**UNITED STATES DISTRICT COURT**
**EASTERN DISTRICT OF WASHINGTON**

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| STATE OF WASHINGTON,<br><br>Plaintiff,<br><br>v.<br><br>STEVEN CHU, Secretary of the United States Department of Energy, and the UNITED STATES DEPARTMENT OF ENERGY,<br><br>Defendants. | NO. 08-5085-FVS<br><br>CONSENT DECREE |

## I. INTRODUCTION

WHEREAS, Plaintiff State of Washington, through its Department of Ecology (State or Ecology), has filed a complaint that alleges violations by Defendants Secretary of Energy Steven Chu and the United States Department of Energy (collectively DOE) of the Hanford Federal Facility Agreement and Consent Order (HFFACO) and regulations promulgated under the Hazardous Waste Management Act (HWMA), Chapter 70.105 Revised Code of Washington (RCW), such regulations which are authorized under the Resource Conservation and Recovery Act (RCRA) pursuant to 42 U.S.C. § 6926; and

WHEREAS, on May 15, 1989, DOE and Ecology entered into the HFFACO. The HFFACO establishes milestones for DOE to, among other matters, construct and operate a Waste Treatment Plant (WTP) to treat (vitrify)

all Hanford tank waste by December 31, 2028, and to complete waste retrieval from 149 single-shell tanks (SSTs) by September 30, 2018; and

WHEREAS, the WTP is a highly complex facility and a number of challenges in its construction have arisen since the HFFACO was signed. DOE has previously requested and Ecology has agreed to a number of schedule extensions using procedures specified in the HFFACO; and

WHEREAS, DOE is behind schedule with the WTP construction, having not completed certain WTP-related HFFACO milestones, and requires additional time beyond the schedule in the HFFACO as of April 3, 2009 to complete WTP construction. To date, the WTP Complex is approximately 44% constructed and 75% designed; and

WHEREAS, although DOE has completed retrieval of waste from seven single-shell tanks, DOE is behind schedule with waste retrievals, having not completed certain retrieval-related HFFACO milestones, and requires additional time beyond the schedule in the HFFACO as of April 3, 2009 to retrieve waste from all of Hanford's SSTs; and

WHEREAS, Ecology alleges that DOE's continued storage of land disposal restricted tank waste, as well as the conditions of and continued storage of waste in Hanford's SSTs, violate applicable regulations promulgated under the HWMA and authorized under RCRA; and

WHEREAS, Ecology and DOE (the Parties) wish to resolve this action without litigation and have, therefore, agreed to entry of this Consent Decree

without adjudication of any issues of fact or law contained herein. This Decree is filed to resolve litigation, solely for the matters covered by this Decree, between the State and DOE regarding certain milestones in the HFFACO and alleged violations of those portions of the regulations which underlie these milestones and portions of milestones in the HFFACO; and

WHEREAS, certain HFFACO modifications become effective simultaneous with entry of this Decree, regarding matters not covered by this Decree.

NOW THEREFORE, it is hereby ordered, adjudged, and decreed as follows:

## II. JURISDICTION

The Court has jurisdiction over the subject matter and the Parties to this Decree. Venue is proper in the United States District Court for the Eastern District of Washington.

## III. PARTIES BOUND

This Decree applies to and is binding upon the United States Department of Energy, the State of Washington, Department of Ecology, and their successors. DOE remains obligated by this Decree regardless of whether it carries out the terms through agents, contractors, and/or consultants. This Decree neither applies to nor is binding upon any other agency of the United States. Nothing in this Consent Decree shall be construed to make any person

or entity not executing this Consent Decree a third-party beneficiary to this Consent Decree.

## IV. WORK TO BE PERFORMED AND SCHEDULE

### A. Waste Treatment Plant (WTP) Construction and Startup.

1. In accordance with Appendix A to this Decree, DOE shall achieve "Hot Start of Waste Treatment Plant" by December 31, 2019, and achieve "initial plant operations" of the WTP no later than December 31, 2022.

