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Tri-Party Agreement

HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER
CHANGE REQUEST M-17-91-05A (HANFORD WASTEWATER DISCHARGES)

Hanford Federal Facility Agreement and Consent Order
Change Request M-17-91-05A (Hanford Wastewater Discharges)

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A. Letter from John Wagoner, U.S. Department of Energy to Dana Rasmussen, U.S. Environmental Protection Agency, and Chuck Clarke, Washington State Department of Ecology

B. Change Request M-17-91-05A (Hanford Wastewater Discharges)

C. Hanford Tri-Party Agreement, Milestone 17-00, Hanford Wastewater Discharges TPA Change Request Number M-17-91-05: Response to Public Comments, July 1992

D. Amendment 3 to the Hanford Federal Facility Agreement and Consent Order

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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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AUG 07 1992

92-TPA-078

Ms. Dana A. Rasmussen
Regional Administrator
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Mr. Chuck Clarke
Director
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Ms. Rasmussen and Mr. Clarke:

HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER DOCUMENTS FOR APPROVAL

Enclosed are two Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) documents which are now ready for approval. These documents include:

1) Change Form M-17-91-5A. This change form contains the major and interim milestones that resulted from liquid effluent negotiations occurring in 1991. These new milestones will achieve a greater level of regulatory control and oversight of liquid effluents at the Hanford Site. This change form underwent public comment during March and April 1992. The change form has been updated appropriately in response to the resulting public comments. Also included are written responses to the public comments.

2) Amendment 3 to the Tri-Party Agreement. This amendment will adjust the Resource Conservation and Recovery Act permit and closure plan review schedules contained in the Tri-Party Agreement. These adjustments to the schedules will enable each agency to better plan resource requirements as well as provide schedules to the public which show anticipated permitting/closure plan activities. Amendment 3 also underwent public comment during March and April 1992, with no resulting comments from the public.

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The originals of these documents have been provided to the State of Washington Department of Ecology (Ecology) as attachments to this letter. It is requested that Ecology forward the original documents, upon approval, to the United States Environmental Protection Agency for their approval and return to the U.S. Department of Energy, Richland (RL).

These Tri-Party Agreement documents normally require your action within 7 days, according to Article XL Paragraph 112. The RL agrees to extend this requirement to 14 days, to allow time for appropriate administrative steps to be carried out within your respective agencies.

If you have any questions, please contact me or your staff may contact Mr. S. H. Wisness at (509) 376-6798 or Mr. T. B. Veneziano of Westinghouse Hanford Company at (509) 376-0543.

Sincerely,

John D. Wagoner

John D. Wagoner
Manager

EAP:SHW

Enclosure:
Change Form M-17-91-5A
Amendment 3

cc:
T. B. Veneziano, WHC
D. B. Jansen, Ecology
D. C. Nylander, Ecology
C. C. Haass, SWEC
P. T. Day, EPA
D. R. Sherwood, EPA

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Change Number	Federal Facility Agreement and Consent Order Change Control Form	Date
M-17-91-05A	Do not use blue ink. Type or print using black ink.	07/27/92

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HEARINGS CLERK
EPA—REGION X

Originator: D. E. Kelley

Phone: 373-4745

Class of Change

[X] I - Signatories [ ] II - Project Manager [ ] III - Unit Manager

Change Title

RENEGOTIATION OF M-17-00 LIQUID EFFLUENT MILESTONES - MODIFICATION OF CHANGE PACKAGE RESULTING FROM PUBLIC COMMENTS

Description/Justification of Change

As part of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement or TPA), Washington State Department of Ecology (Ecology), U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) conducted a 45-day public comment period (March 5-April 22, 1992) to obtain public comments regarding proposed changes to Milestone 17, the milestone that manages Hanford's liquid effluent or wastewater discharges. These proposed changes were contained in TPA Change Request M-17-91-05. See continuation on Page 2.

Impact of Change

This change will provide a more inclusive set of milestones and a greater level of regulatory control and oversight of liquid effluents at the Hanford Site. It should be noted that this change does not affect interim milestones M-17-06A through M-17-06E.

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Table D-3 and Figure D-1. Tri-Party Agreement Milestone M-20 will be modified; tables D4 and D5 will be deleted.

Approvals ✓ Approved ___ Disapproved

John D. Wagoner DOE	8/7/92 Date
Dana A Rasmussen EPA	AUG 18 1992 Date
Chuck Clarke Ecology	8/31/92 Date

Description/Justification of Change (continued)

This TPA Change (i.e., M-17-91-05A) reflects the changes made to M-17-91-05 as a result of public comments. All public comments were considered before making these final changes to Milestone M-17. The response to public comments, copies of the written comments, and meeting transcripts may be viewed at the Hanford Information Repositories.

The changes made to the proposed M-17 interim milestones as a result of public comment are summarized below.

- 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H). Proposed interim milestone M-17-14B which required initiation of pilot plant testing using actual waste from the 242-A Evaporator was deleted. Due to the unforseen delays in the operation of the 242-A Evaporator, an alternative pilot plant testing and delisting strategy for Project C-018H was developed. This alternative approach made proposed TPA milestone M-17-14B unnecessary and allowed the acceleration of the initial submittal of the delisting petition (i.e., M-17-14C) from August 1993 to October 1992.

- N Reactor Effluent. The flow rate limits negotiated for the highest priority Phase I effluent streams will control the peak discharges that these facilities can discharge. In order to provide additional assurances that the N Reactor will have limited discharges, a limit on the total volume to be discharged to the 1325-N Liquid Waste Disposal Facility (i.e, N Reactor effluent) was imposed. Proposed interim milestone M-17-15A will be modified to read:

  M-17-15A September 1991

  Limit discharges to the LWDF to less than or equal to 2 gallons per minute, averaged over the calendar month. The total volume of wastewater to be discharged to the LWDF from June 1992 to June 1995 shall not exceed 1.8 million gallons. Discharge flow rate shall be determined by measuring the sumps before and after pumping or through monitoring at the discharge to the 1325-N LWDF.

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Description/Justification of Change (continued)

- Plutonium Finishing Plant Wastewater. The flow limit for the Plutonium Finishing Plant Wastewater was further reduced from 160 gpm to 100 gpm, averaged over a calendar month. Proposed interim milestone M-17-16A will be modified to read:

  M-17-16A September 1991

  Limit discharge of the Plutonium Finishing Plant Wastewater to the 216-Z-20 Crib to less than or equal to 100 gallons per minute, averaged over the calendar month.

- UO3 Plant Process Condensate. The flow rate limits negotiated for the highest priority Phase I effluent streams will control the peak discharges that these facilities can discharge. In order to provide additional assurances that the UO3 Plant will have limited discharges, a limit on the total volume to be discharged to the 216-U-17 Crib was imposed. Proposed interim milestone M-17-19A will be modified to read:

  M-17-19A September 1991

  Limit the discharge of the UO3 Plant Process Condensate to the 216-U-17 Crib to less than or equal to 10 gallons per minute, averaged over the calendar month. The total volume of wastewater to be discharged to the 216-U-17 Crib from June 1992 to June 1995 shall not exceed 2 million gallons. Operate and test the efficiency of the Fibermist Eliminator throughout the duration of the UO3/U Plant Stabilization Run.

  Discharge of the UO3 Process Condensate shall be further limited after the Stabilization Run to less than or equal to 2 gallons per minute, averaged over the calendar month. Discharge flow rate shall be calculated based on a batch counter.

  Note: The 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.

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Description/Justification of Change (continued)

- o Decontamination Laundry Facility. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

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M-17-00A June, 1995

Complete liquid effluent treatment facilities/upgrades for all Phase I streams.

Hanford currently has 19 Phase I liquid effluent streams being discharged to cribs, ponds, or ditches. Phase I streams are defined in the Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site, September 1988. Some of the cribs, ponds, or ditches are RCRA waste disposal units. These, along with others, are located in areas requiring inactive site investigations/remedial actions. Liquid effluent streams are classified as Phase I streams based upon radionuclide/chemical content, regulatory requirements relative to the waste disposal unit, chemical spill potential, and waste disposal unit life expectancy. Each of the Phase I effluent streams shall be either treated or eliminated, as defined in the above referenced report.

Interim milestones for Phase I Streams include the development and implementation of an impact assessment methodology, sampling and analysis plans, treatment system design and construction commitments, interim flow restrictions and dates for ceasing discharge.

Specific interim/target milestone dates for each stream and any associated treatment or disposal facilities are included in the Appendix D work schedules.

M-17-00B October 1997

Complete implementation of Best Available Technology/All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment (BAT/AKART) for all Phase II liquid effluent streams at the Hanford Site.

Hanford's 14 Phase II liquid effluent streams are discharged to cribs, ponds, ditches, or routed to storage facilities. Phase II streams are defined in the Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site, September 1988. Some of the cribs, ponds, or ditches are RCRA waste disposal units. These, along with others, are located in areas requiring inactive site investigations/remedial actions.

All Phase II effluent streams, except those which have been eliminated (e.g., the 209-E Reflector Water and 163-N Demineralizer Liquid Effluent), are managed through a sequence of interim milestones. Interim milestones for Phase II Streams include the development and implementation of an impact assessment

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methodology, sampling and analysis plans, treatment system design and construction commitments, interim flow restrictions and dates for ceasing discharge.

Specific interim/target milestone dates for each stream and any associated treatment or disposal facilities are included in the Appendix D work schedules.

The October 1997 completion date for Milestone M-17-00B shall remain unchanged unless all parties agree that a change is necessary in accordance with Article XL of the Tri-Party Agreement. The parties recognize that the milestone may be revised to accelerate or delay implementation of BAT/AKART based on the results of the BAT/AKART evaluations for each of the nine Phase II liquid effluent streams included in Milestone M-17-00B. Negotiations on the schedule for implementation of BAT/AKART at each of the Phase II liquid effluent streams shall be finalized by December 1992. Such negotiations shall be based on the BAT/AKART evaluations, the complexity of the required treatment and any other technology necessary to meet effluent guidelines and permitting requirements set forth by Ecology and EPA. DOE will assure Ecology and EPA of meaningful and fully funded participation in the BAT/AKART determination for each of the following Phase II liquid effluents:

B-Plant Cooling Water
AY/AZ Tank Farm Steam Condensate
242-A Evaporator Cooling Water
242-A Evaporator Steam Condensate
241-A Tank Farm Cooling Water
244-AR Vault Cooling Water
183-D Filter Backwash
284-E Power Plant Wastewater
400 Area Secondary Cooling Water

[M-17-02 January 1995 (deleted by this change package)

Complete PUREX ammonia scrubber distillate treatment system.]

<u>B Plant Chemical Sewer</u>

M-17-04 June 1995

Cease discharge of the B Plant Chemical Sewer to the 216-B-3 Pond system.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

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TPA Change Request Number M-17-91-05A
Milestone Listing
July 1992

M-17-04A January 1992

Submit the Sampling and Analysis Plan for the B Plant Chemical Sewer to the EPA and Ecology as a primary document.

M-17-04B February 1992

Discontinue the discharge of the B Plant Chemical Sewer to the 216-B-63 Ditch. Reroute this effluent to the 216-B-3 Pond system via the B Plant Cooling Water.

M-17-04C July 1992

Complete construction of 'B Plant Aqueous Make-up Unit (AMU) Area Upgrades' (Project W-004). No chemical inventory will be stored in B Plant AMU tanks until project completion. The chemical addition lines to these tanks will be blanked off, effective September 1991, and will remain so until initiation of acceptance testing.

M-17-04D July 1992

Complete construction of 'B Plant Environmental Compliance Upgrades' (Project W-010H).

<u>200 Area Treated Effluent Disposal Facility (Project W-049H)</u>

M-17-08 June 1995

Initiate full scale hot operations for '200 Area Treated Effluent Disposal Facility' (Project W-049H), with permitted disposal of effluent to either the soil column or surface water.

M-17-08A February 1992

Submit '200 Area Treated Effluent Disposal Facility' (Project W-049H) design-construction schedule to the EPA and Ecology as a primary document.

M-17-08B June 1995

Implement BAT/AKART at the generating facilities which will discharge to '200 Area Treated Effluent Disposal Facility' (Project W-049H). Those effluents included in the project scope include:

* Plutonium Finishing Plant Wastewater
* 242-S Evaporator Steam Condensate
* 2101-M Laboratory Wastewater
* 284-W Powerplant Wastewater
* T Plant Laboratory Wastewater
* T Plant Wastewater

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* 222-S Laboratory Wastewater
* PUREX Chemical Sewer
  -PUREX Steam Condensate
  -PUREX Cooling Water
* UO3/U Plant Wastewater
* UO3 Plant Process Condensate
* B Plant Steam Condensate
* B Plant Process Condensate
* B Plant Chemical Sewer
* 200E Laundry (New Stream)

<u>300 Area Treated Effluent Disposal Facility (Project L-045H)</u>

M-17-09 December 1994

Initiate full scale hot operations of '300 Area Treated Effluent Disposal Facility' (Project L-045H), with permitted disposal of treated effluent to surface water.

M-17-09A July 1993

Complete definitive design of '300 Area Treated Effluent Disposal Facility' (Project L-045H) and submit design documentation to the EPA and Ecology as a primary document.

<u>Cease Discharge to Hazardous Waste Land Disposal Units</u>

M-17-10 June 1995

Cease all liquid discharges to hazardous waste land disposal units unless such units have been clean closed in accordance with RCRA.

<u>Interim Operating Restrictions</u>

[M-17-11 Date as specified in Table D-5 (action re-assigned by this change package, table deleted)

Complete Actions specified in Appendix D, Table D-5]

<u>Sample and Analysis Plans</u>

[M-17-12 Date as specified in Table D-4 (action re-assigned by this change package, table deleted)

Complete Actions specified in Appendix D, Table D-4]

TPA Change Request Number M-17-91-05
Milestone Listing
July 1992

Impact Assessments

M-17-13 October 1991

Submit methodology for assessing impact of liquid discharge on groundwater at disposal sites to EPA and Ecology as a primary document.

M-17-13A 30 days after approval notification by EPA and Ecology

Submit a schedule, as a primary document, for implementation of the impact assessment methodology, including but not limited to sites listed below. An assessment will not be required if all disposal to the receiving site has been ceased.

* 1325-N Liquid Waste Disposal Facility
* 216-Z-20 Crib
* 216-U-14 Ditch
* 216-U-17 Crib
* 216-B-3 Pond system
* 216-S-26 Crib
* 216-T-4-2 Ditch
* 216-T-1 Ditch
* 284W Powerhouse Pond
* 2101-M Pond
* 216-W-LWC Crib
* D Pond
* 216-B-63 Ditch
* 400 Area Pond

242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H)

M-17-14 October 1994

Initiate full scale hot operations of '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H), with permitted discharge of treated effluent to the soil column.

M-17-14A February 1992

Submit the Architect/Engineering firm design-construction schedule for '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H) to the EPA and Ecology.

M-17-14B June 1992

DELETED. This milestone was deleted as a result of changed project strategy and acceleration of M-17-14C.

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M-17-14C October 1992

Submit initial submittal of the Federal Delisting petition for treated effluent from '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H) in accordance with 40 CFR 260.22 to the EPA.

M-17-14D June 1994

Initiate Operational Test Procedures for the '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H) using simulants and/or actual LERF-stored wastes, with recycle to the LERF basins.

N Reactor Effluent

M-17-15 June 1995

Cease discharge to the 1325-N Liquid Waste Disposal Facility (LWDF) system.

M-17-15A September 1991

Limit discharges to the LWDF to less than or equal to 2 gallons per minute, averaged over the calendar month. The volume of wastewater to be discharged to the LWDF from June 1992 to June 1995 shall not exceed 1.8 million gallons. Discharge flow rate shall be determined by measuring the sumps before and after pumping or through monitoring at the discharge to the 1325-N LWDF.

M-17-15B January 1992

Submit the N Reactor effluent BAT/AKART evaluation to the EPA and Ecology.

M-17-15C January 1992

Submit a plan to cease discharge of all liquid effluents to the 1325-N LWDF to EPA and Ecology. This plan shall be based on the implementation of BAT/AKART.

M-17-15D June 1992

Submit to EPA and Ecology an NPDES permit modification request for the N Reactor effluent.

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TPA Change Request Number M-17-91-05A
Milestone Listing
July 1992

Plutonium Finishing Plant Wastewater

M-17-16 June 1995

Cease all discharges to the 216-Z-20 Crib.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-16A September 1991

Limit discharge of the Plutonium Finishing Plant Wastewater to the 216-Z-20 Crib to less than or equal to 100 gallons per minute, averaged over the calendar month.

M-17-16B December 1991

Install a flume for the Plutonium Finishing Plant Wastewater for the purposes of flow rate measurement. Thereafter the flow rate shall be measured by the flume and automatically recorded on a strip chart recorder.

M-17-16C December 1992

Complete definitive design of 'Plutonium Finishing Plant Liquid Low-Level Waste System Modification' (Project B-680H) and submit design documentation to the EPA and Ecology as a primary document.

M-17-16D January 1994

Implement closed loop cooling for Buildings 291-Z, 234-5Z, and 236-Z, as provided by '291-Z Closed Loop Cooling' (Project C-040) and 'Plutonium Finishing Plant Liquid Low-Level Waste System Modification' (Project B-680H). Reduce the discharge to the 216-Z-20 Crib to less than or equal to 75 gallons per minute, averaged over the calendar month.

M-17-16E May 1994

Complete 'Plutonium Finishing Plant Liquid Low Level Waste System Modification' (Project B-680H).

U03/U Plant Wastewater

M-17-17 June 1995

Cease discharge of the U03/U Plant Wastewater to the 216-U-14 Ditch.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See Milestone M-17-08.

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M-17-17A September 1991

Except as specified below, limit discharge of the wastewater to the ditch to less than or equal to 450 gallons per minute, averaged over the calendar month. 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. Measurement of the discharge flow rate shall be by an instantaneous flow rate recorder system with data recording by a strip chart.

Note: The 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.

M-17-17B February 1992

Cease discharge of the 216-U-14 Ditch surface contamination control water. Limit the 216-U-14 Ditch surface contamination control water point source discharge at 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 and initiate construction of the engineered surface contamination control solution. The use of clean water during construction is allowed for dust control. This dust control water shall not exceed 300 gpm and must be discontinued by February 1992.

M-17-17C May 1992

Complete a study which evaluates the need for and feasibility of rerouting the UO3/U Plant Wastewater to an alternative site and submit it to the EPA and Ecology.

M-17-17D December 1992

Limit UO3/U Plant Wastewater effluent flow to less than or equal to 250 gallons per minute, averaged over the calendar month.

<u>242-S Evaporator Steam Condensate</u>

M-17-18 June 1995

Cease discharge of the 242-S Evaporator Steam Condensate to the 216-U-14 Ditch.

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Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-18A September 1991

Limit the discharge of steam condensate to the ditch to less than or equal to 50 gallons per minute. This flow rate is based on the maximum design flow.

M-17-18B September 1992

Replace the air sample pump at the 242-S Evaporator and eliminate the seal water contribution to the 242-S Evaporator Steam Condensate.

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U03 Plant Process Condensate

M-17-19 June 1995

Cease discharge to the 216-U-17 Crib.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-19A September 1991

Limit the discharge of the U03 Plant Process Condensate to the 216-U-17 Crib to less than or equal to 10 gallons per minute, averaged over the calendar month. The volume of wastewater to be discharged to the 216-U-17 Crib from June 1992 to June 1995 shall not exceed 2 million gallons. Operate and test the efficiency of the Fibermist Eliminator throughout the duration of the U03/U Plant Stabilization Run.

