

START

**Comments and Responses
to the
Tentative Agreement
on
Environmental
Restoration Refocusing**



April 1995

**U.S. Environmental Protection Agency
U.S. Department of Energy
Washington State Department of Ecology**

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PUBLIC COMMENTS AND RESPONSES TO THE
TENTATIVE AGREEMENT ON ENVIRONMENTAL RESTORATION REFOCUSING
TRI-PARTY AGREEMENT NEGOTIATIONS

1.0 INTRODUCTION

BACKGROUND

In May 1993, the U.S. Department of Energy (USDOE) proposed major changes to the *Hanford Federal Facility Agreement and Consent Order*, or Tri-Party Agreement. Formal negotiations began in June. The USDOE, Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) met through the summer to revise the cleanup agreement. Throughout negotiations the three parties consulted with the affected tribal nations. The three parties also consulted with Hanford Advisory Board members and received their input on issues. The Hanford Advisory Board is made up of representatives from groups within Washington and Oregon that have an interest in Hanford cleanup.

The four-month negotiation process ended September 30, 1994. A formal 45-day public comment period followed from October 24 through December 8, although we--USDOE, Ecology and EPA--accepted comments until January. This report presents the comments we received and our responses.

We collected comments on the proposed changes in two ways: we recorded verbal comments at public meetings and we received written comments through the mail and fax. The review package, *Tentative Agreement on Environmental Restoration Refocusing Tri-Party Agreement Negotiations*, included a tear-out comment form for readers to send in.

We also requested comments through newspaper announcements and briefings to interested groups. We distributed more than 200 copies of the review package and we produced a summary of proposed changes to the agreement. In November, we conducted public meetings in Hood River, Portland, Seattle and Richland.

Approximately 170 comments were received from many people and groups. Comments covered a wide range of views and opinions on the issues. We organized the comments the same way as the package presented proposed changes. Issue 1 covers changes to the milestone requiring six Remedial Investigations/Feasibility Studies each year and to demonstrate progress and commitment in cleaning up Hanford. Issue 2 covers changes to utilize N Area as a pilot project to ensure coordinated cleanup efforts by DOE, EPA and Ecology. The Action Memorandum on N-Springs Expedited Response Action covers a cleanup alternative to the N-Springs. Issue 3 covers changes to the milestones requiring the completion of Remedial Investigations/Feasibility Studies for all operable units by the year 2005 and to achieve earlier remediation and focus on sites along the Columbia River. We also received comments on the Tentative Agreement as a whole and other general topics.

The three agencies shared the responsibility to respond to the comments and conferred to discuss those responses. Except where noted otherwise, all agencies reviewed, edited and agreed on the responses.

When several comments were very similar, we grouped them together and gave them one response. In other cases, we referred readers to responses which pertained to that topic. While we tried to keep responses short, sometimes the comment required a more detailed response. In a few cases, we referred readers to specific individuals or organizations who can discuss the topic in great detail or provide additional information.

HOW THE TENTATIVE AGREEMENT CHANGED IN RESPONSE TO PUBLIC COMMENTS

Several modifications were made to the Environmental Restoration Refocusing package as a direct result of public comment. The primary modification to the package came as a result of the many comments we received on the acceleration of cleanup actions. In addition, the stakeholders have communicated to the agencies that work at this time should be focused on protecting the Columbia River. As previously stated, the three parties believe that the Environmental Restoration Refocusing package places greater emphasis on remediation rather than investigation, and hence, represents an acceleration over the previous program. In response to these comments and concerns, the three parties have set an early cleanup date for the 1100 Area (December 1995) and established other dates by which final cleanup schedules will be set for the 100 Area and the 300 Area.

The revised Milestone M-16-00 now contains commitments for establishing 100 and 300 Area remedial action schedules leading to completion of remedial actions in these areas. For the 100 Area, December 2001 has been set as the date by which a final cleanup schedule for the 100 Area will be established. Similarly, June 2002 is the date established for the 300 Area. These dates were selected based on the commitment in Milestone M-15 to complete all 100 and 300 Area investigations by December 1999. Following completion of the investigations, issuance of Records of Decision for these areas, appropriate cleanup schedules can be developed. Although this does not totally address the public comments, by waiting until after the year 2000 to set actual cleanup completion dates, it will allow us to gain information which will provide for a technically defensible position.

Additional changes to the Environmental Restoration Refocusing package and specifically the N Area Pilot Project will also be made in the near future. During the public comment period, test sections of the N-Springs Barrier were installed. These test sections could not be installed in accordance with the requirements of the N Area Pilot Project or the N-Springs Action Memorandum issued by Ecology and EPA (dated September 23, 1994). Further evaluation of the feasibility of installing a modified N-Springs Barrier wall will occur over the next ten months and will also be evaluated as part of Milestone M-16-12E in the pilot project (evaluating the effectiveness of pump and treat for strontium-90 at N-Springs).

The three parties believe these modifications as well as the Environmental Restoration Refocusing package as a whole embody those values expressed by tribal governments, the public at large, the Hanford Advisory Board and other stakeholders.

Finally, prior to production of the next amendment to the Tri-Party Agreement we plan to modify the milestone nomenclature. These changes do not substantively modify the milestones, but the format will be slightly different. The three parties will produce a crosswalk to allow tribal members, stakeholders and the public at large to understand the new format.

2.0 GENERAL COMMENTS

1. We would like to conduct an educational tour to interpret the ecology, future recreational opportunities and information about the cleanup. (Steve Hall, Bike to Nature)

Response: Educational tours of Hanford may be scheduled through Ms. Mary Goldie, Public Affairs Specialist, U.S. Department of Energy, Richland Operations, Mail Stop A7-75, P.O. Box 550, Richland, Washington 99352. Telephone (509) 376-7505.

2. I think this tentative cleanup agreement is great. In fact I think it is such a wonderful idea, that I would like to help. I am presently employed at Trident Refit Facility (Bangor) as a fully qualified radiation worker, etc. I am looking for work in the private sector, and after sending my resume to ICF Kaiser Hanford with no positive results, I could not resist responding to your Richland address. If you have any contacts or any advice on how to get in on any type of nuclear cleanup, feel free to write, fax, e-mail via the internet or call collect. Thank you for your time. (Gary M. Jefferson)

Response: We appreciate the enthusiasm of people who are so solidly behind the cleanup agreement that they are willing to dedicate their personal efforts to making the project a success. We want to be able to consider these individuals for possible employment on the environmental cleanup project.

However, because of the uncertainties associated with funding of the cleanup effort, Hanford contractors have increasingly limited opportunities to take advantage of hiring additional personnel. For the next several months the contractors at Hanford, will be working with USDOE to assess site critical needs and the personnel needed to support those needs. While we are always willing to review resumes of qualified personnel, we are not in a position to offer any encouragement that we will be able to extend offers of employment in the near term.

Those individuals who would still like to submit their resumes may send them to W.H. Young, Employment, Bechtel Hanford, Inc., P.O. Box 969, Richland, WA 99352.

3. Director Riveland once said that removing and vitrifying the high-soda liquids from the high-level waste tanks is urgent, a high priority, to avoid further leaks and contamination of the soil. It is disappointing, then, to see that the Tentative Agreement on the Environmental Restoration Refocusing at Hanford makes no mention of speeding up the present 2005 start of operations. The technology is available now, and has been since a proof run in a six ton/day high-level waste vitrification furnace built by Penberthy Electromelt in 1981. That was 13 years ago. There is no need to wait another 11 years. Further, there is no need for or benefit from removing the cesium. Cesium-137 is a relatively short-term activity, (30 year half-life). Two hundred years of decay is within an acceptable span of institutional control. There is no justification of spending very large sums of public money

for no long-term gain. Penberthy glass furnaces can be operated remotely quite readily. Penberthy moly-electrode melting process is producing 16,000,000 tons of glass per year. Why wait? (Larry Penberthy, Penberthy Electromelt International, Inc.)

Response: The three parties' negotiations have had as their focus USDOE's Environmental Restoration program (cleanup of inactive hazardous waste sites and surplus buildings managed under USDOEs' "environmental restoration" program). Consequently, Hanford's tanks, and tank cleanup schedules were not within the scope of these negotiations. Double and single-shell tank cleanup schedules were set in January 1994, following Tank Waste Remediation System rebaselining. Tank cleanup under the Tank Waste Remediation System program has been, and continues to be a top priority of each of the three agencies.

4. If you cannot find a method of vitrification for the waste, then take the French up on their offer to provide the technology at their risk. (John and Linda Jewell)

Response: There are many vitrification processes being planned and being demonstrated in the United States at the present time. USDOE continues to also look at technologies offered by other countries. The largest effort here in the U.S. is the process to handle defense waste at the Savannah River Plant (Aiken, South Carolina). Processes to vitrify soils are being evaluated and demonstrated here at Hanford. Vitrification of the "low level" fraction of Hanford's tank wastes is in the technology development and demonstration phase consistent with tank cleanup schedules agreed to in January 1994. High level (tank waste) vitrification systems utilized by the French are also undergoing aggressive scrutiny for applicability here at Hanford.

See also response to comment 3.

5. USDOE must immediately institute strict contractor accountability. Any prioritization must be based solely on values developed through public processes such as the Hanford Advisory Board. (Doris Cellarius, Cascade Chapter, Sierra Club)

Response: The Environmental Restoration Contractor (ERC) is paid for labor and expenses on a cost reimbursable basis. Invoices are reviewed by the USDOE Environmental Restoration Project, USDOE Finance Division and the Defense Contract Audit Agency. Fee (profit) is determined and paid separately on the basis of predetermined performance criteria.

We agree that agency efforts should be responsive to values developed through public involvement. We attempted to do so during these Environmental Restoration Refocusing negotiations.

The following principles and recommendations have been endorsed by the Hanford Advisory Board:

Hanford Future Site Uses Working Group
--Protect the Columbia River

- Deal realistically and forcefully with ground water contamination
- Use the central plateau wisely for waste management
- Do no harm during cleanup or with new development
- Cleanup of areas of high future use value is important
- Cleanup to the level necessary to enable future use options to occur
- Transport waste safely and be prepared
- Capture economic development opportunities locally
- Involve the Public in future decisions about the Hanford Site

Tank Waste Task Force

- Protect the environment
- Protect public/worker health and safety
- Get on with cleanup to achieve substantive progress in a timely manner
- Use system design approach that keeps endpoints in mind as intermediate decisions are made
- Establish management practices that ensure accountability, efficiency and allocation of funds to high priority items

***Note:** These lists are a summary representation of the principles/recommendations. In order to fully understand the principles/recommendations the Future Site Uses Working Group and the Tank Waste Task Force reports should be consulted.

6. My name is John Bigas. I am 42 years old and a lifelong resident of Washington. I have been involved with environmental planning since 1971 because of my belief that nature is not to be conquered or overcome but part of our lives we need to manage wisely. I have seen old growth ecosystems and species disappear, air become unhealthy, shellfish and salmon runs wiped out, violence and overcrowding a way of life. I have been involved with Alpine Lakes North Cascades National Park Forest Service rd. system planning, urban growth management King Co., open space issues, President's old growth plan, salmon restoration by removal of Elwha, rivers, two dams, Green lake cleanups and on, and on!

My first introduction to your project came from stories from my father who was a research chemist for 38 years at the American Can Company, San Francisco, then Seattle Laboratory. He recounted stories in the *Seattle Times* of the temperature of the Columbia River rising and no one knew why. Also, the time he made inquiries about uranium and the FBI agents wanted to know why. Dad used to take me to his lab and we had carbon tetrachloride, etc., around the house, so I know a little bit about how deadly these chemicals are. I also learned a little knowledge from my own chemistry class and my brother who is a physicist. I had heard Hanford was polluted, but I was shocked after I read the Washington state's Hanford Briefing packet. Especially the discharge tubes 2500' upriver from Richland's water supply. I don't know how this poison can be stored for thousands of years and to know the single wall tanks are leaking and 1.2 billion gallons of poison are being discharged last year and not do whatever it takes to protect the citizens' and our public property (Hanford land and the Columbia River) is a shortsighted savings. Money should not be a consideration only that the public is receiving an honest day's work for the wages needed to do the job. Nature works very slowly and if we don't address this half-century old problem, it will haunt us and the people of this earth for thousands of

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years. People have suffered enough--let's do the right thing! (John Bigas)

Response: The agencies are working to stop the spread of radioactive and chemical contaminants into the environment at Hanford. Over the next several years significant amounts of contaminants should be removed in the areas near the Columbia River. In times of diminishing budgets, funding is an unavoidable factor in Hanford cleanup decisions. Our responsibility is to focus those dollars on projects where we get maximum value from a cleanup and reduction of risk to workers and public standpoint.

7. I understand that the Department of Defense is one of the other problems for declassification. The Department of Defense is basically the one that's been saying no, don't release those documents. I've heard this numerous times. I've heard this from Westinghouse people. I've heard it from Battelle people. I've heard it from USDOE people. And I think that maybe when the Department of Energy has a problem getting something released or the State of Washington or the EPA or the USDOE contractors, they should come to the public and tell the public why they can't get these documents declassified. The only way that we're going to get this openness to continue is when the public keeps getting involved and keeps putting pressure on the system to make a change. What we've got here at Hanford is progress. What they've got back at Oakridge, Tennessee is they're still living in the 60's and they don't want to talk about cleanup, and they don't want to talk about environmental health problems, and environmental problems. So we've got something good here, but we need to keep pushing so the rest of the nation can get up to speed with us. (Greg deBruler, Columbia River United)

Response: It is assumed that the commenter's concerns are focused on the Hanford Environmental Dose Reconstruction Project (HEDR). The HEDR Project was instrumental in declassifying and making approximately 8,000 documents available to the public. The only documents that HEDR needed and had declassified were those documents directly related to releases that could have caused impacts to off-site people. Department of Defense and other relatively unrelated documents were not declassified. The Technical Steering Panel understood this need and told the public in writing and in open meetings of these differences. However, in certain cases, and to address comments like the one above, several Technical Steering Panel members were cleared to look at some of the other documents to ensure that the information was not relevant to project needs. A detailed process was developed between the Center for Disease Control, USDOE Richland Field Office (USDOE-RL), USDOE Headquarters (USDOE-HQ) and others, signed by USDOE-RL to cover the review and potential declassification of these documents.

USDOE's Openness Initiative involves the release of a variety of previously classified information to the public and stakeholders. The USDOE-RL is committed to the implementation of the Secretary's Initiative in this regard. Documents containing information that will not damage national security on release will be provided to the public. Before any release of the documents, a declassification review must take place to assure that there is no other classified information in the

documents. When a document cannot be declassified in total, an edited version of the document will be generated when possible, and provided to the public.

Public participation will be used to identify a prioritized listing of subject areas which will be used in the declassification process. Documents will be categorized during and after the inventory process to determine the general type of information contained in the document. A list of categories follows:

1. Environment, Safety and Health
2. Production (weapons related)
3. Production (non-weapons related)
4. Safeguards and Security
5. Liquid Metal Fast Breeder Reactor and Advanced Reactor
6. USDOE Other-Site
7. Other Agency
8. Other

Specific categories may include sub-categories, if needed, to address interested party concerns and priorities. Those parties will be requested to rank the declassification review priority by these document categories.

The priority scheme for declassification will be determined in cooperation between USDOE and the public. A listing of documents in each of the prioritized categories will be available to interested parties. As documents complete the declassification review process and are declassified or declassified with deletions, they will be made available to the public through the Opennet, the USDOE Public Reading Room, and when appropriate, through the Office of Scientific and Technical Information.

The review is planned to occur in two distinct phases:

PHASE I

The objective of the first phase of this declassification effort is to declassify and provide to the public the largest possible amount of documents in the shortest amount of time. This will be accomplished by:

- 1) declassifying only documents that can be done in total,
- 2) reviewing Comprehensive Classification Review Program documents, and
- 3) reviewing documents that have previously been declassified, but still require an Unclassified Controlled Nuclear Information review and other reviews prior to public release.

Documents that require editing will be reviewed in the second phase. It should be stressed that the order in which documents are reviewed will be that determined to be a priority by the local tribal governments, stakeholders, and other interested parties.

PHASE II

Phase II of the declassification effort will target classified documents which, because of content, will require significantly more time in the declassification review process. Types of documents that would be included in Phase II are:

- 1) documents requiring sanitization (removal of still classified information),
- 2) documents that contain weapons related information, or
- 3) other agency or other site documents which require action by non-USDOE entities.

USDOE and Hanford contractors do not have authority to either derivatively classify or declassify other than Hanford program originated information. As required in DOE Order 5650.2B, the Office of Declassification, NN-52, will be requested to coordinate all requests for action that involve other agencies or sites.

A stakeholder meeting or other forum, such as the Hanford Advisory Board, shall be used to inform the public of the current document declassification status and to receive suggestions on how to improve the process.

Interested parties and the general public will be able to access the information on a personal computer at the USDOE Public Reading Room using a system such as Declassified Document Tracking System. It will also be possible to determine the status of document declassification on a real time basis as well as review the newly released documents. Hard copies of documents can be generated from the optical computer diskettes if requested.

8. My name is Bernice Mitchell from Richland. My question is, with all of this paperwork that we have, how many of these people who are responsible for it, have read it all? Another thing is, why haven't we learned by now to condense some of these things rather than have all of these reams of paper? With a feasibility study, do you do it before or after you did that (tentative) agreement? (Bernice Mitchell)

Response: The agencies have initiated aggressive action over the past several years to reduce the amount of paperwork that is required during the cleanup effort. Currently the agencies are piloting several projects to develop administrative packages that meet the intent of multiple laws versus individual plans for each law. We agree that far too much paper is generated in decision processes here at Hanford and are serious in our efforts to find ways to more efficiently make decisions and get work done. Concerns regarding the feasibility study were addressed in the Environmental Restoration Disposal Facility Responsiveness Summary.

9. My name is Dan Bell and I have a question. Behind 220 West Ray Docks...we made a dry well, two dry wells, it's out of ties and craft paper on top of that we put a steel plate and a riser, so eventually I was transferred to another building and I come back and here there's a

tanker from 300 Area and I don't know how many loads and it's hot waste from 300 Area was dumped in that dry well. They thought a tank was down there. I said there's no tank, it's just sand down there because I helped build the dry well so I know so you better stop. Because I know doggone well it's hot and awful hot. It's a dry well behind 220 West Ray Docks. So if you want to find hot stuff it's there. If they haven't done so yet. (Dan Bell)

Response: This comment is appreciated and is consistent with our efforts to obtain historical information relative to ensuring that suspect waste sites are investigated. This information has been provided to the operable unit task lead to investigate as a part of the remedial investigation. Mr. Bell may be contacted to gain additional information relative to his knowledge of this site.

10. I am Harry Olsen. I wonder if the splitting of the atom is something that helped society in the world. Did it help me? Did it help you? Did it help the United States, Europe and the whole world? I just happened to be in San Juan, Puerto Rico the day the first atomic bomb was falling at Hiroshima. My gut feeling is, it seems to me that it is too expensive to monkey this up. You can't control it, it has to be done in secret. I think we could find another source of energy. It is a very dangerous thing to use. The United States has been one of the first nations that ever has dropped it. Thank you. (Harry Olsen)

Response: Thank you for your comment.

11. Hi, my name is Edgar Ulbricht, I am representing both myself and a small group of people that we call ourselves the River Hermit Project. The new human vocation is to heal the earth, we can only heal that which we love, we can only love that which we know, we can only know that which we touch. I think one of the ways that we could save a lot of money is if Bechtel, and I assume that they have set up a private corporation or separation corporations. Why don't all of the supervisors get out there and do some cleanup? That way they could really come and touch with what needs to be done. And that goes back to my statement we can only heal what we love. We can love what we know, we can only know what we touch. It would be real nice may be the whole panel would go out there with a tyvek suit and start doing up some cleanup because we are running some wastes into the river and that is not a good thing. The other thing that I will tell you is that part of our project we're doing is a fasting. I imagine that some of you are Christians, some of you are Buddhist, some of you are whatever some of you even believe that you have a mortal sole. I don't know if very many in the panel do, but imagine that one of you do. And for the one person I will tell you I am fasting one day a week because I realize that some day you will have to get up before your God and you will say, "Well I did a real good job, I worked for this bureaucratic outfit. I hid behind all the bureaucratic stuff that I am supposed to hide behind. I followed all the rules and you know, God, we f__ed up badly. And I am sorry." (Edgar Ulbricht)

Response: Over the next several years the cleanup process will be shifting from administrative work to actual field work. This will require a shift in the type of employee needed to carry out the cleanup

work (a shift away from planning and investigation to construction and more field-oriented workforces).

See also response to comment 53.

12. Regarding the exit interview of John Tuck from being under Secretary of Energy during George Bush's administration. Tuck said that his department knew there wouldn't be enough money to obey it's cleanup contracts with Colorado and other states. Tuck said that the compliance agreements including a 1990 pact covering Rocky Flats was signed largely to preserve bomb making capabilities which really didn't pan out anyhow because they had other safety problems, but they got into this because of this and not to meet environmental promises. We got into the compliance agreements in my view because we had to stay in production to produce the requirements for the military he said. Tuck's admission strikes, this is reading the newspaper article, admissions strike at the heart of the Energy Department's credibility. As Rocky Flats opens talks with hopes of persuading the United States Environmental Protection Agency and Colorado Health Department to renegotiate it's cleanup agreement. We have had renegotiation after renegotiation and there's the constant worry particularly now with the reduced funding that in fact the department will not be able to meet the milestones if not in '95 that there will be degradation in our ability to meet the outyear milestones that are coming down. And it's critically important to the health of the river and the health of the Northwest that there should be no taint associated with the quality of the Columbia River. And so I think that tackling efficiency challenges is fine if you have a chance of meeting the mark with the reduced funding. That's fine. I'm not in favor of spending more than you need to, but sometimes you squish so much that in fact it doesn't work. There's a story about the peasant who was starving but he's feeding his horse and he goes to his neighbor and says what should I do. He says well the horse is doing fine, your family's not doing so fine, so take some of the food from the horse and give it to the family. So he cut his horse's rations by one-half and it worked. The horse still plowed away. He said, hey, this is a good idea so he took another half off and it kept on working and he did it a couple of more times and things didn't work so well. His neighbor came over and says how's it doing. So this fellow told him the story. He says just as I was getting it really tapered down, the horse died and I'm afraid with cleanup we're going to keep on screwing down the diet, the support for all of this, the food for cleanup so much that we're going to hurt the Northwest by image and by possibly by hurting the health of its' economy and possibly by hurting the health of the people living in and around Hanford. (Dick Belsey, Oregon Hanford Waste Board and Hanford Advisory Board member)

Response: The mission for Hanford centers around environmental restoration and waste management; Hanford no longer has a production mission. The Tri-Party Agreement sets the schedule for compliance with the laws that govern the cleanup mission. The USDOE does not agree with Mr. Tuck's allegations. See responses to comments 11, 39, 40, 44, and 64-66 for funding issues. See response to comment 5 for values guiding the negotiations, including protection of the Columbia River.

2.1 MODEL TOXICS CONTROL ACT

- 13. Washington's Model Toxics Control Act has a process for dealing with individual risks. The public supports this process and it should be used to get on with cleanup. (Doris Cellarius, Cascade Chapter, Sierra Club)

Response: Ecology, EPA and USDOE have recently agreed that the Model Toxics Control Act process and cleanup standards will apply as Applicable, Relevant and Appropriate Requirements in Hanford proposed plans. Model Toxics Control Act cleanup standards will also apply at Hanford through Ecology's adoption of Model Toxics Control Act as the state Resource Conservation and Recovery Act corrective action authority and our adoption of Model Toxics Control Act cleanup levels to define Resource Conservation and Recovery Act clean closure.

- 14. My name is Scott Stumbaugh. I am a Seattle resident. I am truly saddened to hear what I just heard about the Westinghouse Corporation going to lobby representatives to lower the standard for allowable hazardous waste. I hope that doesn't happen. So in that same vein, I think the (Model) Toxic Control Act regulations for the cleanup standards at Hanford are the standards that ought to be used for the environmental restoration overall analysis. And they are good standards and they are there and they should be used. (Scott Stumbaugh)

Response: We believe your reference to the Toxic Control Act should be rather to the Model Toxics Control Act, Chapter 70.105D RCW, which was passed by the voters of the State of Washington in November, 1988. Chapter 173-340 WAC (Washington Administrative Code) implements this act and describes the standards that should be administered in the cleanup of hazardous waste sites. The Model Toxics Control Act and the WAC are applicable throughout the State of Washington and this includes the Hanford Site. The Model Toxics Control Act was developed by the Washington State legislature and it is administered through the WAC by the Washington State Department of Ecology. The WAC has gone through an extensive review with input from citizens of the State of Washington. Cleanup standards for hazardous substances are included within the WAC. Presently, the Washington State Department of Health is in the process of developing radiation standards, with input from citizens of the State of Washington, that would be applicable through the Model Toxics Control Act as Applicable, Relevant and Appropriate Requirements. When applicable, the standards in the Model Toxics Control Act will be applied at Hanford during the cleanup of hazardous waste sites.

See also response to comment 13.

- 15. I wish to stress my opinion that we should follow Model Toxics Control Act guidelines regarding the standards for cleanup and proceed to start the cleanup immediately. Secondly, it is important to set goals and deadlines to lower current radiation and chemical exposures along the Hanford Reach including capping the N Area cribs. Obviously, the N-Springs area needs attention right away to begin to remedy the leaking of strontium into the river and ground water. USDOE must be pressured to honor its obligations to request the necessary funds. As a citizen

of Washington, I'm angry, upset and concerned for the future of this incredible area. (Nancy Rerucha)

Response: When applicable, the Model Toxics Control Act standards will be applied at Hanford. One of the objectives of our Environmental Restoration Refocusing negotiations was to establish target dates and milestones that will result in the reduction of radiation and chemical exposures along the Columbia River adjacent to the N Area. Many of the milestones tied to the N Area Pilot Project in your Environmental Restoration Refocusing packet are pertinent to reducing these actual and potential exposures. These milestones include M-16-12 and M-16-12A which address skyshine and milestones M-16-12C, M-16-12D and M-16-12E which address the Expedited Response Action at N-Springs. Closure plans for 1301-N and 1325-N cribs will be submitted under Milestone M-15-12B. The closure plans will determine type and extent of closure or remediation which will be conducted to reduce or eliminate chemical and/or radioactive hazards at the cribs.

See also responses to comments 13, 14 and 90.

16. My name is Kerry Canfield. I want to start by quoting from an article by Betty Tabbutt of the Washington Environmental Council. There is a danger paralyzing delay when the agencies demand to know from the public exactly what clean means. Especially when that question is asked before any action takes place. The Department of Ecology must aggressively and creatively use the state Model Toxics Control Act. The regulations under Model Toxics Control Act anticipated the danger of bogging down on the question of how clean is clean. The regulations set cleanup standards that will allow for unrestricted use of sites with minimal reliance on institutional controls. These standards are not to be negotiated on a site by site basis. They must be met if technically feasible. They are not negotiable because of cost. The Model Toxics Control Act also anticipated that in complex sites there might not be adequate information at the start of the cleanup to plan the remedial action that will obtain cleanup standards. Therefore, it is possible to embark on a phased cleanup or to adjust the time of compliance. This flexibility was intentional to encourage action to start while preserving the cleanup standards. With Hanford, the public cannot allow the agencies to bog down in the question of how clean is clean. We must resist any attempt to weaken the Model Toxics Control Act standards before remedial action even begins. We must keep the focus on the fact that the site is high contaminated and we must insist that cleanup start immediately. Thanks for tonight's presentation, it was fairly direct and clear. I do think however that the distinction between environmental restoration and cleanup is at best a bureaucratic one and in a holistic one not valid. I tried to read this booklet, but I just couldn't follow it. Maybe I should try harder. But it strikes me the document is simply not very meaningful and this causes me to wonder about the agreement itself. Not that any of these documents are meaningless, just that they comprise such highly evolved bureaucracies that I wonder who really understands at all. I had a very hard time trying to tie things together to get some sense of the true process. Of course, it is not my job. However, I have an equally hard time believing that someone executive person or body whose job it is, is

actually keeping track of what all this says and insuring that it is internally consistent and really mean something. And this is just one little pamphlet. I suppose there are rooms full of paper regarding these matters. Is this why cleanup progressing so slowly? Because the major portion of everyone's job consists simply of simply figuring out what myriads of documents like this are actually saying or supposed to be saying. Then as far as I could determine most of the so called milestones seem to consist merely of making assessments, reports, or plans. If I understand correctly tonight we are commenting on a plan, for a plan. Very few of these milestones, at least up to the point to which I read, seem to indicate achievement of real physical act of cleanup. Why? Even the assessments, reports and plans seem to be not due for another one to four years. Why again? I am sorry, I just don't get it. I am sorry if I am ungenerous, but I'm even moved to wonder if the concerned departments are simply biding their time, banking on the new Republican congress to call the whole thing off and put Hanford back in the defense production. I'll put it purely and simply. Do we have problems or don't we? Is there contamination or isn't there? I have the overwhelming impression that there is. If this contamination poses as a hazard, the actual numbers are irrelevant, why are we still going around and around on this two years after the first Tri-Party Agreement was signed. Why are negotiating? As I have said at other times if a particular proposed change and policy or procedure will render conditions more hazardous or dangers then they are at present, why should anyone consent to that proposal? If a proposed change would decrease the hazard or danger, why would anyone object? Is this cleanup somebody's full time job? If it is, I suggest (a) closing the various departments of obsuration at their various locations, (b) recycling all of this damn "CYA" paperwork and (c) doing that job. Thanks for listening. (Kerry Canfield)

Response: Your comment has many components which address a variety of issues. We will attempt to respond to the principle issues raised. The first issue is the application of the Model Toxics Control Act to the Hanford Site. The Model Toxics Control Act cleanup standards will be applied to waste sites at Hanford.

The second issue is that all the documents are meaningful to bureaucracies but meaningless to the general public. Many documents generated are in response to regulatory requirements mandated by the federal and state governments. The language and content in these documents becomes technical when describing activities or requirements in a complicated cleanup. We are striving to make these documents easier to read and more understandable.

The third issue questions whether the generation and review of documents is the reason cleanup progresses so slowly. The generation and review of documents certainly can be time consuming. The documents generated by the USDOE and their contractors pursuant to Comprehensive Environmental Response, Compensation and Liability Act include:

--Preliminary Assessment/Site Investigation which identifies releases needing further investigation;

--Remedial Investigation which characterize nature, extent, and the rate of the release;

--Feasibility Study which evaluates cleanup alternatives and identifies a preferred remedy; and

--Remedial Design/Remedial Action which design and implement the chosen remedy.

EPA and Ecology review these documents for accuracy and completeness as well as compliance with applicable federal and/or state law. If the documents do not satisfactorily meet the criteria, revisions are required. The document is then resubmitted for review and approval/modification. USDOE, EPA, and Ecology are working together to reduce these review cycles, and move more quickly to cleanup. Significant progress has been made in reducing time spent reviewing and writing cleanup documents.

The final issue questioned milestones, the content of the milestones in relation to actual cleanup, the timeline for meeting these milestones, and the reasons for renegotiating milestones. Milestones represent agreements between USDOE, EPA, and Ecology to accomplish activities as outlined in the Tri-Party Agreement. Milestone wording is intended to describe agreed to schedules to achieve cleanup in a realistic timeframe. If the milestone is not completed as scheduled, the regulators may use enforcement actions as provided by law. Renegotiation occurs when a change is needed to the language within the Tri-Party Agreement. Renegotiations can be the result of new information, technical, or other occurrences that effect the schedules.

See also response to comment 8.

2.2 PUBLIC INVOLVEMENT

17. My name's Gene Weisskopf. One of my questions is how do I get more information. You've got the little (*Hanford*) *Update* that gets mailed out informally. Is any of this information available in sort of a digital format? So if we want to search for our favorite contaminant we can do that? Is there a way to get it on mass without getting giant documents? (Gene Weisskopf)

Response: The Tri-Party Agreement Public Information Repositories, located in Portland, Seattle, Richland and Spokane have computers with a database of the index of the following Hanford cleanup documents: (1) Administrative Record files (text will be available in microfilm); (2) Public Information Repository documents (hard copy text available); and (3) a selected group of publicly-cleared environmental documents that are not in the Administrative Record or Public Information Repositories (a phone number is provided for ordering copies of documents). We currently do not have a way for people to search for contaminants. If you need information on Hanford, there also is a toll-free number to call--1-800-321-2008. An Ecology staff member will answer and direct your request to the appropriate agency.

18. My name is Paul Richmond. I walked into the media room today at about 6:30 p.m. and I saw a nice flyer that had been apparently circulated to most of the community telling us that this hearing was happening. Now the problem was, before I walked into that room, I hadn't seen that flyer. I am someone who goes to a lot of meetings follows the news very regularly, and involved in production of a lot of the news. I hadn't heard of this meeting. I find that very disturbing proposition especially given the toxicity of a lot of the chemicals involved. Obviously I am not in any position to have done any type of thorough analysis nor could I expect anyone in the room to be have done any type of thorough analysis and I feel that this really shows a lot in terms of why you do not have a large portion of citizenry here at this point. This meeting was not something which the public was aware of. And I feel that there should be additional meetings and additional opportunity for public input and for members of the public to be informed upon.
(Paul Richmond)

Response: Prior to the public meetings, USDOE, EPA and Ecology provided the tentative agreement on Environmental Restoration Refocusing to the "highly-interested" members on the Hanford Cleanup mailing list (approximately 1,500). We also provided a focus sheet outlining the issues in a summary form. The three parties would be happy to include you on the mailing list to make sure you receive documents in the future. If you would like to be on the mailing list, call the Hanford Cleanup toll-free line at 1-800-321-2008.

In addition, the media was notified of the public comment period and public meetings in two separate news releases. Advertisements were placed on the radio and in the newspapers in Seattle, Portland, the Tri-Cities, Hood River (and surrounding Columbia River communities) and Spokane. We appreciate any suggestions you have to try and reach the general public with information and issues on Hanford cleanup.

19. My name is Ross Tewksbury and I think that this time you did a somewhat better job publicizing than in the past. It was even worse in the past. I did hear (about the public comment period and meeting) on the radio. I also got (information since) I am on the mailing list. And I got multiple reminders of (of the public comment period and public meeting). So that really helped a lot. So I wish you would continue that, but I think that there is an area that you kind of miss out on. And I think a lot of the people who are most interested in (Hanford issues) tend to listen to radio stations or read some publications that are not necessarily the main stream types, such as KBOO or *Willamette Week*. I think if you did more of a effort in those kinds of areas that you would get more people involved that were really interested in it and so I think you made some progress, but you still got quite a bit of a ways to go. (Ross Tewksbury)

Response: We appreciate your suggestions and are looking into using these mediums to get the word out on public comment period opportunities and public meetings.

See also response to comment 18.

20. I was wondering what the separate agencies do here. If they call up any of the agencies, news media and or perhaps flop out your database so these people can be reached, you know with your money possibly since it's our money. Does any of the separate groups here, what is it, Environmental Protection Agency, Washington Department of Ecology, do any of you folks care enough about the constituency to let them know what's going on or do you just depend on the Department of Energy to pass the buck? (Unknown Commenter)

Response: The three parties work together and independently to provide information to the public on Hanford issues. Each one of the agencies do care about keeping the public at large informed and involved. Together, the three parties keep the Hanford Advisory Board informed and involved in Hanford issues and rely on their recommendations prior to making decisions. Individually, Ecology meets with highly-interested members of the public to make sure they are kept up to date on Hanford issues and agency views. EPA and USDOE also conduct discussions with individuals, tribes and key interest groups. If you would like to keep up to date on issues, make sure you are included on the Hanford Cleanup mailing list. The Hanford Cleanup toll-free line at 1-800-321-2008 will provide you with information on how to be included on the mailing list.

21. My name's Ross Tewksbury. I think that you should do more to get on the calendars in the *Oregonian*. You did do a better job with your mailings. People that were on the mailing list were getting more multiple reminders of meeting. Also, I think in future newspaper ads you need to include the key issues besides just the technical language. Anybody looking at some of the ads that I've seen in the past would be very hard to really get a grasp of what was happening and it would look extremely boring. (Ross Tewksbury)

Response: We'll try harder to provide the right kind of information in newspapers and advertisements.

22. We reside near one of the most dangerous polluted sites on the planet. Every effort should be made to educate and inform the people of the situation and the importance of participation and knowledge to make good decisions now and in the future. All information should be balanced between government, state, citizen, independent science perspectives. (Lynn Sims)

Response: The three parties strive to provide the most current information on Hanford cleanup to the public.

23. I've noticed that there's a lot of paperwork (provided at the public meetings); nice maps and colored graphs and all that. I wondered if perhaps next time we could get a colored graph on much energy is spent, how much money is being spent on sound people. In different places I've seen buffets and waiters walking around, all the different money that's being spent renting this place. How much money is being spent notifying the public? You know if you could even get that little sliver on that pie compared to everything else it would be interesting. Thank you. (Unknown Commenter)

Response: In a report recently submitted to the Hanford Advisory Board Public Involvement Working group, the following represents USDOE's total public involvement costs for Tri-Party Agreement public meetings held in 1994 (including N-Springs meetings (January/February 1994), Environmental Restoration Disposal Facility meetings (January/February 1994), Tri-Party Agreement Annual Meetings (May 1994), Columbia River/Ground water workshops (June 1994), Environmental Restoration/Environmental Restoration Disposal Facility meetings (October 1994). This does not include labor or travel costs.

Audiovisual support:	\$5,433.00
Advertising (radio and newspaper):	\$132,410.93
Facility Rental:	\$3,363.26
Presentation materials:	\$2,625.00
Handouts at meetings:	\$18,145.62
Public notices and draft documents: (distributed prior to the public meeting)	\$74,041.78

2.3 K AREA WATER TREATMENT BASINS

24. Why are the Yakamas and the Department of Energy using the basins as a good place to raise fish when there are other places farther on up the river and below. I went up to the Yakamas to help me raise fish in these rivers here, Hood River, the big White Salmon, Little White Salmon, Klickitat and these other rivers, but they paid no attention to me because I told them there would be one dam for the fish to go over and then they can come back. They wouldn't have to go through all that water upriver. Yet they feel it's a good idea to plant fish or raise fish in a place where they have made parts for the atomic bomb and made bombs and even made plutonium or whatever. The more I study and travel around this country to other troubled reservations and other troubled parts of this country where people are having the problem with nuclear waste and health problems because there's something that was overlooked and never brought out to the people. The more concerned I get, I come back to thinking about the Yakamas and what's happening here at Hanford. They say it's clean. How clean? You know, we're always told something after a fact. Why can't it be checked and be fairly looked at before it even happens? It seems when I look at Yakama and some of these tribal governments, the only thing they ever know is that green stuff. They can put it in their hands and the people they can talk to put more of it in their hands because they're all elected officials. Once they get into that office, they forget who they're representing. They forget the children. They forget the elders and they forget the people along the river, but when the time comes for them to be re-elected, they're here talking to us. After that's over, they forget about us. They forget about what kind of water's coming down the river. I've asked questions about having tests behind every dam. I've asked about the water quality

many times and I've never gotten no answer, but yet I see young people in the summertime, you can't keep them from it, I see thousands of kids out here and I just wonder one of these days when is the time going to come when I might see one of those kids turn out like the fish I caught. I still have pictures of that fish and it's scary. This is what I'm concerned about is where you're raising that fish. It sounds good, you make it sound good, but what's in the flesh of that fish when we have to eat it and we take it and we catch it and we sell it to people to feed to their families. That's what concerns me. That's the same way I would talk to the Yakamas because this is my home here and this river here is my concern and the people that live on both sides and the children. I'm speaking because the children can't speak for themselves, neither can the elders. That's why I travel. I don't get paid for it like a Yakama Tribal Councilman or a Warm Springs Tribal Councilman. I travel because I'm concerned and my way's paid, a lot of times publicly. That's my concern right there is why. Why was that place picked? We have rivers here. I went down to the Coast above Vancouver to schools up there where little third graders are raising thousands of fish in a stream that's going right by their schools and they're successful and this is what I want to see here. It falls on deaf ears, but it sure could be made public and brought out what could be done at Hanford and I don't like it. (Chief John Jackson, Columbia River Tribe)

Response: The agencies are currently conducting a study to determine the effects of Hanford operations on the Columbia River and its sediments. As to the commenter's specific concerns on fish rearing projects on the Hanford Site, these projects are being conducted at facilities which were not contaminated by Hanford actions. We view them as beneficial and hope for their success.

