

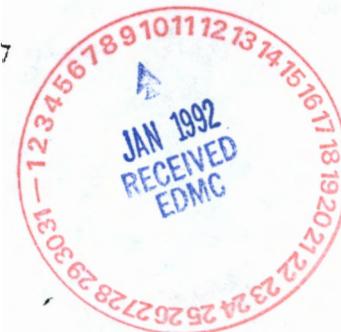


STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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IN THE MATTER OF THE COMPLIANCE BY)
United States Department of Energy)
with Chapter 70.105 and 90.48 RCW)
and the Rules and Regulations of)
the Department of Ecology)

CONSENT ORDER
No. DE 91NM-177



To: United States Department of Energy
Richland Field Office
P.O. Box 550
Richland, WA 99352

The parties to this Consent Order are the U.S. Department of Energy (USDOE) and the Department of Ecology (Ecology).

Chapter 173-303 Washington Administrative Code (WAC), entitled "Dangerous Waste Regulations," designates those solid wastes which are dangerous or extremely hazardous to the public health and environment; and provides for surveillance and monitoring of dangerous wastes until they are detoxified, reclaimed, neutralized, or disposed of safely.

Revised Code of Washington (RCW) 90.48.020 defines underground waters as waters of the state. RCW 90.48.080 provides that it shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharge into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the Director.

RCW 70.105.095 reads in part: "Whenever on the basis of any information the Department determines that a person has violated or is about to violate any provision of this chapter, the Department may issue a Consent Order requiring compliance either immediately or within a specified time period."

RCW 90.48.120 reads in part: "Whenever, in the opinion of the Department, any person shall violate or creates a substantial potential to violate the provisions of this chapter, or fails to control the polluting content of waste discharged or to be discharged into any waters of the state, the Department shall notify such person of its determination by registered mail. . ." Notice is hereby given in accordance with RCW 90.48.120, as follows:

A study of liquid effluents, at the Hanford Site culminated in the production of the Hanford Site Stream Specific Reports (WHC-EP-0342), the Liquid Effluent Study Final Project Report (WHC-EP-0367), and the Liquid Effluent Study:

Ground Water Characterization Data (WHC-EP-G366). These reports document that liquid effluents containing chemical and radiological constituents have been discharged, and continue to be discharged to ground; that the constituents have accumulated in the soil column; that these unpermitted discharges by the USDOE, and its Contractors have caused, or create a substantial potential to cause, pollution of waters of the state. These reports also show that a number of Hanford liquid effluents contain hazardous substances and are regulated by the provisions of Chapter 70.105 RCW and Chapter 173-303 WAC.

USDOE and Ecology agreed through the Hanford Federal Facility Agreement and Consent Order (HFFACO) negotiations that these discharges could best be addressed through the Ch. 173-216 WAC, State Waste Discharge Permit Program. This Consent Order is consistent in substance to a proposed amendment to the HFFACO. This proposed amendment will soon be the subject of public review and comment. This Consent Order may be amended in light of public comment received by Ecology on the proposed amendment to Milestone M-17-00 in the HFFACO.

In view of the foregoing and in accordance with the provisions of RCW 70.105.095 and 90.48.120:

IT IS ORDERED AND AGREED THAT the USDOE shall, upon signature of this Consent Order, take appropriate action in accordance with the following instructions. While not necessarily agreeing with the facts set forth above, USDOE agrees to comply with this Consent Order.

SECTION 1

Administrative Provisions

- I. The USDOE agrees to abide by all applicable state water quality criteria of Chapters 173-200 and 173-201, provided those criteria are consistent with Ecology's statutory authority and are applied on a nondiscriminatory basis statewide.
- II. The USDOE agrees to secure permits for effluent streams discharged at the Hanford Site as required by applicable law.
- III. Schedule for Permitting: This Consent Order provides a schedule and prioritizes Ch. 173-216 WAC permit approval for specific waste streams. The schedules listed in Tables 1 to 4 and 6 of this Consent Order identify when specific waste streams will be permitted. The schedule listed in Table 5 identifies Phase I and Phase II waste streams which will not require Ch. 173-216 WAC permits but for which NPDES permits will be applied for or the waste streams will be terminated by the dates noted in the tabs.
- IV. Relationship to HFFACO: This Consent Order is separate and legally distinct from the HFFACO. However, Ecology intends to maintain consistency with Milestone M-17-00 in the HFFACO in implementing this Consent Order.

- V. Modifications to Consent Order: This Consent Order for permitting liquid effluent streams may be modified at any time by mutual consent of the parties. Either party may request a modification at any time and consent by the non-moving party will not be unreasonably withheld.
- VI. Five Year Plan: The terms of USDOE's Five Year Plan shall be consistent with the provisions of this Consent Order, including all requirements and schedules contained herein; it is the intent of the parties that USDOE's Five Year Plan be drafted and updated in a manner that ensures that the provisions of this Consent Order are incorporated into the USDOE planning and budget process. Nothing in the Five Year Plan shall be construed to affect the provisions of this Consent Order.
- VII. Dispute Resolution: The parties shall attempt to resolve disputes informally through discussions at a working level. In the event USDOE disputes any Ecology decision or action under this Consent Order, USDOE may, within fourteen (14) working days of receipt of Ecology's decision or action, submit a written description of the dispute and its position to Ecology's Program Manager for Nuclear and Mixed Waste. The Program Manager, shall issue a final written decision within ten (10) working days of receipt of the dispute. Unless an appeal is taken, USDOE shall immediately implement the results of Ecology's final decision. USDOE may, appeal the issuance or denial of wastewater discharge permits, or other final Ecology actions which are appealable, to the Pollution Control Hearings Board or other appropriate forum.
- VIII. Anti-Deficiency Act: USDOE shall ensure that sufficient funds to comply with this Consent Order are requested in the Agency budget. USDOE contends that the Anti-Deficiency Act, 33 U.S.C. 1341, applies to its compliance with this Consent Order. It is Ecology's position that the Anti-Deficiency Act has no application in this situation; that, in any event, the Anti-Deficiency Act does not excuse USDOE from its obligations to comply with this Consent Order; and that USDOE is subject to the provisions of Chapters 90.48 and 70.105 RCW to the same extent as any other person. USDOE, however, reserves the right to raise the Anti-Deficiency Act as a defense to an action brought to enforce this Consent Order. Nothing in this paragraph shall prevent the Department of Ecology from contending that USDOE and/or the United States have obligations to obtain sufficient funding to comply with this Consent Order in addition to those set forth in this paragraph.