2. "Hot Start of Waste Treatment Plant" means the initiation of simultaneous operation of the Pretreatment (PT) Facility, High-level Waste (HLW) Facility and Low-activity Waste (LAW) Facility (including as needed the operations of the Analytical Laboratory (LAB) and the Balance of Facilities) treating Hanford tank wastes and producing a waste glass product.

3. "Initial plant operations" under this Decree is defined as, over a rolling period of at least 3 months leading to the milestone date, operating the WTP to produce high-level waste glass at an average rate of at least 4.2 Metric Tons of Glass (MTG)/day, and low-activity waste glass at an average rate of at least 21 MTG/day.

4. Each milestone set forth in Appendix A shall be completed by the specified date for that milestone in Appendix A. In the event that the State seeks to enforce an interim milestone in Appendix A, it shall be a defense to such enforcement (such that failure to meet the interim milestone by that date will not constitute a violation of the Consent Decree) if DOE demonstrates that

it will (a) complete the interim milestone as soon as practicable and (b) notwithstanding the missed interim milestone date, achieve WTP hot start by December 31, 2019, and initial plant operations of the WTP no later than December 31, 2022, as required in paragraph 1 above.

**B. Single-shell Tank (SST) Waste Retrievals.**

1. In accordance with Appendix B, no later than September 30, 2014, DOE shall complete retrieval of tank waste from the ten (10) remaining SSTs in Waste Management Area C for which waste has not yet been retrieved.

2. In accordance with Appendix B, no later than December 31, 2022, DOE shall complete retrieval of tank waste from nine (9) additional SSTs selected by DOE.

3. For purposes of paragraph 2 above, the tanks shall be selected by DOE after consultation with Ecology. The selected tanks shall include only 100 series tanks (excluding tank S-102), with consideration given to optimizing WTP waste feed blending and addressing tanks that pose a high risk due to tank contents, previous leaks, or the risk of future leaks. Once tanks have been selected, DOE may substitute alternative tanks, but such substitution shall be subject to the consultation and selection criteria of this paragraph.

4. a. At least 180 days before DOE plans to initiate the installation of equipment for retrieval of waste from a tank or set of tanks covered by Section IV-B of this Decree, DOE shall submit to Ecology, for its approval, a Tank

Waste Retrieval Work Plan (TWRWP) that sets out in a Part 1 and a Part 2 of the TWRWP the information required in Part 1 and Part 2 of Appendix C. The TWRWP shall be deemed approved if Ecology notifies DOE of its approval or if 60 days have elapsed after the date DOE submitted the TWRWP to Ecology and Ecology has not disapproved the TWRWP within that 60-day period.

b. In the event of a disapproval by Ecology, within 30 days of such disapproval, DOE shall submit a revised TWRWP for a tank or set of tanks covered by Section IV-B of this Decree addressing Ecology's comments. If DOE and Ecology cannot resolve the concern(s) raised by Ecology within 60 days of Ecology's initial disapproval, the Parties shall utilize Section IX of the Decree and the Court shall resolve their dispute under Section IX of the Decree regarding the disputed elements of Part 1 or Part 2 of the TWRWP. Once the TWRWP is established for a tank or set of tanks covered by Section IV-B (either by approval of Ecology or after dispute resolution by the Court under Section IX of the Decree), DOE may start and carry out tank waste retrieval activities for the tank(s) addressed by the TWRWP.

c. Notwithstanding the provisions of Section IX-C, any period of delay in resolving a dispute regarding approval of a TWRWP beyond 180 days after DOE submits a TWRWP for a tank or set of tanks covered by Section IV-B to Ecology shall extend by a corresponding period the affected milestones in this Decree, but only for that portion of time that this corresponding period extends

beyond the date DOE planned to initiate the installation of equipment for tank waste retrieval from that tank or set of tanks covered by Section IV-B of the Decree. For purposes of this paragraph, "affected milestones" are defined as Section IV-B-1, Section IV-B-2, Milestone B-1in Appendix B, Milestone B-3 in Appendix B, or Milestone B-4 in Appendix B, involving the tank or set of tanks addressed in the TWRWP. Ecology may petition the Court to argue that an extension under this default schedule adjustment should not apply due to the delay in establishing a TWRWP (either by approval of Ecology or after dispute resolution by the Court under Section IX of the Decree). In any such petition, the Court should determine whether, notwithstanding the delay in establishing the TWRWP, DOE can still meet the scheduled date in the affected milestones by exercising reasonable diligence under the circumstances. The Court may consider any allegation concerning whether DOE or the State failed to exercise reasonable diligence in producing or reviewing the TWRWP and resolving any disputes.

d. Nothing in paragraph 4 shall affect DOE's right to relief under Section VI, VII, VIII, and IX of the Decree, to the extent such relief would otherwise be available.