See also response to comment 137.

25. My name is Chief Jackson. I'm one of the Columbia River Chiefs and I'm also a member of the High End National Council and my concern is that when one of the gentlemen was talking about rearing fish in these ponds up at Hanford. I've asked the tribe about this issue before and have never had a clear response from them or anything on how it's done and how it's handled. It concerned me very much (regarding) the river because we're people that live along the river. We've been here for generations. My people's been here. And there's not very much ever said about the river people. And not really a concern looked at on what river people are dealing with when they deal with the fish. They're always dealing with fish. It's their livelihood. Their way of life and their diet. And in the past few years, I've noticed that many of the people along the Columbia River, as well as on the reservations, have come down with cancer. And now, it was a big concern of mine because a few years back I've caught fish that were practically looked like they were mutilated with hot scalding water, but the fish were alive, but they didn't have no eyes. I made a lot of noise about it, everywhere I've gone, and I've never got any answers out of that even from the tribe. The tribe destroyed the fish even before it got to the laboratory and that concerned me very much because my people are always fishing and they have a lot of use for this water for this river. And it concerns me when I can see where Hanford is because when I travel to

the East or to the South, in New Mexico, dealing with the Los Alamos issue and other plants like Savannah River, Nevada and up in the New York area, I talk to a lot of people and I hear a lot of people their views on what nuclear waste and nuclear exposure is and what it does and what happens to people. I've watched and seen a lot of the people down in New Mexico and Arizona, the children. What happened to the children. It's very pitiful. They don't show that publicly, you don't know nothing about it. You only see it if you went down there and it would make you think again. What if one of those children were your children because they're isolated. They're locked up and put away where no one will see them. This is a concern I have for my people along this river because they won't go to the reservation or anywhere else, this is their home. This is their livelihood. But yet as one of the Chiefs I'm concerned for everyone along the river, all people. It's part of my way because I've been selected to live that life, as a leader for my people. And I don't just choose my people to feel this way about. I feel this way about all children. It's been a big concern to me about the river and the water quality and the children I see, the young people I see, using it everyday and we have to fish to get that fish. It's part of our diet, and our livelihood. This is what concerns me is why did they pick the cooling ponds of Hanford to rear them fish when there's a lot of other habitat in other areas that they could use instead of using Hanford. I totally disagree with this and I'm totally at odds with the tribe for feeling and saying that it could be all right. To me it doesn't feel right and I wouldn't want to see anybody, not even my worst enemy, eat something that I believe that comes from that contaminated area. In the past few years, when I get involved with these nuclear issues, since I caught the fish that were badly mutilated and I was never given a correct answer for it of what happened to them, I've been concerned ever since and I started traveling and then I got back and I started hearing about all these releases out of Hanford. Where all these releases went, how much of a radius it took and when it come down, what did it effect? And that's just the way I look at Hanford and the river that runs by it. And whatever is there right at that plant and that whole area there, this is what concerns me is why? You know, I'm not a person that feels just for myself. I've traveled this country and I've traveled to Hawaii, I've traveled to a lot of places where I've seen people suffer. I've seen children and I've seen what happens to people when they're not told what's happening around them or what's taken place and they're kept in the dark from it. This is what concerns me. (Chief John Jackson, Columbia River Tribe)

Response: The agencies have committed to making protection of the Columbia River and the Habitat associated with it one of our top priorities. The new agreement is designed to help achieve this goal.

See also response to comment 24.

26. What (I'm concerned about) is that fish being reared in this whole area here and I've known from the past that this whole area here has had releases. Where did the releases go? Can you tell me and assure me that none of that came down into the very same area? None of that area is contaminated and the soil and those areas there where the fish is being reared has any kind of contamination or the waterway in where the

fish is being released. This is what I'm looking at. You know, we just buried a guy here this summer who lost all his hair. He was a close relative of mine who lived along this river and ate fish. He's the same age as I am. He lost all his hair and he died and we buried him here this summer. There were others that have come down and died the same way. You know I've lost relatives from cancer. My mother from thyroid cancer, my aunt, my uncle and this latest one, this summer. This is why I'm concerned. (Chief John Jackson, Columbia River Tribe)

Response: See response to comment 24.

2.4 GENERAL ENVIRONMENTAL RESTORATION ISSUES

27. I'm Al Conklin, Washington State Department of Health. One of the requirements of the Comprehensive Environmental Response, Compensation and Liability Act is to meet the Applicable, Relevant and Appropriate Requirements and one of the Applicable, Relevant and Appropriate Requirements that USDOE has committed to meet are the standards that are contained in the Washington Administrative Codes for controlling radionuclides which would include best available radionuclide control technology. I share the concern over dust control. One of the things that we will have to be shown to agree that the Applicable, Relevant and Appropriate Requirements are being met are that there are adequate controls being made to control the spread of contaminated dirt. There is also an issue of continuous air monitors. I believe those will not be continuous air monitors, but will instead be air samplers. If they're going to set up continuous air monitors, they do have an instantaneous response. I've never seen those out on the general environment. If they're going to do that, fine. If you set up air samplers, though generally those results are not back for, I mean you can get a result back in a week or so, something like that, but it's basically after the fact. So one of the reasons for the control technology standard is to make sure that the releases are controlled before they get to the point where you have to find them in the environment. The only other point I have is that one of the under waste acceptance criteria you mentioned there would be no transuranics that would be disposed of in this area. Having worked in the 200 Area for a long time, I really am familiar with 200 Area waste, but I assume that there's a lot of similarities in the 100 Areas. There are transuranics mixed in the waste. The difference in definitions is the difference between transuranics and transuranic waste. I think what you mean is there will be transuranics that will go in that waste under 100 nanocuries per gram. It will not be transuranic waste. So, with the definition you just need to be careful. (Al Conklin, Washington State Department of Health)

Response: There is presently a Memorandum-of-Understanding between the Washington State Department of Ecology and the Washington State Department of Health that provides for review of documents by both agencies where concerns and authorities overlap. The Washington State Department of Health will have the opportunity to review documents pertinent to radionuclides in the environment and, in particular, air issues. The Washington State Department of Health will also be establishing radiation standards that will be applied as Applicable,

44-119-161

Relevant and Appropriate Requirements for cleanup purposes under the Model Toxics Control Act. Your comment on transuranics and the 100 nanocuries per gram criteria are correct, and are noted.

28. I'm Dirk Dunning with the State of Oregon Department of Energy. Mr. Thomas Grumbly who's the Manager of Environmental Restoration and Waste Management...He's about a third level back at U.S. Department of Energy Headquarters. In *Nature* magazine here, not this past issue, but the one prior I believe, was quoted with comments basically to the effect that he didn't believe that the Hanford or any of the U.S. Department of Energy cleanups could occur within the timeframes that they have planned. The technology development didn't exist and that was required before those cleanups could occur and that he was basically encouraging a delay in those cleanups until such time as that technology did exist. Basically, I'd like an answer to that question and how it relates to the agreement that we have now, but also what might be done in terms of responding in the other direction of focussing the dollars on identifying the technologies that are needed and the test programs that are necessary in order to allow some of these cleanups to go forward. In particular, one of the comments that we had over the last year was along the lines on technology development of doing some things in some of the particularly highly radioactive areas such as the 1301 or 1325 trenches at the N Reactor complex to find out what kind of equipment is necessary and how it might be done expecting that equipment in it's first couple of prototypes will probably fail in the high radiation fields. That obviously, this is a program that's never been attempted before. It's a cleanup of a complexity that no one has ever tried to do. (Dirk Dunning, state of Oregon Department of Energy)

Response: It is true that some of the cleanup schedules within the Tri-Party Agreement have been established knowing that necessary waste management methodologies are not currently available. For example, schedules to retrieve single-shell tank waste have been established knowing that retrieval techniques and equipment require a number of years of developmental work. It has been our intent to set reasonable schedules which allow sufficient time for these developmental activities. It is also our intent that these schedules will drive technology development. We expect that they will be met.

In as much as focusing technology development dollars is concerned, the three parties, Hanford contractors, tribes and other stakeholder representatives have recently formed a Site Technology Coordination Group here at Hanford as a site-specific extension of USDOE's national technology development activities. It is this group's express purpose to identify and aid the development of waste technologies here at Hanford as they are needed.

29. This letter is in response to the October 1994 announcement from your agencies regarding the Tentative Agreement on the Environmental Restoration Refocusing of the Tri-Party Agreement negotiations at Hanford. While the U.S. Fish and Wildlife Service (Service) is supportive of the refocusing of the cleanup efforts at Hanford to waste sites along the Columbia River, we do have significant concerns regarding how natural resource issues are presently addressed in the

cleanup process. The Service submits the following comments for your consideration during the finalization of the agreement: Under the National Contingency Plan, USDOE as the land manager of the Hanford Reservation is the primary trustee for natural resources on the site. However, the Department of the Interior shares co-trusteeship with USDOE for migratory birds, andranamous fish and endangered species on the Hanford Reservation. Other federal, state (i.e., Washington State Department of Ecology and tribal natural resource trustees also share co-trusteeship with USDOE for specific natural resources. Although both USDOE and Ecology, as trustees, have a regulatory obligation to protect and enhance the natural resources at Hanford, many of their trustee responsibilities have not been addressed in the cleanup progress to date. Cleanup of Hanford, as it is currently being conducted, will eliminate high quality habitat and, therefore, preclude important options for future use of the site for fish and wildlife resources and habitat protection. Recent actions such as the siting of the Environmental Restoration Disposal Facility exemplify the absence of consideration for environmental and habitat factors, and failure to consult with other natural resource trustees early in the project development process. The Environmental Restoration Disposal Facility scoping document, available for public review (Document number DOE-RL-93-101, revision 0) proposed a single site which would eliminate six square miles of the highest quality mature shrub-steppe habitat on the Hanford Reservation. Mitigation for habitat loss was limited to a single vague sentence about mitigating with habitat restoration. As another example, consideration has not been given to cumulative impacts from multiple projects. Several developments are currently planned for the 200 Area plateau, including the Environmental Restoration Disposal Facility, the BC Crib site, the Tank Waste Remediation System and several others. The 200 Area plateau is the location of the highest quality mature shrub-steppe habitat on the Hanford Reservation. This habitat is extremely limited in the state, and is irreplaceable. In-kind mitigation is not an option for the destruction of this habitat because comparable habitat does not exist at Hanford. Furthermore, restoration of degraded habitat is not an suitable option because those species requiring mature shrub-steppe habitat will be eliminated by the time restoration efforts product mature shrubs. An irreplaceable ecosystem may be eliminated by the cumulative impacts of these projects. The failure to address environmental regulations (i.e., National Environmental Policy Act), to minimize environmental impacts, to consult with natural resource agencies early in the project development phase, and to retain future site use options for natural resource management is often justified with the argument that the Tri-Party Agreement milestones must be met. This justification is neither acceptable nor appropriate. Hazardous waste cleanups can be accomplished in an efficient and environmentally sound manner. To do so requires that the environmental and natural resource concerns be addressed from the very beginning of project development and that they are recognized as an integral part of the cleanup process. Thus, it is critical that the Tri-Party Agreement milestones be renegotiated to permit adequate time and funding to address environmental issues throughout the entire cleanup process, including environmental site evaluations, planning and implementation of mitigation and restoration, and consultation with natural resource trustees. As successful restoration of a site may take

five to ten years or more to accomplish, the milestones must include the funds needed to accomplish environmental goals consistent with the natural resource trusteeship responsibilities of Energy. The Service requests that all parties in the going Tri-Party Agreement negotiations seek milestone extensions or adjustments to enable the Hanford cleanup to proceed in a more environmentally responsible manner. (David Frederick, U.S. Fish and Wildlife Service)

Response: Ecology, EPA and USDOE agree with your concern that decision-making at Hanford today is far too "piecemeal", and that an integrated management system must be established which is more considerate of overall environmental impacts and interfaces between projects. The three agencies are currently working with one another to establish such a system, and have asked that habitat loss/protection be incorporated for consideration as a basic key value. We also note that with the formation of the Hanford Natural Resource Trustee Council an avenue has been established through which the three parties can work with the trustees to ensure that information important to the trustees is provided with adequate time for consideration throughout the cleanup process.

30. I would like to go on record as saying I would not like agriculture to be considered for any of that land for the simple reason that ag people seem to be now selling off some of the land that they have for housing projects so I don't see any need to expand land for them. (Bernice Mitchell)

Response: Ultimate uses of the land are outside of the scope of the Tri-Party Agreement. Once cleanup is complete, the land will be made available for other uses through public, political, and established government processes.

31. I would propose, and I am quite serious about this, calling this the cleanup of the most poisonous and toxic substance known to man. Now that is what we are dealing with here. We are not cleaning up the environment or restoring it. We are dealing with substance and products here that we have generated that has the capacity to kill people for thousands of years. I mean that is serious stuff and it needs to be addressed in a real scary kind of way. Because it makes me real nervous. (Unknown Commenter)

Response: The Tri-Party agencies share your concern about the level of contamination at the Hanford Site. The Tentative Agreement for Environmental Restoration has attempted to refocus cleanup schedules and funding to address high priority contamination along the Columbia River. We hope to contain the spread of contamination, establish aggressive schedules to cleanup contaminated areas, and reduce the threat to human health and the environment.

32. I am Pat Herbert and I represent the Coho Coalition. We are a group of people in this state and sometimes we are joined by people in other states. We do civil disobedience at Hanford and we have encampments there every year. We make sure that we are there for the Nagasaki each year. There is a couple things that I would generally like to say about

the agreement. I think first of all something really unfair has happened to the public and that is that we are not really talking about cleanup. The USDOE is not talking about cleanup. They are talking about a more effective way to treat and store wastes for the country and possibly from other parts of the world. They (USDOE) said that (they will only accept) Hanford waste but that was only for the (Environmental Restoration) Disposal Facility. We have to keep that in mind. I think that it is really unfair that they haven't made that very clear to the public. Also, I think our group is concerned about the money that we are spending, when this country needs money in other areas. The largest amount of unemployed and homeless are now in this country I think is literally a crime. It's a crime to be spending the money we are spending at Hanford because if it was not being wasted but a lot of it is being wasted. We are spending endless amounts of time with reports and monitoring and pulling from all different people and different areas. It all takes money. It is not going into cleanup. And it is a waste and it is a crime. It is a crime. I think generally we would say that decommissioning the building is a good thing. There is a lot of water in the N Reactor. I guess there are stored rods there. There are other things that need to be taken out of that area because it is so close to the river. But I am totally against tearing down the buildings. Our group is not so sure that we think that we should be worried about the soil, tearing up the soil and bringing it to another area. The Hanford has been used for all kinds of dumping for years. The river has been dumped in for years. We shouldn't be surprised the figures that we are seeing now. I imagine that they were much higher many years ago. I think we should not try and put anything dangerous near the river that we know that there are underground streams that are going to carry it into the river. We need to be concerned about that. Maybe that is why we need the (Environmental Restoration) Disposal Facility to keep some of this stuff away from the river, but I am very much against removing the soil that is all ready there, spending the time and the money to do that. To put it into this facility. I think that a lot of the buildings we are talking about not in the 100 Areas but in other areas of tearing down and removing. We could consider using those buildings for storing drums, other kinds of materials. I don't think because they are contaminated we should be tearing them down. Also, I would like to comment on restoring the area for environmental beautification. A lot of this is a waste of time. This area is never going to be considered an area where people can come and where it is going to be clean. It will never be that way. This area is being cleaned up for treatment and storage of wastes. And the money that we spend to try and clean something up, to beautify it to the public is a waste of money. All the surveys, all of the reviews, all of the additions of plants, all the use of herbicide to control the edible plants in area that is suspect is a waste of money. Also, there are areas that we are concerned about things that are going on that we are not hearing about. We should be getting Environmental Impact Statements on things like the microbacteriological lab that has been started. There is a third laser unit that is starting to be built there. The public doesn't know a thing about it. How is this going to effect the environment? How is this experimenting with this bacteria, besides trying to get rid wastes what else are you going to do with these? How is it going to effect the environment. We haven't heard anything in

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this state and I don't think anywhere else in this country, very little does the public know about these. So these are our major concerns with this agreement. Thank you. (Pat Herbert, Coho Coalition)

Response: The commenter notes that the Environmental Restoration Disposal Facility may receive Hanford-only wastes, but the Hanford Site may still receive offsite generated wastes ("Its [USDOE's] talking about a more effective way to treat and store wastes for the country and possibly from other parts of the world. We don't know yet. I know tonight they said that this was only Hanford waste but that was only for the disposal facility"). This is correct.

The commenter expresses concern over the amount of time and money being expended without visible cleanup progress. A higher percentage of USDOE's Environmental Restoration budget will be spent on remediation than was previously planned.

The commenter appears to support the planned deactivation of the N Reactor and expresses concern over "stored rods there...[and] other things that need to be taken out of that area because it is so close to the river". There are no nuclear fuel rods stored at N Reactor, all were removed in 1989 and moved to the 100 K Area Fuel Storage Basins. However, radiologically contaminated water, sediments and hardware are still contained in the 105 N Fuel Basin and radiologically contaminated water is still contained in the 1300-N Emergency Dump Basin. There is also a potential for small quantities of radioactive fuel fragments and lithium targets or fragments thereof in the 105-N Fuel Storage Basin. The presence of these materials is the basis of prioritizing the deactivation of the facility.

The commenter is "very much against removing the soil that is all ready there, spending the time and the money to do that", i.e. moving contaminated soil to the Environmental Restoration Disposal Facility. Removal of contaminated soil has been chosen as the remedial technology for most of the sites after careful consideration and evaluation of a wide variety of remedial action alternatives through the feasibility study process. Proposed Plans for 100 Area soil remediation are presently being written by USDOE that have contaminated soil removal to the 200 Area (Environmental Restoration Disposal Facility) as the remedial technology selected. However, if site conditions are proven such that other technologies are better suited for reasons such as environmental impact, cultural impacts or cost effectiveness other technologies can be utilized through an "explanation of significant differences" to the Record of Decision and after public comment.

The commenter is against tearing down buildings and spending money on "beautification". The tentative agreement requires the decontamination and decommissioning (and dismantlement) of 100 Area buildings that no longer have a continuing mission in a timeframe consistent with the cleanup of the land. This is to support land release goals. In addition, the majority of the 100 Area structures (outside of N Area) have outlived their engineered life and may represent a hazard. Many must either be torn down or be upgraded (roofing, electrical, etc). The trustees for the natural resources are working with USDOE to define the

appropriate actions for resource restoration provisions under the Superfund Law.

See also response to comment 53.

33. I would like to adopt Gerald Pollet's quote of Betty Tabbutt's on how clean is clean? I am very concerned that the Hanford Advisory Board was asked so early to try to answer the question of how clean is clean. I think USDOE, presented some figures that were highly exaggerated. They were not based on actual work that they had done. They were highly inflated in terms of analysis and I also feel that there is a serious problem when you start a cleanup already trying to compromise the cleanup standards. I think that there is a point which you can show that something is technically feasible or something that is technically infeasible. But I don't believe that you should start a cleanup saying we can't clean it up to that standard. When you really don't know. (Cynthia Sarthou, Heart of America Northwest (comments also seconded by Katherine Crandall and Hilary Harding))

Response: We agree. The "how clean is clean" decision has not yet been made and will not be made until the Records of Decision are issued. "How clean is clean" will be a continuing discussion with the Hanford Advisory Board and the public will have an opportunity to provide input into the decision through the Records of Decision that are forthcoming for the 100 Area operable units. Under the removal option, it is simply a factor of how much soil is to be removed. However, the desire to bring the soil concentrations of radionuclides down as low as practicable must be balanced against environmental and cultural impacts of removing larger volumes of soil, exposure and safety considerations for workers, the desire to minimize the footprint of the disposal facility, managing costs involved with the analytical requirements associated with more stringent cleanup levels, and optimizing the return for the tax dollar expended.

34. Robert Oppenheimer said many years ago in his book, The Open Mind, "We know that the wages of secrecy are corruption. We know that in secrecy, error, undetected, will flourish and subvert." As a citizen, I would caution you not to subvert this cleanup as a coverup. The tank farms are the most dangerous threat to the public health and safety, the area along the river can wait. It is curious that the environmental restoration would be refocused into an area where there well may be evidence of previously unreported Class One events, or worse, major disasters of the type that destroyed Chernobyl and caused such extensive health damage. If there is buried out there a reactor core that suffered major damage in the forties and thus released alpha and beta to the environment, and it is exhumed, washed, sorted and reburied on the orders of some "Duke" whose fiefdom was part of the 100 Area and the documentation was quietly "buried" in Bellevue, no one except a few grinning fascists would ever really know. Our free society cannot survive must more of this behavior. What is dug up in the 100 Area and reburied in the Environmental Restoration Disposal Facility better not be old secrets. Neither is there any particular interest in preserving the financial welfare to and of the contractors that ran this place long after it should have been shut down. "...the wages of secrecy are

corruption." I doubt sincerely that the American taxpayer is going to write any more checks for that! (Curt Leslie)

Response: See response to comment 53.

35. If the technology is not yet available for cleanup, then use a double-lined holding area, repackage the leaking tanks (i.e., stop leaking to ground water and river), and do not spend more money on useless reports. When technology is available, use it. (Unknown Commenter)

Response: We agree that in the absence of needed final waste management technologies, the three parties need to act in order to halt contaminant migration, or to otherwise alleviate threats which may be posed by Hanford wastes on a case by case basis. We also agree that in doing so each of the three agencies needs to do everything it can to minimize bureaucratic paperwork, while still ensuring that actions taken are based on sound planning.

36. In the future, all creation of hazardous radioactive waste (i.e., reprocessing, deep burn, mixed oxides, commercial power) should be strictly limited or eliminated until we can clean up what we already have and guarantee safe storage for the next geologic age. (Lynn Sims)

Response: Hanford's production mission is over and the environmental restoration mission is underway. Any wastes generated through the cleanup process will be managed in accordance with appropriate regulations to ensure protection of human health and the environment.

37. We would like responses to what the impacts would be of eliminating extremely hazardous waste as a category and lower the toxicity level to 10 percent of what it is currently is for dangerous waste in terms of protection of human health and the environment as we clean up Hanford and dig up soils that we need to dig up and remove. Thank you. (Gerald Pollet, Heart of America Northwest)

Response: Cleanup standards will be determined at the Record of Decision stage. See also response to comment 13.

38. I think that USDOE needs to demand reductions from Hanford contractors of the strontium levels in the ground water which I guess are reported at 15,000 times the acceptable levels and if they accelerated the negotiated agreement which can be finalized as soon as possible. That is that much sooner that remedial action can happen and those high levels of strontium which are real health and safety threat to people and wildlife can be removed from the environment. (Scott Stumbaugh)

Response: USDOE is proceeding with implementation of the initial (50 gallons/per minute) pump and treat system per a September 23, 1994 EPA and Ecology Action Memorandum. This system will be operational by September 30, 1995 per Milestone M-16-12D. The effectiveness and efficiency of this system will be assessed in a letter report required by Milestone M-16-12E, which will be delivered by February 28, 1996. To a large extent, this report will help us determine the future use of pump and treat at N Area.

N Area strontium-90 concentrations appear to be highly variable. Since discharge to the 1301-N crib ceased in 1991, the highest measurement of strontium-90 has been 11,000 pCi/L. This is approximately 1,400 times the Federal Drinking Water Standard of 8 pCi/L.

2.5 BUDGET

- 39. I am deeply distressed to learn that funds allocated for toxic waste cleanup in Central Washington State have not been effectively put to use. Please bring to bear whatever authority you have to implement the rightful use of these tax-funded cleanup policies. (Dennis Catrell)

Response: The USDOE recognizes that the cost of business is too high at the Hanford Site. In recognition of this need for efficiency, the USDOE has agreed to trim the Fiscal Year 1995 Environmental Restoration budget by \$30,000,000 without cutting workscope. In addition, the Department of Energy agreed to a Cost Efficiency Initiative in 1993 that commits to saving one billion dollars over a five-year period (without a reduction in work deliverables).

Implementation of this Tentative Agreement will effect a change of focus for Environmental Restoration from waste site investigations to remedial design and remedial action. USDOE has also agreed to bring the EPA and Washington Department of Ecology early into the budget process. (Refer to the Tri-Party Agreement, dated January 1994, paragraphs 148 and 149.)

See also response to comment 53.

- 40. The progress to date on completed cleanup has been disappointing, and all possible initiatives for speeding up the process need to be pursued. In this respect, first and foremost, USDOE must aggressively seek to raise the level of budgeting not only for the work outlined in the proposed change to the Tri-Party Agreement, but also for speeding up the whole cleanup process. Certainly, it should not accept what has been reported as reduced funding for this work without strong representations to the Office of Management and Budget and Congress. Second, USDOE must seek assistance from the Executive Office of the President in requiring the U.S. Department of Defense to include funds in the Defense budget to share in the cleanup costs, especially in the cleanup of the high level wastes stored in the tank farm--the very wastes that stem from the production of weapons grade nuclear material during the cold war. This would be particularly timely and urgent to pursue if the new Congress moves to increase the Defense Budget and cut other budgets. And third, USDOE and the other Tri-Party agencies should be developing an information strategy dramatizing to the new Congress the grave human health and environmental consequences of not funding the budget needed to carry out the cleanup on an expedited timeframe. (Stuart and Mildred Chapin)

Response: At this time it appears that the amount of funding available for cleanup will be decreased. Therefore, the USDOE must pursue aggressive methods to get the most out of the cleanup dollar and to comply with Tri-Party Agreement requirements. In regards to defense sharing in the cost of the cleanup the process by which the Office of

Management and Budget and Congress allocates funding does not allow this to occur.

41. The Mountaineers want to note that little progress has been made on cleaning up the Reservation, although the government has spent almost \$7.5 billion since 1989. In a recent series of articles, the *Spokesman-Review* documented the incredible amount of waste and mismanagement which has occurred at the Reservation. According to those news stories, Assistant Energy Secretary Thomas Grumbly stated that he suspects that approximately one-third of the money spent on Hanford has been wasted. John Wagoner, the Energy Department's site manager at Hanford, states that as much as three-quarters of the \$450 million spent looking for ways to dispose of radioactive material has been wasted. The newspaper also reported that contractors spent millions of dollars trying to transform an aging plutonium plant into a waste processor after state regulators vetoed the idea. Clark Hodge, an engineer at the Reservation for twenty years was quoted in the newspaper as saying that the government has spent billions of dollars and hasn't gotten anything for the money spent. These are very serious charges, which are apparently conceded by federal and state officials and employees who work at the Reservation. The newspaper stories also detail lavish expenditures for chauffeur services, food, exorbitant legal fees and other expenditures which do not contribute anything to cleanup. It is apparent that "waste, fraud and abuse" are not limited to the Pentagon. In light of the extremely serious environmental and public safety concerns at the Reservation and the limited funds available for cleanup of atomic facilities throughout the country, the intolerable situation at the Hanford Reservation must be remedied through immediate and drastic action. (Craig Howley, the Mountaineers)

Response: See responses to comments 11 and 53.

42. You need to request and use efficiently an adequate budget to get this job done (for example, no more fancy roads, chauffeurs, employee rewards, etc.)! (John and Linda Jewell)

Response: See responses to comments 39 and 53.

43. The Board has serious concerns that budget shortfalls will delay critical cleanup activities such as accelerated ground water remediation and startup of soil remediation along the Columbia River, despite assurances to the contrary by the Tri-Parties. The Board will continue to monitor the manner in which the refocused Tri-Party Agreement carries out the explicit advice given the Tri-Parties by the Future Site Uses Working Group, the Tank Waste Task Force, and the Board itself. (Hanford Advisory Board)

Response: The agencies believe that by changing current practices, cleanup can be achieved within the present Environmental Restoration budget. The agencies commend the Board for their work on Environmental Restoration Refocusing and welcome their continued involvement.

44. One of the concerns heard tonight (in Doug's presentation at the Hood River public meeting), he mentioned that tanks would be delayed in

cleanup. The tanks as we know there is 177 of them, and they were the top priorities. They were and they still are. And the question comes up why are they being delayed? The real truth is they're being delayed because of the prioritization of cleanup and the amount of funds that the Department of Energy is requesting for cleanup. Our position is their budget is too small to accomplish the task. More money needs to be funded so they can accelerate the cleanup of Hanford and actually have cleanup success...for the single shells and now they're all going to be closed out or cleaned up which means that the liquid will be taken out of tanks to 2024. So that's an extension of six years. Now that's all determined and is all predicated on the fact that if the funding comes through for the vitrification process and if the vitrification process is successful. So there are still some variables there. When they said there was some money that is going to be shortened in the 200 Area we hope that it's not in the characterization of the tanks and the safety measures on the tanks because we all remember in the past about the potential of explosion in the tanks and they haven't gone away. So what we're really asking is acceleration in the funding from USDOE. USDOE needs to go to the table and ask for more money so we can get to this cleanup. (Greg debruler, Columbia River United)

Response: Tank cleanup schedules are being pursued in compliance with Amendment four of the Tri-Party Agreement, dated January 1994. During the Environmental Restoration Refocusing negotiations, we have simply made environmental restoration milestones consistent with those agreed-to schedules. The three agencies do not agree that simply providing more funding for Hanford cleanup is the way to ensure progress. We recognize that not enough cleanup progress has been achieved for the amount spent during the early years of the Tri-Party Agreement. USDOE, EPA and Ecology actions are increasingly based on trying to do everything we can to achieve efficiencies, and to set realistic cleanup schedules which drive realistic funding levels.

- 45. My name is Greg debruler and I represent an organization called Columbia River United and I will put my comments on the record tonight for Columbia River United. Under Environmental Restoration Refocusing--the process the Tri-Parties are involved in to make the cleanup better, quicker and more cost efficiently, we hope. But our one concern or many concerns is there has not been sufficient funding requested by the Department of Energy in their budget to meet all of the milestones in the Tri-Party Agreement. There could be some changes coming up with things that won't be cleaned up and won't be funded. The environmental restoration portion of the USDOE funding is proportionally too small in the overall Hanford budget for real cleanup. (Greg debruler, Columbia River United)

Response: See responses to comments 40 and 44.

- 46. We just want to make sure that the U.S. Department of Energy hears that they really need to start looking at funding more money for Hanford in the future because as they have said at headquarters they see this train wreck coming. If they see a train wreck, they best slow the train down, they best get some more money in the process so they don't have this train wreck. Perhaps we should lobby the Secretary of Energy O'Leary,

U.S. Department of Energy, all it's contractors, all the American public, to put pressure on the President and the Department of Defense and we should start looking at funding from the Department of Defense. These facilities were virtually the backbone for the Department of Defense. There budget is \$330 billion dollars, perhaps we the American public should say because of your past practices we want to take 10 percent of your budget or \$33 billion dollars, only 10 percent this next year, and give it to the Department of Energy so they can adequately go out and remediate, clean up, create new technologies to help the problems we face in America. But I think we all need to start lobbying upstairs and making sure the Department of Defense starts paying some money for this. (Greg debruler, Columbia River United)

Response: See responses to comments 40 and 44.

47. My name's Gene Weisskopf from Pendleton, South Carolina and we're in the process of moving out here so all of this is new and exciting to me. That last question brings up one of my thousands of questions, but I presume that after "x" number of years that the cleanup has been initiated and you know pretty well where the documented sites are, what percentage more undocumented sites does anybody suspect there might be? Have you run into surprises so far that elevated the amount of dollars to be spent? How many man hours for that type of thing? (Gene Weisskopf)

Response: At this point in the process the parties have a good idea where the waste sites are located. This is not to say that no new sites will be discovered as we move through the cleanup process. There is no estimate of how many more sites may be discovered.

48. My name is Isaac Standen and I have just one short comment to say. Only 10 percent or 12 percent of the actual Hanford cleanup budget is being spent on environmental restoration. The rest of it is being spent on jewelry and chauffeurs and pizza delivery. And I think that is just ridiculous. This is our tax money and we should make sure our tax money is being spent on the real thing. (Isaac Standen)

Response: See responses to comments 44, 53 and 64-66. The Environmental Restoration Project is intended to clean up the waste sites that were used in the past, soil contamination, ground water contamination and the decontamination and decommissioning of surplus facilities. Management of wastes; transition of past operating facilities to a safe and stable condition; management and disposition of nuclear fuel and nuclear materials; and the management, treatment and disposal of tank waste comprise the majority of the Hanford budget. These activities should be viewed as cleanup activities.

49. I think that what you have heard from the three agencies here is pretty good news. As a result of some public examination and renegotiation work that USDOE had said we can't do because it will cost \$300 million and basically one out of every three dollars wouldn't have been as productive if this process hadn't happened. That is good news. The bad news though is we are talking about fiscal year 1995, with this cap of \$201 million dollars. We're mostly in studies. If these guys had been

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as successful as they claim in scrubbing the numbers and stepping up to the productivity challenge. Once you get out of the studies and start trying to do real cleanup we have a problem. Unless USDOE decides that environmental restoration should get more priority in the budget than Westinghouse overhead, for new highways and Hanford legal fees, chauffeurs, and we are paying \$15 million dollars out of our Hanford cleanup budget this year to safeguard plutonium at PFP because the defense program that owns the plutonium refused to pay it. I would say those types of priorities are backwards. We have got a problem if these folks have really scrubbed the numbers and we are going to get \$230 million dollars worth of work for \$201 million dollars. But once we start getting into real cleanup milestones they have a real roadblock ahead, unless USDOE decides to reprioritize its funding at Hanford. (Gerald Pollet, Heart of America Northwest)

Response: See response to comment 53.

50. I am Phyllis Fiege and I am not an expert on any of these things but I'm just here to learn. I see several things happening. One, we have a regulator group that I understand must be from Washington State Department of Ecology and the Department of Environment. And then we had the Department of Energy who is here this evening in effect representing the contractors too. I see several things happening and one is, who is doing the regulating and how careful the regulating is. I always assumed that most of the money or all the money was being used to clean up Hanford and to clean up the environment and then of course the *Spokesman-Review* article hit the press recently and we learned other things are being done with that money. (Phyllis Fiege)

Response: Ecology and EPA have the responsibility to provide environmental oversight regarding the cleanup of Hanford. The USDOE is responsible for implementing the cleanup and has regulatory responsibility for radionuclides under the Atomic Energy Act.

See also responses to comments 3, 44 and 53.

51. We seem to have this, "maybe there is a danger there and may be there isn't". There are other places where there is danger and you (Tri-Party Agreement) Project Managers talked about a \$201 million budget. I don't know whether this is true or not. They say Westinghouse has spent more money on overhead than you have budgeted for cleanup. No manager has ever said that \$201 million is going to be used for cleanup and not for studies. I have not heard and I would like to hear from someone that, "yes, that is money that is going to be used to cleanup, it is not going to be used to make other studies." Can a manager tell me that, yes, we are going to use that money to actually do cleanup. (Dave Wilson)

Response: As with any series of environmental restoration projects before any soil can be removed or any ground water treated, plans, impacts, etc., must be generated and undergo scrutiny by various agencies. This is the case with the Hanford cleanup.

We are striving to complete only necessary paperwork and to quickly move the activities to construction; moving dirt, cleaning

up the ground water, removing buildings, the like. Fiscal Year 1995 is a pivotal year for the project. Paperwork required by the various regulatory agencies is nearing completion. Construction related work is beginning.

Fiscal Year 1995 can be segregated into the following key activities:

1. Document preparation in support of the regulatory process
2. Remediation design
3. Physical remediation of the site
4. Physical removal of buildings and structures
5. Deactivation of the N Reactor
6. Protection of the Columbia River from contamination
7. Surveillance and Maintenance

The amount of monies directly related to items 3, 4, 5, and 6 is approximately 70 percent of the entire project Fiscal Year '95 budget of \$201 million. About 12 percent of the Fiscal Year '95 budget is associated with item 7 (surveillance and maintenance). The remaining monies are closely related to processing the necessary paperwork to allow the various regulator bodies to grant approval to the cleanup approach.

As the next few years evolve, more and more of the monies spent will go directly to physical site remediation and removal of buildings.

52. We will not have a sacrifice zone next to the Columbia River. Medical evidence indicates cumulative radioactive effects may bring terrible health and economic consequences. Efforts should be made to obtain adequate cleanup money and use it efficiently in a timely manner. Priority focused on keeping the river clean and avoiding accidents. Clear, definite milestones and goals which are enforced. (Lynn Sims)

Response: See responses to comments 39, 40 and 123.

53. I am Barbara Zepeda and I am speaking for the Washington Democratic Council. We have repeatedly brought up at these hearings requests for independent audit. We have been listening to the new congress talk about welfare, but the defense department at Hanford has been a corporate welfare program without any real outside auditing and objective information. You have got these people--Westinghouse, General Electric, and Bechtel--making more money the more mistakes they make. Until you can set up an accounting system that a bookkeeper working for \$7 an hour with the objective is to balance the books. It is a much worse welfare fraud system than any mother getting welfare and feeding six kids on \$300 a month. (Brenda Zepeda, Washington Democratic Council)

Response: Ecology, EPA and USDOE agree that the amount of cleanup dollars spent inefficiently at Hanford during the Tri-Party Agreement's early years has been excessive. The three parties have received this message loud and clear. As a result, a wide array of efficiency

measures are being implemented. These include downsizing and restructuring Hanford's workforce, focusing cleanup budgets where they can do the most good, and attempting to strip away unnecessary bureaucracy which has long been built into the decision-making process.

See also response to comment 5.

54. Take the advice of the Hanford Advisory Board on environmental restoration, please. Total funding of \$1.5 billion should be used on environmental restoration. That is, in my mind, that is what cleanup means, total environmental restoration and it doesn't mean paper work. I don't want to see a cap on the environmental restoration funding. I am against any renegotiation of the scope of work outlined in the current agreement negotiation solely based on budget reasons. (Scott Stumbaugh)

Response: See responses to comments 44, 48 and 53. Concerning allocation of budget to cleanup, the tentative agreement was negotiated on the basis of the correct scope of work that needs to be performed. Budget estimates to perform the scope were initiated only after a tentative agreement was reached. Considerable effort was made in evaluating the assumptions and inputs for these estimates. The budget exercises did not result in any changes to the tentative agreement.

55. Can you do active remedial action at 15 operable units given your current budget cap for restoration? (Gerald Pollet, Heart of America Northwest)

Response: The agencies agreed that remediation can occur within required time limits when Records of Decision are issued, if the outyear budget, projected remedial decision, and site condition assumptions hold true. However, given the current budget climate, there is uncertainty regarding the adequacy of future Environmental Restoration budgets. Milestones in the current agreement will bring operable units in the 100, 300, and 1100 Areas through the investigation phase to Record of Decision. After the Records of Decision are issued, we will perform Remedial Design where the specific work necessary to carry out the remedial requirements of the Records of Decision will be engineered and costs will be estimated. Until that time, USD OE and the regulatory agencies can only assume what the remedial actions will be and roughly estimate costs. In addition, very little experience has been gained at Hanford in exhuming, transporting and disposing of large volumes of contaminated soils and burial ground contents. Therefore, today's cost estimates are uncertain. USD OE, EPA and Ecology all looked at outyear cost estimates before bringing the tentative agreement to the public for comment. They agreed that the tentative agreement can be achieved within budget projections at the time of review, provided USD OE can meet its cost efficiency challenge.