SECTION 2

Enforcement

Any person subject to civil penalties under section 5001 of the Resource Conservation and Recovery Act (42 U.S.C. § 5961) and/or section 313 of the Clean Water Act (33 U.S.C. § 1323), who fails to take corrective action as specified in a Consent Order shall be liable for a civil penalty of not more than ten thousand dollars for each day of continued noncompliance. In addition, the Department may suspend or revoke any permits, certificates, and/or interim discharge authorizations which have been issued under the

provisions of this Consent Order and with which USDOE fails to comply. USDOE, however, reserves the right to contest Ecology's authority to impose civil penalties.

WORK TO BE PERFORMED

Liquid effluents shall be dispositioned according to the schedules provided in the footnoted tables of this Consent Order. This Consent Order requires that liquid effluents at Hanford be subjected to certain regulatory milestones. These regulatory milestones include WAC 173-240-130 Engineering Reports¹; 30% and 80% design reports, in accordance with WAC 173-240-140; WAC 173-216² (WAC 173-218 where applicable) and WAC 173-303 permit applications; sampling and analysis plans; construction schedules; impact assessments; and interim operating restrictions.

Liquid effluents are grouped into three categories; Phase I, Phase II and Miscellaneous streams. The categories were established according to compositional and flow rate characteristics.

There are 33 Phase I and Phase II effluent streams, 2 planned streams and an unknown number of Miscellaneous Streams. Two liquid effluent treatment and disposal projects, Project C-018H and Project W-049H, shall provide BAT/AKART for the Hanford Site 200 Area Phase I streams and for the Phase II streams in the 200 West Area. The other Phase I Streams, Phase II Streams and the Miscellaneous Streams shall achieve BAT/AKART on a stream by stream basis as per the terms of this Consent Order.

Any liquid effluent stream that is discontinued or rerouted, prior to the submittal date for any pertinent regulatory milestone, shall be exempted from the milestone requirements for that effluent stream as provided in the Tables 1 to 6. However, if rerouted (which may occur only with Ecology approval), the liquid effluent stream shall assume the submittal date for any pertinent regulatory milestone established for the effluent treatment, collection, conveyance, storage or disposal facility it is rerouted to, in accordance with Tables 1 to 6.

¹ WAC 173-240-130 Engineering Reports shall include BAT/AKART evaluations. The term "BAT/AKART" is used throughout this compliance schedule. "BAT" refers to "Best Available Technology" as that term is used in the Clean Water Act, 33 U.S.C. § 1251, et. seq. AKART refers to "All Known Available and Reasonable Treatment" as that term is used in Chapter 90.48 RCW. These terms describe equivalent levels of treatment required for discharge to waters of the United States and Washington State.

² The regulatory milestones for the submittal of WAC 173-216 (WAC 173-218 where applicable) permit applications include the submittal of an operation and maintenance manual for those industrial wastewater facilities which include mechanical components in accordance with WAC 173-240-150.

SECTION 3

242-A Evaporator and PUREX Process Condensate and Ammonia Scrubber Distillate Treatment Facility - Project C-018H

The scheduled regulatory milestones for Project C-018H are provided in Table 1. Project C-018H shall provide treatment for Phase I streams from the 242-A Evaporator and the PUREX Plant. It will also provide treatment for wastewater stored in the Liquid Effluent Retention Facility (LERF). The specific level of treatment necessary for Project C-018H contributor streams shall be determined by the Ecology approved WAC 173-240-130 Engineering Report. The WAC 173-240-130 Engineering Report shall include a BAT/AKART implementation schedule that supports a cessation of untreated discharge to the environment by 6/95.

The treated effluent may be discharged to the ground. If the discharge to ground alternative is selected, the disposal site shall be characterized in accordance with the requirements of WAC 173-216 (WAC 173-218 where applicable) and WAC 173-240-130.

To ensure that the site characterization process for the disposal site shall be consistent with the impact assessment methodology required by Section 13.1.5 of the HFFACO, as amended, a Site Characterization Work Plan shall be submitted to Ecology for approval. Information and data obtained from implementation of the Site Characterization Work Plan shall be included in the WAC 173-240-130 engineering report for the disposal site submitted to Ecology for approval.