5. When DOE completes retrieval of waste from a tank covered by this Decree, DOE will submit to Ecology a written certification that DOE has completed retrieval of that tank. For purposes of this Consent Decree, "complete retrieval" means the retrieval of tank waste in accordance with Part 1

of Appendix C and with the retrieval technology/systems that were established by Part 1 of the TWRWP either by approval of Ecology or after dispute resolution by the Court under Section IX of the Decree.

**C. Reporting.**

1. Semi-Annual Reports. DOE shall, on a semi-annual basis, submit to Ecology a written report documenting WTP construction and startup activities and tank retrieval activities that occurred during the period covered by the report. This written report shall provide the status of progress made during the reporting period and shall include:

a. A brief description of project accomplishments and project issues encountered during the reporting period and/or expected in the next six (6) months;

b. A definitive statement describing whether or not DOE has complied with milestones that have already come due as of the date of the report, and how any missed milestones may affect compliance with other milestones;

c. Where applicable, a description of actions initiated or otherwise taken to address any schedule slippage;

d. Budget/cost status; and

e. Copies of written directives given by DOE to the contractors for work required by this Decree, if requested by Ecology.

2. Monthly reports. DOE shall, on a monthly basis, submit to Ecology a written summary report (*e.g.,* approximately 10 to 15 pages in length) documenting WTP construction and startup activities and tank retrieval activities covered by this Decree. This report may be combined with the reports already provided by DOE to Ecology pursuant to Section 4 of the HFFACO Action Plan. The monthly report shall address: (a) cost and schedule performance (earned value management system graphs) for each major activity; (b) significant accomplishments during the prior month; and (c) significant planned activities for the next month.

3. In the event DOE determines that a serious risk has arisen that DOE may be unable to meet a schedule as required in Section IV, DOE shall notify Ecology in a timely manner, as described in Section VII-C.

**D. Regulatory Coordination**

For the matters covered by this Decree, the Parties shall ensure, to the maximum extent possible, that any existing or required permit, order, or approval associated with constructing and operating the WTP, SST waste retrieval, and reporting is consistent with the requirements of this Consent Decree.

## V. ACCESS

Without limitation on any authority conferred on it by law, Ecology shall have authority to enter the Hanford Site at all reasonable times for the purposes of, among other things: (1) inspecting records, operating logs, contracts, and

other documents relevant to the implementation of this Decree, subject to applicable limits on classified and confidential information; (2) reviewing the progress of DOE in implementing this Decree; (3) conducting such tests as Ecology deems necessary regarding the work covered herein (provided that such tests do not interfere with DOE's ability to meet the schedule); and (4) verifying data relating to the work covered herein submitted to Ecology by DOE. DOE shall honor all requests for access by Ecology's representatives, conditioned only upon proof of such status, and conformance with Hanford Site safety and security requirements. Ecology's representatives shall minimize interference with operations while on the Hanford Site. DOE reserves the right to require Ecology's representatives to be accompanied by an escort while on the Hanford Site. DOE shall provide escorts in a timely manner.

## VI. JOINT THREE YEAR REVIEWS

The Parties shall meet on mutually agreeable dates that are approximately three years after the entry of this Decree, and on dates that are approximately at three year intervals thereafter, and at such other times upon which the Parties may agree, to review the requirements of the Consent Decree and to discuss the best available information and any circumstances that may necessitate the reconsideration of and/or modification to the outstanding requirements of this Decree. DOE shall provide an update of all activity to date, address any schedule changes, describe unforeseen technological and logistical difficulties, and explain any good cause reasons for modifications. Every effort will be

made by the Parties to seek agreement to any modifications to the Consent Decree. Any modifications to the Decree agreed to by the Parties as a result of this process shall be effectuated through a joint motion to modify the Decree and any disputes as to whether such a modification is appropriate shall be resolved through the process set forth in Section IX. The notice and comment provisions of Section VII-A-2 apply to this section.

