along the northern stretch of the Columbia River. The 200 East and 200 West Areas, located in Hanford's Central Plateau, contain approximately 53 million gallons of high-level radioactive waste in aging underground tanks, and the principal nuclear chemical processing and waste management facilities. The 300 Area, approximately three miles north of the city of Richland, contains research and development laboratories and former reactor fuel manufacturing facilities. The Fast Flux Test Facility is located in the 400 Area, which lies about 9 miles northwest of the 300 Area. The 600 Area is the administrative designation for Site lands that are not part of any other administrative area. The 1100 Area, located adjacent to the Richland city limits, once contained vehicle maintenance and storage facilities. However, this 1.25-square mile area was cleaned up, removed from the Superfund list in 1995, and given to the Port of Benton (a local port district) to assist in economic diversification development in the

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

North Richland area and is no longer a part of the Hanford Site.

HANFORD SITE HISTORY

The Hanford Site was originally inhabited by Native Americans, primarily the Wanapum Band. It was also used by the Yakama, Nez Perce, Umatilla, Walla Walla, and Cayuse Tribes. In 1855, the Yakama, Nez Perce, Umatilla, Cayuse and Walla Walla Tribes signed treaties with the United States under which the tribes ceded to the Federal government the lands on which the Hanford Site is located and other lands. The tribes reserved certain rights in the ceded lands: to take fish from all streams within or adjacent to the territory and at their usual and accustomed places, and to erect temporary buildings for curing fish. The tribes also reserved the privileges to hunt, to gather roots and berries, to graze their horses and cattle on open and unclaimed land, and to observe traditional religious practices at physical locations considered sacred.

Parts of the land, now the Hanford Site, were settled by non-Native Americans and used for irrigated orchards, farms, and ranches before World War II. Approximately 6,000 acres were used to grow peaches, pears, grapes, asparagus, and other agricultural products. The towns of Hanford, White Bluffs and Richland were founded by some of these non-Native Americans.

Hanford Site construction began in March 1943 after the Manhattan District of the Army Corps of Engineers chose it as one of the sites for the highly secret Manhattan Project. Hanford's mission was to produce plutonium for the world's first nuclear weapons. Hanford was considered to be an ideal site for the Manhattan Project for several reasons: 1) its remote location; 2) access to railroad systems; 3) the abundance of water from the Columbia River for cooling the reactors; and 4) the abundance of hydroelectric power from dams on the Columbia River. About 1,500 people who were living within the Site boundaries were forced to move.

In September 1944, with the first operation of B Reactor in the 100 Areas, the Department of Defense (at that time known as the War Department) began producing materials to be used in nuclear weapons. B Reactor startup was followed by the startup of D Reactor in December 1944, and F Reactor in February 1945. These three reactors produced the initial plutonium for nuclear weapons.

By 1955, seven reactors similar in design to the original B Reactor were built and all eight reactors were in operation to produce plutonium at the Hanford Site. Between 1959 and 1963, a very powerful dual-purpose reactor, N Reactor, was constructed. In addition to producing plutonium, N Reactor steam was used to make electricity for domestic consumption. In 1966, the utility known then as the Washington Public Power Supply System (now Energy Northwest) built a power generating facility near the N Reactor to harness reactor steam to generate electricity.

In addition to the reactors, operations at the Hanford Site included other elements of the nuclear fuel cycle: fuel fabrication, chemical processing, waste management, and research and development facilities. Large amounts of radioactive substances were released to the air and water during early operations at the Hanford Site. The possible health consequences of these releases are being studied by programs outside the Tri-Party Agreement.

The development of Hanford's plutonium production capacity resulted in the growth of the area surrounding the Site. In the months following initial construction on the Site in 1943, more than 50,000 construction workers moved to the Hanford area. Many of these workers later settled in the Tri-Cities, which became not only the fourth largest metropolitan area in Washington State, but a new economic hub for the region.

Eight of the nine plutonium production reactors were closed between 1964 and 1971 when the nation's plutonium needs diminished due to a shift in national defense policy. As part of a national program to investigate peaceful uses of nuclear power and research, the Hanford Site was chosen

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as the location for the Fast Flux Test Facility advanced reactor in 1967.

In the early 1980s, Hanford Site activities shifted again to re-emphasize defense production. Site facilities were upgraded and used to produce material that was to be part of President Ronald Reagan's Strategic Defense Initiative (sometimes known as Star Wars).

Beginning in 1989, USDOE's primary mission at the Hanford Site shifted from production to waste cleanup. The Tri-Party Agreement was signed in May 1989, among the USDOE, EPA, and Ecology. No plutonium for defense purposes has been produced at the Hanford Site since that time.

SCIENCE AND TECHNOLOGY MISSION

The purpose of the Hanford Site science and technology mission is to deliver environmental science and technology in the service of the nation and humanity. Science and technology supports both the environmental management and the non-environmental management missions at Hanford. The main focus of the Pacific Northwest National Laboratory, a USDOE national laboratory, is implementing the science and technology mission. The Pacific Northwest National Laboratory is developing knowledge and new environmental technologies that make environmental cleanup faster, less expensive, and more effective, with benefits targeted to the Hanford Site and the USDOE complex. In February 2001, Pacific Northwest National Laboratory prepared a document entitled *Hanford Site Cleanup Challenges and Opportunities for Science and Technology – A Strategic Assessment*. The purpose of the document was to provide a single, strategic perspective on Site closure challenges and associated science and technology opportunities. The assessment identified 11 closure challenges where it is believed science and technology will significantly assist the environmental management mission. From the closure challenges identified, four fundamental science and technology areas of opportunity were recommended in the Assessment where it was

judged that the largest return would occur with an investment in science and technology:

- Remote-handled waste retrieval and disposition
- Groundwater and subsurface technology
- Surface barrier development and performance monitoring
- Massive facility disposition options development.

This initial assessment serves as a framework for providing strategic direction for science and technology support of the environmental management mission. Hanford is committed to deploying innovative technologies to help resolve these critical challenges for successful cleanup. Partnering with the USDOE Office of Science & Technology, other federal laboratories, industry, and academia, Hanford is making great strides to develop, test, validate, and deploy selected technologies for its most intractable problems.

For the non-environmental management science and technology mission, The Pacific Northwest National Laboratory, through basic research, creates fundamental knowledge of natural, engineered, and social systems that is the basis for both effective environmental technology and sound public policy. The Pacific Northwest National Laboratory solves legacy environmental problems by delivering technologies that remedy existing environmental hazards, addresses today's environmental needs with technologies that prevent pollution and minimize waste, and is laying the technical foundation for tomorrow's inherently clean energy and industrial processes. The Pacific Northwest National Laboratory also applies capabilities to meet selected national security, energy, and human health needs; strengthen the U.S. economy; and support the education of future scientists and engineers. Science and technology is a major strategy area in preparing the Hanford Site and the local community for the future.

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

PAST AND PRESENT OPERATIONS AT THE HANFORD SITE

USDOE activities at the Hanford Site now center around waste management, environmental restoration, science and technology, and helping the region to develop a diversified economy. Activities that have been or are presently conducted at the Hanford Site are described in the following sections, and are broken into Hanford's main operating areas.

100 AREA

The 100 Area consists of 26 square miles of land along the Columbia River where nine water-cooled plutonium reactors were constructed between 1943-1963 as part of the nation's defense program. There are six reactor areas in the 100 Area. Three of these areas contain two reactors each, and three contain just one reactor each. All nine reactors were operating at one time during the early 1960s, but only N Reactor remained in operation after 1971. N Reactor ceased operations in January 1987. The other eight reactors are B Reactor, 1944-1968; D Reactor, 1944-1967; F Reactor, 1945-1965; DR Reactor, 1950-1964; H Reactor, 1949-1965; C Reactor 1952-1969; KW Reactor, 1955-1970; and KE Reactor, 1955-1971. B Reactor is listed on the National Register of Historic Places and is being considered for preservation as a museum.

While in operation, the reactors disposed cooling water and solid wastes in the Columbia River and in more than 100 trenches, cribs (underground drain fields), ponds, and burial grounds in the 100 Area. Also, leaks in the reactors' wastewater piping and retention systems caused soil and underlying groundwater to be contaminated with chemical and radioactive pollutants.

The primary contaminants are the radioisotopes strontium-90, cobalt-60, cesium-137, tritium, and the heavy metal chromium. Solid waste burial grounds and other facilities not associated with liquid wastewater may also contain significant amounts of contaminants. These could pose

human or environmental threats through exposure to ground and surface water contaminated by these substances. The 100 Area has about 11 square miles of waste disposal locations and contaminated groundwater.