56. In terms of the Environmental (Restoration) Refocusing, I have been grappling with this issue since it was presented to the Hanford Advisory Board which we have a seat. When I hear people talk about it, when I read the literature that comes out and tonight it came through very, very clear again in some of the answers that were given to us in

response to people's questions. This seems like a shell game and I say that because it seems like we are having Washington press down on us in terms of taking the money away part of that with good reason because there has been no really obvious cleanup since 1989 and this is still being reported in the papers. My parents just sent me articles from Lewiston, Idaho. I get them from all over the country and there is no faith that anything substantial has been done with the billions of dollars that have been spent thus far. So I would like to say that I think environmental restoration seems like a shell game. I hope it isn't, but I don't have ultimate trust yet. We're interested in our organization in the Columbia River, so we're very concerned about the pump and treat program that's part of the environmental restoration plan and some of the talks that we've had with Ralph Patt indicate that pump and treat isn't being done on a serious level, and there may be many, many reasons for that, but this needs to be expedited. We also feel very, very leery of there being enough money in the budget which is something that Dick Belsey and all of us are talking about. I have to tell you that since the elections on November 8, I am fearful that we are going to see a harder, meaner Congress when it comes to cleanup because they aren't seeing a product. I'm not talking about great buildings, I can't remember who just had their fancy, wonderful building finished out there, but somebody just did and buildings are necessary, but they don't need to be extravagant. We need other things. We are concerned about our health and safety. We're concerned about the health and safety of our children and we want these issues addressed. We want this money well spent and we want you to ask for enough money but you're going to have to do the work and you're going to have to do the work in an expeditious manner in order to get that money coming in. So in general we agree with some of the things that are happening in the environmental restoration, but I fear that it's a shell game. We're being told here's how much money we have, now you have to pick and choose where you think your highest priorities are, even then when we ask questions about is there enough money in the budget, we get these commitments, and some words I heard tonight that we will need to be more, to do a better job. I want to hear, we are doing a better job, not that we will need to a better job because we will need to do a better job sounds to me like you're dreaming and that you're not really committed, heart and soul, yet. So I want to hear the language change and I want to hear from your gut that you really mean it and that you really know it. I'm not getting that in the talks that we've had with all of you yet. I'm not getting that feeling like, oh yeah there's a change taking place. So those are the things that we want from our group. Thank you. (Paige Knight, Hanford Watch)

Response: The approach to pump and treat is to initiate such operations at a pilot-scale level and subsequently upgrade as operational information provides needed information concerning effectiveness and efficiency. This approach is the norm in hazardous waste cleanup actions across the country in military and civilian remedial actions. In this manner, treatment can be started sooner; actually using a treatment action to provide characterization information. The pump and treat systems that have been put into operation on the Hanford Site are pilot-scale treatability test systems that are designed to assess the feasibility of such a system for remediating ground water contamination.

In the event that the treatability tests demonstrate that pump and treat is a cost effective remediation alternative, full-scale pump and treat systems will be designated, installed and operated to remediate ground water contamination.

See also responses to comments 44 and 53.

57. The Department of Energy is only spending 13 percent of its 1.5 billion dollar Hanford cleanup funding for 1995. Only 13 percent is going to environmental restoration and they have imposed an internal cap on that expenditure so it will remain flat. Right now, we are only paying for studies in environmental restoration. We are not paying for any large scale cleanup. As long as this funding level remains flat, the Department of Energy has decided it will violate the agreement. In essence, it will not be able to do large scale remediation. These are actual quotes out of the Department of Energy's own activity data sheets. That for every area along the Columbia River, the target case does not provide for remediation at waste sites after the paperwork study is done. Remember, cleanup costs more than paperwork and as long as they have a million dollars a year to spend on chauffeurs and on pizza delivery and millions of dollars on planned new highways and new offices and as long as Westinghouse spends more on overhead last year than they did on environmental restoration. As long as this remains the priority you are not going to see any acceleration of cleanup along the river unless the regulators say we are going to set real deadlines.
(Gerald Pollet, Heart of America Northwest)

Response: One of the objectives of the Tentative Agreement is to focus environmental restoration resources, regardless of funding levels, on remediation, starting in Fiscal Year 1995. To do this, the agencies agreed to defer further Remedial Investigation/Feasibility Study activities in the 200 Area (except for the remaining key ground water plumes, 200-P0-01) for three years. 1995 will see priority waste sites of the 100 Area go from Remedial Investigation/Feasibility Study to remedial design. The 300 Area will also go to this step. Remedial action will occur in the 1100 Area. Cleanup milestones will be established at the end of the remedial design process. It is inappropriate to establish milestones for cleanup prior to a Record of Decision and remedial design. To do so would presuppose what the remedial action is, without public comment.

See also responses to comments 11, 44 and 53.

58. Huge sums of money are being spent to "clean up" the Hanford site, however, virtually nothing has been cleaned and there is no indication that any real concrete mopping up is going to take place anytime soon. Is the problem lack of funding, poor management, or lack of technical capability, that allows 1.5 billion dollars to be spent each year for this not-so-new Hanford mission: cleanup without cleaning anything up? Whatever the reasons, American taxpayers and citizens concerned for the health of the region find no comfort in them. On the contrary, alarm is more like it. Much of the dollars being spent are for necessary waste management, i.e., either to maintain or to struggle to secure wastes in a somewhat stable condition -- not however, to stop seepage and leaks,

not to clean up the many square miles of contaminated soils, not to clean up the Columbia and its shores. Astonishingly, as we speak, some 10-50 cubic feet per second (tens of thousands of gallons each day) of radioactive and hazardous substance ground water discharge is seeping into the Columbia River. Less than two percent of the enormous Hanford budget actually goes to cleanup, largely because that is all that is left over after everything else. Furthermore, most of the budget goes to salaries, lots of them. The small Tri-Cities area in the eastern Washington desert has become a veritable boomtown. But, many of the 1.5+ billion dollars designated for cleanup, we are told, have been spent on *non-waste* management, *non-cleanup* projects like new roads, new weapons development facilities, excessive luxury expenditures, and let's not forget the millions spent on public relations campaigns. All this while there still does not exist adequate environmental monitoring and reporting (which are cheap), let alone cleanup (which is expensive)! For example, the dollars spent on limousine service could have brought several badly needed state-of-the-art air monitoring instruments that collect valuable information of public interest, information crucial for tracking restoration progress on emissions. (Robin Klein, Hanford Action of Oregon)

Response: See responses to comments 3, 5, 11, 39, 40, 44, 48, 53 and 64-66.

59. The USDOE must demand the dollars necessary to accomplish all environmental restoration goals, set by the Department and supported by the public, in an accelerated timeframe, and provide the contractor audits and management oversight necessary to ensure proper and efficient use of those funds. (Robin Klein, Hanford Action of Oregon)

Response: See responses to comments 5, 44 and 53.

60. The Confederated Tribes of the Umatilla Indian Reservation's staff and policy makers are deeply concerned about the increasing budget cuts--euphemistically referred to as "productivity challenges"--that are being singularly focused on the Environmental Restoration program, when both the largest Hanford expenditures and most widespread waste and fraud are concentrated in the Waste Management and Operations areas. Environmental restoration is the chief mission of the Hanford Site now; it is no longer defense production, although this is often hard to discern from the increasing diversion of already limited environmental restoration program funding to other purposes. CTUIR staff do not see concrete evidence that cost and management efficiencies are being systematically eliminated. Rather, decreased funding is being used as an excuse to simply cut or defer the scope of remedial efforts agreed to by all three parties in the Tri-Party Agreement. This deceitful approach does not enhance the credibility of USDOE and its contractors to actually complete the actions agreed to in the Tri-Party Agreement. At a bare minimum, commitments agreed to in the Tri-Party Agreement must receive sufficient funding to permit their satisfactory completion. Moreover, more serious efforts to achieve real efficiency improvements must be accomplished in order to meet both the spirit and expectations of Amendment four's Cost and Management Efficiency Initiative. Funding reallocation decisions thus far appear to have occurred too quickly as to

represent nothing more than knee-jerk reactions. Such "decisions" do not--and indeed cannot--reflect thoughtful consideration of where specific cuts could be most effective or how the consequences of such cuts may impact other (desirable) programs or activities across the site, either now or in the future. CTUIR staff are further concerned that the current approach--blanket cuts of some given percentage across the board--will most critically impact just those on-the-ground remedial programs that are the most important and action-oriented, rather than directly confronting the more difficult task of identifying and then focusing specifically on eliminating the real waste, excessive management, and other bureaucratic inefficiencies. All such reallocation decisions must be first and foremost directed at achievement of more cleanup progress in the field and less cleanup delay and review in the office. For example, how can USDOE justify to tribes, regulators and U.S. taxpayers the siphoning off of millions of dollars from the environmental restoration program to support economic diversification of the Tri-Cities when there are clearly not enough funds to meet even the minimum commitments of actual environmental restoration? CTUIR staff also are aware that regulators share these concerns about haphazard funding reallocations and the impacts that will necessarily occur to meaningful and timely remediation and restoration of the Hanford site. CTUIR staff sincerely hope and expect that USDOE will carefully and broadly consider the impacts that such reallocation will have in fulfilling good faith commitments made in the Tri-Party Agreement. Staff further expects that such decisions will be based on sound and defensible technical or programmatic policy, planning, and realistic cost estimates that are not inflated by contractor padding, excessive indirect costs, redundant oversight, or unrealistic work scope. All resulting decisions must facilitate both timely and substantive accomplishment of all Tri-Party Agreement commitments.
(J.R. Wilkinson, Confederated Tribes of the Umatilla Indian Reservation)

Response: Ecology, EPA and USDOE are encouraged by the improvements in the consultation process with tribal governments. The tribes, regulatory agencies and other stakeholders must have meaningful and timely capability to review, understand and influence USDOE's budget development and execution decisions.

The three agencies continue to support active and timely involvement by Tribal governments in the forthcoming Fiscal Year 1996 and 1997 budget development review and comment process, and in all future budget-related decisions that affect environmental restoration and waste management activities.

We share the CTUIR's concerns regarding the impact of budget shortfalls upon cleanup progress at the Hanford site. In Ecology/EPA's joint comment letter on USDOE's Fiscal Year 1995 budget reallocation proposals, we stated our position that USDOE and its contractors must fully pursue all alternative and available cost cutting and efficiency measures prior to elimination or deferring substantive workscope.

The CTUIR expressed its concern that sufficient funding be provided to ensure satisfactory completion of the Tri-Party Agreement. In response, Ecology and EPA are required by the Tri-Party Agreement to work with

USDOE to minimize the impacts of Congressional appropriations decisions upon the Tri-Party Agreement. However, we have also publicly stated our position that we cannot support a wholesale renegotiation of the Tri-Party Agreement because of a funding shortfall problem. Ecology and EPA are particularly sensitive to any budget driven proposal that would place the Columbia River remediation strategy at risk.

In summary, we support the CTUIR's call for budget decisions and strategies that strive to eliminate waste and inefficiency, while preserving the pace and progress of remedial programs. More, not less cleanup must be realized in any funding/budget strategy. A lean "results-oriented" program must be implemented. This can only be achieved by: effective, site-wide integrated plans, strategies and decisions; an assessment of total program costs and risks; well developed cost estimates; and, maximization of cost and management efficiencies. Meaningful and timely involvement by the tribes, regulators and other stakeholders is an absolute essential in any decision process.

See also responses to comments 11, 44 and 53.

- 61. With reference to the Agreement, have the Tri-Party agencies considered and prepared a contingent milestone plan and budget based on a speedup of the cleanup which might be used as a basis for defending an increased level of Congressional authorization and appropriations? Could such a contingency plan be designed and carried out efficiently using increased manpower such that an earlier date for completion of the cleanup under Milestone M-16 is feasible? Also, can the timeline of the process be reduced in Milestone M-15 with additional manpower and still maintain work efficiency?—Similarly, would more staff make it possible to keep the present Milestone M-20 activities? We can't answer these questions, but could a larger budget for personnel be effectively used to speed up the process from a Tri-Party Agreement perspective? If so, an increase in budget should be pursued. (Stuart and Mildred Chapin)

Response: See responses to comments 44 and 53.

- 62. I just want to let you know that we're happy that they are expediting cleanup. Actually, hopefully, they're going to have actually more cleanup happening on the 100 Area. When actual cleanup happens we'll know it. Right now the direction is going in the right direction and we think it's good step in the right direction. If you've heard our concerns and we just want to make sure that they listen to the stakeholders and make a small a footprint as possible and do the best available job of cleanup. And the only thing I can say for the public is, we have to keep pressure on USDOE to keep funding the facility because the Environmental Restoration budget isn't very big and if we're talking about restoration of the Hanford site, that Environmental Restoration budget should grow and maybe other priorities at the site should start coming down. We shouldn't be shortchanged because of the tanks not being under environmental restoration. The tanks should get the funding that they need and we need to keep pushing USDOE and Congress to make sure that we get that kind of funding because the tanks are a priority. (Greg debruler, Columbia River United)

Response: Ecology, EPA, and USDOE appreciate the numerous comments received which applauded efforts to focus Environmental Restoration monies according to agency and stakeholder values (primarily on efforts along the Columbia and on ground water remediation). In addition, we recognize that the agencies must give increasing attention to the balance between Hanford's programs, and to insuring integrated management of Hanford cleanup efforts overall.

See also responses to comments 11, 29 and 53.

63. I wanted to know a little bit more about the environmental restoration negotiation process. I have a two part question about that for the regulators. At what point did it become apparent in the process supposedly of accelerating, negotiating to accelerate the cleanup along the Columbia River that the previous milestones were underfunded by USDOE and were not going to be met and as a second part of that do you feel that indicates good faith in the negotiations process for USDOE to not be upfront about not meeting their old milestones. (Unknown Commenter)

Response: Negotiations usually begin with an Agreement In Principle that provides the scope of negotiations (what should be accomplished) and the timeframe for completion of negotiations. The Agreement in Principle is signed by the Director of Ecology, the Regional Administrator for the EPA and the Manager of the USDOE. The Environmental Restoration Refocusing Agreement in Principle was signed by the three parties on July 18, 1994. Negotiations then proceeded based on the Agreement in Principle. In the case of the Environmental Restoration Refocusing negotiations, the three parties negotiated and agreed on changes to the Tri-Party Agreement, created new milestones or modified old milestones and deferred some work in the 200 Areas to accelerate work near the Columbia River.

As the scope of work and milestones took shape, the question was asked "what is this going to cost?". USDOE and their contractors provided budget information that showed an increase in costs due to the Environmental Restoration negotiations. This should not have been the case if all previous remediation-related work resulting from Tri-Party Agreement negotiations and agreements was funded. Project baseline management plans for the 100 Areas showed that assumptions used for cleanup were much too conservative in order to allow for lack of data and to provide contingencies for the budget and projected work. Priorities had been established by USDOE and/or their contractors based on these conservative assumptions. Data gathered in the 100 Areas over the last several years has provided a more realistic appraisal of contamination and the remediation effort required for cleanup of the sites adjacent to the 100 Areas. The more realistic assumptions allow priorities and funding to be established based on Tri-Party Agreement milestones and negotiated workscope. More complete project baseline management plans for the 100 Areas based on Tri-Party Agreement negotiations are being developed now by Bechtel Hanford Incorporated, the new Environmental Restoration contractor for USDOE, and will be available sometime in spring of 1995. The regulators will be more intimately involved in the development of these baseline project plans

than at any time in the past and this involvement will provide some assurance that the plans will be consistent with Tri-Party Agreement negotiations and existing milestones.

Once the workscope and funding had been established and agreement was reached between the three parties, a Tentative Agreement document was drawn up and signed by the three parties. This Tentative Agreement was sent out for public review and modified based on major verbal and written comment provided at public meetings and/or received during the public comment period.

As far as the second part of your question, "do the regulators believe that because USDOE was not upfront about missing old milestones that this represents a lack of good faith in the negotiations process?". EPA and Ecology do not believe that USDOE and/or its contractors acted in bad faith. Our perception was that original baseline cost estimate assumptions were poor, and that during the negotiation process we consequently invested substantial effort together to validate these assumptions. This instance reinforces our belief that the regulators should be more involved in the planning and upfront work with USDOE rather than be more passive and reactive. With many of the new changes from the previous negotiations (specifically Article XLVIII, Section 149 of the Hanford Federal Facility Agreement and Consent Order, Fourth Amendment) and the changes resulting from these negotiations, there should be more active participation by the regulators, as well as the Hanford Advisory Board, Indian nations and public in general.

See also response to comment 54.

2.6 WESTINGHOUSE HANFORD COMPANY OVERHEAD BUDGET

(Response following comments 64-66)

64. Can somebody respond to the fact that Westinghouse overhead exceeds the \$200 million dollar budget over cleanup. Is that a true statement? Is this something somebody has picked out of the air. Can it be justified? I haven't looked at it that way but I am certain that is probably correct. That is not justifiable. Not that it is over \$200 million dollars out of \$1.6 billion. (Dave Wilson)
65. The Department of Energy refused to release Westinghouse Hanford Company's overhead charge to the environmental restoration waste management budget under the Freedom of Information Act. Last year, they finally, the first time ever released it to the public on October 5th to the Dollar and Sense Subcommittee of the Hanford Advisory Board. I have those materials and I am responsible for writing up the reports for the Advisory Board. The figure for 1994 was that 22 percent of every dollar given for environmental restoration or waste management was taxed and put into Westinghouse Hanford Company's overhead and indirect funded account for overhead. Now that is different than another 60 odd million (dollars) spent on program direction and administration which normally one thinks as overhead out at the site. Now that figure of 22 percent came to about 170 some odd million dollars and the budget for environmental restoration was \$197 million. Subtract 22 percent from a \$197 million and you realize that you spent more money on overhead then

you did on environmental restoration; about \$20 million dollars more on overhead than on environmental restoration last year. It is shocking and it stinks. We have got to do something about this system. And we have to do something about the fact that USDOE and Westinghouse got away with preventing disclosure of it for this long as well. And they are still stonewalling. The *Spokesman-Review* article, if you saw any of those reprints of the series they are running, they could not get the Westinghouse Hanford Company and the USDOE Richland to disclose things like certain portion of their overhead being charged as legal fees, the Westinghouse Hanford Company's president office costs and a whole slew of other things we were refused to the *Spokesman-Review* when they tried to examine the Hanford cleanup budget. It is shocking and I am hopeful that we will move more money into actual cleanup, but unfortunately as we do this as I have said. Cleanup is going to be more expensive than doing the study. If we are spending a \$150 million dollars a year doing the studies right now. Once, we actually hit the milestones for remediation in a couple of years we are not going to have the funds unless the priority change. Doug said (in his public meeting presentation) we are going to move those dollars into remediation because of this new agreement. I disagree. Milestones and the current schedules under the existing agreement all ready dictated and you have heard tonight that most of the work plans and investigation are all ready do under the existing agreement along the river. Twenty out of 25 of the work plans are due or done for the 100 Area. Now the new agreement in fact under environmental restoration instead of doing six workplans a year to speed up this process. They are now only required to do an average of 4.8 workplans a year. This new agreement has not sped up the movement of your tax dollars from study to cleanup. That was underway, and the question is whether we are going to accelerate that. (Gerald Pollet, Heart of America Northwest)

66. As a citizen I feel the overhead is too much for Westinghouse and I want more money into the actual cleanup. (Unknown Commenter)

USDOE response to 64-66: The following comments were included in the topics discussed in an interview with representatives of the *Spokesman-Review* who visited Hanford to do "a five year report card on Hanford cleanup progress." They raised a number of topics:

1. **Topic:** Allegations that Westinghouse Hanford Co. is not cost effective

Since taking over the consolidated Hanford contract in 1987, Westinghouse has consistently underrun its allotted funding and given dollars back to USDOE.

Westinghouse was selected in 1987 on the basis of committing to save \$212 million. Westinghouse estimates that twice that amount was saved in the first five years of the contract. Since then, Westinghouse Hanford Company estimates that it has saved \$228 million in 1993, \$265 million in fiscal 1994.

2. **Topic:** Westinghouse is not open and denied reporters access to senior executives.

The reporters were given access to Hanford's most sensitive facilities. Briefings and tours were conducted by top level Westinghouse Hanford Company executives.

3. Topic: Westinghouse's high overhead rates lead to exorbitant charges to the taxpayer.

Westinghouse has cut its overhead rates from 27 percent a few years ago to the present 22 percent. Management is committed to further cuts in other overhead rate. Westinghouse Hanford Company is cutting staffing by at least 1,000 employees in FY 1995, a move that will save \$40 to \$50 million a year.

Westinghouse has changed from a mission oriented organization to one that is project oriented. Prior to FY 1994, 40 percent of Westinghouse employees were directly involved in Hanford missions; 40 percent were in support organizations, and 20 percent worked for subcontractors. Now, 69 percent of employees directly support projects; 11 percent are in support organizations, and 20 percent work for subcontractors.

In the past year, Westinghouse Hanford Company increased the span of management by cutting eight layers of management to five. The number of managers within Westinghouse was cut by 250. Project directors have been empowered to make decisions and they are being held accountable for those decisions.

4. Topic: Employee recognition expenses are inappropriate.

As part of its USDOE contract, Westinghouse is allowed to spend about \$25 per employee per year on its recognition program. That's about \$280,000 per year. It motivates employees by recognizing their achievements. These morale-building programs take the place of holiday and performance bonuses that are common in private industry, but not available to Hanford employees.

5. Topic: Overtime workers are given free meals.

Frozen TV dinners are provided for employees working a double shift or for those unexpectedly held over past their regular shifts. These employees are located out in the various areas on site. It is appropriate that we keep our employees productive and alert by feeding them when we hold them over hours past their normal shift. There are no restaurants or cafeterias on the Hanford Site and it's not reasonable to expect our employees to work 12 to 16 hour shifts without eating.

6. Topic: Of the \$1 billion productivity improvement commitment over the next five years, Westinghouse saved only \$33 million the first year.

Information provided to the reporters documents \$411 million in savings identified as of September 30, 1994.

7. Topic: Westinghouse budgets \$300 million a year and has 643 employees assigned to the Plutonium Finishing Plant even though it was shut down five years ago.

The costs and staffing of the Plutonium Finishing Plant continue to be high because the plant still contains a large quantity of dangerous materials. Maintaining the plant and its operating systems is essential to public safety. Westinghouse is stabilizing the remaining plutonium scrap in the plant so it can be safely stored and the plant deactivated. Only by cleaning out the plant and deactivating it can personnel and operating costs be safely cut.

8. Topic: Hanford managers gripe about environmental regulators slowing work.

At no time during tours or interviews did any Westinghouse senior manager blame regulators for delays or increased costs. On the contrary, the reporters were repeatedly told Westinghouse feels it has a good working relationship with state and federal regulators.

9. Topic: Public involvement isn't mentioned.

USDOE and its contractors actively involves the public, interest groups and Indian tribes in Hanford cleanup decisions, including how and where money is spent. During interviews, it was stressed that involving Hanford stakeholders in the decision process was not only advantageous, but absolutely essential to the success of the cleanup effort.

10. Topic: Westinghouse doesn't know what to do with the spent fuel in the K Basins and where to put it.

The reporters were supplied on October 20 with a detailed fact sheet on Westinghouse's proposal for expediting the removal of fuel from the K Basins and placing it in interim storage. The recommendation was accepted by Tom Grumbly of USDOE headquarters on November 2 and endorsed by the Hanford Advisory Board on November 3.

2.7 HIGHWAY CONSTRUCTION

(Response following comments 67-71)

67. In regards to the cleanup budget and the construction of a highway, I heard it was \$12 million dollars. Is that the correct figure for this particular year? Anybody know about this at all? **(Unknown Commenter)**
68. When I heard about the highway construction and all the money that was coming out, granted the amount is pretty small percentage wise of the whole cleanup budget, yet not so small to the Environmental Restoration budget. That really illustrates a problem with priorities here. I am sure a new highway is maybe need, maybe it would be nice. I don't know if it cuts the corner. Somehow it will be a help. There is a mess out there and it is killing people and it is going to get worse. You know we have to start building these highways and doing this other stuff. I guess when I heard that 65 percent of the money is going to paperwork.

This really needs to be improved and there is no reason why that can't be improved quickly. (Unknown Commenter)

- 69. You don't need the new highway if you didn't build the new offices instead rent space in Richland or use your existing Federal building. But instead you have a got whole major construction program that costs scores of millions of dollars. The highway is just one part of it and so it looks like small potatoes when we say there is a highway and it costs \$18 million, but it is pretty big potatoes when you start adding up everything else in comparison to what the budget is for environmental restoration. (Unknown Commenter)
- 70. (Regarding the building of a highway.) There is a huge problem with priorities and I think it doesn't take a huge intellect to kind of figure out what the best thing to do is here. Start doing the right thing please. (Unknown Commenter)
- 71. Spent nuclear fuel is next to the river that can't be moved away on the path identified because of funding constraints and we have a road built through old growth sage habitat which when we were approached about it, it was clearly identified as being a significant biological habitat and almost laughed at. Can you believe old growth sage habitat? What will be next, was the way it was presented to us. I'm really concerned about it and I would like if someone could get back to us about what was the State Environmental Policy Act and National Environmental Policy Act compliance. (Gerald Pollet, Heart of America Northwest)

Response to comments 67-71: A general plant project (GPP) was completed in December 1994 and at a cost of \$1.2 million dollars. A cut-off road was constructed between the 222-S lab and Highway 240 to relieve traffic conditions which were creating a safety hazard.

In addition, there is a proposed \$12 to 18 million dollar Line Item (LI) which will be a road from the Wye Barricade to the 200E Area. The project is in support of the Tank Waste Remediation System and Environmental Restoration programs and the current road will not support the heavy traffic required to accomplish the program activities. If the current road is not replaced, the increased traffic volume and heavy weight will result in high maintenance costs and probable unsafe road conditions. Our present estimate indicates thousands of cubic feet of construction material will be transported over this road. By using the life-cycle cost basis to evaluate the alternatives, a savings of \$8 million dollars will be achieved by building a new road when compared to the cost of maintaining the current road. Hanford management will be happy to meet on site with interested parties and discuss our justification of this project. It should also be noted road projects at the Hanford Site are initiated only after an extensive cost-benefit and safety analysis is completed.

National Environmental Policy Act documentation for the SR 240 Access Road was initiated on May 5, 1993 when an Action Description Memorandum was submitted to USDOE. An Environmental Assessment was determined to be the proper level of National Environmental Policy Act documentation. A Finding of No Significant Impact was issued in February, 1994.

During the Environmental Assessment preparation and approval process comments were solicited from the State of Washington and various Indian tribes. The Department of Ecology, Environmental Review Section, published the proposal in the 1993, October 20-24 State Environmental Policy Act Register. Adjustments to the proposal were made based on comments received by USDOE. In order to not disturb nesting birds actual construction was delayed until after nesting season. In the Finding of No Significant Impact, USDOE committed to formulate a habitat enhancement strategy to compensate for habitat lost as a result of this action. The State of Washington Department of Transportation issued an Access Connection Permit on February 18, 1994 (Permit No. A5-0061). The State Environmental Policy Act is the responsibility of the State of Washington.

As is documented in the Environmental Assessment for the SR 240 Access Road, traffic studies indicated a high probability of a fatal accidents on route 4A within the next one to two years because of the extreme volume of traffic during rush hours. Traffic volume was running nearly triple the state guidelines on recommended usage for a two lane highway.

Engineering studies recommended construction of an access road to SR 240 as the cheapest and most efficient method to quickly reduce the traffic glut on route 4A by as much as 600 vehicles per rush hour and protect the lives of workers. Cultural and biological resource reviews indicted that no cultural resources or threatened or endangered species would be adversely affected by the construction of the SR 240 access road.

See also response to comment 29.

2.8 TENTATIVE AGREEMENT

72. During one Tri-Party Agreement negotiation session, the issue was raised of when tribes should receive documents. At that time, the USDOE representative stated that USDOE's policy is that any time a document goes to a regulator it also goes to the tribes. He also stated that tribes can participate at any decision point, and that tribes will be provided documents at any point before a decision that allows them time enough to review the documents and participate in the decision. Upon hearing this, Dave Conrad, of the Nez Perce Tribe's Environmental Restoration/Waste Management Program requested that the USDOE policy be put into writing. In the ensuing discussion, all those present, including negotiators for all three parties, agreed to a specific language change to 10.10 of the Action Plan which would formally record this USDOE Policy. Confederated Tribes of the Umatilla Indian Reservation staff were disappointed to find no reference to this change in the Tentative Agreement on Amendment five to the Tri-Party Agreement. The issue of tribes' access to documents and participation in decision making is extremely important to the tribes, and as such, should not be left to customary practices alone. The CTUIR experience is that institutions have short memories as personnel come and go, a practice that has exploded at USDOE this past year. CTUIR staff formally request that this addition be made to the Action Plan as soon as possible,

preferably during this current amendment. (J.R. Wilkinson, Confederated Tribes of the Umatilla Indian Reservation)

Response: The following draft language was added as part of the Tentative Agreement on Facility Transition: "...USDOE will provide copies of key documents and other pertinent material to the tribes at the time they are provided to EPA and Ecology for review. Such documents include those identified in tables 9-1 and 9-2 of the Action Plan, but will also include other technical plans, studies and reports related to this agreement. Other pertinent material includes, but is not limited to, draft change packages, Agreements in Principle, between the three parties, and budget information. For large documents containing supporting technical information (i.e., laboratory data packages), USDOE will only provide copies of the transmittal letter to the tribes. The document will then be provided upon request. USDOE will periodically consult with the tribes to ensure that they are receiving the appropriate documents and material in accordance with this paragraph."

73. Confederated Tribes of the Umatilla Indian Reservation staff commends the Tri-Parties for negotiating a set of Tri-Party Agreement change packages that better integrate Hanford's Environmental Restoration program and that seriously address and resolve issues or inconsistencies remaining from last year's Amendment four negotiations. Many of these changes also address specific tribal comments to these issues provided last year, along with more general concerns associated with big picture program integration and direction shared by tribes, regulators and other interested parties. Dramatic improvements have been made in involving tribes throughout the process this time, which has resulted directly in a more sound and widely supportable package. CTUIR staff wish to commend the Tri-Parties for the dramatic improvements they have made with regards to meaningful tribal consultation over the past year. CTUIR staff sincerely hope this trend will continue. (J.R. Wilkinson, Confederated Tribes of the Umatilla Indian Reservation)

Response: Thank you for your support.

74. The Hanford Advisory Board agrees in principle with the general refocus of the October 1994 Tentative Tri-Party Agreement on Environmental Restoration. Tri-Party negotiators followed recommendations of the Hanford Future Site Uses Working Group and the Tank Waste Task Force. In particular, the Future Site Uses Working Group identified protecting the Columbia River as an "immediate priority." That position was adopted and endorsed by the Hanford Advisory Board. The Board commends the Tri-Parties for heeding that advice. (Hanford Advisory Board)

Response: Thank you, we appreciate the Board's continuing scrutiny and input.

75. I expect a commitment from the Department of Energy to reply to the public input from these hearings before the renegotiated agreement is reached. (Scott Stumbaugh)

Response: The three parties will consider all comments and respond to those comments before an agreement is made on Environmental Restoration Refocusing.

76. I am Dick Belsey and I am chair of the Waste Management and Site Restoration Committee of Oregon's Hanford Waste Board. And we considered the refocusing package when we had our meeting in Portland last week and we came to an agreement on recommendations. The Oregon Hanford Waste Board agrees in principle with the general refocus of the October 1994 tentative Tri-Party Agreement on environmental restoration. Tri-Party negotiators followed recommendations of the Hanford Future Sites Uses Working Group and the Tank Waste Task Force. (Dick Belsey, Oregon Hanford Waste Board and Hanford Advisory Board member)

Response: Thank you for your comment.

2.9 READABILITY OF THE TENTATIVE AGREEMENT

(Response following comments 77-80)

77. I am Cynthia Sarthou, Staff Attorney for Heart America Northwest. Regarding the Tentative Agreement on Environmental Restoration Refocusing, you should have put it into a readable form and you all got an "F". It is not in a very readable form, it is not understandable, in fact it took me a long time to put together a summary of what the heck was going on. So you all need to work on that a little. (Cynthia Sarthou, Heart of America Northwest (comments seconded by Katherine Crandall and Hilary Harding))
78. Hi my name is Loretta Ahouse. I want to go on the record saying that I too found the green booklet pretty unreadable. (Loretta Ahouse)
79. My name is Hilary Harding and you can put a ditto after Cindy Sarthou's comments with my name (see comment number 77). I also looked at the green book. I felt that I would be seeing a delay balanced by an acceleration. What I saw in my head was the scales of justice with a delay, no acceleration, a delay, no acceleration, a delay. There didn't seem to be an acceleration. If there is supposed to be an acceleration and there is no acceleration, then it becomes a delay. So my scales got tipped pretty heavily. But I did have a hard time going through that book and deciphering all that was being said. So I am very delighted to see that this is called a Tentative Agreement. I don't accept this renegotiation. This Tentative Agreement is not what I expected. And at meetings before we have been asked to tell you what to do. Don't just complain. Give us something you want us to do. I want you to go back and do this right. I don't think this is okay. I think more attention needs to be paid to what the public is saying instead of just meeting what it seems they are saying. You can get away with saying, "Well we have listened to you, now we want to show that we have done what you want." Hiding it behind a booklet it is hard to see what's been done. This agreement is not okay. At this point I would like to see further work. I would like to see it go back to the table and address again some of the same issues that we asked for and maybe try to meet our requests better. (Hilary Harding)

80. Make reports more concise, clear and to the point. I have to read page after page of wordy sentences that all add up to "we don't really know what to do with this stuff, so we're going to remonitor, reinvestigate and restudy." (Unknown Commenter)

Response to 77-80: The three parties will work harder to provide clear, concise information to the public at large. Prior to the public comment period, the three parties wrote an executive summary to try and explain the Tentative Agreement and the proposed changes. Some members of the Hanford Advisory Board Environmental Restoration Committee reviewed the executive summary for clarity as well. We appreciate your comments and will try and improve our documents in the future.

3.0 ISSUE 1 -- MODIFY MILESTONE REQUIRING SIX REMEDIAL INVESTIGATIONS/FEASIBILITY STUDIES EACH YEAR; TO DEMONSTRATE PROGRESS AND COMMITMENT IN CLEANING UP HANFORD

81. I was glad to find something in the green booklet (the Environmental Restoration Refocusing Tentative Agreement) that I could sort of follow. On pages 21 and 22, it states several milestones for the 100 N Area and all the dates for these are past by now. So I was just curious if all of these milestones have been met. (Unknown Commenter)

Response: Milestones in the Tentative Agreement that were due, were met; milestones that were "to be determined" were associated with dates. The following table lists the milestones which were agreed upon and current status of each:

MILESTONE	DESCRIPTION	DATE	STATUS
M-16-12	skyshine letter report	10/31/94	regulator comments have been submitted to USDOE, responses are being prepared
M-16-12A	implement skyshine abatement	TBD November 1994	a date of September 1995 has been agreed upon
M-13-87	submit 100-NR-1/2 work plans	10/31/94	the documents have been received are being reviewed

M-13-87-T1	submit Data Quality Objectives for 1301/1325 crib characterization	6/30/94	the "Safer" process was followed and a set of Data Quality Objectives were submitted
M-13-87-T2	submit a Description of Work for the 1301/1325 cribs	8/31/94	a Description of Work has been submitted to Ecology and EPA
M-15-12A	submit a Limited Field Investigation Report for new work at 1301/1325 cribs	TBD November 1994	a date of July 1996 has been agreed upon
M-15-12A-T1	submit Limited Field Investigation reports for work previously conducted at 1301/1325	8/31/94	the reports have been submitted
M-15-12B	submit closure plan/corrective measures study for 1301/1325	TBD November 1994	a date of March 1997 has been agreed upon
M-15-12C	submit a closure plan and corrective measures study for 1324N/NA and lower priority sites within the N Area	TBD November 1994	a date of November 1996 has been agreed upon

TBD: To be determined

4.0 ISSUE 2 -- UTILIZE N AREA AS A PILOT PROJECT TO ENSURE COORDINATED CLEANUP EFFORTS BY USDOE, EPA AND ECOLOGY

82. I hope that the public will encourage vigorous action when you decide next month what you are going to do. But does (milestones) M-16, M-12, and M-12-A go anything beyond just the N Area skyshine? Skyshine, by

the way, is the term that USDOE uses for the radiation that bounces off atmosphere and comes back down from these trenches and it is one cause of the irradiation of someone standing on the shoreline. So I guess my question is are you going to set some goals and deadlines for up and down the Columbia River, the Hanford Reach of the Columbia River not to exceed 10 millirems excess radiation dose or is it just N Area? (Gerald Pollet, Heart of America Northwest)

Response: Milestone M-16-12 and Milestone M-16-12A are specific to N Area skyshine. The 10 millirem/year standard that you refer to is a requirement of the federal Clean Air Act. This dose limit to humans applies strictly to radioactive particulate air emissions and does not apply to ionizing radiation from fixed sources. The current dose limit that USDOE must comply with is 100 millirem annual limit (above background) at the boundary (or shoreline) in accordance with DOE order 5400.5. The Westinghouse, Battelle, PNL, and Washington State Department of Health thermoluminescent dosimeter measurements along the N Reactor shoreline all measure approximately 150 millirem per year above background. In order for a member of the public to receive this dose, they would have to spend 24 hours per day for 365 days of the year on the N Reactor shoreline. This is not a probable scenario. The agencies are now in the process of choosing an appropriate measure to reduce this dose rate. The Tri-Parties' plan to apply standards consistently along the length of the Columbia River.

See response to comment 109.

83. This draft must include serious measures to reduce the current high radiation and chemical exposures to the public and wildlife along the Columbia River. Current radiation levels along publicly used shorelines are as high as 24 times what is allowed by law. Users of the Hanford Reach, and the wildlife living there, must be given more protection. The N Area cribs must be capped. The sediments and islands issue must be addressed, and we mean more than warning signs. Even these do not exist. (Doris Cellarius, Cascade Chapter, Sierra Club)

Response: See responses to comments 82, 85-101 and 130-33.

84. My name is Lynn Porter. I live in Portland and I am a member of Hanford Watch. I would like to hear more about what this new agreement is going to do for reducing ground water contamination. All I heard from the presentation is that you are going to build a wall at the N Reactor and do some pump and treat there. I am wondering what about all the other plumes of contamination in the ground water and how much of an impact do you expect to have what you are doing at N Reactor to have it just seems real vague at this point (Lynn Porter)

Response: Currently, several pump and treat operations, lab/bench scale studies and other remediation efforts are going on to treat contaminated ground water throughout the Hanford Site. These plume specific tests/pilot scale treatment technologies are at various stages of operation and their performances are under evaluation before full scale implementation through Operable Unit Records of Decision. These pump and treat technologies are used with the primary goal of containing existing

ground water contamination plumes of the 200 and 100 Areas through mass removal.

Contaminants that are presently undergoing remediation through pilot scale tests in the 200 Area include carbon tetrachloride, chloroform, trichloroethylene, uranium, technetium, plutonium, cesium, strontium, cyanide, and cobalt-60. In the case of 100-HR-3 Area, the pump and treat system is designed to remediate the chromium plumes. Pilot scales performance and full scale application of the remediation effort will define the duration of these ground water treatment systems.

It should be mentioned here that the preceding activities address Hanford's major ground water contamination plumes except N-Springs. USDOE is proceeding with implementation of the initial (50 gallons/per minute) pump and treat system per the September 23, 1994 Action Memorandum. This system will be operational by September 30, 1995 per Milestone M-16-12D. The effectiveness and efficiency of this system will be assessed in the letter report required by Milestone M-16-12E, which will be delivered by February 28, 1996. To a large extent, this report will help us determine the future use of pump and treat at N Area.

5.0 N-SPRINGS EXPEDITED RESPONSE ACTION

85. We see a need for this speedup of cleanup to eliminate continuing risk to public health, further environmental damage and as an offset to growing Congressional disenchantment with a cleanup process which seems to be dragging on with no visible results. In general, we support the changes in the Tri-Party Agreement that refocus the early stages of non-tankfarm cleanup for ground water remediation and protection. We are particularly pleased to see changes that give priority to waste sites in the 100 Area along the river where unacceptable levels of contamination are putting ground water and the river at risk. In this connection, we endorse the N-Springs expedited cleanup of strontium-90 contamination. (Stuart and Mildred Chapin)

Response: See response to comment 123.

86. One major concern is the flow of contaminated radioactive waste ground water into the Columbia River through seeps, which are called N-Springs. The project proposes that there would be an accelerated cleanup of the N-Springs with the contaminated water being pumped out and treated by the end of September 1995. Outside review groups have serious concerns as to the effectiveness of this cleanup. (Craig Rowley, the Mountaineers)

Response: See responses to comments 38, 84 and 97.

87. Perhaps the Expedited Response Action on the N-Springs would be a success and we can make Congress believe that we're cleaning up. We need a specific agreement and milestones to be assured that this stays a priority. The cleanup is actually happened and that cleanup is actually occurring and that there are dates that are locked in that Congress can

look at and say the 100 Area will be cleaned up by this date. They know it. It's coming. It's going to be done. We think that's something that we need to have. (Greg deBruler, Columbia River United)

Response: See response to comment 38, 84, 97 and 123.

88. I think it is important that the accelerated preventive steps that have all ready been approved by the contractors for the N-Springs area of Hanford. And by those preventive measures, I mean the pumping out of the contaminated water and the treatment of it and also the constructing an underground wall preventing the contaminations from reaching the ground water. I think they ought to start the construction on those plans of action immediately. They sound to me like good first steps in a critical area which the N-Springs are vital as far as any ground water reaching the Columbia River and contaminating the rest of Hanford Reach river area. So accelerate those actions environmental steps as soon as possible. Please. (Scott Stumbaugh)

Response: Initial attempts to install a sheet pile wall were ineffective. Further evaluation of the constructability of the wall are expected to be concluded by March 1996. See also responses to comments 38, 84 and 123.

