START

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Department of Energy

Richland Operations Office

P.O. Box 550

Richland, Washington 99352

OCT 03 1991

91-TPA-168

Contractors, Richland, Washington

Mr. T. M. Anderson, President
Westinghouse Hanford Company

Dr. W. R. Wiley, Director
Pacific Northwest Laboratory

Mr. R. T. French, General Manager
Kaiser Engineers Hanford Company

Dr. W. L. Meader, President
Hanford Environmental Health Foundation

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OCT 08 1991
CORRESPONDENCE CONTROL

Gentlemen:

TRI-PARTY AGREEMENT CHANGE REQUEST

Attached is the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) change requests that were formally approved by U.S. Department of Energy (DOE), U.S. Environmental Protection Agency, Region 10, and the State of Washington Department of Ecology on September 9, 1991. The major and interim milestones included in these changes are now DOE commitments that are legally enforceable. Please assure that all program/project documentation and baselines are updated to incorporate these changes. Issues that have the potential to impact any Tri-Party Agreement milestone shall be immediately brought to the attention of DOE Field Office, Richland. If you have any questions please contact me, or your staff may contact Steve Wisness on 376-6798.

Sincerely,

John D. Wagoner
Manager

AME:SHW

Attachment

cc: R. O. Puthoff, AMO - WHC
J. R. Shadel, RDD - PNL
J. P. Collins, PMD - KEH
M. W. Tiernan, TSD - HEHF
T. B. Veneziano, WHC

OCT 1991
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Author	Addressee	Incoming Correspondence No.
JD Wagoner/RL	TM Anderson/WHC etal	9104864

Subject Tri-Party Agreement Change Request

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		GA Meyer	S4-56	X
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		DP Pabst	B2-35	X
		RG Slocum		X
		LL Powers	B2-35	X
		TC Varljen		X
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54-6000-117 (09/88)

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Tri-Party Agreement

SEPTEMBER 9, 1991

HANFORD FEDERAL FACILITY

AGREEMENT AND CONSENT ORDER

CHANGES

9112745.133

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016039

Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-01-90-3	Do not use blue ink. Type, or print using black ink.	5-3-91 Rev. 1

Originator	Phone
W. Jackson	373-3885

Class of Change

☒ I - Signatories (Section 13.0) ☐ II - Project Manager ☐ III - Unit Manager

Change Title

27-Month Delay to M-01-XX Grout Disposal Campaigns

Description/Justification of Change

Description:

The Federal Facility Agreement and Consent Order (Tri-Party Agreement) Milestone M-01-XX calls for the completion of 3, 6, 10, and 14 grout campaigns by September 1991, 1992, 1993, and 1994 respectively. This change request is prompted by the impacts outlined below and shown on Attachment 1.

a. The changing complexity of the Grout Facility Final Safety Analysis Report has added additional requirements to the program for new equipment which must be designed, procured, fabricated and installed.

b. Grout reformulation and verification is required to resolve excessive grout temperatures due to heat of hydration and verify agreement with the applicable guidance in the new NRC Waste Form Technical Position for cementitious waste forms.

(Cont. on next page)

Impact of Change

Impacts:

The impacts of implementing this change will be the delay of grouting campaigns by 27 months. Even when taking this delay into account, it has been determined that adequate double-shell tank space will be available to support other Hanford missions.

9112451334

Affected Documents

Federal Facility Agreement and Consent Order (Tri-Party Agreement), page D-2, Table D-1 Major and Interim Milestones-Disposal of Tank Waste.

Approvals X Approved ___ Disapproved

DOE	John D. Wagoner	09/09/91 Date
	Dana A. Rasmussen	09/09/91 Date
Ecology	Christine O. Gregoire	09/09/91 Date

A-6000-376 (05/89)

c. Additional time is required between the filling of vaults 102 and 103 to verify grout solidification required by the Washington State Department of Ecology.

The cumulative impact of these changes will delay the grout Tri-Party Agreement milestones by 27 months. This change request will establish a new baseline for the Hanford Grout Disposal Program and corresponding Tri-Party Agreement milestones.

The affected Tri-Party Agreement milestones are listed as follows. The basis for these negotiated dates are the filling of a vault in a continuous "pour" and no additional time required for verification of grout solidification between campaigns with the exception of the delay between filling vaults 102 and 103.

MILESTONE NUMBER	MILESTONE	CURRENT BASELINE DUE DATE	NEGOTIATED DUE DATE (THIS CHANGE REQUEST)
M-01-00	Complete 14 grout campaigns of double-shell tank waste by 12-96 and maintain currency with feed thereafter.	9-94	12-96
M-01-01	Complete a total of 3 grout campaigns of double-shell tank wastes (this includes 1 campaign of phosphate-sulfate waste).	9-91	Replaced by M-01-01A and M-01-01B
M-01-01A	Complete and verify 2 campaigns of double-shell tank waste (this includes one campaign of phosphate-sulfate waste).	N/A	9-93
M-01-01B	Complete 1 additional campaign of double-shell tank waste (this makes a total of 3 campaigns including 1 phosphate-sulfate waste campaign).	9-91	12-93
M-01-02	Complete 3 campaigns of double-shell tank waste in CY 1994.	9-92	12-94
M-01-02A	Initiate construction of vaults 106-109.	N/A	11-92
M-01-03	Complete 4 campaigns of double-shell tank waste in CY 1995.	9-93	12-95
M-01-03A	Initiate construction of vaults 110-113.	N/A	11-93
-01-04	Complete 4 campaigns of double shell tank waste in CY 1996.	9-94	12-96

M-01-04A	Initiate construction of vault 114.	N/A	11-94
M-01-05	Commitments for additional grout campaigns after 12-96 will be incorporated as interim milestones.	Bi-annually beginning 9-94	Bi-annually beginning 9-96

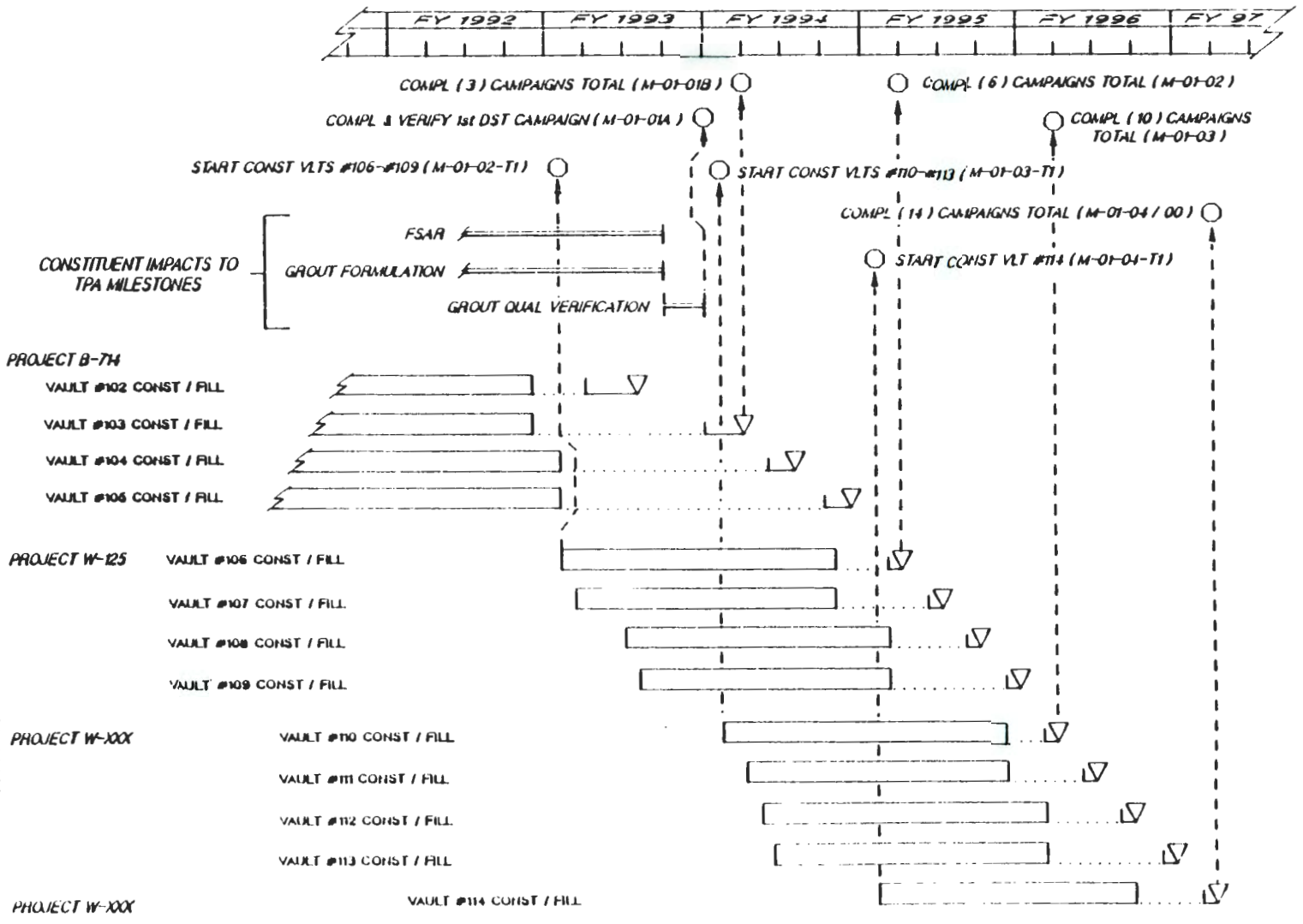
9112245137 [redacted]

WESTINGHOUSE HANFORD COMPANY

GROUT PROGRAM - DEFENSE WASTE REMEDIATION

VAULT CONSTRUCTION / FILL

SPECIAL TPA SCHEDULE



VLTCONS3 / GFY / F.WIDA / REV 0 05-03-91

01604

Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
02-91-1	Do not use blue ink. Type, or print using black ink.	05/13/91

Originator: G. A. Meyer

Phone: 373-1810

Class of Change

☒ I – Signatories (Section 13.0) ☐ II – Project Manager ☐ III – Unit Manager

Change Title

Revision to Double-Shell Tank Waste Pretreatment

Description/Justification of Change

Revision to Milestones M-02-00, M-02-01, and M-02-02:

Number	Milestone	Current Date	Revised Date
M-02-00	Initiate pretreatment of double-shell tank waste Double-shell tank waste pretreatment is required prior to disposal of high-activity tank wastes. The pretreatment supports the removal, treatment, and final disposal of wastes subject to land disposal restrictions which are stored in double-shell tanks.	Oct. 1993	TBD*

(Continued on page 2)

*To Be Determined

Impact of Change

Activities associated with pretreatment in B Plant of double-shell tank waste are undetermined at this time pending completion of the revised pretreatment program strategy.

9112245138

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-1 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

DOE John D. Wagoner	09/09/91	Date
EPA Dana A. Rasmussen	09/09/91	Date
Ecology Christine O. Gregoire	09/09/91	Date

escription: (Continued)

M-02-00	Removal of the wastes from double-shell tanks and disposal in grout or glass will allow double-shell tank space to be made available for single-shell tank waste.		
M-02-01	Submit to Ecology and EPA the double-shell tank waste disposal program redefinition study.	N/A	Dec. 1991
M-02-02	Incorporate additional interim milestones to support pretreatment of double-shell tank waste.	N/A	Jan. 1992

Due to the initial results of the risk assessment regarding the viability of B Plant for pretreatment of double-shell tank (DST) wastes, a series of studies have been undertaken which will be complete in FY 1991.

By December 1991, a revised program strategy outlining the preferred options for process and facilities to remediate DST wastes will be proposed to the Washington State Department of Ecology (Ecology and U.S. Environmental Protection Agency (EPA). The strategy will provide for the safe, environmentally sound, timely, and efficient remediation of Hanford T waste within the intent of the Hanford Defense Waste-Environmental Impact Statement ecord of Decision.

The revised program strategy will be of sufficient detail (Level 0 Program Schedule to established milestones while the new baseline is prepared. At a minimum target dates or milestones proposed for Ecology and EPA approval will include:

Major Milestones:

1. HWVP hot-start (to be incorporated as a revised M-03-00)

Interim Milestones:

1. DST waste retrieval process test start
2. DST waste remediation program baseline schedule
3. Complete selected pretreatment facility(s) conceptual design report(s)
4. If TRUEX is a selected pretreatment option, then appropriate milestones will be identified.