Hundreds of soil waste sites have been identified in the 100 Areas, and contractors working for USDOE's Richland Operations Office began remediating them in the mid-1990s. Since then, over 2 million tons of contaminated soil have been excavated and taken to a lined, permitted, mixed waste landfill called the Environmental Restoration Disposal Facility in the center of the Hanford Site. The Environmental Restoration Disposal Facility lies over 200 feet above groundwater, and all of its rainwater and drainage water is collected and treated to remove contaminants before being discharged. Soil cleanup operations in the 100 Area are projected to last until at least 2012, and involve removing at least 10 million cubic yards of soil. Final remediation of surface and near-surface sites will consist of placing clean fill dirt on the formerly contaminated areas, and re-vegetating with native plant species. Additionally, "pump-and-treat" systems are in use to reduce chromium levels and the levels of some other contaminants in 100 Area groundwater sites. The chromium cleanup actions will help protect salmon spawning areas in the Hanford Reach.

Contamination discharges from the 100 Area have stopped almost totally, although there is slow seepage of some contaminants to the Columbia River through underground springs and groundwater. Monitoring results show that concentrations of radionuclides identified in the river are within the drinking water standards set by the EPA and Washington State.

The 100 Area reactors are being remediated in the USDOE Interim Safe Storage program, known as "cocooning." Beginning in late 1996, all of the "wings" were torn off of the C Reactor building; hundreds of tons of asbestos, steel, copper, and contaminated soil were removed; and the old pumphouse, pumps, tunnels and other ancillary parts of the structure were razed. In total, approximately 80 percent of C Reactor was

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

eliminated and buried in Hanford Site disposal facilities. Only the core and the surrounding shields were left. They were then sealed up, and given a new aluminum and zinc-coated steel roof slanted at a sharp angle to facilitate rain run-off and extended down over the top portions of the old shield walls for additional sealing. The entire C Reactor Interim Safe Storage Project was completed in October 1998. Presently, interim safe storage projects are underway at F, H, and DR Reactors, and similar projects are planned for at least three other Hanford production reactors. Costs decline at each location as crews learn their way through the maze of tunnels, levels, and service areas.

One of the major cleanup priorities in the 100 Area is the K Basins. More than 2,100 metric tons of spent nuclear fuel, nearly 80 percent of USDOE's nationwide inventory, is stored in concrete basins adjacent to the K West and K East reactors. Located a few hundred yards from the Columbia River, the 40-year-old basins do not meet current safety standards, and one has a history of serious leaks. After six years of planning, design, and construction, operations to remove the spent nuclear fuel from the basins began in December 2000. Operations are now fully underway and fuel removal is scheduled to be completed in mid-2004. Fuel is removed from the basin water in a large steel container called a Multi-Canister Overpack, taken to a new drying facility where the moisture is removed, and then sent to dry storage in steel tubes beneath a large building in the Hanford Site's Central Plateau.

200 AREA

Chemical processing, plutonium finishing, and defense waste management activities took place in the 200 East and 200 West Areas. Since 1944, nuclear fuel irradiated in Hanford's 100 Area production reactors was transported to the 200 Areas and chemically treated to remove and refine plutonium and uranium. The process involved dissolving the solid irradiated fuel elements, and then chemically separating constituents in order to separate plutonium and uranium from waste fission products. Then the plutonium constituent,

mixed with nitric acid in a liquid plutonium nitrate form, was heated with some forming agents to produce solid metal plutonium shapes.

These processes produced radioactive, hazardous, and mixed (radioactive and hazardous) wastes, all of which have been stored or disposed in the 200 Areas. The 200 Areas contain 149 underground, single-shell storage tanks and 28 double-shell tanks with a capacity of up to 1 million gallons each. These tanks store more than 53 million gallons of high-level radioactive waste, the majority of which came from the radiochemical facilities. Up to 67 of the single-shell tanks are known or suspected to have leaked some of their contents into the soil. Between 1 and 2 million gallons of tank wastes are believed to have leaked, with some contaminants reaching groundwater. Congress created the Office of River Protection in 1998. The sole purpose of this USDOE Field Office is establishing the Hanford tank waste treatment complex. The mission of the Office of River Protection is to retrieve high-level tank waste, build and operate tank waste facilities, and dispose of the glassified waste.

Wastes from the plutonium finishing operations were more varied, and generally smaller in volume. Sludges, powders, shavings, aerosols, liquids, and solids were generated as wastes from these operations. Many of the liquid wastes were disposed in the soil south of the Plutonium Finishing Plant in the 200 West Area, and stored in tanks after 1973. Various plutonium materials and wastes remain in the Plutonium Finishing Plant and are undergoing stabilization and cleanout today.

Solid radioactive and mixed wastes were disposed over the years by burial in trenches and in two large structural tunnels at the Hanford Site. The two tunnels extend just south of the Plutonium-Uranium Extraction plant in the 200 East Area, and were used to dispose of very large items. In 1970, Hanford Site policy changed to mandate that all solid waste disposals had to occur in the northwest quadrant of the 200 West Area, and that wastes and locations had to be labeled to record their contents and radioactivity levels. Today, solid wastes known to contain transuranic

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

elements are being excavated and shipped to the Waste Isolation Pilot Project in New Mexico for permanent disposal. Transuranic elements are those higher, or heavier, than uranium on the Periodic Table of the Elements. These elements include plutonium, neptunium, and americium. Low-level solid wastes will remain buried at the Hanford Site in perpetuity.

Over the years, low-level liquid wastes from 200 and 300 Area facilities were discharged to Site soils through various trenches, drains, cribs, and, in a few cases, reverse wells (also known as injection wells). A total of about 440 billion gallons were so disposed to Site soils (not counting reactor cooling water that went to the Columbia River). The practice of discharging untreated liquid wastes to Hanford Site soils ended in 1995, when the Liquid Effluent Retention Facility began operations. The facility, along with two Treated Effluent Disposal Facilities built onsite in the early 1990s, treats all contaminated discharges to remove radioactivity before liquids are discharged to the soil.

Groundwater samples taken over the years in the 200 Areas have revealed concentrations of many radioisotopes, including tritium (a radioactive isotope of hydrogen), uranium, strontium-90, cesium-137, iodine-129, and others. Chemicals including cyanide, carbon tetrachloride and others also are present in 200 Area groundwater. Cyanide is an organic compound that was used during uranium recovery, and carbon tetrachloride is a solvent that was used in the plutonium extraction process in the Plutonium Finishing Plant. Contaminants spread out in groundwater from the point of disposal into large fans known as plumes. Spreading from Hanford's 200 Areas, the tritium plume is the largest and extends east to the Columbia River. In total, the 200 Areas contain 230 known liquid disposal locations that generated 215 square miles of contaminated plumes.

In the early 1990s, a large project began to remove carbon tetrachloride from soils in the vicinity of the Plutonium Finishing Plant using a vapor extraction method. Thus far, about 20 percent of the approximately 900,000 pounds of the chemical has been extracted from 200 West Area soils. A

large pump-and-treat effort is underway for contaminated groundwater below the historical U Pond site in the 200 West Area. In total, over 300 million gallons of contaminated groundwater have been pumped out, treated, and released as clean water at the Hanford Site thus far. In 1998, Hanford's newest major project was created, the Groundwater/Vadose Zone Integration Project, to examine all aspects of subsurface, non-solid contamination in an integrated fashion. The vadose zone is that area between the surface of the soil and the groundwater.

The following large facilities operated over the years in the 200 Areas.

B Plant and T Plant

Processing of the Hanford Site's reactor fuel from 1944 through 1956 was conducted at B Plant in the 200 East Area and T Plant in the 200 West Area. Since 1957, T Plant has been used as a decontamination facility for Site equipment. T Plant is now the oldest nuclear facility in the world that still has a nuclear mission. Today, T Plant is being readied to store the contaminated sludge that will come out of the spent nuclear fuel basins at the Hanford Site.

From 1968 through 1984, B Plant was used to remove high heat-producing isotopes of cesium and strontium from the liquid waste in storage tanks. The Waste Encapsulation and Storage Facility was added to the B Plant complex in 1974 to encapsulate and store the cesium and strontium. B Plant was deactivated in a project that was completed in 1998. During that project, the Waste Encapsulation and Storage Facility was "de-coupled" from B Plant, so that it can continue to store the nearly 2,000 capsules until final disposal decisions are made. As of now, schedules call for the contents of the capsules to be vitrified in Hanford's vitrification facility beginning in 2018.

Reduction Oxidation Plant and Plutonium Uranium Extraction Plant

In the 1950s, two new radiochemical processes were invented at the Hanford Site. Chemical

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

processing was conducted at the Reduction Oxidation Plant in the 200 West Area from 1952 through 1967, and at the Plutonium-Uranium Extraction plant in 200 East Area. The Plutonium-Uranium Extraction plant opened in 1956, went into standby in 1972, was re-started in 1983, and was shut down in 1988. A large deactivation project, which became a model in the USDOE complex, was conducted from 1993-1997. As a result, facility surveillance costs declined dramatically and the plant remains passive until final disposition decisions are made.

Uranium Oxide Plant

Once plutonium and uranium were separated from irradiated fuel, they were sent to other Hanford Site facilities for further processing. Liquid material containing uranium went to the Uranium Oxide Plant in the 200 West Area, where it was converted into a solid powder (oxide) and sent offsite for recycling. The Uranium Oxide Plant was deactivated and placed on long-term surveillance and maintenance status in 1994.