89. The issue of skyshine--it seems to me like somebody suggested capping the N Area cribs. I think so too and the sooner the better. The radiation levels along the 100 N Area shoreline that is the area where the N Reactor and its contamination discharge facilities are located. Well I guess they pose a real serious health and safety threat to the general public. This risk should be first and foremost addressed by the Model Toxics Control Act. (Scott Stumbaugh)

Response: The dose rate along the N Reactor shoreline does not pose a "real serious health and safety threat" to humans under existing land use. Recent information indicates that the emergency dump tank at the N Reactor is in fact a significant contributor to skyshine along the N Area shoreline. As part of N Reactor deactivation, the parties expect actions to reduce skyshine from this source.

See also responses to comments 13, 14, 15, 82, and 109.

90. We need to not only deal with skyshine in the N Area, but apparently also other direct radiation sources. We need to deal with chemical exposure hazardous not just the radiation sources. We need to deal on the basis on process knowledge as well for instance over the years we have repeatedly testified about the fact that it has been known for 30 years that reactor fuel chips, some the size of half dollars, went into the river and landed on the islands and sediments and shorelines down stream. We are talking about highly radioactive pieces of the actual spent fuel. No one's ever gone back out and looked for them except for in several classified documents in the 1960's or if they have the documents are still classified and I sure haven't seen them. There needs to be an independent survey of these risks and an effort to make sure that the public is not exposed to them as well as remediation of them. (Gerald Pollet, Heart of America Northwest)

Response: The Columbia River Comprehensive Impact Assessment is intended to address current risks to the public and to the environment resulting from past and/or present operations at Hanford. Chemical and radiological contaminants are included in the assessment. Radiation sources, other than the skyshine at 100 N, are also included. Investigations of historical records as part of this study and the extensive searches conducted through the Hanford Environmental Dose Reconstruction Project have not revealed any evidence of "reactor fuel chips, some the size of half dollars". In addition, special radiological surveys of the river shoreline and periodic flyovers using sophisticated and highly sensitive radiation detection instrumentation have not indicated the presence of such "highly radioactive pieces of the actual spent fuel". Both the special studies and the aerial surveys were designed, and have demonstrated the ability, to detect extremely small differences in ambient radiation levels and identify the presence of and locate the small radioactive specks that are known to be present along the river. A short list of significant documents relative to this issue follows. We would greatly appreciate your input in identifying the source of information (reference of individual) relative to the presence of large fuel pieces in the river.

See also response to comment 93.

Cooper, A.T. and R.K. Woodruff. 1993. Investigation of Exposure Rates and Radionuclide and Trace Metal Distributions Along the Hanford Reach of the Columbia River. PNL-8789, Pacific Northwest Laboratory, Richland, Washington.

Erickson, J.L. October 25, 1994. Letter to EPA pertaining to cobalt-60 radioactive specks. ERS 94-1028. Washington Department of Health, Olympia, Washington.

Sula, M.J. 1980. Radiological Survey of Exposed Shorelines and Islands of the Columbia River Between Vernita and The Snake River Confluence. PNL-3127, Pacific Northwest Laboratory, Richland, Washington.

Wade, C.D. and M.A. Wendling. 1994. 100 D Island USRADS Radiological Surveys Preliminary Report - Phase II. BHI-00134, Bechtel Hanford, Inc., Richland, Washington; also includes attachments.

Wells, D.P. 1994. Special Report: Radioactivity in Columbia River Sediments and Their Health Effects. Washington State Department of Health, Olympia, Washington.

91. I represent Physicians for Social Responsibility on the Hanford Advisory Board, and in looking at the package the thing that everyone is talking about in this document it says that the letter report and schedules to Ecology and EPA documenting alternative proposed to abate 1301-N and 1325-N crib skyshine. That was due October 31st. It's very hard to evaluate this particular key section. It's one of the hottest topics on the shoreline and also around the room. I think that there's no way that I can evaluate anything about this because I got only this evening handed the letter but I don't study things as quickly as Gerry does and it's going to take me some chewing to really understand what that's

about. The complete implementation of the skyshine abatement actions selected under M-16-12 is to be established November 1994. We've just missed that milestone or will very shortly. Count that on your watches. Have you agreed on the dates and the approaches or do you have a date in the proposed letter. I mean, I don't want to get into semantics, it's just the fact coming here this evening and looking at this, this week, I called around to try and get a sense of what was coming down and they told me I would be able to see it tonight. I saw it all, 27 pages of it, and it sort of got me going around. I think we need to look at that and look at that critically in order to give you a fair reading on what we think about it. The real issue is the bottom line. (Dick Belsey, Oregon Hanford Waste Board and Hanford Advisory Board member)

Response: See responses to comments 80, 81 and 89.

92. The skyshine issue is, mostly from my perspective, even more a worker health issue. We need to do something about that. I remember riding through there with Oregon Hanford's Waste Board on the road between the two cribs, we were seeing fluxes of 600, 650 nearly 700 microrem per hour. People are going to have to work in that. We've got to make sure that we minimize their dosage. Thank you. (Dick Belsey, Oregon Hanford Waste Board and Hanford Advisory Board member)

Response: We agree that doses to workers are a significant concern and must be carefully addressed. Any option to remediate the 1301-N and 1325-N cribs will result in exposure to workers. Shielding actions to reduce skyshine will help protect Hanford workers characterizing the cribs. Other techniques, such as limiting the time workers are exposed to radiation may also be required. However, both Ecology and EPA believe that the information that can be gathered by characterizing the 1301 and 1325 cribs will be useful in determining further actions in the N Area and can reduce worker exposure at some future period if it can be determined that many radionuclides are concentrated within the upper few inches or feet of the bottoms of the cribs.

See response to comment 89.

93. I am Tim Takaro with the Physicians for Social Responsibility. In light of the interests by the agricultural community in the Tri-Cities to develop the North Slope for agricultural use, I would like the public record to reflect estimates by the Department of Health about skyshine and the far side of the river on the North Slope and the variation that one would expect with weather conditions. Especially considering worst weather conditions scenarios. Thank you. (Tim Takaro, Physicians for Social Responsibility)

Response: The Department of Health (WDOH) has not surveyed that part of the North Slope that is directly opposite the N Reactor. Battelle surveyed this area in 1992. Their results were published in the Cooper and Woodruff publication referenced in the response to comment 90. The maximum external exposure rate that they observed was 14.9 $\mu\text{R/hr}$ and the typical rate ranged from 9 to 11 $\mu\text{R/hr}$. These should be compared to natural background rates in that area which range from 8 to 12 $\mu\text{R/hr}$. Thus the skyshine along the North Slope does not appear to be

significantly elevated above natural background and does not pose a significant public health risk. Skyshine dose rates are further reduced as one moves away from the river. The accuracy of these results is an important issue. The WDOH, in order to verify the accuracy of Battelle monitoring programs, frequently participates in joint radiation surveys and sampling. These samples are independently analyzed at the Public Health Laboratory in Seattle. The WDOH's results are consistently in good agreement with the results of Battelle. Thus the WDOH has confidence in Battelle's survey. Nevertheless, in order to verify Battelle's results, the WDOH anticipates independently surveying this area in the summer of 1995. Weather should not significantly affect the dose rates because skyshine, which is the reflection of gamma radiation from the atomic constituents of the atmosphere, depends primarily upon the density of the atmosphere above the cribs. The presence or absence of clouds or other storm systems does not significantly alter the atmospheric density.

See responses to comments 89, 90, 130, 131, 132, and 134.

94. From the N-Springs plan you have right now. How much of a reduction to you expect to get from the flow of strontium-90 into the river? (Lynn Porter)

Response: See responses to comments 84 and 97.

95. What are you doing other than the N Area, which actually was announced a year ago that an Expedited Response Action would be taken to the strontium plume, it is not part of this negotiation. What else is being done to accelerate the cleanup of ground water all along the river. (Gerald Pollet, Heart of America Northwest)

Response: See responses to comments 84 and 123.

96. I'm Lynn Porter. The ground water issue is that the studies have been done and the decisions aside from the N-Springs, decisions have not been made about what to do about it and what we need to hear is, we need to hear milestones with definite deadlines and them that can be enforced rather than milestones which just say studies will be made by this date and so on. There's not a real high level of trust. We're kind of the public police or something. We really need something real definite to look at and I hope it will be coming along soon. (Lynn Porter)

Response: The Tri-Parties agree that there is a need to achieve immediate and meaningful remediation and that Tri-Party Agreement milestones need to effectively drive real cleanup.

See also response to comment 84.

97. The decision to construct a sheet pile wall and initiate a pump and treat system at 100 N do not appear to be supported by the evidence of risk to human health and safety, or to the Columbia River ecosystem. In public meetings, peer review sessions, and published documents, neither EPA, Ecology or USDOE have demonstrated a risk-based need for this action. Also, harm associated with the historical mitigation of

strontium-90 to the river, which was at higher levels than today, has not been revealed by surveillance programs. Ironically, former N-Springs discharges are apparently allowed under an National Pollutant Discharge Elimination System permit. Inaccuracies in Ecology's "Action Memorandum" raise concern that regulators are not fully informed about the characteristics of strontium-90 contamination and the implications of remedial actions. The confusion in differentiating "flux" and "concentration," and the reliance on single concentration values as representative of a plume, do not reflect careful analysis of the problem. The Action Memorandum repeatedly refers to reducing "the strontium-90 contamination flux to the ground water that feeds N-Springs...". Strontium-90 will continue to be released from the soil column to ground water at a very slow rate for some time to come; neither the wall nor the pump and treat will reduce this flux. There is a slim chance the remedial action might increase this flux, by changing the current steady state conditions. A disturbingly small amount of information is available to support the decision to invest millions of taxpayer dollars into this project. The flux of strontium-90 to the river is a rough estimate, based on very small up- and downstream differences observed in the river itself. Estimates derived from generalized ground water flow models also suggest only small amounts are being added by the current ground water pathway, in stark contrast to the large amounts discharged during operations. There have been no efforts to identify areas where ground water containing strontium-90 might be upwelling into the river channel, other than the N-Springs monitoring wells. Ecological data from a few areas, including sampling results on water and sediment from shoreline seepage, is neither comprehensive, nor indicative of ecological damage caused by strontium-90. What is perhaps most disturbing is the absence of any Tri-Party Agreement milestones to better determine the significance of strontium-90 migration into the river and the possible risk implications. The current attitude suggestions, "we don't want to know--just clean it up." This is not a responsible attitude. There has been no direct sampling of the very process that the Expedited Response Action intended to stop: The flux of strontium-90 to the river via ground water. Why not drill along the shoreline to collect ground water samples for analysis? Radiological logging tools could be used in these boreholes to further define zones of contamination. Comparisons of strontium-90 in water samples with soil samples taken during drilling would help determine retardation coefficients. How about a detailed look at where strontium-90 ends up along the shoreline? It may be held in fine-grained sediments and coatings on gravels--materials likely to be disturbed during sheet pile driving, thus remobilizing strontium-90 that otherwise would remain in place. Information of this nature should be available to the public, and particularly to designated stakeholders who have gained increased influence over the technical aspects of remediation. The incremental cost for hydrologists, chemists and ecologists to get such information is minimal relative to the total project cost. Careful contaminant characterization investigations can result in large savings on remediation projects. We should not be attempting to solve a problem before we understand the problem. The N-Springs Expedited Response Action has the potential to become a disastrous public relations nightmare for USDOE and the regulators. In the worst case, attempts to drive sheet pile will remobilize and/or enhance movement of strontium-90

to the river by altering the current steady-state conditions. Partial completion of the wall, resulting from construction problems associated with the gravelly sediments will not achieve the barrier desired. While concentrations of strontium-90 will decrease during pump and treat, they are likely to rise again when pumping stops, as strontium-90 continues its very slow migration downward through the soil column. Finally, the explanation for discharging treated ground water which may contain 200+ pCi/L of strontium-90, back to the ground will be a tough one. If this worst case scenario were to evolve, congressional support for continuing the high level of environmental restoration funding for Hanford might be compromised. Prior to starting the proposed activities, we need to acquire additional information on the movement of strontium-90 to the river via ground water, and the ultimate fate of the contamination. The criticism that USDOE should "stop studying the problem and get on with the cleanup..." is not valid, since much of what has been cited as "studies" is actually administrative paperwork. There has never been strong support for either the USDOE or the regulators for an accurate description of the contamination problem along the river, in spite of the intent of the Comprehensive Environmental Response, Compensation and Liability Act remedial investigation process prescribed by law. And part of the obligation to understand the contamination problem is to be able to accurately communicate the problem to stakeholders, such that they may make informed demands of USDOE and the regulators. I urge the Tri-Parties to seek more complete information regarding strontium-90 contamination before embarking on the construction aspects of the N-Springs Expedited Response Action. (Robert E. Peterson)

Response: Interpretation of the 100 N data has been a controversial issue. However, it is clear that ground water entering the Columbia River at N-Springs is far above drinking water standards. Uncertainties will result in a wide range of estimates of the amount of strontium-90 that is entering or will eventually enter the Columbia River. Actions scheduled under the N Area pilot project are in large part designed to reduce these uncertainties. The mission of the 100 N facilities has changed from nuclear material production and electrical generation to environmental restoration. Laws governing the allowable radioactive and hazardous waste discharges and impacts have changed from the early days of 100 N production. The commenter is correct that the Action Memorandum does cite reduction of "the strontium-90 contamination flux to the ground water that feeds N-Springs". These words originate in the Three parties' Milestone M-14 dispute settlement of January 8, 1993 where USDOE committed to a response action at N-Springs that "will reduce the strontium-90 contamination flux to the ground water that feeds N-Springs, evaluate commercially available treatment options for strontium-90, and provide data necessary to set demonstrable strontium-90 ground water cleanup standards". Initiation of a pump and treat system will meet these three objectives. It is the intention of the agencies to evaluate the effectiveness and efficiency of this system to determine if it should be continued, expanded or discontinued. A large amount of new data was collected and analyzed during the sheet pile testing including real time-ground water data by the use of an expanded transducer network. This data helped refine the flow system conceptual model, yet significant uncertainty remains. The initial phase of pump and treat system operation will be used to collect more data that will

reduce these uncertainties. Upwelling of ground water plumes into the Columbia River and associated risks and ecological impacts to the Columbia River from ground water discharges will be assessed in the Columbia River Comprehensive Impact Assessment. Upwelling data collected in March 1995 at H Area will be evaluated and further sampling in other locations is planned for late summer of 1995.

See also response to comment 88.

98. I'm Oscar Elgert. I live near Kennewick, retired and a sometime nuclear engineer consultant. I comment on the decision to promote the early cleanup along the river. I applaud that decision to amend it, the Tri-Party Agreement to emphasize, cleanup of the areas along the Columbia River first. I believe it is desirable to remove radioactive chemical and petroleum contaminants from these areas as soon as possible. However the pace of actual cleanup appears to be excruciatingly slow with a \$2 billion dollar Hanford budget, it would appear, annual budget, it would appear that much more resources both dollars and manpower could be allocated to clean up along the river. There also appears to be an ineffective effort in cleanup. For example, according to the latest Hanford site environmental report for 1993, only about 1100 of a curies strontium-90 is entering the river and a strontium-90 concentration upstream of Hanford is the same as downstream of the 100 Area. In other words, the release of that 1100th of a curie does not contribute to the overall level of strontium in the river. Still the projected effort to abate strontium-90 relieves on a temporary basis is ongoing and is projected to cost nearly \$35 million. I believe these funds could be more effectively used in actually removing the contaminated soil underneath these disposal facilities and thereby eliminating the source of strontium-90 from this general area. Thank you. (Oscar Elgert)

In the near term, the parties are taking an interim action to reduce strontium-90 discharges to the Columbia River. Timing of the actual closure of the source is expected to be determined as a result of the 100-NR-1 Operable Unit Corrective Measures Study.

Response: See also responses to comments 11, 39, 56 and 123.

99. Just a couple questions. You were talking about Strontium-90 and it gets into your bones and I don't know exactly what that's all about, but it sounds pretty dangerous to me and we were being told it's leaking into the Columbia River. Alright, but it's not dangerous because it's going to be diluted, right? Is that everybody's pretty much position here? Since it's going into the Columbia River, and down the road about two miles, it's going to be so diluted it's not dangerous, it's acceptable? That's the sense I get from all this. (Unknown Commenter)

Response: See responses to comments 84, 90 and 97.

100. Regarding the N-Springs area and the N-Springs area and the trenches where for over 23 billion gallons of waste have been dumped over the years. And that waste which contains a lot of strontium which is a

bone-seeker, is flowing into the Columbia River to the rate of as much as 24 times the drinking the allowable EPA standard of strontium and other radionuclides. This is all gama radiation that is picture in here. Right now studies are finding that 15,000 times the level of acceptable radiation is flowing into the river. They are still detecting that amount of radiation, excess radiation in that area of the river. This is a fifty-mile stretch along the Columbia River that Hanford sits on. There is a lot of wildlife in this area, people boat here, people fish here, workers of course working in this area. So we are very concerned that the proposal does not include reducing the levels of radiation in any foreseeable way. Anything that we can determine that benefits us. So just to go on with that and to repeat current radiation levels along publicly used shorelines are as high as 24 times what is allowed by law. The public and wildlife must be protected from such exposures while using the Hanford Reach. (Paige Knight, Hanford Watch)

Response: See responses to comments 38, 90, 97 and 130.

101. What are we talking about in terms of levels of risk here? Referring to a map showing the area of the fifty mile Hanford Reach of the Columbia River near the D, DR and N Reactors. This is the N Reactor buildings, these are the liquid waste disposal trenches near the N Reactor which received huge quantities of contaminated waste from the reactor. These trenches are so radioactive that they give off levels of radiation that are, according to one estimate published in the Response to Comments on last year's Tri-Party Agreement, 24 times EPA's allowable limit for public exposure. Now, hundreds of people on the opening day of Salmon season and on summer weekends use this stretch of the Columbia River. The radiation levels extend all the way across the Columbia River. That is not the only area. Near the B Reactor, you see shoreline areas and an island with higher levels of radiation as well. Up and down the fifty mile stretch of the Columbia River we have levels of radiation that are way in excess of what we should allow the public and the environment to be close to. And we can reduce it, but what we need is a milestone in the agreement that is real progress for Hanford cleanup, real risk reduction by the year 2000. We can't understand why this wasn't the topic of negotiation, given the fact that EPA's Clean Air Act limit of 10 millirem per year is clearly being exceeded here. Now in the Response to Comment (document) issued in January (1994), something very interesting was also disclosed for the first time. It said that while EPA's level standard is 10 millirem per year, some readings in this area alone of the shoreline are 100 millirem per hour. That is in one hour, 10 times EPA says you can get in a year. This is why we need to accelerate real cleanup along the Columbia River and soon. Referring to the promises made in the negotiations, these are actual quotes. "The Columbia River milestones were be achieved sooner and the land can be ready for new uses." It was promised that consistent with the Future Site Uses Working Group advice before the year 2018 the area along the Columbia River will be ready for unrestricted public use. Now, what's the reality here. First of all, there is no accelerated real deadline for cleanup along the Columbia River. It remains at the year 2018. The only things changed were milestones relating paperwork studies when we went through them in the existing agreement all of the paperwork studies

were going to be done by the end of the century which is the new milestone anyway. There isn't a real speedup. (Gerald Pollet, Heart of America Northwest)

Response: See responses to comments 53, 82, 89, 101, 110, 123 and 171.

6.0 ISSUE 3 -- MODIFY MILESTONE REQUIRING THE COMPLETION OF THE REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES FOR ALL OPERABLE UNITS BY THE YEAR 2005. THE OBJECTIVE IS TO ACHIEVE EARLIER REMEDIATION AND FOCUS ON SITES ALONG THE COLUMBIA RIVER

102. A stated purpose for the Milestone M-15-80 is "to reinforce commitments to stakeholders regarding the high priority of *monitoring* and ceasing contaminant discharges to area ground water." Where are these commitments supported by the Tri-Party Agreement milestones? The single milestone currently offered refers to an impact assessment that won't be available prior to interim remedial action decisions for the 100 Areas ground water operable units. (Note: An impact assessment is already available in early versions of USDOE's Columbia River Impact Evaluation Plan. Why isn't it being used?) Why not follow through with the original intent of the Tri-Party Agreement milestone series M-30-00 by establishing successor milestones? Some relevant objectives might be: (1) interpret the extensive data set obtained under M-30-05 relative to the movement of ground water at each reactor area; (2) document the data quality objectives associated with using ground water monitoring wells to support records of decision, both interim and final, for shoreline contamination problems; (3) establish a ground water/surface monitoring program to keep track of contamination along the exposed 100 Areas shoreline. The data quality objective of this effort should be directly tied to the basis for records of decision and evaluation of remediation performance; (4) create a coordinating function for ground water, shoreline and river environmental sampling to support environmental restoration. Many of these objectives are already identified in existing work plans (i.e., Appendix D to ground water operable unit plans; tasks in the Columbia River Impact Evaluation Plan). Perhaps it is time to implement these plans and enforce performance via Tri-Party Agreement milestones. (Robert E. Peterson)

Response: The commenter is correct in stating the intent of M-15-80. As stated in the comment there is a vast amount of data regarding the river and ground water interaction in the 100 Areas that was collected to support near term decisions on ground water units. The three parties will ensure this information will be used in the Ground water Protection Plan, the Ground water Remediation Strategy and the Columbia River Comprehensive Impact Assessment. The three parties will determine if more work needs to be performed in regards to the ground water/river interaction to support long term goals.

6.1 ACCELERATION OF CLEANUP

103. Dare we risk delaying cleanup and notification with what we know of the downwind effects from Hanford on animals and human beings? I implore you and those of USDOE, EPA and Ecology to act with the utmost urgency

and efficiency to implement cleanup and notification. (Dr. Lester and Gloria Abbenhouse)

Response: The intent of the Environmental Restoration Refocusing is to begin actual cleanup as soon as possible. The parties strive to keep the public informed of the progress of Hanford cleanup and any risks that may be posed at the site through public information documents. For more information on Hanford cleanup, call the toll-free number at 1-800-321-2008.

See also responses to comments 18 and 123.

104. It is a moral obligation of the U.S. Government, USDOE and its contractors to get on with the cleanup at Hanford and do it as quickly and efficiently as possible. (John and Linda Jewell)

Response: See responses to comments 53 and 123.

105. My name is Chloe Harris and I just wanted to say that you guys are not just hurting us, you are hurting the streams, you are hurting everything, all the wildlife. You are hurting everything and you guys need to wise up. Get cracking and start doing some work. (Chloe Harris)

Response: See responses to comments 53, 103 and 123.

106. Being a contributing member to the organization Heart of America Northwest, I attended a public meeting concerning the disposal and storage of the waste at Hanford on December 15. While Ecology, EPA and USDOE presented a plan for storage and further cleanup, it appeared that they are very slow in constructing and getting into operation that vital plant or storage or milestones as they termed the ongoing operation. Slow is not what we need and while there is considerable money being spent, wasting it is what is being accomplished. I came away with the impression that no one really knew how to contain this world destructive force. Also, I was disturbed by the repeated usage of the term, "renegotiation." Why isn't the word "cooperation" used instead, where egos, positions and who's got more power doesn't come into the scenario? It is quite obvious that action should be taken immediately, that no more time or money be wasted. We're talking about our lives and definitely that future of our Earth. (Nell Zajac)

Response: We agree that more cleanup progress must be achieved for fewer cleanup dollars, and less bureaucratic paperwork.

See also responses to comments 11, 44, 53 and 123.

107. Despite billions of dollars which have been spent at Hanford, the new Agreement does little or nothing to improve cleanup. The proposed Agreement shifts a few deadlines, but does not start the cleanup process any sooner. In light of the very serious public health, safety and environmental problems at Hanford, the Mountaineers strongly urges that the cleanup schedule be accelerated and that actual cleanup work begin promptly. (Craig Rowley, the Mountaineers)

Response: See responses to comments 53 and 11.

6.2 ACCELERATION OF CLEANUP NEAR THE COLUMBIA RIVER

108. I want to thank the USDOE for access to get facts about what is in the future for the cleanup of Hanford. I attended the public meeting on November 14 in Hood River, Oregon and was impressed with the information I heard and the handouts were helpful. My main concern is the Columbia River and when the cleanup starts! I've always heard (since I was a kid in the 60's) that if they (the government) ever disturbed the Hanford area, it would get into the waters of the Columbia River. It has always stayed in my thoughts. (Vera Wilson)

Response: Environmental restoration (cleanup) activities addressing actual and potential releases of contamination to the Columbia River have already begun. For example, a ground water removal and treatment project is in operation adjacent to the Columbia River at the D Reactor; the objective of the project is to reduce the mass of contamination (chromium) that might ultimately be discharged in ground water to the river. Also, an Expedited Response Action is underway at the N Reactor to address contaminated ground water seeping into the Columbia River.

A major environmental restoration project related to the Columbia River will address the large diameter effluent discharge pipelines that run from the reactors to beneath the center of the Columbia River. Reactor cooling water that was discharged through these pipelines into the river occasionally became contaminated, resulting in some contamination of the pipelines. Recently, small "vent pipes" protruding from the pipelines beneath an off-shore island at D Reactor were removed. Studies are in progress to evaluate the best way to deal with the main pipelines; additional characterization of the contamination within the pipelines will occur in 1995. Remediation of the pipelines will begin only after the regulators issue an Action Memorandum indicating the preferred approach; this document is expected in late 1995 or early 1996. Remediation could begin as early as 1997 or 1998.

All cleanup decisions, by law and regulation, must consider and evaluate the environmental impacts of the options considered for remedial action. If the environmental impacts of a particular option are unacceptable or the environmental or human health risk reduction is not worth the environmental damage incurred as a result of implementing the remedial action, that remedial action should not be selected. Additionally, remedial actions will include appropriate monitoring to assure improper impacts do not occur.

109. I wish to comment regarding Hanford environmental restoration. I was recently hiking along the shoreline of the Hanford Reach on the Saddle Mountain National Wildlife Refuge. I enjoyed my day along the last free flowing stretch of the Columbia, however, I was alarmed to learn that I was likely exposed to radiation 240 millirems above annual background levels--24 times above the EPA allowable limit of just 10 millirems! Now that this area is on line to Wild and Scenic River status, this simply must end. I thought cleanup was going to be accelerated as

promised in 1993. Now I understand that the draft agreement would not reduce the current high radiation and chemical exposure levels to the public or wildlife along the Columbia River. This is an outrage!
(Daniel Dancer)

Response: Exposures incurred to those hiking or boating along the Hanford Reach are well within established exposure limits. As identified in the response to comment 82, the 10 millirem limit referred to by Gerald Pollet at the Environmental Restoration Refocusing meeting applies only to radioactive airborne emissions to a permanent resident, and does not apply to external exposures from waste sites (skyshine). There is one applicable regulation that sets limits for public exposure that applies to skyshine; DOE Order 5400.5 limits exposure to 100 millirem/yr/person. In addition, there is one policy guidance standard, USDOE As Low As Reasonably Achievable Guidance sets policy at 30 millirem/yr/person. A pending regulation (10CFR834) cites a standard of 25 millirem/yr/person for residual radioactive waste. These standards are for exposure above background and require the estimates of exposure to be based on reasonable exposure scenarios. USDOE has evaluated the exposure at the shoreline on the Hanford (south) shore of the Columbia River adjacent to N Area, where skyshine is the highest. Approximately 1200 hours of exposure, at the shoreline of the N Area, is needed to exceed the most stringent of these standards (25 millirem pending standard). Exposures across the river, where there is day use public access is considerably lower.

110. The commitment to complete remedial action along the river by 2018 is actually weakened by the draft agreement to allow huge contaminated reactor buildings to remain in place after that date for later (if ever) decontamination and removal to the 200 Area. This can cause recontamination of "cleaned" areas and destruction of restored habitat.
(Doris Cellarius, Cascade Chapter, Sierra Club)

Response: Cleanup of 100 Area Operable Units and facilities subject to decontamination and decommissioning will be required in order to allow for potential future uses of these lands. As cleanup decisions are made for 100 Area Source Operable Units, cleanup schedules will be set for remaining facilities or structures within the operable unit. Tri-Party Agreement milestones for cleanup and removal of the reactor cores in the 100 Area will be negotiated by no later than December 1996. The Tri-Party members ultimate goal is achieving unrestricted use of the 100 Area. This use can be equated to the frequent land and ground water use scenario. During these cleanup activities the recontamination of "cleaned" areas and destruction of restored habitat will be avoided to the extent practical.

See also responses to comments 123 and 171.

111. The commitment to complete remediation action along the river by 2018 is actually weakened by the draft agreement to allow the huge contaminated reactor buildings to remain in place after that date for later (if ever) decontamination and removal to the 200 Area. This raises the potential for recontamination of "cleaned" areas and destruction of restored habitat. (Washington Environmental Council, Heart of America Northwest,

Hanford Watch, Hanford Education Action League, Sierra Club, Hanford Action of Oregon, Washington Physicians for Social Responsibility, Columbia River United)

Response: See responses to comments 110, 123 and 171.

112. The draft agreement would not reduce current high radiation and chemical exposure levels to the public or wildlife along the Columbia River. Current radiation levels along publicly used shorelines are as high as 24 times what is allowed by law. The public and wildlife must be protected from such exposures while using the Hanford Reach. Tri-Party Agreement milestones for completing investigations of contaminated areas in the 200 Areas (high-level waste tanks, PFP and PUREX plants, etc.) is delayed for two years. This may delay completing remedial actions by 2018. (Washington Environmental Council, Heart of America Northwest, Hanford Watch, Hanford Education Action League, Sierra Club, Hanford Action of Oregon, Washington Physicians for Social Responsibility, Columbia River United)

Response: See responses to comments 82, 85-101 and 130-33.

113. Current radiation levels along the shorelines heavily used by the public for recreation have been measured at 240 millirems, whereas the EPA allowable limit is only 10 millirems. The responsible agencies should take steps to significantly reduce the hazardous waste entering the river on an accelerated basis ahead of the schedule called for in the Agreement. (Craig Rowley, the Mountaineers)

Response: See responses to comments 82, 109 and 134.

114. There is an acceleration in this renegotiation, but our concern comes up with the acceleration. Is it actually cleanup? There's acceleration of remedial investigations, but our concern is, is there an acceleration in the actual cleanup. There's going to be acceleration in feasibility studies, but is that going to get to the acceleration of actual cleanup? We don't know yet. Nothing's locked in as far as when there will be closure on certain sites or certain operable units. There's no milestones for that. So we're excited that they did change the direction. They said that they're going to clean up along the Columbia River and that's a priority and we thank everybody for doing that. But the public's concerns are still sitting here saying, will there be actual closure, actual cleanup in these operable units and when will it come? (Greg deBruler, Columbia River United)

Response: See responses to comments 11 and 53.

115. The Cascade Chapter of the Sierra Club is extremely concerned about successful implementation of the Hanford Tri-Party Agreement. This renegotiation of the Agreement does not speed the cleanup effort along the Columbia River, as promised. This is unacceptable! We see once again that there are delays, and the state gets no improvements in the Agreement in return for allowing this. (Doris Cellarius, Cascade Chapter of the Sierra Club)

Response: See response to comment 123.

- 116. In 1993, the USDOE agreed to renegotiate the environmental restoration provisions of the Hanford Cleanup Agreement (or Tri-Party Agreement) with Ecology and EPA. The agencies promised that the renegotiation would "accelerate" or "speed up" the cleanup effort along the Columbia River. Completion of cleanup (remedial action) along the Columbia River is not accelerated from the existing Tri-Party Agreement milestone for the year 2018. (Washington Environmental Council, Heart of America Northwest, Hanford Watch, Hanford Education Action League, Sierra Club, Hanford Action of Oregon, Washington Physicians for Social Responsibility, Columbia River United)

Response: See response to comment 123.

- 117. The proposed Restoration Agreement is seriously deficient in many major aspects. Although the agencies promised that the Agreement would "accelerate" the cleanup effort, the completion of the remedial action is not accelerated from the existing milestone year 2018. Secondly, the draft Agreement is actually weakened to allow the contaminated reactor buildings to remain in place after that date. This raises the potential for recontamination of "cleaned" areas. Third, the Agreement does not reduce current high radiation and chemical exposure levels, which pose serious risk to the public recreation use along the shorelines of the river and to the wildlife along the Hanford Reach. (Craig Rowley, the Mountaineers)

Response: See responses to comments 90, 123, 130-134 and 170.

- 118. My name is Katherine Crandall, and I also wanted to lend my support to Cindy Sarthou's comments. And I just want to say that I am really disappointed because last year you had promised us accelerated cleanup along the Columbia River and my assumption was that that was being negotiated and instead what I see is less cleanup, and that is not what the public asked for. We have regulatory agencies that are "rolling over and relaxing milestones," because the USDOE is setting internally lower funding levels for cleanup of the Columbia River while they are simultaneously spending over a million dollars on chauffeur service. That is ridiculously. I want to ask you to please set limits that make it safe for people to use the river in the unrestricted way that they are all ready using it by the year 2000. (Katherine Crandall)

Response: There are existing standards that establish safe limits for radiation and hazardous materials. These promulgated standards will be used to establish cleanup levels. Existing data indicates that exposures of radiation and hazardous materials to people who use the Columbia River are within acceptable levels. There is a Comprehensive Columbia River Impact Assessment currently underway to further evaluate your concerns.

See also responses to comments 107 and 123.

- 119. The key issues to us public interests groups are first of all the completion of cleanup, the remedial action along the Columbia River is

not expect accelerated from the existing Tri-Party Agreement milestone for the year 2018. We don't think that this plan is speeding up the cleanup along the Columbia River to the extent that it needs to be speeded up. We also believe that the draft agreement would not reduce the current high radiation and chemical exposure levels to the public or wildlife along the Columbia River. (Paige Knight, Hanford Watch)

Response: The Agreement will allow for the focus of resources on waste sites close to and which have a significant potential to impact the Columbia River, (consistent with the key stakeholder value of protecting the river). Cleanup milestones will be established during the Remedial Design/Remedial Action stage. Proposed Plans for interim Records of Decision will be forthcoming for priority waste sites in the 100 Area and for 100 Area ground water operable units.

See also responses to comments 5, 107 and 123.

120. In reviewing the draft agreement for the public interests groups, Cynthia Sarthou and I went through milestone by milestone comparing the draft with what exists and what the current work plans and schedules are and in fact what you have is no acceleration whatsoever of cleanup along the Columbia River in this draft from what we were already expecting. You do have a deferral in the 200 Area of two years, but you do not have any new deadline saying that number one, you will finish remediation along the Columbia River of either soil or ground water before 2018. This is a year ago and throughout the course of the past year the public was promised in document after document produced by the three agencies that they were going to renegotiate the restoration portion of the agreement to accomplish remediation before 2018 along the river. And I have one quote from this year, where the agencies wrote that this renegotiation was to "hasten cleanup along the Columbia River in the 100 and 300 Areas." "Columbia River milestones will be achieved sooner and land can be ready for new uses." These are quotes from September of this year. "For March we have revised milestones to clean up contamination in the ground water in Columbia River's shoreline, islands and river beds." This will allow us to clean up faster." In fact, in reviewing milestone after milestone, what you potentially have is fewer work plans being required under the new agreement on average over the next five years than you did under the existing agreement. You had a milestone in the old agreement that said that you had six work plans a year done. Now, the average under the new plan is slightly more than four. So you have reduction in work plans. Well, maybe that is good if you put more money into remediation, but the Department of Energy has capped its restoration budget at its current level which is basically only funding studies. And USDOE's own internal budget building block documents called activities data sheets say "the target case which is the plan budget request does not provide for remediation at the waste sites after the Record of Decision. Large scale remediation is not funded, completion of remediation by 2018, Milestone M-16 of the Tri-Party Agreement is in jeopardy." And that is repeated for every area along the river in every budget document. And as long as number one, they have a cap on their restoration budget and basically preserve the preexisting priorities of the site they can't move into remediation along the river in a major way. Number two, they have not negotiated a

defining goal to tell you about that says we will have ground water and soil cleaned up along the river and the areas along river available for unrestricted public access prior to the year 2018 which is the existing deadline. (Gerald Pollet, Heart of America Northwest)

Response: See description of modification pursuant to public comment (introduction to the Response to Comment document on pages 1 and 2) and response to comment 123.

121. The refocusing does not accelerate the cleanup along the 100 and 300 Areas by the river. When we say accelerate, we mean actual cleanup. We don't feel that Congress is going to be impressed with another feasibility study or a potential interim action that kind of gets around to touching the soil and kind of looking at it. What they need to see is actual cleanup. (Greg deBruler, Columbia River United)

Response: See response to comment 123.

122. The new agreement works to protect the Columbia River and sets risks of schedules to deal with the greatest risks first. We are going to deal with all the discharge pipes. Two different promises. Well, we don't have any schedule for dealing with the real great risks, as I have said. No radiation, no chemical exposure reductions guaranteed between now and the end of the century. Again, we have the citation here out of the Response to Comments (document) issued in January of 1994 by USDOE that show that the levels of radiation are may be as high as one hundred millirem per hour, 10 times what EPA says the public can get in a year. The draft agreement does not include any new milestones at all to clean up the shorelines, islands or river beds. Despite the promise last year that very specifically made at the public meetings that this year islands would be included and there would be new milestones for dealing with contaminated islands and freeing them up for unrestricted public use. Same with the shorelines, same with the river bed. Again, the only thing that is done is giving Battelle a study to do that ought to be rejected out of hand. Last issue. The promise was that the agencies would coordinate cleanup and decontamination, decommissioning work in the 100 Areas. That's along the river where the reactors are. You see quotes based on the agencies promises that they would set a deadline this year for removal of the reactors. This was their promise that they would set a deadline for removal of the reactors. There is no deadline for removal of the reactors. In fact, we are going the other direction and we urge people to say we need to reject the change to Milestone M-16 which says you can wait until after the year 2018 for removal of the reactors. That is like saying we are going to spend millions of millions of dollars remediating the areas around the reactors and then after we have replanted and encouraged the public to use this area. Then we are going to go back in with the world's largest moving vehicle, something like 280 wheels to put the reactor core on and tear up the area we just cleaned-up. It is crazy. It is not integrated at all. And we need a deadline that is before the year 2018 if we are really going to tell the public that you are going to get accelerated meeting of the goal of unrestricted use along the Columbia River before the year 2018. You can't leave the contaminated huge monuments that are the nine reactors sitting there after the year 2018 and pretend you have

unrestricted public usage along the Columbia River. Thank you. (Gerald Pollet, Heart of America Northwest)

Response: See responses to comments 44, 89, 90, 93 and 123.