TABLE 1

PROJECT C-018H MILESTONES

ACTIVITY/PROJECT &/OR EFFLUENT STREAM	240 ENG. RPT. or ADDENDUM	DESIGN RPT		OTHER SUBMITTALS	CCNST SCHED
		30%	80%		
C-018H Treatment Facility:	2/92	¹	8/93	Submit complete RCRA Part B Permit Application 8/93 ²	3
Initiate Operational Tests using simulants or LERF Wastes with recycle to LERF Basins	NA ⁴		NA	6/94	NA
Initiate full scale hot operations with permitted discharge of treated effluent to the soil column	NA		NA	10/94	NA
C-018H Treatment Facility Pilot Plant:	8/93 ⁵		NA	Submit RD & D Permit Application 10/91	NA
Initiate full scale hot operations				6/92	
Delisting Petition for C- 018H Effluent	NA		NA	Submit to Ecology by 8/93	NA

¹Architect/Engineering contractor's schedule for submittal of plans and specifications in accordance with WAC 173-240-140 shall be submitted to Ecology for approval by 2/92.

²Submission of RCRA Part B permit application includes 80% design detail and Pilot Plant test results.

³Architect/Engineering contractor's construction schedule shall be submitted to Ecology for approval by 2/92.

⁴NA - Not Applicable

⁵C-018H Treatment Facility WAC 173-240-130 Engineering Report Addendum for the Pilot Plant test results.

ACTIVITY/PROJECT &/OR EFFLUENT STREAM	240 ENG. RPT. or ADDENDUM	DESIGN RPT		OTHER SUBMITTALS	CONST SCHED
		30%	80%		
Treated Effluent Disposal Site	1/93 ⁶ 8/93 ⁷	3/93	5/93	Submit 216 Permit Application 8/93	8/93

SECTION 4

200 Area Treated Effluent Disposal Facility - Project W-049H

The submittal dates for the regulatory milestones for Project W-049H are provided in Table 2. Project W-049H shall provide a collection, conveyance and disposal system for all 200 Area Phase I Streams not within the scope of Project C-018H and for the Phase II Streams originating in the 200 West Area. The need for treating the Phase I and Phase II Streams, within the scope of Project W-049H, shall be determined by the Ecology approved WAC 173-240-130 Engineering Reports at the source generation facility for each stream.¹ The WAC 173-240-130 Engineering Reports shall include a BAT/AKART implementation schedule for each contributor stream that supports the cessation of untreated discharge to the environment by 6/95 for all contributor streams.

The treated effluent may be discharged to the ground. If the discharge to ground alternative is selected the disposal site shall be characterized in accordance with the requirements of WAC 173-216 (WAC 173-218 where applicable) and WAC 173-240-130. The Site Characterization Work Plan shall be consistent with the impact assessment methodology required by Section 13.1.5 of the HFFACO, as amended. Information and data obtained from implementation of the Site Characterization Work Plan shall be included in the WAC 173-240-130 Engineering Report for the disposal system that will be submitted to Ecology for approval.

Project W-049H may provide retention of effluent prior to discharge. Retention may occur at the point source discharge of each contributor stream, or at downstream locations within the collection and conveyance system.

⁶C-018H Treatment Facility WAC 173-240-130 Engineering Report Addendum for the Treated Effluent Disposal Site engineered structures.

⁷C-018H Treatment Facility WAC 173-240-130 Engineering Report Addendum for the Site Characterization Work Plan results.

TABLE 2

PROJECT W-049E MILESTONES

PROJECT &/or EFFLUENT STREAM	SAMPLING ANALYSIS PLAN	240 ENGINEERING REPORT ¹	DESIGN REPORT		216/218 PERMIT APP. ²	START CONST
			30%	80%		
Effluent Collection System		2/92	3	12/93	9/94	3
Effluent Retent. System		2/92		4	9/94	4
Effluent Disposal System		10/93	3	12/93	9/94	3
PFP Waste Water						
242-S Evap Stm Cond						
2101-M Lab Wastewater	1/92					
284-W Power Plant Waste Water	4/92					
T-Plant Lab Waste Water	4/92					
T-Plant Waste Water	1/92					
222-S Lab Waste Water	1/92					
PUREX Chem Sewer						
PUREX Steam Cond	5					
PUREX Cooling Water	5					
UO ₃ Waste Water						
UO ₃ Proc Cond						
B Plant Steam Cond	6					
B Plant Proc Cond	6					
B Plant Chem Sewer	1/92					
HWVP (new stream)	7				7	
200E Laundry (new)	7	12/91	4/92	8/92	7	2/93

¹All of the Project W-049H contributor streams may be addressed in a single WAC 173-240-130 Engineering Report. The BAT/AKART evaluation for each of the contributor streams shall be incorporated into the WAC 173-240-130 engineering report(s).

²A single WAC 173-216 (WAC 173-218 where applicable) permit application may be submitted for Project W-049H.

³Dates for submittal of 30% design reports in accordance with WAC 173-240-140 and construction schedule shall be submitted to Ecology for approval by 2/92.

⁴The need for a retention system shall be evaluated and the results of the evaluation provided in WAC 173-240-130 Engineering Report submitted to Ecology for approval by 2/92. If it is decided to include a retention system within the scope of Project W-049H, the dates for submittal of design reports in accordance with WAC 173-240-140 and construction schedule shall be provided to Ecology for approval by 2/92.

⁵To be rerouted to PUREX Plant Chemical Sewer by 6/92; associated Sampling & Analysis Plan (SAP) to be developed with PUREX Chemical Sewer SAP.

⁶Stream is inactive. Sampling and Analysis Plan shall be developed and approved by Ecology and a WAC 173-216 (WAC 173-218 where applicable) permit effective prior to initiation of hot operations.

⁷Stream is currently non-existent. Sampling and Analysis Plan shall be developed and approved by Ecology and a WAC 173-216 (WAC 173-218 where applicable) permit effective or modified with the modification effective prior to continuation of hot operations past 6/95.