## VII. AMENDMENT OF DECREE

### A. Amendment Process.

1. This Decree may be amended by mutual agreement of the State and DOE upon approval by the Court. The party proposing the amendment shall provide the proposal in writing to the other party, along with a justification for the amendment. Proposals to amend the schedule shall be submitted in accordance with, and shall be evaluated under the criteria described in, paragraphs B through G, below. Within ten (10) working days of receipt (except as provided in Section VII-F), the other party shall notify the party proposing the amendment whether or not the amendment is acceptable.

2. If the amendment is acceptable, then the State shall determine, in its sole discretion, whether the amendment constitutes a significant modification to the Consent Decree. If the amendment is significant, then the State and DOE shall take public comment on the amendment. Unless public comments disclose facts or considerations which indicate the amendment is inappropriate, the Parties shall submit the amendment to the Court for its

approval. If, in the view of either party, public comments disclose facts or considerations which indicate that the amendment is inappropriate, and if the Parties are unable to agree on revisions to the proposed amendment to address the concerns raised during the public comment period, then the provisions of Section VII-A-3 shall apply.

3. If the amendment is not acceptable to the other party, the other party shall explain in writing its reasons for disagreeing with the amendment. In such an event, the party proposing the amendment may invoke the dispute resolution procedures of this Decree.

4. The time periods in Section VII may be extended by mutual agreement of the Parties.

**B. Amendment of Schedule.**

The schedules in Section IV may be amended under this section if (1) a request for amendment is timely, and (2) good cause exists for the amendment.

**C. Timeliness.**

To be timely, a request must be submitted to the other party as expeditiously as practicable within a reasonable time from when the party learns that underlying facts give rise to the need for the schedule amendment.

**D. Good Cause.**

1. "Good cause" for schedule amendment exists when the schedule cannot be met due to circumstances or events either (1) unanticipated in the

development of the schedule in Section IV of this Consent Decree, or (2) anticipated in the development of the schedule, but which have a greater impact on the schedule than was predicted or assumed at the time the schedule was developed (hereafter collectively referred to as "circumstances and events"). However, in any case, good cause does not exist if DOE can nonetheless meet the existing schedule by responding with reasonable diligence to such circumstances or events. Likewise, good cause does not exist if DOE could have met the existing schedule if it had responded with reasonable diligence to the circumstance(s) and event(s) when they occurred. Efficient management practices are an appropriate consideration in determining whether reasonable diligence has been exercised.

2. Both Parties to this Consent Decree understand that to develop this schedule, assumptions had to be made about a broad range of circumstances and events including unforeseen circumstances that might arise which could affect the schedule. As part of this process, further assumptions had to be made about the likelihood of such circumstances and events occurring and the types of concerns they may raise, and if they did occur, what effect that might have on the schedule. It is possible that circumstances and events will arise whose effect on the schedule exceeds an allowance for uncertainty beyond what is now included in the schedule.

3. If circumstances and events occur that will delay the completion of work beyond the deadlines in the schedule, and the delay cannot be or could not

have been avoided by DOE responding to the circumstances and events with reasonable diligence, then "good cause" exists for extending the schedule. Although such circumstances and events cannot, by their nature, be fully anticipated and controlled, the general types of circumstances and events that may give rise to "good cause" include, but are not limited to: safety concerns; requirement changes and unknown technical obstacles; equipment failures; market conditions and equipment supplier responsiveness; regulatory actions/inactions or legal intervention; and labor shortages. Appendices A and B set out some of the assumptions and concerns for these types of circumstances and events.

4. The identification in this Decree and its Appendices of certain circumstances and events and certain concerns and assumptions regarding circumstances and events does not create a presumption that any particular circumstance, event, concern, or assumption described in this Decree or its Appendices will provide the basis for a good cause extension in any particular case.

