



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 434-4000

April 4, 1995

Merilyn B. Reeves, Chair  
Hanford Advisory Board  
800 NW Sixth Ave., Suite 342  
Portland, OR 97209-3715

RE: Consortium for Environmental Risk Assessment (CERE) process

Dear Ms. Reeves:

The Washington Department of Ecology appreciated the receipt of the Hanford Advisory Board's letter, dated March 3, 1995, to Dr. Carol Henry of the U.S. Department of Energy concerning the Consortium for Environmental Risk Assessment (CERE) process.

In response to the board's letter, I will summarize comments which Ecology Department staff provided last month on the interim drafts of the CERE Public Concerns Report and the Risk Report. These summarized comments are as follows:

- The study has suffered from the lack of time to do a quality job. Gaps in data reflect that more research time was needed. In the Public Concerns Report, only half of the Hanford Type A focus groups have been analyzed, and none of the Type B focus groups have been analyzed. Concerns identified in various documents are not always distinguished, summarized, or integrated with those identified from focus groups.
- The interim reports contained serious omissions. In the Risk Report, skyshine is not mentioned even though it is a possible direct exposure pathway for a recreational or tribal scenario receptor in the proximity of N Springs. Tables listing local contacts in the Hanford Installation Summary were incomplete. In the Public Concerns Report, the Future Site Uses Report was not included, and the tribal concerns section was so brief as to be useless.
- Ecology has strong reservations about using this report for budgetary decisions. Concerns regarding the Hanford Site are not always presented in context so that the reader knows the time and setting when an issue was raised. Discussion of budget and cost-efficiency concerns are incomplete.

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I also am enclosing, for your information, a copy of the Washington Department of Health response to the draft interim Risk Report.

If you have any questions, please feel free to call me at (360) 407-7150.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Wilson". The signature is written in a cursive style with a long horizontal stroke at the end.

Mike Wilson, Manager  
Nuclear Waste Program

Enclosure

MAR 21 1995



ERS 95-306

STATE OF WASHINGTON

DEPARTMENT OF HEALTH

DIVISION OF RADIATION PROTECTION

*Airustrial Center, Bldg. 5 • P.O. Box 47827 • Olympia, Washington 98504-7827*

March 14, 1995

Dr. James L. Regens  
CERE/Tulane University Medical Center  
Entergy Spatial Analysis  
Research Laboratory, SL1  
New Orleans, Louisiana 70112-2699

Dear Dr. Regens:

Thank you for the opportunity to participate in the CERE risk evaluation process and comment upon the Draft Interim Risk Report (the document). I agree with the general conclusions of the report as they pertain to the Hanford Site, which are that current conditions of the site do not pose large risks to the public as long as institutional controls and maintenance of the site are continued. My primary criticism of the document, however, is that there are significant technical errors in the document's discussions of individual sites and facilities. Further, many of these flaws could have been averted if the CERE team had made greater effort to interview regional regulators.

An examination of the local contacts for discussions of public and tribal health, for example, is replete with contacts from the Department of Energy (DOE) and its contractors, but devoid of any contacts with the Washington Department of Health (DOH). With the exception of DOE and its contractors, the DOH is the only state or federal agency that regulates the radiological emissions of Hanford, the only state or federal agency that monitors Hanford's radiological impact upon the environment, both on and offsite, and the only state or federal agency that performs radiological risk assessments of the Hanford site and the surrounding environment. The failure of the CERE team to contact the DOH contributed to the document's technical errors discussed below.

The document's discussion of the risks of an accident at K-basins, for example, misses the largest potential risk in the event of an earthquake. The spent nuclear fuel that is stored in K-east is pyrophoric. Thus, should an earthquake rupture the basin and release the water stored in K-east, it is possible that an intense fire would soon follow that would release very large quantities of uranium, transuranics, fission products and activation products into the atmosphere. This risk is currently considered the most significant risk in the event of a rupture in the basin, yet the document omits any discussion of this risk and erroneously claims that the most significant risk is the release of contaminated liquids to the Columbia River. The Air Emissions regulatory program of the DOH has been working with the Department of Energy to reduce the risk associated with pyrophoric fuel. The Head of DOH's Air Emissions program is Alan Conklin. He can be contacted at 360-586-0254 if the CERE team wishes to contact him regarding K-basins or any other air-emissions issue at Hanford.