SECTION 5

Other Phase II Liquid Effluent Streams

All Phase II Streams that are outside the scope of Project C-018H and Project W-049 shall be dispositioned according to the regulatory milestones in Table 3. The need for treating the Other Phase II streams shall be determined by the Ecology approved BAT/AKART evaluation of each point source discharge included in the WAC 173-240-130 Engineering Reports. These WAC 173-240-130 Engineering Reports shall include a BAT/AKART implementation schedule that supports BAT/AKART as soon as technically practicable. However, in no event shall implementation of BAT/AKART occur later than 10/97 unless clear, convincing, and technically valid evidence is submitted in the BAT/AKART evaluation, which justifies a later date. This information must be included in the WAC 173-240-130 Engineering Report which is to be submitted by the date specified in Table 3. Ecology shall set the final schedule for implementing BAT/AKART in its approval of the Engineering Report.

If it is determined that there is a need for treatment and/or for creating a new ground disposal site, dates for submittal of 30% and 30% design reports in

accordance with WAC 173-240-140 and a construction schedule shall be included in the WAC 173-240-130 Engineering Reports submitted to Ecology for approval by 9/92.

TABLE 3

OTHER PHASE II STREAM MILESTONES

EFFLUENT STREAM	SAMPLING & ANALYSIS PLAN	240 ENGINEERING REPORT	216/218 PERMIT ¹ APPLICATION
241-AY/AZ Steam Condensate	²	9/92	2
242-A Evaporator Cooling Water	4/92	9/92	12/93
242-A Evaporator Steam Condensate	4/92	9/92	12/93
241-A Tank Farm Cooling Water	4/92	9/92	12/93
244-AR Vault Cooling Water	4/92	9/92	12/93
284-E Power Plant Waste Water	4/92	9/92	12/93
183-D Filter Backwash	4/92	9/92	12/93
B Plant Cooling Water	4/92	9/92	12/93
400 Area Secondary Cooling Water	4/92	9/92	12/92

¹Effluent streams that are commingled and discharged to a common ground disposal site may be combined into a single WAC 173-216 (WAC 173-218 where applicable) permit application.

²Stream is currently discharging to double-shell tanks. Sampling and Analysis Plan shall be developed and approved by Ecology prior to rerouting stream from double-shell tanks, and a WAC 173-216 (WAC 173-218 where applicable) permit shall be effective prior to discharge to ground.

SECTION 6

Miscellaneous Streams

Miscellaneous Streams are those streams that are not categorized as Phase I or Phase II Streams. Miscellaneous Streams shall be permitted in accordance with the schedule established in Table 4 and according to the remainder of this section.

TABLE 4

MISCELLANEOUS STREAMS MILESTONES

EFFLUENT STREAM	CURRENT DISPOSAL SITE	216/218 PERMIT APPLICATION
209-E Building Steam Condensate	216-C-9 Pond	6/94
400 Area Sanitary Waste Water	400 Area Septic System	6/94
200-W Powerhouse Ash Waste Water	200-W Powerhouse Ash Pit	6/94
200-E Powerhouse Ash Waste Water	200-E Powerhouse Ash Pit	6/94
300 Area Powerhouse Ash Waste Water	300 Area Powerhouse Ash Pit ¹	6/94
100-N Sanitary Sewer System	100-N Sewage Lagoon	6/94
300 Area Filter Backwash	300 Area Backwash Pond ¹	6/94
300 Area Sanitary Sewer System	300 Area Sanitary Sewer ¹	6/94
234-5Z Ventilation Steam Condensate/Dry Air Compressor Cooling	Z-21 Seepage Basin (207-Z Retention Basin)	9/94
272-E, 2703-E Buildings Waste Water	200-E Chemical Drain Field	6/94
183-N Filter Backwash	183-N Backwash Discharge Pond	6/94

¹submit WAC 173-216 (WAC 173-218 where applicable) permit application only if a USDOE decision is made not to obtain or modify a National Pollutant Discharge Elimination System (NPDES) permit.

Miscellaneous Streams not identified on Table 4 shall be dispositioned as follows:

- o Submit revised "Inventory of Disposal Sites for Miscellaneous Streams, July, 1991" to Ecology by 8/92.
- o Submit a plan which includes an overall regulatory strategy, methodology, and schedule for identification and evaluation of all Miscellaneous Streams by 9/92.
- o Submit a plan and schedule for disposition and regulatory compliance for all remaining Miscellaneous Streams to Ecology for approval by 1/94.

SECTION 7

Phase I and Phase II Liquid Effluents for which WAC 173-216 (WAC 173-218 where applicable) Permits Shall Not be Required

WAC 173-216 (WAC 173-218 where applicable) permits shall not be required for liquid effluent streams that remain discontinued, that are currently discharging to ground but shall not continue to discharge to ground after 6/95, or that are permitted through the NPDES, or through an Ecology approved pretreatment program, where applicable. The Phase I and Phase II Streams for which WAC 173-216 (WAC 173-218 where applicable) permits will not be obtained are identified in Table 5.

TABLE 5

PHASE I AND II STREAMS
FOR WHICH 216/218 PERMITS WILL NOT BE OBTAINED

EFFLUENT STREAM	WAC 173-240 ENGINEERING REPORT	DISPOSITION	SAMPLING & ANALYSIS PLAN
163-N Demineralizer Waste Water	NA ¹	Discontinued	²
N Reactor Effluent	NA	Surface Water Discharge	9/91
2724-W Laundry	NA	Discontinue by 1/95	1/92
209-E Laboratory Reflector Waste Water	NA	Discontinued	²

¹NA - Not Applicable

²Prior to resuming discharge to ground, Sampling and Analysis Plans shall be developed and submitted to Ecology for approval.