123. (Letter to Governor Lowry): Last year you joined the public in calling for accelerated protection and cleanup of the Hanford Reach of the Columbia River used by both people and wildlife despite elevated radiation levels and contamination. The Hanford Reach is the last free flowing stretch of the Columbia and a vital spawning area. Regardless of the public outcry for accelerated cleanup along the River, less than 10 percent of the Hanford cleanup budget has been allocated to environmental restoration along the River. After months of negotiations, USDOE has failed to commit to accelerated goals for: (1) reducing radiation and toxic contamination levels; and (2) completing remediation along the River. Instead, USDOE is underfunding and evading previous milestones for environmental restoration of the Hanford Reach of the Columbia. Please do not end negotiations until USDOE agrees to reduce radiation and contamination levels along the Columbia River by the end of the century. *(The following commenters sent in Heart of America Northwest post cards to Governor Lowry: Bill Abelson, Leslie Adams, Jerry and Jane Akita, Edward Alessandro, Nora Alvin, Richard Anderson, B.H. Anfinson, George Armour, Nancy Bauer, Kenneth Bahn, Rilla Barrett, Jan Bazala, Brian Benson, Julie Benson, Susan Berlien, Beatrice Bernhardsen, Mike Bestrom, Susan Birkenbuel, Joanne Boerth, Chaterine Bradshaw, Geoff Brigg, D.C. Brink, Lynette Brodsley, Beth Bronson, T.Y. Burham, Darlene Burt, Lavern Butler, Kerry Canfield, R. Carlson, Shelly Carpenter, Eugene Carter, John Case, Rebecca Castilleja, Del Castle, Faye Cate, Arlene Cavanaugh, Linda Ceriello, Kara Ceriello, Geoffrey Charlton, James Christo, Margarita Churchill, Brenda Clifton, Melissa Coiley, David Coles, Daniel Costello, Kristin Cothorn, Darlene Couldry, Martha Cram, Chris Crandall, Janet Creighton, Kathy Cross, Patrick Dadosio, Karen Daubert, Cynthia Davis, Felice Davis, Merritt Desvoigue, Daniel Devine, Paul Dewar, Julian Dewell, Charles Doughty, Sharon Eastman, Yasuko Endo, Rene Flynn, Tom Galbraith, Kevin Gallagher, Pat Garvin, Gary Gelow, Marva Gilmore, Bob Gelnovich, Joyce Grage, Douglas Grant, Robert Gray, Tina Griffith, Kathleen Hallum, Nelson Hauke, Rick Haykin, Miriam Heel, Eva Heiland, Mary Helman, Mary Helton, Roy Hendrickson, Robert Hennen, Estrella Hill, Hamlet Hilpert, Janet Hogue, Mr. and Mrs. Eric Hoyte, John Huston, Luanna Iverson, Virginia Iverson, Robin Jackson, Dorothy Jacobsen, Neil Johnson, Lillian Journey, Lydia Karhu, Rosemary Keller, Edmond Kelly, Nancy Kennedy, Douglas Kimball, Richard Kohler, Peter Kok, Polluanna Kondis, Sharene Kuhrt-Nelson, Jeremy Kunz, Joanne Larson, Rory Laughtery, Ruth Lawrence, Amber Ledford, Janice Leffew, Margaret Lemberg, Lorie Brudvik Linder, Louise Luthy, Tyler Lynch, Ken Mabbatt, James Maher, Mary Manning, Jan Martinka, Terri Mast, Wenell Matas, Elizabeth Mathay, Diane Mathers, Mark Matyjus, Laura McCormick, Margot McDonald, Alan McDougall, S.V. McIntyre, Sally McManus, Sarah Merner, Robert Meyer, Wendy Meyer-Goodwin, Winifred Miller, Lynn Mink, Joe Moore, Alan Moores, Don Moreland, Kathryn Morris Allen, Millard Mott, Mary Lynne Myer, Carol Nelson, Dorothy Nelson, Helen Nelson, Joe Nelson, Mary Neuberg, Julee Neuhart, E. Norton, Floria Ordon, Laura Owen, Anne Paisley, Doug Palmer, Anne Paquette, Rose Marie Parker, Joanne Parrent, Chris Parsons,*

Marcie Passic, Christopher Peragine, Gordon Perrott, Kathleen Peters, Merry Ann Peterson, Barbara Phillips, David Phillips, Emmanuel Pleshe, Nancy Post, Susan Quiett, Stanford Rabin, Stephin Raskin, W.H. Reddy, Mark Rediske, Jezaina Reinforest, Charlene Resan-Vollmer, Marjorie Rieck, Kay Rnerson, D.F. Rorex, Karisa Rose, Lynn Ross, Robert Ross, Marjory Rowley, Ralph Rudeen, Shirley Rund, William Rundall, Eri Rydgren, Lynda Sacamano, David Salsman, Ethel Sandoval, Cathy Savage, Part Savatgy, James Sawyer, Julie Schiro, Linda Schmid, Ulrich Schoettle M.D., Chris Sharpe, Juanita Shaternick, Christine Shellman, Mark Shepard, Bruce Sherman, Mary Sheilds, Dorothy Shindler, B. Shoenbauer, Ed Shope, Ruth Silberstein, Larry Silverman, A.K. Singh, Sarah Sloat, Gordon Smith, Christine Smullin, Gwen Sobieralski, Julie Somers-Gulsvig, Beth Spadafora, Winnie Sperry, Jerold Sprout, Robert Stagman, William Steele, Mr. and Mrs. Jeff Stone, Judy Swenson, M.R. Taylor, Jeanna Taylor, Mason Taylor, Molly Tennebaum, Daniel Thompson, Jan Thompson, Mary-Ellen Thompson, Teresa Tipton, Arnold Tomal, Connie Travaille, Lynn Tribbey, Victoria Trimble-Betz, Terese Tubbs, Bruce Vanderwall, Sandy Van Neel, Anita Von Oppenfeld, Anne Wagner, Shawn Wagner, Angela Wartes, Victor Watson, Mr. and Mrs. Dave Watts, Richard Weeks, Larry West, Doris Westman, Susan Westover, Everett Whealdon, D.N. Wheeler, Gordon Whisner, Jody Whitsett, Kathleen Wickett, Mary Lou Wickwire, Greg Wiegand, Betty Willett, David Williams, Donald Wilson, Elizabeth Wilson, P.L. Yasue)

Response: The three parties believe this agreement will result in accelerated cleanup along the Columbia River. Under the previous agreement, USDOE would continue to produce Remedial Investigation/Feasibility Study Work Plans and initiate new investigations at a rate of six per year. The cost to produce each work plan and perform the associated investigation ranges from 2 to 5 million dollars per year. Continuation of this program would have lead to a much higher proportion of the Environmental Restoration budget being spent on investigation rather than cleanup. This is not the case under proposed language. This change in direction will result in accelerated cleanup.

In order to accelerate cleanup the three parties agreed to finalize proposed plans for remedial action at many of the operable units that have completed the Remedial Investigation/Feasibility Study process. The first step in finalizing that cleanup strategy is to submit the first three proposed plans related to cleanup along the Columbia River for public comment. Once a remedial alternative is selected, the three parties will issue a Record of Decision and proceed with cleanup.

Since the Tentative Agreement was signed, the three parties have listened to your concerns and continued to discuss additional ways to accelerate cleanup. The parties have agreed to initiate a number of cleanup efforts this summer after public comment is complete on these initial proposed plans. This effort will result in real cleanup sooner as well as providing valuable information for remedial design.

In addition, the three parties have committed to decontaminate and decommission the buildings and ancillary facilities in conjunction with the remediation of the associated 100 Area operable units. Prior to this agreement, no such commitment was in place. We acknowledge that this commitment does not apply to the reactor buildings themselves. The

parties had agreed to negotiate schedules for reactor removal by December 1996 as established in January 1994 as part of Amendment 4 to the Hanford Federal Facility Agreement and Consent Order.

Finally, the parties have revised Milestone M-16, to complete cleanup by 2018, to reflect our commitment to accelerated cleanup of the 100 and 300 Areas and to establish milestones for the completion of the ongoing 1100 Area remedial action.

124. The commitment to complete remediation action along the river by 2018 is actually weakened by the draft agreement to allow the huge contaminated reactor buildings to remain in place after that date for later (if ever) decontamination and removal to the 200 Area. This raises the potential for recontamination of "cleaned" areas and destruction of restored habitat. Please make the Columbia River cleanup a number one priority. It is an outrage to let this go year after year. (Willadean and Ray Ross)

Response: See responses to comments 123 and 170.

125. The level of radiation in the Columbia River is of great concern to me. I am also gravely concerned over the slow response of USDOE to clean up the contaminated site at Hanford and to notify the public of the down river danger. (Dr. Lester and Gloria Abbenhouse)

Response: See responses to comments 53, 103 and 123.

126. The first (issue I have) is that the public has been promised over the last year and half I guess, that the renegotiation of the Hanford Cleanup Agreement this year would result in real acceleration of real cleanup along the Columbia River, as the highest priority for cleanup and showing progress. Secondly, the draft agreement does not address the need to reduce extremely high levels of radiation for people using the 50 mile Hanford Reach of the Columbia River and other toxic chemicals exposures along the river. We are suggesting that by the year 2000 and we think that is plenty of time, the Department of Energy should be required to meet a new milestone that says no one in the public using the Columbia River should be exposed to levels of radiation or toxic chemicals in excess of EPA and state standards for an operating facility. Right now people using the Hanford Reach of the Columbia River are exposed to levels of radiation 24 times what EPA sets as the maximum allowable level of radiation from USDOE nuclear facility in a year. That is not what we would consider a safe standard, that is based on the level of risk that one person out of every 10,000 exposed to it each year will get fatal cancer. And we are talking about a level of radiation along the Columbia River shorelines, twenty-four times that allowed under EPA standards. One of our comments has to do with other radiation levels along the stretch of river that we haven't been able to get a hold of from you folks. Thirdly, the commitment to complete remedial action along the Columbia River cleanup. As I mentioned before wasn't accelerated from the year 2018, but it is actually weakened and someone asked the question and that goes right to the heart of this. It is actually weakened by creating a exception for the 2018 deadline, removal of the huge immense contaminated nine reactor buildings.

Everyone thought they were in the 2018 deadline, all of a sudden under this new agreement they are out of the 2018 deadline. Fourth, milestones deadlines EPA milestones is the legal term for in the agreement what they call a deadline for completing investigations of the contaminated areas in the essential part of Hanford, the 200 Areas are delayed. Because we have a trade off for the speed up of cleanup from the year 2018 along the river. As I have mentioned we don't have speed up of any cleanup deadline along the river. Lastly, the report required under the Tri-Party Agreement about the levels of contamination in the Columbia River, what islands, what let areas downstream will be cleaned up is left in the hands of Pacific Northwest Laboratory which for 30 years has been issuing reports and saying things like maximum exposed hypothetical individual is someone who has never seen the Hanford Reach of the Columbia River because they don't include radiation exposures to people along the Hanford Reach in their calculations. (Gerald Pollet, Heart of America Northwest)

Response: See responses to comments 123, 127, 141, 156-167, 170 and 171.

127. Regarding levels of risk here (regarding contamination near the Columbia River)...Referring to the fifty mile Hanford Reach of the Columbia River near the DR and N Reactors...the N Reactor buildings, these are the liquid waste disposal trenches near the N Reactor which received huge quantities of contaminated waste from the reactor. These trenches are so radioactive that they give off levels of radiation that are according to one estimate published in the Response to Comments on last year's Tri-Party Agreement 24 times EPA's allowable limit for public exposure. Hundreds of people on the opening day of Salmon season and on summer weekends use this stretch of the Columbia River. You can see that the radiation levels extend all the way across the Columbia River. That is not the only area. Up here near the B Reactor you see shoreline areas and an island with higher levels of radiation as well. Up and down the fifty-mile stretch of the Columbia River we have levels of radiation that are way in excess of what we should allow the public and the environment to be close to. And we can reduce it, but what we need is a milestone in the agreement that is real progress for Hanford cleanup, real risk reduction by the year 2000. And we can't understand why this wasn't the topic of negotiation. Given the fact that EPA's Clean Air Act limit of 10 millirem per year is clearly being exceeded here. Now in the Response to Comment (document) issued in January (1994), something very interesting was also disclosed for the first time. It said that while EPA's level standard is 10 millirem per year. Some readings in this area alone of the shoreline are 100 millirem per hour. That is in one hour 10 times the amount EPA says you can get in a year. This is why we need to accelerate real cleanup along the Columbia River and soon. Let's take a look at what was promised in the negotiations quickly. These are actual quotes of the promises made for these negotiations. The Columbia River milestones were to be achieved sooner and the land can be ready for new uses. It was promised that consistent with the future site advice before the year 2018 the area along the Columbia River will be ready for unrestricted public use. Now what is the reality here. First of all, there is no accelerated real deadline for cleanup along the Columbia River. It remains at the year 2018. The

only things changed were milestones relating paperwork studies when we went through them in the existing agreement all of the paperwork studies were going to be done by the end of the century which is the new milestone anyway. There isn't a real speed up. Secondly, and this is very important. The Department of Energy is only spending 13 percent of its 1.5 billion dollar cleanup funding for 1995, only 13 percent is going to environmental restoration and they have imposed an internal cap on that expenditure so it will remain flat. Right now we are only paying for studies in environmental restoration. We are not paying for any large scale cleanup. As long as this funding level remains flat, the Department of Energy has decided it will violate the agreement. In essence it will not be able to do large scale remediation. These are actual quotes out of the Department of Energy's own activity data sheets. That for every area along the Columbia River, repeat that their plan budget requests. The target case does not provide for remediation at waste sites after the paperwork study is done. Remember cleanup costs more than paperwork. And as long as they have a million dollars a year to spend on pizza delivery and millions of dollars on planned new highways and new offices and as long as Westinghouse spends this is going to amaze you but they spent more on overhead last year than they did on environmental restoration, folks. As long as this remains the priority you are not going to see any acceleration of cleanup along the river unless the regulators say we are going to set real deadlines. I am just about done here. The new agreement works to protect the Columbia River sets risks of schedules to deal with the greatest risks first. We are going to deal with all the discharge pipes. Two different promises. Well we don't have any schedule for dealing with the real great risks, as I have said. No radiation, no chemical exposure reductions guaranteed between now and the end of the century. Again, we have the citation here out of the comments issued in January of 1994 by USDOE that show that the levels of radiation are may be as high as one hundred millirem per hour, ten times what EPA says the public can get in a year. Finally, five and six. The draft agreement does not include any new milestones at all to clean up the shorelines, islands or river beds. Despite the promise last year that very specifically made at the public meetings that this year islands would be included and there would be new milestones for dealing with contaminated islands and freeing them up for unrestricted public use. Same with the shorelines, same with the river bed. Again, the only thing that is done is giving Battelle a study to do that ought to be rejected out of hand. Last set here. The promise was that the agencies would coordinate cleanup and decontamination, decommissioning work in the 100 Areas. That is along the river where the reactors are. You see quotes based on the agencies promises that they would set a deadline this year for removal of the reactors. This was their promise. That they would set a deadline for removal of the reactors. There is no deadline for removal of the reactors. In fact we are going the other direction and we urge people to say we need to reject the change to Milestone M-16 which says you can wait until after the year 2018 for removal of the reactors. That is like saying we are going to spend millions of millions of dollars remediating the areas around the reactors and then after we have replanted and encouraged the public to use this area. Then we are going to go back in with the world's largest moving vehicle, something like 280 wheels to put the reactor core on and tear up the area we just

cleaned up. It is crazy. It is not integrated at all. And we need a deadline that is before the year 2018 if we are really going to tell the public that you are going to get accelerated meeting of the goal of unrestricted use along the Columbia River before the year 2018. You can't leave the contaminated huge monuments that are the nine reactors sitting there after the year 2018 and pretend you have unrestricted public usage along the Columbia River. Thank you. (Gerald Pollet, Heart of America Northwest)

Response: There appears to be a misunderstanding about what standards are applicable along the shoreline adjacent to the 100 N Area. The Clean Air Act is not applicable to skyshine. The issue of applicable standards is addressed in the response to comment 90.

The Tri-Party agencies are unaware of any significantly elevated external exposure rates along the Columbia River, with the exception of N Reactor. In particular, shoreline external exposure rates along the B Reactor shoreline have been measured with thermoluminescent dosimeters by Battelle and published in their annual report. The results are indistinguishable from natural background.

The comment of external exposure rates of 100 mrem/hr along shoreline locations is incorrect. This information apparently stems from a typographical error in the January, 1994 responses to comments of the Tri-Party Agreement amendment four. The correct statement should have been exposure rates had been measured as high as 100 μ R/hr. Even this rate is misleading because μ R-meters overrespond to the low energy gamma's of skyshine. Measurements which more accurately measure dose rate at these low gamma-ray energies, such as with a μ Rem meter, find that maximum dose rates are in the range of 20 - 30 μ Rem/hr, including natural background.

We agree with you that much of the acceleration of cleanup pertains to "paperwork studies" or at least documentation of limited field investigations and documents describing selection of remediation options and risk assessments.

USDOE must honor its agreements and must seek adequate funding that will provide sufficient resources to cleanup Hanford. USDOE must also make every effort to cut back on their overhead and make efficiency a priority in every decision that is made. Because of many comments made by you and others, more efficient methods will be used to remediate sites at Hanford. It is anticipated that many of the areas immediately adjacent to the reactors will be left until the reactors are removed and those areas will be remediated at that time. Other areas within the 100 Areas will be cleaned up according to the schedules as delineated by the Tri-Party Agreement and negotiated during this last session of negotiations. All cleanup and waste management must be integrated to provide the most efficient uses of funding and other resources.

See also responses to comments 44, 85-97, 109, 123, 130, 131, 132, 139, and 171.

128. The commitment to complete remedial action along the river by 2018 is actually weakened by the draft agreement to allow the huge contaminated reactor buildings to remain in place after that date or later if ever for later decontamination or removal to the 200 Area. This raises the potential for recontamination of cleaned areas and destruction of restored habitat. This is also controversial point you are going to hear some things that you need to think about from the Oregon Department of Energy tonight. (Paige Knight, Hanford Watch)

Response: See response to comments 110, 170 and 171.

129. In particular, the Future Site Uses Group identified protecting the Columbia River an immediate priority. The Board commends the Tri-Parties for heeding that advice. However, the Board has serious concerns that the budget short-falls will delay critical cleanup activities despite the assurances to the contrary by the Tri-Parties. The Board will continue to monitor the manner in which refocus Tri-Party Agreement carries out the commitment to Hanford cleanup. The Board insists that the U.S. Department of Energy meet legal obligations under the Tri-Party Agreement and will assist in seeking adequate funding the congress. (Dick Belsey, Oregon Hanford Waste Board and Hanford Advisory Board member)

Response: See response to comment 43.

6.3 POSTING OF SIGNS

130. Please warn innocent recreationists of the hazards in the air and soil along the Hanford Reach. (John and Linda Jewell)

Response: According to the 1993 Hanford Site Environmental Report the hypothetical maximum dose to a member of the public from Hanford radioactive contaminants was approximately 0.03 millirem in 1993. This includes all exposure pathways including air.

The following information regarding hazards along the Hanford Reach appears in the USDOE brochure about the Columbia River titled, "Welcome to the Hanford Reach of the Columbia River!" and addresses the concerns about hazards in soil. This brochure is available at the Leslie Groves Park boatramp in North Richland next to the Environmental Monitoring Station. The following is a quote in the brochure:

HEALTH AND SAFETY CONCERNS ALONG THE HANFORD REACH

"The public should be aware of certain health and safety issues when using the Hanford Reach. These include those associated with the river itself and those resulting directly from past or present operations at the Hanford Site.

River hazards include widely fluctuating water levels, swift currents, areas of extremely shallow water, and rocky shorelines. Boaters can be left stranded, as daily water levels can fluctuate as much as 5 vertical feet. Swift water through the Reach can render navigation and anchoring difficult and dangerous. Shallow water also creates hazardous boating

conditions and can be compounded by the fluctuating water levels. Rocky shorelines often protrude, submerged, into the river, imposing additional boating hazards. Those venturing ashore, where access is allowed, should be careful of walking along rocky shorelines, as the rocks can become slippery when wet and are often unstable.

Concerns related to the Hanford Site include abandoned facilities, elevated radiation exposure levels, and the presence of contaminants in some areas along the river. Obvious are the hazards associated with the various structures located on the river. These include water system intakes, some still in service, and old outfall structures. These tend to be points of interest; however, these structures are posted and are best observed from a distance.

Past operations have left some areas along the Reach with radiation exposure levels above background. Low concentrations of contaminants have been measured in riverbank springs, and the associated vegetation and sediment, along isolated areas of the shoreline. Areas of potential concern are marked and access restricted as appropriate. Potential exposures can be minimized by avoiding these areas. Postings that may be visible from the river include:

CAUTION:
Hazardous Waste Investigation Area

CAUTION:
Radiological Controlled Area

CAUTION:
Underground Radioactive Material

NO TRESPASSING:
Radiologically Controlled Area,
Surface Contamination Area

DANGER:
Cave-In Area

As is the case for any surface water, untreated river water should not be used as drinking water. Similarly, the riverbank springs along the Hanford Reach, which are small and flow intermittently, should not be used as a source of drinking water. In addition to the potential for bacteriological contamination (a natural phenomena), springs along the Benton County shoreline may contain low levels of contaminants from past waste disposal practices at Hanford."

131. It's not sufficient to post warning signs, but they must be posted and soon along the Hanford Reach of the Columbia River. They're only a stop gap. They should be posted within a month. Within six months, areas that have not yet been surveyed or which have been surveyed and show either a chemical hazardous or a radiation hazard must be fenced. EPA and Ecology should use their authority to act on imminent health and environmental threats requirements. This doesn't have to be a Tri-Party Agreement (requirement). You guys should just go and require it. It's

unconscionable. I keep looking at other states superfund sites and talking to other people and this is the only unfenced accessible hazardous waste site that anyone knows about. We need to act and we need to act quick. (Gerald Pollet, Heart of America Northwest)

Response: Posting of D Island was the issue generally discussed at the Environmental Restoration Refocusing meetings. This island is presently posted. Discrete radioactive particles are known to exist on D Island and, at lower concentrations, along Hanford Reach shorelines and its other islands. However, as cited in the response to comment 119, existing data indicates that they do not represent a human health risk above levels that would require action. Radioactive contaminants are also known to exist in sediments of the Columbia River, primarily above McNary Dam, also below concentrations that represent risk above regulatory concern. These issues are being further evaluated through the Comprehensive Columbia River Impact Assessment.

See also response to comment 90, 99, 118, 130 and 134.

132. Post signs and prevent the public from using the 50 miles of the Columbia River and shoreline around Hanford. (Unknown Commenter)

Response: See response to comments 90, 130, 131 and 134.

Much of the discussion at the public meetings at Portland and Seattle focused on the need to post a particular island (D Island) which is known to have radioactive discrete particles deposited in the shoreline gravels. USDOE has determined that D Island was, and is, posted with warning signs indicating the presence of underground radioactive materials. USDOE, however, agrees with the analysis of the potential health impacts of activated metallic chips on D Island and the recommendations of the Washington Department of Health, as follows:

"The presence of radioactive metallic specks in the Columbia River raises several difficult regulatory questions. Among these are what are the potential health effects of these particles and what protocols should be implemented for their remediation?"

Potential health effects can be separated into those that are carcinogenic and those that are non-carcinogenic. The potential non-carcinogenic, or acute, effect is tissue damage in highly localized areas of the skin or respiratory tract. The short term effect of this damage would be a lesion, while the long term effect would be a scar.

The carcinogenic potential of these specks primarily stems from two pathways. These are "ground shine", or external exposure, and ingestion. The maximum potential dose from ground shine has been estimated to be 0.04 mrem/year in a recreational scenario [We94]. This dose rate yields an annual cancer risk of 2.7×10^{-8} , using BEIR V risk estimates. Cooper and Woodruff published dose estimates for the ingestion pathway in 1993 [Co93]. Their estimate implies that an individual would receive a dose of 83 mrem if that individual were to ingest a speck with the highest recently-measured activity of 22 μ Ci. The Department of Health has estimated that the probability that an

individual would ingest a speck is less than 0.31×10^{-6} . The product of this probability and the risk of the above maximum dose leads to a cancer risk per year of 0.23×10^{-10} .

The pathways of inhalation and direct contact with the skin are the means of the non-carcinogenic potential effects of specks. This is a deterministic, or nonstochastic, effect which will occur if the localized dose exceeds a threshold value and will not occur if the threshold value is not exceeded. The National Council on Radiation Protection has suggested that the contact exposure limit of $75 \mu\text{Ci-hrs}$ [NCRP89] is the exposure threshold above which lesions will occur.

Cooper and Woodruff suggest that the maximum reasonable time a speck would remain directly on the skin is 48 hours, which implies that a speck with an activity of $1.6 \mu\text{Ci}$ greater could exceed the $75 \mu\text{Ci-hr}$ limit. Cooper and Woodruff also estimate that the localized dose equivalent to $75 \mu\text{Ci-hrs}$ could be exceeded by the use of clothing containing a $1.6 \mu\text{Ci}$ speck in 300 hours, and in a sleeping bag in 440 hours. These longer potential exposure times are plausible because it has been shown that specks are not easily washed out of clothing [NCRP89]. The Department of Health has conservatively estimated that the probability per year of an individual "picking up" a speck on their skin or clothing is 1.6×10^{-6} and 5.8×10^{-6} respectively.

Cooper and Woodruff also assume a 48 hour retention time for the inhalation pathway. They estimate that the dose limiting scenario for this pathway is uptake and retention of a speck in the nose. In this scenario, as in the case of direct skin exposure, specks with activities larger than $1.6 \mu\text{Ci}$ will exceed the $75 \mu\text{Ci-hr}$ limit. The Department of Health has estimated that the maximum probability for inhalation of a speck is 1.2×10^{-9} .

The calculations of these probabilities can be found in the Appendix, and the dose estimates are contained in the publications of Cooper and Woodruff [Co93] and the Department of Health [We94].

The maximum carcinogenic risks that have been calculated here are all several orders of magnitude below the 10^{-4} level and the maximum lesion probabilities are all approximately 10^{-6} or less. Thus the Department of Health does not believe that the human-health risks of radioactive specks in the Columbia River are sufficient to justify further surveys to locate and remove them. Nevertheless, when specks are found in the course of cleanup actions the Department [Of Health] recommends that they be removed. This is consistent with other environmental radiological cleanups, such as uranium mills, where "hot spots" are always remediated when they are found. Further, this recommendation does not apply to the remediation of reactor effluent pipes in the Hanford Reach of the river because it is not clear to the Department [Of Health] if these pipes are a significant repository of radioactive specks."

References

- [Co93] A.T. Cooper and R.K. Woodruff, "Investigation of Exposure Rates and Radionuclide and Trace Metal Distributions Along the Hanford Reach of the Columbia River", Pacific Northwest Laboratories document number PNL-8789, Richland, WA (1993).
- [We94] D.P. Wells, "Radioactivity in Columbia River Sediments and their Health Effects", Washington Department of Health, Olympia, WA (1994).
- [EPA91] T. Fields and B. Diamond, "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors", Washington, DC (1989).
- [HSBRAM] "Hanford Site Baseline Risk Assessment Methodology", U.S. Department of Energy publication number DOE/RL/-91-45, Richland, WA (1992).
- [NCRP89] "Limit for Exposure to Hot Particles on the Skin", NCRP report number 106, National Council on Radiation Protection and Measurements, Washington, DC (1989).
- [Sc93] R.G. Schreckhise *et al.*, "Recommended Environmental Dose Calculations Methods and Hanford Specific Parameters", Pacific Northwest Laboratories document number PNL-3777, Richland, WA (1993).
- [Sh92] B. Shleien, Editor, "The Health Physics and Radiological Health Handbook", Scinta Press Inc., Silver Spring, MD (1992).
- [Su80] M.J. Sula, "Radiological Survey of Exposed Shorelines and Islands of the Columbia River between Vernita and the Snake River Confluence", Pacific Northwest Laboratories document number PNL-3127, Richland, WA (1980).

See also responses to comments 82 and 89.

133. Have there been any kind of cost estimates put together to try and figure out what kind of study it would take to come up with the right wording for these signs and how many dollars. I imagine that with their kind of thinking...I am a project manager myself and I would start out with probably that would be a good 10 million dollars maybe 15 million dollars little thing as to what the wording could be. Has there been any? (Edgar Ulbricht)

Response: Signs discussed in the meeting presently exist at D Island. This was verified by the USDOE responder upon return to Hanford. See response to comment 132.

134. It is very easy to get the readings of ambient radiation levels along the shoreline and we know that there is an area near K that is a problem, the aerial radiation survey from which that slide that I showed was done. It was done a couple of years ago but it shows very clearly gama radiation levels that are quite high up and down the area. I mean it shouldn't be hard to get this data. It ought be a lot easier than trying to find out what is in the sediment. It ought to be very easy to go out and measure if the agencies require USDOE to do it. USDOE has

been pushed and shoved into doing any of these measurements and they didn't even report it until a year ago in the Annual Environmental Report. (Gerald Pollet, Heart of America Northwest)

Response: Both PNL and WHC collect thermoluminescent dosimeter data at or around the 100K site. A short list of the most recent 100K data follows:

PNL 1994 thermoluminescent dosimeter data from the 100K Area. (note: 1993 data available in Annual Environmental Report, PNL-9823)

Site #	$\mu\text{R/hr}$
100 K Boat Ramp	12.4
Near 100 K Entrance	10.9

WHC 1993 thermoluminescent dosimeter data From the 100 K Area (WHC-EP-0573-2 (1993 Annual)). (note: 1994 data available from C.J. Perkins. Map illustrating locations available from WHC-CM-7-4, "Operational Environmental Monitoring")

Site #	Ave (mrem/yr)	($\mu\text{R/hr}$)
1	46	5.3
2	54	6.2
3	51	5.8
4	54	6.2
5	72	8.2
6	63	7.2
7	82	9.4
8	260	29.7
9	1500	171.2
10	6800	776.3
11	89	10.2

With the exception of sites 8, 9 and 10, the dose rates observed at each of the remaining thermoluminescent dosimeter locations at 100-K Area were at typical Hanford background levels. Sites 8 and 9 are near the designated staging area for rail cars used to transport irradiated fuel from the fuel storage basin at 105KE to the 200 Areas. Thermoluminescent dosimeter site 10 is near an area used for staging spent ion exchange modules used in maintaining water quality levels in the 105KE fuel storage basin before they are transported.

The data presented in the 1988 EG&G aerial report, from which the slide you mention was taken, should be used only qualitatively. The aerial measurements cannot be accurately converted to exposure measurements but are to be used to identify areas for ground level measurements (i.e. thermoluminescent dosimeters or quantitative instruments).

When interpreting the isopleths presented on the EG&G survey, it is important to realize that the isopleths do not accurately delineate areas of contaminated soil, and probably do not accurately represent the distribution of external exposure rates that would be measured by an instrument one meter above the ground because of ground surface scattering and shielding effects (evident when comparing above

thermoluminescent dosimeter data with isopleths in EG&G report). The isopleths tend to form a "bulls eye" around the source of gamma emissions, with higher exposure rates nearest the center of the "bulls eye" and with exposure rates decreasing with distance from the source of radiation.

The isopleths at the 100 K Area in the 1988 EG&G survey indicate that exposures near the shoreline are at or just slightly elevated from background. Areas of elevated exposures, as identified in the survey isopleths, are located some distance from the river shoreline (point of public access) within a secured fenced-off area and therefore not accessible to the public.

The subject survey was conducted in 1988 but the EG&G report was not published until October, 1990. The aerial survey discussed below was mentioned in both the 1990 and 1991 annual reports.

The following is the text from the 1990 report (PNL-7930), Section 4.7 External Radiation Surveillance, page 120, "In 1988, an extensive aerial radiological survey capable of detecting very small changes in gamma ray radiation levels coming from ground-level sources was performed over the Site and the surrounding areas (EG&G 1990). The final report for this study was received and reviewed in October 1990. The data from this study indicated that the radionuclides and associated gamma rays detected were generally consistent with those expected from normal background sources and the past and present activities at the Site. The external dose rates interpreted from this study were about 10 μ rem/hr, or 88 mrem/yr, which agrees well with average thermoluminescent dosimeter-measured dose rates for the Site and perimeter locations during the past few years. Some operating areas were determined to have external gamma radiation levels approximately 100 times higher than this typical background level, but these are inaccessible to the public and are currently under operational safety controls. This study showed that the total amount of publicly accessible land area known to have elevated external radiation levels from past Hanford operations (primarily areas on the Hanford Reach of the Columbia River) has decreased since a similar 1978 study (EG&G 1978). This amount of land is expected to decline further in response to the decay of artificial radionuclides in some river sediments and changing Site operations."

Similar information was also published in the 1991 Site Environmental Report (PNL-8148) in Section 4.7, External Radiation Surveillance, p. 129.

As part of the Hanford-Site Surface Surveillance Project, environmental radiation exposure rates were measured at shoreline and island areas from Vernita, along the Hanford Reach, to the Richland pumphouse in 1992 and again in 1994. The 1994 radiation exposure measurements from the Vernita area (14 sites) ranged from 8 to 11 uR/hr; Hanford Reach area (19 sites) ranged from 8 to 15 uR/hr; and, the Richland area ranged from 7 to 10 uR/hr. Results are published in PNL-8789, Addendum 1.

See also responses to comments 82, 89, 90, 93, 130, 131, and 132.

135. Appallingly, the USDOE's Annual Environmental Report does not report radiation exposure to the public when figuring the maximum dosage received along the Columbia River. At the very least, the public has the right to know to what they are being exposed! And there is plenty of reason for concern and suspicion. One doesn't have to go very far to see this. One recent report shows that radiation levels along the Columbia River shoreline in the Reach area are 24 times greater than the EPA's legal limit for public exposure to airborne radiation from USDOE nuclear facilities. This is not to mention that the legal limits and standards themselves are generally found to be too high, as scientists determine the seriously harmful effects of smaller and smaller doses of radiation. If you don't properly monitor restoration, then how do you know if you've achieved any real restoration? Therefore, the public must insist on thorough monitoring and reporting of conditions based on good data. All suspect (by public as well as agencies) hazardous chemical species should be tracked using acceptable equipment and methods open to review by public and independents. If this seems overkill, so be it. At least appease us, the masses. The price is relatively minuscule compared with some of the frivolous expenditures and major misuses of cleanup funds. And the value of assurance to the public of reporting true exposures should not be underestimated. In summary, measures must be taken to begin REAL environmental restoration at once. Pristine levels should be strived for while decisions to determine what cleanliness level is adequate should be deferred indefinitely pending common acceptance (by the public and the agencies) of standards--standards which will no doubt incorporate some resolution on understanding the harmful effects of chronic exposure to extremely low doses of radiation and the implications of such exposures for future environment and generations. (Currently the State of Washington Health Department is in the process of establishing cleanup standards for radioactive materials, and the Department is seeking comment.) The contractors must proceed toward a goal of total cleanup, at least for now. We've a long way to go, let's at least get started. (Robin Klein, Hanford Action of Oregon)

Response: Concerning exposure levels from radiation see responses to comments 82, 89, 90, 130, 131, 132 and 134. Existing data indicates that exposures of radiation and hazardous materials to people who use the Columbia River are within acceptable levels. There is a Comprehensive Columbia River Impact Assessment currently underway to further evaluate your concerns.

6.4 REDUCTION OF RISK AND PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

136. Regarding the River Hermit Project. The reason it got started was our leader was one of the people back about 20 years ago who was out there I don't know whether he was on D Island or where he was. At any rate he got a little wound on his arm that he says now still has not really healed some twenty years later. The question is this, is there any place that you people keep statistics on that or people can report those kinds of things and is that being done? (Edgar Ulbricht)

Response: Suspected health effects should be reported to the Hanford Health Information Network.

HHIN TOLL FREE 800-522-HHIN (4446): Monday 9:30 - 12:00,
Tuesday 3:00 pm - 7:00 pm, Thursday 1:00 pm - 5:00 pm

Donna Manders 206-664-2102 fax 753-1496
Barbara Brooner 206-664-2104
Laurie Spetsas 206-664-2100
Molly Staley 206-705-6056 WA Service Program Coordinator
Teri Savage 206-705-6055 Project Assistant
PO Box 47812, Olympia, WA 98504-7812

137. How many of you are familiar with the picu effect? I may be mispronouncing it. I have only read about it. I have been studying this now for about three years and I do not consider myself an expert. I am a civil engineer by background, I have a masters degree. But the picu effect basically says that when we have low level radiation, there are two kinds of things that can happen. One of the things is that when you get down into the lower levels, is where you get into the cell changes. And you actually get into mutations. The study, I believe, was done with fruit flies. But what happened was, as they started doing these low levels, and the body started getting into genetic changes. Of course, there has been a lot more study done in the last few years on that. So therefore, these people who are out in Hanford, when you start talking about...I know that the USDOE for years has relied on the legal basis and what is considered a high level dose. But when you start getting into the low level doses, I submit from the study that I have done here actually getting more likely into having true mutation effects. If it is real I think we are going to see a lot more of those things. And I submit to the agencies that you better start studying about the picu effect. (Edgar Ulbricht)

Response: USDOE and its contractor Bechtel Hanford, Inc. (BHI) are very much aware of radiation risk and of the many studies that are conducted that demonstrate the relationship between radiation dose and the biological effects. The radiation doses to the workers and public, as a result of work performed by the environmental restoration Program, are expected to be small and the biological effects will be indistinguishable from the effects normally seen in that same population. State-of-the-art technologies will be used in measuring radiation doses and planning work so as to keep radiation exposure to workers and the public As Low As Reasonably Achievable. Furthermore, BHI employs radiation protection professionals who are very knowledgeable on the subject of radiation protection and are certified by the American Board of Health Physics.

138. My name is David Anderson. My question I guess is could you please state the risk reduction or risk changes by the cleanup in some understandable units. Such as costs of decreased risk for the cleanup that you are going to do For example, what is the costs for the 10 changing the 10 millirem per year exposure that was discussed earlier. What was the cost of cleaning that up in costs per number of lives saved

or cost per life saved. Can you compare that to someone walking across the downtown street in Seattle, riding a bicycle in Seattle in order to get exercise which is what I do or driving a car in Seattle or what kind of relative risk are we looking at saving? And how much is it per life saved? When we include the costs, the transactional costs, the studies, the legal fees, and then the actual cleanup costs together. Are we talking several hundreds of millions of dollars per life saved or are we talking in 10 of thousands of dollars and how does your prioritization of cleanup costs relate to the actual cost per life saved? (David Anderson)

Response: The risk reduction versus the cost of the action is an integral part of the cleanup process. At this point future uses of the various portions of the Hanford site have not been determined. Therefore it is difficult to determine what the ultimate risk reduction will be as well as the cost to achieve this risk reduction. This information will be detailed in the operable unit specific clean up plans due out over the next several years.

139. I want to say that the main goal in cleaning up should be protecting people and the rest of the environment from health and safety risks and radiation and toxic waste. It should definitely not be cleaning up the areas so that they can be used for other uses. This is completely wrong and is an example of the old ways of thinking that have gone for decades and you can't tell me that after more than fifty years of spewing out radioactive and toxic wastes in the air and water and land that any of these areas that are immediately surrounding can be declared completely safe. This is just absolutely ludicrous and dangerous. For example, there's a lot of suggestions for growing potatoes in some of these areas. Well, this is the kind of thing that once it's allowed to happen that years later it will be determined that well there was really more radiation around in there than we thought and now some of these things that we've been doing here has been causing some level of cancer. Of course, somebody will declare that to be acceptable probably. Now, in general this type of thinking I think is a perfect example of what people 100 years from now would consider to be a grievous mistake just as now we realize that many mistakes were made over the last 50 years, but at the time it seemed like it was okay, seemed like the best thing to do, but now we realize that it was definitely the wrong way to go. So I just want to say that no one will be able to say 100 years from now that they didn't know any better back then because we do know better. (Ross Tewksbury)

Response: The agencies agree that protection of people and the environment should be the main goal of the cleanup. However, in certain instances, such as the North Slope, it is prudent to cleanup the small amount of hazardous material and release the land for alternative uses.