Discharge of the U03 Process Condensate shall be further limited after the Stabilization Run to less than or equal to 2 gallons per minute, averaged over the calendar month. Discharge flow rate shall be calculated based on a batch counter.

Note: The Stabilization Run of the U03/U Plant refers to the operation of the Plant in the Calcination Mode as described in the U03 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.

PUREX Plant Process Condensate

M-17-20 June 1995

Implement BAT/AKART for the PUREX Plant Process Condensate. No soil column disposal of this effluent will occur until BAT/AKART is implemented as part of '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H). See Milestone M-17-14.

M-17-20A September 1991

Cease all discharge to the 216-A-45 Crib.

PUREX Plant Ammonia Scrubber Condensate

M-17-21 June 1995

Implement BAT/AKART for the PUREX Plant Ammonia Scrubber Condensate. No soil column disposal of this effluent will occur until BAT/AKART is implemented as part of '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H). See Milestone M-17-14.

M-17-21A September 1991

Cease all discharge to the 216-A-36B Crib.

PUREX Plant Steam Condensate

M-17-22 June 1995

Cease discharge of the PUREX Plant Steam Condensate to the 216-B-3 Pond system.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-22A June 1992

Discontinue discharge of the PUREX Plant Steam Condensate to the 216-A-30 and 216-A-37-2 Cribs. Reroute effluent flow to the 216-B-3 Pond system via the PUREX Chemical Sewer. Following implementation of BAT/AKART and approval of a Sampling and Analysis Plan, discharge to the 216-A-30 and 216-A-37-2 Cribs may resume if supported by the environmental impact assessment agreed to by EPA and Ecology. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

PUREX Plant Cooling Water

M-17-23 June 1995

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Cease discharge of the PUREX Plant Cooling Water to the 216-B-3 Pond system.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-23A June 1992

Reroute the PUREX Plant Cooling Water effluent to the 216-B-3 Pond system via the PUREX Chemical Sewer. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

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PUREX Plant Chemical Sewer

M-17-24 June 1995

Cease discharge of the PUREX Plant Chemical Sewer to the 216-B-3 Pond system.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-24A June 1992

Complete PUREX reconfiguration and source control to minimize volume and reroute the remaining PUREX Cooling Water and Steam Condensate to the 216-B-3 Pond system via the PUREX Chemical Sewer. Limit the discharge of the PUREX Plant Chemical Sewer to the 216-B-3 Pond system to less than or equal to 600 gallons per minute, averaged over the calendar month. Measurement of the discharge flow volume shall be by a combination of magnetic and pneumatic flowmeters with data recording by a strip chart recorder. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

B Plant Steam Condensate

M-17-25 September 1991

Cease all discharge to the 216-B-55 Crib. There shall be no further soil column discharge of B Plant Steam Condensate until BAT/AKART is implemented; until that time, the effluent will be routed to double-shell tanks. Following implementation of BAT/AKART and approval of a Sampling and Analysis Plan, discharge

to the 216-B-55 Crib may resume if supported by the environmental assessment agreed to by EPA and Ecology.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

B Plant Process Condensate

M-17-26 September 1991

Cease discharge to the 216-B-62 Crib. There shall be no further soil column discharge of B Plant Process Condensate until BAT/AKART is implemented; until that time, the effluent will be routed to double-shell tanks. Following implementation of BAT/AKART and approval of a Sampling and Analysis Plan, discharge to the 216-B-62 Crib may resume if supported by the environmental impact assessment agreed to by EPA and Ecology.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

B Plant Cooling Water

M-17-27 April 1992

Submit the Sampling and Analysis Plan for the B Plant Cooling Water to the EPA and Ecology as a primary document.

AY/AZ Tank Farm Steam Condensate

M-17-28 September 1991

Cease discharge to the 216-A-08 Crib. There shall be no further soil column discharge of this effluent until BAT/AKART is implemented; in the interim, the effluent will be routed to double-shell tanks. Following implementation of BAT/AKART and approval of a Sampling and Analysis Plan, discharge to the 216-A-08 Crib may resume if supported by the environmental impact assessment agreed to by EPA and Ecology.

242-A Evaporator Process Condensate

M-17-29 October 1994

Implement BAT/AKART for the 242-A Evaporator Process Condensate.

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M-17-29A September 1991

Cease all discharges to the 216-A-37-1 Crib. No soil column disposal of this effluent shall occur until BAT/AKART is implemented as part of '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H). See Milestone M-17-14. Upon restart of the 242-A Evaporator in Fiscal Year 1992, process condensate will be routed to the LERF basins for storage and eventual processing via the '242-A Evaporator/PUREX Plant Condensate Treatment Facility' (Project C-018H).

<u>242-A Evaporator Cooling Water</u>

M-17-30 April 1992

Submit the Sampling and Analysis Plan for the 242-A Evaporator Cooling Water to the EPA and Ecology as a primary document. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

<u>242-A Evaporator Steam Condensate</u>

M-17-31 April 1992

Submit the Sampling and Analysis Plan for the 242-A Evaporator Steam Condensate to the EPA and Ecology as a primary document. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

<u>241-A Tank Farm Cooling Water</u>

M-17-32 December 1996

Complete 'Tank Farm Ventilation Upgrade' (Project W-030).

M-17-32A April 1992

Submit the Sampling and Analysis Plan for the 241-A Tank Farm Cooling Water to the EPA and Ecology as a primary document. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

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244-AR Vault Cooling Water

M-17-33 April 1992

Submit the Sampling and Analysis Plan for the 244-AR Vault Cooling Water to the EPA and Ecology as a primary document. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

2724-W Laundry Wastewater

M-17-34 January 1995

Cease all discharges to the 216-W-LWC Crib.

M-17-34A January 1992

Submit the Sampling and Analysis Plan for the 2724-W Laundry Wastewater to the EPA and Ecology as a primary document.

M-17-34B January 1992

Complete construction of Laundry Effluent 2724-W Wastewater treatment project (B-697).

Decontamination Laundry Facility (Project B-503)

M-17-35 June 1995

DELETED. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

M-17-35A September 1992

DELETED. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

M-17-35B April 1993

DELETED. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

M-17-35C October 1994

DELETED. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

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M-17-35D January 1995

DELETED. Interim milestones M-17-35, M-17-35A, M-17-35B, M-17-35C, and M-17-35D were deleted as a result of the DOE obtaining off-site laundry services.

183-D Filter Backwash

M-17-36 April 1992

Submit the Sampling and Analysis Plan for the 183-D Filter Backwash to the EPA and Ecology as a primary document.

284-E Powerplant Wastewater

M-17-37 April 1992

Submit the Sampling and Analysis Plan for the 284-E Powerplant Wastewater to the EPA and Ecology as a primary document. Effective September 1991, discharge to the 216-B-3 Pond System is allowed, and may continue provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan.

284-W Powerplant Wastewater

M-17-38 June 1995

Cease all discharges to the 284-W Powerplant Pond.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-38A April 1992

Submit the Sampling and Analysis Plan for the 284-W Powerplant Wastewater to the EPA and Ecology as a primary document.

222-S Laboratory Wastewater

M-17-39 June 1995

Cease all discharges to the 216-S-26 Crib.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-39A January 1992

Submit the Sampling and Analysis Plan for the 222-S Laboratory Wastewater to the EPA and Ecology as a primary document.

S Plant Wastewater

M-17-40 October 1991

Cease all discharges to the 216-S-10 Ditch.

T Plant Wastewater

M-17-41 June 1995

Cease all discharge to the 216-T-4-2 Ditch.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-41A January 1992

Submit the Sampling and Analysis Plan for the T Plant Wastewater to the EPA and Ecology as a primary document.

T Plant Laboratory Wastewater

M-17-42 June 1995

Cease all discharges to the 216-T-1 Ditch.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

M-17-42A April 1992

Submit the Sampling and Analysis Plan for the T Plant Laboratory Wastewater to the EPA and Ecology as a primary document.

2101-M Laboratory Wastewater

M-17-43 June 1995

Cease all discharges to the 2101-M Pond.

Note: This effluent is contained within the scope of '200 Area Treated Effluent Disposal Facility' (Project W-049H). See milestone M-17-08.

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M-17-43A January 1992

Eliminate effluent contributions to the 2101-M Laboratory Wastewater from 2 of 9 HVAC coolers serving the 2101-M Laboratory.

M-17-43B January 1992

Submit the Sampling and Analysis Plan for the 2101-M Laboratory Wastewater to the EPA and Ecology as a primary document.

<u>400 Area Secondary Cooling Water</u>

M-17-44 April 1992

Submit the Sampling and Analysis Plan for the 400 Area Secondary Cooling Water to the EPA and Ecology as a primary document.

Related TPA interim milestones for submission of RCRA permits (i.e., M-20) to be included in this change package:

M-20-49 October 1991

Submit RCRA Research, Development and Demonstration (RD & D) permit application for the 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H) pilot plant testing in accordance with 40 CFR 270.65.

M-20-50 August 1993

Submit complete RCRA Part B permit application for the 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H) to Ecology for approval, which includes 80% design detail and available pilot plant test results, to Ecology as a primary document.

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Hanford Tri-Party Agreement
Milestone 17-00, Hanford Wastewater Discharges
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<u>Acronym List</u>

ASD - PUREX Ammonia Scrubber Condensate
BAT/AKART - Best Available Technology/ All Known, Available, and Reasonable Methods of Prevention, Control and Treatment
CSL - PUREX Chemical Sewer
CWL - PUREX Cooling Water
DOE - Department of Energy
DST - Double Shell Tanks
Ecology - Washington State Department of Ecology
EPA - U. S. Environmental Protection Agency
GPM - gallons per minute
LERF - Liquid Effluent Retention Facility
LES - Liquid Effluent Studies, WHC-EP-637
LWDF - Liquid Waste Disposal Facility
NEPA - National Environmental Policy Act
NPDES - National Pollutant Discharge Elimination System. A permitting program, implemented by EPA for Hanford, that addresses discharges of liquid effluents to surface waters.
PDD - PUREX Process Condensate
PFP - Plutonium Finishing Plant
PUREX - Plutonium/Uranium Extraction Facility
RL - U. S. Department of Energy, Richland Field Office
SCD - PUREX Steam Condensate
SHPO - Washington State Historic Preservation Officer
TEDF - Treated Effluent Disposal Facility
TPA - Tri-Party Agreement, the common name for the Hanford Federal Facility Agreement and Consent Order
UO3/U Plant - Uranium Trioxide Plant
WAC - Washington Administrative Code

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Response to Public Comments
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Introduction

As part of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement or TPA), Washington State Department of Ecology (Ecology), U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) conducted a 45-day public comment period (March 5-April 22, 1992) to obtain public comments regarding proposed changes to Milestone 17, the milestone that manages Hanford's liquid effluent or wastewater discharges. These proposed changes were contained in TPA Change Request M-17-91-05.

The agencies conducted four Hanford Tri-Party Agreement Quarterly Public Meetings to discuss the proposed changes with the public.

Richland, Washington	April 1, 1992
Spokane, Washington	April 2, 1992
Bellevue, Washington	April 8, 1992
White Salmon, Washington	April 9, 1992

Also, the agencies received 21 written public comments. At the close of public comment, Washington State Governor Booth Gardner received 157 postcards regarding the draft Milestone 17 changes; Washington State Department of Ecology Director Chuck Clarke received 83 postcards.

The three agencies reviewed written transcripts from the four recorded public meetings, written comments and the postcards regarding the Milestone 17 proposed changes. Ecology, EPA and DOE summarized the comments, arranging the comments from the most frequently stated comments to more specific comments. The agencies responded to all of the public comments. All of the comments were considered before making final changes to Milestone 17.

You may view the response to public comments, final Milestone 17 document, and copies of the written comments and meeting transcripts at the Hanford Information Repositories.

U.S. Department of Energy-Richland Operation, Public Reading Room
Federal Building Room 157, 825 Jadwin Avenue, Richland, WA
(509) 376-8583

Suzzalo Library, Government Publications Room
University of Washington, Seattle, WA
(206) 543-4664

Crosby Library, Gonzaga University
Main Floor Reference Area, E. 502 Boone, Spokane, WA
(509) 328-4220

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Portland State University Library, Science and Engineering Floor
Trojan and Hanford Collection, SW Park, Portland, OR
(503) 464-4617

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Comments and Responses

1. **Comment**

Cease discharges now. Do not provide DOE additional time to stop discharges. Explain why discharges cannot be stopped now. Regulators have "bought off" on DOE's anecdotal rationale for continued discharges. We understand that some streams must continue. But, spell out which ones cannot be shut off and why. We need to have more information in order to comment rationally. Is it possible to shut down all effluent that is not currently connected to cleanup or worker safety?

Response

All liquid effluent discharges at Hanford cannot be stopped immediately. Cessation of liquid effluent disposal to the soil column will not stop those effluents from being generated. Liquid effluents are generated from a variety of sources, most of which are not process related. Most of the facilities currently producing liquid effluents at Hanford were designed and built in the 1940's and 1950's when water use and disposal were not issues. In order to stop many of the discharges, the plant producing the effluent would need to be completely decontaminated and/or decommissioned. The time and money required to accomplish this type of shutdown activity far exceeds the time required to reroute the clean streams away from contaminated sites, cease discharges of hazardous or dangerous wastes, and provide treatment capacity for those streams requiring treatment.

EPA and Ecology did not "buy off" on anecdotal rationale as suggested during public comment. For each liquid effluent stream and receiving sites, EPA and Ecology reviewed the specific wastewater sources, evaluated the potential impact of continued discharge, assessed the impact of ceasing discharge on environmental restoration and waste management programs, and determined the influence of ceasing discharge on facility and worker safety.

An appendix to the M-17 Comment Responses, "Discussion of Liquid Effluents at the Hanford Site Addressed in TPA Milestone M-17", has been provided so the public can be informed as to the makeup of the liquid effluents discharged to the soil column at Hanford. This appendix provides a general description of the types of wastewater generated

across the Hanford Site. In addition, a stream-by-stream discussion is provided that includes a summary of the milestone commitments, a description of the liquid effluent, and a response to the question "Why the effluent needs to continue?"

2. Comment

The public has stated previously that discharges must be stopped before 1995. The proposed changes reassert the 1995 cease discharge date. Renegotiation of milestones should be required to stop the discharges as soon as possible. The agencies have not responded to the public concerns.

Response

It is true that the major milestone completion date for the nineteen Phase I liquid effluent streams remain 1995, but the requirements and the schedules for those effluents have changed dramatically. The original M-17 milestone required either treatment or elimination of these discharges by June 1995. The cease discharge milestone of June 1995 only applied to those ten liquid disposal sites that had received hazardous waste (216-A-36-B, 1325-N, 1324-N/NA, 216-B-3 Pond, 216-A-29, 216-B-63, 300 Area Process Trenches, 2101-M, 216-S-10, 100-D Ponds). Under the original M-17 milestone, treated discharges would have been allowed to continue to all other disposal sites indefinitely.

The renegotiated M-17 milestone sets cease discharge dates for fifteen additional disposal sites not covered by the original milestone (216-A-8, 216-A-30, 216-A-37-1, 216-A-37-2, 216-A-45, 216-B-55, 216-B-62, 216-S-26, 216-T-1, 216-T-4-2, 216-U-14, 216-U-17, 216-W-LWC, 284-W Powerplant Pond, 216-Z-20). Of the twenty-five disposal sites discussed above (the ten covered by the original M-17 plus the additional fifteen), eleven no longer receive liquid effluent. Although the final completion date still remains June 1995, the result of the renegotiated milestone is that eleven of these discharges were rendered inactive in excess of 3 years before the previous schedule and fifteen additional sites were added to the cease discharge list. EPA and Ecology believe that the renegotiated M-17 milestone provides a technically sound approach to management of liquid effluents at the Hanford Site.

3. Comment

EPA and Ecology have been accused of doing a poor job of negotiating the liquid effluent milestones and not responding to public concerns to cease liquid effluent discharges.

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Response

It is important for the public to understand the basis of the EPA and Ecology negotiating position. This position was based on EPA and Ecology comments submitted in February and April 1991, respectively, on the Liquid Effluent Study. The fundamental points of the regulators' position were:

- o implement flow and/or cease discharge restrictions for liquid effluents and associated disposal sites with significant contaminant inventories or the potential to impact adjacent contaminated waste sites;
- o minimize the discharge of liquid effluent to the 200 West Area because it will ultimately accelerate the flow of contaminated groundwater toward the Columbia River;
- o initiate the State Waste Discharge Permitting process for all liquid effluents;
- o require Ecology and EPA approved sampling and analysis plans for dangerous waste designation, treatment system design and assessment of continued discharge;
- o establish an Ecology and EPA approved impact assessment methodology for those continuing discharges and establish a schedule for submittal of impact assessments and,
- o do not compromise facility or worker safety.

These factors were used to formulate the EPA and Ecology negotiating position. The public contention that the regulators did a poor job negotiating can only be evaluated through a thorough review of the responses to all comments. Liquid effluent negotiations were initiated in May 1991 and did not conclude until November 1991. The negotiations included a series of stream-by-stream sessions where detailed evaluations of potential environmental impacts, safety issues, impacts to environmental restoration projects, and regulatory status were discussed. These negotiations resulted in a series of hard-fought milestones.

4. Comment

Test sediments in the Columbia River. Does annual report list chemicals as well as radioactivity? Does the Washington State Department of Health test the Columbia River for plutonium? Fish in the river should

be routinely tested and monitored for contamination. Inadequate characterization data is used to determine if waste streams are hazardous. Test and monitor contaminants in the Columbia River. Are water samples tested or monitored below the dams? Explain the contaminants entering the water table and the Columbia River. Explain why fire water and cooling system effluent cannot be discharged directly into the Columbia River. Why can't the discharges go directly into Columbia River?

Response

In general these questions address public concerns about the health of the Columbia River. A number of different state and federal agencies test the river on a regular basis. Fish tissue and sediment sampling is also carried out.

Although extensive testing is done, it is not all compiled into a single report. As a result of public comment, Ecology will ensure that the data we have is incorporated into the bi-annual report put out by the Department of Ecology Water Quality Program (305b Report). Copies of this report, reports from other agencies, and information on how to gain access to more specific data, will be made available at the Hanford Public Information Repositories and through the joint state Lower Columbia River Task Force. A listing of the Hanford Public Information Repositories are attached for your convenience.

The three parties, along with other agencies along the Columbia, will evaluate the need for additional sediment testing in the river. To date, no health or environmental concerns that can be linked to the Hanford Site have been identified by either the Department of Health, Ecology or EPA.

We are committing to ensure that people living along the Columbia River have ready access to the information generated by agency activities in that area. We will publish additional information in the Hanford Update as soon as it becomes available.

5. Comment

If effluent is being dumped on the ground near the Columbia River and is reaching groundwater flowing toward the river, how can Energy claim cleanup methods are effective? Contaminated groundwater problems cannot be solved, excessive funds are being spent on this unsolvable problem. Currently technology is not available to remediate contaminants in the soil and groundwater. Therefore, how can agencies justify the continued discharge of wastes into soil and groundwater? Hazardous waste streams?

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Response

Much of the groundwater beneath the Hanford Site is connected to the Columbia River. However, the groundwater discharges that occur at present are a very small fraction of what has been placed in the groundwater in the past. The contamination loading has decreased considerably since the 1970's and 1980's. Although some small contaminant loading is occurring now, we are more concerned with the potential for significant releases to the air and groundwater from the tanks, inactive facilities and other contaminated sites at Hanford. Since the use of water is required to control and remediate these facilities, we have to allow the continued discharges.