EFFLUENT STREAM	WAC 173-240 ENGINEERING REPORT	DISPOSITION	SAMPLING & ANALYSIS PLAN
S Plant Waste Water	NA	Discontinued	NA
300 Area Process Waste Water	NA	Surface Water Discharge	9/91

SECTION 8

Interim Operating Restrictions and Impact Assessments

Interim operating restrictions identified in Table 5 shall be implemented for certain waste streams. Interim operating restrictions address such operational factors as flow rate, effluent fate, completion of engineering studies and stream rerouting. The interim operating restrictions identified in Table 6 apply only to current plant operating configuration, except where noted in Table 6. New liquid effluent streams that result from a change in current plant operating configuration shall have pertinent regulatory milestones established through an amendment to this Consent Order prior to initiation of discharge to ground. These interim operating restrictions are intended to provide reasonable steps to maximize protection of human health and the environment.

An assessment of the impact of all active and proposed discharges on ground water at the disposal sites for the Phase I and Phase II streams shall be conducted as required by Section 13.1.5 of the September 1991 changes to the HFFACO, as amended. Those disposal sites for which impact assessments are currently required are identified in Table 6. If implementation of the approved impact assessment methodology supports resumption of discharge to the assessed former ground disposal site, discharge of BAT/AKART effluent to the former ground disposal site may resume following the effective date of the WAC 173-216 (WAC 173-218 where applicable) permit.

All data sheets documenting flow measurements for compliance with the flow restrictions established in Table 6 shall be stored at the discharging facility for a period of one calendar year and then archived at a mutually approved record retention facility where the data sheets shall be kept for no less than three years following discontinuation of the discharge.

TABLE 6

LIQUID EFFLUENT INTERIM OPERATING RESTRICTIONS
AND
DISPOSAL SITES FOR WHICH IMPACT ASSESSMENTS ARE TO BE CONDUCTED

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT OF STREAM TYPE	IMPACT ASSESS (Y/N)
<p>N Reactor Effluent/ 1325-N Liquid Waste Disposal Facility (LWDF)</p>	<p>Immediately limit N Reactor discharge to the Crib system to less than or equal to 2 gallons per minute, averaged over the calendar month.</p> <p>Discharge flow rate shall be determined by measuring the sumps before and after pumping. Flow data and calculated results are recorded manually and stored at the N Reactor.</p> <p>Develop a plan to reroute the 1325-N effluent to surface water following BAT/AKART implementation and submit to Ecology for approval by 1/92.</p> <p>Cease discharge of N Reactor Effluent to 1325-N LWDF by 6/95.</p>	<p>Phase I</p>	<p>Yes</p>

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
<p>PFW Wastewater /216-Z-20 Crib</p>	<p>Immediately limit discharge to the 216-Z-20 Crib to less than or equal to 150 gallons per minute, averaged over the calendar month.</p> <p>Closed loop cooling for 234-5Z and 236-Z buildings shall be implemented by 1/94. Complete Project C-040, "291-Z Closed Loop Cooling" (Attachment I) and Project B-680H, "Plutonium Finishing Plant Liquid Low Level Waste System Modification," by 1/94. (Attachment II)</p> <p>Reduce discharge to the 216-Z-20 crib to less than or equal to 75 gallons per minute, averaged over the calendar month (Projects C-040 & B-680H) by 1/94.</p> <p>Complete Project B-680H by 5/94.</p> <p>The current measurement of discharge flow rate shall be by flow proportional sampler with data recording by a strip chart. Following installation of a flume by 12/91, flow rate will be measured by the flume and automatically recorded on a strip chart recorder. The data sheets shall be stored at PFP.</p> <p>Cease discharge of PFW Wastewater to the 216-Z-20 Crib by 6/95.</p>	<p>W-049H</p>	<p>Yes</p>

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT OR STREAM TYPE	IMPACT ASSESS (Y/N)
<p>UO₃/U Plant Waste Water/ 216-U-14 Ditch</p> <p>STATUS: Stand-by & Stabilization¹</p>	<p>Immediately limit discharge of the wastewater to the ditch to less than or equal to 450 gallons per minute, averaged over the calendar month, before and after the Stabilization Run.</p> <p>During the Stabilization Run, limit the discharge of wastewater to the ditch to less than or equal to 750 gallons per minute, averaged over the calendar month.</p> <p>Maintain the 216-U-14 Ditch surface contamination control water discharge to less than or equal to 300 gallons per minute, as estimated through engineering calculations, until the completion of the Stabilization Run. At the completion of the Stabilization Run, cease the existing contamination control water point source discharge. The use of contamination control water discharges during construction of engineered surface contamination control solution is allowed as necessary, to control contamination at the active areas of construction and in those portions of the ditch awaiting construction, but shall not exceed 300 gallons per minute. Discontinue all contamination control water discharges by 2/92.</p> <p>Complete a study which evaluates the need for and feasibility of rerouting the UO₃/U Plant Wastewater to an alternative site, and submit to Ecology for approval by 5/92.</p> <p>Limit UO₃/U Plant Wastewater effluent flow to less than or equal to 250 gallons per minute, averaged over the calendar month by 12/92.</p> <p>Measurement of discharge flow rate shall be by an instantaneous flow recorder system</p>	<p>W-049H</p>	<p>Yes</p>

¹The Stabilization Run of the UO₃/U Plant refers to the operation of the Plant in the Calcination Mode as described in the UO₃/U Plant Wastewater Stream Specific Report. The Stabilization Run will occur over a short period of time and is necessary to convert Plant inventory to a more stable form for storage.