140. My name's Jim Lockhart. Regarding patients injected with plutonium, which was done in the forties and a report that reveals the secret release of radiation in the U.S. after World War II. Since it's inception, the production of nuclear energy and nuclear weapons has left a trail of deceit and duplicity and has disregarded the well being of precisely those who these agencies here before you are proposing to

protect and serve. The Department of Energy is a renegade agency. Far from being in the forefront of reform and truth as it pretended to be here tonight with promises of getting the media aware of what we're doing here. Instead of being in the forefront of reform and truth, they established a pattern of behavior in harmony with the nuclear industry and their lack of consideration for nature and humanity. And these are just a small example of what has been done in the past. Fifty years ago, the lives of pregnant woman and their children were recklessly and unknowingly endangered. Students at a state school for the retarded were given a radioactive isotope and today we have Energy Secretary Hazel O'Leary saying that current testing is being conducted properly. Is there proof of this? Are we supposed to believe this? We also read about the fumbling during the extremely sensitive and hazardous operations at Hanford recently. And the ground water is becoming contaminated with radioactive waste. We also read that no solution has been found on how and where to store this radioactive waste, yet the nuclear industry and their lackeys continue to operate nuclear reactors and intend to import some of this stuff into this country for storage. It doesn't sound like anything's changed in fifty years to me. And it seems like you people are refusing to take seriously the utter horror that is being unleashed on our future. You think because you plug up a few holes here and there, the stuff is getting into the Columbia River. What are we doing about it? It's not Russia, but it would have been, if it wasn't for the people. If it wasn't for Paige Knight, if it wasn't for Mr. Pollet. And what about the time between the forties and today? The largest radiation disaster in U.S. history occurred in 1979. Not at Three Mile Island, but at a place called Rio Puerko, Arizona. Has anybody heard about that? Ninety-five trillion gallons of water containing 1,100 tons of huge uranium tailings flooded the river. Eventually the Navajo people were forced to drink the water, even though they were told not to. They were forced to feed it to their cattle and their sheep who nobody would buy because they were poisoned. It caused massive sickness. Oregon cancer 15 times the national average. Throughout Indian country, this has been the case. We know about Hanford. I don't know the levels, the names and numbers, but people up there are dying. Much higher than the national average. We know that. Throughout Indian country, Pine Ridge. The Nevada Shoshone have been bombed 300 times with atomic weapons. I haven't heard their name mentioned once. Where's Karen Silkwood's name? From then to now, there's been one breach in this pattern. A pattern that any individual was to exhibit they would have been brought up on charges a long time ago. People are committed to institutions for less crimes than the nuclear industry has committed. If a man or woman was to conduct their lives towards their families or their property, even their own person, with as little regard to the future as all the nuclear industry and the watchdogs supposedly, the watchdogs of the nuclear industry, and all those who stand on the profit margin crying for more, they would have been found mentally incompetent and their lives would have been taken away from them. They would be in jail. They would be in an institution because they cannot look to the future which is what you folks have been paid to do. Where were you when they decided to put radioactive waste, how far is the Columbia River from that, why did you need to have the public involvement period to tell you that you don't put stuff that leaks near the third largest water shed in this nation, in this

continent, but it was done. Now you talk about it. You talk about it. You talk about it. And you get us talking about it as if it's not going to do any good. By our power, strictly because of our power, we are stewards of this land. We have the power to destroy it so we must have the power to take care of it. There's no greater gift from God than nature. There's no greater evidence of this grace than each other. And there's no greater travesty in the slight of hand that renders this earth upon to be exploited and cast aside heedlessly. Whether that's timber, mining, uranium, it doesn't matter if we save the earth, if we poisoned it with radioactive wastes and things that we now have the power to control. We have had the power to control it. No one has stood up. Those who haven't been marginalized. I would like to tell this Department of War, the Department of Energy and the Department of Defense that there is one other eye that is upon you at this moment, this moment, strategic and important for all future children. Thinking, swimming, crawling and I was brought back from the brink of extinction at the 11th hour. I'm speaking about the eagle which almost disappeared. If it wasn't for a few activists again, they probably would have disappeared. People were too busy with their televisions. People were too busy worrying about this, worrying about that. The eagle almost disappeared and he's back right now. He's here to put an eye on you sitting at this table right now. I'm ashamed of what we do in his name. Ashamed of Nagasaki, ashamed of Hiroshima, ashamed of uranium tailings poisoning Navajo children ashamed that we create this poisonous substance anywhere, anywhere for any reason. Thank you. (Jim Lockhart)

Response: In large part, we share your concern. Nonetheless, there is no avoiding the fact that cleanup of the Hanford Site is a tremendously complex task made ever more difficult by the volumes and radioactive hazards associated with its wastes. The comment concerning ground water pollution and the Columbia River ("You think because you plug up a few holes here and there, the stuff is getting into the Columbia River. What are we doing about it?") is directly applicable to these negotiations. USDOE's approach to the stewardship of the ground water resource will be described in the Hanford Ground water Protection Management Plan, which is presently undergoing regulatory review. The overall approach to remediation of contaminated ground water at Hanford is described in the Hanford Ground water Remediation Strategy.

USDOE has reached agreements with EPA and Ecology to reduce and eventually eliminate contaminated liquid discharges to contaminated sites and has embarked on a sitewide effluent reduction program. This effort has significantly reduced the quantity of liquids being disposed to cribs that reduces the introduction of new ground water contamination and slows the movement of existing contamination to the River.

Simultaneously, USDOE has undertaken multiple ground water treatability tests to evaluate the technical feasibility of stabilizing and reducing the mass of existing ground water contamination. Within the Separations Area, these ongoing treatability tests include carbon tetrachloride, uranium, technetium-99, plutonium, cesium, strontium, and cobalt-60. USDOE is also conducting a field test

to evaluate the feasibility to remove mobile chromium from ground water in the 100 Areas.

See also response to comment 53.

141. As to cost, I have a serious problem with that question. I realize that in the abstract it is easy to say that "x" amount of money is too much to save one human life. But if that human life is my father or my mother or my child, I think that is very serious. And I am not sure that I wouldn't spend that much money to save the life of my mother, my father or my child. I know a lot of people who have spent a lot of money trying to save their family. So I would say that the cost is really irrelevant at this time. At some point it may become relevant but after you provide concrete proof that you can't clean it up. That you can not in fact meet the standards that are required by law. (Cynthia Sarthou, (comments also seconded by Katherine Crandall and Hilary Harding)

Response: To refer to the risk as 1 in 10,000 or 1 in 1,000,000 will die as a result of the exposure requires clarification. Increased cancer risks are expressed as the chance (such as one chance in 10,000) that an individual, functioning as described in the regulatory compliance scenario, could contract cancer in his/her lifetime. Increased cancer risk estimates presented in a risk assessment are upper-bound estimates of the risks associated with exposure to contaminated soils. In other words, the actual risks may be lower than shown in the risk assessment.

Risk estimates also are based on a series of conservative assumptions. For example, one assumption is that there is daily exposure to the highest contaminant concentrations detected in soil. If the sites in question were to be used in the future, actual exposures and increased cancer risks would likely be lower than estimated in the risk assessment.

A projected risk of (10^{-4}) to (10^{-6}) adds 0.01% to 0.0001% increase of contracting cancer to an average risk of 25% of contracting cancer to an individual from all other causes.

142. I've been through a lot of the areas on the site and I saw a lot of amazing things on Monday. Among them I saw something that's apparently as rare as a white buffalo which is a one-point doe. Bald eagles out along the river and a number of other things. But with the sagebrush, you go out through a lot of the site and you see the sagebrush is about a foot tall or maybe a foot and one half tall or two feet tall or three feet tall. There is something about walking out into sagebrush that's taller than I am. It has an effect on you that's just hard to explain. It's like walking into a grove of old growth forest on the westside of the mountains here. It's has an absolutely stunning impression and to go into that and see it as badly destroyed in a straight line across the site as it was, was very painful to see. Another part of the problem that's going to be associated with this is there are some roads that lead off from this main road that are the old Army Loop Road and a couple of other minor services roads and it's going to be very important

to those be blocked so people don't easily access off of that road into some of this area. It is really hard for me to describe what we all felt and I know for the trustees in general we, I think everybody was impacted. (Dirk Dunning, state of Oregon Department of Energy)

Response: The Hanford Site incorporates many programs, procedures, and policies to ensure undue harm/damage does not happen to the area's natural resources. While many service/access roads on the site were installed many years ago, some new service;access roads will be required to complete the environmental restoration of Hanford. These service/access roads are required to support the maintenance, surveillance, fire protection, and restoration activities.

A few examples of protective measures utilized are: Isolation of areas during bald eagle and curlew nesting times; and incorporation of nesting isolation times in the restoration schedules (i.e., no work in these areas during these times). Compliance with the required environmental laws, permitting, and USDOE orders when major restoration activities occur may at times require disturbance of natural resources. When restoration activities adversely affect natural resources, a recovery/restoration plan is also included in the work plan/documents.

See also response to comment 29.

143. My name is Edgar Ulbricht. It is good that we have these meetings. These meetings are important to get the public comment and it's good that we are doing it. I really appreciate the format tonight. One of the things is that you people cut your presentations down and allowed us to actually comment. I really appreciate that. Instead of trying to wear us out so that we all get disgusted and go home which I have seen in other meetings. I also really want to emphasize the fact that each one of you individually do take an interest in cleanup. I realize that all of you are fathers, some of you mothers, some of you may be grandparents and you all take your roles very seriously. We really appreciate that. We in the public know that some of our anger is directed towards you and it is really not meant that way. Some of it is just the frustration of system. We realize that the system is set up...of course, we've heard about the fancy plans and \$500 screwdrivers and we realize that now that they have no place to go, they've moved to is environmental cleanup. We realize that some of the anger that was really directed at the old military programs has now moved to environmental cleanup. You people are kind of the lightning rod for that. We really appreciate the fact that you are willing to be the lightning rods. Because this is really a very serious thing. Many of us are aware that probably took the old USSR was not communism per se. It was basically that they got so much junk, nuclear waste, Chernobyl, that basically their whole system fell down. I would submit that the U.S. may not be that far away from going the same route the USSR did if we don't start addressing and start really thinking about what we are doing with our nuclear waste. I know that many people fish in the Columbia River. Many people wind surf and they think it is really

great, but I know from personal experience that unfortunately we are seeing more cases of birth defects and those kinds of things showing up. Some of you may be aware that I lived near Rocky Flats for a couple years. My wife and I had a daughter born with Down Syndrome. We do not put it down to Rocky Flats at the time that we had our child we were both over forty years of age. And we realized that was probably just cosmic rays that comes from living in Denver at the higher altitude and I do not put it down at all to the fact that we were less than two miles from Rocky Flats. But I will submit that when you start looking at the data around Selefieid when you start looking around the data and I realize that we as a people move our people around. There is a corporate policy to keep moving people around. You got good man what do you do? You move him every two years. So it gets real confusing and it gets real hard for people to know where they actually probably ran into the problems. The fact that our daughter was born while we were still living in Denver was probably just a fluke. I happened to work construction I have actually worked with Bechtel and have a lot of respect for them and it was just really unusual that we happen to still be in Denver after so many years. Because normally we just move. And I realize that pattern is happening around the country. Most people move, therefore don't really realize probably what's going on. But the data is starting to generate there gentlemen, ladies it is showing up and it is showing up and it is showing up. The data is showing up around Three Mile Island what is happening there is showing up around Savannah River and I submit that it is going to be showing up around Hanford and I realize that all of you have a very tough job. I also think we are also looking at probably what is going to be one of the biggest scams that's going to make the banking and loan industry scam look very, very small. But I think this whole environmental thing is really ripe for a scam. And I would tell you, I know that some of you, your politics actually say that is the way it should be, but that it is really what it is about. It's, "take the American people." Well I tell you, there is a number of people who are very upset about it and you are aware and I am aware that there are people who are taking measures to deal with it and I think that we need to start thinking about doing true, serious cleanup not running scams. We can't afford them any more. We will go the same route as USSR did and they had their problems too and they had their sick scams. But I will tell you we are looking at something very serious. I will also tell you that there is a lot of people that don't believe in the picu effect and what not. But the data that I am seeing tells me that it is real and I will tell you, all of you, you have a very serious job that you are doing. I thank you again for doing it we are counting on you. We are praying for you because if you don't do it right we are probably going to see the human race taken off the planet. That may not be the worst thing, I will tell you it is very serious time. Thank you again. (Edgar Ulbricht)

Response: We could not agree more that we are at a critically important time here at Hanford, and that the success of Hanford cleanup efforts hangs in the balance.

See also response to comment 53.

144. My name is Kara Ceriello, P.O. Box 95913, Seattle, 98145. The Columbia River and Hanford is beautiful and scenic it is also a natural salmon spawning ground. The Columbia River and shoreline unbelievably in the Hanford Reach are used by the public, boating, fishing, picnicking, swimming, water skiing and wind surfing. I know someone who is an avid wind surfer who wind surfs with friends in the popular gorge area which is not too far from Hanford. She knows a person who has experienced clumps of hair falling out, following a long day of wind surfing there. I don't know the time period in which this happened, as far as I know this isn't documented in a study yet, but that is systematic of radiation exposure. As mentioned before I think in 1975 and documented in a newspaper article, there was a family picnicking on one of the islands and one of children, I think a nine year old did find a piece of a fuel rod that kind of accidently floated away. And within the last couple of weeks a deer was killed within the boundaries of the Idaho National Engineering Laboratory, I know which is Idaho's version of Hanford. This deer was found to have numerous fists size warts or papilloma, two stomachs, three lungs and two tails. This cannot be a singular instance in that area. Hanford is older and larger what has happened there? Why is it that comprehensive studies of health effects on wildlife in and around Hanford haven't been done? Animals after serious exposure to radioactivity of various types at Hanford may travel quite a distance and expose other animals or humans. If this is happening to the animals what is happening to the humans? What is happening to those under eighteen that are using this area that aren't being counted. I think it is outrageous, horrifying and completely unacceptable that the public continues to be allowed to use contaminated areas for recreational purposes. Actual cleanup must happen and soon. It is time to stop stalling. Thanks. (Kara Ceriello)

Response: Information regarding Hanford contaminant impacts to wildlife is detailed in the yearly Environmental Monitoring Report put out by Battelle for USDOE. Monitoring data indicates by and large that wildlife populations on the Hanford Site are in good health. However, there may be some localized effects to wildlife due to Hanford contaminants.

Concerning contamination, warnings and posting see responses to comments 82, 89, 90, 130, 131, 132 and 134.

6.5 CLEANUP ACTIVITIES ON D ISLAND

145. I have several questions about environmental restoration. Last year we were promised certain cleanup activities on D Island. Removing large particles of uranium of fuel rod chips and such that the USDOE had previously denied the existence of until Heart of America showed them their own documents claiming that a nine year old boy had found one of these things out there. And the Department of Energy said that it would go out to D Island, remove that stuff, remove the plumbing system, the pipes that had carried the waste there. And it would I believe also survey D Island to find out what other forms of contaminates were there and also survey the other islands in the Hanford Reach. So I would like to know what has been done. If this cleanup action was done, how many chunks of uranium did areas nine year olds leave behind? What did you

get out there. What remains to be done, has D Island have the other islands been sampled to find if there are serious hot spots out there. If there is not when will it be done. Thank you for assuring us that the cleanup will be done but the Manhattan project assured us that the cleanup will be done. It is not a matter of will it be done, but when and for how much money. I would also like to know what is going on right now both with the islands and the shoreline areas in the way of warning people off. The status a year ago was that the islands in particular were wide open to public access there was nothing to tell boaters or other recreationists that this is not a picnic area. Have the areas been signed? Have the areas been fenced off where appropriate? (Fred Miller)

Response: See responses to comments 90, 130, 131, 132, 133 and 134.

146. The island that is now effectively open to public use there is no indication to "Joe boater" that there is anything wrong with having a picnic there. And boy, when I was a kid when we went on a picnic down to the beach we brought shovels and we dug. I don't know if your contractors brought shovels and dug or just picked up the stuff that was on the surface. But if there was weird stuff out there when I was nine years old, I would have found it too. I don't think nine year olds are that much different these days. I think that you are in effect openly inviting people to picnic in a radioactive sewer of your own making. And that is unconscionable. I also asked about surveys of the other islands. Have surveys of the other islands been done and throw in the area across the river on the far side from N Reactor which showed levels of gama radiation above background. Has there been any sampling of that to find out how extensive that contamination is. I have also requested that at the same hearing previous hearings last year. And was told at that time there had been no studies done of ground water or soil samples on the north side of the river at all. (Fred Miller)

Response: See response to comments 90, 130, 131, 132 and 134..

147. My name is Fred Miller and during the question period I asked something about D Island. I want to make some comments on that and also on other subjects. I don't want to leave the impression that I am a D Island fanatic. Frankly, D Island is not all that important to me, it is tiny and far away. D Island and E Island and F Island and G Island, the whole Columbia River, the whole Hanford mess I am honing in on that particular topic so that I can make the point because my understanding from what I know about Hanford the whole place is in the same sort of shambles and is being treated in same sort of lackadaisical through money at it fashion. You asked for my values. I think you could go out to all of the islands in the Hanford Reach and put big mean ugly fences around them. That should be done right away to keep people out. The assumption should be given Hanford history that those islands are all ready contaminated and right now dangerous for people to go to. Then as you go about cleaning them up you can take the fences down when they are clean, when they are safe, and not until. This would have negative consequences. It would make a very beautiful place a lot less beautiful. I think that would provide stimulation and motivation for the contracting companies and for the Department of Energy and the

regulating agencies. It would be a very obvious symbol that you haven't done your job yet. And as you get that small portion of your job done you would be deserving of a little bit of a celebration. In addition to fencing off the islands, you should put up signs at the entrances the boat launch areas, with maps and maps that people can take with them showing where they are going to be exposed to levels of radioactivity or levels of other toxic materials that could effect their health and their children's health. This is basic. This is done in many, many water ways for many different purposes ranging from controlling weeds to controlling liter it is cheap. There is no reason why you can't do it. There is no reason why you haven't done it long ago. Away from the islands, onto the cleanup of the river general still there is a large amount of data that has not been made available to the public. There aren't any bomb secrets lurking in the Columbia River or on the north slope. All that information should be made available to the public. Heart of America had a nasty time trying to get the Department of Energy to share its budgeting information that should be made available as soon as it is written, not when it is almost to late so the people have to do an all nighter cramming trying to be able to get word into congress, the congressional staff to make some kind of a difference. Get that information out in the hands of the public, it belongs there. I want to say thank you for being emphatic that this is not going to be open for non Hanford waste, please make sure it stays that way. There will be pressure to keep on digging those trenches longer and longer and solve a lot of other peoples problems. The Department of Energy in dealing with ERDF, dealing with environmental restoration needs to quit hiding behind the old section 113 H (of the Comprehensive Environmental Response, Compensation and Liability Act) needs to have very specific language in any future agreements with the state and the EPA saying what consequences it is subject to. How it is going to be hurt, how it can be sued if it fails to meet the agreements. And again I am not just talking about D Island. I am talking about the 100, 200, 300 Areas all of Hanford and the downwinders. (Fred Miller)

Response: Concerning contamination, warning and posting see responses to comments 90, 130, 131, 132, 133 and 134. See also responses to comments 5, 6 and 107.

148. We need to make sure that the promise given last year that D Island was not just an example, an isolated example, but that D Island was the first example of islands that would be surveyed and remediated is lived up to. On skyshine, we need to have response to whether or not the Department of Energy actually believes in the principle of as low as reasonably achievable. I find it again, I think on behalf of our membership, unconscionable that for all the talk about "as low as reasonably achievable" and for the fact the Department of Energy gives bonuses to the Westinghouse Hanford Company for reducing areas of exposure but at the same time can sign off on a report that says we don't have to worry about achieving as low as is reasonably achievable radiation exposures to the public, never mind of course to the workers in the N Area. (Gerald Pollet, Heart of America Northwest)

Response: Concerning contamination, warnings and posting see responses to comments 90, 130, 131, 132, 133 and 134. Concerning skyshine issues see responses to comments 82 and 109.

149. I am David Wilson. I have heard two remarks about the radiation at D Island. Gerry gave a certain number that he said he would get as much as 10 times the radiation in one hour as the allowable limit for a year. And I think Mike you were geologist and you gave other numbers and I have heard a resolution of those. You said you could go there and fish as often as your wife would let and you wouldn't get that much more radiation. I am aware that radiation can change, if stay here in Seattle or if we go up in Mt. Rainier or go to Denver. If you go to Denver or Mt. Rainier that radiation is twice what you get here. So if we are splitting hairs over a few millirems per year it isn't worth putting fences around the island because if you are going to do that you better put a fence around Denver and don't go there because you are going to get twice the radiation there than you are here. So I have a question. What is the radiation level on D Island? (David Wilson)

Response: See response to comment 132.

150. Up and down the river you have all sorts of springs, seepages with this type of problem and here is what the response was. There is no warning about the water and fish because they do not pose any special hazard. There are postings on the shores and on the islands which I would dispute for the islands. Even if the islands do have radiological warnings and most neither need nor have them. People should stay off the islands. That is not because of contamination but because they are "environmentally fragile and wildlife some endangered or threatened use them for nesting." I would suggest that for wildlife purposes this is one of the prime wildlife habitats slated for acquisition by the U.S. Fish and Wildlife service, the Hanford Reach and the north side. For that reason alone the public should be discouraged from using more actively, but we have documented in the citizens guide that we published how the signs are place so far back from the shoreline that you have to walk through the contaminated area and through the seeps before you find that you can read the sign and the sign do not say don't drink the water, don't dig in the soil, up and down the Hanford Reach those are what the signs should be saying. And they ought to be very clear about what the hazards they are from and shouldn't just say no trespassing U.S. Department of Energy Hanford Reservation which is what most of the "postings" say and they are ignored by everyone. And I think that is absolutely criminal and I am sorry I just got to say it is absolutely criminal not warn the people about these hazards and to take active steps to say you can't use it until we clean it up. And then go out and set a goal that by the year 2000 we will have reduced the hazard so that you can use the Hanford Reach shorelines and islands. That is the point we are trying to make. Just one other thing on these fuel reactor fuel chips. We are not surprised that you didn't find them by doing a surface study. They have been in the sediments of shifting sand islands for 20 years, but they are there. Back in 1962 a USDOE classified report said that the public was getting "potentially, significant radiation exposure" from using the islands back then. And scientists warned that the management ought to refuse to allow people to fish or to

use the islands and management said we can't do that. That was back in the early 60's. (Gerald Pollet, Heart of America Northwest)

Response: See responses to comments 90, 130, 131, 132 and 134.

151. We all want that place cleaned up. It is unforgivable that it is still continuing to put peoples lives in danger and the least you can do as someone said is to put signs around the river and on those islands that say danger, "Keep Out". Not private property but this is hazardous to your life. Put those signs up because when you go over to Hanford and along that river it is beautiful as someone else said, it is lovely you have no idea that there is any danger there. It doesn't smell, it doesn't make you itch none of those things at the time you are doing it. And for a child to be exposed to that amount of radiation is very, very dangerous far more than it would be for me who is as old as I am. So please keep in mind if you would put your child there for 24 hours or five hours would you be happy. So think of your own children in that situation and do your best for us at Hanford. (Phyllis Fiege)

Response: Concerning contamination, warnings and posting see responses to comments 90, 130, 131, 132 and 134.

152. My name is Felice Davis, I live in Lynnwood and I work for a couple in Edmonds and this couple has a one year old daughter, or granddaughter Cloe who is growing up in the Tri-Cities and hope tomorrow when I go into work that I can tell my bosses that next summer when Cloe is two years and definitively at that dig and taste stage. That next summer when she is enjoying the Columbia River shoreline and island. That the three gentlemen that are facing me right now, really listened and did take the corrective action of posting signs. I could sense that, next summer those signs will be there for her protection. I hope I am correct. (Felice Davis)

Response: The signs that were discussed are in place.

153. I pretty much got nothing out of going through (the Tentative Agreement). I also wanted to go on the record saying that the fact that there are no signs, warning signs on these islands especially when it has been acknowledged that these are not going to be safe for 10 years is immoral and chanciast and I thought that the idea of putting fences around some of the islands is a great idea. If that is the only way we are going to keep people off. I think that the main point is safety to wildlife and to the public. People are using this area and that has to be our number one priority and I think it is clear from everything that has been said tonight that the public feels that and we are very concerned that is not what is being covered in this proposed action. (Loretta Ahouse)

Response: Concerning contamination, warnings and posting see responses to comments 90, 130, 131, 132 and 134.

154. I have to agree with some other speakers tonight and ask that fences on the shores, hot areas on the shoreline if they are monitored and are giving off high levels of radioactive gama ray particles that fences be

erected as barriers keeping the general public from those areas. Finally, exposures to the public along the shorelines in various islands of the Columbia River certainly are containing heavy metals and toxic chemicals like mercury which are brought to this environment by all of these abandon reactors out fall pipes and I guess the N Reactor, they are potentially lethal. You know somebody is constantly within probably a half mile of there every day of the week fishing. Especially somebody under 18 years old. You are putting the public at risk and some positive stuff I would like to see this panel take under consideration would be to take the advice offered by the Hanford Advisory Board on the environmental restoration, please. (Scott Stumbaugh)

Response: Concerning contamination, warnings and posting see responses to comments 90, 130, 131, 132 and 134. Existing data indicates that exposures of radiation and hazardous materials to people who use the Columbia River are within acceptable levels. There is a Comprehensive Columbia River Impact Assessment currently underway to further evaluate your concerns.

155. I have been a resident of the state of Washington for the past 48 years and am greatly concerned about the lack of progress being made by the USDOE with the cleanup of Hanford and the 50-mile portion of the Columbia River that runs through Hanford. For the past several years the public has received alarming information from governmental and environmental groups concerning the situation at Hanford. I am concerned not only for the well-being of the people of Washington and Oregon and our environments, but realize that the situation at Hanford has worldwide implications. Our government used plutonium at Hanford to develop the atomic bomb during World War II and made the area one of the most contaminated areas on earth. The cleanup must begin immediately. There can be no further delays on this. Promises made to clean up this area must be kept. Because the USDOE has conceded the islands would have unsafe radiation levels for at least another 10 years, warning signs should be posted on islands and riverbanks in the area so that more lives are not put in jeopardy. Thank you for your attention. Please do not allow USDOE to further delay the progress of the cleanup and please listen to all the concerned citizens. There are people who care about our environment. (Pauline Dubois)

Response: USDOE has posted D Island with warning signs indicating the presence of underground radioactive materials. USDOE, however, agrees with the analysis of the potential health impacts of activated metallic chips on D Island and the recommendations of the Washington Department of Health (see response to comment 132).

6.6 COLUMBIA RIVER COMPREHENSIVE IMPACT ASSESSMENT

(Response following comments 156-167)

156. The Confederated Tribes of the Umatilla Indian Reservation have prepared a separate letter to John Wagoner, copied to the Tri-Party representatives, outlining three principal concerns regarding progress-- or lack thereof--being made in the Columbia River Comprehensive Impact Assessment. These concerns focus on (1) the increasing failure since mid-1994 of USDOE to consult with the CTUIR on substantive issues

- associated with completion of the Assessment; (2) confusion or misunderstanding by some USDOE representatives about the true purpose, scope, and objectives of the Assessment, as clearly defined by tribes, regulators, and stakeholders over the past year, and as outlined in the latest M-15-80 change package, and (3) the excessive discretion of some USDOE managers in irresponsibly juggling or diverting funding away from this widely supported and agreed upon project. The obfuscation of the Columbia River Assessment by some USDOE and/or contractor staff stands in stark contrast to the comprehensive scope and refreshing openness of the Environmental Restoration Refocusing efforts. The proposed M-15-80 change package drafted by Ecology and EPA, outlining an appropriately comprehensive scope and goals and including a detailed outline and specific schedules for completion of all major and interim milestones, must be fully supported by USDOE and formally adopted in the Environmental Restoration Refocusing amendments. (J.R. Wilkinson, Confederated Tribes of the Umatilla Indian Reservation)
157. Battelle Pacific Northwest Lab is a polluter that is liable under Federal Law and State environmental laws yet they are given job of doing the study of the Columbia River that is their liability. It is a conflict of interest and we are saying they simply should have an independent entity do this. Do it once and do it right. They have to do a study of the end of cleanup called the Natural Resource Damage Assessment. Under EPA and the state rules, Battelle can't do that as a potentially liable polluter. Why are we wasting our money and letting them do it now and having to do the same study twice. (Gerald Pollet, Heart of America Northwest)
158. The report required to determine what Columbia River sediments, shorelines and islands will get cleaned up is still in the hands of Battelle, which has a conflict of interest as a potentially liable party to the pollution. Environmental groups have lodged a longtime protest of giving them this responsibility because of their history of covering up environmental impacts to the river. (Doris Cellarius, Cascade Chapter, Sierra Club)
159. The proposed Agreement permits Battelle to do the study on the Columbia River sediments, even though it is a potentially liable polluter and has a clear conflict of interest. Battelle's history of covering up environmental impacts to the river is good reason to choose another entity to do this study. (Craig Rowley, the Mountaineers)
160. In addition, the report required to determine what Columbia River sediments, shorelines and islands will get cleaned up is still left in the hands of Battelle, which has a conflict of interest as a potentially liable polluter and a legacy of covering up environmental impacts to the river. This is not acceptable. (Daniel Dancer)
161. The report required to determine what Columbia River sediments, shorelines and islands will get cleaned up is still left in the hands of Battelle, which has a conflict of interest as a potentially liable polluter and a legacy of covering up environmental impacts to the river. (Washington Environmental Council, Heart of America Northwest, Hanford Watch, Hanford Education Action League, Sierra Club, Hanford Action of

Oregon, Washington Physicians for Social Responsibility, Columbia River United)

162. Under the Tri-Party Agreement, they're preparing to do a Columbia River Impact Assessment which is a study of the impact Hanford had on it, on the river, but the concern that I have is almost two years ago, they started to do a Columbia River Impact Assessment and the assessment was so flawed with I would use the word cover up or whitewash that the Yakama Nation, I believe, put a 16-page document together and the Umatilla's 22-page basically telling them to go back to the drawing boards because it wasn't really looking at the damage and true assessments of how much damage to the ecosystem, to the fish and to the humans, the river could have had on people. They're now proposing last December they have initiated a startup of the next Columbia River Impact Assessment and they've hired Battelle Pacific Northwest Laboratories to do the study. We have adamantly opposed the process at the get go because Battelle is on record of being a polluter and we find that there's a conflict of interest. At the last environmental meeting of the Hanford Advisory Board Mike Thompson had suggested that we get together and try to work out the differences because Battelle does have some good resources. They have good people working for them, but they have a problem now because they don't release all the studies that have been done and under declassification, under Hazel O'Leary under Hanford Summit I, she stated that all documents in reference to anything that has to do with environmental releases, human health studies, human health experiments, animal studies, anything that had to do with anything except the production of bombs, or trade secrets, should be and will be released. It's now 1994, a year and one half later after the Hanford Summit and we still don't have those documents. And our feeling at Columbia River United and the people who live down here and I'm just letting the regulators know, they've heard this more than once, but the public too is that if we're going to do a study that these documents must be declassified because if they are not declassified Battelle, first of all, can't do a good study and find out the true assessment of damages that occurred to the Columbia River and to the ecosystem and the other thing that they have to keep in mind is that there was a law that was passed I believe in 1988, called the Natural Resource Damage Act and they better look at that law and realize that it does have some strong leverages and they do need to do a true assessment and so hopefully with the work of the public being involved and I know Mike is reaching out and saying from the U.S. Department of Energy if they're going to do this study, they want a credible study. We'll be able to get this information and we'll be able to do a good study, but I can't say they're going to. I don't know. Time's going to tell and hopefully with a lot of pressure with the public and a lot of openness on the part of the U.S. Department of Energy and its' contractors, all the documents will be released and from that we can possibly do a valid study, but even under the Hanford Dose Reconstruction Project, documents were declassified, but there are many documents that have never been released to the public that were even declassified. So we still have a big problem and will it be a successful study? I have no idea. (Greg deBruler, Columbia River United)

163. The Columbia River Assessment that will determine the impacts from Hanford on the river is being done by Battelle a site polluter and the company in charge of all past environmental monitoring. There is a direct conflict of interest here. And the Columbia River United Board believes that an independent contractor should be hired to do this very important study. The question is who is this person, who is this independent contractor and really is there one out there to do it. My comment is that the technical consultant to CRU is if we cannot find a contractor to do it, then we best make that when Battelle does this study that we have a technical review panel and technical experts that are there watching the process all along and there is full declassification of all documents and full access to all documents and we will be supplying a request through the environmental restoration committee of the Hanford Advisory Board, a list of documents that to date have not been released and that should be released for open disclosure of the public and this will hopefully aid in the Columbia River Impact Assessment. (Greg deBruler, Columbia River United)
164. Battelle Pacific Northwest Lab is a polluter that is liable under Federal Law and State environmental laws yet they are given job of doing the study of their liability. It is a conflict of interest and we are saying they simply should have an independent entity do this. Do it once and do it right. They have to do a study of the end of cleanup called the Natural Resource Damage Assessment. Under EPA and state rules Battelle can't do that as a potentially liable polluter. Why are we wasting our money and letting them do it now and having to do the same study twice. (Gerald Pollet, Heart of America Northwest)
165. The report required to determine what Columbia River sediments shorelines and islands will get cleaned up is still left in the hands of Battelle which has a conflict of interest as a potentially liable polluter and a legacy of covering up impacts to the river. And we public interests groups have been working this and hounding the agencies that Battelle can not be doing the studies of the river and telling us how our contaminated or uncontaminated is when they are one of the polluters. (Paige Knight, Hanford Watch)
166. The Columbia River Comprehensive Impact Assessment which is another part of the environmental restoration milestones. It is not acceptable to have Battelle do this report. One reason should make imminent sense to everyone in the room. That report ought to suffice for natural resource damage assessment purposes. We ought to only do one report on natural resource and ecological damage to the river from Hanford operations. However, Battelle cannot possibly meet the criteria for an independent entity under EPA and Department of Interior requirements for doing an Natural Resource Damage Assessment. Why are we wasting money by having to do it over again. Battelle has a conflict of interest. They are liable polluter. They are being given \$20 million to do a study to limit their own liability for past discharges and releases damaging the environment. A study that would be in direct irreconcilable conflict with their past reports. For instance the Columbia River Comprehensive Impact Assessment has a specific comment must address the risks such as reactor fuel chips, skyshine, direct radiation from facilities such as the 100 N dump tank and chemicals exposures along the Hanford Reach.

Not one of these risks were willingly discussed by Battelle in the Annual Environmental Reports. Battelle has a history of covering up these specific risks. Perhaps or not perhaps by order of the Department of Energy. It is irrelevant for this purpose. They're not qualified to do the Columbia River Impact Assessment. Lastly about the Columbia River Impact Assessment, this document isn't going to be worth the paper it's written on for \$20 million bucks if you can't deliver the openness initiative drafted by the state of Oregon and adopted by the Hanford Summit II which would guarantee the public not only declassification of all relevant documents showing what went into the river, but also all relevant documents have to be made accessible for public review. You've failed miserably on this openness initiative and this document is not going to be worth anything in terms of public credibility unless you immediately live up to that. Thank you. (Gerald Pollet, Heart of America Northwest)

167. Given the sorry history of Battelle, reports revealing cleanup needs and procedures should be made by more reputable agencies. (Lynn Sims)

Response to comments 156-167: Five major themes are identified in comments 156 through 167 as to why PNL should not be involved in the Columbia River Comprehensive Impact Assessment Project. The themes are summarized and responded to as follows:

Theme #1. PNL has a conflict of interest in performing the Columbia River Comprehensive Impact Assessment. The basis for this conflict of interest is that PNL is a polluter and is liable under Federal and State environmental laws.

We do not believe that the categorization of PNL as a polluter in the context of liability for cleanup costs is correct. Some supporting items include:

- For approximately the last 20 years Battelle has provided the USDOE effluent release information based on its operations for inclusion in the publicly available EIS/ODIS (Effluent Information System/Onsite Discharge Information System). EIS/ODIS is maintained by the Idaho National Engineering Laboratory and contains information from all USDOE sites.
- All effluent released by PNL is independently monitored and regulated by outside agencies. The State of Washington monitors air effluent pursuant to the National Emissions Standards for Hazardous Air Pollutants Act (40 CFR 61). Liquid effluent are regulated by EPA through National Pollutant Discharges Elimination System (NPDES) permits.
- PNL's role on the Hanford Site has been that of research and development rather than operation of facilities. Effluent released by PNL have been a very minor contributor to the total release of effluent from the Hanford Site.

The question of conflict of interest seems to be based on the assumption that a company that is a polluter cannot clean up its own discharges. General responses to this claim are:

- A system of checks and balances gives the regulatory agencies (EPA and Washington State Department of Ecology) the watchdog role to ensure that analyses supporting cleanup decisions are technically valid. This is implemented in their role in the Tri-Party Agreement and their oversight of the Columbia River Comprehensive Impact Assessment Project.
- Instead of considering it a conflict of interest, the Washington State Department of Ecology encourages polluters to clean up their own problems rather than waiting for someone else to evaluate it and act on it. However, in doing so the polluter is not released from any liabilities under Model Toxic Control Act.
- A significant percent of the environmental analyses performed for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are performed by the same entity that released contaminants. The regulation does not consider it a conflict of interest that the polluting entity performs analyses that direct cleanup efforts, in fact, the law is written to encourage such actions.
- The USDOE is paying for and directing cleanup activities on the Hanford Site per mandate from Congress under current environmental regulations. The USDOE, will fund whatever contractor is chosen to perform the river study.

Theme #2. PNL has a history of covering up environmental problems. This occurred in the past and is symbolized by leaving key information out of the Annual Environmental Reports.

The USDOE has no reason to believe that PNL has participated in coverups of environmental problems. The Annual Reports do not indicate any coverup, rather the reports have tracked information gathered as a result of changing emphasis, in response to changes in regulatory requirements and public interest. In addition, changes were often spearheaded by publication of PNL special studies.

- The Washington State Department of Health has been involved in oversight work on the Hanford Site since the early 1980's (see the discussion in theme #5 below). There has been no communication to USDOE or PNL of any concern or evidence of coverups.
- Annual reports containing information about contamination on the Hanford Site have been published since 1958. PNL has been involved in generating the annual report since starting work on the Hanford Site in 1965. A section on hazardous and radiological effluent has been included in the annual report for approximately the last 10 years.

- The environmental monitoring performed by PNL includes descriptions of environmental conditions and assessments of whether conditions meet applicable state and federal regulations. Historically these assessments have dealt primarily with human health risks. The contents of the Annual Report have changed over recent years in response to changing operations, changing site mission, changing issues of concern, and ultimately, changes in USDOE-HQ guidance directing what is expected in the report.
- Skyshine and direct radiation from facilities such as 100 N are components that are measured through the use of environmental thermoluminescent dosimeters located along the river. In earlier years of site operation film badges were used for the same purpose. Radiation from discrete particles will also be measured through the thermoluminescent dosimeters if they are of high enough levels to be measured, given the thermoluminescent dosimeters location relative to the particle. All thermoluminescent dosimeters results are and have been reported in the Site Annual Report and the results interpreted and discussed. Skyshine, since it has emerged as a concern, has been addressed separately in recent annual reports whether or not it is warranted from the perspective of exposure to the public.
- Discrete particles (which are not fuel chips), because of their lack of influence on exposure to the public, are not mentioned specifically in all annual reports, but have been included in special studies, all of which have been available to the public (for example, Sula, 1978; Cooper and Woodruff, 1993). Special studies provide a focus on an area of concern, such as shoreline exposures and discrete particles, allowing a detailed directed study beyond what is conducted as part of the routine surveillance program.

Theme #3. PNL has not allowed outsiders access to classified information. This has occurred in two steps: applicable documents have not been declassified and those documents that have been declassified have not been made accessible to the public.

Declassification of documents is a slow and expensive process. However, recently documents containing information related to releases have been declassified and made available to the public. The declassification was a joint effort between PNL and USDOE. Some specific information includes:

- The HEDR Project was instrumental in declassifying and making approximately 8000 documents available to the public.
- The Data Compendium published in early 1994 for the Columbia River Comprehensive Impact Assessment Project identified a number of classified documents. All except two of these documents have been declassified and placed in the USDOE Reading Room: one was destroyed years ago and one, although deemed not declassifiable, did not contain any environmental release data.

- The Columbia River Comprehensive Impact Assessment Project has identified another approximately 500 classified documents as potentially containing information related to releases to the Columbia River. A document containing a list of these titles is currently in PNL's review process. PNL will request that USDOE declassify all of these documents.

Theme #4. The work on the Columbia River Comprehensive Impact Assessment Project is not addressing Natural Resource Damage Assessment (NRDA) concerns.

There is explicit agreement between USDOE, EPA and Ecology that the objective of the Columbia River Comprehensive Impact Assessment is to perform an assessment for "cleanup decisions" and an NRDA assessment is not an objective of the Columbia River Comprehensive Impact Assessment. In accordance with the agreement, USDOE has explicitly directed PNL not to perform formal NRDA actions on the Columbia River Comprehensive Impact Assessment Project. However, it is recognized in the negotiated agreement that created the requirement to perform the Columbia River Comprehensive Impact Assessment that, "The Columbia River Comprehensive Impact Assessment will benefit activities undertaken pursuant to the natural resource damages provisions of Comprehensive Environmental Response, Compensation and Liability Act by providing data that will be of value in such activities".

Theme #5. PNL has a history of not performing credible technical work.

USDOE does not share this assessment and welcomes any review of the technical work performed by PNL by technical peers. Technical work produced by PNL is recognized by the scientific community as credible. Some specific items related to work on contaminant releases and environmental issues supporting this position are:

- Battelle has been an active member of the Environmental Radiation Quality Assurance Task Force of the Pacific Northwest (QATF) since its origin in 1985. Members of the QATF include Washington Department of Health, USDOE, PNL, Washington Public Power Supply System, Siemens Nuclear Power Corporation, US Ecology Incorporated, U.S. Nuclear Regulatory Commission, EPA, Oregon State Health Division, Idaho Department of Health and Welfare, Washington State Public Health Association, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Yakama Indian Nation. A primary goal of the QATF is "to verify adequacy and accuracy of environmental radiation monitoring programs and data which relate to the state of Washington." PNL has participated in all joint sampling and analytical intercomparison activities conducted through the QATF during this time period. Results of the intercomparison studies have shown data generated by the various environmental monitoring programs to be accurate and consistent.
- The State of Washington Department of Health (DOH) conducts independent monitoring of environmental sampling for the Hanford Site and publishes the results in publicly available annual

reports. The DOH identifies which wells and other environmental media are to be sampled, collects samples that are split with PNL, and accompany PNL monitoring teams in the field. This activity has been funded through grants from USDOE (for approximately the last 5 years) and the Washington Public Power Supply System (WPPSS) (since the early 1980's).