The continued discharge of water can serve as a driver to push still more contamination down into the groundwater. Interim restrictions (i.e., flow restrictions) have been placed on those wastewater streams that pose the greatest potential for future groundwater contamination. Some sort of groundwater remediation such as pump and treat operation to remove contaminants at many locations will be required as part of the Hanford cleanup. The continued discharges for the short term that are presently expected, will not add significantly to the effectiveness or cost of those treatment operations.

The liquid effluents at the Hanford Site do not qualify as hazardous waste as defined in Washington State Dangerous Waste regulations, WAC 173-303. Discharges that were found to be hazardous wastes have been eliminated. Sampling continues and any other streams found to be hazardous wastes will be prioritized for elimination.

Hanford will be in the cleanup business for the next several decades. In the long run, our decision to separate flows and eliminate unnecessary flows will be better for the environment. The overall reduction of waste discharge, water use, and the other changes proposed in milestone M-17 will have a greater long-term benefit than the short-term gains that would have been realized through application of treatment systems and ceasing discharges as required by the original milestone.

6. Comment

Many unidentified waste streams are not addressed in the Hanford Tri-Party Agreement. Many streams are still unidentified.

Response

The revised M-17 milestones picked up 13 Phase II effluent streams that were not addressed in the original M-17 milestone. These effluents are

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now being addressed through milestones for treatment, source control, or termination. Other minor streams are addressed in Consent Order DE-91NM-177 between Ecology and DOE. Some of these minor streams are scheduled for permitting through the Consent Order; others may not require permitting under state law (e.g., sewage flows to septic tanks).

The Consent Order requires Energy to seek out, report on, and control any additional miscellaneous waste streams. If additional waste streams are identified they will be addressed by the Consent Order. The Consent Order generated because of the Tri-Party Agreement (see Section 13.1.2 of the TPA Action Plan), regulates any of the flows not covered specifically by the Tri-Party Agreement.

With Ecology's expanded Kennewick Office, the regulators have more staff at the Hanford Site doing inspections and looking for any yet unidentified miscellaneous waste streams. If any member of the public has information on yet unidentified waste streams, the regulators ask that they present this information. Such information can be kept confidential at the request of the individual providing it.

7. <u>Comment</u>

A lot of these effluents are being discharged from facilities that just have a short time to operate: specifically, the Plutonium Finishing Plant and the Uranium Trioxide Plant. The facilities only have short periods, but they have fairly high flow rate limits. If you're only expecting a short period of time, why not reflect that in the change packages as well, so that DOE couldn't change its mind. This would have allowed the regulators to have more control and the restrictions to have more of a bite than they currently do.

<u>Response</u>

The flow rate limits negotiated for the highest priority Phase I effluent streams will control the peak discharges that these facilities can discharge. In order to provide assurances from the DOE that specific facilities (i.e., the Uranium Trioxide Plant and N Reactor) will have limited discharges, the EPA and Ecology have pressed for both a flow rate limit and a limit on the total volume to be discharged to the 1325-N Liquid Waste Disposal Facility (i.e, N Reactor effluent) and the 216-U-17 Crib (i.e., UO3 Plant Process Condensate). The Plutonium Finishing Plant will have a flow rate limitation of 100 gallons per minute which was reduced from 160 gallons per minute in proposed M-17.

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The milestone for UO3 Process Condensate, the N Reactor effluent, and the PFP Wastewater will be modified to read:

N Reactor Effluent

M-17-15A September 1991

Limit discharges to the LWDF to less than or equal to 2 gallons per minute, averaged over the calendar month. The total volume of wastewater to be discharged to the LWDF from June 1992 to June 1995 shall not exceed 1.8 million gallons. Discharge flow rate shall be determined by measuring the sumps before and after pumping or through monitoring at the discharge to the 1325-N LWDF.

PFP Plant Wastewater

M-17-16A September 1991

Limit discharge of the Plutonium Finishing Plant Wastewater to the 216-Z-20 Crib to less than or equal to 100 gallons per minute, averaged over the calendar month.

UO3 Plant Process Condensate

M-17-19A September 1991

Limit the discharge of the UO3 Plant Process Condensate to the 216-U-17 Crib to less than or equal to 10 gallons per minute, averaged over the calendar month. The total volume of wastewater to be discharged to the 216-U-17 Crib from June 1992 to June 1995 shall not exceed 2 million gallons. Operate and test the efficiency of the Fibermist Eliminator throughout the duration of the UO3/U Plant Stabilization Run.

Discharge of the UO3 Process Condensate shall be further limited after the Stabilization Run to less than or equal to 2 gallons per minute, averaged over the calendar month. Discharge flow rate shall be calculated based on a batch counter.

Note: The 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.

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8. Comment

Provide total amount of Hanford wastewater discharges.

Response

Since 1990, the Hanford Site has reduced the total volume of effluent being discharged to the environment from the 33 Hanford liquid effluents addressed in Tri-Party Agreement Milestone M-17 by over 490 million gallons. In 1991, the total discharge of these effluent streams was about 2.8 billion gallons. This represents an approximate 15% reduction from the total volume discharged in 1990 (i.e., about 3.3 billion gallons) and an approximate 55% reduction from the total volume discharged in 1987 (i.e., about 6.2 billion gallons).

The flows experienced in 1991 began to show reductions that were a direct result of M-17. The N Reactor Effluent flowrate was reduced by over 99% from the 1990 annual average flow rate of 100 gpm to the 1991 annual average flow rate of 0.6 gpm. The monthly average flow restriction placed on the N Reactor effluent by TPA Milestone M-17-15 is 2 gpm. The 300 Area Process Sewer experienced an approximate 35% reduction in its annual average flow rate between 1990 (i.e., 1005 gpm) and 1991 (i.e., about 625 gpm).

The flow restrictions imposed in M-17 will be more dramatically evident in 1992 as additional flow restrictions come into effect. For instance, while the annual average flow rate for the 300 Area Process Sewer decreased from about 1005 gpm to about 625 gpm from 1990 to 1991, the projected 1992 annual average flow rate will be less than 400 gpm (i.e., the flow rate restriction imposed by Milestone M-17-06). Therefore, by the end of 1992, the 400 gpm flow rate restriction placed on flow to the 300 Area Process Trench in Milestone M-17-06, will have reduced discharges by more than 500 million gallons when compared to continued discharges at the 1990 levels.

Another flow restrictions that will be dramatically evident in 1992 will be the flow restrictions imposed on the combined PUREX Cooling Water, Steam Condensate, and Chemical Sewers. In June, 1992 the 600 gpm flow rate restriction imposed by TPA milestone M-17-24 for the combined PUREX Cooling Water, Steam Condensate, and Chemical Sewers came into effect. Based on this monthly flow rate limit, the projected 1992 combined annual average flow rate will be about 70% lower than the 1991 combined flow rate and about 75% lower than the 1990 combined flow rate. In 1990 the annual average combined flow rate from these three effluents, was about 2,350 gpm. In 1991 the combined annual average flow rate from these three effluents was reduced to about 2,100 gpm. Therefore, by the

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end of 1992, the 600 gpm flow rate restriction placed on the combined PUREX Cooling Water, Steam Condensate, and Chemical Sewer will have reduced PUREX discharges to the soil column by more than 690 million gallons when compared to continued discharge at the 1990 levels.

9. Comment

Provide information, if available on soil column/depth profiling.

Response

Information on soil column/depth profiling for waste sites in the 200 Areas is available in "Evaluation of Scintillation Probe Profiles from 200 Crib Monitoring Wells", (ARH-ST-156). Additional radionuclide depth profiles will be reported in the 200 West Area and 200 East Area Groundwater Aggregate Area Management Studies which will be submitted to EPA and Ecology in September 1992. These reports will contain the most up-to-date information available. Radionuclide depth profiling was not used in the 100 and 300 Areas due to the shallow depth (50-70 ft) to groundwater in those areas as opposed to in excess of 200 feet in the 200 Areas.

In October of 1991, DOE submitted a methodology to evaluate the impacts of continued discharge at 14 of the major liquid effluent disposal facilities. Discharge to these disposal facilities would likely be discontinued after the Best Available Technology or All Known, Available, Reasonable Methods of Prevention, Control and Treatment (i.e., BAT/AKART) is implemented on these effluent streams in 1995. In December of 1991, DOE also entered into Consent Order DE-91NM-177 with the Ecology addressing permitting of discharge streams and disposal locations.

Characterization of the extent of contamination below a crib, ditch or pond will be conducted for both the groundwater impact assessment methodology and also for the development of permitting documents. The characterization will depend on the history of discharges to the facility, the future use, if any, of the facility, and the existing knowledge of the geology and hydrology of the specific facility location.

Recently, characterization data has been collected near the 216-Z-20 crib, 216-B-3 Pond System, and the 300 Area Process Trench. Future plans contain direct field characterization of other cribs and facilities.

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As part of the Liquid Effluent Study completed in 1990, estimates of discharge facility contaminant loadings and flows were made in order to predict the possibility of each facility impacting groundwater. No field program was conducted to confirm these estimates. The results of this effort can be found in the Liquid Effluent Study Final Project Report (WHC-EP-0367).

10. Comment

Continued waste water discharges could violate cultural sites. Protection of rights specified in the treaty of 1855 on ceded lands at Hanford should be assured.

Response

To the best of our knowledge, there are no cultural sites being impacted by continued wastewater discharges. If anyone knows of an exception, please notify the Department of Energy, Richland Field Office (RL), Cultural Resources Program Manager, of the location and concern and it will be investigated.

Procedures for the management and protection of cultural resources are outlined in the Hanford Cultural Resources Management Plan. This plan is consistent with Federal cultural resources laws including the Native American Graves Protection and Repatriation Act, National Historic Preservation Act, American Indian Religious Freedom Act, and the Archeological Resources Protection Act.

The Department of Energy requires that a cultural resources review be performed, as required by Section 106 of the National Historic Preservation Act, whenever a new Hanford project or management strategy is proposed. A cultural resources review entails the review of records on previous archaeological investigations, ethnographic literature, historic records, and the Washington State Archaeological Survey records to determine if the site has been considered for cultural resources before and, if so, if significant cultural properties have been identified. When an area has not been reviewed previously, an archaeological survey is conducted of the proposed project site.

When large-scale projects are proposed RL also requests comment from local Indian tribes and bands on whether they believe any locations with traditional cultural importance will be affected. If significant properties are identified, then a finding of effect is written and sent to the Washington State Historic Preservation Officer (SHPO) for review. Adverse effects require consideration of alternative avoidance or mitigation strategies in consultation with the SHPO, Advisory Council

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for Historical Preservation, Indian Tribes and the public. Results of the cultural resources survey is included in the evaluations performed by DOE on a proposed action as required by the National Environmental Policy Act (NEPA).

In the event that a project fails to request a cultural resource review int he planning stages, cultural resources staff will become aware of the project before ground is broken. Excavation permits, required by RL for all ground breaking activities regardless of scale or location, require approval by cultural resources staff before they can be issued.

The Hanford Site is located on land ceded to the United States under the Treaties of 1855 with the Yakima Indian Nation and the Confederated Tribes of the Umatilla Indian Reservation. In addition, the Nez Perce Tribe has treaty-established fishing rights on the Columbia River. The rights reserved under these treaties establish a trust responsibility for federal agencies, and provide a basis for the tribes' participation in Hanford Site plans.

The RL Indian Nations Program has been established at the Hanford Site because of the importance of interactions between the tribes and DOE and the increasing number of issues potentially affecting Indians. In keeping with national and DOE policy, RL recognizes and commits to a government-to-government relationship with tribal governments. The goal of the DOE Indian Policy is to establish and maintain effective working relationships with American Indian tribal governments by taking affirmative steps to ensure that tribal rights and concerns are considered prior to DOE taking actions, making decision, or implementing programs that may affect tribes.

The Yakima Indian Nation as well as the Confederated Tribes of the Umatilla have been funded through DOE grants to actively participate in Hanford programs and projects. A Nez Perce grant is pending. Ongoing activities that tribes have been invited to participate in include: Five-Year Plan Working Group Meeting, Future Site-Use Organizational Committee Meeting, emergency response training, the Native American Employment Program, Cultural Sensitivity Training, DOE bi-monthly meetings, DOE educational grant proposals, and the Hanford Environmental Dose Reconstruction Project.

11. a. <u>Comment</u>

Is the C-018H Liquid Effluent Treatment Plant on schedule?

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Response

Yes, Project C-018H is presently on schedule.

b. Comment

Did DOE sign the Consent Order knowing that the schedule (for Project C-018H) was slipping?

Response

When the DOE signed the Consent Order DE-91NM-177 on December 23, 1991 all proposed commitments for Project C-018H, "242-A Evaporator/PUREX Process Condensate Treatment Facility" in the Consent Order DE-91NM-177 were achievable. The Consent Order (and TPA milestone M-17) contains milestones for the design, pilot plant testing, construction, and operation of Project C-018H.

It was determined that Project C-018H could stay on schedule despite preliminary indications of schedule slippage of the restart of 242-A Evaporator if an alternative approach to pilot plant testing and delisting of the treatment system were pursued. The alternative approach to maintain the C-018H schedule was discussed with both Ecology, EPA Region 10, and EPA Headquarters and was initiated.

This alternative approach made proposed TPA milestone M-17-14B unnecessary and allowed the acceleration of the initial submittal of the delisting petition (i.e., M-17-14C) from August 1993 to October 1992. This re-alignment of the M-17 milestone proposal for Project C-018H demonstrates the Parties' commitment to having the Project C-018H treatment system operational by June 1995.

12. Comment

Drain and remove the radioactive chemical residue in the soil. Dig a trench 100 feet deep to prevent the seepage of radioactive chemical leaks from entering the Columbia River.

Response

In many cases it is possible to temporarily lower the existing water table, erect supports as is done with sheet pile or other shoring methods, and remove soil contaminated with radioactive wastes. The actual methods used and their feasibility depend on site specific factors such as soil stability, depth to the contaminated zone, the

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quantity of soil to be removed, the level of exposure to the public and workers, and the depth below the water table.

The extent to which radioactive material can be removed from the soil is uncertain but further testing is scheduled at Hanford to address this issue. Information to date indicates that many radionuclides are bound to the fine soil particles found in the total soil matrix. Separation and recovery of radionuclides is possible, to some degree, by simple particle size separation. Chemical processes which either increase the mobility or complex the radionuclides to a mobile chemical species are also possible.

Yes, it is possible to dig a 100 foot deep trench. Presumably the 100 foot deep trench would be back-filled with a material that would impede the movement to water. The Parties have considered the use of barrier trenches to impede groundwater flow in certain locations and they think that remediation of this nature has little value unless linked with other forms of groundwater treatment. We will continue to look at this technology along with a wide range of cleanup technologies to address specific environmental concerns.

13. <u>Comment</u>

Cleanup funds are being diverted to fund infrastructure projects.

<u>Response</u>

No funds specifically earmarked for cleanup or TPA commitments have been diverted to support infrastructure projects. It should be noted that infrastructure upgrades and maintenance contribute to DOE's ability to meet TPA agreements in a safe and cost effective way. Upgrading and maintaining the infrastructure (roads, sidewalks, lighting, etc.) of the Hanford Site is an essential part of site activities so that roads, traffic interchanges, sidewalks, parking lot lighting, and utilities are maintained in a safe condition. Funding for infrastructure does not come at the expense of TPA commitment projects.

14. <u>Comment</u>

Clean water wastes, for example, fire main wastewater, should not be allowed to dilute wastes from other facilities by mixing the clean water with undesirable wastes in sewer systems as is accomplished in the 300 Area Sewer System.

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Response to Public Comments
TPA Milestone 17-00, Hanford Wastewater Discharges
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Response

We agree that clean water should not be used to dilute a waste. In fact, the dilution of a dangerous waste for the purpose of avoiding regulation, is a violation of the State Dangerous Waste Regulations. No dangerous wastes are being discharged into the 300 Area Process Sewer System.

It must be kept in mind that much of the 300 Area was designed in the 1940s and 1950s. As a result, a significant portion of the 300 Area effluent consisted of clean water addition. This was not added for any dilution purpose, but was standard engineering practice to maintain residual chlorine levels in the storage tanks and to prevent freeze up of the elevated tanks. Unfortunately, this practice resulted in significant volumes of clean water overflows being discharged to the 300 Area Process Sewer System as wastewater. As part of the 300 Area wastewater reduction effort, the majority of this type of wastewater has been eliminated and projects are currently being implemented to eliminate the remainder.

In order to identify potential sources of contaminants to the 300 Area Process Sewer, several surveys during the past 3 years have been conducted. These surveys have resulted in the identification and elimination of many contaminated effluents that were discharged to the 300 Area Process Sewer. These wastewater reduction efforts and source control measures have reduced the potential of a contaminants entering the 300 Area Process Sewer System during normal operations. The wastewater reduction efforts and source control measures have also reduced the potential of hazardous waste from entering the 300 Process Trench in the event of an accident.

In order to determine if one (or a limited number) of contributors to the 300 Area Process Sewer were contributing the majority of the contaminants, the Liquid Effluent Studies (LES) analyzed the 17 major contributors to the 300 Area Process Sewer System. The study provided preliminary indications that the chemical characteristics were relatively consistent among the contributor streams. While not conclusive, the LES indicated that there wasn't a single concentrated waste stream that was being diluted by the addition of other wastewater contributors. More conclusive characterization of the 300 Area Process Sewer contributor streams will be conducted to support the National Pollutant Discharge Elimination System (NPDES) permit application for Project L-045H, "300 Area Treated Effluent Disposal System."

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15. Comment

Wastewater discharges from PFP and PUREX are not included as part of cleanup.

Response

Cleanup of the wastewater discharges from the Plutonium Finishing Plant (PFP) and the Plutonium/Uranium Extraction Plant (PUREX) are addressed in both the Tri-Party Agreement and Consent Order DE91NM-177.

PUREX. All wastewater discharges from PUREX except, Sanitary Sewage, are addressed in the TPA. The respective milestones are as follows:

M-17-20	PUREX Plant Process Condensate (PDD)
M-17-21	PUREX Plant Ammonia Scrubber Condensate (ASD)
M-17-22	PUREX Plant Steam Condensate (SCD)
M-17-23	PUREX Plant Cooling Water (CWL)
M-17-24	PUREX Plant Chemical Sewer (CSL)

Each of the above milestones contains a description of the required cleanup action for each respective stream. The PDD and ASD streams are not generated when PUREX is in stand-by. Discharge of the ASD to the 216-A-36B Crib was stopped in 1987 when it was determined that the effluent was a dangerous waste, as defined in the Washington State Dangerous Waste regulations. Discharge of the PDD to the 216-A-45 Crib was ceased in 1989. A clean out run was performed in 1990 for the purpose of processing the fuel already in the PUREX dissolvers and reducing the source term of radioactive materials throughout the PUREX plant. During these runs, both the PDD and ASD were not disposed to the soil column, but were routed to DST.

It is not anticipated that PUREX will run again, but if this should happen, the PDD and ASD would either be treated (i.e., by Project C-018H, see Milestones M-17-14, M-17-20, M-17-21, and Table 6 of the Consent Order DE91NM-177) and the resultant treated effluent would be discharged in a manner compliant with all State and Federal regulations, or the PDD and ASD would be routed to DST.

The 242-A Evaporator Process Condensate was designated Dangerous Waste. As a result of the designation, the 242-A Evaporator was shut-down and plans for construction of the Liquid Effluent Retention Facility (LERF) were initiated. Construction of the LERF will completed in 1992. The 242-A Evaporator Process Condensate will undergo treatment in the Project C-018H, "242-A Evaporator/PUREX Process Condensate Treatment

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Facility" prior to discharge to the environment. Milestones for the treatment facility are found in M-17-14, M-17-14A through M-17-14D.