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
<p>UO₃ Plant Process Cond/ 216-U-17 Crib</p> <p>STATUS: Stand-by & Stabilization²</p>	<p>Limit the discharge of Process Condensate to the 216-U-17 Crib to less than or equal to 10 gallons per minute, averaged over the calendar month, before and during the Stabilization Run, and to less than 2 gallons per minute after the Stabilization Run, averaged over the calendar month.</p> <p>Discharge flow rate shall be calculated based on a batch counter of process condensate generated during calcination. The calculated results shall be recorded and together with pH strip chart. The data sheets shall be stored at the UO₃ Plant.</p> <p>The Fibermist Eliminator shall be installed prior to, and shall be operational during, the Stabilization Run. Efficiency testing of the Fibermist Eliminator shall occur throughout the duration of the UO₃/U Plant Stabilization Run.</p> <p>Cease discharge of the UO₃ Plant Process Condensate to the 216-U-17 Crib in 6/95.</p>	W-049H	Yes
<p>PUREX Plant Process Condensate/ 216-A-45 Crib</p>	<p>Discharge to 216-A-45 Crib shall remain discontinued.</p> <p>No further discharge of PUREX Plant Process Condensate until BAT/AKART is implemented by 6/95.</p>	C-018H	No
<p>PUREX Plant Ammonia Scrubber Distillate/ 216-A-36B Crib</p>	<p>Discharge to 216-A-36B Crib shall remain discontinued.</p> <p>No further discharge of PUREX Plant Ammonia Scrubber Distillate until BAT/AKART is implemented by 6/95.</p>	C-018H	No

²The Stabilization Run of the UO₃/U Plant refers to the operation of the Plant in the Calcination Mode as described in the UO₃ Plant Process Condensate Stream Specific Report. The Stabilization Run will occur over a short period of time and is necessary to convert Plant inventory to a more stable form for storage.

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
PUREX Plant Steam Condensate/ 216-A-30 Crib 216-A-37-2	<p>Reroute effluent flow to the 216-B-3 Pond System via PUREX Chemical Sewer by 6/92, provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Cease discharge of the PUREX Plant Steam Condensate to the 216-B-3 Pond System by 6/95.</p>	W-049H	No
PUREX Plant Cooling Water/ 216-B-3 Pond	<p>Discontinue current method of discharge of the PUREX Plant Cooling Water to the 216-B-3 Pond System after source control and plant reconfiguration is implemented and reroute remaining effluent flow to the B Pond via PUREX Chemical Sewer by 6/92, provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Cease discharge of the PUREX Plant Cooling Water to the 216-B-3 Pond System by 6/95.</p>	W-049H	Yes
PUREX Plant Chemical Sewer/ 216-B-3 Pond	<p>Complete facility reconfiguration and source control to minimize volume and reroute the remaining PUREX Cooling Water and Steam Condensate to the PUREX Chemical Sewer by 6/92.</p> <p>Limit Chemical Sewer effluent discharge to the 216-B-3 Pond System to less than or equal to 600 gallons per minute, averaged over the calendar month by 6/92 provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Measurement of the discharge flow volume shall be by a combination of magnetic and pneumatic flow meters with data recording by a strip chart recorder. The data sheets shall be stored at the PUREX Plant.</p> <p>Cease discharge to the 216-B-3 Pond System by 6/95.</p>	W-049H	Yes

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
B Plant Steam Condensate/ 216-B-55 Crib	There shall be no further soil column discharge of B Plant Steam Condensate until BAT/AKART is implemented and a WAC 173-216 (WAC 173-218 where applicable) permit is effective; effluent shall be routed to double shell tanks. This effluent may be rerouted from double-shell tanks to Project W-049H upon full scale start-up of Project W-049H.	W-049H	No ³
B Plant Process Condensate/ 216-B-62 Crib	There shall be no further soil column discharge of B Plant Process Condensate until BAT/AKART is implemented and a WAC 173-216 (WAC 173-218 where applicable) permit is effective; effluent shall be routed to double-shell tanks. This effluent may be rerouted from double shell tanks to Project W-049H upon full scale start-up of Project W-049H.	W-049H	No ³
241-AY/AZ Tank Farms Steam Condensate/ 216-A-8 Crib	There shall be no further soil column discharge of this effluent until BAT/AKART is implemented and a WAC 173-216 (WAC 173-218 where applicable) permit is effective; until such time effluent shall be routed to the double-shell tanks.	Other Phase II	No ³
242-A Evaporator Process Condensate/ 216-A-37-1 Crib	Discharge to 216-A-37-1 Crib shall remain discontinued. No further soil column discharge of the 242-A Evaporator Process Condensate until BAT/AKART is implemented and a WAC 173-216 (WAC 173-218 where applicable) permit is effective. Upon restart of the 242-A Evaporator in Fiscal Year 1992, process condensate shall be routed to the LERF basins for storage or to Project C-018H.	C-018H	No
222-S Lab Waste Water/ 216-S-26 Crib	Cease discharge of the 222-S Laboratory Wastewater to the 216-S-26 Crib by 6/95.	W-049H	Yes
S Plant Waste Water/ 216-S-10 Ditch	Cease discharge of the S Plant Wastewater to the 216-S-10 Crib by 10/91.		No

³Impact assessment required only if decision is made to return to ground.