Plutonium Finishing Plant

The plutonium solution product from B Plant, T Plant, the Reduction Oxidation Plant, and the early Plutonium-Uranium Extraction plant was either converted to plutonium oxide or plutonium metal at the Plutonium Finishing Plant in the 200 West Area. From there, plutonium oxide or plutonium metal was shipped to other USDOE facilities for multiple uses. During the late 1970s, the Plutonium-Uranium Extraction plant was modified so that it converted its plutonium solution product to oxide form. After the plant re-started in 1983, it shipped its product as oxide to the Plutonium Finishing Plant for final conversion to plutonium metal. The Plutonium Finishing Plant is currently stabilizing plutonium-bearing materials for long-term storage. The Plutonium Finishing Plant complex also contains vaults that serve as plutonium storage and handling facilities.

200 Area Laboratories

The 222-S Laboratory in the 200 West Area was built during 1950-1951, but was upgraded and modernized in the early 1990s. Today it performs sampling analyses for the Site's waste tanks program, and analyses of other Site radioactive samples. The Waste Characterization and Sampling Facility, located just east of the 200 West Area, is a much newer laboratory complex, built during the 1990s, that processes hazardous samples and samples containing low levels of radioactivity. It also manages a mobile sampling vehicle that serves some remote onsite locations.

Environmental Restoration Disposal Facility

The Environmental Restoration Disposal Facility is the primary repository for low-level contaminated soils and contaminated structure rubble from cleanup projects on the Hanford Site. The Environmental Restoration Disposal Facility opened in 1996, and by 2001 it had received over 2 million tons of such nuclear debris. About 3,000 tons of waste, contained in about 150 truckloads, enter the Environmental Restoration Disposal Facility on a typical day. The total amount of waste and debris deposited in the Environmental Restoration Disposal Facility is expected to be at least 7 million tons as cleanup progresses.

300 AREA

Facilities in the 300 Area have been used since World War II for fabrication of reactor fuel, research and development, and technical and service support functions. Some limited research and development on radioactive materials still takes place in the 300 Area, but most of the old laboratories are being deactivated. Fuel fabrication buildings, and structures associated with irradiation experiments, either have been deactivated or are now being deactivated. Deactivation activities are governed by Tri-Party Agreement milestones. Eventual demolition of most of the 300 Area buildings is planned.

Liquid and solid wastes from operations in the 300 Area were disposed of in various ponds, trenches, and burial grounds over approximately a 5-square

Section 3 – Description of the Hanford Site and Activities Carried Out on the Site

mile area. The primary contaminants of these sites include uranium, metal shavings and dusts, acids, and solvents used in fuel fabrication operations.

400 AREA

The 400 Area is the location of the Fast Flux Test Facility, a liquid metal test reactor that began full-power operation in 1982 and shut down in 1993. Initially, the Fast Flux Test Facility served as a test tool for advanced reactor technology, but it then expanded into other areas of research and development, including fusion research, space power systems, medical isotope production, and international research programs. During its standby period, the Fast Flux Test Facility was considered as a possible producer of tritium and medical isotopes for the United States. However, after seven years in standby status, the Fast Flux Test Facility was ordered to permanent deactivation and closure in late 2000. In early 2001, at the request of the Hanford Site's Congressman, USDOE authorized another study of Fast Flux Test Facility's future viability as a facility to produce medical isotopes.

Adjacent to Fast Flux Test Facility is the Fuels and Materials Examination Facility. The facility was constructed in 1984 as a nuclear materials processing facility. It was also outfitted with an automated fuel fabrication line. However, it has never been used as a nuclear facility, and now stands empty.

Liquid wastes generated by Fast Flux Test Facility were transported to 200 Area waste management locations. Several spills and nonradioactive liquid waste disposal facilities will be investigated to determine the need for remedial actions. The spent nuclear fuel from the Fast Flux Test Facility now sits in dry storage in casks outside the facility but inside the guarded portion of the 400 Area. It will be transported to a concrete pad facility known as the Interim Storage Area in the 200 East Area beginning in 2003.

600 AREA

The 600 Area encompasses Hanford's roads, railroads, fire station, an old concrete mix plant

site, contaminated storage vaults in the east end of Gable Mountain, the former town sites of Hanford and White Bluffs, the Hanford meteorology station, the Wahluke Slope, and the Arid Lands Ecology Reserve (including Rattlesnake Mountain). There is very little contamination in the 600 Area, except in groundwater beneath large stretches.

1100 AREA

Cleanup of the 1100 Area was completed in 1995, and it became the first Hanford area to be removed from the National Priorities List (created by the *Comprehensive Environmental Response, Compensation and Liability Act of 1980*). It had no disposal locations for radioactive or mixed wastes, but contained several sites at which hazardous wastes were disposed. These wastes included batteries and battery acid containing lead and sulfuric acid, and ethylene glycol (antifreeze). After cleanup, USDOE gave the 1100 Area to the Port of Benton in Richland to assist in local economic diversification. The Port of Benton created a Manufacturing Mall, and has attracted several private businesses.

Section 4

TRI-CITIES AREA COMMUNITY BACKGROUND

The Hanford Site has played a primary role in determining the Tri-Cities economic makeup. When Hanford's mission changes, repercussions are felt in the Tri-Cities. A brief history of the community reveals the Tri-Cities' dependence on the Hanford Site for economic stability and growth. The history also reveals its vulnerabilities and strengths influencing present and future economic conditions.

In December 1942, scientists in Chicago conducted the first controlled nuclear chain reaction. In the race to develop nuclear weapons during World War II, this initial step provided America the knowledge needed to develop the atomic bomb. A site was needed to apply this new technology to weapons production. In January 1943, Hanford, north of Richland, was chosen by the Federal government as the site to build facilities to produce America's nuclear weapons.

To construct the facilities that would create the plutonium required for the world's first nuclear weapons, the Federal government acquired land, including the towns of Richland, Hanford, and White Bluffs. The Hanford Site became home to the world's first full-scale plutonium production plants. More than 1,500 Hanford residents were evacuated during the spring of 1943 to make way for construction.

Thousands of workers across the nation converged on the area in 1944 and 1945 to build these plants. The population swelled to 51,000 in a few months. The world's first three production plutonium reactors were built about 35 miles north of Richland, although at the time few knew their purpose. About two years after their construction started, Hanford produced plutonium for America's first nuclear detonation.

Following World War II, during the Cold War years, the Federal government continued to use the Hanford Site for nuclear weapons materials production. From 1943 to 1958, Richland was a government town. Most Hanford workers lived in Richland. As a result, a large proportion of

Richland's population consisted of skilled laborers and highly educated professionals in the upper-income brackets. This work force provided the Tri-Cities with a stronger economic base.

In 1958, the citizens chose by popular vote to incorporate Richland as an independent city. Although freed from federal oversight of the municipal government, Richland's economic well-being remained dependent on Hanford.

By 1945, three plutonium production reactors were in operation at the Hanford Site. There were also facilities for the entire nuclear production cycle, including fuel fabrication, chemical processing, waste management, and research. In the mid-1960s, Hanford entered a period of decline. All eight of the single-purpose plutonium production reactors were closed between 1964 and 1971. Only the N Reactor, a dual-purpose reactor producing plutonium and electricity, remained in operation.

In the 1970s, the Hanford Site became a research center for peaceful uses of the atom and alternative energy sources. By 1975, energy research had become Hanford's major mission. Besides nuclear energy, solar, geothermal, fossil, wind, and organic energy sources were studied.

The Tri-Cities was one of the fastest growing metropolitan areas in the nation during the 1970s, with a population increase of 55 percent during that decade.

The growth of the 1970s was reversed in the 1980s. Starting in 1981, construction of the Washington Public Power Supply System plant WNP-4 was terminated, construction on plant WNP-1 was halted, and plans for additional power plants were canceled. Only plant WNP-2 was completed and began commercial operation. About 11,000 construction jobs associated with building these plants were lost during that decade. In the late 1980s, the N Reactor was placed in cold standby, terminating another major Site

Section 4 – Tri-Cities Area Community Background

project; and in 1987, the Basalt Waste Isolation Project was unexpectedly discontinued.

During the decline of the 1980s, the weaknesses of the Tri-Cities' reliance on Hanford were revealed. The severe cutbacks in Hanford jobs forced many highly-skilled nuclear technicians and construction workers to leave the Tri-Cities area. This cost the community a large portion of residents in the upper-income brackets. Though many left during downturns in the Tri-Cities economy, others chose to find alternative local employment and remain because of the high quality of life found in the Tri-Cities.

In 1991, USDOE announced N Reactor would be permanently shut down. Nearly 50 years of producing nuclear materials at the Hanford Site for America's defense had come to an end. Several Hanford areas were left contaminated by chemical and radioactive waste from the years of weapon production. This resulted in the present Hanford Site mission of environmental cleanup.

Thousands of jobs were added at the Hanford Site to support new and expanded environmental restoration and waste management activities. In 1994, Site employment peaked at approximately 18,000. Since that time, declining budgets and restructuring of work have reduced Site employment to about 11,000.