Target Dates

1. Start design of selected pretreatment facility(s)
2. Start construction of selected pretreatment facility(s)
3. Complete construction of selected pretreatment facility(s)
4. Initiate pretreatment of DST waste in selected pretreatment facility(s)

DOE recognizes that the December 1999 Hot Start-up milestone will remain unchanged, unless all parties agree that the change is necessary in accordance with Article XL of the Agreement.

Other milestones may be possible depending upon the outcome of the revised program strategy, including the start of construction/modification of sludge wash, filtration, and ion exchange process facilities. Upon completion of conceptual designs for any new or modified pretreatment facilities, USDOE will propose additional interim milestones for the construction and operation of those facilities. These interim milestones, subject to Ecology and EPA approval, will be incorporated into the agreement. Ecology and EPA recognize that if the completed conceptual designs demonstrate the technical infeasibility of achieving any of the established milestones for HWVP or pretreatment, USDOE will request extensions for M-02 and M-03 on that basis.

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Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-03-90-2	Do not use blue ink. Type, or print using black ink.	05/13/91

nator
R. A. Smith

Phone
376-8041

Class of Change

☐ I – Signatories (Section 13.0) ☒ II – Project Manager ☐ III – Unit Manager

Change Title

REVISION TO INTERIM MILESTONE M-03-01

Description/Justification of Change

Number	Milestone	Current Date	Revised Date
M-03-01	Initiate Hanford Waste Vitrification Plant construction	July 1991	April 1992

Add a description for Interim Milestone M-03-01 as follows:

M-03-01 "Initiation of HWVP construction is defined as start of HWVP site preparation (includes site grading, roads, generic site utilities such as sewer, domestic water, construction powers, security fencing, and construction support buildings, initiation of procurement for long-lead HWVP construction materials and by December 1991, initiate design of HWVP canister storage building."
(Continued on Page 2.)

ct of Change

Deferral of interim milestone M-03-01. The preliminary design of the HWVP was completed in September 1990 by the architect/engineer, Fluor Daniel, Inc. Detailed design started in January 1990. Detailed design activities will continue in support of the HWVP startup/operations schedule. Additional assumptions and analysis need to be developed jointly in order to determine impacts to the project.

Affected Documents

Tri-Party Agreement related documents including "the Hanford Federal Facility Agreement and Consent Order Calendar Year 1990 Annual Update," Table D-1 and Figure D-1.
(Continued on Page 2).

Approvals X Approved ___ Disapproved

DOE John D. Wagoner	09/09/91	Date
Jana A. Rasmussen	09/09/91	Date
Ecology Christine O. Gregoire	09/09/91	Date

Justification (Continued)

Number	Milestone	Current Date	Revised Date
M-03-01-T1*	Establish date for design compltion Provide a date for a new interim milestone which will read "complete HWVP detailed design."		Jan. 1992

*Target Date

The technical suitability of tank waste treatment processes and facilities has been questioned. As a result, a systematic assessment was initiated by DOE to determine if there are significant risks with the current vitrification/pretreatment program and the ability to provide continuous pretreated feed to HWVP. The proposed 9-month delay in the start of HWVP construction allows time to evaluate the impacts of the technical concerns and to implement any necessary changes to the HWVP before commitment of resources for construction.

Milestone number M-03-00 will remain the same (December 1999). Ecology will provide a letter to DOE acknowledging that the milestone may need to be revisited based on the December 1991 decisions related to waste retrieval, the pretreatment process, and resulting HWVP design and construction changes. DOE will assure Ecology of meaningful and fully funded participation in this decision making process. DOE recognizes that the December 1999 Hot Start-up milestone will remain unchanged unless all parties agree that a change is necessary in accordance with Article XL of the Agreement.

Affected Documents (Continued)

Also, HWVP Project specific documents including: Project Plan, Project Management Plan, project Acquisition Plan, Project Master Schedule, Contractor Master Schedule, major milestone, and other appropriate supporting subtier documents.

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Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-05-90-03 Rev. 1	Do not use blue ink. Type, or print using black ink.	05/03/91

nator
N. E. Raymond

Phone
373-2785

Class of Change

☐ I – Signatories (Section 13.0) ☒ II – Project Manager ☐ III – Unit Manager

Change Title

INTERIM STABILIZATION MILESTONE CHANGES FOR FISCAL YEARS 1991-1996

Description/Justification of Change

Revise the M-05-03 through M-05-09 milestones for the numbers of tanks to be interim stabilized.

The change request M-05-90-2, approved September 1990, revised the number of interim stabilized tanks for fiscal year (FY) 1990 from five to four tanks. Schedule slippage during FY 1990 caused by on-going safety concerns on ferrocyanide, flammable gas and high organic salts have impacted the planning and documentation needed to start pumping tanks early in FY 1991. These delays have necessitated revision of future milestones. Of the 44 tanks remaining to be interim stabilized, only 18 tanks located in the 200E and 200W Areas are available for pumping. The other 26 tanks are currently restricted from pumping until ferrocyanide and flammable gas concerns are resolved. The delays are due to time required to respond to new safety concerns and inefficiencies of pumping in more tank farms without pumping all tanks in each farm simultaneously. The milestone changes needed to complete interim stabilization and isolation by the end of 1996 are as follows:
(See Page 2 for Description/Justification of Change continuation.)

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...t of Change

There is no change impact to the final milestone M-05-00 as the tanks are still scheduled to be interim stabilized by the end of FY 1996.

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-3 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

DOE John D. Wagoner — Date 09/09/91

EPA Dana A. Rasmussen — Date 09/09/91

Ecology Christine O. Gregoire — Date 09/09/91

A-6000-176 (05/89)

9112245345

Description/Justification of Change (Continued from Page 1)

ORIGINAL

Milestone	Fiscal Year	Stabilization
M-05-03	September 1991	9
M-05-04	September 1992	9
M-05-05	September 1993	9
M-05-06	September 1994	9
M-05-07	September 1995	5
M-05-08 & 09	September 1996	2 1*

REVISED

Milestone	Fiscal Year	Stabilization
M-05-03	September 1991	4
M-05-04	September 1992	9
M-05-05	September 1993	11
M-05-06	September 1994	8
M-05-07	September 1995	10
M-05-08 & 09	September 1996	2

*One tank carried over from FY 1990.

The target dates for pumping of tanks planned to start in 1991 and 1992:

M-05-03-T1* 241-BY Farm, May 1991
M-05-03-T2* 241-C Farm, August 1991
M-05-04-T1* 241-S Farm, September 1991
M-05-05-T1* 241-SX Farm, July 1992[a]
M-05-05-T2* 241-S Farm, remainder of tanks July 1992[a]

*Target date.
[a]These tanks are currently listed as flammable gas tanks and the assumption made for this schedule is that the safety concerns that prohibit pumping will be resolved by January 1992.

Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-10-90-2	Do not use blue ink. Type, or print using black ink.	06/14/91

nator
. W. Hall/A. F. Noonan

Phone
376-0286/373-3579

Class of Change

☐ I – Signatories (Section 13.0) ☒ II – Project Manager ☐ III – Unit Manager

Change Title: Single-Shell Tank Core Sampling Milestone Delay Due to Recently Identified Core Drilling and Tank Storage Safety Issues

Description/Justification of Change

The following changes are requested to the Federal Facility Agreement and Consent Order (Tri-Party Agreement) Milestones:

Number	Milestone	Current Date	Revised Date
M-10-04	Obtain 4 core samples from 2 single-shell tanks (SSTs)	Dec. 1990	Sept. 1991
M-10-04-T1*	Readiness complete to proceed with push-mode core sampling	N/A	June 1991
M-10-05	Issue "Integrated Plan - Sampling and Analysis of Hanford Site Wastes Measuring Greater Than 10 mREM per Hour"	N/A	March 1992

arget Date

ct of Change

As a result of this change 20 tank waste core sampling events from SSTs will be rescheduled. The interim milestones supporting M-10-00 will be redefined, scheduled, and planned in the "Integrated Plan-Sampling and Analysis of Hanford Site Wastes Measuring Greater Than 10 mREM per Hour" to be issued by March 31, 1992. Products from the plan will result in an optimized sampling and analysis schedule with defined and achievable interim milestones and a plan consistent with milestone M-10-00 to complete analyses of at least 2 complete core samples from each single-shell tank by September 1998.

The new milestone M-10-13 will restore to the Hanford Site the capability to sample tanks in the rotary core drilling mode, and will be completed by September 30, 1992.

(See Page 4 for continuation.)

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-3 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

John D. Wagoner	09/09/91
DOE John D. Wagoner	Date
Dana A. Rasmussen	09/09/91
Dana A. Rasmussen	Date
Christine O. Gregoire	09/09/91
Ecology Christine O. Gregoire	Date

umber	Milestone	Current Date	Revised Date
M-10-05-T1*	Issue draft integrated plan to Ecology	N/A	Jan. 1992
M-10-06	Obtain 20 core samples from Single-Shell Tanks (SSTs)	Sept. 1992	Sept. 1992
M-10-13	Restore rotary mode sampling capability at the Hanford Site	N/A	June 1992
M-10-13-T1*	Completion of improved organic clean-up analytical method	N/A	Jan. 1992
M-10-13-T2*	Complete R&D and installation of both the hard saltcake sampler and the improved hydrostatic balance system	N/A	June 1992

*Target Date

Milestone M-10-04

Milestone M-10-04 has been impacted by tank waste storage safety issues and the issue raised over the safety of core sampling operations.

As a result of high drill bit temperatures measured during testing of the drill bit on ynthetic hardcake in the rotational mode, all tank waste core drilling operations have een suspended until it can be demonstrated that core sampling can be performed safely. he SSTs selected to be sampled to meet M-10-04 are expected to be soft wastes that can be sampled without rotation of the drill bit and should not exhibit the high temperatures observed during the hardcake tests. It was determined that additional testing and analysis of the core drilling equipment in the push-mode (no rotation) would be the prudent course of action prior to performing additional core sampling. As a result, an instrumented test in simulated wastes measuring drill bit temperatures has been satisfactorily completed confirming that increase in temperature is minimal and acceptable. The target date for completion of all startup and Readiness Review activities required to proceed with push-mode core sampling of SSTs to satisfy interim milestone M-10-04 is June 24, 1991.

Milestone M-10-05

Because of the current sampling schedule uncertainties imposed by safety related issues, M-10-05 will not be met. It has been determined that an integrated Hanford Site waste sampling and analysis plan is needed to address the evolving Hanford characterization program. To address this need, interim milestone M-10-05 will be redefined to be issuance of an "Integrated Plan - Sampling and Analysis of Hanford Site Wastes Measuring Greater Than 10 mREM per Hour" to be issued by March 31, 1992. The letter transmitting the plan to Ecology will include the USDOE recommended plan of action. The scope of the plan will include: 1) Identification of current and projected sampling and analysis needs for Hanford Site wastes measuring greater than 10 mREM per hour; 2) Assessment of existing and planned resources; 3) Establishment of prioritization criteria; 4) Development of an integrated schedule; 5) Analysis of the integrated schedule and plan to determine actions ecessary to meet and support M-10-00; and 6) Identification of opportunities for cceleration. In this plan the sampling and analysis strategy and redefinition of interim

milestones required to satisfy M-10-00 will be accomplished and the projected near-term sampling events identified. This plan will be the basis for a change request to interim milestones M-10-07 through M-10-12 showing how missed cores will be recovered before September 1998. The target date for release of the draft document to Ecology is January 31, 1992.

Milestone M-10-06

After careful review of projected tank waste core sampling and analysis capabilities it has been determined that milestone M-10-06 as currently defined to obtain 24 cores from single-shell tanks is not achievable by September of 1992. This condition is due to core sampling requirements imposed because of safety concerns related to selected double-shell tanks (DSTs), and the need to provide DST tank waste core materials for retrieval and pretreatment studies, also driven by TPA milestones. As in the case of milestone M-10-05, the redistribution of the balance of 4 cores for milestone M-10-06 will be redefined in the plan developed in the "Integrated Plan - Sampling and Analysis of Hanford Site Wastes Measuring Greater Than 10 mREM per Hour" issued by March 31, 1992 (milestone M-10-05). The plan will also provide the basis for focused near-term acceleration to identify additional sampling opportunities to achieve this recovery in FY 1992. USDOE agrees to diligently pursue sampling an additional 4 cores if this can be accomplished without preventing characterization of tank wastes with safety concerns or tank wastes which must be characterized for pretreatment, grout, or HWVP.