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS- (Y/N)
T Plant Waste Water/ 216-T-4-2 Ditch	Cease discharge of the T Plant Wastewater to the 216-T-4-2 Ditch by 6/95.	W-049H	Yes
T Plant Lab Waste Water/ 216-T-1 Ditch	Cease discharge of the T Plant Laboratory Wastewater to the 216-T-1 Ditch by 6/95.	W-049H	Yes
284-W Power Plant Waste Water/ 284-W Powerplant Pond	Cease discharge of the 284-W Powerplant Wastewater to the Powerplant Pond by 6/95.	W-049H	Yes
2101-M Lab Waste Water/ 2101-M Pond	Eliminate effluent contributions from 2 of 9 HVAC coolers serving the facility by 1/92. Cease discharge of the 2101-M Laboratory Wastewater to the 2101-M Pond by 6/95.	W-049H	Yes

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
242-S Evaporator Steam Condensate/ 216-U-14 Ditch	<p>Immediately limit the discharge of steam condensate to less than or equal to 30 gallons per minute.</p> <p>Maintain the 216-U-14 Ditch surface contamination control water discharge to less than or equal to 300 gallons per minute, as estimated through engineering calculations, until the completion of the Stabilization Run. At the completion of the Stabilization Run, cease the existing contamination control water point source discharge. The use of contamination control water discharges during construction of engineered surface contamination control solution is allowed as necessary, to control contamination at the active areas of construction and in those portions of the ditch awaiting construction, but shall not exceed 300 gallons per minute. Complete construction of engineered surface contamination control solution and discontinue all contamination control water discharges by 2/92.</p> <p>Replace the air sample pump, eliminating seal water contribution to facility effluent by 9/92.</p> <p>Cease discharge of the 242-S Evaporator Steam Condensate to the 216-U-14 Ditch by 6/95.</p>	W-049H	Yes
242-A Evaporator Cooling Water/ 216-B-3 Pond System	Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes
242-A Evaporator Steam Condensate/ 216-B-3 Pond System	Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT OR STREAM TYPE	IMPACT ASSESS (Y/N)
241-A Tank Farm Cooling Water/ 216-B-3 Pond System	Complete Project W-030, "241-A Tank Farm Ventilation Upgrade," (Attachment III) by 12/96. Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes
244-AR Vault Cooling Water/ 216-B-3 Pond System	Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes
284-E Powerplant Waste Water/ 216-B-3 Pond System	Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved D-Pond System Closure Plan.	Other Phase II	Yes
183-D Filter Backwash/ D Pond System	Continue discharge to D-Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes
B Plant Cooling Water/ 216-B-3 Pond System	Continue discharge to 216-B-3 Pond System provided continued discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.	Other Phase II	Yes

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT or STREAM TYPE	IMPACT ASSESS (Y/N)
B Plant Chemical Sewer/ 216-B-63 Trench	<p>Discontinue discharge of the B Plant Chemical Sewer to the 216-B-63 Trench after plant reconfiguration is implemented by 2/92. Reroute remaining effluent flow to the 216-B-3 Pond System via the B Plant Cooling Water by 2/92, provided discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Complete Project W-004, "B Plant AMU Area Upgrades" (Attachment IV) by 7/92. No chemical inventory shall be stored in the B Plant AMU Tanks by this project. The chemical addition lines to these tanks shall be blanked off immediately, and remain inoperable until initiation of acceptance testing.</p> <p>Complete Project W-010H, "B Plant Environmental Compliance Upgrades" (Attachment V) by 7/92.</p> <p>Cease effluent discharge to the 216-B-3 Pond System by 6/95.</p>	W-049H	Yes
400 Area Secondary Cooling Water/ 400 Area Pond System	NA	Other Phase II	Yes
2724-W Laundry Waste Water/ 216-W-LWC Crib	<p>Sampling and Analysis Plan shall be submitted to Ecology for approval by 1/92.</p> <p>Cease discharge of the 2724-W Laundry Wastewater to the 216-W-LWC Crib by 1/95.</p>	Phase I	Yes

EFFLUENT STREAM and/or DISPOSAL SITE	INTERIM OPERATING RESTRICTIONS	PROJECT OF STREAM TYPE	IMPACT ASSESS (Y/N)
New Decontamina- tion Laundry Facility/ B Pond System	<p>Discharge to the 216-B-3 Pond System in support of construction test procedures may be initiated with Ecology approval by 4/93 provided discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Complete construction of Decontamination Laundry Facility by 10/94.</p> <p>Initiate full scale hot operations at the Decontamination Laundry Facility with discharge of BAT/AKART implemented effluent to 216-B-3 Pond System by 1/95 provided discharge is consistent with the closure schedule and strategy within any Ecology approved 216-B-3 Pond System Closure Plan.</p> <p>Cease all decontamination laundry facility discharges to B Pond by 6/95.</p>	W-049H	No

SECTION 9

Sampling and Analysis Plans

The sampling and analysis plans (SAPs), identified as regulatory milestones in Tables 2 and 5, shall be developed and implemented as required by Section 13.1.4 of the HFFACO, as amended. The SAPs shall provide for representative sampling of liquid effluents and shall consider fluctuation of constituent concentration and flow rate. The SAPs shall include implementation schedules and address the frequency of sampling, type and frequency of analysis, and type and frequency of data reporting. Description of flow measurements, for those streams without interim operation restrictions, shall be provided in the SAPs. The contaminant analysis requirements shall consider operational practices, raw water characteristics, process chemical additions, process knowledge, and all known or suspected constituents associated with each wastewater streams.

SECTION 10

Elementary Neutralization Units

Industrial wastewaters which discharge to the environment from Elementary Neutralization Units are required by WAC 173-303-802 to comply with the provisions of WAC 173-216, with the National Pollutant Discharge Elimination System or with an approved Pretreatment permit program. Effluents from

Elementary Neutralization Units contributing to the following streams shall be dispositioned in accordance with the schedules identified in this Consent Order for their associated streams.