- The Hanford Environmental Dose Reconstruction (HEDR) Project is PNL's project most closely related to the Columbia River Comprehensive Impact Assessment Project. It was subjected to intense review from the independent Technical Steering Panel, an external peer review panel, and several stakeholder groups. The Technical Steering Panel and external peer review panel found the work to be technically credible. A recent National Research Council report on HEDR states: "Some concern was expressed regarding potential conflicts arising from having staff from Battelle, Pacific Northwest Laboratories assess past activities that involved persons who were employees of Battelle Memorial Institute and in some cases previous employees of the General Electric Company. However, the committee did not observe any indication of bias in the studies it reviewed." (The Hanford Environmental Dose Reconstruction Project: A Review of Four Documents. National Academy Press, 1994)

In summary, we do not believe that PNL has a conflict of interest in studying contamination in the Columbia River. Instead, PNL is very qualified to perform this assessment. PNL staff members have published hundreds of reports over the last 25 years dealing with the effect of Hanford-related contaminants on humans and biota. Battelle has many experienced staff members who have spent a good part of their careers studying the human and ecological effects of contaminants released from Hanford. The results of these years of study have been technically peer reviewed by experts throughout the world and found credible. USDOE has agreed to have PNL's Columbia River Comprehensive Impact Assessment activities peer reviewed. Successful completion of the Columbia River Comprehensive Impact Assessment Project will be dependent on implementing the technical review panel identified in Tri-Party Agreement Milestone M-13-80.

7.0 ISSUE 4 -- THE TRI-PARTY AGREEMENT MILESTONE REQUIRING COMPLETION OF ALL REMEDIAL ACTIONS FOR ALL OPERABLE UNITS BY 9/30/2018 IS INCONSISTENT WITH AMENDMENT FOUR OF THE TRI-PARTY AGREEMENT AND NEEDS TO BE MODIFIED

168. My pet peeve is the lack of integration in the 100 Area. I still don't understand how you can do environmental restoration if you haven't integrated the milestones for decontamination and decommissioning. I know you are going to negotiate most of them by 1996, but it is still no planned that decontamination and decommissioning will be completed by 2018 which is the date on which environmental restoration of all those areas are suppose to be completed. And I hope that I am wrong, but I am very concerned about it. Because I am really still not clear on how, you know, or why you want to go vacuum the house before you pull down

the plaster. It just doesn't make sense to me that you can fully clean up an area when you haven't even removed the buildings which the people in decontamination and decommissioning tell me are going to again contaminate the soil that has all ready been cleaned up. So it is sort of a double whammy on money. (Cynthia Sarthou, Heart of America Northwest (comments seconded by Katherine Crandall and Hilary Harding))

Response: See responses to comments 110 and 171.

169. When it comes to the moving of the reactor cores, they are concerned about the soil movement of pulling those reactors. But isn't that soil going to be displaced and put into the disposal facility that is going to be set-up because won't that be contaminated soil any ways? (Unknown Commenter)

Response: Cleanup of 100 Area Operable Units and facilities subject to decontamination and decommissioning shall be required in order to address the potential future use of these lands. As cleanup decisions are made for 100 Area Source Operable Units, concurrent cleanup schedules shall be set for any remaining facilities or structures within the operable unit. Schedules for cleanup and removal of the reactor cores in the 100 Area will be negotiated by no later than December 1996.

It is expected that the contaminated materials from the 100 Areas would be sent to the on-site Environmental Restoration Disposal Facility to allow for safe disposal of soil and rubble contaminated with chemical, low-level radioactive and combined hazardous chemicals and radioactivity wastes. See responses to comments 110 and 171.

170. All the old reactors need to be moved to the 200 Area first and dealt with there. The mixed waste in the tanks and the PUREX plant also need remediation quickly. (John and Linda Jewell)

Response: The agencies agree that the reactors are relatively low risk; allowing for radioactive decay will reduce worker exposure. There are higher priorities to focus resources on. The reactor block buildings will not be dismantled until contamination has decayed sufficiently. It should be noted however, that though Hanford's old reactor block buildings themselves will not be cleaned up now, the three parties have agreed that all other buildings associated with old reactor sites (in addition to inactive waste sites) along the river will be cleaned up by 2018. The agencies have agreed to negotiate schedules for reactor removal by December 1996. See also response to comment 3 regarding the three parties commitment to tank cleanup and the agencies tentative agreement on Facility Transition and responses to comments 53 and 137.

171. The Agreement must include removal of reactors by previous date set. (Unknown Commenter)

Response: See response to comment 170. In addition, the reader should note that the Tri-Party Agreement has not previously addressed Hanford's old reactor buildings specifically. This has caused some confusion as to whether or not these reactor buildings have been, or should be, included within the scope of cleanup to be completed by 2018. We have

attempted to clarify our expectation regarding old reactor cleanup during these Environmental Restoration Refocusing negotiations.

172. The question of whether you include in this cleanup plan taking down those eight reactors or if you leave them to stand. Some people think they would be good history standings and there are other points of views as well that favor keeping the reactors in place and the reactor buildings in place even after the area is cleaned up. Tri-Party Agreement milestones for completing investigations of contaminated areas in the 200 Areas. The high-level waste tanks, the PFP Building which we have a hearing on next week and the PUREX Plant is delayed for two years. This may be delay completing the remedial actions by 2018. So once again we are afraid here that the milestones are actually slipping and we are not going to get the work done while there is money in the pot to do the work. (Paige Knight, Hanford Watch)

Response: See responses to comments 110 and 171.

173. The Tri-Party Agreement milestones for completing investigations of contaminated areas in the 200 Areas (high-level waste tanks, Plutonium Finishing Plants and PUREX plants, etc.) are delayed for two years. This will probably seriously delay completion of remedial actions by 2018. (Doris Cellarius, Cascade Chapter, Sierra Club)

Response: Although the Tri-Party Agreement milestone for completing site investigations of all non-tank farm contaminated areas in the 200 Areas (M-15-00-C) is now December 31, 2008; Milestone M-16 has been clarified to require completion of all remedial actions for all Non-Tank Farm Operable Units and decontamination and decommissioning of all 100 Area buildings and structures (except the reactor buildings) by September 30, 2018. These milestones still direct completion of remedial actions in the 200 Area Non-Tank Farms Operable Units by 2018.

Facilities such as PUREX are going through Facility Transition activities which will take these facilities to safer conditions by the removal of all liquid wastes and most of the solid wastes. In addition, transition of such large facilities enables minimum routine upkeep, reduces the mortgage, and allows for safer employee work areas. This transition is captured in a set of Tri-Party Agreement milestones which should not be affected by new Milestone M-16 dates.

Change Number M-13-94-03	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink. Type or print using black ink.</small>	Date September 29, 1994
Originator Jack W. Donnelly		Phone 736-3013
Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title M-13-00 Modification (1994 Refocusing Negotiations)		
Description/Justification of Change <u>Justification of Change:</u> In 1989, when the Hanford Federal Facility Agreement and Consent Order was signed by the U. S. Department of Energy (USDOE), Environmental Protection Agency (EPA), and Washington State Department of Ecology (Ecology), 78 operable units existed throughout the Hanford Site. The Site was divided into four National Priorities List (NPL) Areas, the 100 NPL Area, 200 NPL Area, 300 NPL Area, and 1100 NPL Area. The 100 NPL Area contained 25 operable units. The 200 NPL Area contained 43 operable units. The 300 NPL Area contained 6 operable units. The 1100 NPL Area contained 4 operable units. See attached Description/Justification of Change continued on Page 2.		
Impact of Change 1. Complete 100 NPL Area pre-Record of Decision (pre-ROD) characterization/investigation ahead of schedule (December 31, 1999); 2. Complete 300 NPL Area pre-ROD characterization/investigation ahead of schedule (December 31, 1999); 3. Complete 200 NPL Area pre-ROD characterization/investigation by December 31, 2008 versus September 30, 2005; 4. Modification of M-15-00 required; 5. Milestones/reaffirmation more reflective of public, stakeholder, tribal values; 6. Emphasis on groundwater treatment/containment/extraction; 7. Closure/Postclosure of the 6 Tank Farm Operable Units (200-UP-3, 200-TP-5, 200-TP-6, 200-RO-4, 200-PO-3, 200-BP-7) will be addressed under M-45-00; and 8. No other TPA impacts are expected.		
Affected Documents 1. Hanford Federal Facility Agreement and Consent Order, Action Plan and Appendices B, C and D. 2. Change Control Form Number M-13-93-06, Jan. 1994.		
Approvals		
_____ DOE	Date _____ Approved _____ Disapproved	
_____ EPA	Date _____ Approved _____ Disapproved	
_____ Ecology	Date _____ Approved _____ Disapproved	

Description/Justification of Change (continued)

Justification of Change (continued):

The current status in each NPL Area is as follows:

100 NPL Area: 2018 of the 225 operable units either have existing RI/FS (RFI/CMS) Work Plans or have existing milestones for further work in CY 1994. Cleanup actions are underway or complete at 4 operable units.

200 NPL Area: 6 of the 4342 operable units either have existing RI/FS (RFI/CMS) Work Plans or have existing milestones to have further work in CY 1994. Cleanup actions are underway or complete at 4 operable units.

300 NPL Area: 6 of the 6 operable units either have existing RI/FS (RFI/CMS) Work Plans or have existing milestones for further work in CY 1994. Cleanup actions are underway or complete at 2 operable units.

1100 NPL Area: 4 of the 4 operable units have a remedial action (record of decision).

200 NPL Area Tank Farms: 6 of the 4342 operable units in the 200 NPL Area are Tank Farm Operable Units; Closure/Postclosure of these units is addressed under M-45-00 and will not be within the scope of M-13-00.

Under (the original) M-15-00, the RI/FS (RFI/CMS) process is to be completed at all operable units by 2005. To achieve M-15-00, M-13-00 was established to set a rate of 6 RI/FS (RFI/CMS) Work Plans/year. However, based on public comment and values, tribal and stakeholder comment and values, environmental restoration goals, the need to achieve cost efficiencies, recommendations of the Tank Waste Task Force and the Future Site Uses Working Group, there is a need to modify M-13-00. This modification is expected to better meet program goals and objectives while ensuring adequate resources are dedicated to cleanup near the Columbia River; remediate groundwater plumes impacting the river; and to demonstrate progress and commitment in cleaning up Hanford effectively and efficiently. USDOE M-13-00 commitments not modified by this change remain in effect and include M-13-06A and M-13-00C. M-13-00C is to be satisfied by submittals for the following existing milestones: M-13-07, M-13-08, M-13-09, M-13-80, M-13-81, and M-13-81A.

Description of Change:

1. THE FOLLOWING MILESTONES WILL BE DELETED:

MILESTONE	DESCRIPTION	DATE
M-13-00D	Submit 6 RI/FS (RFI/CMS) Work Plans	12/31/95
M-13-00E	Submit 6 RI/FS (RFI/CMS) Work Plans	12/31/96
M-13-00F	Submit 6 RI/FS (RFI/CMS) Work Plans	12/31/97
M-13-00G	Submit 6 RI/FS (RFI/CMS) Work Plans	12/31/98
M-13-00H	Submit 6 RI/FS (RFI/CMS) Work Plans	12/31/99

With the commitment of completing the RI/FS (RFI/CMS) Process at the 100 and 300 NPL Areas by 12/31/99, and the 200 NPL Area by 12/31/2008 (See also M-15-00 commitments), the following milestones will be established:

Description/Justification of Change (continued)

2. 100 NPL AREA:

MILESTONE	DESCRIPTION	DATE
M-13-00I	Submit planning documentation necessary to complete the RI/FS Process for 100-FR-2, 100-KR-2 (including the former and 100-KR-3) (see Note 1).	12/31/95
M-13-00J	Submit planning documentation necessary to complete the RI/FS Process for 100-IU-2, and 100-IU-6 (see Note 1).	12/31/96

Note 1: Documentation for M-13-00I and M-13-00J may include plans consistent with the Hanford Past Practice Strategy. The purpose of these plans is to provide sufficient information to meet the requirements of the RI/FS process to support appropriate cleanup decisions for the remaining 100 NPL Area Operable Units. Completion of the RI/FS (pre-ROD) process shall be satisfied by submittal of the proposed plan.

3. 200 NPL AREA:

MILESTONE	DESCRIPTION	DATE
M-13-11	Submit 200-PO-2 RFI/CMS, Closure/Postclosure Work Plan.	06/30/98
M-13-12	Submit 200-PO-4 RFI/CMS, Closure/Postclosure Work Plan.	10/31/98
M-13-14	Submit 200-IU-3 RFI/CMS, Closure/Postclosure Work Plan.	02/28/99
M-13-15	Submit 200-RO-1 RFI/CMS, Closure/Postclosure Work Plan.	06/30/99
M-13-16	Submit 200-PO-5 RFI/CMS, Closure/Postclosure Work Plan.	10/31/99
M-13-17	Submit 200-SO-1 RFI/CMS, Closure/Postclosure Work Plan.	02/28/2000

Each Work Plan above will include a coordinated past practice site investigation/RCRA Closure/Postclosure/RCRA Corrective Action approach in order to implement applicable requirements within a single document.

The RFI/CMS, Closure/Postclosure Work Plan will be the first of several necessary submittals for completing the RFI/CMS and RCRA closure/postclosure processes for an individual operable unit. It will include a schedule for the submittal of subsequent documents.

The information necessary for performing RCRA closures/postclosures within an operable unit will be provided in various RFI/CMS documents. The initial work plan will contain a Sampling and Analysis Plan (SAP) for the associated RCRA units and it will outline the manner in which RCRA Closure/Postclosure Plan requirements will be met in the work plan and subsequent documents. The selected closure/postclosure method and associated design details will (unless otherwise agreed to by the parties) be submitted as part of the CMS report at a later date, as specified in the work plan.

Description/Justification of Change (continued)

The proposed closure/postclosure activities contained in the CMS report will: (1) meet RCRA closure/postclosure standards and requirements, (2) be consistent with closure/postclosure requirements specified in the Hanford Site-Wide (RCRA) permit, and (3) be coordinated with recommended remedial action(s) for the associated operable unit.

Additionally, the closure/postclosure implementation schedule will reflect an overall prioritization between closure/postclosure and other remedial activities within the subject operable unit, considering environmental protection, health & safety, availability of technology, etc.

Each RFI/CMS, Closure/Postclosure document will be structured such that RCRA closure/postclosure requirements can be readily identified for a separate review/approval process and so that RCRA closure/postclosure requirements can be incorporated in the RCRA Permit.

Coordination of RCRA closures/postclosures at operable units where a work plan has already been prepared will require either a revision to the work plan or an addition to a subsequent RFI/CMS document that outlines the manner in which RCRA Closure/Postclosure Plan requirements will be met in the overall sequence of documents.

The purpose of coordinating RCRA closure/postclosure requirements with CERCLA or RCRA Past Practice requirements is to ensure consistent, effective, and non-duplicative cleanup. USDOE, EPA and Ecology have agreed to a number of early attempts (the N Area Pilot Project, 200-BP-11) to determine whether this approach to satisfying RCRA and CERCLA requirements is viable. Each of the parties reserve their right to reject this approach if that party believes that it does not adequately ensure compliance with applicable requirements. If rejected, the parties agree to negotiate acceptable document submittal schedules.

4. REMAINING 200 NPL AREA:

MILESTONE	DESCRIPTION	DATE
M-13-10	Submit 200-PO-1 RFI/CMS Work Plan.	10/31/95
M-13-13	Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan.	12/31/98
M-13-00K	Submit 2 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2000
M-13-00L	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2001
M-13-00M	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2002
M-13-00N	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2003
M-13-00O	Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2004
M-13-00P	Submit 4 200 NPL RI/FS (RFI/CMS) Work Plans.	12/31/2005
M-13-00Q	Submit 4 200 NPL RI/FS (RFI/CMS) Work Plans.	06/30/2006

The preceding commitments allow more resources to be applied in the 100 and 300 NPL Areas remediation efforts, while maintaining investigation/characterization plans for the 200 NPL Area to support remedial actions under M-16-00.

Description/Justification of Change (continued)

5. LEAD REGULATORY AGENCY AND UNIT CATEGORY DESIGNATIONS:

Lead Regulatory Agency and Unit Category designations are also modified for the following operable units as shown:

<u>Operable Unit</u>	<u>Current Lead Agency</u>	<u>Proposed Lead Agency</u>	<u>Proposed Unit Category</u>
200-PO-1	Ecology CPP	Ecology	RPP
200-PO-4	Not Designated	Ecology	RPP
200-IU-3	Not Designated	Ecology	RPP
200-RO-1	Not Designated	Ecology	RPP
200-PO-5	Not Designated	Ecology	RPP
200-SO-1	Not Designated	Ecology	RPP

6. COLUMBIA RIVER:

Under change number M-13-93-06, a milestone was established (M-13-80B) to submit a Columbia River Comprehensive Impact Assessment to EPA and Ecology (Human Health and Environmental Risk Assessment). USDOE, EPA, and Ecology propose this milestone (M-13-80B) be placed under M-15-00. Therefore, the following will occur:

1. Establish milestone ~~M-15-17~~M-15-80, to replace M-13-80B (use existing language);
2. Delete M-13-80B.

Change Number M-15-94-04	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink. Type or print using black ink.</small>	Date September 29, 1994
Originator Ecology, EPA and DOE negotiation team members		Phone
Class of Change <input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title 100-N Area Pilot Project		
Description/Justification of Change <u>Justification of Change:</u> <p>This change request has been developed pursuant to Amendment Four of the <u>Hanford Federal Facility Agreement and Consent Order</u> (Tri-Party Agreement), dated January 25, 1994. Included within Amendment Four was recognition by the parties that Hanford facility deactivation, decontamination and decommissioning will result in both regulated and nonregulated activities. In order to ensure consistent, effective, and nonduplicative cleanup, actions taken under Washington State Department of Ecology (Ecology), United States Department of Energy (USDOE) and United States Environmental Protection Agency (EPA) authorities will need to be implemented in a coordinated fashion.</p> <p>In light of this recognition USDOE, EPA, and Ecology have agreed to utilize USDOE's 100-N Area as a pilot project with the objective of ensuring coordinated cleanup efforts. The parties expect that "Lessons learned" from the 100-N Area Pilot Project will aid them as other Hanford facilities proceed through cleanup.</p> <p>See attached Description/Justification of Change continued on Page 2.</p>		
Impact of Change <p>Signature of this change request will establish near term expectations for management and cleanup activities at Hanford's 100-N Area.</p> <p>See attached continuation sheet.</p>		
Affected Documents <p>Hanford Federal Facility Agreement and Consent Order, Appendix D. Additional reports and submittals required by this change.</p>		
Approvals _____ Date _____ Approved _____ Disapproved DOE _____ Date _____ Approved _____ Disapproved EPA _____ Date _____ Approved _____ Disapproved Ecology		

Description/Justification of Change (continued)

Justification of Change (continued):

This change request, and the 100-N Area Pilot Project, are intended to ensure that actions are taken which adequately reduce current and potential near term impacts to human health and the environment from 100-N Area facilities, discharges, etc. Actions taken under this change request will be consistent with Action Plan sections 6.3 and 7.5, and address all hazardous substances including radioactive constituents. Addressing all such substances during closure and/or remediation of Hazardous Waste Facility Treatment, Storage and/or Disposal (TSD) and RCRA Past Practice (RPP) units will avoid the need to perform additional work at these units later under CERCLA. Priority 100-N Area Pilot Project activities will include N Reactor Facilities deactivation; abatement of "skyshine" from 1301-N and 1325-N cribs; abatement of contaminant discharges from N-Springs; and closure of N-Springs source terms (i.e., 1301-N and 1325-N cribs). 1324-N/NA crib closures and lower priority RCRA past practice site remediation will be delayed until priority activities begin to be completed (maintaining overall level of effort).

This change request includes those actions presently deemed necessary to address near term environmental and human health related concerns, and is intended to carry 100-N Area through early cleanup and the deactivation process. More detailed 100-N Area cleanup and decontamination and decommissioning (D&D) requirements will be developed through change request (milestone) revision as D&D, closure, and past practice site remediation processes progress. The Parties agree to provide affected tribes, key stakeholders and the public notice, copies of this change request, and access to the N Reactor Deactivation Program Plan. Comments based on their review may result in change request amendment(s).

Approval of this change request constitutes deletion of Tri-Party Agreement milestones M-20-31 (1301-N and 1325-N closure plans) and M-20-35 (1324-N and 1324-NA closure plans).

Description of Change:

1. 100-N AREA DECONTAMINATION AND DECOMMISSIONING:

MILESTONE	DESCRIPTION	DATE
M-16-01	Complete 100-N Area Decontamination and Decommissioning.	To be determined
M-16-01A	Submit necessary 100-N Area Decontamination and Decommissioning (D&D) National Environmental Policy Act (NEPA) documentation for public review.	06/30/97
M-16-01B	Complete negotiation of 100-N Area D&D work schedules.	Six months after Environmental Impact Statement Record of Decision (or equivalent)

Description/Justification of Change (continued)

2. PILOT PROJECT PLAN:

MILESTONE	DESCRIPTION	DATE
M-15-12D	Submit 100-N Area Pilot Project Plan for EPA and Ecology concurrence. Priority 100-N Area Pilot Project activities will include N Reactor facilities deactivation; abatement of "skyshine" from 1301-N and 1325-N cribs; abatement of contaminant discharges from N-Springs; and closure of N-Springs source terms (i.e., 1301-N and 1325-N cribs).	45 days after receipt of regulator comments.

3. 100-N AREA DEACTIVATION:

MILESTONE	DESCRIPTION	DATE
M-16-01E	Complete N Reactor/100-N Area Deactivation pursuant to the work scope identified in the <u>N Reactor Deactivation Program Plan</u> , Revision 4, WHC-SP-0615, December 1993. Note: The three parties will review progress, issues and critical path activities semi-annually to assure progress towards 100-N Area Deactivation by September 1997. Critical path activities will be defined in the N-Reactor Deactivation Program Plan [Revision 5, November 1994]. Overall schedule and scope is defined in revision 4; critical path activities and new information will be defined in revision 5.	09/30/97
M-16-01E-T1	Complete removal and disposal of 118-N-1/1303-N Silo fuel spacers.	09/30/95
M-16-01E-T2	Initiate pretreatment and removal of all N Reactor fuel storage basin waters pursuant to the N Reactor Deactivation Program Plan.	09/30/96
M-16-01E-T3	Complete characterization of N Reactor fuel storage basin sludge and debris.	04/30/97

Description/Justification of Change (continued)

IV. 100-N AREA PAST PRACTICE SITE/RCRA TSD ACTIVITIES:

MILESTONE	DESCRIPTION	DATE
M-16-12	Issue letter report and schedules to Ecology and EPA, documenting alternative proposed to abate 1301-N and 1325-N crib "skyshine". Any alternative interim abatement measure selected will be compatible with future final closure actions.	10/31/94
M-16-12A	Complete implementation of skyshine abatement action selected under M-16-12.	To be established November 1994 199409/30/95
M-13-87	Submit 100-NR-01 and 100-NR-02 RFI/CMS Operable Unit Work Plans. Work Plans will be submitted to Ecology and/or EPA for approval in accordance with their respective authorities. Work Plans will incorporate regulatory comments of December 20, 1993 as resolved March 21, 1994. The Work plans will include project specific work duration schedules and a summary of N Reactor facilities deactivation activities (citing WHC-SP-0615, REV 4, December, 1993). General descriptions of 1301-N and 1325-N (high priority sites) and 1324-N/NA (lower priority) will be included (thorough descriptions will be provided in limited field investigation reports). Data previously collected at these operable units will be included in the work plans.	10/31/94
M-13-87-T01	Submit for Ecology and EPA review and concurrence, data quality objectives developed through the "Streamlined Approach for Environmental Restoration (SAFER)" process for contaminant investigations of the 1301-N/1325-N cribs. Existing characterization data for 1324-N/NA will be provided to Ecology and EPA to obtain concurrence on data sufficiency in this time period.	06/30/94
M-13-87-T02	Submit for Ecology and/or EPA review and approval in accordance with their respective authorities, the descriptions of work for contaminant investigations of the 1301-N/1325-N (and potentially 1324-N/NA) cribs.	08/31/94
M-15-12A	Submit Limited Field Investigation Report for new work completed under 100-NR-01 and 100-NR-02 RFI/CMS Work Plans.	To be established by November, 199407/31/96

Description/Justification of Change (continued)

M-15-12A-T1 Submit to Ecology and EPA for review the 100-NR-1 and 100-NR-02 Limited Field Investigation Reports for previously approved field investigations. 08/31/94

M-15-12B Submit Closure Plan/Corrective Measures Study (CMS) for 1301-N/1325-N to Ecology and/or EPA for approval in accordance with their respective authorities. The CMS will include focused feasibility study (FFS) information, closure and postclosure information, proposed Interim Response Measure (IRM) RCRA permit modifications and work schedules for the 1301-N/1325-N facilities. ~~To be established by November, 1994~~ 03/31/97

In an effort to achieve coordinated management of 100-N Area activities, closure and postclosure requirements of Washington State's Hazardous Waste Management Act (Chapter 70.105 RCW and its implementing regulations) applicable to the 1301-N and 1325-N cribs will be met and addressed within the 1301-N/1325-N CMS. Ecology CMS approval will constitute 1301-N/1325-N closure plan approval.

M-15-12C Submit 100-NR-1 and 100-NR-2 CMS to Ecology and/or EPA for approval in accordance with their respective authorities. The 100-NR-1 and 100-NR-2 CMS will address 1324-N/NA TSD existing groundwater contamination, and lower priority past practice sites. The CMS will include FFS information, closure and postclosure information, proposed IRM RCRA permit modifications and work schedules for all sites. ~~To be established by November, 1994~~ 11/30/96

In an effort to achieve coordinated management of 100-N Area activities, closure and postclosure requirements of Washington State's Hazardous Waste Management Act (Chapter 70.105 RCW and its implementing regulations) applicable to the 1324-N/NA crib will be met and addressed within the 100-NR-1 and 100-NR-2 CMS. Ecology CMS approval will constitute 1324-N/NA closure plan approval.

Description/Justification of Change (continued)

4. N-SPRINGS EXPEDITED RESPONSE ACTION:

Synopsis:

A pump-and-treat facility will be installed and operated initially to: (i) evaluate commercially available treatment options for Strontium-90, (ii) provide data necessary to set demonstrable Strontium-90 groundwater cleanup standards, and (iii) reduce Strontium-90 contamination flux from the groundwater to the river. If Ecology and/or EPA in accordance with their respective authorities (and after consultation with USDOE) determine that initial pump and treat operations are successful (see M-16-12-E), USDOE will upgrade and optimize the system.

A hydraulic barrier will be installed for the purpose of reducing the flux of Strontium-90 contamination at N-Springs to the Columbia River. This will be accomplished by the creation of a stagnant groundwater pool within the contaminant plume and through increased travel time for any contamination not captured in this zone. In response to public comments the barrier will be removable. In response to a post Engineering Evaluation/Cost Assessment (EE/CA) independent technical review committee report, the barrier selected will be a (approximately 3000') sealed-hinge metal sheet pile structure. The barrier is expected to enhance upgradient pump-and-treat operations.

a) Hydraulic Barrier

MILESTONE	DESCRIPTION	DATE
*M-16-12B	Complete construction/installation of sheet pile wall, monitoring wells at the termini and matched (center of wall) sample capable piezometers, pursuant to Ecology (N Springs ERA) Action Memorandum dated September 23, 1994.	06/30/95
M-16-12B-T1	Release Request for Proposal.	09/30/94
M-16-12B-T2	Begin Site Preparation, e.g., preparation of shoreline road.	12/31/94
M-16-12B-T3	Initiate sheet pile wall construction.	02/28/95

* Refer to introduction of Response to Comments, USDOE letter from S. H. Wisness to EPA and Ecology dated 2/8/95, "Request to change N-Springs Action Memorandum", and letter from Ecology/EPA to USDOE dated 3/23/95, "USDOE request to change N-Springs Action Memorandum".

Description/Justification of Change (continued)

b) Pump-and-Treat

MILESTONE	DESCRIPTION	DATE
M-16-12C	Submit letter report to Ecology and EPA on: (i) The results of pumping tests at three existing wells to evaluate Strontium-90 concentration response to pumping (effluents will be managed in accordance with the Hanford Purgewater Strategy); and (ii) necessary documentation justifying barrier placement and location of extraction wells and discharge point(s).	10/31/94
M-16-12D	Complete construction/installation and initiate operations of N-Springs pump and treat facility pursuant to Ecology (N-Springs Expedited Response Action (ERA)) Action Memorandum dated September 23, 1994.	09/30/95
M-16-12D-T1	Initiate preparation of pump and treat system extraction well network.	01/31/95
M-16-12E	Submit letter report to Ecology and EPA that evaluates pump-and-treat facility effectiveness and efficiency. Recommendations for continuation and system upgrades will be included.	02/28/96
	<p>The initial facility letter report and its accompanying recommendations, will be submitted to Ecology and/or EPA for approval in accordance with their respective authorities. This approval shall be consistent with provisions within Ecology's (N-Springs ERA) Action Memorandum dated September 23, 1994, as amended, reference letter from Ecology/EPA dated 3/23/95, "USDOE request to change N-Springs Action Memorandum".</p>	

Change Number M-15-94-09	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink Type or print using black ink.</small>	Date September 29, 1994
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Originator Nancy Uziemblo	Phone 736-3014
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Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager
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Change Title M-15-00 Modification (1994 Refocusing Negotiations)
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Description/Justification of Change <u>Justification of Change:</u> From the direction of Tri-Party commitments to rebaseline USDOE's Environmental Restoration (ER) Program, the need to refocus and reprioritize ER activities, and the need to achieve the "bias-for-action" as stated in the Hanford Past Practice Strategy, the M-15-00 milestone is rewritten to speed progress in achieving stakeholder values including protecting the Columbia River, implementing aggressive remedial actions, and making land available for other uses. The actions for this approach will include moving a milestone from M-13-00 to M-15-00, modifying M-15-00, stating priorities for clean-up of the Hanford site, and coordinating the submittal of Hazardous Waste Facility Treatment, Storage and/or Disposal (TSD) Unit Closure/Postclosure Plans with operable unit work plans (or other equivalent document). This revised course of action will result in a more effective Environmental Restoration Program. See attached Description/Justification of Change continued on Page 2.
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Impact of Change The M-15-00 milestone is defined to show priority of ER activities, achieve earlier remediation, and focus on remediation of sites along the Columbia River. The following activities & impacts are addressed on the attached pages: 1. Columbia River/Groundwater Activities; 2. 100, 200, and 300 Area Activities; 3. 200 Area Groundwater Activities; 4. No impact to ongoing 200 area source operable unit work. Remediation schedules will be set through the Remedial Design/Remedial Action(RD/RA) process as enforceable milestones with appropriate target dates in order to effectively drive work and allow measurement of progress. Closure of the 6 Tank Farm Operable Units (200-UP-3, 200-TP-5, 200-TP-6, 200-RO-4, 200-PO-3, 200-BP-7) will be addressed under M-45-00.
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Affected Documents Hanford Federal Facility Agreement and Consent Order Action Plan and Appendices B, C & D.
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Approvals																									
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Description/Justification of Change (continued)

1. COLUMBIA RIVER/GROUNDWATER ACTIVITIES

Description/Justification of Change:

Columbia River initiatives are identified as high priority activities by Hanford stakeholders, public, and Native American Indian Tribes. The Columbia River Comprehensive Impact Assessment is moved from a M-13-00 to a M-15-00 milestone to direct completion of this assessment. Groundwater remediation strategies are clarified.

MILESTONE	DESCRIPTION	DATE
M-15-80	Submit the Columbia River Comprehensive Impact Assessment to EPA and Ecology (Human Health and Environment Risk Assessment) [formerly M-13-80B].	submittal date to be determined no later than 12/15/95
M-15-81A	Provide a report to the EPA and Ecology, including recommendations for actions for approval by Ecology and EPA, to coordinate regulatory compliance decisions across RCRA & CERCLA Groundwater monitoring programs for the 200 Area Plateau. The report shall: (1) Evaluate: (a) the effects of pump and treat systems on existing groundwater monitoring; (b) the effects of ceasing discharge to the soil column (Milestone M-17-00) on existing groundwater monitoring; (c) the effects of the rerouting of liquid discharges to the soil column on existing groundwater monitoring systems; and, (2) Incorporate the impacts of groundwater remediation and liquids management as described in the Hanford Groundwater Remediation Strategy and the Hanford Groundwater Protection Management Plan.	12/31/95
M-15-81B	Submit to the EPA and Ecology, a document to support future Feasibility Studies describing: the known nature and extent of Iodine-129 contamination in the 200 Area Plateau (soil and groundwater); potential Applicable or Relevant and Appropriate Requirements (ARARS); and available treatment methods; including costs and efficiencies.	4/30/96

Description/Justification of Change (continued)

Impact of Change:

The submittal of the Columbia River Comprehensive Impact Assessment to EPA and Ecology (Human Health and Environment Risk Assessment) [formerly M-13-80B] is a milestone which was left as TBD in the Fourth Amendment of the Tri-Party Agreement. The submittal of this assessment and cited groundwater strategies are expected to reinforce commitments to stakeholders regarding the high priority of monitoring and ceasing contaminant discharges to area groundwater.

2. 100, 200, AND 300 AREA ACTIVITIES

Description/Justification of Change:

Dates are set for the completion of 100, 200, and 300 Area Operable Unit past practice site investigations in order to ensure continued progress in characterization and remediation in these areas. The three agencies have a goal of issuing Records of Decision by 12/31/96 for all twenty 100 and two 300 Area Operable Units currently under investigation. There is an additional goal of issuing RODs for the remaining five 100 Area Operable Units and one 300 Area Operable Unit by the year 2000.

MILESTONE	DESCRIPTION	DUE DATE
M-15-00	Complete RI/FS (or RFI/CMS) process for all Operable Units	9/30/2005 12/31/2008
M-15-00A	Complete all remaining 100 Area Operable Unit pre-ROD site investigations under approved work plan schedules (100-KR-2, 100-KR-3, 100-FR-2, 100-IU-2, and 100-IU-6).	12/31/99
M-15-00B	Complete all 300 Area Operable Unit pre-ROD site investigations under approved Work Plan schedules.	12/31/99
M-15-00C	Complete all 200 Area non-Tank Farm Operable Unit pre-ROD site investigations under approved Work Plan schedules.	12/31/2008

Impact of Change:

The determination of 100, 200 and 300 Area investigation completion dates allows for a definitive course of action. Significant changes are made in the ER program to prioritize the 100 and 300 Area cleanup. All interim milestones will be implemented as stated in approved Work Plans. Closure of the 6 Tank Farm Operable Units (200-UP-3, 200-TP-5, 200-TP-6, 200-RO-4, 200-PO-3, 200-BP-7) will be addressed under M-45-00.

Description/Justification of Change (continued)

3. 200 AREA GROUNDWATER ACTIVITIES

Description/Justification of Change:

200 Area Groundwater investigations, remediation, and pump and treat activities will continue in order to address tribal and stakeholder key values of dealing realistically and forcefully with groundwater contamination. Pump and treat activities will continue at 200-BP-5, 200-UP-1, and 200-ZP-1 under M-13-06A, M-13-02A, and M-13-04A, respectively. Milestones are established to follow through on these activities for Interim Remedial Measure (IRM) plume remediation and non-IRM plume investigation through approved schedules in the Work Plan.

MILESTONE	DESCRIPTION	DUE DATE
M-15-21	Evaluate results of M-13-06A and submit Proposed IRM Plan for 200-BP-5.	10/31/95
M-15-17	Submit Proposed IRM Plan for Uranium, Technetium-99 and Nitrate for 200-UP-1.	4/30/95

Impact of Change:

The establishment of these two 200 Area proposed groundwater milestones sets firm dates to examine the performance of these groundwater remediation efforts.

4. 200 AREA SOURCE OPERABLE UNIT ACTIVITIES

Description/Justification of Change:

There is no impact to ongoing 200 Area source operable unit work. Implementation of continued work will follow schedules in approved work plans and/or other approved documents. The ongoing 200 Area source operable units are 200-UP-2, 200-BP-11, 200-BP-1, and 200-ZP-2.

Change Number M-16-94-03	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink Type or print using black ink.</small>	Date September 29, 1994
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Originator D. R. Sherwood	Phone 376-9529
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Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager
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Change Title M-16-00 Modification (1994 ER Refocusing Negotiations)

Description/Justification of Change Justification of Change: The M-16-00 major milestone is inconsistent with Amendment Four of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement). In Amendment Four of the Tri-Party Agreement, Closure of Single-Shell Tank Farms was addressed under Milestone M-45-00 and extended until 2024. Under Milestone M-16-00, these Single-Shell Tank Farms were grouped into six (6) operable units (200-BP-7, 200-PO-3, 200-RO-4, 200-TP-5, 200-TP-6, and 200-UP-3). These operable units were originally scheduled for completion of remedial actions by September 2018, as were all other operable units. With expected delays in retrieval of waste from single-shell tanks, not all waste will be removed until well after September 2018. The six tank farm operable units, as described in Appendix C of the Tri-Party Agreement, will be closed under Milestone M-45-00 and, therefore can be removed from the scope of M-16-00. See attached Description/Justification of Change continued on Page 2.
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Impact of Change This change request redefines the scope of major Milestone M-16-00 to be consistent with Milestone M-45-00. Existing M-16-00 interim milestones (M-16-80, M-16-81, and M-16-82) remain unchanged. No other interim or major milestones are impacted. A listing of the units and releases from the following tank farm operable units; 200-BP-7, 200-PO-3, 200-RO-4, 200-TP-5, 200-TP-6, and 200-UP-3 shall be removed from Appendix C and included in the definition of RCRA Storage Unit S-2-4 in Appendix B.
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Affected Documents Hanford Federal Facility Agreement and Consent Order, Action Plan and Appendices B, C and D.

Approvals <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;">DOE</td> <td style="width: 15%; border-bottom: 1px solid black;">Date</td> <td style="width: 15%; text-align: center;">___ Approved</td> <td style="width: 15%; text-align: center;">___ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">EPA</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">___ Approved</td> <td style="text-align: center;">___ Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Ecology</td> <td style="border-bottom: 1px solid black;">Date</td> <td style="text-align: center;">___ Approved</td> <td style="text-align: center;">___ Disapproved</td> </tr> </table>	DOE	Date	___ Approved	___ Disapproved	EPA	Date	___ Approved	___ Disapproved	Ecology	Date	___ Approved	___ Disapproved	
DOE	Date	___ Approved	___ Disapproved										
EPA	Date	___ Approved	___ Disapproved										
Ecology	Date	___ Approved	___ Disapproved										

Description/Justification of Change (continued)

Description of Change:

The title of milestone M-16-00 is proposed to be changed to read:

MILESTONE	DESCRIPTION	DATE
M-16-00	Complete remedial actions for all non-tank farm operable units. Complete decontamination and decommissioning of all 100 Area buildings and structures (except 105-B, 105-C, 105-D, 105-DR, 105-F, 105-H, 105-KE, 105-KW, and 105-N Reactor Buildings).	September 30, 2018
M-16-00A	Complete all 100 Area Remedial Actions.	TBE
M-16-00F	Establish date for completion of all 100 Area Remedial Actions	12/31/2001
M-16-00B	Complete all 300 Area Remedial Actions	TBE
M-16-03A	Establish date for completion of 300 Area Remedial Actions	6/30/2002
M-16-05A	Submit Construction Completion Reports for the remaining 1100 Area Operable Units.	12/31/1995
M-16-05A-T1	Submit 1100 Area Groundwater Monitoring Plan and well location rationale to EPA and Ecology for review and approval.	4/30/1995
M-16-05A-T2	Complete 1100 Area Remediation Field Activities.	9/30/1995
M-16-05A-T3	Complete 1100 Area Site Restoration (e.g. Revegetation)	12/31/1995

Justification of Change (continued):

In addition, the scope of Milestone M-16-00 shall be expanded to include the decontamination and decommissioning (final disposition) of all facilities and structures, excluding the reactor buildings, located in the 100 Areas. In order to address the potential future use of lands in the 100 Areas, cleanup of both operable units and facilities subject to decontamination and decommissioning shall be required. The three parties have agreed that as cleanup decisions are made for 100 Area Source Operable Units, concurrent cleanup schedules shall be set for any remaining facilities or structures within the operable unit. Cleanup schedules set forth in each operable unit will not include the decontamination and decommissioning of the buildings containing the reactor core (105-B, 105-C, 105-D, 105-DR, 105-F, 105-H, 105-KE, and 105-KW). Schedules for cleanup and removal of the reactor cores from these buildings will be negotiated by no later than December 1996 as agreed in Amendment Four of the Tri-Party Agreement. Similar negotiations shall be required for the 105-N Reactor Building. The timing of these (105-N) negotiations has yet to be established.