The other PUREX liquid effluents (i.e., the CSL, SCD and CWL liquid effluents) are addressed in TPA Milestone M-17-08B as contributors to the 200 Area Treated Effluent Disposal Facility (TEDF). Additionally, the SCD and CWL streams have been minimized, flow to the 216-A-37-2 and 216-A-30 Cribs has ceased, and rerouted to the 216-B-3 Pond System via the Chemical Sewer Line as required by TPA milestone M-17-22A, -23A, and -24A.

Uncontaminated supply-side steam condensate is discharged to numerous steam traps along the steam distribution lines at the Hanford Site. These steam traps are addressed in the Consent Order as Miscellaneous Streams. In addition, PUREX Sanitary Sewage is discharged to a sanitary tile field.

<u>PFP</u>. PFP has four sources of wastewater effluent.

(a) Potentially contaminated wastewater which is discharged to 216-Z-20 Crib, 216-Z-13, -14 and -15 French Drains. The 216-Z-20 Crib is addressed in TPA Milestone M-17-16, and the Consent Order DE 91NM-177. The French Drains are addressed in the Consent Order as Miscellaneous Streams.

(b) Non-contaminated wastewater, which is discharged to the 216-Z-21 Seepage Basin. The 216-Z-21 Seepage Basin is addressed in the Consent Order PFP must submit a 216 permit application for this wastewater by September 1994.

(c) Uncontaminated supply-side steam condensate is discharged to numerous steam traps along the steam distribution lines at the Hanford Site. These steam traps are addressed in the Consent Order as Miscellaneous Streams.

(d) PFP Sanitary Sewage is discharged to 2 septic tanks.

It is the intention of the EPA and Ecology to limit flows of the facilities to as low as possible, considering protection of human health and environment. As a result of M-17-16B, a new flow measuring device was installed in the PFP Wastewater. This flow measuring devise indicates the previous flow rate limit was too high and that a lower discharge rate could be met. Therefore, the flow rate restriction as specified in M-17-16A will be lowered from 160 gpm to 100 gpm.

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TPA Milestone 17-00, Hanford Wastewater Discharges
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16. Comment

Has the three hundred gallon per minute discharge to Ditch U-14 ceased as mandated in the Ecology/DOE Hanford Wastewater Discharges Consent Order?

Response

Yes, the 216-U-14 Ditch surface contamination control water, which was being used to control surface contamination at approximately 300 gpm in the 216-U-14 Ditch, was stopped in February 1992 in accordance with the Consent Order DE 91NM-177 and proposed Milestone M-17-17B. As an alternate means to control surface contamination, clean back-fill was added to the ditch. The Ditch will continue to receive U03/U Plant Wastewater and the 242-S Evaporator Steam Condensate liquid effluent streams, as allowed by TPA milestones M-17-17 and M-17-19, and the Consent Order DE91NM-177, until June 1995. Final remediation of the 216-U-14 Ditch will be performed as part of the 200-UP-2 Operable Unit cleanup.

The cessation of the surface contamination control water was a major accomplishment. The contamination control water flow rate was calculated to be 300 gallons per minute. Ceasing this flow resulted in about a 65% flow reduction to the 216-U-14 Ditch.

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Hanford Tri-Party Agreement
Milestone M-17-00, Hanford Wastewater Discharges
TPA Change Request Number M-17-91-05

Appendix to Response to Public Comments

Discussion of Liquid Effluents
at the Hanford Site
Addressed in TPA Milestone M-17-00

July 1992

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Appendix to Response to Public Comments
Discussion of Liquid Effluents at the Hanford Site
Addressed in TPA Milestone M-17-00
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Introduction

This appendix to the Response to Public Comments received on TPA Change Request Number M-17-91-05, has been compiled so that the public can be better informed about the makeup of the liquid effluents discharged to the soil column at the Hanford Site. This appendix provides a general description of the types of wastewater generated across the Hanford Site. In addition, a stream-by-stream discussion is provided that includes a summary of the milestone commitments, a description of the liquid effluent, and a response to the question "Why does the effluent need to continue?"

General Description

Liquid effluent discharges at the Hanford Site come from facilities necessary to support the restoration and remediation programs and from facilities that are deactivated but not yet decommissioned, decontaminated or dismantled. Typical liquid discharges may originate from:

- Cooling water systems - play an important role in keeping facilities and equipment operating within acceptable safety margins. Cooling water is necessary to protect equipment and workers by removing heat from the system being cooled. Cooling water is used to cool process vessels; condense hazardous vapors before they can escape into the air; provide building air conditioning; cool tanks containing self-heating radioactive liquids; cool air compressors which supply instrument air and other control systems; cool heating ventilation and cooling systems (HVAC) that contribute to negative air pressure gradients that manage potential airborne contamination; cool transfer pumps; and fans that cool vacuum pumps integral to air monitoring systems.

- Heating, ventilation, and air conditioning (HVAC) systems - play a crucial role in preventing the spread of contamination by maintaining airflow from uncontaminated regions into contaminated regions, and exhausting these contaminated regions through high efficiency particulate air (HEPA) filters which trap the airborne contamination. Failure would cause a loss of carefully adjusted, staged negative pressure gradients which ensure confinement of the radioactive materials within the process areas. Without this confinement system, radioactive materials could become airborne and escape into the environment, as well as to the occupied areas of the building.

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- Air monitoring systems - are required to collect samples of air for radionuclide analysis. They are used to monitor the air quality in the facility in order to protect worker health and to monitor environmental releases of airborne radionuclides. These air monitoring systems provide documentation of the extent of radioactive airborne releases to the environment, and warn personnel of dangerous air conditions in the plant. Air monitoring systems have vacuum pumps, which require cooling and seal water. If the vacuum pump seal water were turned off, improper vacuum system operation would preclude accurate sampling of the air within the plant for radionuclide contamination.

- Steam condensates - must continue to be generated to maintain appropriate temperatures in bulk chemical storage tanks, process vessels, instrument air lines, and occupied buildings.

- Process condensates - must be generated at UO3/U Plant in order to process the remainder of uranyl nitrate hexahydrate remaining from the Plutonium/Uranium Extraction Facility (PUREX) operation and to assist in facility decontamination.

- Laundry waste water - must continue to be generated to provide radiation workers with clean clothing to work safely in radiation areas.

- Miscellaneous streams - for the most part consists of raw water, filter backwash, water softener regenerate, and domestic water (i.e., potable water used for drinking, showers, lunchrooms). Raw water must continue to be generated to provide make-up water for decontamination activities and fire suppression water in case of an emergency. Filter Backwash water must continue to be generated to clean the filters that remove suspended solids in the preparation of potable and process water. Water softener regenerate must continue to be generated to provide demineralized water for boiler feed. Potable water must be supplied and sanitary waste water generated by certain facilities. For example, water must be provided for showers to be used by personnel who work in potentially contaminated areas.

The 33 major liquid effluent streams on the Hanford Site are regulated jointly under the Hanford Federal Facility Agreement and Consent Order (commonly called the Tri-Party Agreement) and a Consent Order between Ecology and DOE regarding liquid effluents. The Liquid Effluent Consent Order contains commitments that are consistent with those in the TPA, contains additional

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commitments for these 33 major liquid effluents, and contains commitments for other liquid effluents at the Hanford Site.

Since the signing of the Tri-Party Agreement in May 1989, 12 of the 33 liquid effluent streams have been discontinued and flows have been greatly reduced by application of source controls. The remaining effluent discharges, that will continue to be generated after June 1992 and before the implementation of Best Available Technology (BAT), are required in order to maintain the present level of protection of human health and the environment. If these streams were discontinued, this level of protection would significantly decrease.

Surface and ground water on and near the Hanford Site is monitored to determine the potential effects of operations. Surface water sample results from the Columbia River and off-site water systems (the two possible pathways to members of the public) for radiological and chemical constituents have remained well below Drinking Water Standards.

Table 1 lists the liquid effluent streams included in TPA Milestone M-17, their current or most recent soil column disposal sites, flow restrictions, and commitment dates for BAT/AKART implementation and, where applicable, cease discharge. Dates included in Table 1 for ceasing discharge refer to ceasing discharge to the identified disposal site in accordance with the appropriate interim milestone for that stream.

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Appendix to Response to Public Comments
Discussion of Liquid Effluents at the Hanford Site
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TABLE 1

33 PHASE I AND II EFFLUENT STREAMS
AND TPA MILESTONES

STREAM NAME	TPA MILE-STONE	FLOW LIMIT IN GPM AND EFFECTIVE DATE	DISPOSAL SITE	COMMITMENT DATES	
				IMPL BAT	CEASE DSCHRG*
300 Area Process Wastewater	M-17-06	400 in 12/91	300 Area Process Trenches	12/94	12/94
N Reactor Effluent	M-17-15	2 in 9/91	1325-N LWDF	6/95	6/95
PFP Wastewater	M-17-16	160 in 9/91 75 in 1/94	216-Z-20 Crib	5/94	6/95
UO3/U Plant Wastewater	M-17-17	450 in 9/91 750 (STBL RUN) 250 in 12/92	216-U-14 Ditch	6/95	6/95
242-S Evaporator Steam Condensate	M-17-18	50 in 9/91	216-U-14 Ditch	6/95	6/95
UO3 Plant Process Condensate	M-17-19	10 in 9/91 2 (AFTER STABL RUN)	216-U-17 Crib	6/95	6/95
PUREX Process Condensate (PDD)	M-17-20	0 in 9/91	DST; most recently 216-A-45 Crib	6/95	9/91

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STREAM NAME	TPA MILE-STONE	FLOW LIMIT IN GPM AND EFFECTIVE DATE	DISPOSAL SITE	COMMITMENT DATES	
				IMPL BAT	CEASE DSCHRG*
PUREX Ammonia Scrubber Condensate (ASD)	M-17-21	0 in 9/91	DST; previously 216-A-36B Crib	6/95	9/91
PUREX Steam Condensate (SCD)	M-17-22	0 in 6/92	216-A-30 Crib 216-A-37-2 Crib	6/95	6/92
PUREX Cooling Water (CWL)	M-17-23	0 in 6/92	216-B-3 Pond	6/95	6/92
PUREX Chemical Sewer (CSL) (+SCD+CWL)	M-17-24	600 in 6/92	216-B-3 Pond System	6/95	6/95
B Plant Steam Condensate (BCS)	M-17-25	0 in 9/91	previously 216-B-55 Crib	6/95	9/91
B Plant Process Condensate (BCP)	M-17-26	0 in 9/91	previously 216-B-62 Crib	6/95	9/91
B Plant Chemical Sewer (BCE)	M-17-04	0 in 2/92 to 216-B-63	216-B-3 Pond; recently rerouted from 216-B-63 Trench	6/95	2/92 to 216-B-63 6/95 to B POND
B Plant Cooling Water	M-17-27	Not Specified (NS)	216-B-3 Pond System	10/97	
241 AY/AZ Tank Farm Steam Condensate	M-17-28	0 in 9/91	DST; previously to 216-A-8 Crib	10/97	9/91

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STREAM NAME	TPA MILE-STONE	FLOW LIMIT IN GPM AND EFFECTIVE DATE	DISPOSAL SITE	COMMITMENT DATES	
				IMPL BAT	CEASE DSCHRG*
242-A Evaporator Process Condensate	M-17-29	0 in 9/91	previously 216-A-37-1 Crib	10/94	9/91
242-A Evaporator Cooling Water	M-17-30	NS	216-B-3 Pond System	10/97	
242-A Evaporator Steam Condensate	M-17-31	NS	216-B-3 Pond System	10/97	
241-A Tank Farm Cooling Water	M-17-32	NS	216-B-3 Pond System	10/97	
244-AR Vault Cooling Water	M-17-33	NS	216-B-3 Pond System	10/97	
2724-W Laundry Wastewater	M-17-34	NS	216-W-LN Crib		1/95
183-D Filter Backwash Wastewater	M-17-36	NS	D Pond System	10/97	
284-E Powerplant Wastewater	M-17-37	NS	216-B-3 Pond System	10/97	
284-W Powerplant Wastewater	M-17-38	NS	284-W Powerhouse Pond	6/95	6/95
222-S Laboratory Wastewater	M-17-39	NS	216-S-26 Crib	6/95	6/95
S Plant Wastewater	M-17-40	0 in 10/91	Flow ceased; previously 216-S-10 Ditch		10/91
T-Plant Wastewater	M-17-41	NS	216-T-4-2 Ditch	6/95	6/95

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STREAM NAME	TPA MILE-STONE	FLOW LIMIT IN GPM AND EFFECTIVE DATE	DISPOSAL SITE	COMMITMENT DATES	
				IMPL BAT	CEASE DSCHRG*
T Plant Laboratory Wastewater	M-17-42	NS	216-T-1 Ditch	6/95	6/95
2101-M Laboratory Wastewater	M-17-43	NS	2101-M Pond	6/95	6/95
400 Area Secondary Cooling Water	M-17-44	NS	400 Area Pond System	10/97	
163-N Demineralizer Wastewater	NO MILESTONE, STREAM DISCONTINUED				
209-E Laboratory Wastewater	NO MILESTONE, STREAM DISCONTINUED				

* Cease discharge to the identified disposal site in accordance with the TPA interim milestone

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<u>300 Area Process Waste Water</u> (M-17-06A-E)

a. Milestone Commitment Summary

The 300 Area Process Waste Water is disposed to 300 Area Process Trenches. Proposed milestone M-17-09 requires that the 300 Area Treated Effluent disposal facility (Project L-045H) become operational in December 1994. A continued discharge to the Trenches is planned until the effluent treatment facility becomes operational. Shutting down the facilities that generate flows that contribute the 300 Area Process waste water would require at least 3 years longer than the current Shut-down Plan (e.g., M-17-06C) which emphasizes flow reduction and early implementation of the treatment system.

b. Description of the Effluent

Within the 300 Area facilities, much of the research, development, and demonstration activities which support the cleanup of the Hanford Site are conducted. Some of the work performed cannot be conducted at other locations of the national DOE complex. The 300 Area work which falls into this category includes analytical chemistry which supports characterization of the single and double shell tanks, and chemistry which supports the stabilization of the hydrogen and ferro-cyanide containing storage tanks. In addition, high heat, highly radioactive material (i.e., highly radioactive materials which generate much heat due to radioactive decay) is stored in 300 Area facilities. The majority of flow to the 300 Area Process Trenches is attributable to the operation of the steam plant and heat exchangers for cooling.

Waste water minimization activities have been implemented and the flow rate limited to less than 400 gpm thereby meeting milestone M-17-06A. Waste water discharges to the Trenches have been reduced by greater than 1.7 million gallons a day from approximately 1471 gpm at the beginning of the flow reduction efforts in 1990 to the less than 400 gpm in 1991. An additional flow reduction to 300 gpm is planned for December 1992 as part of the Shut-down plan. Plan are under-way to develop a specific goal and facility modifications for the 1993 reductions. The 1993 reductions will minimize the quantity of effluent requiring processing by the treatment facility.

Most of the flow reductions to date have been achieved through modification of cooling systems to convert them to closed cycle systems. Further reductions planned for 1992 and under development for 1993 will rely on converting similar heat exchangers in other facilities to closed cycle systems.

The effluent treatment facility is scheduled to initiate operation by December 1994 with discharge under an NPDES permit of the treated effluent to the Columbia River. A characterization of the waste water has been submitted

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under Milestone M-17-06B and based on sampling results, it is anticipated the effluent will be designated a non-dangerous waste stream in accordance with WAC 173-303. Operation of the treatment facility will result in a cessation of discharge to the Trenches.

An Expedited Response Action (ERA) was implemented to remove contaminated soil from the trenches. The contaminated soil was removed to prevent migration of contamination to the groundwater. With the removal of most of the contaminated soils and the reduction of effluent discharge which drove some of the contaminants to the groundwater, contamination has been significantly diminished. The final report for the ERA is due by July 1992 (Milestone M-17-06D).

In addition, an updated assessment will be provided in July 1992 (Milestone M-16-06E) on potential environmental impacts from the interim discharge of the waste water to the Trenches.

Other constraints to an immediate shutdown of the waste water includes federal and state requirements regarding: fire safety, potable water, facility heating, and safety cooling requirements for specialized equipment and materials. These requirements would constrain the time allowed for the shut-down of the process trenches.

The fire protection system in the 300 Area requires a storage capacity of 1.3 million gallons of water due to the close proximity of the 300 Area facilities. The fire protection in the 300 Area runs off of the potable water grid. Clean water is pumped from the 315 facility to three water storage tanks near the steam plant. The water is stored in the three above ground storage tanks which utilize steam heat to prevent freezing. In order to maintain clean water chlorination requirements, water from the storage tanks is drained directly into the process sewer so that the water may be replenished with fresh chlorinated water.

The fire department also renews the water supply in the wet fire protection system by draining the lines and hydrants. The water drained from the wet system generally flows into process sewer due to access from storm sewer drains. The water volume requirement to adequately protect the 300 Area is larger than the capacity of both the Hanford and Richland Fire Departments pumper and tanker trucks. In order to maintain proper fire protection an alternative heating source would be required to be designed and fabricated due to the size of the water storage tanks.

The steam plant provides heat, compressed air, and vacuum lines to the 300 Area facilities. The steam plant and potable water systems are the largest contributors to the process sewer. The steam plant provides heat for

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facilities to ensure the pipes in the facilities will not freeze and cause flooding, the steam plant also heats the firewater storage tanks, and pipe freezing would also impair the fire protection system.

c. Why the effluent needs to continue

Requiring 300 Area facilities to not generate waste water would shut-down the majority of 300 Area operations. The 300 Area would be largely uninhabitable due to lack of heating and cooling, as well as unsafe due to lack of fire suppression water, and HVAC systems. In addition to the safety impacts of shutting down the 300 Area, programs that support single shell tank and double shell tank safety would be shut down and 10 of the 31 TPA milestones associated with Hanford Site cleanup would be impacted significantly. A detailed discussion on these impacts is included within the 300 Area Process Trenches Shutdown Plan (Milestone M-17-06C).

<u>N Reactor Effluent</u> (M-17-15)

a. Milestone Commitment Summary

The N Reactor Effluent stream is currently being discharged to the 1325 N Liquid Waste Disposal Facility (LWDF). Proposed milestone M-17-15 requires that discharge of this effluent to the 1325 N LWDF be ceased no later than June 1995. Proposed milestone M-17-15A imposed a flow restriction of 2 gpm on the N Reactor effluent in September 1991 that will remain in effect until flow is rerouted from the LWDF. A plan to reroute this effluent to the Columbia River after EPA approval of a modification of the Hanford Site NPDES permit and implementation of BAT/AKART was submitted in January 1992, in accordance with proposed milestone M-17-15C. A request for modification of the Hanford Site NPDES permit was submitted in June 1992, in accordance with proposed milestone M-17-15D.

b. Description of the Effluent

Continued discharge of plant effluents to the 1325N Liquid Waste Disposal Facility can be categorized as originating from either "normal" or "upset" conditions.

Normal operating conditions:

The normal conditions which contribute effluents being discharged to the 1325N LWDF are those attributed to:

(a) decontamination activities using high pressure water jets

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(b) draining of water from the fuel storage basin

(c) draining of rain water from the 109N/D Reactor roof drains

Contributors (a) and (b) are an integral part of the mission's objective to place N Reactor in a configuration requiring the least amount of monitoring and surveillance which will result in radiation and contamination levels As Low as Reasonable Achievable (ALARA). Contributor (c) is a low occurrence event.