5. In any request for amendment, DOE shall identify the good cause that, in its view, justifies amendment. If the State agrees that good cause exists, the Parties shall agree to an appropriate amendment. If the State does not agree that good cause exists, DOE may invoke the dispute resolution process set forth in Section IX of this Decree.

**E. Force Majeure.**

The Parties agree that some events are of such a magnitude that they will be presumed to justify amendment. Extensions of the schedule shall be equal to the number of days during which work is interrupted due to *force majeure* events. These events include, but are not limited to:

1. Acts of God, fire, war, insurrection, civil disturbance, or explosion;

2. Significant adverse weather conditions that could not have been reasonably anticipated;

3. Restraint by court order;

4. Inability to obtain, at reasonable cost and after exercise of reasonable diligence, any necessary authorizations, approvals, permits or licenses due to action or inaction of any governmental agency or authority other than DOE or its authorized contractors;

5. Any strike or similar work stoppage resulting from labor dispute, and

6. Government shutdown or a government- or agency-wide prohibition of work by essential or non-essential personnel.

Any amendment requested on the grounds that one of the events listed above has occurred will be granted unless the State does not agree that a *force majeure* event has occurred. DOE may pursue dispute resolution regarding this determination under Section IX of this Decree. If the dispute is not resolved by

mutual agreement of the Parties, DOE may seek court review, and if the Court determines that, under the pertinent facts and circumstances, the event does constitute a *force majeure* event, then the Court shall approve the requested extension. Whenever a *force majeure* event occurs, DOE shall exercise its best efforts to complete the affected work in accordance with the original schedule.

**F. Safety Concerns.**

If a safety concern arises that affects or will likely affect the schedule in Section IV, DOE shall take the following steps:

1. As soon as a safety concern is identified, DOE shall notify Ecology that an issue exists, the nature of the issue, and any actions taken to respond to the issue.

2. No more than 45 days after the notification in Section VII-F-1, DOE shall develop and submit to Ecology a Safety Issue Resolution Plan (SIRP) that identifies the following:

a. the issue and its technical basis, its probability of occurrence, consequences of occurrence, and any threat to human health and the environment that would result if DOE adhered to the schedules in Section IV in light of the safety issue;

b. the impacts that the safety issue will have on the schedules in Section IV;

c. required administrative, procedural, technical, and operational issues that must be resolved in order for work to continue;

d. a schedule and necessary resources to resolve the safety issue in order to allow the resumption of work in the event that work was stopped because of the safety issue;

e. the management process to be used to resolve the safety issue;

f. any pertinent information not already provided to Ecology; and

g. a request for a schedule amendment as set forth in Section VII-G below. In the event that the impact on the schedule cannot be adequately determined until the analysis of the safety question is completed, DOE will advise Ecology of its initial estimate of schedule impact and a date by which it will submit the required request for schedule amendment.

3. If Ecology agrees, based on the information provided in the SIRP and any other information, whether oral or written, provided by DOE, that good cause exists for a schedule amendment, then the State shall determine, in its sole discretion, whether the amendment constitutes a significant modification to the Consent Decree. If the amendment is significant, then the State and DOE shall take public comment on the

amendment. Unless public comments disclose facts or considerations which indicate that the amendment is inappropriate, the Parties shall submit the amendment to the Court for its approval. In the event that Ecology does not agree, either before or after any public comment period, that good cause exists, DOE may invoke the dispute resolution procedures in Section IX.

**G. Proposals to Amend.**

1. Any proposal to amend the schedule in Section IV shall be submitted in writing to the other party and shall specify the following:

a. The particular deadline(s) for which the amendment is sought;

b. The length of the extension(s) sought;

c. The basis for the amendment; and

d. Any other requirement of this Consent Decree or of the HFFACO that would be affected if the proposal to amend the schedule were accepted.

2. Any proposal to amend any other provision of this Consent Decree shall be in writing and shall identify:

a. Those portions of the Consent Decree to be amended;

b. The proposed new language to be included in the Consent Decree; and

c. The reason for the proposed amendment.