- o B Plant Chemical Sewer
- o PUREX Chemical Sewer
- o UO₃ Process Condensate
- o 222-5 Laboratory Wastewater

Dated this _____ day of _____, _____, at Olympia, Washington.

Christine O. Gregoire
Director
Washington State Department of Ecology

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

DESCRIPTIONS OF
LIQUID EFFLUENT PROJECTS AT SPECIFIC FACILITIES

Project G-040 "291-Z CLOSED LOOP COOLING"

The project will essentially eliminate the 291-Z once-through cooling water flow, significantly reducing the volume of effluent discharged to the 216-Z-20 Crib. This reduction in flow can be achieved by:

- * Installation of a closed, recirculating loop cooling system to provide cooling water to instrument air compressors.
- * Replacement of two water sealed vacuum pumps with similar pumps which are not water sealed.
- * Removal of two vacuum pumps and any unused piping from those systems, and capping of any unused drains to the 291-Z Building Sump.

The drain line from the 291-Z Building Sump currently discharges to the 216-Z-20 Crib via the chemical sewer which enters at manhole #3. Project B-680H, "Liquid Low-Level Waste Facility Modification" includes rerouting the 291-Z wastewater stream to the Low-Level Waste Treatment Facility (LLWTF) to be processed.

DESCRIPTIONS OF
LIQUID EFFLUENT PROJECTS AT SPECIFIC FACILITIES

Project B-680H "PLUTONIUM FINISHING PLANT LIQUID LOW-LEVEL WASTE SYSTEM
MODIFICATION"

The overall scope of this project is to first install a closed loop cooling system and a Low-Level Waste Treatment Facility (LLWTF) to provide BAT/AKART treatment. To accomplish this, the project will include:

- * Segregation of cooling water from process heat exchangers and equipment that are the major potential sources of contamination.
- * Installation of a closed recirculating loop cooling system, or systems, to provide cooling for the segregated heat exchangers and equipment, and installation of a secondary loop for rejecting the heat from the primary loop(s).
- * Segregation and rerouting of potentially contaminated streams from the chemical sewer to a low-level (radionuclide) waste treatment facility (LLWTF) for BAT/AKART treatment.
- * Installation of a LLWTF sized to process the maximum chemical sewer flow, after it has been reduced by the closed loop cooling portion of this project, to produce a liquid effluent that meets, at a minimum, the DCGs for radionuclide discharge limits and a packaged solid or slurry waste suitable for transport for disposal.
- * Installation of a piping system to transfer contaminated closed loop cooling water to either the LLWTF or the 241-Z Waste Receiving Facility for clean-up or disposal in the event it becomes contaminated. Sample results will dictate how the solution will be processed. Piping will also be installed to introduce approved (non-hazardous) cleaning solutions for cleaning the closed loop piping prior to refilling with water.
- * Consideration of the need for relining the existing chemical sewer to transport uncontaminated water from the LLWTF to the 216-Z-20 crib, and consider the need for assuring that the sewer line from the PFP to the LLWTF provided adequate spill prevention/containment.

Attachment III

DESCRIPTIONS OF
LIQUID EFFLUENT PROJECTS AT SPECIFIC FACILITIES

PROJECT W-030. "TANK FARM VENTILATION UPGRADE"

This project will provide upgrades to the primary ventilation system for the 241-AY/AZ Tank Farms which will improve system safety and reliability. Most of these upgrades do not impact liquid effluent generation. However, a closed loop cooling system will be provided to remove the heat generated by the stored waste, the in-tank steam coil, and the heat loads of future mixing pumps. This new system will replace the existing once-through cooling system, reducing the discharge of effluent to the 216-B-3 Pond System.

DESCRIPTIONS OF
LIQUID EFFLUENT PROJECTS AT SPECIFIC FACILITIES

PROJECT W-004, "B PLANT AMU AREA UPGRADE"

This project will provide a general upgrade of the B Plant Aqueous Make-Up (AMU) Area by providing the following:

- * Secondary containment for the eight west side 271-B AMU tanks.
- * Instrumentation and alarm upgrades for the AMU tanks which will allow B Plant Operations to identify leaks, overflows and spills in a more expeditious manner.
- * Upgrade of the concrete floor beneath the AMU tanks on the third floor of 271-B to insure adequate structural support and to provide secondary containment curbs segregating tanks.

DESCRIPTIONS OF
LIQUID EFFLUENT PROJECTS AT SPECIFIC FACILITIES

PROJECT W-010H "B-PLANT ENVIRONMENTAL COMPLIANCE UPGRADES"

This project is intended to provide an integrated waste release prevention system for portions of B Plant. This system will include:

- * Secondary containment for the vertical and horizontal tanks in the 211 Area of B Plant.
- * Upgrade of instrumentation and alarms for the 211-B Area which will permit B Plant Operations to identify leaks, overflows, and spills from the 211-B storage tanks in a more expeditious manner.
- * Chemical piping support upgrades for overhead transfer piping in the 211-B Area to minimize the potential for a pipe failure.
- * Electrical and lighting upgrades for the 211-B Area. A new motor control center for the new and existing pumps in the chemical tank farm.
- * An independent drain system for scale tank 23-A, which contains a non-corrosive toxic chemical, in the 211-B operating gallery.
- * Upgrade of instrumentation, controls and alarms for selected 221-B operating gallery scale tanks to assist B Plant Operations in prevention of dangerous waste releases.