Upset operating conditions:

The upset conditions which would cause effluents to be discharged to the soil column are those attributed to:

(a) pressurized pipe break or rupture in an area draining into the radioactive drain system

(b) fire protection system activation in an area draining into the radioactive drain system

These conditions are very unlikely to occur. Not draining this effluent from within the facility could compromise worker safety, spread radiological contamination to areas which are not contaminated, short circuit electrical switch-gear providing power to essential services to building occupants (i.e. HVAC) and environmental monitoring systems.

c. Why the effluent needs to continue

Activities that contribute, or will contribute in the future to the N Reactor liquid effluent under normal conditions are those: (1) associated with natural events (stormwater), (2) decontamination activities required to control personnel radiation exposures and surface contamination to be within ALARA guidelines, and (3) N Reactor shutdown activities, starting in FY 1994, resulting in the draining of certain liquid inventories in a time frame not to compromise shutdown completion by 1999. These activities are required so that the 100-NR-1 and 100-NR-2 Operable Unit Work Schedule is not delayed.

Activities that contribute to the N Reactor liquid effluent under upset operating conditions are very unlikely to occur. In the unlikely event of an upset condition occurring at N Reactor, failure to drain the liquid effluent from within the facility could compromise worker safety, spread radiological contamination to areas which are not contaminated, short circuit electrical switch-gear providing power to essential services to building occupants (i.e. lighting, HVAC), compromise environmental monitoring systems, and could

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result in the uncontrolled and unmonitored release of radionuclides and other contaminants to the environment.

163-N Demineralizer Waste Water

This stream has been eliminated and has no proposed milestones.

Plutonium Finishing Plant (PFP) Waste Water (M-17-16)

a. Milestone Commitment Summary

Waste water from the PFP is currently discharged to the 216-Z-20 Crib. Proposed milestone M-17-16 requires that discharge of the PFP waste water to the 216-Z-20 Crib be discontinued in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this effluent stream by June 1995 and flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

Proposed milestone M-17-16A imposed a flow restriction on the PFP waste water stream of less than or equal to 160 gpm in September 1991. Proposed milestone M-17-16D requires implementation of closed loop cooling for Buildings 291-Z, 234-5Z, and 236-Z (as provided by Project C-040), implementation of the PFP liquid low-level waste system (Project B-680H), and limitation of flow rate of the PFP waste water to the 216-Z-20 Crib to less than 75 gpm by January 1994.

b. Description of the Effluent

The majority of the PFP Waste Water being discharged to the 216-Z-20 Crib consists of air compressor cooling water and vacuum pump seal water. Additional sources of waste water comes from two of the PFP process areas, the Plutonium Reclamation Facility (PRF) and the Remote Mechanical C Line (RMC). Operation of the PRF will temporarily increase the waste water flow to the crib by an average of 13 GPM during the planned 40 week PRF campaign. All of the PRF streams are predominately non-contact equipment cooling water that have a very low potential for being contaminated. The RMC Line will be modified so as to not produce any additional waste water during the planned 35 week RMC campaign. Upon completion of the stabilization and clean out activities to improve plant safety, processing will be suspended.

Both PRF and RMC processes are necessary for stabilization and clean out activities to improve the long term safety of the plant, its personnel, and the environment. Plutonium bearing materials, nitrate solution and process

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scrap will be converted to the more stable plutonium oxide form instead of the weapon grade metal once produced at the plant.

c. Why the Effluent Needs to Continue

Although many steps have been taken to reduce the flow to the 216-Z-20 Crib, the generation of some waste water is necessary for the safe and normal operation of the facility. If the water serving the air compressors were turned off, ventilation control instruments throughout the plant would cease to function, causing a loss of control of ventilation equipment such as fans and dampers. This in turn would cause a loss of carefully adjusted staged negative pressure gradients which ensure confinement of the radioactive materials within the process areas. Without this confinement system, radioactive materials could be released from the plant into the environment.

Similarly, if the vacuum pump seal water were turned off, improper vacuum system operation would preclude accurate sampling of the air within the plant for radionuclide contamination, increasing the risk to plant personnel.

Failure to process materials stored in the PRF tankage will most likely result in the material leaking onto the process canyon floor due to the long term corrosivity of the solutions. Material clean up requires manned entry into the process canyon and increased exposure to personnel. Process sludges that are not stabilized may vent radioactive off-gases into the plant and increase safety risks to personnel. Material leakage also loses the first level of confinement for preventing airborne and liquid releases which increases the risk to the environment.

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<u>UO_3/U Plant Waste Water</u> (M-17-17)

a. Milestone Commitment Summary

Waste water from the UO3/U Plant is currently discharged to the 216-U-14 ditch. Proposed milestone M-17-17 requires that discharge of the UO3/U Plant Waste Water to the 216-U-14 ditch be discontinued in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this effluent stream by June 1995 and flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

Discharge of the UO3/U Plant Waste Water to the 216-U-14 ditch was limited to less than 450 gpm in September 1991 in accordance with proposed milestone M-17-17A. During the Stabilization run the discharge of the waste water will be limited to 750 gpm with the limit reverting to 450 gpm after the run is completed. The final discharge limit for this waste water stream will occur

in December 1992 when the flow will be limited to 250 gpm in accordance with proposed milestone M-17-17D.

b. Description of the Effluent

The UO_3/U Plant waste water is generated from the cooling water and steam heating utility systems and is needed to support the operations and safe standby configuration of the UO_3 Plant.

The upcoming operation of the UO_3 Plant (i.e, the Stabilization Run), scheduled for September 1992, is necessary to stabilize and prepare materials for long-term storage and to support material clean-out activities needed to improve the safety posture of the PUREX and UO_3 facilities. The remaining inventory of corrosive uranyl nitrate hexahydrate (UNH) solution (liquid), currently stored at PUREX and UO_3 Plants, will be concentrated and calcined at UO_3 Plant to produce uranium trioxide (UO_3) powder. Uranium trioxide is a stable form (solid) suitable for extended storage.

After the stabilization run, the facility will be placed into a standby condition until a decision is made on the future operations at PUREX. The facility will be maintained with a minimum staff.

The UO_3 Plant has outdoor paved areas over which material, supplies, and equipment are moved between processing cells. Some of the paved areas are considered to be potentially contaminated. The rain runoff from the paved areas is collected in sumps and may become slightly contaminated with uranium residual from prior plant operations. Periodically, the accumulated liquid is processed through a recycle concentrator which employs steam as a heat source. The resultant steam condensate (from the concentrator's heat exchange coil) becomes a waste water stream source. The vessel vent system utilizes a steam jet to support the concentration process. Cooling water is used to condense water vapor and steam produced during the process. The cooling water and condensed steam also become waste water.

Air compressors that supply the instrument air for ventilation control and instrumentation necessary for essential plant monitoring systems require cooling water for removal of compression heat to prevent thermal damage to the piston rings and seals. The cooling water and regeneration of the desiccant that removes moisture from the air both become waste water sources.

In addition, the 224-U and 224-UA building complex, liquid containing tanks, and outdoor piping require steam heat during the winter. The steam condensate from these sources becomes waste water. Other contributors include rain runoff from the 211-U tank area and building heating/ventilation for the 271-U office area.

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The plan to eliminate the ground discharge of this stream is to reroute the flow to the Treated Effluent Disposal Facility in June 1995. Other options for rerouting or eliminating this stream were considered in a study that was completed in May 1992 (proposed milestone M-17-17C). Implementation of the rerouting options during the interim period do not appear feasible because of cost and time constraints imposed by required Federal budget authorization schedules.

c. Why the Effluent Needs to Continue

The primary systems that need to remain in operation after the stabilization run are the building ventilation, vessel vent system, and liquid waste processing system. The past processing of uranium has left some areas in the buildings with minor contamination problems. Uranium from dust and uranyl nitrate hexahydrate has permeated into concrete pores, building joints, and other crevices; in addition, while the building is in standby condition prior to the future plans decision, tanks and piping will contain residual uranium from processing. Radon gas, a daughter product from the uranium radioisotope decay, would build up in non-ventilated areas, creating a potential health risk to the plant operators. The building ventilation fans must continuously operate to keep the radon gas concentrations down within air quality limits. Waste water sources in the ventilation systems at the UO_3 Plant are air washers for cooling, condensate from heating coils, and water seals on some rotating equipment. The ventilation systems are partially controlled by air actuated dampers and other control devices.

The facility will need to continue discharging some water until a solution is found to eliminate the need for processing accumulated rainwater and the building has been decontaminated. The water required to operate the ventilation system and vessel vent systems is a personnel safety issue and would require a suitable alternative prior to reduction/elimination of these flows.

<u>242-S Evaporator Steam Condensate</u> (M-17-18)

a. Milestone Commitment Summary

Proposed milestone M-17-18 requires that discharge of the 242-S Evaporator Steam Condensate stream to the 216-U-14 ditch be discontinued in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this effluent stream by June 1995 and flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-18A imposed a flow restriction of 50 gpm on this effluent effective September 1991. Proposed milestone M-17-18B requires replacement of the air sample pump

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and elimination of the seal water contribution to the 242-S Evaporator Steam Condensate by September 1992.

The 242-S Evaporator Steam Condensate is currently disposed to 216-U-14 ditch. The current nominal flow rate is between 10 and 15 gallons per minute (gpm). This flow has been reduced by the installation of alternate air compressors using closed loop cooling (currently in final testing) and the elimination of contamination control water. This is significantly below the 50 gpm proposed for the stream in milestone M-17-18A.

b. Description of the Effluent

The steam condensate effluent from this facility consists of several non-contact cooling water and steam condensate contributors. These include air compressor cooling water, air sample pump seal water, and HVAC system steam condensate.

The 242-S Evaporator is a shutdown tank waste evaporator facility that also serves significant control and support functions to the 200 West Area Tank Farms. A manned control room is located at the facility that serves the overall tank farms, including significant alarm and control circuitry associated with the 241-SY Tank Farm (including Tank 241-SY-101). The facility also provides support services to the tank farms including steam and control air. These needs are essential to safe operation of tank farm control and indication instrumentation.

c. Why the Effluent Needs to Continue

The compressed air is essential for safe operation of tank farm indication instrumentation (including level and pressure measurement). Loss of compressed air would result in loss of instrumentation that has been designated "Operational Safety Requirement" Instrumentation from a nuclear safety perspective. The lost instrumentation would effect the 242-S Evaporator, along with 241-SY and other tank farms. These compressors require cooling water (currently in a once through fashion) to maintain the equipment operational. The compressors will be replaced with compressors that utilize a closed loop cooling system.

Air sample pump seal water is generated as part of the 242-S Evaporator atmosphere control system. A sample pump is used to draw air from the various rooms in the facility through monitoring and control equipment. The indications from this system are used to track the exposure conditions in each part of the facility, as there are radioactive materials still present. If this pump were not utilized, then facility conditions would not be known, and a potential release to the HVAC system would go unnoticed. This pump will be

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replaced by 9/92 with a vacuum pump that does not utilize seal water, as agreed to in TPA milestone M-17-18.

The HVAC system is also a contributor to this stream when steam heating or evaporative cooling is used for building temperature controls. The use of heating and cooling equipment is seasonally based on the outside ambient air temperature. Maintenance of adequate temperature control is essential for safety and health reasons, as well as to prevent broken water pipes and other equipment failures. No activities are carried out in the HVAC room that would cause the introduction of contaminants to the streams.

Continued use of the 242-S Evaporator Steam Condensate stream is required for safe operation of the Tank Farms for the reasons discussed above. The overall continued operation of the 242-S Evaporator steam condensate stream is essential for safe Tank Farm operations. Significant actions are being taken to reduce the stream until final treatment is in place.

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<u>UO_3 Plant Process Condensate</u> (M-17-19)

a. Milestone Commitment Summary

Process Condensate from the UO3 Plant is currently discharged to the 216-U-17 Crib. Proposed milestone M-17-19 requires that discharge of this effluent stream to the 216-U-17 Crib be discontinued in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this effluent stream by June 1995 and flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

Discharge of the UO3 Plant Process Condensate was limited to less than or equal to 10 gpm in September 1991 in accordance with proposed milestone M-17-19A. After the completion of the UO3/U Plant Stabilization Run, the discharge of the process condensate will be limited to 2 gpm.

b. Description of the Effluent

The UO_3 Plant Process Condensate stream is generated from two sources: a.) the collection of water vapor resulting from the processing of uranyl nitrate hexahydrate (UNH) solution, which will be generated during the stabilization run; and b.) the condensate from the reprocessing of water that is collected in sumps within the designated radiation zones. The water vapor from these two sources is then condensed, sampled, analyzed, neutralized, and discharged to the 216-U-17 Crib.

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During processing, the UNH solution is concentrated by evaporation of water to 100% UNH and calcined to denitrate the material into uranium trioxide, nitrogen oxides, and water vapor. The water vapor is removed from the process equipment with vacuum from steam jets. The process water vapor and steam are condensed in heat exchangers to become the primary source of water to the crib during the plant operation.

The UNH solution is a residual by-product from the processing of irradiated nuclear fuel elements. The uranium that is recovered in the PUREX process is normally transported to the UO_3 plant for conversion to the oxide (UO_3) form.

The UNH solution is acidic and is a corrosive liquid material. The nitrate ion in the solution is a strong oxidizer that is reactive with organic materials. The uranium isotopes emit alpha particles and one of the daughter products is radon gas.

UO_3 powder is a valuable commodity that is mined and consumed worldwide for electrical power. The wasting of this mineral would require the eventual replacement by mining from a natural deposit.

The water collected in the sumps is from rain water runoff from paved areas around the UO_3 Plant, wash down water, steam condensate from tank heating and piping heat trace, fire protection system testing water, and other miscellaneous sources in the radiation protection zones. The water is pumped from the sumps to a recycle concentrator. The recycle concentrator is steam heated and the overhead water vapor is condensed, neutralized, and discharged to the crib. The processing and disposal of the UO3 Plant Process Condensate needs to continue until June 1995, when Project W-049H will be constructed and in operation.

The Hanford Site has five options for the handling and storage of the liquid UNH solution. These options are:

1. Leave in the current storage tanks.
2. Ship to another site for recycling.
3. Bury in concrete grout.
4. Store in Double Shell Tanks.
5. Convert the UNH to solid UO_3 and nitric acid.

The first option is not acceptable. The solution will eventually corrode the storage tanks and become a dangerous waste spill. In addition, the material would be classified as solid waste being accumulated speculatively (WAC 173-303-016). The DOE could be required to apply annually for a variance to the storage requirements in the Washington State Dangerous Waste Code.

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At the present time no other facility within the United States is authorized to process the UNH solution which negates the second option. The Savannah River Facility is not operating and could require an upgrading program and an Environmental Impact Statement (EIS) to restart the process. Three commercial companies in the United States (Illinois, Oklahoma, and New Mexico) have the process capability to recover the uranium, but are not licensed to process slightly enriched uranium. The licensing process may take several years and the profits may not be sufficient to attract commercial interest.

For the third option, the UNH solution can be neutralized, mixed with concrete, and buried at Hanford with current government authorization. It is the only immediate viable disposal alternative for the UO_3 powder without operating the plant. The amount of concrete would be large in volume and have a high content of nitrate ion. Nitrates make concrete more leachable and entombing the uranium on-site would create a permanent additional source for radon gas at Hanford. The grouting of the UNH solution would create an additional disposal site that would require long term monitoring.

Finally, the existing Double Shell Tanks (DST) do not have sufficient storage capacity, except under emergency conditions, for receiving the current inventory of UNH. An additional tank would be required. Several years would be needed for design and construction. This storage option would only delay the eventual disposal of the material.

The operation of the plant would recover both UO_3 powder and nitric acid as usable and salable products. The uranium would be in a stable solid form that would have a low probability of being released to the environment. The radiation levels can be more easily surveyed as a solid. The total weight of "Dangerous Waste" material would be reduced. Less energy and natural resources would be consumed. The processing of UNH at Hanford would be the lowest cost alternative.

c. Why the Effluent Needs to Continue

The UNH must be processed to stabilize this highly acidic and corrosive liquid into the stable, non-corrosive UO3 powder. The UO_3 powder is the safest and most cost effective method of stabilization. The stabilization provides a usable raw material that can be sold. It also eliminates a buried source of radon gas at the Hanford site.

The UO3 Plant Process Condensate must be generated in order to maintain the plant in a safe configuration during the Stabilization Run. Generation of the process condensate is required to maintain proper vessel vent control in the waste concentrator and the process tanks. If these systems failed it could

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cause an uncontrolled release of radionuclides to the environment and pose a hazard to workers.

In addition, the facility will need to continue discharging some water until a solution is found to eliminate the need for processing accumulated rainwater and water generated from the radiation zone housekeeping activities and post-stabilization campaign cleanout of residual uranium. Any system or method to reduce or eliminate rainwater processing will likely require more than two years to design and construct. The UO3 Process Condensate will be re-routed to Project W-049H in 1995.

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PUREX Process Condensate (PDD) (M-17-20)

a. Milestone Commitment Summary

Disposal of the PDD into the 216-A-45 Crib was ceased in 1989 and flow was re-routed to the Double Shell Tanks. Proposed milestone M-17-20 requires implementation of BAT/AKART for this effluent stream by June 1995. Proposed milestone M-17-20 also precludes disposal of this effluent to the soil column until after BAT/AKART is implemented as part of 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H).

b. Description of the Effluent

The PDD is not generated in the current operational status of PUREX.

c. Why the Effluent Needs to Continue

The PDD is not generated in the current operational status of PUREX. The cease discharge date of September 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-A-45 Crib.

PUREX Ammonia Scrubber Condensate (ASD) (M-17-21)

a. Milestone Commitment Summary

Proposed milestone M-17-21 precludes disposal of this effluent to the soil column until after BAT/AKART is implemented as part of 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H).

b. Description of the Effluent

The disposal of this stream into the 216-A-36B Crib was ceased in 1987 and flow was re-routed to Double Shell Tanks.

c. Why the Effluent Needs to Continue

The ASD is not generated in the current operational status of PUREX. The cease discharge date of September 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-A-36B Crib.

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<u>PUREX Steam Condensate (SCD)</u> (M-17-22)

a. Milestone Commitment Summary

This effluent stream previously discharged to the 216-A-30 and 216-A-37-2 Cribs. Discharge to these disposal sites was ceased and re-routed to the 216-B-3 Pond system via the PUREX Chemical Sewer in June 1992.

b. Description of the Effluent

The SCD has eliminated all major waste water contributors, but two intermittent contributors to the SCD remain. The first contributor is steam condensate from the HEPA filter building. During the winter, steam is used to heat the final HEPA filter bank for the Main Stack exhaust. As the steam cools, it condenses into water (i.e., steam condensate). This source of steam condensate will generate about 100,000 gallons per year. The filters are heated to prevent condensation of the warm moist air from the building onto the filter media.

The second (potential) contributor is steam condensate from a nonhazardous waste concentrator. This concentrator would reduce the volume of waste being sent to underground storage and save the space for other uses.

The remaining SCD flow resulting from these two contributor streams will be diverted to the 216-A-42 Retention Basin for discharge to the 216-B-3 Pond system via the PUREX Chemical Sewer (CSL) by 6/92.

c. Why the Effluent Needs to Continue

If HEPA filters become moistened, their filtration efficiency is degraded, thereby, potentially resulting in an increase of radionuclides being released

into the environment and increasing personnel exposure by requiring more frequent filter change-outs. The second (potential) contributor is steam condensate from a nonhazardous waste concentrator. This concentrator would reduce the volume of waste being sent to underground storage and save the space for other uses. The remaining SCD flow resulting from these two contributor streams will be diverted to the 216-A-42 Retention Basin for discharge to the 216-B-3 Pond system via the PUREX Chemical Sewer (CSL) by 6/92.

