

Change Number M-26-93-01	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date Jan. 25, 1994
Originator J. M. Hennig	Phone 509/376-1366	
Class of Change <input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title Tritiated Waste Water Treatment Evaluation		
Description/Justification of Change <p>A technological solution needs to be found for controlling or removing residual tritium from water at the concentrations and quantities which presently exist in the environment or which will remain in liquid effluent streams after treatment. The two major applications for this treatment technology at the Hanford Site would potentially be the clean up of tritium contaminated groundwater and waste water which contains residual tritium after treatment (e.g., the 242-A Evaporator Process Condensate liquid effluent).</p> <p>(continued on next page)</p>		
Impact of Change <p>This change will provide a regular comprehensive review of tritium control and treatment technologies that would be applicable for use at the Hanford Site. Tritium treatment technology will be reviewed for application to the treatment of tritium contaminated waste water and tritium contaminated groundwater with the purpose of identifying solutions which look promising for large scale applications. DOE, Ecology and EPA will work together to screen emerging promising technologies to identify those technologies suitable for bench and pilot-scale testing with Hanford contaminated water. If application of a technology is mutually agreed-upon, implementation (e.g., bench scale, pilot scale, full scale) of the technology will be incorporated into the Agreement Action Plan through negotiation. Timely resolution of these negotiations (within six months) is expected. Failure to complete negotiations within six months from annual report submission will result in dispute resolution.</p>		
Affected Documents <p>Hanford Federal Facility Agreement and Consent Order Action Plan Table D-3 and Figure D-1.</p>		
Approvals <u>X</u> Approved ___ Disapproved		
This change form approved by Amendment Four to the Hanford Federal Facility Agreement and Consent Order executed by the signatories on January 25, 1994.		
John Wagoner DOE	_____	January 25, 1994 Date
Gerald Emison EPA	_____	January 25, 1994 Date
Mary Riveland Ecology	_____	January 25, 1994 Date

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The DOE proposes that a Tri-Party Agreement interim milestone be established to provide a comprehensive annual review of the development status of tritium contaminated water treatment and control technologies. The summary report would be written in a non-technical fashion and would contain a bibliography to reference technical reports, and would be less than 30 pages in length. The report should cover:

- 9913138-1926
- A. A brief background discussion about tritium, the Drinking Water Standards established for tritium by the Environmental Protection Agency and the environmental and health risks (short term and long term) associated with exposure to tritium.
 - B. A summary of the expected discharge of tritium contaminated waste water from the 200 Area Effluent Treatment Facility and other current or future liquid effluents which have tritium present in concentrations in excess of the Drinking Water Standards. This summary will include the expected concentration of tritium in the effluent after treatment, the expected volume of discharge, and the total curies of tritium expected to be discharged.
 - C. Summary of the extent of tritium contamination in the groundwater beneath the Hanford Site. This summary will describe the direction, speed, movement, and concentration gradients of the tritium ground water plume(s).
 - D. A comparison of the extent of the tritium contamination, tritium control and treatment technologies and permit conditions at Hanford against other DOE sites.
 - E. A survey of the major permits granted for the disposal of tritiated waste water. A comparison of the disposal mechanisms and permitting approach being used at other facilities in the United States disposing of tritiated discharges in concentrations in excess of the EPA Drinking Water Standards. The report will contain an evaluation and comparison of the permit conditions being imposed at these sites and release limits being used worldwide for tritiated waste water discharges to the environment.
 - F. The current waste management practices and summary of technology development associated with tritium contaminated water currently used in:
 - The DOE complex
 - Commercial Nuclear Facilities within the U.S.
 - Internationally; Canada, France, Belgium, Germany, Japan, Russia
 - G. The background and basis for continuing to discharge the tritiated waste water to the soil column. This section should provide an analysis of the treatment technologies evaluated, the disposal options considered and the basis for the selection of soil column disposal. Included should be the summary of the groundwater modeling done to select the site for disposal of the liquid effluent.
 - H. A discussion and status of tritiated water treatment and control technologies. An analysis of the application of sufficiently developed technologies to the tritium contamination issues at the Hanford Site. If the technologies appear feasible, develop rough order of magnitude cost estimates and schedules for specific technology application at Hanford.

Description/Justification of Change (Continued)

- I. An analysis of options for reuse of all or parts of the tritium contaminated waters at the site including, but not limited to, use as a feed water in sludge washing, cooling water in new facilities or as hydraulic barriers for containment of more dangerous plumes.

The interim milestone:

M-26-05

Commencing August 1994 and annually thereafter:

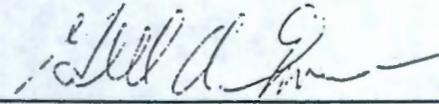
Submit to EPA and Ecology an evaluation of development status of tritium treatment technology that would be pertinent to the cleanup and management of tritiated waste water (e.g., the 242-A Evaporator Process Condensate liquid effluent) and tritium contaminated groundwater at the Hanford Site.

6261-DECEMBER

IT IS SO AGREED:

Each undersigned representative of a Party certifies that he or she is fully authorized to enter into this Agreement and Action Plan and to legally bind such Party to this Agreement and Action Plan. These change requests and amendments shall be effective upon the date on which this amendment agreement is signed by the Parties. Except as amended herein, the existing provisions of the Agreement shall remain in full force and effect.

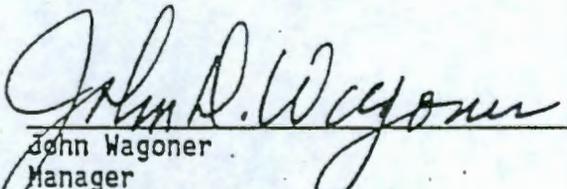
FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:



Gerald Emison
Acting Regional Administrator
Region 10
U.S. Environmental Protection Agency

1-25-94
Date

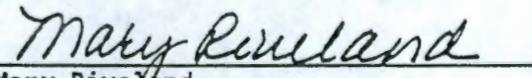
FOR THE UNITED STATES DEPARTMENT OF ENERGY:



John Wagoner
Manager
U.S. Department of Energy
Richland Operations Office

1/25/94
Date

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY:



Mary Riveland
Director
State of Washington
Department of Ecology

1/25/94
Date