Milestone M-10-13

New and extensive modification to the core sampling apparatus planned for the second core sampling truck is required to provide safe tank waste core sampling capability to address both DST and SST safety related concerns. These additional modifications include gas purging and temperature monitoring capability, and an instrumentation package to monitor bit temperature, depth, pressure, RPM, and purge gas flow rate. Also integrated into the development effort will be other tasks including NPH elimination, and the development of a universal hardcake sampler planned for the SST Characterization Program. Extensive testing during and following design and fabrication activities, followed by procedure development, training, and a formal Readiness Review will be required prior to actual tank waste core sampling in the rotary-mode. The focused and expedited completion of this upgrade is essential to the SST Characterization Program in that the majority of SSTs require a hardcake sampler for acquiring materials for characterization. Continuing safety concerns associated with all hardcake core sampling will likely require documented monitoring during operations. This new milestone requires completion of this major task by September 30, 1992. (In support of the characterization of tank waste materials that may be exposed to NPH hydrostatic fluid during sampling, the target date for completion of improved organic clean-up analytical method is January 31, 1992.) The target date for a hydrostatic balance system that does not utilize NPH, and completion of the hard saltcake sampler is June 30, 1992.

Impact of Change: (Continued from Page 1)

It is anticipated that the new hard saltcake sampler, the improved (laboratory) organic cleanup analytical method, and the improved hydrostatic balance system (field) will be developed and installed concurrent with restoration of rotary capability. A target date of January 31, 1992 is established for completion of the organic cleanup method. In consideration of the significant R&D requirements, a target date of June 30, 1992 is established for completion of both the hard saltcake sampler and the improved hydrostatic balance system. These changes will not impact completion of Milestone M-10 or the interim milestones preceding M-10.

9125145.3560

Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-12-90-4	Do not use blue ink. Type, or print using black ink.	05/13/91

...nator	Phone
... D. Wojtasek	376-7000

Class of Change

☒ I – Signatories (Section 13.0) ☐ II – Project Manager ☐ III – Unit Manager

Change Title MODIFICATION OF MILESTONES M-12-00 AND M-13-00 TO IMPLEMENT AGGREGATE AREA MANAGEMENT STRATEGY

Description/Justification of Change

See attached for description/justifications of change

...ct of Change

See attached for impact of change

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-2 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

DOE	John D. Wagoner	09/09/91 Date
E	Jana A. Rasmussen	09/09/91 Date
Ecology	Christine O. Gregoire	09/09/91 Date

A-6000-376 (05/89)

Description/Justification and Impact of Change for Change Request Package for Hanford Past-Practice Milestones Change Control Form Number M-12-90-4

May 13, 1991

The parties are proposing an approach aimed at maximizing efficiency, maintaining aggressive project schedules, and achieving earlier remedial action. The DOE, EPA and Ecology have agreed that some efficiencies could be gained over the existing Tri-Party Agreement past-practice investigation process. These changes to the existing process and schedules are being proposed in consideration of long-term solutions, including DOE's commitment to fully fund and implement the required work in a timely manner.

The bases for modifications to the milestones at this point are twofold. First, as mentioned above the parties believe that a more efficient system can be designed and tailored for the work to be done at Hanford. This rationale alone would be sufficient cause to adjust the direction in which the parties have been proceeding. The current approaches to investigations and decision-making have been along the traditional Superfund path with a somewhat linear and phased process. This has resulted in extremely high DOE cost estimates for the scope of work envisioned by the three parties since the Agreement was signed (as much as $27 million to $50 million per project) -- before remedial action ever begins. Part of the reason for the high cost is the long duration of each project. Currently, DOE's proposed operable unit RI/FS schedules have ranged from three years to nine years, with an average of five to six years. All of the parties recognize that excessive costs and schedules can not be supported. [Note: The term "RI/FS" is used here in a broad sense and includes "RFI/CMS" activities.]

Second, and as a related factor, DOE has been unable to allocate sufficient funds to implement all of the required RI/FS activities. This is due to a combination of circumstances including the difficulty of accurately projecting budget needs over two years in advance, escalating costs, unanticipated scope of work and new requirements, and allocation of funds to various priority activities within the Environmental Restoration program. Nonetheless, the funding deficiencies arising from such circumstances have resulted in delays on several projects. As part of this new approach, DOE agrees to seek all funding necessary to assure that all work required by this change request is accomplished in a timely manner. DOE, EPA and Ecology will continue to develop and implement sound management practices to assure the effective and efficient execution of work covered under these milestones.

The parties agree that it is important to include new provisions to ensure that activities necessary for timely project completion are implemented as planned. The provisions listed in the remainder of this justification indicate the parties' approach to implementation of a streamlined approach to past-practice work at Hanford. These provisions are organized in terms of 1) general topics/issues, 2) a 100-Area approach, and 3) a 200-Area approach. These points identify what EPA and Ecology believe are the minimal requirements for a successful program.

The following discussion consists of agreements that have been reached between the three parties over the past few weeks. In some cases, such agreements are in the form of public commitments, while in other cases, additional milestones are proposed (M-27-00 through M-30-00) to address new requirements.

GENERAL TOPICS / ISSUES

1. Requirements for submittal of RI/FS work plans under both M-12-00 and M-13-00 will be adjusted to some extent, but only under conditions that will lead to efficiencies and keep long-term schedules intact and enforceable. In other words, any adjustments to near-term schedules must not result in records of decision beyond those dates scheduled or anticipated under the current methodology. M-15-00 (complete the RI/FS [or RFI/CMS] for all operable units by September 2005) must be maintained.

   For M-12-00, All work plans through 100-FR-1 (due April 30, 1991) have been submitted as per the current Tri-Party Agreement schedule. Submittal of the 200-UP-2 work plan (Milestone M-12-15, due June 30, 1991) will be deferred until June 1992. That work plan, or an agreed upon alternate work plan, will reflect the submission of the U-Plant Aggregate Area Management Study (AAMS) report in January 1992 (Milestone M-27-02). Submittal of the following work plans will be deferred from M-12-00 into M-13-00, as the first work plans to be submitted under that milestone:

Operable Unit	Milestone Number	Current Due Date
100-BC-2	M-12-16	August 1991
200-BP-5	M-12-17	October 1991
100-DR-2	M-12-18	December 1991
200-ZP-1	M-12-19	February 1992
100-KR-2	M-12-20	April 1992

   Milestone M-12-00 will be revised to reflect that the number of work plans to be submitted to EPA and Ecology is changed from 20 to 15 and the due date is changed from April 1992 to June 1992.

By deferring these work plans (not deleting them), EPA and Ecology recognize claims by DOE-RL that funding deficiencies arising from the circumstances mentioned previously will prevent development of further work plans and implemention of approved work plans, as well as carrying out other work required by the Tri-Party Agreement. The parties agree to finalize and implement a more effective and streamlined RI/FS (RFI/CMS) process based on the draft "Hanford Past Practice Investigation Strategy", including those work plans submitted to date under M-12-00 which have not yet been approved for implementation. Continued development and submittal of work plans prior to finalization of this streamlined process would not be appropriate.

By deferring the submittal of certain work plans, EPA and Ecology are giving DOE the opportunity to use existing funding to concentrate on implementing field activities and the aggregate area management approach in a manner agreed to by all parties. During the delay period, EPA and Ecology expect DOE to secure funding necessary to develop the deferred work plans and to carry out all work that will be required by those plans in a timely manner.

For M-13-00, The parties are proposing to defer the start date of M-13-00 (currently scheduled to begin in January 1992) until January 1993, constituting a one year delay. The first five work plans to be submitted after January 1993 would be the above mentioned work plans that are being deferred from M-12-00. A specific date for submittal of each work plan to be submitted under M-13-00 will be established as part of the annual update to the work schedule (Appendix D of the Action Plan).

2. For future work plans, i.e., those contained in M-13-00, it should be possible to obtain approved work plans with a reduced effort on the part of all parties. Additionally, the scope of the field work that will required by each of these future work plans should be reduced to some extent from the level required for the first several work plans. This is achievable through a focused RI/FS process, where the parties build on a base of knowledge that is continually developing. As an example, the 100-BC-1 operable unit will undergo a relatively rigorous level of investigation, since it is the first operable unit in that area. The RI/FSs for those adjacent, subsequent operable units (100-BC-2, 100-BC-3, and 100-BC-4) can be tailored in consideration of what was learned at 100-BC-1.

The parties envision a "focused" or "streamlined" RI/FS, wherever possible, for future operable units. Close coordination with the regulators during all phases of work plan development and implementation is necessary for this to

occur. With a "bias for action", the parties believe there are opportunities to implement remedial action sooner than would occur with the current or traditional process. In some cases, data gathering as part of the investigation, may overlap with certain elements of remedial action in an integrated fashion.

With increased scoping activities prior to initiating intrusive field work and with an increased emphasis toward early remediation, DOE will commit to a significantly shorter period for conducting the RI/FS than with previous projects, provided the scope of the RI/FS is commensurate with project duration. The parties will seek the most aggressive schedules possible, without sacrificing the quality and amount of information necessary to support remedial action decisions. All schedules must support M-15-00 (complete the RI/FS for all operable units by September 2005).

3. The RI/FSs for the four currently approved work plans will be fully funded, implemented, and completed in accordance with the currently approved schedules. Additional interim milestones will be developed, in accordance with Section 11 of the Action Plan, in the near term to ensure progress toward timely completion of these RI/FSs. The designation of these additional milestones shall be completed by June 30, 1991. The parties will be open to changes to both the scope and schedule of these approved work plans whenever agreement can be reached that such changes will result in efficiencies and timely completion of work.

4. EPA and Ecology have been pursuing DOE to construct a site-wide (or at least area-wide) groundwater model, to better understand the flow system as a whole at Hanford. This will be accomplished as part of the overall risk assessment process (proposed as M-29-00). The parties believe that this will prove to be very useful to operable unit investigations.

5. One of the problems EPA and Ecology have observed with implementation of the environmental restoration program is the lack of direct oversight to planning and coordination of field activities, support services, and the budget. To date, it appears that each RI/FS project has its own schedule and management structure which is independent of other projects. The parties believe that better project coordination will enhance the ability to stay on schedule. This issue will become more complex as more projects are added to the system.

   EPA and Ecology recently offered a possible solution to this problem -- that DOE create a "coordinator role", within DOE-

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RL Environmental Restoration Division. The goal was to ensure that all ER work required by the TPA would be accomplished in an efficient, coordinated manner. Functions such as assurance of consistency in preparation of primary documents, data compilation from a wide range of sources, coordination of activities to ensure available drill rigs, field equipment, specialized personnel, and laboratories were included in the discussion.

Although not incorporated as a milestone in the Agreement, DOE provided the following commitment to EPA and Ecology:

"Enhanced management, coordination and planning of Environmental Restoration Program activities by DOE is recognized as an essential ingredient to successful accomplishment of the Program goals, TPA milestones and cleanup of the Hanford Site. To achieve a stronger focus on the effective implementation and coordination of field activities, support services, budget preparation, document preparation, and program management, DOE will augment its staff by assigning full time support contractor staff to enhance its oversight of the M&O and USACE assigned work.

By June 1, 1991, DOE will take steps to enhance DOE's oversight of Environmental Restoration Program activities.

By July 1, 1991, full implementation of the Task Order described above will be in effect."

EPA and Ecology see this as a positive step toward better coordination within DOE's Environmental Restoration program.

6. DOE has been attempting to establish guidelines for conducting a risk assessment (or performance assessment) program on a site-wide basis for the past two years. However, funding has not been available in light of other priority activities. The parties are proposing a new milestone (M-29-00) to address this issue. The guidelines to be established will be used on a site-wide basis and will enhance the consistency in risk assessment methods and in evaluation of remedial action alternatives.

7. DOE and WHC have been attempting to conduct a soil and groundwater background study on an area-wide basis (e.g., 100-Area, 200-Area, etc.) for the past two years. However, the results of this study have not yet been finalized. EPA and Ecology recently received a draft copy of the document, "Characterization and Use of Soil and Groundwater Background for the Hanford Site", WHC-MR-0246, dated March 1991. The parties have proposed a new milestone to ensure that this

document is finalized. This document will result in an improvement to the current process of establishing background on an operable unit or an individual waste site basis and would require less effort and dollars in the long run. This document will be subject to approval by EPA and Ecology and will be included in Appendix F of the Action Plan.