<u>PUREX Cooling Water (CWL)</u> (M-17-23)

a. Milestone Commitment Summary

Cooling Water from the PUREX Plant is currently being discharged to the 216-B-3 Pond system. This effluent stream was re-routed to the PUREX Chemical Sewer (CSL) in June 1992 in accordance with proposed milestone M-17-23A.

b. Description of the Effluent

The CWL has been reduced to approximately 40 gpm from two sources: the seal and cooling water for the PUREX canyon building (i.e., the 202-A Building) sample vacuum pump and the cooling water for the 292-AB Building (Main Stack) sample vacuum pump. The PUREX canyon building vacuum pump provides for radiation monitoring for personnel protection and required environmental samples, and the Main Stack vacuum pump also provides for required environmental samples.

The first contributor will be rerouted to the CSL and the second will be eliminated by the installation of a closed-loop cooling system on the 292-AB Building sample vacuum pump by June 1992. Two potential intermittent contributors are cooling water for the 2711-A Building air dryers and seal/cooling water for the N-Cell transfer vacuum pumps. These pieces of equipment will be operated occasionally to maintain their operability and to make solution transfers between tanks within the PUREX facility if necessary.

c. Why the Effluent Needs to Continue

The CWL must continue because it cools crucial equipment in the air monitoring system that is used to monitor the air quality in the facility in order to protect worker health and to monitor environmental releases of airborne radionuclides. The air monitoring system provides documentation of the extent of radioactive airborne releases to the environment, and warns personnel of dangerous air conditions in the plant.

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PUREX Chemical Sewer (CSL) (M-17-24)

a. Milestone Commitment Summary

The CSL is currently disposed to 216-B-3 Pond system. Proposed milestone M-17-24 requires that discharge of the CSL to the 216-B-3 Pond system be discontinued in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on the CSL by June 1995 and flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-24A imposes a flow restriction of 600 gpm on the combined CSL, SCD, and CWL stream in June 1992.

b. Description of the Effluent

One of the contributors to the CSL is the overflow effluent from the 2901-A Sanitary Water High Tank. This tank must remain full to provide an adequate supply of fire fighting water. The method of keeping the tank full produces an overflow stream of clean water.

The PUREX canyon building contains significant quantities of radioactive contamination which can easily become airborne and thereby escape into the environment, as well as the occupied areas of the building. The heating, ventilation, and air conditioning (HVAC) system in the PUREX canyon building plays a crucial role in preventing contamination spreads by maintaining negative pressure in the building (i.e., air flows from uncontaminated regions of the building into contaminated regions), and exhausting contaminated air through high efficiency particulate air (HEPA) filters, which trap the airborne contamination.

The ventilation air supply system generates a low-volume effluent which feeds the CSL. Condensed steam from heating the air also flows into the CSL. Air compressors provide the instrument air which controls the dampers necessary for ventilation control. The non-contact cooling water from the air compressors is another contributor to the CSL.

The PUREX plant has extensive air monitoring systems, which require vacuum pumps. These pumps require cooling and seal water, which does or will flow to the CSL. These air monitoring systems provide documentation of the extent of radioactive airborne releases to the environment, and warn personnel of dangerous air conditions in the plant.

Like any safe chemical plant, PUREX has many safety showers, which must be tested to assure operability. The test water from many of these safety showers drains into the CSL.

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c. Why the Effluent Needs to Continue

Although steps have been taken to decrease the flow rate of the CSL, generation of this stream must continue in order to protect the health and safety of the workers and the environment. The CSL receives wastewater that must be generated in order to help prevent operating the facility in an unsafe condition (e.g., without fire suppression water), in order to control and monitor discharge of radionuclides to the environment (e.g., the HVAC system and air monitoring system), and contributes to worker safety with the operation of safety showers.

Therefore, discontinuing the CSL would greatly increase the hazards posed to the PUREX plant personnel and the environment.

PUREX Liquid Effluent Streams			
	Chemical Sewer	Cooling Water	Steam Condensate
Flow rates in 1990 (gpm) (WHC-EP-0342)	470	3200	260
Combined Flow Limit in M-17 (gpm) (Effective June 30, 1992)	600		

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<u>B Plant Steam Condensate (BCS)</u> (M-17-25)

a. Milestone Commitment Summary

Disposal of the BCS into the 216-B-55 Crib was ceased in 1990. Proposed milestone M-17-25 requires implementation of BAT/AKART for this effluent stream by June 1995. The BCS is contained within the scope of the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-25 also precludes disposal of the BCS to the soil column until after BAT/AKART is implemented. The cease discharge date of August 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-B-55 Crib until after BAT/AKART is approved by the EPA and Ecology and implemented, the Sampling and Analysis Plan (SAP) is approved, and if EPA and Ecology agree that the discharge is supported by an environmental impact assessment.

b. Description of the Effluent

Operation of the Low-Level Waste Concentrator generates both B Plant Steam Condensate (BCS) and Process Condensate (BCP). The BCS is not generated in the current plant operational status, and will not be generated until the Low-Level Waste Concentrator is operated. The BCS consists of spent steam used to supply heat to the E-23-3 Concentrator. Operation of the Concentrator itself is vital for waste minimization and continued safe storage of the WESF cesium and strontium capsules in the facility's pool cells. The Concentrator is a part of the WESF contingency plan in the event of a capsule leak in the pool cells and is operated to reduce the volume of low-level waste generated at B Plant and WESF due to on-going operations required just to support and manage the radiological inventory at WESF and B Plant. In addition, due to the current capacity issues of Double-Shell Tanks in the Tank Farms storage areas, operation of the Low-Level Waste Concentrator is even more essential to waste volume reductions.

c. Why the Effluent Needs to Continue

The BCS is not generated in the current operational configuration of B Plant.

<u>B Plant Process Condensate (BCP)</u> (M-17-26)

a. Milestone Commitment Summary

Disposal of the BCP into the 216-B-62 Crib was ceased in 1986 and routed to Double Shell Tanks. Proposed milestone M-17-08B requires implementation of BAT/AKART for this effluent stream by June 1995. The BCP is contained within the scope of the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-26 also precludes disposal of the BCP to the soil column until after BAT/AKART is implemented. The cease discharge date of September 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-B-62 Crib until after BAT/AKART is approved by the EPA and Ecology and implemented, the Sampling and Analysis Plan (SAP) is approved, and if supported by an environmental impact assessment that has been approved by the EPA and Ecology.

b. Description of the Effluent

Operation of the B Plant Low-Level Waste Concentrator generates BCP. When the B Plant concentrator is not in operation, the accumulated concentrator feed stream waste is transferred to the DSTs and the BCP is not generated. The Concentrator feed is composed of steam condensate from Heating, Ventilation,

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and Air Conditioning (HVAC) units and room heaters, sanitary water from safety showers, and general housekeeping activities in the B Plant/ WESF facility.

c. Why the Effluent Needs to Continue

The BCP is not generated in the current operational configuration of B Plant.

<u>B-Plant Chemical Sewer (BCE)</u> (M-17-04)

a. Milestone Commitment Summary

The discharge of the BCE into the 216-B-63 Trench was ceased in February 1992 (proposed M-17-04B) and the effluent has been re-routed to the 216-B-3 Pond system via the B Plant Cooling Water. Proposed milestone M-17-04 requires that the discharge of the BCE to the 216-B-3 Pond system be ceased in June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on the BCE by June 1995 and BCE flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

b. Description of the Effluent

The BCE is an active stream which supports operations at B Plant/WESF. A major portion of the stream is the discharge of water used to cool air compressors for process air at B Plant/WESF and instrument air at B Plant. In addition, a portion of this stream also results from the production of demineralized water for the safe handling and storage of radiological inventories in B Plant and WESF.

The BCE stream is now combined with the B Plant Cooling Water stream as a result of the completion of TPA milestone M-17-04B. This combined stream is discharge to the 216-B-3 Pond during this interim period until the start-up of the Treated Effluent Disposal System planned by June 1995, as outlined in the TPA Consent Order.

c. Why the Effluent Needs to Continue

This stream needs to continue to maintain operable systems used for containment of radionuclides to prevent uncontrolled releases to the environment and ensure worker safety.

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<u>B Plant Cooling Water</u> (M-17-27)

a. Milestone Commitment Summary

The B Plant Cooling Water is currently being discharged to the 216-B-3 Pond System. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations.

The current combined flow rate for the B Plant Cooling Water and B Plant Chemical Sewer streams is approximately 1600 to 1700 gallons per minute to the 216-B-3 Pond.

b. Description of the Effluent

The B Plant Cooling Water stream is an active stream which supports operations at B Plant/ WESF. This stream will continue to receive discharge from the B Plant Chemical Sewer stream as defined in TPA milestone M-17-04B until start-up of the Treated Effluent Disposal System planned by June 1995.

c. Why the Effluent Needs to Continue

Continued discharge of this stream is necessary to protect equipment and workers by removing heat from (i.e., cooling) process tanks in the 221-B Building and from cooling stored Cesium capsules in the WESF pool cells.

<u>AY/AZ Tank Farm Steam Condensate</u> (M-17-28)

a. Milestone Commitment Summary

The AY/AZ Tank Farm Steam Condensate was previously discharged to the 216-A-08 Crib. The cease discharge date of September 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-A-08 Crib until after BAT/AKART is approved by the EPA and Ecology and implemented, the Sampling and Analysis Plan (SAP) is approved, and if supported by an environmental impact assessment agreed to by the EPA and Ecology.

b. Description of the Effluent

The steam condensate from the steam heating coils in the AY/AZ Tank Farm is routed for discharge into the Double Shell Tanks and is not being discharged to the environment.

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c. Why the Effluent Needs to Continue

The AY/AZ Tank Farm Steam Condensate is not generated in the current operation configuration of the Double Shell Tanks.

<u>242-A Evaporator Process Condensate</u> (M-17-29)

a. Milestone Commitment Summary

The process condensate from the 242-A Evaporator is not being generated because the 242-A Evaporator is undergoing life extension maintenance. Disposal of the 242-A Evaporator process condensate into the 216-A-37-1 Crib was discontinued in 1989 when the Evaporator was shutdown. The cease discharge date of September 1991 was included as an M-17 interim milestone in order to provide assurances that discharge would not resume to the 216-A-37-1 Crib.

Proposed milestone M-17-29 requires implementation of BAT/AKART for this effluent stream by October 1994 and precludes disposal to the soil column until after BAT/AKART is implemented. When the Evaporator resumes operations, this effluent will be routed to the Liquid Effluent Retention Facility (Project W-105) (LERF) for storage and eventual processing in the 242-A Evaporator/PUREX Plant Condensate Treatment Facility (Project C-018H).

Project C-018H will provide BAT/AKART treatment for this stream. When C-018H is completed and operational, it will treat the process condensate stored in LERF, as well as receiving newly produced process condensate directly from the 242-A Evaporator. The treatment facility will discharge into a land disposal facility after obtaining a State Waste Discharge Permit pursuant to the terms and conditions of WAC 173-216.

b. Description of the Effluent

The purpose of the 242-A Evaporator is to concentrate liquid wastes which are stored in the Double-Shell Tanks. It uses evaporative concentration, via steam heat to separate DST waste into a vapor, which when condensed becomes the process condensate, and a liquid (slurry) phase, which is returned to the DST.

When DST waste is pumped into the 242-A Evaporator from one of the DSTs, it enters a reboiler where it is heated to a specific temperature using non-contact steam which is contained within steel tubes. This non-contact steam, which when condensed, becomes a major contributor to the 242-A Evaporator Steam Condensate liquid effluent. The heated DST waste is then discharged

from the reboiler into a vapor-liquid separator which is operated at a reduced pressure. The reduced pressure of the vapor-liquid separator causes a fraction of the heated DST waste to flash to vapor while the remaining liquid is recirculated, concentrated, and eventually routed back to a DST. The process vapors from the separator are filtered and then condensed forming the major contributor to the 242-A Process Condensate liquid effluent in a series of condensers which use non-contact, raw water for cooling. The non-contact cooling water become a major contributor to the 242-A Evaporator Cooling Water effluent.

c. Why the Effluent Needs to Continue

Operation of the 242-A Evaporator is critical to the overall Tank Waste Remediation System. The evaporator concentrates existing wastes that must be stored in the Double Shell Tanks (DSTs), and is necessary to alleviate the already critical storage shortage in the DSTs. Inability to operate this facility would lead to halting significant operations including Single-Shell Tank stabilization, 222-S Laboratory operations (including SST characterization work), and discontinuing safety system discharges from operational facilities (i.e. B-Plant, T-Plant, PUREX, PFP, and 340 Facilities).

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<u>242-A Evaporator Cooling Water</u> (M-17-30)

a. Milestone Commitment Summary

The cooling water from the 242-A Evaporator is currently being discharged to the 216-B-3 Pond System. The current (shutdown/maintenance mode) stream flow rate is 10 to 12 gallons per minute. When the 242-A Evaporator is operational (concentrating waste), the combined flow rate of all the cooling water contributors is a approximately 2,700 gal/minute.

Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations. Continued discharge of this stream until BAT/AKART is implemented is essential to the operation of the DST system and overall tank waste remediation at Hanford.

b. Description of the Effluent

The cooling water stream consists of several contributors, with the condenser cooling water being a majority of the flow. The condenser cooling water is a once-through, non-contact cooling water. Separate streams of cooling water

exist for the main condenser and the secondary condensers (inner and outer condensers).

Additional contributors are non-contact raw water and steam condensates from support equipment. The condenser cooling water goes through a sampler and monitor, and then the combined flow is discharged to the 216-B-3 Pond. The cooling water is maintained at a higher pressure than the condensate in order to preclude contamination of the cooling water from tube leaks. However, in the unlikely event that the cooling water becomes contaminated, the evaporator is shut down.

c. Why the Effluent Needs to Continue

Operation of the 242-A Evaporator is critical to the overall Tank Waste Remediation System. The evaporator concentrates existing wastes that must be stored in the Double Shell Tanks (DSTs), and is necessary to alleviate the already critical storage shortage in the DSTs. Inability to operate this facility would lead to halting significant operations including Single-Shell Tank stabilization, 222-S Laboratory operations (including SST characterization work), and discontinuing safety system discharges from operational facilities (i.e. B-Plant, T-Plant, PUREX, PFP, and 340 Facilities).

<u>242-A Evaporator Steam Condensate</u> (M-17-31)

a. Milestone Commitment Summary

The Steam Condensate from the 242-A Evaporator is discharged to the 216-B-3 Pond System. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations. The current stream flow rate is zero, due to the 242-A Evaporator facility being shutdown for life extension upgrades. When the 242-A Evaporator is operational (concentrating waste), the steam condensate flow rate is approximately 60 to 70 gal/minute.

b. Description of the Effluent

The steam condensate stream consists of several contributors, with the main contribution coming from the re-boiler steam condensate. The re-boiler utilizes low pressure steam to heat the tank waste. The waste is then introduced into the evaporator vessel, where a significant portion of the water and volatiles vaporize. These are then removed as process condensate,

and the reduced volume of tank waste is returned to the DSTs. The 242-A Evaporator cannot operate without the re-boiler and its associated steam.

Additional contributors to this stream are non-contact streams that include steam strainer condensate, steam separator condensate and strainer blow down, pressure control valve seal water, water filter catch pan drainage, and sampler cooler raw water. The combined stream flow is sampled and monitored for radioactive contamination and is discharged to the 207-A Retention Basin. The steam condensate is then sampled at the 207-A basin and verified as acceptable prior to being discharged to the 216-B-3 Pond.

c. Why the Effluent Needs to Continue

Operation of the 242-A Evaporator is critical to the overall Tank Waste Remediation System. The evaporator concentrates existing wastes that must be stored in the Double Shell Tanks (DSTs), and is necessary to alleviate the already critical storage shortage in the DSTs.

Inability to operate this facility would lead to halting significant operations including Single-Shell Tank stabilization, 222-S Laboratory operations (including SST characterization work), and discontinuing safety system discharges from operational facilities (i.e. B-Plant, T-Plant, PUREX, PFP, and 340 Facilities). Continued discharge of this stream until BAT/AKART is implemented is essential to the operation of the DST system and overall tank waste remediation at Hanford.

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<u>241-A Tank Farm Cooling Water</u> (M-17-32)

a. Milestone Commitment Summary

The cooling water from the 241-A Tank Farm is disposed to the 216-B-3 Pond System. The current stream flow rate is 600 gallons per minute. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations.

b. Description of the Effluent

The cooling water is used in once through condensers to condense contaminated vapors that come from the storage of high heat wastes in these DSTs.

c. Why the Effluent Needs to Continue

The 241-A Tank Farm cooling water stream is required to support the ventilation system for the 241-AY and 241-AZ Double Shell Tank Farms. Loss of this cooling water could lead to failure of the ventilation system control equipment (including HEPA filters). Operation of the ventilation system is an operational safety requirement, with the potential for an uncontrolled discharge to the environment if the system is not operated. Continued discharge of this stream until BAT/AKART is implemented is essential to the operation of the Aging Waste Tanks in the DST system.

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244-AR Vault Cooling Water (M-17-33)

a. Milestone Commitment Summary

The cooling water from the 244-AR Vault is disposed to the 216-B-3 Pond System. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations. The current stream flow rate is 5 to 15 gallons per minute.

b. Description of the Effluent

The 244-AR Vault is utilized for secondary containment for transfer lines serving B-Plant, along with the potential for future pre-treatment missions. The continued operation of the facility is essential to ensure that B-Plant waste transfers are being contained. The cooling water stream consists of two contributors, including HVAC system drainage and compressor cooling water.

c. Why the Effluent Needs to Continue

Both of these contributors are required to keep instrumentation operational and for overall safety of the standby facility. Continued discharge of this stream until BAT/AKART is implemented is essential to maintain 244-AR Vault in a safe condition.

2724-W Laundry Waste Water (M-17-34)

a. Milestone Commitment Summary

The waste water from the 2724-W Laundry is disposed to the 216-W-LN Crib. This crib started operation in 1982. Proposed milestone M-17-34 requires that discharge of this effluent be discontinued in January 1995, the date of initiation of operations of the new Decontamination Laundry (Project B-503).

b. Description of the Effluent

The 2724-W Laundry Waste Water is the result of the operations at the 2724-W laundry facility. All soiled protective work clothing used on the Hanford site is cleaned at the facility.

c. Why the Effluent Needs to Continue

Protective clothing is required for worker safety during cleanup of the Hanford Site.

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<u>183-D Filter Backwash</u> (M-17-36)

a. Milestone Commitment Summary

The Filter Backwash water from the 183-D Water Treatment Facility is discharged to the 100-D Pond and averages approximately 2 gpm. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations.

b. Description of the Effluent

This effluent stream results from back-washing the sand filters which are used during the processing of raw water from the Columbia River prior to use as drinking water and fire protection water to the 100-D, 100-H and 100-F Areas.

c. Why the Effluent Needs to Continue

At present, the 183D Building is the only plant capable of furnishing fire protection water and potable water to these areas. Thus, the effluent stream is required as long as the areas are maintained as habitable spaces.

<u>284-E Powerplant Waste Water</u> (M-17-37)

a. Milestone Commitment Summary

The 284-E Powerplant waste water discharges to the 216-B-3 Pond System. Discharge is anticipated to continue to the 216-B-Pond System provided such discharge is consistent with the closure schedule and strategy in any Ecology approved 216-B-3 Pond System Closure Plan. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October

1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations.

b. Description of the Effluent

There are three major contributors to this effluent stream. The first and largest is normal operations. The sources for it are waste waters from cooling operations within the powerplant and waste water from the 283-E Water Treatment Facility. Cooling water is used for such equipment as air compressors, turbines, generators, boiler water jackets, and feed pumps.