Appendix A

REFERENCE: OTHER LAWS

THE CLEAN WATER ACT

The USDOE has met the Tri-Party Agreement's Milestone 17, which required all of the Site's major liquid waste discharges to the soil to be treated or halted by June 30, 1995. Completion of the milestone resulted in the elimination of 75 percent of Hanford's liquid waste discharges.

Ecology oversees Washington State Discharge permits issued for the 200 Area Treated Effluent Disposal Facility and the 200 Area Effluent Treatment Facility. The EPA regulates the 300 Area Treated Effluent Disposal Facility through a National Pollution Discharge Elimination System permit.

Both the state and federal permit processes include requirements for public involvement and comment.

For more information, contact Ecology at (509) 736-3015 or call the Hanford Cleanup Line at 1-800-321-2008.

THE CLEAN AIR ACT

The EPA delegated *Clean Air Act* responsibility to Ecology and the Washington Department of Health. Ecology and the Washington Department of Health jointly regulate Clean Air provisions at the Hanford Site. The EPA has regulatory authority over National Emission Standards for Hazardous Air Pollutants provisions for primary air pollutants. The primary air pollutants are sulfur dioxide, particulate matter, carbon monoxide, ozone, nitrogen oxides, and lead.

The Washington Department of Health Division of Radiation Protection regulates Hanford Site radioactive air emissions and conducts environmental radiation monitoring.

For more information, contact Ecology at (509) 736-3040 or call the Hanford Cleanup Line at 1-800-321-2008.

STATE ENVIRONMENTAL POLICY ACT

Ecology must review the permitting of several Hanford Site projects under the State Environmental Policy Act. The purpose of the State Environmental Policy Act is to ensure that environmental values are considered by state and local government officials when making decisions. Before taking actions (issuing permits, etc.), agencies must follow specific procedures to ensure that appropriate consideration is given to the environment. The severity of the potential environmental impacts associated with a proposed project will determine whether an environmental impact statement is required.

For more information call the Hanford Cleanup Line at 1-800-321-2008.

MODEL TOXICS CONTROL ACT

The Model Toxics Control Act is Washington State's version of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*. Ecology implements the Model Toxics Control Act's public involvement activities, which are similar to *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* public involvement requirements.

For more information, contact Ecology at (509) 736-3003 or call Hanford Cleanup Line at 1-800-321-2008.

Appendix B

DOCUMENTS TO BE PLACED IN INFORMATION REPOSITORIES

The following list includes documents and/or types of documents that are placed in the Public Information Repositories.

Action Plans (for implementation of the *Hanford Federal Facility Agreement and Consent Order*)

Closure Plans

Comments and Responses Document

Community Relations Plan

Fact and Focus Sheets (information on Tri-Party Agreement issues, cleanup activities, and public involvement opportunities)

Feasibility Study and Corrective Measures Study Phase II Reports

Feasibility Study and Corrective Measures Study Phase III Reports

Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) amendments and changes

Hanford Site Performance Summary – Environmental Management Funded Programs

Hearing Transcripts (from public hearings related to the Tri-Party Agreement)

Interim Action Records of Decision

Meeting Summaries (from Tri-Party Agreement public meetings)

Newsletters (*Hanford Update*, *Hanford Happenings*, and others)

Resource Conservation and Recovery Act of 1976 Permits

Resource Conservation and Recovery Act of 1976 Permit Modifications

Records of Decision

Remedial Action and Corrective Measures Implementation Work Plans

Remedial Design and Corrective Measures Design Reports

Remedial Investigation/Feasibility Study and *Resource Conservation and Recovery Act of 1976* Facility Investigation/Corrective Measures Study Work Plans

Remedial Investigation and *Resource Conservation and Recovery Act of 1976* Facility Investigation Reports

Site Management System Executive Summary Report

Topics

Administrative Record Index

Agency for Toxic Substances and Disease Registry Health Assessments

Current Activity Data Sheets (budget information)

Current Hanford Site Waste Management Unit Reports

Expedited Response Action -- Action Memoranda

Expedited Response Action -- Candidate Waste Sites

Expedited Response Action Closeout Reports

Expedited Response Action Engineering Evaluation/Cost Analysis

Hanford Groundwater Monitoring Reports (1987 - Present)

Preliminary Natural Resource Survey

Appendix B – Documents to be Placed in Information Repositories

Public Notices

Resource Conservation and Recovery Act of 1976
Part B modifications to the Hanford Site-Wide
Permit

Washington State Permit Applications, Draft and
Final Permits, and Fact Sheets

U.S. Environmental Protection Agency
Park Place Building
1200 6th Avenue, HW-070
Records Center, HW-070
Seattle, WA 98101
(206) 553-0685

ADMINISTRATIVE RECORD

The Administrative Record serves the same purpose in the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, *Resource Conservation and Recovery Act of 1976*, and Washington State Dangerous Waste Programs. The Administrative Record is the body of documents and information that is considered or relied on to arrive at a decision for remedial action or hazardous waste management.

An Administrative Record file is established for each group of waste sites with a similar location and waste characteristics and for each grouping of treatment, storage, or disposal units for the purpose of preparing and submitting a permit application and/or closure plan. It will include all the documents considered or relied on in arriving at a decision or to issue a permit or permit modification. When the investigation process begins or when a permit action begins, the Administrative Record file is established. The USDOE is responsible for management of the official Administrative Record file (hard copies). EPA and Ecology (and the public information repositories) have information listings only.

Environmental Data Management Center
2440 Stevens Center Place, H6-08
Richland, WA 99352
(509) 376-2530

Washington State Department of Ecology
1315 West 4th Avenue
Kennewick, WA 99336
(509) 735-7581

Appendix C

HANFORD TRI-PARTY AGREEMENT COMMUNITY RELATIONS PLAN UPDATE PROCESS

The Tri-Party Agreement Community Relations Plan is revised every few years. This is the fourth revision to the plan and the Tri-Parties are planning to hold a 45-day public comment period prior to finalizing the plan by December 2001. To update the Hanford Tri-Party Agreement Community Relations Plan, the Tri-Parties have conducted the following activities:

- In the first quarter of 2001, the Tri-Parties made small revisions to the Community Relations Plan by updating information and adding web site addresses.
- On March 27, 2001, a discussion was held with the Oregon Hanford Waste Board about the upcoming revision to the Community Relations Plan.
- At the April 11, 2001, Hanford Advisory Board Public Involvement and Communication Committee meeting, the Tri-Parties provided copies of the revised plan to committee members and asked them to review the Plan and provide feedback.
- The Tri-Parties further discussed the Community Relations Plan with the Hanford Advisory Board Public Involvement and Communication Committee at their May 16, 2001 meeting.
- The Hanford Advisory Board Public Involvement and Communication Committee further discussed and came to consensus on proposed changes to the Community Relations Plan. It was decided to develop formal advice to present to the Hanford Advisory Board for consensus.
- The Hanford Advisory Board Public Involvement and Communication Committee at their September 5, 2001 meeting plan further discussions on the Community Relations Plan. The Committee also plans to

present the draft advice for consensus to the Hanford Advisory Board at the September 6-7, 2001 meeting.

The Tri-Parties propose conducting a 45-day public comment period from August 27 to October 10, 2001, specific to this Community Relations Plan. Should public interest indicate a need for public meetings, the Tri-Parties will respond accordingly.

Appendix D

HANFORD ADVISORY BOARD ORGANIZATION

LOCAL GOVERNMENT INTERESTS

Benton County
Benton-Franklin Council of Governments
City of Kennewick
City of Pasco
City of Richland
City of West Richland
Grant and Franklin Counties

LOCAL BUSINESS INTERESTS

Tri-Cities Industrial Development Council

HANFORD WORK FORCE

Central Washington Building Trades Council
Hanford Atomic Metal Trades Council
"Non-Union, Non-Management" Employees
(2 Members)
Government Accountability Project

LOCAL ENVIRONMENTAL INTERESTS

Lower Columbia Basin Audubon Society and
Columbia River Conservation League

REGIONAL CITIZEN, ENVIRONMENTAL AND PUBLIC INTEREST ORGANIZATIONS

Columbia Riverkeeper
Hanford Watch
Heart of America Northwest
Washington League of Women Voters
Citizens for a Clean Eastern Washington

LOCAL AND REGIONAL PUBLIC HEALTH

Benton-Franklin Public Health
Physicians for Social Responsibility

TRIBAL GOVERNMENT

Nez Perce Tribe
Yakama Nation

STATE OF OREGON

Oregon Hanford Waste Board
Oregon Office of Energy

UNIVERSITY

University of Washington
Washington State University

PUBLIC AT LARGE

(4 members)

EX-OFFICIO REPRESENTATIVES

Confederated Tribes of the Umatilla Indian
Reservation
Washington State Department of Health
U.S. Department of Energy – Richland Operations
Office
U.S. Department of Energy – Office of River
Protection
U.S. Environmental Protection Agency
Washington State Department of Ecology