All existing interim milestones within M-16-00 remain unchanged.

Description/Justification of Change (continued)

Decontamination and decommissioning schedules for all other major nuclear facilities in the 200 and 300 NPL Areas are not included as part of M-16-00.

Change Number M-20-94-05	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink. Type or print using black ink.</small>	Date September 29, 1994
Originator Moses Jaraysi		Phone 376-3016
Class of Change <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title Milestone M-20-00 Modification (1994 ER Refocusing Negotiations)		
Description/Justification of Change <u>Justification of Change:</u> The current milestone M-20-00 (and its associated interim milestones) needs substantial revision to assure that it: (a) covers all regulated units; (b) adequately reflects developing agreements to coordinate hazardous waste facility closure/postclosure with operable unit remediation; (c) accurately reflects regulatory status or necessary coordination with developing transition efforts; and (d) adequately reflect stakeholder values. See attached Description/Justification of Change continued on Page 2.		
Impact of Change Proposed changes will result in the following: 1. The completion date of milestone M-20-00 is modified from May 1996 to February 2000; 2. Reassignment of scope and deletion of milestones M-20-31, M-20-34, M-20-35, and M-20-38; 3. Addition of new interim milestones M-20-52 to M-20-54; and 4. The completion date of milestones M-20-33, -36, -37, and -39 are changed.		
Affected Documents Hanford Federal Facility Agreement and Consent Order, Action Plan and Appendices B, C and D.		
Approvals _____ Disapproved _____ Approved _____ DOE Date _____ Disapproved _____ Approved _____ EPA Date _____ Disapproved _____ Approved _____ Ecology Date		

Description/Justification of Change (continued)

Justification of Change (continued):

Proposed changes are expected to aid the parties in complying with the Tri-Party Agreement and Cost and Management Efficiency Initiative, and in coordinating the application of RCRA and the State Hazardous Waste Management Act (HWMA) with CERCLA and RCRA Past Practice site remediation. The submittal of Hazardous Waste Facility Treatment, Storage and/or Disposal (TSD) Unit Closure/Postclosure Plans in coordination with Operable Unit Work Plans (and associated documents) is expected to optimize the efficiency of site characterization and cleanup activities. This coordinated approach is expected to result in cost and resource savings such that funding can be redirected for cleanup activities along the Columbia River (e.g. documentation, site characterization, cleanup). Specific agreements for coordinating TSD Closure/Postclosure Plans with Operable Unit Work Plans are outlined in TPA change request numbers M-13-94-03 and M-15-94-04.

The RFI/CMS, Closure/Postclosure Work Plan will be the first of several necessary submittals for completing the RFI/CMS and RCRA closure/postclosure processes for an individual operable unit. It will include a schedule for the submittal of subsequent documents.

The information necessary for performing RCRA closures/postclosures within an operable unit will be provided in various RFI/CMS documents. The initial work plan will contain a Sampling and Analysis Plan (SAP) for the associated RCRA units and it will outline the manner in which RCRA Closure/Postclosure Plan requirements will be met in the work plan and subsequent documents. The selected closure/postclosure method and associated design details will (unless otherwise agreed to by the parties) be submitted as part of the CMS report at a later date, as specified in the work plan. The proposed closure/postclosure activities contained in the CMS report will meet RCRA closure/postclosure standards and requirements, and will be coordinated with the recommended remedial action for the associated operable unit. Additionally, the closure/postclosure implementation schedule will reflect an overall prioritization between closure/postclosure and other remedial activities within the subject operable unit, considering environmental protection, health & safety, and availability of technology.

Each RFI/CMS, Closure/Postclosure document will be structured such that RCRA closure/postclosure requirements can be readily identified for a separate review/approval process so that RCRA closure/postclosure requirements can be incorporated in the RCRA Permit.

Coordination of RCRA closures/postclosures at operable units where a work plan has already been prepared will require either a revision to the work plan or an addition to a subsequent RFI/CMS document that outlines the manner in which RCRA Closure/Postclosure Plan requirements will be met in the overall sequence of documents.

The purpose of combining RCRA closure/postclosure requirements is to ensure consistent, effective, and non-duplicative cleanup. USDOE, EPA and Ecology have agreed to a number of early attempts (the 100-N Area Pilot Project, 200-BP-11) to determine whether this approach to satisfying RCRA and CERCLA requirements is viable. Each of the parties reserve their right to reject this approach if that party believes that it does not adequately ensure compliance with applicable requirements. If rejected, the parties agree to negotiate acceptable document submittal schedules.

Description/Justification of Change (continued)

In addition, the parties have agreed to establish a regulatory course of action to take major Hanford facilities through transition in preparation for Decontamination and Decommissioning (D&D). Each of these facilities will require a regulatory course of action (e.g. Closure/Postclosure, Part B Application(s), and/or a transition plan). Proposed M-20-00 milestones are designed to guide these evaluations. Additional M-20-00 milestone changes are expected as a result of current Facility Transition negotiations. Approval of this change request constitutes scope reassignment of milestones M-20-34 (reassigned to M-20-33), M-20-38 (reassigned to M-20-36), M-20-31 (reassigned to M-15-12B) and M-20-35 (reassigned to M-15-12C). Please refer to change request M-15-94-04.

Description of Change:

1. PROPOSED MODIFICATIONS RELATED TO NEW UNITS:

MILESTONE	DESCRIPTION	DUE DATE
M-20-00	Submit Part B Permit Applications or Closure/Postclosure Plans for all RCRA TSD Units. Permit applications, closure and postclosure plans will be submitted to Ecology and/or EPA for approval in accordance with their respective authorities. Individual unit submittals (enforceable as interim milestones) will occur as shown in Appendix D.	02/28/2000
M-20-52	Submit 216-A-37-1 Crib Closure/Postclosure Plan to Ecology and EPA in coordination with the Work Plan of Operable Unit 200-P0-4 (to be satisfied by M-13-12).*	10/31/1998
M-20-53	Submit 207-A Retention Basin Closure/Postclosure Plan to Ecology and EPA in coordination with the Work Plan of Operable Unit 200-P0-5 (to be satisfied by M-13-16).*	10/31/1999
M-20-54	Submit 241-CX Tank System Closure/Postclosure Plan to Ecology and EPA in coordination with the Work Plan of Operable Unit 200-S0-1 (to be satisfied by M-13-17).*	02/28/2000

* See Change Request M-13-94-03

Description/Justification of Change (continued)

2. PROPOSED MODIFICATIONS RELATED TO ENVIRONMENTAL RESTORATION:

MILESTONE	DESCRIPTION	DUE DATE
M-20-32	Submit documents for 300 Area Process Trenches that address closure/postclosure requirements to Ecology and EPA in coordination with the Phase III Feasibility Study for OU 300-FF-1.	08/15/1994
M-20-33	Submit 216-A-10 Crib and 216-A-36B Crib Closure/Postclosure Plans to Ecology and EPA in coordination with the Work Plan for Operable Unit 200-PO-2 (to be satisfied by M-13-11).	06/30/1998
M-20-36	Submit 216-A-29 Ditch and 216-B-63 Trench Closure/Postclosure Plans to Ecology and EPA in coordination with the Work Plan for Operable Unit 200-BP-11 (to be satisfied by M-13-07).	06/30/1995
M-20-37	Submit 216-U-12 Crib Closure/Postclosure Plan to Ecology and EPA in coordination with the LFI Report for Operable Unit 200-UP-2.	06/30/1995
M-20-39	Submit 216-S-10 Pond and Ditch Closure/Postclosure Plan to Ecology and EPA in coordination with the Work Plan for Operable Unit 200-RO-1 (to be satisfied by M-13-15).	06/30/1999



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Department of Energy

Richland Operations Office
P.O. Box 550
Richland, Washington 99352

FEB 1995

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. Roger F. Stanley, Director
Tri-Party Agreement Implementation
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Sherwood and Stanley:

REQUEST TO CHANGE N SPRINGS ACTION MEMORANDUM

As discussed in our meeting on January 4, 1995, and January 24, 1995, the U.S. Department of Energy, Richland Operations Office (RL), is submitting the attached Request to Change the N Springs Action Memorandum. This request provides a description and justification for making a fundamental change in the action selected in the Action Memorandum.

The request also contains significant new information that was not available at the time the Action Memorandum was issued. RL believes that evaluation of the new data requires a revised strategy for N Springs groundwater remediation and proposes to work with the U.S. Environmental Protection Agency (EPA) and the State of Washington Department of Ecology (Ecology) to develop appropriate recommendations regarding a revised strategy to present to the public, tribes, and the Hanford Advisory Board. The new information indicates that the prior calculation of flux of Strontium-90 to the river overestimated that flux by almost 90%. Based on the new information, it appears that immediate action is not warranted with regard to the flux to the river, and that a remedy for N Area groundwater conditions should be arrived at through the remedy selection process for the NR-2 groundwater operable unit.

As agreed to in the above mentioned meetings, physical field work on the barrier wall installation has been stopped, and the contractor placed on a "suspended" status, due to the inability to drive the sheet pile in accordance with the specifications in the Action Memorandum, as reflected in the constructibility test report submitted to EPA and Ecology (letter dated February 6, 1995). The cost to maintain the barrier wall subcontractor on a "suspended" status is approximately \$1,100 per day. In addition, cost for design, management, and functional support related to evaluation of alternative barrier wall construction methods and development of a test pile program are expected to be approximately \$325,000 for February and March 1995. The current costs being incurred with regard to the pump and treat system (including design, management, functional support, skid procurement, well contractor, laboratory support, operations support and construction) will be approximately \$465,000 in February 1995 and expected to be \$1,985,000 in March 1995.

009901

Messrs. Sherwood and Stanley

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FEB 08 1995

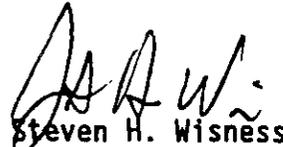
To prevent unnecessary expenditure of government funds, RL proposes that all work on the design and construction of the barrier and pump and treat systems be halted until a decision is reached on revision of the Action Memorandum.

To minimize such expenses, RL requests EPA and Ecology's concurrence, by February 14, 1995, with the determination to halt design and construction activities, and agreement that the milestones in the Action Memorandum shall be extended pending resolution of the Action Memorandum revisions.

RL would like to establish a forum and schedule for reaching agreement with Ecology and EPA on revising the Action Memorandum. RL proposes that the three agencies meet immediately to commence this process and discuss the appropriate activities to be undertaken to support a final decision on the N Springs groundwater issues.

If you have any questions, please contact Mr. P. M. Pak on (509) 376-4798.

Sincerely,



Steven H. Wisness
Hanford Project Manager

RSD:PMP

Enclosure

cc w/encl:
M. K. Harmon, EM-442
P. S. Innis, EPA
P. R. Staats, Ecology

cc w/o encl:
S. M. Alexander, Ecology
S. N. Balone, EM-442
G. R. Eidam, BHI

REQUEST TO CHANGE THE N SPRINGS ACTION MEMORANDUM

I. EXECUTIVE SUMMARY

This document provides an explanation of the basis for the Department of Energy, Richland Operation Office's (DOE) request to change the N Springs Expedited Response Action Cleanup Plan Action Memorandum (Action Memorandum) based on significant new information discovered during the implementation of the N Springs Expedited Response Action. The Action Memorandum, dated September 23, 1994, required installation of a groundwater pump and treat system and a grouted hinge sheet pile wall at the N Springs Area of the Hanford Site. The action prescribed in the Action Memorandum was selected from an engineering evaluation/cost analysis (EE/CA), a report of an independent technical review of the EE/CA, and public comments received on these technical reports.

During implementation of the actions required by the Action Memorandum, significant new information and analyses have been obtained and conducted that demonstrate the need for a fundamental change in the Action Memorandum. This new information includes: the results of the barrier wall constructability test program, which demonstrates that the barrier wall cannot be installed as specified in the Action Memorandum due to unfavorable geologic conditions at N Springs; and new sampling and modeling results, which demonstrate that the flux of strontium-90 (Sr-90) from the groundwater to the river is significantly less than had previously been presented to the public, and that there is no significant additional reduction of flux by installing a pump and treat system in combination with a barrier wall.

Based on this significant new information, DOE requests the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) to reconsider the action selected in the Action Memorandum. DOE believes that current information demonstrates that a non-time critical removal action with regard to the groundwater at the N Springs Area is not necessary, and that a comprehensive remedy for N Area groundwater should be addressed as part of the current remedy selection process for the NR-2 operable unit.

II. BACKGROUND

II.A N Springs Expedited Response Action Proposal: January 1994

In January 1994, DOE submitted to EPA and Ecology an engineering evaluation/cost analysis entitled the "N Springs Expedited Response Action Proposal" (ERA Proposal), DOE/RL-93-23. The ERA Proposal was prepared to evaluate alternatives in order to recommend an alternative to reduce the flux of Sr-90 to the Columbia River.

The ERA Proposal reported that the levels of Sr-90 in water samples from the wells placed in seeps and springs adjacent to the river generally are declining with time. However, three of the fourteen near river sampling points, well N-8T and seeps 3 and 4, continued to exhibit significant concentrations of Sr-90. The ERA Proposal established a primary objective of eliminating or significantly reducing the flux of Sr-90 to the Columbia River through the N Springs. A performance threshold for this objective was defined to be a reduction of at least 50% of the Sr-90 concentrations greater than 1,000 pCi/L. A secondary objective was to implement a removal action compatible with future remedial actions planned for the operable unit and which would contribute to the efficient performance of the final remedial action.

The ERA Proposal reviewed and screened five technologies and 20 process options. Based on the screening analysis, three technologies and 10 process options were retained for more detailed analysis. A sheet pile wall was evaluated as a potential process option for providing a vertical barrier. The sheet pile barrier option was excluded from further analysis because installation of sheet pilings was not considered technically feasible at N Springs. It was concluded that the presence of large boulders and rocky soil would cause damage or deflection of the sheets, resulting in unpredictable wall integrity. A detailed analysis was conducted on four alternatives: no action, pump and treat, a slurry wall vertical barrier, and upgradient hydraulic control.

The ERA Proposal concluded that although all three of the active alternatives were feasible for application at N Springs, there were uncertainties with regard to the technical implementation, efficiency and cost of each alternative. Due to these uncertainties, the ERA Proposal recommended additional study of the factors causing the uncertainties related to the pump and treat and slurry wall alternatives to gather the information needed to arrive at a preferred alternative. (The uncertainties associated with the hydraulic control alternative, with regard to efficiency and the potential for increased contamination of clean areas, were considered to be greater than for the other two active alternatives.)

The factor causing the greatest uncertainty for the slurry wall alternative was concern regarding whether the local rocky soils would prevent installation of a wall with sufficient integrity and impermeability to be effective. Uncertainties also existed with regard to the extent of the groundwater gradient reduction behind the wall, the effects of the increased flow velocity at the wall ends, wall length, and the potential that concentrations higher than those estimated by the model may flow around the wall. A field implementability test was recommended to assess the impacts of the gravel and boulders on the deep soil mixing slurry wall and to optimize slurry wall formulations. Additional groundwater flow and contaminant transport modeling was recommended to evaluate wall placement and length.

For pump and treat, uncertainties included hydraulic conductivity, hydraulic gradient, contaminant distribution (both lateral and vertical), the effects of pumping on either end of the model zone, and the ability to treat the groundwater to meet discharge levels. A concern was expressed with regard to the generation of secondary waste. The ERA Proposal recommended time consistent groundwater and spring sampling, additional groundwater flow and contaminant transport modeling with the new sample results to evaluate well spacing and pumping rates, field testing and a treatability test of potential treatment technologies to reduce these uncertainties for the groundwater pump and treat alternative.

II.B Public Comment Period: February 7 through March 24, 1994

By notice dated February 7, 1994, the public was notified of a comment period on the N Springs ERA Proposal. The notice informed the public that an action was being considered with regard to ground water contaminated with radioactivity seeping into the Columbia River from springs located near the N Reactor on the Hanford Site. The notice stated that although discharges to the N Reactor cribs stopped in 1991, and flow volume at the spring had slowed in recent years, the water remained contaminated.

Four alternatives were presented to the public for comment: no action; pump and treat, described as a proven, flexible, easy-to-implement technology that would reduce actual contaminant levels at a cost of \$6 million to \$23 million; a slurry wall, which would reduce groundwater flow to the river but not reduce groundwater contaminant levels at a cost of \$10 million; and hydraulic control, which would not reduce contaminants, but would lower the pressure gradient pushing contamination toward the river at a cost of \$2.7 million.

Two public meetings were held, in Hood River, Oregon, on February 28, 1994, and in Richland, Washington, on March 2, 1994. Written comments were received on the proposal from 20 people.

II.C Independent Technical Review of ERA Proposal: February 22, 1994

On February 22, 1994, an Independent Technical Review Report was made available for review and comment as part of the ongoing public comment period on the ERA Proposal. This report presented the conclusions of a panel of independent third-party technical experts regarding the technical adequacy and conclusions of the N Springs ERA Proposal. The independent review board made the following conclusions and recommendations:

Objective of the ERA: The appropriate objective of an ERA at N Springs should be to select a cost-effective alternative to prevent dispersal of Sr-90 into the river. A goal of mass removal of Sr-90 from the groundwater is not commensurate with standard non-time critical ERA proposals, and due to the natural immobility of Sr-90, significant mass

is unlikely to be removed by pumping and treating groundwater for the 10 year period of the ERA.

Scope of Problem: The presentation in the ERA Proposal of existing concentrations of Sr-90 in soil and ground water was confusing because the timing and location of concentrations in both soil and groundwater were not well documented. The groundwater model that was used assumed hydrologic conditions that no longer exist at the site, which created much uncertainty with regard to the magnitude of the problem.

Effectiveness of Alternatives: There are significant uncertainties in the evaluation of effectiveness of alternatives in the ERA Proposal. The pump and treat alternative was incorrectly assessed in its capability to remove Sr-90 from the groundwater and soils at the site. This alternative may not be able to achieve a net reduction of 50% flux of Sr-90 to the River, and the proposed treatment systems may not be able to meet the proposed maximum contaminant level (MCL) of 42 pCi/L. The least complex and potentially most reliable alternative with the fewest uncertainties in meeting the ERA goal of flux reduction would be a vertical barrier system, particularly a single-auger, deep soil mixing technology. Reassessment was recommended of the potential constructability of a grouted interlock sheet pile wall, and the feasibility of constructing a barrier very near (within 50 feet of) the Columbia River. No assessment of either of these options was undertaken in this report, although it was concluded that the sheet-pile wall system appears to offer significant advantages, because of limited access to the river bank.

Cost Evaluation: Incorrect assumptions used in the ERA Proposal for evaluating the cost of a pump and treat system lead to an underestimation of cost for that alternative. Because of the uncertainties in the pump and treat alternative, this method of flux reduction may, in fact, become a very expensive hydraulic control alternative.

Preferred Alternative: The alternative with the least amount of technological and cost uncertainty, vertical barrier using a slurry wall, could have been selected in the ERA Proposal as the preferred alternative.

II.D Action Memorandum: September 23, 1994

The Action Memorandum, dated September 23, 1994, required installation and operation of a 50 gpm pump and treat system by September 1995, and initiation of construction by February 1995, and completion of construction by June 1995, of a grouted-hinge sheet pile wall with a minimum length of 3,000 feet, installed at the river's edge.

The Action Memorandum summarized the evaluation of the four alternatives from the ERA Proposal: no action, pump and treat, slurry wall and hydraulic control. The pump and treat alternative was stated to have a

flux reduction efficiency of 67% to 96% (depending upon whether 3 or 5 wells were used for extraction of groundwater).

Public comments were received into three major areas: risk analysis, adequacy of the existing database, and a majority interest in proceeding with the pump and treat cleanup alternative. Several public comments asked for information on the current risk posed by N Springs. In response, it was acknowledged that no risk assessment had been performed for discharge of Sr-90 from N Springs, and that the decision in the Action Memorandum was based on the average concentration based in groundwater monitoring wells of 6,000 pCi/L, which is 750 times the current MCL.

It was acknowledged that the ERA Proposal had recommended continued study of the pump and treat and barrier wall alternatives, and had considered a grouted sheet pile wall to be impractical because of the presence of large boulders. The Action Memorandum stated that the Independent Technical Review report had concluded that the groundwater modeling done in the ERA Proposal was inadequate in that it did not reflect the heterogeneous conditions believed to exist at N Area, and had identified a grouted sheet pile wall along the river's edge as a potential option. The Action Memorandum concluded that placement of a sheet pile wall at the river's edge greatly reduces the likelihood of encountering boulders. A review of historical documents indicating a heterogeneous condition (i.e., preferential pathway) at N Springs was also referenced as a basis for choosing the selected alternative.

A new alternative was adopted based on public comments, the conclusions reached in the Independent Technical Review and the information in the historical documents, combining pump and treat and a grouted hinge sheet pile vertical barrier at the river's edge. The majority of public comments supported the selection of a pump and treat system; however, it was concluded that the installation of a pump and treat system may not sufficiently reduce the flux of Sr-90 to the river. The uncertainties associated with groundwater flow paths at the N Springs were determined to require the use of a combination of alternatives, including a pump and treat system and a removable vertical barrier, which in combination will achieve the goals of the ERA. A slurry wall was deemed inappropriate because the barrier itself would at year 10 become a source of Sr-90 flux to the river, and the potential disposal costs of this alternative are prohibitive.

The estimated cost of the selected alternative was \$6.74 million for the barrier wall and between \$2.24 and \$10.09 million for the pump and treat system, for a total of between \$8.98 and \$16.83 million. The Action Memorandum provided design and construction details for both the pump and treat system and the sheet pile wall. The Action Memorandum further provided that implementation of the approved alternative will include the need for specific modeling of the groundwater flowpath, geologic conditions at the site of installation, and the conditions which exist at the point of effluent discharge. Such modeling is for the stated

purpose of determining the location of the extraction wells and point of effluent discharge, and the specific location and total length (beyond the 3000 foot minimum) of the wall.

II.E Data Gathering and Modeling Evaluations: October 1994 to February 1995

In the process of implementing the Action Memorandum, DOE has undertaken efforts to gather additional information regarding subsurface conditions at N Springs, and to refine the evaluation of potential effects of various remedial alternatives and combinations of alternatives. A draft report entitled the "Letter Report for Modeling Evaluation of N Springs Barrier and Pump-and-Treat Systems" was submitted by DOE to EPA and Ecology in October 1994. This draft report contained preliminary results and conclusions from data gathering and modeling efforts aimed at evaluating the feasibility and effectiveness of various combinations of pump and treat systems and barrier walls.

The report evaluated various combinations of three wall lengths and three pumping rates. Although certain factors in the modeling done for this report were refinements of the prior modeling efforts reported in the ERA Proposal, there were still model inputs and assumptions that were generalized estimates and considered to be not representative of site specific conditions. These assumptions included the following:

- 1) An assumption that the maximum value detected in groundwater was representative of the concentration throughout the entire forty foot saturated zone, when it actually appears that the significant Sr-90 concentration are found at the top of the unconfined aquifer; and
- 2) An assumption regarding subsurface conditions that does not account for the heterogenous conditions believed to exist at N Area.

This modeling estimated that the flux of Sr-90 to the river was significantly less (.3 Curies per year) than had been previously estimated in the ERA Proposal (1.26 Curies per year). The report also concluded that the pump and treat options did not show any significant improvement in flux reduction to the river compared to the wall alone, due to the highly sorptive nature of Sr-90 to the saturated soil matrix in the aquifer. The report recommended that additional data gathering be done to obtain information needed to further refine the model.

Since the release of the draft Modeling Evaluation Report in October 1994, additional data gathering and model evaluation activities have occurred. Eight new boreholes were drilled along the alignment of the proposed barrier. Four of these boreholes were completed as groundwater monitoring wells. At each new borehole, "blow count" tests were conducted every five feet to help determine wall constructability. Drill cuttings were taken and logged by geologists to determine

mineralogic and lithologic conditions. At five foot intervals, soils samples were collected and analyzed for gamma emitting radionuclides. A subset of these soil samples was sieved and analyzed for the presence of Sr-90. For approximately 20 samples, soil/water equilibria tests were conducted. New well hydraulic data were collected. In three of the four wells, slug-withdrawal tests were conducted to collect aquifer property information which supplemented existing aquifer tests conducted in the area.

The additional data confirmed that the Sr-90 was adsorbed onto the soil in areas where higher groundwater flow potentially occurred. Sr-90 levels on the soil decreases with depth and decreases with distance away from a newly detected preferential flow pathway. Hydraulic testing of three new wells and a reevaluation of past data indicated that the hydraulic conductivity used in the previous analysis may be too high.

In response to the newly gathered data, the model was further refined by correcting the values assumed in the October 1994 modeling effort for hydraulic conductivity (from 261 ft/day to 100 ft/day) and porosity (from .25 to .15) over most of the modeled domain, and incorporating a higher conductivity zone (300 ft by 1500 ft) at the center of the N Springs to reflect the preferential flowpath that is believed to exist at this location. The retardation coefficient used in this modeling effort was the same as had been used in the October 1994 model run (different than the number that had been used in the ERA Proposal); newly acquired data confirmed this value to be correct. The net effect of these changes in hydraulic properties was to further reduce the predicted flux of Sr-90 to the river, to an average of .16 Ci/yr.

II.F Sheet Pile Barrier Wall Constructability Test Program: December 1994

A constructability test program for construction of the sheet pile wall was conducted between December 2 and December 30, 1994, to assess the feasibility of installing the sheet pile wall in accordance with the detailed technical specifications in the Action Memorandum. Initially, installation of the sheet piling was attempted with vibratory hammers. After several attempts, with very little penetration accomplished, a diesel impact hammer was utilized. Although there was improvement in performance, it quickly became obvious that if the dense soil was to be penetrated it would require still larger pile hammers.

Test pits were dug to explore ground conditions, which confirmed that dense soil (and not large obstructions) was preventing penetration. For the second test, a variable energy hydraulic hammer capable of higher driving energy than the diesel hammer was utilized. Although early indications during driving appeared to be successful, it was discovered after extraction that the pile had reached only thirty feet in penetration and then refused to penetrate further due to encountering dense soils. The high energy produced by the hammer had destroyed the bottoms of the pile.

7-1-73

Three further tests were conducted utilizing maximum hammer energy before pile failure occurred, all of which penetrated approximately 30 feet (10 to 15 feet short of the desired clay layer). Even though the pile penetrated to 30 feet with minor damage to the tips of the pile, most had twisted and in some cases separated at the interlocks.

It was concluded that adequate testing had been performed to demonstrate that interlocking Z piling cannot be driven to the clay layer, and that even at lesser depths, severe damage occurs. The dense impenetrable layers of soil were deemed not penetrable with standard methods of construction. Three possible alternate construction methods were identified in the constructability report which may be capable of installing a sheet pile barrier wall at the selected location. Additional constructability tests were recommended in the report to determine the feasibility of implementing one of these alternative construction methods.

III. DISCUSSION

III.A Selected Remedy Not Consistent With New Technical Information

The Action Memorandum adopted a new combined alternative that included both a pump and treat system and a barrier wall. In adopting this combined alternative, the Action Memorandum acknowledged that the Independent Technical Review Report had determined that the ERA Proposal groundwater modeling was inadequate. The Independent Technical Review further concluded that because of the uncertainties in the pump and treat alternative, this method of flux reduction may, in fact, become a very expensive hydraulic control alternative. At the time of the Action Memorandum, new information or scientific analysis was not yet available to reduce the uncertainties relating to the cost or effectiveness of the groundwater pump and treat system.

The Action Memorandum selected a grouted-hinge sheet pile technology instead of the slurry wall system proposed in the ERA Proposal. The sheet pile barrier wall was screened out in the ERA Proposal because installation of sheet piling was considered to be not technically feasible due to large boulders and rocky soil in the N Springs Area. The Independent Technical Review recommended a reassessment of the sheet pile wall option and evaluation of the feasibility of constructing a barrier very near the River. These assessments were not completed prior to the date of the Action Memorandum.

III.B Significant New Information

Substantial additional information has been gathered and analyses have been conducted since the date of the Action Memorandum. Site specific sample data has been collected, refinements have been made to the model used in the ERA Proposal, additional scenarios have been modeled, and the constructability test phase for construction of the sheet pile wall

has been completed. The information gathered in these sampling, testing and modeling efforts and the conclusions drawn from the evaluation of this information constitute significant new information. This information is not contained elsewhere in the administrative record file. Because this information was developed after the date of the Action Memorandum, it could not have been submitted to EPA and Ecology during the public comment period in February and March 1994.

This new information has been presented to the agencies orally, and has been or will be presented in writing no later than March 15, 1995. The sampling data was provided to the agencies by letter dated February 6, 1995. Preliminary modeling results were presented to the agencies in the draft Modeling Evaluation Report in October 1994. The constructability test phase report for the sheet pile wall has been submitted to the agencies by letter dated February 6, 1995. The analytical report providing the detailed evaluation and conclusions regarding all of this new information is currently being drafted and will be submitted to the agencies on or before March 15, 1995.

A summary of the new information is provided above, and a summary discussion of the analysis and conclusions reached on the basis of this information is provided below. As discussed further below, the new information, and conclusions reached from analysis of this information support the need to fundamentally alter the response action selected in the Action Memorandum.

III.C Remedy Specified In The Action Memorandum Not Technically Feasible

The Action Memorandum specified that a grouted-hinge sheet pile wall with a minimum length of not less than 3,000 feet would be installed in close proximity to the river's edge at a cost of \$6.74 million, and that a pump and treat system would be installed to work in combination with the barrier wall at an additional cost of \$2.24 to \$10.09 million. The Action Memorandum specified extensive design and construction details for both components of the combined alternative.

1. Barrier Wall

The depth required for the barrier wall to contact the impervious layer at the river's edge was estimated to be 50 feet. The Action Memorandum further specified that

the grouted-hinge sheet pile wall consists of steel sheets with interlocking hinges which are driven or vibrated into the ground to the desired depth. The interlocking hinges allow successive sheets to be added to extend the wall to the length necessary and once in-place form an annular space which is then filled with a grout material. This sealable cavity enhances the impervious capability of the wall to a hydraulic conductivity of 10⁻⁸ to 10⁻¹⁰.

Because neither the ERA Proposal nor the Independent Technical Review report had thoroughly evaluated installation of a sheet pile at the river's edge, a constructability test program was undertaken to evaluate the feasibility of installing a sheet pile wall by conventional construction methods at the selected site. The constructability test phase for the sheet pile wall demonstrated that it is not physically possible to install the sheet pile wall at the selected location to the depth required using the construction techniques specified in the Action Memorandum.

Three possible alternative construction techniques have been identified that may be able to accomplish installation of the wall to the desired depth at the selected location. The alternative construction techniques identified as a result of the constructability test are pre-excitation of a vertical trench for insertion of the sheet pile, pre-punching a large steel beam into a shallow trench to break up the dense material at depth, and pre-drilling three-foot wide holes on four foot centers to perforate the dense material prior to driving the sheet piles. These alternative techniques may cause additional impacts to the river bank area. The constructability test report recommends an evaluation of the feasibility of implementing these alternative construction techniques at the N Springs Area.

Current preliminary engineering predicts that the estimated planning cost of installing the 3,000 foot wall as specified in the Action Memorandum using one of these alternative techniques would cost approximately \$14.7 million. This cost includes costs to design and construct the barrier wall, as well as costs for program management, a second pile test program, additional groundwater modeling, and groundwater monitoring. This cost estimate is more than double the original cost estimated in the Action Memorandum, and therefore a significant change in the cost of the selected action.

In addition, the schedule to construct the revised barrier wall is expected to take longer than the original milestones in the Action Memorandum. These milestones cannot be met using any of the identified alternative construction techniques. At present, a tentative schedule would have the pile test program beginning in March 1995, wall construction beginning in July 1995 and construction completion by March 1996. The schedule could vary significantly depending upon which alternative construction technique was selected.

2. Pump and Treat System

The Action Memorandum determined that the pump and treat system by itself may not sufficiently reduce the flux of Sr-90 to the river, and that the selected action therefore must be a combination of

the pump and treat system and the sheet pile wall. The constructability test demonstrated that it is technically infeasible to construct the sheet pile wall as specified in the Action Memorandum. The recently conducted modeling evaluations have produced the conclusion that there is no significant benefit in flux reduction to the river by installation of the pump and treat system in addition to the wall, as compared to the wall alone. The modeling efforts also indicate that a pump and treat system alone would not be effective in meeting the flux reduction criteria unless it were operated at 250 to 280 gallons per minute, at a preliminary estimated cost of approximately \$30 to \$40 million over the 10 year period of the ERA.

Based on the unproven nature and uncertain feasibility of implementing the alternative barrier wall construction techniques under site specific conditions, the results of the groundwater modeling efforts, and the significant increase in the cost of the selected action, the evaluation of alternatives in the ERA Proposal and the action selected should be reconsidered.

III.D New Data And Modeling Results

In the Response to Comments on the Action Memorandum, it was recognized that no risk assessment had been performed for discharge of Sr-90 from N Springs, and that the decision in the Action Memorandum was based on the fact that a certain amount of Sr-90 was migrating from the groundwater to the river. In the ERA Proposal, the flux to the river was reported to be approximately 1.26 Curies per year. During the implementation of the action required by the Action Memorandum, new site specific information and refined modeling have demonstrated that the flux of Sr-90 to the river is significantly less than that. Current information estimates that the flux to the river is only approximately .16 Curies per year, a reduction of almost 90%, compared to the information available to the agencies and presented to the public in the ERA Proposal.

The newly available information also demonstrates the presence of a "channeling" effect in the groundwater in the N Springs Area. The existence of a preferential pathway indicates that a 3,000 foot minimum length of wall would not be warranted.

III.E Selected Response Action Must Be Fundamentally Altered

Based on significant new information that demonstrates a much lower impact on the river than was available to the agencies and presented to the public in the ERA Proposal, the technical infeasibility of implementing the selected remedy as specified in the Action Memorandum, and inconsistencies between the selected action and currently available technical information, DOE requests that EPA and Ecology reconsider the action selected in the Action Memorandum. Based on currently available information, it appears that immediate action (non-time critical

removal) is not warranted with regard to the small amount of flux entering the river.

A determination of actual impacts and potential risks from the Sr-90 in the groundwater, and selection of a comprehensive remedial alternative as part of the current NR-2 operable unit remedy selection process would appear to be the appropriate course of action in light of the current information.

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DEPARTMENT OF ECOLOGY

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March 23, 1995

Mr. Steven H. Wisness
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Dear Mr. Wisness:

RE: USDOE REQUEST TO CHANGE N SPRINGS ACTION MEMORANDUM

This letter follows our receipt of your February 8, 1995 letter, and subsequent March 6, 1995 meeting at which we provided and discussed associated Washington Department of Ecology (Ecology) and Environmental Protection Agency (EPA) policies. As such, this letter constitutes a more formalized Ecology and EPA response to USDOE requests for reconsideration and for relief from work required by the above noted Action Memorandum in the vicinity of N Springs, and the 1301-N and 1325-N cribs.

Over the past few weeks our respective technical staff have worked together evaluating new data which has become available as a result of activities in the vicinity of N Springs. In some respects Ecology and EPA agree that this information supports a substantial revision of work requirements in the area. Most specifically, we agree that barrier wall constructability tests have demonstrated that installation of a jointed hinge sheet pile wall of no less than 3000' length (and as currently designed and installed) is not achievable. Consequently, we are initiating actions aimed at revising Ecology/EPA's September 23, 1994 Action Memorandum accordingly.

However, we also note that we do not agree with USDOE findings: (a) regarding total Strontium 90 flux to the Columbia, or (b), its request for relief from requirements pertaining to the installation and operation of a pump and treat system. Our observations in these regards are as follows:

- (1) **Regarding total Strontium loading to the Columbia:** USDOE's February 8 request for relief is based in large part on its assertion that the flux of Strontium 90 to the Columbia has been "...overestimated...by almost 90%", and is now projected at "...an average of .16 Ci/yr". As a result of Ecology/EPA technical review, we do not believe that USDOE (or its contractors) have sufficient information on which to draw these conclusions with any degree of certainty. Conversely (based on the information now available) one could just as easily assert a much larger flux (on the order of 20 Ci/yr).

Mr. Steve Wisness
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Consequently, though we certainly agree that installation of a lengthy barrier wall as originally designed is unwarranted, we are not convinced that a modified barrier may not be necessary in order to meet our objective of significantly reducing continuing and excessive Strontium 90 discharges to the environment of the Columbia. We expect that USDOE and its contractors will not halt any work in progress or planned which will more accurately assess the flux of Sr90 to the Columbia, further characterize geologic and hydrologic conditions within the area (including refinements to expected response models), and assess design and installation alternatives related to modified barriers and expected performance. It is our understanding that sufficient information in these three areas will be available by March, 1996, and that a final assessment of benefits which may be realized through installation of a modified barrier will be made at that time.

- (2.) **Regarding installation of an initial module N Area Pump and Treat system:** USDOEs' request for relief from Action Memorandum requirements in this regard seem based on its conclusion that a pump and treat system (in and of itself) would not result in a significant reduction in Sr90 flux to the river (with or without a barrier wall). We agree that this may be the case. However, we do not agree with USDOEs' subsequent conclusion that a non time critical Expedited Response Action (ERA) is not warranted, and that field installation and operation of a small scale (P&T) system is not of value. We note that though augmenting actions taken to reduce Sr90 flux to the river should be one of our objectives, meeting "treatability test" objectives through field application is equally necessary (see TPA Dispute Resolution Committee M-14-00 settlement of January 8, 1993).

Consequently, USDOE remains required to proceed with the installation of a small scale (50 GPM) initial module P&T at N Springs pursuant to Action Memorandum requirements. We do not expect substantive modification of the Action Memorandum in this regard.

In addition to the above, we would like to point out our deepening concern regarding appropriate timing of closure of the 1301-N and 1325-N cribs. As you will recall, one of the basic premises of our tentatively agreed to N Area Pilot Project has been the focusing of attention (and cleanup dollars) on high priority units (in this case, the two aforementioned cribs, resulting skyshine, and groundwater/surface water contamination). Agreements to coordinate RCRA and CERCLA requirements on a pilot project basis were made with the understanding that USDOE would act to: (a) lessen impacts from these units on an interim basis, (b) accelerate crib characterization, and (c) subsequently move to crib closure (maintaining an overall level of Pilot Project effort).

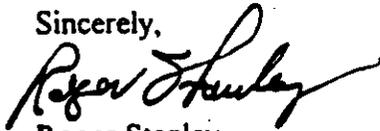
We propose that representatives from each agency meet in order to craft a consolidated action plan regarding N Springs / N Area crib actions, and that this plan be consistent with: (i) Our January 8, 1993 DRC settlement, (ii), revisions to Ecology and EPAs' September 24, 1994 Action

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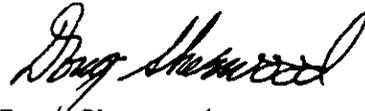
Memorandum (pursuant to a revised course of action as described here), (iii) planned acceleration of crib characterization, and (iv) corresponding modifications which will be necessary to our N Area Pilot Project change request. This plan of action would of course need to include planning for public review before finalization.

Please feel free to contact us if you have any questions. We look forward to scheduling a working session with key staff at your earliest opportunity.

Sincerely,



Roger Stanley
Hanford Project Manager
WA. Dept of Ecology



Doug Sherwood
Hanford Project Manager
Environmental Protection Agency

cc: Julie Erickson, USDOE/RL
Larry Arnold, WHC
✓ Scott Hajner, BHI
Administrative Record