The other two contributors are discharges from batch processes. The softener regeneration contributor is associated with the use of a brine solution to recondition zeolite water softener units. Softener regeneration is the contributor with the highest concentration of dissolved solids. The third contributor is powerplant blow down, which is the discharge from the operation of blowing down the boilers to remove scaling.

Because the 284-E Powerplant provides steam for heat purposes to many buildings in the 200 Areas, there is some seasonal variance in the flow rates, with the winter flow rates being higher.

c. Why the Effluent Needs to Continue

The basic requirement for heating and processing steam is determined by the mission requirement as defined by DOE. Potable water and fire protection water is a basic requirement as long as the site is habitable by people. Raw supplies are tied to basic mission requirements.

Elimination of the 284-E Powerplant Waste Water by discontinuing its generation would result in the elimination of processing steam, heating steam, steam for key safety back-up equipment, raw water, potable water, and fire protection water. Key safety back-up equipment includes items such as back-up source for fire protection water pressure and canyon exhaust fans for PUREX and other processing plants.

<u>284-W Powerplant Waste Water</u> (M-17-38)

a. Milestone Commitment Summary

The 284-W Powerplant waste water is discharged to the 284-W Powerplant Pond. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent

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Disposal Facility (Project W-049H). Proposed milestone M-17-38 requires that discharge to the 284-W Powerplant Pond be ceased by June 1995.

b. Description of the Effluent

There are three major contributors to this effluent stream. The first and largest is normal operations. The source for it is waste water from cooling operations within the powerplant. Cooling water is used for such equipment as air compressors, turbines, generators, boiler water jackets, and feed pumps.

The other two contributors are discharges from batch processes. The softener regeneration contributor is associated with the use of a brine solution to recondition zeolite water softener units. Softener regeneration is the contributor with the highest concentration of dissolved solids. The third contributor is powerplant blow down, which is the discharge from the operation of blowing down the boilers to remove scaling.

Because the 284-W Powerplant provides steam for heat purposes to many buildings in the 200 Areas, there is some seasonal variance in the flow rates, with the winter flow rates being higher.

c. Why the Effluent Needs to Continue

The basic requirement for heating and processing steam is determined by the mission requirement as defined by DOE. Potable water and fire protection water is a basic requirement as long as the site is habitable by people. Raw supplies are tied to basic mission requirements.

Elimination of the 284-W Powerplant Waste Water by discontinuing its generation would result in the elimination of processing steam, heating steam, steam for key safety back-up equipment, raw water, potable water, and fire protection water. Key safety back-up equipment includes items such as back-up source for fire protection water pressure , fire system pumps, ventilation fans, and temperature, moisture control for tank farms.

<u>222-S Laboratory Waste Water</u> (M-17-39)

a. Milestone Commitment Summary

Waste water from the 222-S Laboratory is discharged to the 216-S-26 Crib. Proposed milestone M-17-39 requires that all discharges to this crib be ceased by no later than June 1995. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

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b. Description of the Effluent

The 222-S Laboratory Complex is the primary laboratory providing the Hanford site with analytical and chemical services. Continued operation of the laboratory is necessary to provide analytical elements of the Tri-Party Agreement and the remediation of Hanford.

Waste water from the complex is sampled and analyzed to ensure that it meets discharge limits for chemical and radioactive constituents, before being released to the 216-S-26 Crib. The effluent is mostly steam condensate from the building heating system and discharged cooling water from the building HVAC system. Substantial progress has been made to reduce this flow by installing recirculating vacuum pumps, the flow has been reduced by approximately 60%. However, as long as evaporative cooling is used and steam is the main heat source, the effluent stream will be necessary. The current discharge rate of waste water to the 216-S-26 Crib is approximately 7,000 gallons per day in the summer to 15,000 gallons per day in the winter.

c. Why the Effluent Needs to Continue

The 222-S Laboratory Complex provides essential compliance with analytical elements of the Tri-Party Agreement. In view of the important long-term mission 222-S will play in the remediation of Hanford, continued use of the 216-S-26 Crib is vital until an acceptable alternative for waste water treatment is operational.

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<u>S Plant Waste Water</u> (M-17-40)

a. Milestone Commitment Summary

Disposal of S Plant Waste Water to the 216-S-10 Ditch was ceased in October 1991 in accordance with proposed milestone M-17-40. As a result of proposed TPA milestone M-17-40, ceasing disposal of this effluent stream to the soil column occurred two years earlier than schedule listed in the S Plant Waste Water Stream-Specific Report. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H).

c. Why the Effluent Needs to Continue

Disposal of S Plant Waste Water to the 216-S-10 Ditch was ceased in October 1991 in accordance with proposed milestone M-17-40.

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<u>T Plant Waste Water</u> (M-17-41)

a. Milestone Commitment Summary

The T Plant Waste Water is discharged to the 216-T-4-2 ditch. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-41 requires that all discharges to the 216-T-4-2 Ditch be ceased by June 1995.

b. Description of the Effluent

The T Plant waste water discharged to the 216-T-4-2 ditch has been sampled and does not contain dangerous waste. The major contributors to this stream are non-contact cooling water from heat exchangers for air compressors and a spent-fuel storage pool refrigeration system. Engineering studies underway are evaluating the potential for further modifying or replacing these systems and minimizing these contributors.

Raw water is used to remove heat from a refrigeration system which provides cooling to a fuel storage pool within the T Plant canyon. Currently this is the largest contributor to the T Plant effluent system, generating six gallons per minute. The water-cooled refrigeration system is anticipated to be replaced with an air-cooled unit next year.

Steam condensate contributes the majority of the T Plant waste water stream. Steam delivery piping must be periodically drained of condensate to maintain the system in good working order. Steam is the lifeblood of this 50-year old facility and is used for tank solution transfers during process operations. Steam serves as a primary medium for equipment decontamination, in support of T Plant's mission of providing decontamination services for the Hanford cleanup efforts. Steam provides the heat to T Plant during the colder months. Sufficient electrical power is not available to convert steam-powered systems to electrically operated ones. Shutting off the steam to T Plant would effectively shut down the facility. Swamp coolers contribute a portion of this stream and are necessary to provide a comfortable work atmosphere during the hot summer months.

Minor contributors to the T Plant waste water include blind sumps collecting storm water run-on, safety shower effluents, and floor drains collecting waste water generated during facility housekeeping and maintenance activities. Waste water derived from these sources has a remote potential for being contaminated from a spill of chemical products stored or used in T Plant. To mitigate environmental consequences from such a spill, an elementary neutralization system is being placed in the T Plant waste water system. This

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system will collect effluents and provides pH monitoring of the waste water. In the event the pH is outside of preset limits, the system will have the capability to neutralize it with either acid or caustic. Effluents within specification will be retained in the 207-T basin and batch discharged through existing piping to the 216-T-4-2 ditch. Out-of specification effluents will be isolated and sent to the appropriate disposal facility.

In addition to the elementary neutralization system, source control methods which minimize the potential for a spill of a hazardous material, are practiced at T Plant. These include double containment or isolation of chemical products from sewer drain areas, product substitution to less-hazardous materials, and blind sumps in chemical storage areas. Blind sumps are a source control method providing retention which can be analyzed prior to pumping to the waste water system. The source of waste water in these blind sumps is infrequent stormwater.

c. Why the Effluent Needs to Continue

The waste water discharged by T Plant is necessary to support decontamination activities at T Plant. These activities support various waste management and environmental restoration milestones required by the Tri-Party Agreement.

<u>T Plant Laboratory Waste Water</u> (M-17-42)

a. Milestone Commitment Summary

The T Plant Laboratory Waste Water is discharged to the 216-T-1 Ditch. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-42 requires that all discharges to the 216-T-1 Ditch be ceased by June 1995.

b. Description of the Effluent

A major contributor to this stream was non-contact cooling water. This large volume contribution has been discontinued, significantly reducing the quantity of effluent from this facility. The head-end of T Plant, where the laboratory facility is located, now houses personnel performing support functions essential to the operation of T Plant.

Another major contributor, batch discharges of non-hazardous laboratory wastes, were generated during research activities. The laboratory operations have been permanently discontinued and the chemical inventory removed from T Plant.

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Besides the minor effluents from emergency showers and eyewash stations, climate control systems contribute the majority of effluent from this facility today. Steam delivery piping must be periodically drained of condensate to maintain the system in good working order. Steam is the lifeblood of this 50-year old facility, providing heat to the Plant. Swamp coolers provide air-conditioning in the hot summer months. Sufficient electrical power is not available to convert these systems to electrically operated ones.

Planned projects include installation of a retention tank to collect all Laboratory waste water and pump it to the elementary neutralization unit. This will provide additional monitoring and spill-retention capability for better management of this waste stream. Combining this stream with the T Plant waste water will also eliminate the need for multiple delivery points to Project W-049H.

c. Why the Effluent Needs to Continue

Shutting off the steam to T Plant would effectively shut down the facility.

<u>2101-M Laboratory Waste Water</u> (M-17-43)

a. Milestone Commitment Summary

The 2101-M Laboratory Waste Water is discharged to the 2101-M Pond. Proposed milestone M-17-08 requires that BAT/AKART be implemented on this stream by June 1995 and the flow be re-routed to the 200 Area Treated Effluent Disposal Facility (Project W-049H). Proposed milestone M-17-43 requires that all discharges to the 2101-M Pond be ceased by June 1995. Effluent contributions to the waste water stream from 2 of 9 HVAC coolers were eliminated in January 1992 in accordance with proposed milestone M-17-43A.

b. Description of the Effluent

There are two sources of discharge to the 2101M Pond from the 2101M facility. The 2101M facility HVAC system discharges cooling water and steam condensate to the 2101M Pond. The HVAC system provides cooling and heating to the facility for employee comfort. The discharges are necessary until the HVAC system is upgraded. The other source of discharge to the Pond is from three sinks which supply water for employee use. One sink is in the insulator shop and the other two are located in the labs. These sinks support normal facility operations.

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The flow rate of the discharge varies from less than one to 12 gpm. During the winter months the peak flow reaches no more than 12 gpm. In the summer, the flow rate reduces to virtually zero.

c. Why the Effluent Needs to Continue

Through process knowledge and administrative controls it is known that there are no dangerous wastes discharged to the 2101M Pond. Two of the nine HVAC cooling systems have been eliminated which decreased the flow rate to the pond. The remaining HVAC units will be terminated upon receiving funding and replacement equipment to upgrade the system. The remaining discharges from the sinks will be rerouted to the septic system.

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<u>400 Area Secondary Cooling Water</u> (M-17-44)

a. Milestone Commitment Summary

The 400 Area Secondary Cooling Water is discharged to the 400 Area Pond System. Proposed milestone M-17-00B requires that BAT/AKART be implemented for this effluent stream by October 1997, unless the milestone is revised to accelerate or delay implementation of actions based on the BAT/AKART evaluations.

b. Description of the Effluent

The 400 Area Secondary Cooling Water, also known as the 400 Area Process Sewer, is discharging between 6 and 56 gallons per minute to one of two percolation ponds. The flow rate is dependent on cooling demand. In general, peak flow occurs during the summer. About 85% of the effluent is from, or in support of, eleven non-contact evaporative cooling towers. These cooling towers provide cooling to various auxiliary systems such as building air conditioning. The balance of the effluent is from pump seal leakage (one is a fire pump; two are potable water pumps), air compressor cooling, and a computer room air conditioner. At no point in the 400 Area is hazardous, dangerous or radioactive material discharged to the process sewer. Any maintenance or operations activities in the 400 Area are rigorously controlled by Administrative Procedures.

c. Why the Effluent Needs to Continue

The Process Sewer is essential to the habitability of the 400 Area. Without it, the fire suppression, plant instrumentation, and heating and ventilating systems could not be operated. The effluent stream contains only trace

amounts of contaminants and the non-contact evaporative cooling tower technology used at the 400 Area is an industry standard.

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Acronym List

ALARA -	As Low As Reasonably Achievable
ASD -	PUREX Ammonia Scrubber Condensate
BAT/AKART -	Best Available Technology/ All Known, Available, and Reasonable Methods of Prevention, Control and Treatment
BCE -	B Plant Chemical Sewer
BCS -	B Plant Steam Condensate
BCP -	B Plant Process Condensate
CSL -	PUREX Chemical Sewer
CWL -	PUREX Cooling Water
DOE -	Department of Energy
DST -	Double Shell Tanks
Ecology -	Washington State Department of Ecology
EIS -	Environmental Impact Statement
EPA -	Environmental Protection Agency
GPM -	gallons per minute
HEPA -	High Efficiency Particulate Air-filter
HVAC -	Heating, Ventilation, and Air Conditioning system
LWDF -	Liquid Waste Disposal Facility
NPDES -	National Pollutant Discharge Elimination System. A permitting program, implemented by EPA for Hanford, that addresses discharges of liquid effluents to surface waters.
PDD -	PUREX Process Condensate
PFP -	Plutonium Finishing Plant
PNL -	Pacific Northwest Laboratory
PRF -	Plutonium Reclamation Facility (in PFP)
PUREX -	Plutonium/Uranium Extraction Facility
RMC -	Remote Mechanical C Line (in PFP)
SAP -	Sampling and Analysis Plan
SCD -	PUREX Steam Condensate
TPA -	Tri-Party Agreement, the common name for the Hanford Federal Facility Agreement and Consent Order
UNH -	Uranyl Nitrate Hexahydrate
WAC -	Washington Administrative Code
WESF -	Waste Encapsulation and Storage Facility

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Tri-Party Agreement

HANFORD TRI-PARTY AGREEMENT QUARTERLY MEETINGS

APRIL 1, 1992, 6:30 P.M.
RICHLAND, WASHINGTON

APRIL 2, 1992, 6:30 P.M.
SPOKANE, WASHINGTON

APRIL 8, 1992, 6:30 P.M.
BELLEVUE, WASHINGTON

APRIL 9, 1992, 6:30 P.M.
WHITE SALMON, WASHINGTON

Welcome

Mary Getchell, Washington State Department of Ecology, opened the Hanford Tri-Party Agreement Quarterly Meetings welcoming the public to each meeting. Getchell introduced key Ecology, U.S. Environmental Protection Agency and Department of Energy representatives at each meeting. She briefly discussed the meeting agenda, stressing the agenda was developed based upon prior public comments. Also, Getchell stated that the Hanford Federal Facility Agreement and Consent Order (Hanford Tri-Party Agreement or TPA) currently had three documents undergoing public comment: the 1992 Annual Update, Amendment 3 to the TPA and Milestone-17 which directs the schedule for managing Hanford's wastewater discharges. The meeting was planned to provide a brief overview of Hanford cleanup activities with particular emphasis on the documents currently undergoing public comment. Then a public question and answer/public comment period would be conducted.

Opening Comments

Dave Jansen, Ecology, welcomed the public to the meeting. As Ecology's new Hanford project manager, Jansen gave a brief personal/professional introduction.

Jansen that stated the goal of quarterly public meetings is to inform and educate the public about TPA activities and to receive comments regarding cleanup activities and proposals.

> Next month marks the third anniversary of the TPA. Ecology, EPA and USDOE have accomplished several objectives, including obtaining funding for the site cleanup, designing cleanup facilities and conducting Expedited Response Actions. Expedited Response Actions or ERA's are strategies that expedite or speed-up cleanup actions. According to environmental laws, numerous studies must be conducted before cleanup can occur. However, the laws allow cleanup actions to occur before completion of such studies if a threat exists to human health or the environment or if preventive measures are appropriate.

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Jansen explained that, to date, the TPA has not directly turned a great deal of dirt, but he said the tasks the agencies are currently undertaking are setting the stage for construction of cleanup facilities in 1994, 95 and 96.

> The TPA has undergone some changes. The 30-year cleanup schedule equates to an immense task and the TPA is a living document directing both cleanup and compliance objectives.

Jansen outlined several milestone or schedule changes which are currently or will soon be out for public comment. Three public comment documents which are out for public review and comment--the 1992 Draft Annual Update to the Hanford Federal Facility Agreement and Consent Order, Draft Amendment 3 to the Agreement and Milestone-17 Draft Changes.

Milestone 25 and 26

The three agencies are consolidating two Land Disposal Restriction reports--the TPA refers to these reports as Milestone 25 and 26. Essentially, one combined report now exists under Milestone 26. The goal of this consolidation is to streamline the reporting process so that one report is prepared, distributed and reviewed. Previously the two reports were redundant.

Milestone 24: RCRA groundwater monitoring wells.

Currently, Milestone-24 calls for the drilling of 50 wells per year. We're proposing to keep the milestone with a word change to allow less than 50 wells drilled per year as a holding place in case more wells are needed in the future. The objective of this milestone has been met. Also, the change requires USDOE to drill 30 wells in 1992, because that should be enough to meet the requirement. The three parties are proposing to change this to read drilling up to 50 wells per year. This draft change will be out for public comment in a couple of weeks.

Milestone 14

Jansen explained that Milestone 14, the schedule for constructing and operating a low level mixed waste laboratory at Hanford, marks a major disagreement between the three parties. The laboratory, which was scheduled to be constructed and operating by January of this year, was intended to be used for the many tests necessary for Hanford cleanup activities. In November 1991, USDOE requested to use off-site laboratories. EPA and Ecology refused USDOE's request and USDOE invoked dispute resolution. As spelled out in the TPA, the Dispute Resolution process is designed for the three parties to negotiate a decision to the proposed change. Ecology determined that USDOE must build the lab. EPA's final decision was being considered by USDOE. Within a couple of weeks, the three agencies planned to ask the public for their comments on the low level mixed waste laboratory draft changes.

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Land Use

Jansen discussed the land use processes, which are not part of the TPA. The Future Site Use Working Group kicks off their first meeting this month. The Working Group includes county, state, federal, and tribal government representatives, and individuals selected from business, agricultural, environmental and watchdog organizations. The Working Group will oversee the Hanford Future Site Use Project which is charged with developing alternative future scenarios for land uses on the Hanford Site. The recommendations are scheduled to be completed in December 1992. The recommendations will be used by Energy in the Hanford Remedial Action Environmental Impact Statement. The meetings were April 2 and 3 at the Tower Inn in Richland.

Status of RCRA permit

Jansen explained that Ecology and EPA received numerous comments on the Hanford Facility Wide Draft Permit. The regulators were continuing to review and consider public comments.

New Expedited Response Actions

Jansen briefly described six new expedited response actions under consideration.

Public Comment Documents

He gave an overview of the current public comment period.

Starting on March 9, the three parties issued three documents for public comment:

- 1992 Draft Annual Update to the Hanford Federal Facility Agreement and Consent Order
- Draft Amendment 3 to the Agreement
- Milestone-17 Draft Changes.

The public comment period for these documents ends April 22. All comments received will be considered before issuing the final documents. The documents were scheduled to be issued May 20.

Annual Update

The Annual Update incorporates changes to the TPA's cleanup schedules and activities planned for 1992-1998. It is a comprehensive document that outlines the cleanup milestones or schedules for the next several years.

Amendment 3

Amendment 3 to the TPA proposes to adjust the Resources Conservation and Recovery Act (RCRA) permit application and closure plan review schedules in the cleanup Agreement.

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Milestone 17

Draft changes to Milestone 17 include the schedule for managing, treating, reducing or stopping Hanford's wastewater discharges. The draft changes direct the schedule for cleaning up all waters discharged to the soil at Hanford.