ACRONYM LIST AND GLOSSARY

COMMONLY USED ACRONYMS AT THE HANFORD SITE

AEA	<i>Atomic Energy Act</i>
AIP	agreement in principle
ALARA	as low as reasonably achievable
ALE	Fitzner-Eberhardt Arid Lands Ecology Reserve
AMEW	RL Assistant Manager for Environmental Restoration and Waste Management
ARAR	applicable or relevant and appropriate requirements
ATSDR	Agency for Toxic Substances and Disease Registry
BBC	Business, Budgets, and Contracts
BCP	Baseline Change Proposal
BHI	Bechtel Hanford, Inc.
BMOP	Business Management Overview Process
BMP	Business Management Practice
BNI	Bechtel National, Inc.
Board	Hanford Advisory Board
BPA	Bonneville Power Administration
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	Code of Federal Regulations
CHG	CH2M Hill Hanford Group, Inc.
CONOPS	Conduct of Operations
CPP	CERCLA Past Practice
CRP	Community Relations Plan
D&D	decontamination and decommissioning
DCRT	double-contained Receiver Tank
DCG	derived concentration guide
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy-Headquarters
DQO	data quality objectives
DST	double-shell tank
DW	dangerous waste
DWP	Detailed Work Plan
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EEA	Engineering Evaluation of Alternative
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EM	DOE Office of Environmental Management
EMSL	Environmental Molecular Sciences Laboratory
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ERA	Expedited Response Action
ERDF	Environmental Restoration Disposal Facility
ES&H	environment, safety, and health
FFTF	Fast Flux Test Facility
FH	Fluor Hanford, Inc.

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

FS	Feasibility Study
FSUG	Future Site Uses Working Group
FY	fiscal year
HAMMER	Hazardous Material Management and Emergency Response (Training Center)
HCP-EIS	Hanford Comprehensive Land Use Plan-Environmental Impact Statement
HEHF	Hanford Environmental Health Foundation
HGET	Hanford General Employee Training
HLW	high-level waste
HMTC	Hanford Atomic Metal Trades Council
HRA-EIS	Hanford Remedial Action – Environmental Impact Statement
HSWA	Hazardous and Solid Waste Amendments (of 1984)
HSMA	Hazardous Waste Management Act
HWVP	Hanford Waste Vitrification Plant
IAMIT	Inter-Agency Management Integration Team
IM	Interim Measure
INEEL	Idaho National Engineering and Environmental Laboratory
IRA	Interim Response Actions
IRM	Information Records Management
ISMS	Integrated Safety Management System
ISS	Interim Safe Storage (of the reactors)
ISV	In-situ Vitrification
JIC	Joint Information Center
LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
LFI	Limited field investigation
LL	low level
LLBG	Low-level burial ground
LLMW	low-level mixed waste
LLW	low-level waste
LMSI	Lockheed Martin Services, Inc.
LWDF	Liquid Waste Disposal Facility
MB	Megabyte
MCL	maximum contaminant level
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MREM	Millirem
MSDS	Material Safety Data Sheet
MTCA	<i>Model Toxics Control Act</i>
MW	mixed waste
MYPP	Multi-Year Program Plan
MYWP	Multi-Year Work Plan
NEPA	<i>National Environmental Policy Act</i>
NCP	National Oil and Hazardous Substances Contingency Plan
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRTC	National Resource Trustee Council

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

O&M	Operation and Maintenance
OMB	Office of Management and Budget
ORNL	Oak Ridge National Laboratory
ORP	DOE Office of River Protection
OSHA	Occupational Safety and Health Administration
OU	operable unit
PA/SI	Preliminary Assessment and Site Investigation
PCHB	Pollution Control Hearings Board
pCi/L	pico curies per liter
PFP	Plutonium Finishing Plant
PHMC	Project Hanford Management Contractor
PI	Performance Indicator
PNNL	Pacific Northwest National Laboratory
PUREX	Plutonium Uranium Reduction Extraction (Facility)
QA	quality assurance
QC	quality control
RA	remedial action
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
R&D	research and development
RL	DOE-Richland Operations Office
ROD	Record of Decision
RPP	RCRA Past Practice
RPP	River Protection Project
S&H	safety and health
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act of 1986
SEC	Senior Executive Committee
SEPA	<i>State Environmental Policy Act</i>
SMS	Site Management System
SNFP	Spent Nuclear Fuels Project
SNM	Special Nuclear Material
SOW	Statement of Work
SRS	Savannah River Site
SST	single-shell tank
STCG	Science and Technology Coordinating Group
SWMU	site waste management unit
TAG	Technical Assistance Grant
TBD	to be decided/determined
TPA	Tri-Party Agreement (<i>Hanford Federal Facility Agreement and Consent Order</i>)
TRIDEC	Tri-Cities Industrial Development Council
TRU	transuranic
TRUEX	Transuranic Extraction (process)
TRUSAF	Transuranic Waste Storage and Assay Facility
TSD	Treatment, storage and disposal
U.S.C.	U.S. Code
USDOE	U.S. Department of Energy
USEPA	U.S. Environmental Protection Agency
USQ	Unreviewed Safety Questions

Appendix E – Acronym List and Glossary

COMMONLY USED ACRONYMS AT THE HANFORD SITE

UST	underground storage tank
WAC	Washington Administrative Code
WBS	Work Breakdown Structure
WESF	Waste Encapsulation and Storage Facility
WIPP	Waste Isolation Pilot Project
WM	waste management
WRAP	Waste Receiving and Processing
WTF	Water Treatment Facility
YN	Yakama Nation

GLOSSARY

Administrative Record: The administrative record is a library of documents which includes information from Tri-Party Agreement activities such as remedial action, interim response action (i.e. removal action), corrective measure, interim measure, RCRA permit, or approved RCRA closure plan. There are two Administrative Records, managed by the U.S. Department of Energy in Richland, Washington and the Washington State Department of Ecology in Kennewick, Washington.

Agency (Agencies): The U.S. Department of Energy, Washington State Department of Ecology, and the U.S. Environmental Protection Agency.

Agency for Toxic Substances and Disease Registry: The agency under the Department of Health and Human Services, Public Health Service, that is responsible for conducting health assessments at Superfund sites for EPA.

Alpha-Emitter: A radioactive substance, such as plutonium, that emits alpha particles. Alpha radiation is much less penetrating than gamma or beta radiation, but is much more ionizing, and therefore potentially extremely toxic.

Applicable or Relevant and Appropriate Requirement (ARAR): Any standard, requirement, criteria or limitation as provided in Section 121(d)(2) of CERCLA.

Aquifer: A geologic formation, group of formations, or part of a formation capable of yielding significant quantities of groundwater to wells, springs, or other points of discharge.

Aquifer System: A logical grouping of aquifers in a region, grouped on the basis of characteristics such as superficial geology, water quality, and vulnerability.

As Low As Reasonably Achievable (ALARA): A radiation protection principle applied to radiation exposure, with costs and benefits taken into account.

Authority: Legal jurisdiction enabling a governmental agency to administer and implement federal or state laws and regulations.

Appendix E – Acronym List and Glossary

B Plant: Old Hanford plutonium recovery and separations facility converted in 1968 for waste fractionation.

Barrier: A manmade addition to a disposal site that is designed to retard or preclude contaminant transport and/or to preserve the integrity of the disposal site.

Basalt: A dark, fine-grained, extrusive igneous rock. Within the geologic structure beneath the Hanford Site, there are three distinct formations. Basalt flows that have been warped and folded make up the deepest level.

Basalt Waste Isolation Project (BWIP): Program to study Hanford as a possible location for the high-level nuclear waste repository.

Base RCRA Program: Those elements of the federal Resource Conservation and Recovery Act of 1976, as amended, for which the state of Washington has received authorization to implement. The state implements its own dangerous waste program in lieu of the base RCRA program.

Beta Radiation: Essentially weightless charged particles (electrons or positrons) emitted from the nucleus of atoms undergoing nuclear transformation.

Bottoms (tank bottoms): The concentrated material remaining in the waste tanks after most of the contents have been pumped out for solidification or transfer to other storage tanks; refers also to specific tanks used to collect such bottoms waste from several other tanks.

Burial Ground: Land area specifically designated to receive contaminated waste packages and equipment, usually in trenches covered with overburden.

Byproduct Material: Waste produced by extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface waste resulting from uranium solution extraction processes; excludes fission products and other radioactive material covered in 10 CFR Part 20.3(3).

Carbon Tetrachloride: A chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Carbon tetrachloride is a known human liver carcinogen via inhalation and ingestion. Other toxic effects include central nervous system damage.

Chromium: An inorganic element, found in the environment in two forms: hexavalent and trivalent. Hexavalent chromium is carcinogenic via inhalation; hexavalent and trivalent chromium are less toxic via ingestion. Hexavalent chromium is a primary contaminant in groundwater beneath the 100 Area at Hanford.