3. Notice of any proposal to amend shall also be provided to the United States Environmental Protection Agency, Region 10.

## VIII. FUNDING

If DOE asserts that appropriated funds necessary to fulfill an obligation under this Decree are not available, the Parties agree to utilize the procedures of Sections VI or VII and Section IX. No provision of this Decree shall be interpreted as or constitute a commitment or requirement that the United States obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, to the extent applicable.

## IX. RESOLUTION OF DISPUTES

### A. Written Demand.

The Parties recognize that a dispute may arise regarding the proper interpretation of this Decree or whether or how the Decree should be amended. If such a dispute arises, the Parties will endeavor to settle it by good faith negotiations among themselves. The party invoking dispute resolution shall send to the other party a written demand for immediate commencement of good faith negotiations to endeavor to settle the dispute. If the Parties cannot resolve the issue within a reasonable time, not to exceed forty (40) calendar days from the date of the written demand for good faith negotiations, then either party may seek appropriate relief from the Court as set out hereinafter in paragraph B below. Either party may request a meeting among technical and/or

management representatives from their respective organizations at any time during the dispute resolution.

**B. Petition Court.**

If the dispute is not resolved within 40 days from the date of the written demand for good faith negotiations of the dispute, either party may petition the Court for relief. A petition seeking appropriate relief from the Court shall be filed within thirty (30) calendar days of the end of the 40-day period provided for in Section IX-A. The Court shall resolve any such disputes under a de novo standard of review.

**C. Applicability of Deadlines During Dispute Resolution.**

Deadlines established in the schedules in Section IV shall continue in force unless and until changed by the Court. Notwithstanding the foregoing sentence, if DOE has requested an extension of a deadline, DOE shall not be deemed to be in violation of that deadline while DOE's request is being evaluated. This period shall run from the time that DOE submits a request for schedule amendment as provided in Section VII-A or Section VII-F through the date on which the Court acts on the request.

**D. Resolution of Disputes of Certain Modification Determinations Under the HFFACO.**

Disputes that arise on the determinations in M-062-45, paragraph 4 and 5, of the HFFACO, regarding whether or not the 2040 and 2047 end-dates for tank waste retrieval and tank waste treatment, respectively, should be

accelerated, shall be resolved under Sections IX-A and –B of the Decree. The Court shall possess exclusive jurisdiction to resolve any such disputes, under a de novo standard of review, until such time as this Decree is terminated pursuant to Section XV-B of this Decree. The Court shall not possess jurisdiction under the Consent Decree to enforce either the 2040 or 2047 end-dates in M-045-70 and M-062-00 of the HFFACO or modifications to those end-dates that it may establish upon resolving disputes regarding the determinations in Milestone M-062-45, paragraphs 4 and 5. Upon termination of this Decree pursuant to Section XV-B, the United States and Ecology shall enter negotiations to establish the mechanism that will apply to resolve future disputes regarding the determinations in M-062-45, paragraphs 4 and 5. The United States and Ecology reserve their rights regarding the mechanism that should apply to such future disputes.

## X. RESOLUTION OF CLAIMS AND COVENANT NOT TO SUE

A. This Decree resolves any claims that have been or could have been raised by the State that DOE has violated or will violate the requirements of the HFFACO (as the HFFACO existed as of April 3, 2009), the HWMA, or RCRA, or any other federal, state, or local claims that have been or could have been raised by the State in its Amended Complaint, for the matters covered by this Decree. "Matters covered" by this Decree are: (i) the schedule (including defined milestones) for WTP construction and initial operation; (ii) submittal, review, and approval of TWRWPs for the 19 tanks covered by this Decree; (iii)

the schedule (including defined milestones) for SST waste retrieval from the 19 tanks in the manner established by Part 1 of the TWRWPs (either by approval of Ecology or after dispute resolution by the Court under Section IX of the Decree); and, (iv) reporting relating to (i) through (iii) above. Except for an action to enforce the requirements of this Decree, the State hereby covenants not to bring any civil, judicial, or administrative enforcement action against DOE, its officials or employees, or its contractors or their subcontractors, their officials, or employees, with respect to matters covered by this Decree. All claims raised in the Amended Complaint that are not resolved by this Consent Decree are dismissed with prejudice.