8. One objective of the AAMSs and the remedial investigations, including screening activities, is identification of potential sites for expedited response actions. The streamlined approach for conducting RI/FSs, with a bias for action supports this objective.

   In order for priority abatement actions to be initiated and completed, adequate funding must be available. DOE has committed to the implementation of any expedited actions as additions to the Tri-Party Agreement, without an impact to existing milestones. If the amount of funding allocated for expedited response actions in a fiscal year should be inadequate to meet identified objectives, DOE has agreed to take all steps to obtain funding.

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100-AREA APPROACH

EPA and Ecology are willing to adjust some schedules to gain efficiencies and to speed up the overall cleanup in the 100-Area. As a condition to modifying current schedules, DOE has agreed to the following, as conditions for a revised approach to conducting the RI/FSs at Hanford. Accordingly, EPA and Ecology would agree to defer submittal of the 100-BC-2, 100-DR-2, and 100-KR-2 work plans until calendar year 1993, when they would apply toward the completion of M-13-00.

1. All of the field screening, scoping, and non-intrusive activities (as defined in the Figure 7-4 of the TPA Action Plan) that have been identified in work plans and that should have been accomplished for all source term waste sites during preparation of the 100-Area work plans through 100-FR-1 must be conducted immediately. Some of these activities are safety related and must be completed before other field activities can occur.

   Scoping for the groundwater operable units (100-HR-3, 100-BC-5, 100-KR-4, 100-NR-1, and the groundwater portion of 100-FR-1) would consist primarily of review of existing information and non-intrusive work. Since there is a limited amount of groundwater data in much of the 100-Area, the scoping would be supplemented with existing information available from other sources, even if those sources are outside the currently identified groundwater operable unit

boundaries.

The three parties would work closely together during all scoping activities, assessing data and making modifications to work plans, as necessary. Groundwater operable unit scoping would be planned to coincide with the river impact study (proposed under M-30-01 and M-30-04) and would provide data, along with source term scoping information, on which to begin the 100-Area combined risk assessment (proposed under M-30-02).

The parties will complete discussions on the methodology and will approve the "Hanford Past-Practice Investigation Strategy", providing a streamlined RI/FS approach by June 30, 1991. This methodology will serve as a guideline for development of all future work plans and for rescoping the ten current work plans in the 100-Area, as appropriate.

2. Immediately following three-party agreement on the streamlined RI/FS methodology, the parties will begin rescoping the current 100-Area work plans that have been prepared. The rescoping will be aimed at placing the initial focus of the intrusive investigations on the highest priority waste sites within each operable unit for which a work plan has been prepared. The collective knowledge of the three parties and the information contained in the work plans is sufficient to identify the high priority waste sites.

Rescoping will allow DOE to place resources on the investigation of the highest priority waste sites in each operable unit at the beginning of the process, with a bias toward remedial action. This will result in information and data on the more critical waste sites at an earlier point in time, which will enable us to arrive at an earlier record of decision for higher priority waste sites or for an entire operable unit. This concept of a "focused" record of decision could apply to similar waste sites contained in different operable units. This methodology will also give us more accurate information to support early records of decision and/or to support expedited response action, as appropriate, for higher priority waste sites.

This approach combines the advantages of investigating high priority units of similar type and history ahead of lower priority units, while keeping the current operable unit concept intact. Also, a significant reduction in the amount of work required for the preparation of the various work plans will be achieved, even though some effort to rescope the work plans will be necessary.

Three-party agreement on the details of how each work plan will be rescoped will be achieved in accordance with the following schedule:

Operable Unit	Conceptual * Agreement	Submit Rescoped ** Work Plan/Schedule
100-HR-1	July 1991	September 1991
100-DR-1	July 1991	September 1991
100-HR-3	July 1991	September 1991
100-BC-1	July 1991	September 1991
100-BC-5	July 1991	September 1991
100-KR-1	August 1991	October 1991
100-KR-4	August 1991	October 1991
100-FR-1	September 1991	November 1991
100-NR-1	October 1991	December 1991
100-NR-3	October 1991	December 1991

* Note: If the parties fail to achieve conceptual agreement by the dates specified, DOE will provide work plans with schedules based on the currently defined work scope. In this case, work plans must be submitted in accordance with the work plan submittal schedule specified above and in M-12-00 and the lead regulatory agency will set the final schedule and approve the work plans for immediate implementation.

** Note: Implementation of these work plans shall begin in accordance with the approved work plan schedules. These schedules shall be constructed on an integrated approach for all work to occur in the 100-Area, the four operable unit RI/FS projects now approved, the 200-Area AAMS projects (M-27-00), and a streamlined approach to conducting RI/FSs. This would allow work on all projects to proceed in an orderly manner.

3. Based on the completion of rescoping the work plans, as described above, a detailed integrated schedule for completion of all investigative work in the 100-Area must be developed. Consideration and scheduling of all necessary resources must be made, including items such as drilling rigs, specialized staff expertise, laboratory capability and capacity, etc. Integrated schedules for 100-HR-1, 100-HR-3, 100-DR-1, 100-BC-1, and 100-BC-5 shall be established no later than September 30, 1991. This schedule must be used to construct the individual operable unit work plan schedules to be submitted with the rescoped work plans as indicated above. Prior to approval, each of the individual work plan schedules will have numerous interim milestones

established, in order to track and ensure progress of the various tasks. The integrated schedule must accommodate the September 2005 date (M-15-00) for completion of all RI/FSs.

4. The parties expect that this integrated system will result in earlier records of decision than are achievable under the current system. Since schedules for the 100-Area work plans have not yet been approved, the parties do not have a baseline to measure against. Therefore, the schedules to be constructed for each of the 100-Area work plans must be aggressive toward the goal of early records of decision.

5. DOE will conduct a focused study to determine the effect of the Columbia River on the hydrology and contaminant migration within the 100-Area operable units. This study, proposed under M-30-00, will maximize the use of currently available information and will focus on the areas of highest contamination and concern. However, EPA and Ecology recognize that some data from outside the currently defined operable units will be necessary for completion of this study.

   The objectives, scope, design, and duration of the study shall be agreed to by the three parties no later than June 30, 1991. Information obtained from this study will be used to support a combined or cumulative risk assessment of the 100-Area, in terms of the Columbia River as a route of exposure to contaminants.

6. DOE will conduct a combined risk assessment for the 100-Area, as noted above, in accordance with proposed M-29-03. This risk assessment will include the Columbia River as a primary pathway for contaminant migration, as well as other exposure scenarios that consider various potential land use alternatives. It will consider both ecological and human health impacts.

   Information gathered during the first few operable unit remedial investigations, including area wide scoping activities, will be considered in this risk assessment. Timing for the risk assessment will be established in consideration of the integrated schedule for the 100-Area, as mentioned above..

   The information gathered during investigations of later operable units will be used to supplement the combined risk assessment and remedial actions will be modified accordingly. The parties would not expect the later operable units to significantly impact the risk assessment, since they are lower priority units to begin with.

This combined risk assessment will replace individual risk assessments for each 100-Area operable unit, resulting in a comprehensive approach to cleanup of the various sites and groundwater. Benefits achieved via expedited response actions will be factored into the risk assessment, if such actions can demonstrate that improvements have already occurred.

7. DOE would not develop new Feasibility Study reports on an operable unit basis. Rather, it would conduct three stand alone or "base" FS reports for the entire 100-Area. These reports would consider 1) source operable units (except N-Area), 2) groundwater operable units, and 3) N-Area, as it is distinctly different from the other 100-Areas.

   These reports will be based on information obtained as the priority investigations proceed in each operable unit, for various categories of waste sites. This methodology will work, since the feasible alternatives for remediation of similar waste sites which received similar types and volumes of wastes should be the same, even if the waste sites are in different operable units. Any additional information from the later operable units would serve to supplement or confirm the content of the three base FS reports.

   DOE will begin assembly of the base FS reports as soon as the scoping activities are underway and will complete them as soon as the data allow, in accordance with the integrated schedule for the 100-Area operable units. It is important that the base FS reports be scheduled and completed in a timely manner, to accommodate schedules for early records of decision, remedial design, and remedial action.

200-AREA APPROACH

The Aggregate Area Management Study (AAMS) approach proposed for the 200-Area (as M-27-00) is outlined in the "Hanford Past-Practice Work Plan Strategy" and is somewhat different from the approach the parties are proposing for the 100-Area, for a number of reasons. It is important to understand that the AAMS for the 200-Area is not an end unto itself, but rather a tool that will lead to increased efficiencies in the past-practice investigation process and, ultimately faster records of decision.

As a condition to modifying current schedules, DOE has agreed to the following, as conditions for a revised approach to conducting the RI/FSs at Hanford, beginning with a series of ten AAMSs. Accordingly, EPA and Ecology will agree to defer submittal of the 200-UP-2 work plan (Milestone M-12-15, due June 30, 1991) until June 1992. That work plan, or an agreed upon

alternate work plan, will reflect the submission of the U-Plant Aggregate Area Management Study (AAMS) report in January 1992 (Milestone M-27-02). In addition, submittal of the 200-BP-5 and 200-ZP-1 work plans will be deferred until calendar year 1993, when they would apply toward the completion of M-13-00.

1. DOE will conduct a series of AAMSs to cover all source terms in the entire 200-West Area and the 200-East Area (not including 200-BP-1 -- information from the 200-BP-1 RI/FS will feed into the appropriate AAMS). The 200-Area, even when divided into East and West, is too large to accommodate a single AAMS for all source terms. However, eight well defined areas within the 200-Area exist that would be suitable for the scale of an AAMS. These areas or waste area groups are as follows:

   a. B-Plant
   b. PUREX
   c. Semi-works
   d. 200-Area North
   e. Redox
   f. T-Plant
   g. U-Plant
   h. Z-Plant

   The groundwater beneath the 200-Area would be divided into two separate AAMS projects -- one for 200-East and one for 200-West. As the existing groundwater information and vadose zone information is assimilated, it should provide a good information source to substantiate the definition of specific groundwater operable units within the 200-Area. As such groundwater operable units are identified, they will be prioritized and added to the Action Plan work schedule. Information collected under the groundwater AAMS projects will be integrated into the site-wide (or area-wide) groundwater flow models proposed under M-29-02.

   The design of the AAMSs will be fashioned after the guidelines in the strategy document, although this document has not yet been finalized or approved by the parties. An outline of the 200-Area AAMSs is provided in the "200 Area Aggregate Area Management Study Guidelines" which is attached. Existing information will be used wherever possible, in consideration of data quality objectives. A limited amount of new intrusive work (such as installation of groundwater wells or vadose borings) will be necessary to achieve the desired result of the AAMS. Efforts to connect known subsurface contamination to sources will be made, followed by detailed mapping of the contaminant plumes. A search of available and applicable process information and records will be made to more accurately predict the contaminants of concern. The design will have to be agreed

to by the three parties. DOE has agreed to submit the methodology and format for the AAMS Reports to EPA and Ecology by June 30, 1991 (see M-27-01). The parties have agreed to finalize the scope of the 200-Area AAMS strategy by July 31, 1991. The schedule for the AAMS Reports is defined in Table 1 of the attachment and in M-27-00.

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ATTACHMENT

200-AREA AGGREGATE AREA MANAGEMENT STUDY GUIDELINES

The draft Hanford Past Practice Investigation Strategy is the basis for the proposed aggregate area management studies proposed for the Hanford Site 200 Areas. The strategy recognizes that the parties to the Tri-Party Agreement must make more effective use of a process similar to the standard "scoping study" to gather and analyze existing data to allow a more limited and focused remedial investigation process. In this manner, the existing data base would help focus the subsequent remedial investigation work plans to the data gaps necessary to select a remedy (if needed) and may in some cases become the basis for decisions, including remedial action, where sufficient data and data quality exist.

In cases where existing data are sufficient, it may be appropriate to make the FS process much more efficient by initiating formal evaluations of remedial technologies during "scoping" and, by mutual consent of the three parties, reducing the number of alternatives evaluated. Three feasibility studies are proposed for the 100 Area, as described in the 1991 TPA change package.