Central Plateau: Hanford's 200 East and 200 West Areas are located in this area of the Hanford Site. The area has approximately 53 million gallons of high-level radioactive waste in aging underground tanks. In addition, there are principal nuclear chemical processing and waste management facilities located in the Central Plateau.

CERCLA Past Practice (CPP): A process by which a past practice unit containing hazardous substances will be addressed for response action (as opposed to RCRA past practice).

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Closure: Actions taken to reduce the human health and environmental threats posed by a hazardous waste treatment, storage and/or disposal (TSD) facility or unit (along with its structures and contiguous land) after the facility or unit has received its final volume of hazardous waste. Closure must satisfy applicable requirements of 40CFR Part 264, subpart G, and of WAC 173-303-610. For purposes of this Agreement, use of the word closure also includes actions necessary for the facility or unit to meet post closure requirements.

Code of Federal Regulations (CFR): Regulations developed by the federal government to implement statutory requirements.

Cold Standby: A condition whereby a reactor is defueled and maintained in a state that will allow the reactor to be restarted, if necessary.

Community Relations Plan (CRP): A public document that provides information on public participation opportunities and information resources. The CRP also encourages and ensures two-way communication between an affected community and the public agency overseeing the site cleanup.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund: The federal statute enacted in 1980 and reauthorized in 1986, which provides the statutory authority for cleanup of hazardous substances that could endanger public health or welfare or the environment.

Confined Aquifer: An aquifer having defined, relatively impermeable upper and lower boundaries and the pressure of which is significantly greater than atmospheric.

Containment Building (for the purposes of RCRA Interim Status Standards): A completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units. It has a primary barrier designed to be: 1) sufficiently durable to withstand the movement of personnel and the handling of equipment within the unit and 2) operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment. (Ref. 40 CFR 265.1100)

Contamination (Groundwater and Surface Water): An impairment of quality by biological, chemical, or radiological materials that lowers the water quality to a degree which creates a potential hazard to the environment, public health, or interferes with a beneficial use.

Corrective Action: The RCRA processes of interim and corrective measures. See definitions for Interim Measure and Corrective Measure.

Corrective Measure: An action taken under RCRA authority to permanently resolve a hazardous waste release or to significantly reduce the potential for a future release from a unit or group of units.

Corrective Measures Implementation (CMI): The step in RCRA past practice process in which a corrective action system is designed and implemented; comparable to the Remedial Design and Remedial Action phases of the CERCLA process.

Corrective Measures Study (CMS): The step in the RCRA past practice process in which alternatives for a corrective action system are investigated and screened; comparable to the Feasibility Study phase of the CERCLA process. (see Section 7.4)

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Crib: An underground structure designed to receive liquid waste that can percolate into the soil directly and/or after travelling through a connected tile field.

Cradle-to-grave: The Resource Conservation and Recovery Act requires management of hazardous wastes from the first point of waste generation until final disposal by all generators, transporters, and owners/operators of treatment, storage, and disposal facilities that handle hazardous waste.

Criteria: Numerical or narrative values which represent the maximum level a contaminant must not exceed to maintain a given beneficial use.

Curie (Ci): The basic unit used to describe the intensity of radioactivity. A curie is equal disintegrations to 37 billion per second.

Cyanide: An extremely hazardous substance used in the extraction of ores, treatment of metals, and in the manufacture of pharmaceuticals.

Dangerous Waste (DW): Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

Data Quality Objective (as used for a planning process): The formal decision-making process between the laboratory and the client that defines necessary analytical requirements based on the end-use of the data.

Deactivation: Activities associated with removing facility systems and/or areas from operational service with the intent of being ready for facility transition to either convert the facility for another use or move to permanent shutdown. These activities could include the removal of fuel, draining and/or de-energizing of systems, removal of accessible stored radioactive and hazardous materials and other actions to place the facility systems and/or areas in a safe and stable condition. Once this is completed, a surveillance and maintenance program will be able to most cost-effectively prevent any unacceptable risk to the public or the environment until ultimate disposition of the facility. (Note: These activities are usually conducted during the facility transition phase.)

Decontamination: The process of removing radioactive and/or hazardous contamination from facilities, equipment, or soils by physical removal, washing, heating, chemical action, mechanical cleaning or other techniques to achieve a stated objective or end condition.

Decommissioning: Actions taken to reduce the potential health and safety impacts of DOE contaminated facilities, including activities to stabilize, reduce, or remove radioactive materials or to demolish the facilities.

Defense Waste: Radioactive waste from any activity performed in whole or in part in support of DOE atomic energy defense activities; term excludes waste under purview of the Nuclear Regulatory Commission or generated by the commercial nuclear power industry.

Definitive Design: DOE's design phase in which detailed construction drawings and specifications are prepared following conceptual design for a new, or modification to a facility or unit.

Dismantlement: The process of disassembly and/or demolition of all or portions of a facility, and appropriate disposal of the residue.

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Ditch: An unlined conveyance for transport of liquid wastes to a pond or trench structure designed for percolation.

Double Shell Tank (DST): A reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes; annulus is instrumented to permit detection of leaks from inner liner.

Drywell: A drainage receptacle constructed by digging a hole and refilling with coarse gravel; also a watertight well casing used for inserting monitoring equipment.

Ecology: The Washington State Department of Ecology.

Entombment: The remedial process to encapsulate a facility in place as a method of final disposition once cleanout has been completed.

Ethylene Glycol: An organic compound used primarily as an anti-freeze. Ethylene glycol is moderately toxic when ingested.

Evapotranspiration: The combined loss of water from soil by evaporation and from the surfaces of plant structures.

Environmental Restoration Disposal Facility (ERDF): The Environmental Restoration Disposal Facility is a large-scale, evolving landfill, complete with ancillary facility, located on the Central Plateau. It is designed to receive and isolate low-level radioactive, hazardous and mixed wastes from Hanford Site cleanup activities only. The ERDF is designed to provide disposal capacity to accommodate projected Hanford wastes volumes over the next 20-30 years.

Expedited Response Action: A general term referring to either an interim response action (i. e. removal action) under authority of CERCLA, or an interim measure under the authority of the Hazardous and Solid Waste Amendments (of 1984).

Extremely Hazardous Waste (EHW): Those solid wastes designated in WAC 173-303-070 through 173-303-103 as dangerous or extremely hazardous wastes.

Facility (as applied to the Facility Decommissioning Process): A free-standing building, plant, laboratory, or other enclosure and associated buildings and disposal sites under its responsibility that fulfills, or fulfilled, a specific purpose, and is owned by or otherwise under the responsibility of the DOE-HQ. (Note: This usage differs substantially from that in the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] and RCRA).

Facility Startup: The time at which the Department of Energy has completed their readiness assessment and has provided the operating contractor approval via letter to start initial operations. At this time the contractor has completed their readiness review verifying that: 1) all operability tests have been completed, 2) operating procedures are available for use, and 3) a trained operating staff capable of operating the facility is in place.

Facility Surveillance and Maintenance (S&M) Phase: Period in the life of a facility following completion of the transition phase until such time as the facility is dispositioned for other use, or facility disposition has commenced.

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Facility Transition Phase: A period of time during which activities necessary to place the subject facility in a safe, stable, and environmentally sound condition, suitable for an extended period of surveillance and maintenance pending final disposition are completed. Facility transition starts with termination of operations, includes the establishment of a S&M program, and ends with the achievement of facility-specific end point criteria.

Fast Flux Test Facility (FFTF): A liquid metal test reactor that serves as a test tool for advanced reactor technology. Operations at the FFTF began in April 1982 and have since expanded into other areas, such as fusion research, space power systems and isotope production.

Feasibility Study (FS): The step in the CERCLA process in which alternatives for a remedial action system are investigated and screened (see Section 7.3).

Final Disposition of the Reactors: Final disposition of the reactors will consist of removing the reactor cores from their present location to a disposal facility in the 200 Area of the Hanford Site. Associated structure(s) and residual wastes will be removed so as to meet established cleanup requirements pertaining to Hanford's 100 Area. Resulting wastes will be disposed at Hanford's Environmental Restoration Disposal Facility, or other disposal facility as may be approved by the parties.

Fiscal Year (FY): The federal government uses the fiscal year for planning-October 1 through September 30. The State of Washington's fiscal year is July 1 through June 30.

Fitzner-Eberhardt Arid Lands Ecology Reserve (ALE): Located southwest on the Hanford Site, the ALE covers 120 square miles and is managed for the USDOE by the U.S. Fish and Wildlife Service, part of the Department of Interior, and is used for ecological research and preservation.

Focused Feasibility Study: A study conducted such that a limited number of alternatives are evaluated that are focused to the scope of the response action planned.

French Drain: A rock-filled encasement with an open bottom to allow seepage of liquid waste into the ground.

Future Site Uses Working Group: A former working group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and Hanford public interest groups. The group was charged with the task of articulating a range of visions for the future use of the Hanford Site, discussing the implications of those visions on cleanup, and searching for common visions of cleanup scenarios and priorities.