Dr. James L. Regens

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The document's discussion of offsite health risks to the public in the Columbia River is similarly misinformed. On page 31 of the Hanford Installation Summary, for example, the document claims that "The onsite/offsite distinction at Hanford is unclear. Below the high water mark of the Columbia River it is no longer DOE property, but the property of the Corps of Engineers." This is untrue. The State of Washington owns the river bed below the high-water mark, and this property is managed by the Department of Natural Resources (DNR). Thus any member of the public has a right to recreate on this stretch of the river, rather than only Native Americans as suggested by the document. I have enclosed a map published by DOE that shows that the islands that are occasionally submerged are owned by DNR. If you wish further information regarding State ownership of the river bed, CERE should contact DNR directly.

The document also claims, on page 2-17 of Volume 1 and page 21 of the Hanford Installation Summary, that there is no complete pathway for exposure to the public. This is also untrue. Since the public has unlimited access to the Hanford reach of the Columbia River, there exist complete pathways to the public from contaminated sediments and cobble, from contaminated seeps and associated biota, and from "skyshine" from Hanford facilities near the river such as N-reactor's waste disposal cribs.

Further, the risks of this stretch of the river have been mischaracterized. The report suggests that the radiological contaminants of concern in the Columbia River are  $^{90}\text{Sr}$  and  $^3\text{H}$ ; yet three independent analyses of Columbia River water and sediments conclude that the radionuclides of concern are  $^{60}\text{Co}$  and isotopes of cesium and europium. These analyses can be found in Cooper and Woodruff's "Investigation of Exposure Rates and Radionuclide and Trace Metal Distributions Along the Hanford Reach of the Columbia River", [Battelle Pacific Northwest Laboratory, 1993(PNL-8789)], in Wells's "Radioactivity in Columbia River Sediments and their Health Effects", [Wash. DOH, 1994], and B.A. Napier *et al.*'s "Identification of Contaminants of Concern" [Battelle Pacific Northwest Laboratory, 1995 (PNL-10400)].

There are many other erroneous, misleading or incomplete discussions regarding the impact of Hanford upon the Columbia River. Some of these include the claim that 3% of the river flow is contributed by Hanford seeps (this is two to three orders of magnitude too high), the suggestion that tritium may bioaccumulate in fish (tritium in biota rapidly reaches equilibrium with environmental concentrations), and the concern that the mutagenic effects of tritium in humans is unclear (there are a large number of publications regarding this issue, the most recent summary appeared in the 1993 December issue of Health Physics). Each of these is either demonstrably incorrect or readily answered.

My emphasis in these comments has been the Columbia River because this is my area of expertise within DOH's Environmental Radiation Program. This program, however, performs radiological

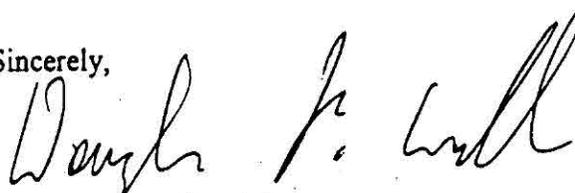
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monitoring and risk assessments throughout the Hanford site and the surrounding areas. The Head of this program is John Erickson. He can be reached at 360-586-3306.

My primary concern about these errors, omissions or misleading statements is that they extend well beyond my particular area of expertise, and therefore that much of the site-specific information is seriously flawed. Most of the errors regarding the Columbia River are not major health issues; however, the remainder of the Hanford site and other major DOE sites contain many facilities with major potential public health impact. If the CERE document's discussion of these facilities contain similar flaws, the potential negative impact upon future cleanup decisions is enormous.

In conclusion, I agree with the primary conclusions of the CERE report as they pertain to the Hanford site; however, the document contains many technical errors that could have been averted if the CERE team had made greater effort to contact and interview regional regulators. Further, I am concerned that the technical errors in the document extend well beyond my particular area of expertise and that this may have significant negative repercussions in future decision-making. Thank you again for the opportunity to comment upon the CERE document. If you have any questions regarding these comments, please contact me at 360-586-3585.

Sincerely,



Douglas P. Wells, Ph.D.  
Environmental Radiation Section  
Division of Radiation Protection

DPW:KP  
Enclosure

cc: John Erickson