AGGREGATE AREA MANAGEMENT STUDY (AAMS) GENERAL DESCRIPTION

The draft Hanford Past Practice Investigation Strategy describes the AAMS process as described herein. Scoping studies are considered in Section 300.430(b) of the NCP and proposed 40 CFR 264.511. Both regulations are designed for characterizing and addressing hazardous substances at sites with considerable less complexity and data than Hanford. The AAMS study is similar in nature to a scoping study in that its intent is to:

- assemble and evaluate existing data (establish associated DQO);
- identify the need for ERAs;
- identify likely contaminants and response scenarios and potentially applicable technologies (if possible, screen, select and initiate FS);
- focus and minimize new work under the work plan;
- provide for the opportunity to perform limited new site characterization work if data or interpretation uncertainty could be reduced by the studies. This is similar in concept to Preliminary Assessment/Site Investigation (PA/SI) studies or RCRA Facility Assessment (RFA) process;
- build defensible conceptual models for further site characterization, the development of performance assessment models and proposed remedial/corrective actions; and report the data and analyses described above.

An appropriate "aggregate area" would be defined to gather and interpret existing data and perform preliminary investigations. The aggregate area would be

delineated to encompass the geography necessary to define and understand the local hydrologic regime, the distribution and migration of contaminants emanating from the target source terms, the interaction of those source terms and the area necessary to provide defensibility for both conceptual and numerical models. In many areas, the aggregate area is the groundwater operable unit. However, in areas such as the 200 Areas, no groundwater operable units have yet been defined. Therefore, in these areas, it might be desirable to define an aggregate area for investigation based on the above criteria.

Existing data would be gathered and interpreted for the entire aggregate area. These data include all that are normally presented in an RI/FS or RFI/CMS report. The quality of existing data would be assessed and any need for verification would be identified. A conceptual model or models would be developed. Data needs would be assessed for: full development of the conceptual model; input to numerical models that assess performance and risk; and completion of site characterization, treatability studies, etc. Process information for the facilities would be gathered and assessed so that contamination potential is factored into site characterization.

The regulators would be involved throughout the AAMS process. Periodic (monthly) meetings would be utilized to transfer information and to provide progress status. The time required to perform an AAMS and produce the Aggregate Area Management Study Report (AAMSR) is dependant on the size, complexity of the site and the nature and extent of the available data. The intention is to perform the study and have results available for decisions in a six to eight month period from initiation of work.

AGGREGATE AREA MANAGEMENT STUDY REPORT (AAMSR)

The draft Hanford Past Practice Investigation Strategy describes the AAMSR as described herein, with the exception that the report is proposed as a primary document in the strategy. This document would be similar to an RI/FS (RFI/CMS) report and would present the knowledge gained from the AAMS. The document, its content and format would be decided during the scoping data gathering phase, and would be dependant on the data and possible analyses and decisions that could be supported. However, depending upon the quantity of available information, the data would probably be presented in separate topical reports. When an AAMSR is prepared, subsequent operable unit work plans would "fill in the gaps" and would also be focused on confirmatory or verification studies. The intent of the AAMSR is to expedite the process by relying on existing data, as much as possible, with confirmatory studies, and to focus remedial investigations as much as possible.

The normal scoping process under CERCLA as outlined in 40 CFR 300.430(b) of the NCP consists of specific tasks including assembly and evaluation of existing data; identification of applicable operable units; responses and technologies; identification of data quality needs; notification of natural resource trustees; initiation and identification of ARARS; and preparation of health and safety, sampling and analysis, public participation, and QA project plans. The chief products are the RI/FS or RFI/CMS work plan and associated project plans. A scoping study report is not necessary. Under the Hanford Past Practice Strategy a separate AAMSR would be written for the aggregate area when existing data are extensive enough to consider making decisions that would normally be made under an RI/FS or RFI/CMS report. In theory, a situation may exist where there is

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sufficient data available in the AAMS phase, such that performing an RI/FS is not justified; thus, the AAMSR would be functionally equivalent to an RI/FS report. If the data base was not that extensive, only topical reports from the scoping phase would be issued and the process would go directly to writing a work plan.

Included in the AAMSR would be:

- interpretation of the accumulated data;
- description of the site and the proposed conceptual model;
- data, data evaluations and data quality;
- identification of areas within the operable units where sufficient data exist to support future ERAs and risk assessments;
- assessment of the aggregate area and the need for refinement of operable unit boundaries, providing for operable units where records of decision could be achieved and decisions concerning cleanup could be made early in the process;
- definition of a groundwater operable unit which may resemble the aggregate area assessed in the scoping study;
- prioritization of the included operable units;
- additional data and analyses that are needed; and,
- assessment of potential remedial technologies, and if possible, a selection of limited expedited FS to be started in the AAMS phase.

If the AAMS has provided sufficient information to forego further field investigations, an FS (CMS) report would be prepared as a primary document. In this case the AAMSR would be functionally equivalent to the RI. All available and relevant data would be included in the AAMSR, would be used in the preparation of the FS (CMS) work plan, and carried forward to the final FS (CMS) report and proposed plan. If further field investigations were required, an RI/FS work plan would be prepared to describe that work. Site data gathering efforts at sites identified as sufficiently characterized would stop, and those areas would be addressed in the FS (CMS), risk assessment and ROD (permit modification).

The regulatory agencies would be involved in the AAMS process and kept informed at regular meetings. In cases where available data appeared to be sufficient for only portions of the total required effort (additional work is required), a work plan would be prepared and approved, on the basis of the scoping report and issued as a primary document. This process provides a mechanism whereby regulatory concurrence and public comment with this proposed course of action would be provided. Note that the AAMSR would address the entire aggregate area, whereas the work plan would only address those sites or operable units for which additional work was necessary.

The FS (CMS) process could be made considerably more efficient by initiating

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formal evaluations of remedial technologies during the AAMS period and by limiting the numbers of alternatives considered. The concept is that existing site and contaminant knowledge could be used to realistically limit the alternatives as early as possible. This concept has been proposed for the scoping phase of Superfund sites by the EPA. In addition, early consideration of remedial technologies allows for efficient data collection during early preliminary studies or during the early RI (RFI) phase for those special data needed for the FS (CMS).

200 NPL SITE AGGREGATE AREA MANAGEMENT STUDY

An Aggregate Area Management Study (AAMS) approach is proposed for the Hanford 200 Area NPL site. The proposed approach is consistent with the "Hanford Past-Practice Work Plan Strategy" and with the EPA and Ecology response to DOE's change request package for Hanford Past-Practice Milestones, CCN M-12-90-3.

A total of 8 source and 2 ground water AAMS are proposed. Source AAMS and ground water AAMS will be conducted on a plant-wide (e.g., T-Plant, PUREX) and Area-wide (i.e., 200 West and 200 East) scale, respectively. Table 1 lists the proposed studies, the type of study, and affected operable units. Isolated operable units associated with the 200 Area NPL site (200-IU) will still be addressed individually per the current Tri-Party Agreement, except 200-IU-6 which will be addressed as part of the B Plant AAMS. Proposed annotated outlines for source and ground water AAMS reports are provided in Attachments A and B.

Implementation of this AAMS approach in the 200 Areas requires adjustments to the M-12 and M-13 Milestones of the Tri-Party Agreement. This includes deferring 200-BP-5 (M-12-17) and 200-ZP-1 (M-12-19) Operable Unit RI/FS Work Plans to M-13. The start of M-13 would be deferred until January 1993, after which the deferred M-12 work plans would be submitted as a minimum. A new major milestone for completing all 10 AAMS by September 1992 is proposed. Interim milestones for completing individual AAMS reports are proposed in Table 1.

DOE requests that AAMS reports be treated as secondary documents. This is intended to simplify the review process such that the amount of time available to conduct the studies is maximized. Regular unit manager meeting updates of individual studies will be provided to keep EPA and Ecology informed on the progress of the studies and involved in any decision making. This will minimize the amount of regulatory review required after the submittal of AAMS reports.

The preparation of an aggregate area management plan is not planned for the 200 NPL site. Chapter 1 of AAMS reports (see attachments) will be sufficiently detailed to mitigate the need for a separate, higher-level management plan. This will allow DOE to concentrate its efforts on the individual AAMS. However, DOE recognizes that it is essential that all parties reach early agreement regarding the purpose and scope of the AAMS process. As a result, DOE plans to submit Chapter 1 early in the process to ensure that EPAs' and Ecologys' expectations are met. A milestone date of June 30, 1991 for submittal of Chapter 1 is proposed. Chapter 1 will be generic to all AAMS reports with minor changes required to address individual study circumstances.

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Limited field activities to assess the nature and extent of contamination in the vadose zone and ground water are also planned as a parallel effort to the preparation of AAMS reports. The following field screening activities are proposed:

* expanded ground water monitoring programs (non CLP) at selected existing wells

* in situ assaying of gamma-emitting radionuclides at selected existing vadose zone boreholes.

Constituent lists at selected ground water monitoring wells will be expanded to identify contaminants of concern and refine groundwater plume maps. Wells and analytes will be selected based on a review of existing ground water data which will be undertaken early in the AAMS process. For planning purposes it is expected that, on the average, 10 ground water monitoring wells will be identified for expanded constituent monitoring per source AAMS area.

In situ assaying of select boreholes will provide baseline information on radioelement concentration profiles in the vadose zone using high-resolution gamma-ray spectroscopy. Boreholes will be selected and prioritized based on a review of existing source data. For planning purposes it is expected that, on the average, 10 boreholes will be identified for assaying per source AAMS area.

Results of these field activities will be documented in topical reports to be completed by September 1992.

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Table 1. Aggregate Area Management Study (AAMS) Schedule for the 200 NPL Site

AAMS Title	Operable Units	AAMS Type	Lead Regulatory Agency	Proposed Interim Milestones
T Plant	200-TP-1 200-TP-2 200-TP-3 200-TP-4 200-TP-5 200-TP-6 200-SS-2	Source	EPA	April 1992
Z Plant	200-ZP-1 200-ZP-2 200-ZP-3	Source	EPA	February 1992
U Plant	200-UP-1 200-UP-2 200-UP-3	Source	Ecology	January 1992
S Plant	200-RO-1 200-RO-2 200-RO-3 200-RO-4	Source	Ecology	March 1992
B Plant	200-BP-1 200-BP-2 200-BP-3 200-BP-4 200-BP-5 200-BP-6 200-BP-7 200-BP-8 200-BP-9 200-BP-10 200-BP-11 200-IU-6 200-SS-1	Source	EPA	June 1992
PUREX	200-PO-1 200-PO-2 200-PO-3 200-PO-4 200-PO-5 200-PO-6	Source	Ecology	May 1992
Semi-Works	200-SO-1	Source	Ecology	July 1992
200 North	200-NO-1	Source	EPA	August 1992
200 West	NA	Groundwater	EPA/Ecology	September 1992
200 East	NA	Groundwater	EPA/Ecology	September 1992

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Attachment A

SOURCE AGGREGATE AREA MANAGEMENT STUDY REPORT OUTLINE

EXECUTIVE SUMMARY

1. INTRODUCTION (replaces 200 NPL aggregate area management plan; describes the AAMS approach at the 200 NPL site and implementation process; provides an overview of the CERCLA, RCRA, TPA program)
   - A. 200 NPL Site Aggregate Area Management Study Program (defines the overall AAMS approach and its implementation at the NPL level; describes management control; describes the investigation process including the evaluation of existing data and field activities; discusses how the AAMS fits into the RI/FS process)
   - B. Aggregate Area Management Study (describes purpose, scope and objectives at the study level; describes supporting nonintrusive field activities and associated supporting/topical reports)
   - C. Quality Assurance
   - D. Organization (discusses the organization of the AAMS report)

2. FACILITY/PROCESS DESCRIPTIONS AND OPERATIONAL HISTORY (describes the history and current understanding of the waste generation, treatment, storage and disposal processes and facilities in the AAMS area)
   - A. Location (describes the location of the AAMS area; provides site map and coordinates)
   - B. History of Operations (describes the history of operations in the AAMS area; develops an operations chronology)
   - C. Facilities, Buildings, and Structures (describes facilities and structures located in the AAMS area in general categories (e.g., plant, cribs, pipelines, tanks, etc.))
   - D. Waste Generating Processes (describes waste generation processes and management in general categories (e.g., process liquids, exhaust gas, solid waste, etc.); identifies waste units/sources)
   - E. Interactions with other AAMS areas/Operable Units (discusses interactions with adjacent source AAMS areas/OU's)
   - F. RCRA Site Interactions (discusses interactions with RCRA TSD facilities located within the AAMS areas)