Groundwater: Water which fills the spaces between soil, sand, rock, and gravel particles beneath the earth's surface. Rain that does not immediately flow to streams and rivers slowly percolates down through the soil to a point of saturation to form groundwater reservoirs. Groundwater flows at a very slow rate, compared to surface water, along gradients which often lead to river systems. If occurring in significant quantities, groundwater can be withdrawn for domestic, industrial, and agricultural purposes.

Grout: A fluid mixture of cementitious materials and liquid waste that sets up as a solid mass and is used for waste fixation and immobilization.

Half-life: The time required for a radionuclide's activity to decay to half its value, used as a measure of the persistence of radioactive materials; each radionuclide has a characteristic constant half-life.

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Hanford Advisory Board: Created in 1994 by the Tri-Parties, the Board advises all three agencies on major cleanup policy decisions. The Board consists of 31 members and their alternates who represent a broad range of stakeholder interests. Two of the three affected tribal governments are represented on the Board. One of the tribal governments participates on the Board in an ex-officio status.

Hanford formation: Within the geologic structure beneath the Hanford Site, there are three distinct formations. This is the uppermost level and it consists of gravel and sands deposited by catastrophic floods.

Hanford Operable Units Report: Documents the assignment of individual units to operable units and provides the rationale and justification for the prioritization of the operable units for the remedial investigation process.

Hanford Reach National Monument: Managed by the U.S. Fish and Wildlife Service, the Hanford Reach consists of a 51-mile stretch through the Hanford site. It is located on each side of the Columbia River with approximately a 0.25-mile corridor. Many types of plant-life and wildlife live on the land.

Hanford Site: Also referred to as "Hanford" or "Site", the approximately 586 square miles in Southeastern Washington State, excluding leased lands, and State and Bonneville Power Administration owned lands, which is owned by the United States and which is commonly known as the Hanford Reservation.

Hanford Waste Vitrification Plant (HWVP): A facility to be constructed for treatment of high level liquid radioactive waste. Liquids are vitrified or glassified in order to reduce the potential for radioactive and hazardous contamination leaching into the environment. This unit will be regulated under RCRA.

Hazardous and Solid Waste Amendments of 1984, P.L. 98-616 (HSWA): The reauthorization of the RCRA program, enacted by Congress on November 8, 1984.

Hazardous Substance: Substances regulated under CERCLA, as defined in CERCLA Sec. 101(14).

Hazardous Waste: Those wastes included in the definitions of RCRA 1004(5) and RCW 70.105.010(15).

Hazardous Waste Management Act (HWMA): A state program, commonly referred to as the State Dangerous Waste Program, which regulates the generation, treatment, storage and/or disposal of hazardous wastes in cooperation with RCRA.

In-Situ Vitrification (ISV): A process by which electrical current is passed through contaminated soils in-place heating the soil to a molten state. While cooling the soils become a homogenous glass-like block thereby minimizing the leachability of contaminants.

Interagency Management Integration Team (IAMIT): A committee of the Executive Managers from each agency with the functions of negotiation of new milestones, adjustment of scope and schedule of existing interim milestones, and Tri-Party Agreement Issue Resolution/Dispute Resolution. The IAMIT also serves as the interface with the Hanford Advisory Board (HAB).

Interim Measure (IM): An expedited response action taken under RCRA authority to mitigate a hazardous waste release or to reduce the potential for a future release from a unit.

Interim Response Action (IRA): An expedited response action taken under CERCLA authority to mitigate a hazardous substance release or to reduce the potential for a future release from a unit.

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Interim Safe Storage (ISS) of the Reactors: Interim Safe Storage (ISS) is the first stage of final disposition. It consists of 1) ensuring that facility hazardous substances are and will remain safe and secure, and 2) reducing the footprint of the reactor building to the primary shield wall, and sealing all openings such that the facility is in an environmentally safe and secure condition prior to initiation of disposition phase II.

Interim Stabilization (as pertains to Single-Shell Tanks): It is the removal of pumpable supernatant and interstitial liquid from single-shell tank systems into double-shell tank systems. As much liquid as practicable will be removed. Supernatant is free standing liquid. Interstitial liquid is that liquid in the waste matrix contained within the pore spaces of the salts and sludges, some of which is capable of gravity drainage while the rest is held by capillary forces.

Interim Status: A RCRA provision which grants a facility the right to continue to operate (treat, store, or dispose of hazardous waste) in accordance with applicable RCRA or state regulations until a RCRA permit is issued.

Iodine: A gaseous inorganic chemical produced in the plutonium production reactors at Hanford. Radioactive isotopes of iodine are found in most radioactive waste streams at Hanford.

Ion Exchange: Process for selectively removing a hazardous constituent from a waste stream by reversibly transferring ions between an insoluble solid and the waste stream; the exchange medium (usually from a column of resin) can then be washed to collect the waste or taken directly to disposal. Both the residue and liquid stream from this process may still be a hazardous waste.

Isotope: Any of two or more forms of a chemical with the same atomic number and nearly identical chemical behavior but different atomic mass and physical (e.g. radioactive) properties.

Land Disposal Restriction Waste (LDR): RCRA hazardous wastes, subject to Section 3004(d) through (m) of RCRA and 40 CFR 268.

Leachate: The product obtained from the passage of water through landfills or storage piles.

Lead: A heavy metal used for shielding material in nuclear reactors. Lead can be toxic when ingested or inhaled. Lead can impair nervous system development in children and can cause nervous system damage in adults. Lead is also a reproductive toxin.

Lead Regulatory Agency: The agency (EPA or Ecology) which is assigned regulatory oversight responsibility with respect to actions under this Agreement regarding a particular Operable Unit; treatment, storage, and disposal group/unit; or, Tri-Party Agreement milestone. The designation of a Lead Regulatory Agency does not change the jurisdictional authorities of the Tri-Parties.

Level of Detection: The level at which a constituent can be detected by a department approved method of analysis.

Liquid Waste Disposal Site: Units used for discharge of contaminated liquids to the ground.

Low-Level Waste (LLW): Typically contains small amounts of radioactivity in large volumes, and most can be handled without protective shielding. Solid low-level waste consists of trash such as clothing, tools, and glassware. Liquid waste consists primarily of water circulated as cooling water.

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Maximum Contaminant Level (MCL): The maximum level of a contaminant in water that can exist without harming the beneficial use of drinking water. Defined specifically in the Safe Drinking Water Act.

Model Toxics Control Act (MTCA): This Washington State law establishes administrative processes and standards to identify, investigate, and cleanup facilities where hazardous substances are located.

N-Reactor: N-Reactor is a dual purpose reactor, generating electricity from its steam by-product in addition to producing plutonium. It is the only plutonium production reactor at Hanford that has operated since 1971. It is currently in standby status.

National Pollutant Discharge Elimination System (NPDES): Grants authority to EPA and authorized states to issue permits for discharge of wastewaters into certain surface water bodies within prescribed limits for constituents, concentrations and volumes.

National Priorities List (NPL): EPA's list of priority waste sites containing hazardous substances that will be investigated and cleaned up under the Superfund program.

Operable Unit: An operable unit at Hanford is a group of land disposal sites placed together for the purposes of doing a Remedial Investigation/ Feasibility Study (RI/FS) and subsequent cleanup actions. The primary criteria for placement of a site into an operable unit includes geographic proximity, similarity of waste characteristics and site type, and the possibility for economies of scale.

Office of River Protection (ORP): The U.S. Department of Energy Office of River Protection manages the tank waste program on the Hanford site.

Parties: The U.S. Environmental Protection Agency, the Washington State Department of Ecology, and the U.S. Department of Energy.

Percolation: Gravity flow of water through pore spaces in rock or soil.

pH: A measure of acidity and alkalinity.

Plume: A defined area of groundwater contamination.

Plutonium: A radioactive element used as the primary fuel in nuclear weapons. Plutonium is purified during various production operations at Hanford.

Plutonium Uranium Extraction (PUREX): Latest in a line of separation technologies, preceded by bismuth phosphate and REDOX.

Ponds: Surface impoundments used to contain low-level liquid radioactive wastes, mixed wastes, or hazardous wastes.

Preliminary Assessment and Site Inspection (PA/SI): Normally the first step in analyzing the nature and severity of contamination at a potential CERCLA site and is used to determine if a site should be nominated for the NPL. Based upon extensive documentation previously submitted to EPA by DOE, this requirement is considered to have been satisfied for the Hanford Site.

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Project Manager: The individual responsible for implementing the terms and conditions of the Agreement at the specific operable unit level on behalf of his/her respective Party. The project manager has direct responsibility for completion of targets and milestones and has authority to agree to modifications of scope and schedule, in accordance with Section 12.0 of the Action Plan.

Public Information Repositories: A library of documents which includes information from Tri-Party Agreement activities such as remedial action, interim response action (i.e. removal action), corrective measure, interim measure, RCRA permit, or approved RCRA closure plan. There are four Public Information Repositories, located in Richland, Washington; Seattle, Washington; Portland, Oregon; and, Spokane, Washington.

Pump and Treat: Active method of treating groundwater that involves pumping the water to the surface, processing the water to remove the contaminants from the water to a levels that meets regulatory requirements, and returning the treated water to the aquifer.

