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Confederated Tribes and Bands
of the Yakima Indian Nation

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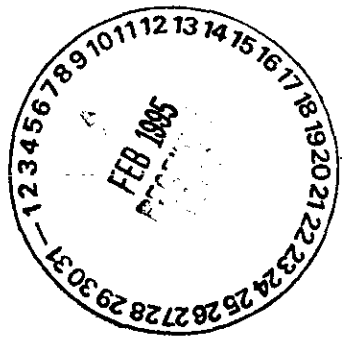
Established by the
Treaty of June 9, 1855

December 21, 1993



U.S. Environmental Protection Agency
Mail Stop 6102 (Old M.S. LE-131)
Air Docket #A-93-27
Room M-1500
First Floor, Waterside Mall
401 M Street S.W.
Washington, DC 20460

Dear Sirs:

Subject: PRINCIPLES, STANDARDS AND DESIGN CRITERIA TO BE INVOKED FOR ENVIRONMENTAL REMEDIATION AND WASTE MANAGEMENT; ADVANCED RULE MAKING (AIR DOCKET #A-93-27) FOR ESTABLISHMENT OF STANDARDS FOR RADIOACTIVE MATERIALS; COMMENTS ON--

Since the Department of Energy's Hanford facility is located within the ceded lands of the Yakima Nation, it is subject to reserved rights stemming from the Treaty of 1855. The U.S. Constitution declares that such treaties are the supreme law of the land. From that perspective, we offer the following comments.

First of all, the question of "how clean is clean?" from the cultural perspective of the Yakima Nation is not necessarily related to standardized human health effects. It may, in fact, be potentially more limiting than prevailing standards.

Although performance assessments must consider the long-term effects of all operations, and short-term impacts should always be evaluated, it is our observation that the long-term impacts control the design and operation of waste management facilities. However, assessments should be patterned after well-established procedures for evaluating the probability of injuries to both individuals and populations. Any significant health effect, whether it occurs in a sub-group or the entire population, should be avoided. Thus, contaminants that become widespread in the biosphere must be evaluated with respect to their effect on all individuals, even though the risk to any given individual is low. Further, site specific design or performance goals pertinent to protecting environmental values not necessarily related to human health should be established.

There is no basis for universal remediation or disposal criteria standards. Such criteria are site specific. They are determined by site performance assessments, considering site specific scenarios.

Design requirements should be incorporated into the design bases for waste treatment and disposal facilities that use the best available technology to remove substances (including radioactive substances) not naturally existing in the environment.

Waste materials should be recycled for use as robust waste containers or for use in processing facilities. If water is clean enough to be discharged to the environment, it may also be re-used in some remediation or treatment activity at the site. Requirements should be established which do not allow dilution in disposal, storage or treatment facility waste streams, unless necessary to make a waste form of "superior performance." "Superior performance" should be determined on a site-by-site basis. To accomplish this, the best estimate of the natural, maximum concentration of a contaminant in the environment during the Holocene, but prior to the event involving contamination or waste management (for example, at Hanford, prior to the 1943 construction of nuclear facilities) should be estimated. The waste form would be considered superior if, considering possible processes and events, its performance would not allow greater than a 10% increase above the natural maximum concentration for all time. In addition, the waste form should not degrade so as to cause any continuous contaminant accumulation for more than 10 years. The level of certainty for this performance should be reasonable assurance. (We consider that this is equivalent to engineering confidence of 95% or greater.)

These long-term design requirements should not be relaxed because of any seemingly less restrictive short-term monitoring requirement associated with a contaminated site. Currently "clean" areas should not be allowed to be used for new disposal sites. RCRA disposal, if necessary and justified, should only be allowed in contaminated areas where cleanup is not anticipated.

Human "processes and events" should include all potential natural and human occurrences that may occur in the next 100,000 years. If a scenario is proposed, there must be reasonable assurance that it will not occur in order to reject consideration in the performance assessment. Such scenario development should not be restricted to human health values, but should include consideration of all environmental values, including cultural. These design goals would allow evaluation of Yakima Nation values regarding a pristine environment and provide a basis for deciding "how clean is clean" on a holistic basis.

RCRA or radioactive waste management facility requirements should include monitoring both facilities and groundwater for signs of leakage. Detecting already contaminated areas and groundwater may be difficult if the facility leakage is minimal. Thus, vadose zone monitoring must be employed. In any case, best available technology should be required.
The expected change in contaminant concentration due to either natural cleansing or additional inflow of contaminants to the area should be projected for the design lifetime of the facility. These changes

should be stated with upper and lower bounds on the projected concentrations at the 95% confidence level. Such analyses are necessary to allow proper monitoring system design and will be useful for justifying future land use and remediation efforts.

Monitoring natural background contaminant levels must be considered in designing systems which determine and measure releases. Man-made contamination could mask leakage at a facility, but this should not be a basis for relaxing long-term design performance requirements.

Despite the suggestion to site new RCRA facilities in areas already contaminated, RCRA facilities should not be sited in contaminated areas if it is not possible to monitor contamination from facility leaks. In any case, RCRA or radioactive materials disposal facilities should not require institutional controls beyond 100 years following closure to protect either health or the environment. Particular attention should be paid to long-term monitoring; the potential for change in contaminant levels as a result of nearby disposal facility sources; and the motion, concentration or dilution of contaminants.

Sincerely,

Russell Jim, Manager
Environmental Restoration/Waste Management Program
Yakima Indian Nation

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