3. SITE CONDITIONS (summarizes the physical (on a plant/waste management unit scale), environmental, and sociological setting; focuses on the surface and unsaturated subsurface)
   - A. Physiography and Topography
   - B. Meteorology (at the Area-wide scale)
   - C. Surface Water
   - D. Geohydrology (focuses on unsaturated zone)
   - E. Environmental Resources (discusses fauna, flora, critical habitats, and land and water use at or near the AAMS area)
   - F. Human Resources (discusses archaeological and cultural resources)

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4. PRELIMINARY CONCEPTUAL SITE MODEL (reviews available data and potential contaminant exposure pathways to develop a conceptual model)
   A. Known and Suspected Contamination (summarizes environmental monitoring and sampling data including scintillation logs; waste types, quantities and characteristics are identified; discusses knowledge of the extent of contamination in various media (except ground water))
   B. Potential Impacts to Human Health and Environment (develops preliminary site conceptual model of exposure pathways and receptors)

5. HEALTH AND ENVIRONMENTAL CONCERNS (identifies contaminants and sources of concern)

6. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (preliminary identification of potential ARARs categorized as chemical-, location-, and action-specific)

7. REMEDIAL ACTION TECHNOLOGIES (identifies and screens potential remedial technologies; preliminary remedial action objectives for each medium (except ground water) and a broad range of remedial action alternatives are identified; applications, effectiveness, and costs are discussed)

8. DATA QUALITY OBJECTIVES (reviews QA information on existing source and soil data, and identifies data gaps and deficiencies; identifies broad data needs for site characterization to improve the conceptual model and to better define ARARs; establishes DQOs and sets data priorities)

9. RECOMMENDATIONS
   A. Expedited Response Actions (source/soil)
   B. Redefinition and Reprioritization of Source Operable Units
   C. RI/FS Process (defines and prioritizes source work plan preparation; discusses the interface with RCRA facilities)
   D. Data Collection Activities (defines and discusses the need to conduct limited field characterization activities)
   E. Treatability Studies (defines and discusses need for treatability studies to support the evaluation of remedial action alternatives for sources/soil)

10. REFERENCES

APPENDICES
   Health and Safety Plan
   Project Management Plan
   Community Relations Plan
   Data Management Plan

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Attachment B

GROUND WATER AGGREGATE AREA MANAGEMENT STUDY REPORT OUTLINE

EXECUTIVE SUMMARY

1. INTRODUCTION (replaces 200 NPL aggregate area management plan; describes the AAMS approach at the 200 NPL site and implementation process; provides an overview of the CERCLA, RCRA, TPA program)
   - A. 200 NPL Site Aggregate Area Management Study Program (defines the overall AAMS approach and its implementation at the NPL level; describes management control; describes the investigation process including the evaluation of existing data and field activities; discusses how the AAMS fits into the RI/FS process)
   - B Aggregate Area Management Study (describes purpose, scope and objectives at the study level; describes supporting nonintrusive field activities and associated supporting/topical reports)
   - C. Quality Assurance
   - D. Organization (discusses the organization of the AAMS report)

2. FACILITY/PROCESS DESCRIPTIONS AND OPERATIONAL HISTORY (summarizes the history and current understanding of waste generation and land disposal processes and facilities in an Area (i.e., 200E or 200W); references detailed facility/process descriptions provided in source AAMS's; focuses on liquid land disposal practices on an Area-wide basis)
   - A. Location (describes the location of the AAMS area; provides site map)
   - B. History of Operations (summarizes the history of operations and develops an operations chronology of liquid discharges to the ground on an Area-wide basis)
   - C. Facilities and Structures (summarizes liquid disposal facilities and structures in general categories (e.g., ponds, cribs, ditches, leaking tanks, reverse wells) on an Area-wide basis; summarizes waste types and quantities)
   - D. Ground Water Monitoring Facilities (describes ground water monitoring systems in an Area)

3. SITE CONDITIONS (summarizes the physical (on an Area-wide scale), and environmental setting; focuses on the saturated subsurface)
   - A. Regional Geohydrology (Pasco Basin)
   - B. Study Area Geohydrology (focuses on saturated zone and summarizes unsaturated zone)
   - C. Environmental Resources (discusses ground water use)

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4. PRELIMINARY CONCEPTUAL SITE MODEL (reviews available data and potential contaminant exposure pathways to develop a conceptual model)
   A. Known and Suspected Contamination (summarizes environmental monitoring and sampling data including scintillation logs; waste types, and characteristics are identified; discusses knowledge of the extent of contamination in the ground water)
   B. Potential Impacts to Human Health and Environment (develops preliminary site conceptual model of exposure pathways and receptors)
   C. Interactions with other Areas/Groundwater AAMS areas (discusses inteactions with adjacent ground water AAMS areas and Hanford Site Areas)

5. HEALTH AND ENVIRONMENTAL CONCERNS (identifies groundwater contaminants/plumes of concern)

6. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (preliminary identification of potential ARARs categorized as chemical-, location-, and action-specific)

7. REMEDIAL ACTION TECHNOLOGIES (identifies and screens potential remedial technologies for groundwater; preliminary remedial action objectives and a broad range of remedial action alternatives are identified; applications, effectiveness, and costs are discussed)

8. DATA QUALITY OBJECTIVES (reviews QA information on existing groundwater data and identifies data gaps and deficiencies; identifies broad data needs for site characterization to improve the conceptual model and to better define ARARs; establishes DQOs and sets data priorities)

9. RECOMMENDATIONS
   A. Expedited Response Actions (ground water)
   B. Definition and Prioritization of Ground Water Operable Units
   C. RI/FS Process (defines and prioritizes work plan preparation based on ground water issues; discusses the interface with RCRA issues)
   D. Data Collection Activities (defines and discusses the need to conduct limited field characterization activities)
   E. Treatability Studies (defines and discusses need for treatability studies to support the evaluation of remedial action alternatives for ground water)

10. REFERENCES

APPENDICES
   Health and Safety Plan
   Project Management Plan
   Community Relations Plan
   Data Management Plan

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SPECIFIC MILESTONE

CHANGES FOR

CHANGE REQUEST

M-12-90-4

9112245 1375

REVISION OF MILESTONES M12-00 AND M-13-00

May 13, 1991

Revise M-12-00 to read as follows:

M-12-00	Submit RI/FS or RFI/CMS work plans for 15 operable units.	Jun 92

Add the following interim milestones:

M-12-05a	Submit rescoped RFI/CMS work plan 100-HR-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Sep 91
M-12-06a	Submit rescoped RFI/CMS work plan for 100-HR-3 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Sep 91
M-12-07a	Submit rescoped RFI/CMS work plan 100-DR-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Sep 91
M-12-08a	Submit rescoped RI/FS work plan 100-BC-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Sep 91
M-12-09a	Submit rescoped RI/FS work plan 100-BC-5 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Sep 91
M-12-10a	Submit rescoped RI/FS work plan 100-KR-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Oct 91
M-12-11a	Submit rescoped RI/FS work plan 100-KR-4 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Oct 91
M-12-12a	Submit rescoped RFI/CMS work plan for 100-NR-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Dec 91

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M-12-13a	Submit rescoped RI/FS work plan for 100-FR-1 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Nov 91
M-12-14a	Submit rescoped RFI/CMS work plan for 100-NR-3 operable unit, in accordance with final "Hanford Past-Practice Strategy Document".	Dec 91

Revise interim milestone M-12-15, as follows:

M-12-15	Submit 200-UP-2 Operable Unit Work Plan (source and groundwater operable unit), or an agreed upon alternate work plan based on results of the U-Plant Aggregate Area Management Study.	Jun 92

Delete the following interim milestones:

M-12-16	Submit 100-BC-2 Operable Unit Work Plan (source and groundwater operable unit)	Aug 91
M-12-17	Submit 200-BP-5 Operable Unit Work Plan (source and groundwater operable unit)	Oct 91
M-12-18	Submit 100-DR-2 Operable Unit Work Plan (source operable unit)	Dec 91
M-12-19	Submit 200-ZP-1 Operable Unit Work Plan (source and groundwater operable unit)	Feb 92
M-12-20	Submit 100-KR-2 Operable Unit Work Plan (source and groundwater operable unit)	Apr 92

Revise Milestone M-13-00, as follows:

M-13-00	Submit six RI/FS or RFI/CMS work plans per year.	Annually Beginning CY 1993

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PROPOSED NEW MILESTONES
May 13, 1991

27-00	**Submit all Aggregate Area Management Study Reports (AAMSR) for the 200 Area to EPA and Ecology as secondary documents. These documents shall be prepared in accordance with the objectives of the "Hanford Past-Practice Investigation Strategy" and the outlines provided in the "200-Area Aggregate Area Management Study Guidelines", both of which are included in Appendix F.**	**Sep 92**
M-27-01	Submit methodology and format for AAMSR (to be included as Chapter 1 of each AAMSR) to EPA and Ecology as secondary document	Jun 91
M-27-02	Submit AAMSR for U-Plant Waste Management Area (for all source term operable units with "200-UP" designations)	Jan 92
M-27-03	Submit AAMSR for Z-Plant Waste Management Area (for all source term operable units with "200-ZP" designations)	Feb 92
M-27-04	Submit AAMSR for REDOX Waste Management Area (for all source term operable units with "200-RO" designations)	Mar 92
·27-05	Submit AAMSR for T-Plant Waste Management Area (for all source term operable units with "200-TP" designations and for operable unit 200-SS-2)	Apr 92
M-27-06	Submit AAMSR for PUREX Waste Management Area (for all source term operable units with "200-PO" designations)	May 92
M-27-07	Submit AAMSR for B-Plant Waste Management Area (for all source term operable units with "200-BP" designations [except the 200-BP-1 operable unit] and for operable units 200-SS-1 and 200-IU-6)	Jun 92
M-27-08	Submit AAMSR for Semi-Works Waste Management Area (for all source term operable units with "200-SO" designations)	Jul 92
M-27-09	Submit AAMSR for 200-North Waste Management Area (for all operable units with "200-NO" designations, including groundwater impacted by the source terms)	Aug 92
M-27-10	Submit AAMSR for 200-West Groundwater Aggregate Area, including all groundwater impacted by the 200-West Area source term operable units	Sep 92
M-27-11	Submit AAMSR for 200-East Groundwater Aggregate Area, including all groundwater impacted by the 200-East Area source term operable units	Sep 92

28-00	**Submit all soils and groundwater background determination documents to EPA and Ecology**	**Apr 92**
M-28-01	Submit soils background sampling and analysis plan and quality assurance project plan (secondary document)	Jun 91
M-28-02	Submit background methodology description document for soils and groundwater (secondary document)	Jul 91
M-28-03	Submit soils study report (primary document), establishing background values for soil at the Hanford Site and include report in Appendix F	Feb 92
M-28-04	Submit evaluation report on existing groundwater data (primary document) establishing background values for groundwater at the Hanford Site and include report in Appendix F	Apr 92

M-29-00	**Develop and submit documentation to EPA and Ecology describing Hanford risk assessment methodology**	**Mar 92**
M-29-01	Identify and submit descriptions of codes and models (secondary document) to be used in risk assessment	Sep 91
M-29-02	Submit a plan for development of area wide groundwater models to support risk assessment and to evaluate impacts of changing groundwater flow fields (secondary document)	Dec 91
M-29-03	Submit risk assessment methodology document (primary document) and include document in Appendix F	Mar 92

M-30-00	**Complete integrated general investigations and studies for the 100-Area**	**Sep 93**
M-30-01	Submit a report (secondary document) to EPA and Ecology evaluating the impact to the Columbia River from contaminated springs and seeps, as described in the operable unit work plans listed in M-30-03	Feb 92
M-30-02	Submit a plan (primary document) to EPA and Ecology to determine cumulative health and environmental impacts to the Columbia River, incorporating results obtained under M-30-01	May 92
M-30-03	Complete all nonintrusive field work as identified in draft work plans for the following operable unit work plans: 100-HR-1, 100-HR-3, 100-DR-1, 100-BC-1, 100-BC-5, 100-KR-1, 100-KR-4, 100-NR-1, 100-NR-3, and 100-FR-1	Sep 92
M-30-04	Submit a report (secondary document) to EPA and Ecology evaluating the interaction of Columbia River and the unconfined aquifer for aquifer hydraulic parameters	Sep 92
-30-05	Install all field instrumentation and initiate monitoring activities necessary to perform long-term evaluation of Columbia River and unconfined aquifer interaction, in accordance with the tasks defined in operable unit work plans listed in M-30-03	Sep 93

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Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-20-90-4	Do not use blue ink. Type, or print using black ink.	05/07/91

ıator
.. A. Meyer

Phone
373-1810

Class of Change
☐ I – Signatories (Section 13.0) ☒ II – Project Manager ☐ III – Unit Manager

Change Title
B PLANT PART B PERMIT APPLICATION/CLOSURE PLAN

Description/Justification of Change
Uncertainties regarding the future operating mode for B Plant required that the currently scheduled October 1991 B Plant Part B Permit Application submittal be rescheduled. The initial results of the risk assessment regarding the viability of B Plant for pretreatment of double-tank wastes have resulted in a series of studies which will be completed in FY 1991. The outcome of these studies will determine the future operations for B Plant. Upon completion of these studies, DOE will determine whether B Plant will continue to operate or whether it will be closed. The M-20-21 milestone will be rescheduled to January 1992 and rewritten as follows:

Number	Milestone	Current Date	Revised Date
M-20-21	Establish new interim milestone date for submittal of B Plant Part B Permit Application or Closure Plan	N/A	Jan. 1992

ı t of Change

Activities associated with B Plant Part B Permit Application will be suspended pending a determination of the future operating status of B Plant.