Quality Assurance (QA): The systematic actions necessary to provide adequate confidence that a material, component, system, process, or facility performs satisfactorily, or as planned in service.

Quality Control (QC): The quality assurance actions that control the attributes of a material, process, component, system, or facility in accordance with predetermined quality requirements.

Radioactive Mixed Waste: Also called "mixed waste", wastes that contain both hazardous waste subject to RCRA, as amended, and radioactive waste subject to the Atomic Energy Act of 1954, as amended. Mixed waste is regulated under the State Dangerous Waste Program.

Radioactive Waste: A solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities except for radioactive material from post-weapons-test activities.

Radionuclide: A species of atoms having a particular number of protons (Z), a particular number of neutrons (A), and a particular atomic weight ($N=Z+A$) that happens to emit radiation.

Receptor: Any living entity potentially affected by release of substances to the environment from Hanford operations.

Record of Decision (ROD): The CERCLA document used to select the method of remedial action to be implemented at a site after the Feasibility Study/Proposed Plan process has been completed.

Reduction/Oxidation (REDOX): A facility and/or processes for separating plutonium from irradiated reactor fuels by using successive steps of chemical reduction/oxidation together with solvent extraction.

Remedial Action: An action taken under CERCLA authority to permanently resolve a hazardous substance release or to significantly reduce the potential for a release from a unit or group of units.

Remedial Design (RD): The CERCLA process of design for the remedial action alternative that was selected in the Record of Decision.

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Remedial Investigation (RI): The CERCLA process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The RI is done in conjunction with the Feasibility Study.

Resource Conservation and Recovery Act (RCRA): A federal law enacted in 1976 that regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes.

Response Action: The CERCLA processes of interim response and remedial actions. See definitions for Interim Response Action and Remedial Action.

RCRA Facility Assessment (RFA): The initial RCRA process to determine whether corrective action for a RCRA past practice unit is warranted, or to define what additional data must be gathered to make this determination; analogous to a CERCLA Preliminary Assessment and Site Inspection

RCRA Facility Investigation (RFI): The RCRA process of determining the extent of hazardous waste contamination; analogous to the CERCLA Remedial Investigation.

RCRA Past Practice (RPP): A process by which a past practice unit containing hazardous wastes or hazardous constituents will be addressed for corrective action, regardless of the date waste was received or discharged at a unit.

RCRA Permit: A permit under RCRA and/or HWMA for treatment, storage or disposal of hazardous waste.

Reverse Well: Liquid waste disposal structure consisting of a well (sometimes drilled into the water table) into which waste solutions were pumped.

Revised Code of Washington (RCW): The Washington State statutes.

Ringold formation: Within the geologic structure beneath the Hanford Site, there are three distinct formations. This is the second layer, consisting of layers of silt, gravel, and sand.

Risk Assessment: An analysis of the potential adverse effects to human health and/or the environment (current or future) caused by radionuclide and/or hazardous substance releases from a site in the absence of any actions to control or mitigate these releases.

River Protection Project (RPP): The River Protection Project consists of the Hanford contractor staff who support the tank waste program.

Salt Cake: Crystallized nitrate and other salts deposited in waste tanks, usually after active measures are taken to remove moisture.

Sanitary Landfill: A burial operation for disposing of nonradioactive, nonhazardous waste or garbage.

Signatories: The Signatories are: For the DOE, the signatory shall be the Manager, Richland Operations Office. For the EPA, the Signatory shall be the Regional Administrator for Region X. For the Washington State Department of Ecology, the signatory shall be the Director.

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Single-Shell Tank (SST): At Hanford, 149 single-shell carbon steel tanks (ranging in size from 55,000 to 1 million gallons) that have been used to store high-level radioactive wastes.

Skylight: Gamma radiation emitted from a source that is reflected off particles in the air, sometimes landing several hundred meters from their point of origin.

Solid Waste (radioactive): Either solid radioactive material or solid objects that contain radioactive material or bear radioactive surface contamination.

Stabilization: The combination of steps or activities to secure, convert and/or confine radioactive and/or hazardous material within enclosures, exhaust ducts, and process equipment within a facility. These activities may include; removal of loose equipment items, draining process fluids to the maximum extent practicable, coating internal surfaces with a fixative coating, removal of waste materials, installing seals and blank flanges, termination of nonessential energy sources, and/or conversion of reactive residues to a stable form suitable for extended safe storage.

State Waste Discharge Permit: A permit issued pursuant to Chapter 173-216 WAC.

Strontium 90: A highly radioactive isotope common in most radioactive waste streams at Hanford.

Sulfuric Acid: A highly corrosive inorganic acid used in various production processes at Hanford.

Superfund Amendments and Reauthorization Act of 1986 (SARA): The reauthorization of the CERCLA statute, enacted by Congress in December 1986.

Support Agency: The regulatory agency (EPA or Ecology) which is not designated as the lead regulatory agency at an operable unit. The support agency will provide assistance to the lead regulatory agency, as needed.

Surplus Facility: Any facility or site (including equipment) that has no identified programmatic use and may or may not be radioactively contaminated to levels that require controlled access.

Surveillance and Maintenance: Activities conducted to assure that a site or facility remains in a physically safe and environmentally secure condition, and includes periodic inspections and monitoring of the property, appropriate contamination control actions, and required maintenance of barriers controlling access.

Tank Farm: An installation of multiple adjacent tanks, usually interconnected, for storage of liquid waste, or substances used in Hanford operations. Major tank farms at Hanford are underground.

Tank Waste Task Force: A former group of representatives from tribal, government, business, economic development, labor, agriculture, environmental groups, and public interest groups focused on Hanford, labor, and public health. The task force was charged with providing values relative to the Tank Waste Remediation System and with principles for the overall Tri-Party Agreement package during the renegotiations of the Tri-Party Agreement, Summer 1993.

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Technical Assistance Grant (TAG): A grant available from EPA designed to enhance public participation as described in Section 117 of CERCLA. A maximum of \$50,000 per NPL site is available. Grant money must be used for the purpose of interpreting information regarding CERCLA activity at the site.

Transuranic (TRU) Waste: Waste contaminated with long-lived transuranic elements in concentrations within a specified range established by DOE, EPA, and the Nuclear Regulatory Commission (NRC). These are elements shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.

Treatment, Storage, or Disposal (TSD): A RCRA term referring to the treatment, storage, or disposal of hazardous waste. Under RCRA, TSD activity can occur only at units which received or stored hazardous waste after November 19, 1980, the effective date of the RCRA regulations.

Treatment, Storage, or Disposal (TSD) Unit: A unit used for treatment, storage, or disposal of hazardous waste and is required to be permitted and/or closed pursuant to RCRA requirements.

Trend Analysis: A statistical methodology used to detect net changes or trends in contaminant levels over time.

Tribal Government: The Hanford Site is located on land at one time ceded to the United States under separate treaties with Indian Nations. As a result of the treaties with the United States, the Confederated Tribes of the Umatilla Indian Reservation, the Yakama Nation, and the Nez Perce Tribe retained certain rights at the Hanford Site. These are known as the “affected tribal governments.”

Tri-Parties: The U.S. Department of Energy, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency.

Tritium: A radioactive isotope of hydrogen used in nuclear weapons to increase the efficiency of the nuclear reaction.

Tunnel: A large underground storage structure for large pieces of equipment, often on railroad cars; PUREX storage tunnels.

Unconfined Aquifer: An aquifer overlain with permeable material and sensitive to contamination; also, an aquifer that has a water table or surface at atmospheric pressure.

United States Department of Energy (DOE): The United States Department of Energy, its employees and Authorized Representatives.

United States Environmental Protection Agency (EPA): The United States Environmental Protection Agency, its employees and Authorized Representatives.

Unplanned Release: An unintentional release, including a spill, of hazardous waste or hazardous substance into the environment.

Vadose Zone: The unsaturated region of soil between the ground surface and the water table.

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Vault: A RCRA approved, subsurface structure designed for permanent disposal of low-level mixed wastes in grout.

Vitrification: See Hanford Waste Vitrification Plant (HWVP) or In-Situ Vitrification.

Wahluke Slope: Also known as the North Slope, this area is located across the Columbia River and is managed by the U.S. Fish and Wildlife Service as a wildlife refuge. The Wahluke Slope and the Fitzner-Eberhardt Arid Lands Ecology Reserve is approximately 45 percent of the Hanford Site and has been cleaned and removed from EPA's Superfund list.

Washington Administrative Code (WAC): The Washington State regulations.

Waste Isolation Pilot Project (WIPP): Located in New Mexico, it is the permanent repository for wastes. The Hanford Site began shipping solid wastes to WIPP.

Water Table: The upper boundary of an unconfined aquifer surface below which soil saturated with groundwater occurs; defined by the levels at which water stands in wells that barely penetrate the aquifer.

200 Areas Plateau: The highest portion (aside from Rattlesnake and Gable Mountains) on the Hanford Site, containing most of the waste processing and storage facilities.