The Milestone 17 draft changes require USDOE to meet a schedule necessary to treat, reduce or stop the discharges of contaminated wastewater from Hanford facilities. Some 88 milestones have been negotiated for the management and control of the waste streams. Most of the interim milestones are new and are designed to make the cleanup and compliance of wastewater discharges more enforceable because there are more checkpoints for the regulators to review. Many also cover streams not addressed in the original milestone.

According to the Milestone's draft changes--all major waste streams will either be treated--a process to remove the contaminants--or stopped by June, 1995. And, all other streams will be permitted or stop discharging of by October, 1997.

M-17 History

A brief history or background leading up to the draft Milestone 17 changes starts with the signing of the TPA in 1989. When the TPA was signed, the public wanted more restrictions placed on the discharge of wastewater at Hanford. The regulators responded by requiring USDOE to conduct the Hanford Liquid Effluent Study. The study was conducted from May of 1989 to October of 1990. It identified 33 high-priority streams and 300 miscellaneous streams. The study also presented information describing the make-up of the contaminants being discharged.

USDOE also conducted an expedited response action in the 300 area process trenches--to remove the contaminants in the trenches.

While Hanford was manufacturing nuclear materials for more than 40 years, facilities discharged contaminated water into cribs, ditches or ponds. Some of those discharges flow into the Columbia River today. The assumption USDOE and other facilities employed was that the soil treated the waste.

Milestone 17 is designed to change that practice and treat the contaminants in the discharges before releasing them into the environment. The new Milestone 17 also offers opportunities to reduce water usage and contamination at the point of use.

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M-17--Stop Discharges Now!

Many people have questioned--if the water is contaminated and it's reaching the Columbia River--then why don't you shut Hanford down? It is not as simple as turning off a valve. That action would have a serious domino affect, impacting both Hanford cleanup activities and public health and the environment.

If USDOE shut down every facility at Hanford, the discharge of pollutants from Hanford facilities would not stop--overtime it would even increase. The discharges exist, they will continue to flow even if the facility is shut down.

Two things would happen if the agencies shut down the discharges today:

> Important and necessary environmental cleanup activities would stop.
>
> The safety of workers would be at risk. For example, water is used to cool many plants at Hanford. If the discharge of wastewaters stopped, the work area would become very contaminated and the workers would not be able to work in the area and site cleanup would stop.

M-17 Compliance Schedule

Other public criticism Ecology has received regarding the discharges questions Ecology's proposal to allow Hanford's continued discharge of the unpermitted wastewater discharges.

The criticism correctly points out that the wastewater discharges are unpermitted. The discharges at Hanford have been going on since the 1940's. Ecology became a major player--or regulator--with the clean up of Hanford with the signing of the Agreement in 1989.

Ecology is tackling the wastewater discharge problem at Hanford similar to how the agency manages other environmental permitting issues in the state. Ecology is putting the waste streams on a flow reduction schedule and treatment construction schedule. The proposed milestone changes exhibit three priorities--reduce water use, reduce contamination and treat the discharges.

There will always be wastewater discharges at Hanford. The draft changes to Milestone 17 show a compliance schedule to treat or eliminate the contaminants.

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Consent Order

Parallel with the proposed milestone changes, Ecology and USDOE signed a Consent Order in December. The Consent Order enforces the permitting of Hanford's waste streams. Ecology deems this a significant document because for the first time the federal government is recognizing the authority of Washington State Water Quality Laws.

The Consent Order further strengthens Ecology's regulatory and enforcement authority of wastewater discharges at Hanford.

Milestone 17-06

In December, EPA proposed an interim milestone change to the Agreement--changing Milestone 17-06. That milestone or schedule directs the clean up or management of wastewater discharges from the 300 area process trenches to the future requirements of treatment and discharge to the Columbia River as required in Milestone 17-09.

M 17-06 History

To give some background surrounding the decisions regarding wastewater discharges to the 300 area process trenches, Jansen depicted the following time line.

In 1989, when Milestone 17-06 was set, USDOE anticipated it could treat the wastewater discharged into the 300 area process trenches through a readily available, and portable treatment system or through discharge to the Richland Sewer Treatment Plant. This would serve as a temporary measure until June 1995, when the 300-area Treated Effluent System would replace the temporary treatment system. After researching treatment options, USDOE concluded that a temporary treatment system was not available. As a concession to continuing discharges after December, USDOE proposed to accelerate the construction and operation of the 300-area treatment facility by six months--to December 1994. Also, the three agencies agreed to reduce the flow of discharges into the trenches--from 1200 gallons per minute to 400 gallons per minute. This has been achieved. Finally as previously noted, the trenches were partially cleaned to prevent flushing of previously captured contaminants.

M 17-06 Changes

Agreement said: Cease all discharges to 300 Area Process Trenches by December 1991.

The revised milestone change says: Cease all discharges to 300 Area Process Trenches--deleted

Limit discharges to the 300 Area Process Trenches to less than or equal to 400 gallons per minute, averaged over the calendar month.

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Milestone 17-09 is the driver to stopping the flow of contaminants into the trenches. Construction of the treatment facility will begin this August and by December of 1994 the discharges will be diverted from the trenches to the treatment facility.

At this time, the three agencies have not set a date for stopping discharges to the 300 area. The agencies welcomed the public to take the meeting as an opportunity, during the public comment period, to provide input on future decisions regarding the process trenches.

The 300 area includes buildings and laboratories located near the Columbia River and the City of Richland.

The work conducted in the 300 area is vital to cleanup, such as hot cell labs which sample single shell tank wastes. To shut this area down would stop important cleanup activities--such as getting the wastes out of the tanks.

Even if the three agencies decided to shut down the 300 area--close down the laboratories and research and development centers--wastewater discharges would continue to be an issue in the 300 area process trenches. Rain water also plays a factor in the wastewater discharges, therefore even if the area was shut down, because the area is contaminated the rainwater would become contaminated and continue as a contaminated wastewater discharge. Even more importantly, the cooling systems in the buildings in the 300 area prevent the spread of contaminants through the area. Shutting down the area would shut down the cooling system and the contaminants would be dispersed in the air.

To manage the wastewater discharges currently being discharged to the process trenches, a wastewater treatment facility is being built.

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Conclusion

Jansen said Ecology, EPA and Energy wanted to hear public comments about the conclusions the agencies reached.

He explained the As an overview of the question and answer session guidelines:

- Many people here this evening would like to ask a question or give us some comments, therefore we request that you keep your comments to five minutes. However, after everyone who would like to speak has been given an opportunity, you may again address the audience with your comments.
- We encourage you to speak into the microphone in the middle of the room so we can clearly and accurately listen to, respond to and record your comments.

Question and Answer Session

For a complete record of the question and answer period, please see refer to the full transcript at the information repositories or contact Hanford Cleanup 1-800-321-2008 for a copy.

U.S. Department of Energy-Richland Operation, Public Reading Room
Federal Building Room 157, 825 Jadwin Avenue, Richland
(509) 376-8583

Suzzalo Library, University of Washington, Seattle
(206) 543-4664

Crosby Library, Gonzaga University
E. 502 Boone, Spokane
(509) 328-4220

Portland State University Library
Corner of Harrison and Park, Portland

Following is a synopsis of both written and verbal comments on the proposed changes to Milestone 17.

- Cease discharges now. Do not give USDOE additional time to cease discharges. Curtail administrative procedures and work toward ceasing discharges. Explain why discharges cannot stop now. Discharges are aiding the migration of huge amounts of existing contaminants in the soil and groundwater. Provide rationale for continuing discharges for individual waste streams.

- Regulators have "bought off" on USDOE's anecdotal rationale for continued discharges--argument is not adequately justified. Regulatory agencies should place public interest ahead of corporate interests.

- Hanford Cleanup Agreement signatories should renegotiate wastewater discharges' milestones. Regulators should renegotiate with the public's best interest in mind and force USDOE to stop the liquid discharges. What public input is required for renegotiation?

- Hanford Cleanup Agreement agencies are not responding to wastewater discharge public comments. If the public provides comments asking for the three agencies to stop discharges, are the agencies planning to change the Hanford Cleanup Agreement and stop the discharges? It seems like decisions are being made prior to asking for public comments.

- Public stated previously that discharges must be stopped before 1995. The proposed changes reassert the 1995 cease discharge date. The agencies have not responded to the public's concerns.

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- Public concern regarding discharges to the Columbia River. Define the types of contaminants entering the water table and the Columbia River. Explain why fire water and cooling system effluent cannot be discharged directly into the Columbia River. River is being used to dilute contamination. Is it possible to construct a barrier to prevent wastes from being discharged into the Columbia?

- Waste streams should have been stopped earlier.

- Test sediments in Columbia River. Does annual report list chemicals as well as radioactivity? Does the Washington State Department of Health test the Columbia River for plutonium? Fish in the river should be routinely tested and monitored for contamination. Inadequate characterization data is used to determine if waste streams are hazardous. Test and monitor contaminants in the Columbia River. Are water samples tested or monitored below the dams?

- Is it possible to shut down all effluent that is not currently connected to cleanup or worker safety?

- If effluent is being dumped on ground near the Columbia River and is reaching groundwater that is flowing toward river, how can USDOE claim cleanup methods are effective?

- Cleanup funds are being diverted to infrastructure projects.

- Continuing wastewater discharges could violate cultural sites. Protection of rights specified in the Treaty of 1855 on Ceded lands at Hanford should be assured.

- Reduce waste stream flows.

- Hanford's contaminated groundwater problems cannot be solved. Excessive funds are being spent on this unsolvable problem. Currently, technology is not available to remediate the contaminants in the soil and groundwater, therefore, how can the agencies justify the continued discharge of wastes into the soil and groundwater?

- Provide total amount of Hanford wastewater discharges.

- Has the 300 gpm discharge to ditch U-14 ceased as mandated in the Ecology-USDOE Hanford wastewater discharges Consent Order?

- Is the CO-18H liquid effluent treatment plant on schedule? Did USDOE sign the Consent Order, knowing that the schedule was slipping?

- Waste streams should be properly treated to assure that facilities are operated in a manner that would not dilute and/or spread existing contaminated groundwater plumes.

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- Milestones should be established to control the discharge of solid wastes by the Department of Ecology from gaseous waste streams. Plutonium discharges should be disallowed considering the long-term toxic and radiologic hazard associated with plutonium. Acceptability of discharge should be determined at the discharge to the atmosphere.

- If a particular proposed change in policy or procedure will render conditions less hazardous or dangerous than they are at present, why would anyone object? If the change would increase the hazard or danger, why should anyone consent to the proposal?

- Solution to wastewater discharges: drain and remove the radioactive chemical residues. Dig a trench 100 feet deep to prevent the seepage of the radioactive chemical leaks from entering the Columbia River.

- Is the groundwater below Hanford being recharged by process water more than natural recharge?

- Provide information, if available, about soil column depth profiling.

- Many unidentified waste streams are not addressed in Hanford Cleanup Agreement. Wastewater discharges from PFP and PUREX are not included as part of cleanup.

Conclusion/Wrap up

Jansen thanked the public for their attendance and participation in each meeting.

The meeting Richland, Spokane and Bellevue meetings ended at 9:30 p.m. The White Salmon meeting ended at 10:30 p.m.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
AND THE
STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

RECEIVED
SEP 4 - 1992
HEARINGS CLERK
EPA—REGION X

IN THE MATTER OF:	)	
	)	THIRD AMENDMENT OF
The U.S. Department of Energy,	)	HANFORD FEDERAL FACILITY
Richland Operations Office,	)	AGREEMENT AND CONSENT ORDER
Richland, Washington	)	
	)	EPA Docket Number: 1089-03-04-120
Respondent	)	Ecology Docket Number: 89-54

In accordance with Article XXXIX of the Hanford Federal Facility Agreement and Consent Order ("Agreement") the Parties hereto agree to the following amendments to the Agreement:

9 3 1 2 7 6 3 1 8 6 3

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		Action Plan
1.	Section 9.2.1 Title	Add underlined text as noted: 9.2.1 Primary Documents (with exception of Part B permit applications <u>and Closure/Postclosure plans</u>)
2.	Figure 9-1, Footnote	Remove text as noted by strikeout: * With exception of 60 days for RI/FS work plans <u>and</u> RFI/CMS work plans ~~and closure plans~~
3.	Figure 9-1, Title	Add underlined text as noted: Figure 9-1. Review and Comment on Primary Documents. (See Figure 9-2 for Part B <u>Permit</u> Application <u>and Closure/Postclosure Plan</u> Review)

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

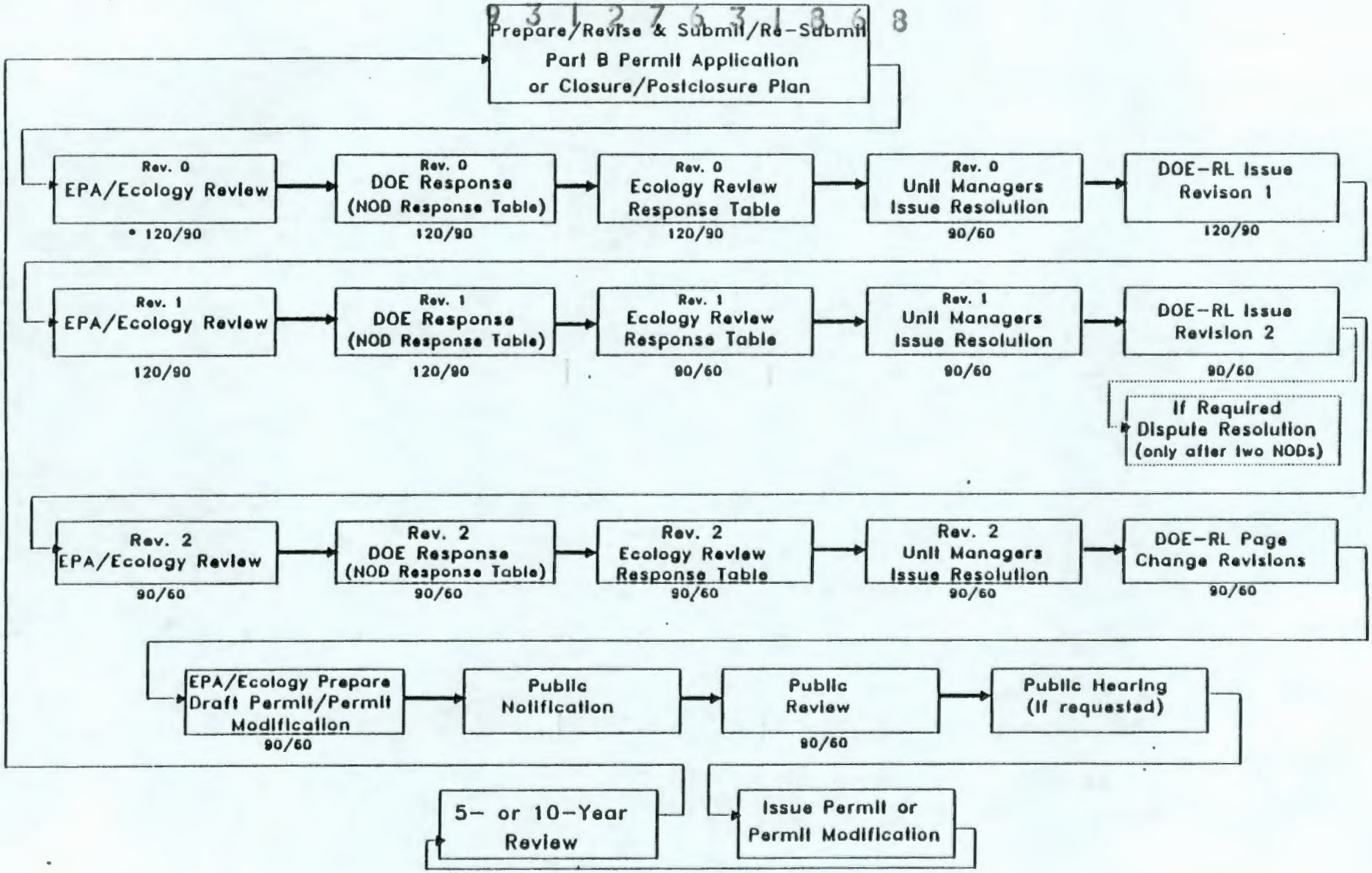
Item Number	Location	Change
4.	Section 9.2.2, All	Modify text as noted: (underline indicates text to be added and strikeout indicates text to be removed) 9.2.2 Part B Permit Applications and Closure/Postclosure Plans (Operations and Postclosure) The process for review of Part B Permit Applications and Closure/Postclosure Plans will be different than for other primary documents due to the size and complex nature of these documents. In addition, Part B Permit Applications do not receive final "approval" from the regulatory agencies. These documents, when complete, are used to form permit conditions. Portions of the applications will be incorporated into the permit along with permit conditions. Figure 9-2 shows the process for review of Part B Permit Applications and Closure/Postclosure Plans. Upon receiving these documents from the DOE, the lead regulatory agency ~~has a period of 90 days to~~ will provide comments as outlined in Figure 9-2 ~~Section 9.2.1 on the first submittal, and 60 days on subsequent submittals~~. It is understood by the parties that in many cases the lead regulatory agency will extend the comment period for a specified period of time to accommodate the complexity and size of the document. If the Part B permit application or Closure/Postclosure Plan is determined to be incomplete, comments will be transmitted by the lead regulatory agency in the form of an NOD. Upon receiving an NOD, the DOE will

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		update the ~~application~~ document as necessary ~~within 90 days in~~ by following the review/response process ~~to the first NOD, and 60 days for subsequent NOD's cycles as~~ outlined in Figure 9-2. With concurrence of the lead regulatory agency, the update may be in the form of either supplemental information to, or a revised portion of, the previously submitted Part B Permit Application or Closure/Postclosure Plan. If the DOE is unable to comply with this timeline, it may request an extension within 30 days of receipt of the NOD. This request will include specific justification for granting an extension, a detailed description of actions to be taken, and the proposed date for resubmittal of the application. Dispute resolution for NODs cannot be initiated until two NODs have been issued by the lead regulatory agency, unless agreed to by all parties. Once an application or closure plan is determined by the lead regulatory agency to be complete, the agency will begin drafting the permitting document. The permitting actions are also shown in Figure 9-2. The process for development and maintenance of the Hanford Site permit is discussed in Section 6.2 In addition to standard public notification procedures, the public will be informed about proposed permit and closure actions in the "Hanford Newsletter" and at quarterly public meetings. However, it is anticipated that in many cases, comments from the public will result in a public hearing on the draft ~~permit~~ document. All comments on the draft ~~permit~~ document, including those received during the public hearing will be addressed in a

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		response summary and incorporated in accordance with 173-303-840(7) and (9) WAC. Public hearing opportunities are further discussed in Section 10.7.
5.	Figure 9-2	Delete current Figure 9-2 and replace with new Figure 9-2 as displayed on next page of this amendment.



* Permit or Closure/Postclosure Days for Completion

DOE = U.S. Department of Energy
Ecology = State of Washington Department of Ecology
EPA = U.S. Environmental Protection Agency
NOD = Notice of Deficiency

Figure 9-2. Part B Permit Application and Closure/Postclosure Plan Process Flowchart.

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
6.	Section 9.6, second paragraph, eighth line of text	Reference to section 9.7 is incorrect, 9.6.3 is the correct reference.

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. The 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:

Dana A. Rasmussen — AUG 18 1992

Dana A. Rasmussen
Regional Administrator, Region 10
U.S. Environmental Protection Agency

Date

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

John D. Wagoner — 8/7/92

John D. Wagoner
Manager,
U.S. Department of Energy
Richland Field Office

Date

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY:

Chuck Clarke — 8/31/92

Chuck Clarke
Director
Department of Ecology

Date

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