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-3 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

DOE John D. Wagoner — 09/09/91 Date

Dana A. Rasmussen — 09/09/91 Date

Ecology Christine O. Gregoire — 09/09/91 Date

A-6000-376 (05/89)

Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM Do not use blue ink. Type, or print using black ink.	Date
M-24-91-3		05/03/91

nator: ... R. Thompson

Phone: 376-9988

Class of Change

☒ I – Signatories (Section 13.0) ☐ II – Project Manager ☐ III – Unit Manager

Change Title

EXTENSION OF MILESTONE M-24-07 AND M-24-00

Description/Justification of Change

Change Milestone M-24-07 due date to: October 7, 1991
Change M-24-00 1990 30 wells due date to: October 7, 1991

Drilling of the 11 wells required under M-24-07 for calendar year (CY) 1990 was suspended for 280 days to consider alternatives on the basis of environmental concerns voiced by the Oregon State Department of Energy about drilling wells around the single-shell tanks. Drilling was suspended on November 9, 1989 at the request of Ecology. Authorization to proceed with drilling was given on August 16, 1990 after due consideration of alternatives to effect groundwater monitoring at the single-shell tanks.

The reason for the suspension was a concern about the wells being drilled at the single-shell tanks and the possibility that they might provide a pathway for the spread of contamination to the unconfined aquifer. Under Article XXXI of the Agreement, Creation of Danger, this suspension of work results in a day for day extension of the work which was stopped, as well as any other work dependent on the work which was stopped. (See Page 2 for continuation.)

:t of Change

The wells not finished at the end of CY 1990 have been drilled and will be completed. The commitment for drilling 50 wells for the CY 1991 program is not changed.

Affected Documents

Hanford Federal Facility Agreement and Consent Order Action Plan Calendar Year 1990 Annual Update, Appendix D (Table D-3 and Figure D-1 Work Schedule).

Approvals X Approved ___ Disapproved

John D. Wagoner DOE John D. Wagoner	09/09/91 Date
Dana A. Rasmussen Dana A. Rasmussen	09/09/91 Date
Christine O. Gregoire Ecology Christine O. Gregoire	09/09/91 Date

A-6000-376 (05/89)

As of May 3, 1991 a total of 10 of 11 wells required by milestone M-24-07 were completed, and 29 of 30 wells required by 24-00B were completed. USDOE will notify Ecology when the wells required by M-24-07 and M-24-00B are installed.

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Change Number	FEDERAL FACILITY AGREEMENT AND CONSENT ORDER CHANGE CONTROL FORM	Date
M-31-91-1	Do not use blue ink. Type, or print using black ink.	05/15/91

ginator	Phone
D. M. Bogen	373-5896

Class of Change

☒ I – Signatories (Section 13.0) ☐ II – Project Manager ☐ III – Unit Manager

Change Title

NEW DOUBLE-SHELL TANK CAPACITY

Description/Justification of Change

New Tri-Party Agreement Milestones are proposed as follows:

Number	Milestone	Date
M-31-00	Provide additional double-shell tank capacity. Construction complete.	TBD*
M-31-01	Complete the Conceptual Design Reports (CDR) for up to four (4) tanks. DOE-RL will propose appropriate milestones for tank construction upon completion of conceptual design.	Sept. 1992

(See Page 2 for continuation.)

*To be determined.

pact of Change

The DOE-RL has identified the potential need for additional double-shell tank capacity to support waste disposal (vitrification), and interim waste treatment for safety issue resolution (e.g., flammable gas, ferrocyanide, and high-heat tanks), and waste storage prior to treatment and closure. The strategy is to initiate conceptual design for up to four tanks on an accelerated basis, with additional tanks (one to four or more) probable. A conceptual design for an up to four-tank new Tank Farm will be developed that meets all existing DOE design criteria and regulatory requirements. The new tanks are conceived as double-shell, concrete encased, direct burial tanks. Tank material may be either stainless steel or carbon steel, depending upon intended use. (See Page 2 for continuation.)

Affected Documents

None. Proposed milestones are new and not directly related to any other milestones.

Approvals X Approved ___ Disapproved

DOE	John D. Wagoner	09/09/91 Date
	Dana A. Rasmussen	09/09/91 Date
Ecology	Christine O. Gregoire	09/09/91 Date

Description/Justification of Change

Description (Continued)

Number	Milestone	Date
M-31-01T*	Initiate permitting strategy discussions between Tri-Party Agreement Signatories	March 1992
M-31-02	Recommend additional double-shell tank milestone(s)	Sept. 1992
M-31-02-T1*	Complete detailed design for first new tanks	Feb. 1995
M-31-02-T2*	Construction start of first new tanks	Oct. 1995
M-31-02-T3*	Provide additional double-shell tank capacity. Construction complete for first new tanks	June 1999

*Target Date

Justification (Continued)

The milestones proposed are based upon the following assumptions:

- Expense funding in FY 1992 is adequate to support existing commitments and the CDR effort in support of four new double-shell tanks
- FY 1993 Congressional Line Item
- Definitive design completion in February 1995 will support all NEPA and permitting activities/requirements required for an October 1995 construction start [eight (8) months after design completion]

9112245188

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

IN THE MATTER OF:	)	
	)	SECOND 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:

9112245139D

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		Title Page
1.	Last line on title page	Add: As amended, July 1991
		Legal Agreement
2.	Article XL, Extensions, paragraph 112 and 114.	Replace paragraphs 112 and 114 with the following (changes underlined): 112. Within seven (7) days of receipt of a request for an extension of a timetable and deadline or a schedule, <u>or as otherwise agreed to by the parties in writing,</u> each Party shall advise DOE in writing of its respective position on the request. Any failure of a Party to respond within the seven (7) day period <u>(or other period agreed to in writing)</u> shall be deemed to constitute concurrence in the request for extension. If a Party does not concur in the requested extension, it shall include in its statement of nonconcurrence an explanation of the basis for its position. 114. Within seven (7) days of receipt of one or more statements of nonconcurrence with the requested extension, <u>or such other time period as agreed to by the parties in writing,</u> DOE may invoke the Dispute Resolution process.

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
3.	Article XLVIII paragraph 139	Replace paragraph 139 with the following:

ARTICLE XLVIII. FUNDING

139. The purpose of this paragraph is to assure that the Parties adequately communicate and exchange information about funding concerns that affect the implementation of this Agreement. These provisions are intended to apply solely to the Hanford Federal Facility Agreement and Consent Order.

A. Ecology, DOE and EPA project managers shall meet periodically throughout each fiscal year to discuss projects to be funded in the current budget year, the status of the current year projects and events causing significant changes to any milestone, or activity within such milestones upon the agreement of all three project managers. DOE shall provide information that shows projected and actual costs for each major milestone in the Agreement.

B. Ecology and EPA shall comment on DOE-RL's estimate of the funding levels required to support the corresponding negotiated work schedule for each fiscal year. These funding levels shall be included in the submittal sent from DOE-RL to DOE-HQ for the relevant fiscal year.

C. On or about June of each year, DOE shall provide EPA and Ecology with current five year planning cost estimates based upon revisions to its Five Year Plan. These estimates shall include projections based on the Activity Data Sheet (ADS) level. This submission shall include a correlation of relevant ADSs with major milestones.

D. After the President has submitted the Budget to Congress, DOE shall notify EPA and Ecology in a

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		timely manner of any differences between the estimates submitted in accordance with subparagraph B above and the actual dollars that were included in the President's budget submission to the Congress for major milestones. E. Whenever DOE proposes a reprogramming, requests a supplemental appropriation due to a program disruption, or some other similar event occurs which may result in the inability of DOE to meet milestones under this Agreement, DOE shall notify Ecology and EPA of its plans and shall prior to submittal of the reprogramming or supplemental appropriation request to Congress consult with them about the effect that such a change may have on the milestones in the Agreement. F. This participation by the State and EPA is limited solely to the aforementioned and is in no way to be construed to allow Ecology or EPA to become involved with the internal DOE budget process, nor to become involved in the Federal budget process as it proceeds from DOE to OMB and ultimately to Congress through the President's submittal. Nothing herein shall affect DOE's authority over its budgets and funding level submission.

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		Action Plan
4.	Section 2.0 Table 2-1, 2-2, and 2-3	Revise wording of major milestones, to reflect approved Tri-Party Agreement change forms, as follows: M-01-00: Due Date: Dec. 1996 Complete 14 grout campaigns of double-shell tank waste by 12-96 and maintain currency with feed thereafter. M-02-00: Due Date: TBD Initiate pretreatment of double-shell tank waste Double-shell tank waste pretreatment is required prior to disposal of high-activity tank wastes. The pretreatment supports the removal, treatment, and final disposal of wastes subject to land disposal restrictions which are stored in double-shell tanks. Removal of wastes from double-shell tanks and disposal in grout or glass will allow double-shell tank space to be made available for single-shell tank waste. M-12-00: Due Date: June 1992 Submit RI/FS or RFI/CMS work plans for 15 operable units.

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		M-13-00: Due Date: Annually Beginning CY 1993 Submit six RI/FS or RFI/CMS work plans per year
		M-27-00: Due Date: Sept. 1992 Submit all Aggregate Area Management Study Reports (AAMSR) for the 200 Area to EPA and Ecology as secondary documents. These documents shall be prepared in accordance with the objectives of the "Hanford Past-Practice Investigation Strategy" and the outlines provided in the "200-Area Aggregate Area Management Study Guidelines", both of which are included in Appendix F.
		M-28-00: Due Date: April 1992 Submit all soils and groundwater background determination documents to EPA and Ecology.
		M-29-00: Due Date: March 1992 Develop and submit documentation to EPA and Ecology describing Hanford risk assessment methodology.
		M-30-00: Due Date: Sept. 1993 Complete integrated general investigations and studies for the 100-Area.

LIST OF AMENDMENTS to TRI-PARTY AGREEMENT

Item Number	Location	Change
		M-31-00: Due Date: TBD Provide additional double-shell tank capacity. Construction complete.
5.	Page 13-1.	Change **13.0 SIGNATURE** to **14.0 SIGNATURE**.
6.	Page 13-1.	Insert new Section 13.0 as follows: 13.0 LIQUID EFFLUENT TREATMENT AND DISPOSAL 13.1 LIQUID EFFLUENT DISCHARGE RESTRICTIONS 13.1.1 Introduction This section addresses requirements for management of restrictions for discharge of liquid effluents to the soil column at Hanford. These managerial requirements are the result, in part, of EPA's and Ecology's reviews of the Liquid Effluent Study (LES) that was submitted by DOE in August 1990. The LES included information on the 33 Phase I and Phase II liquid effluent streams and was conducted outside the scope of this Agreement. However, the parties agreed that information obtained through the LES would be considered new information (see paragraph 126 of the Agreement) and that such new information could form the basis for reevaluation of the liquid discharge milestones in the Agreement. The liquid effluent discharge milestones are covered in M-17-00. The purpose of this section is to describe the process which will be followed for establishing additional milestones related to the operation, treatment, and disposal of all 33 Phase I and Phase II liquid effluent discharges to the soil column and to explain the general guidelines to be followed in the establishment of additional milestones. The initial

Item Number	Location	Change
		requirements and restrictions contained herein address the seven streams identified by EPA as high priority, as well as five streams associated with the PUREX facility. The parties agree that such requirements and restrictions are necessary to provide near-term assurance that all reasonable steps are being taken to minimize environmental degradation. The long-term solutions are to establish stream specific milestones leading to establishment of treatment processes or ceasing discharges altogether and finally, to regulate any remaining discharges to the soil column through provisions of the State of Washington Waste Discharge Permit Program (WAC-173-216 or, if applicable, WAC-173-218).
		13.1.2 State Waste Discharge Permits
		The parties agree that those waste water streams currently discharged to the soil column or any future waste water streams (excluding discharges that are exempt from permitting under Section 121 of CERCLA) discharged to the soil column, which affect groundwater or which have the potential to affect groundwater, shall be subject to permitting under RCW 90.48.160, WAC 173-216, or if applicable, WAC 173-218. While the administration of these provisions of state law will be conducted outside this Agreement, Ecology intends to maintain consistency with this Agreement in implementing the state water quality program at the Hanford Site. Ecology and DOE agree to negotiate a separate agreement by September 1991 or such later date as the parties agree upon, which will provide a schedule for obtaining permits and all necessary actions leading to obtaining such permits pursuant to these provisions of state law at the Hanford Site. While DOE is agreeing to Ecology's authority to implement a permit program under RCW 90.48.160 and WAC Chapter 173-216 for liquid effluents discharged to the soil column which affect or have the potential to affect groundwater at the Hanford Site, DOE reserves any rights and defenses under state and federal law in any enforcement or permitting activity including the right

Item Number	Location	Change
		to appeal such permits to the appropriate tribunal and to raise any objection whatsoever to such permits except that DOE will not challenge Ecology's authority to administer the WAC Chapter 173-216 permit program at the Hanford Site.
		13.1.3 Liquid Effluent Discharge Milestones and Negotiations
		The parties will also negotiate additional interim and final milestones to be included in this Agreement addressing, without limitation, waste reduction, interim and final treatment, and/or termination of the 33 Phase I and Phase II streams. These negotiations will be completed by September 1991. Negotiated milestones will be included in the 1992 Annual Update to the Work Schedule (Appendix D).
		The parties are agreeing now to the addition of certain interim milestones (M-17-11, M-17-12, and M-17-13) in Milestone M-17-00. These milestone requirements relate to interim or final remedial actions which will be taken at Operable Units affected by those discharges. The specific descriptions of these milestone requirements are set forth in Appendix D of this Agreement, Tables D-4 and D-5.
		13.1.4 Sampling and Analysis Plans
		DOE will develop a stream specific sampling and analysis plan (SAP) for the Phase I and Phase II streams which continue to discharge to the soil column as specified in Appendix D, Table D-4. These SAPs shall be subject to approval of EPA and Ecology and will include an implementation schedule. The SAPs must provide for representative sampling of wastes discharged to the soil column, accounting for significant variations in volumes and contaminant concentrations due to operational practices. The frequency of sampling will vary, depending on the consistency or trends established for each stream over time. The SAPs will consider all of the parameters known or suspected to be associated with each

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		liquid effluent stream with consideration given to the influence of operational practice, raw water characteristics, and process knowledge in developing contaminant analysis requirements. DOE will sample and analyze each stream in accordance with the approved sampling and analysis plan. The timing for development of each SAP will be specified on the appropriate M-17-00 milestone as set forth in Appendix D, Table D-4. 13.1.5 Assessment of Environmental Impact of Continuing Liquid Discharges DOE will develop a methodology for assessing the impact of all discharges (including both active and proposed) on groundwater at the disposal sites. This methodology will rely on available data, additional liquid effluent sampling, analytical results supplied under Section 13.1.4, and optimal management practices. DOE shall submit this methodology to EPA and Ecology for approval. Within 30 calendar days after notification of approval of the methodology, DOE shall submit a schedule for the completion of the assessments for each of the 33 Phase I and Phase II effluent streams which will continue beyond June 1992. 13.1.6 Stream Specific Requirements and Restrictions The parties agree that interim operating restrictions are necessary to provide near-term assurance that all reasonable steps are being taken to minimize environmental degradation while negotiations and follow on actions are pursued. The twelve high-priority streams and the interim operating restrictions to be implemented for each of those streams are identified in Appendix D, Table D-5.

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
7.	Action Plan, Appendix D. Volume 2 (will be added to Volume 2 at next annual update)	Add liquid effluent milestones. Text of milestones to be added as follows:

Add:

M-17-11	Complete Actions specified in Appendix D, Table D-5.	As specified in Table D-5
M-17-12	Complete actions specified in Appendix D, Table D-4.	As specified in Table D-4
M-17-13	Submit methodology for assessing impact of liquid discharge on groundwater at disposal sites to EPA and Ecology for approval.	October 1991

8.	Action Plan, Appendix D. Volume 2 (will be added to Volume 2 at next annual update)	Add Table D-4 as follows:

Table D-4 Sampling and Analysis Plan Submittal Schedule

<u>Sampling and Analysis Plans Required Prior to Plant Restart or by September 1991, Whichever Occurs First</u>

Plutonium Finishing Plant Wastewater
UO^3/U Plant Wastewater
UO^3 Plant Process Condensate
242-S Evaporator Steam Condensate (for UO^3 Plant Restart)

<u>Sampling and Analysis Plans Required by September 1991</u>

N Reactor Effluent
PUREX Plant Chemical Sewer
300 Area Process Wastewater

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change

Sampling and Analysis Plans Required by January 1992

Phase I Streams:
- S Plant Wastewater
- 222-S Laboratory Wastewater
- T Plant Wastewater
- B Plant Chemical Sewer
- 2101-M Laboratory Wastewater
- 2724-W Laundry Wastewater

Sampling and Analysis Plans Required by April 1992

Phase II Streams:
- 241-A Tank Farm Cooling Water
- 244-AR Vault Cooling Water
- 242-A Evaporator Steam Condensate
- 242-A Evaporator Cooling Water
- B Plant Cooling Water
- 284-W Powerplant Wastewater
- 284-E Powerplant Wastewater
- 183-D Filter Backwash Wastewater
- 400 Area Secondary Cooling Water
- T Plant Laboratory Wastewater

Other Phase I and Phase II Streams

The two streams listed below are to be rerouted to PUREX Plant Chemical Sewer by June 1992. The associated Sampling and Analysis Plan will have been developed in conjunction with the PUREX Plant Chemical Sewer Plan.

- PUREX Plant Steam Condensate
- PUREX Plant Cooling Water

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change
		The streams listed below are currently not being discharged. Sampling and Analysis Plans would be developed and approved prior to resuming discharge to the soil column. PUREX Plant Process Condensate PUREX Plant Ammonia Scrubber Condensate 163N Demineralization Plant Wastewater B Plant Steam Condensate B Plant Process Condensate 241-AY/AZ Tank Farms Steam Condensate 242-A Evaporator Process Condensate 209-E Laboratory Reflector Water

Item Number	Location	Change
9.	Action Plan, Appendix D. Volume 2 (will be added to Volume 2 at next annual update)	Add Table D-5 as follows:

EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR N)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
N Reactor Effluent (1325-N Liquid Waste Disposal Facility)	Y (Plan to cease discharge when rerouting completed.)	Implement flow restrictions to reduce the monthly average flow rate to less than 2 gpm (reduction from 300 gpm completed). Develop a plan by January 1992 to reroute 1325-N influent following BAT. Cease discharge to 1325-N following appropriate regulatory approval and implementation of rerouting.	Y	Y

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change			
	EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR N)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
	Plutonium Finishing Plant Wastewater (216-Z-20 Crib)	Y (Plan to cease discharge to existing site when treatment implemented by June 1995.)	Implement flow restrictions to maintain monthly average flow rate at less than 160 gpm during and after Stabilization Run. Implement Closed Loop Cooling by January 1994. Provide an estimate by July 1991 of current inventory of transuranics in the 216-Z-20 Crib. Complete a study by July 1991 to evaluate the need for accelerated treatment of transuranics (relative to 10 C.F.R. 20 Table II, Column 2) in the PFP Wastewater. If the study shows additional PFP Wastewater treatment is warranted, complete by April 1992 an engineering study to evaluate options for treatment and/or rerouting of suspected major contributors of transuranics.	Y	Y

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change			
	EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR N)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
	UO^3/U Plant Wastewater (216-U-14 Ditch)	Y (Plan to cease discharge to existing site when 200 Area Treatment Facility completed in June 1995.)	Implement flow restrictions to maintain monthly average flow rate to 216-U-14 Ditch at less than 800 gpm through December 1991; further reduce to 300 gpm by December 1992. Complete a study by May 1992 evaluating the need for and feasibility of rerouting UO^3/U Plant Wastewater to an alternative site.	Y	Y
	UO^3 Plant Process Condensate (216-U-17 Crib)	Y (Plan to cease discharge to existing site when 200 Area Treatment Facility completed in June 1995.)	Implement flow restrictions to maintain monthly average flow rate less than 10 gpm prior to and during the Stabilization Run. Install Fibermist Eliminator by December 1991.	Y	Y

LIST OF AMENDMENTS to TRI-PARTY AGREEMENT

Item Number	Location	Change			
	EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR NO)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
			Complete a study by August 1991 evaluating the need for post neutralization filtration for removal of uranium (relative to 10 C.F.R. 20 Table II, Column 2) from the UO^3 Plant Process Condensate. Following Stabilization Run limit discharge to monthly average flow rate of 2 gpm for concentration of storm/upset water.		
	Purex Plant Process Condensate (216-A-45 Crib)	N (Discharge to be routed to either double-shell tanks or 200 east area treatment facility.)	No discharge until treatment facility is available.	N	N
	Purex Plant Ammonia Scrubber Condensate (216-A-36B Crib)	N (discharge to be routed to either double-shell tanks or 200 east area treatment facility.)	No discharge until treatment facility is available	N	N

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change			
	EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR N)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
	Purex Plant Stream Condensate (216-A-30 Crib 216-A-37-2 Crib)	Y (discharge to be routed to double-shell tanks or 200 area treatment facility unless impact assessment is acceptable.)	Minimize discharges by blanking/ isolating lines and reroute to Purex Plant chemical sewer. Rerouting to be completed by June 1992.	N (sample Purex Plant chemical sewer discharge after rerouting)	Y*
	Purex Plant Cooling Water (216-B-3-Pond)	Y	Minimize discharges by blanking/ isolating lines and reroute to Purex Plant chemical sewer. Rerouting to be completed by June 1992.	N (sample Purex Plant chemical sewer discharge after rerouting)	Y*
	PUREX Plant Chemical Sewer (216-B-3 Pond)	Y (continue to discharge to B Pond; BAT treatment to be completed by June 1995.)	Accept rerouted flows from PUREX Plant Steam Condensate and PUREX Plant Cooling Water. Combined total monthly average flow rate to be less than 500 gpm. Rerouting to be completed by June 1992.	Y	Y
	B Plant Steam Condensate (216-B-55 Crib)	N	No discharge until BAT treatment is available.	N*	N*

LIST OF AMENDMENTS TO TRI-PARTY AGREEMENT

Item Number	Location	Change			
	EFFLUENT STREAM/ DISPOSAL SITE	PLAN TO CONTINUE DISCHARGE TO SOIL COLUMN (Y OR N)	INTERIM OPERATING RESTRICTIONS	SAMPLING AND ANALYSIS PLAN REQUIRED (Y OR N)	IMPACT ASSESSMENT TO BE CONDUCTED (Y OR N)
	B Plant Process Condensate (216-B-62 Crib)	N	No discharge until BAT treatment is available.	N*	N*
	241-AY/AZ Tank Farms Steam Condensate (216-A-8 Crib)	N	No discharge until treatment facility is available.	N*	N*

*Sampling and Analysis Plan and Impact Assessment required only if decision made to return to soil column discharge.

IT IS SO AGREED:

Each undersigned representative of a Party certifies that he or she 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 Amendment shall remain in full force and effect.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

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

9/9/91
Date

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

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

9/9/91
Date

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY

Christine O. Gregoire
Director
Department of Ecology

9/9/91
Date

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