B. This Decree does not relieve DOE of responsibility to comply with any applicable state, federal, or local law or regulation. Both Parties retain all of their rights and defenses with respect to matters not covered or claims not dismissed by this Decree. The State expressly reserves for further action or enforcement, and its execution of this Decree does not discharge, release, or in any way affect any right, demand, claim, or cause of action that it has, or may have, regarding DOE's environmental liabilities at the Hanford Site other than the claims resolved or dismissed by this Decree.

C. Notwithstanding any other provision of this Decree, the State reserves the right to (1) seek amendment of this Decree, if previously unknown information is received, or previously undetected conditions are discovered, and these previously unknown conditions or information together with any other

relevant information indicates that the work to be performed and schedule under this Decree are not protective of human health or the environment, or (2) to pursue an action outside of this Decree to address an imminent and substantial endangerment, if previously unknown information is received, or previously undetected conditions are discovered, and these previously unknown conditions or information together with any other relevant information indicates that an imminent and substantial endangerment exists, notwithstanding the work to be performed and schedule under this Decree, that cannot be addressed by an amendment to this Decree.

## XI. INTEGRATION

A. Simultaneous with the entry of this Decree, amendments to the HFFACO executed by the Parties become effective in accordance with their terms. While the provisions of Sections IV-B, IV-D, IX, and Appendix C may affect certain matters under the HFFACO, the Decree shall not give the court jurisdiction over the HFFACO or otherwise govern the HFFACO or its enforcement (which shall be determined by the HFFACO in accordance with its own terms).

B. The matters covered by this Decree, as described in Section X, are within the scope of matters addressed or to be addressed in the future by the Hanford Sitewide HWMA permit. Ecology shall address such matters in the Hanford Sitewide HWMA permit through incorporation by reference of the requirements and schedules in this Consent Decree for such matters, including

any revisions that may be made to such Decree requirements and schedules. While certain provisions of this Consent Decree may affect certain matters under the Hanford Sitewide HWMA permit, this Decree shall not give the Court jurisdiction over that permit.

## XII. RETENTION OF JURISDICTION

This Court retains jurisdiction over both the subject matter of this Decree and the Parties for the duration of the performance of the terms and conditions of this Decree for the purpose of enabling either of the Parties to apply to the Court at any time for such further order, direction, sanction or other relief as may be necessary or appropriate for the construction or modification of this Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section IX, Resolution of Disputes.

## XIII. CONSTRUCTION AND USE OF CONSENT DECREE

**A. Construction of Decree**. This Consent Decree is the product of negotiation by the Parties. Both Parties contributed to its drafting. In any dispute over the meaning of any provision of this Consent Decree, the Parties shall be treated as having contributed equally to the drafting of that provision.

**B. Restrictions on Use in Other Proceedings.** Neither this Consent Decree nor any of its provisions may be used in any future proceeding to determine or resolve the issue of whether exhaustion of appeal rights or procedures under the HFFACO is a condition precedent to the initiation of a judicial action based upon an alleged violation of a requirement of the

HFFACO. Consistent with the other provisions of this Decree, the Decree shall not give the Court jurisdiction over the HFFACO.

## XIV. COSTS OF LITIGATION

After entry of the Decree by the Court, the Parties intend to resolve the State's claim for costs of litigation (including reasonable attorney and expert witness fees) under 42 U.S.C. § 6972(e). In the event the Parties are unable to reach agreement as to that claim, the State reserves the right to file an application with the Court for such costs.

## XV. EFFECTIVE AND TERMINATION DATES

A. This Consent Decree shall be effective upon the date of its entry by the Court.

B. This Consent Decree shall terminate when all work to be performed under Sections IV-A and IV-B of this Decree has been completed. The Parties will notify the Court of this event by a motion to terminate the Consent Decree.

DATED this 25th day of October, 2010.

s/ Fred Van Sickle
United States District Judge

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## APPENDIX A: WTP CONSENT DECREE

## MILESTONES, SCHEDULE, ASSUMPTIONS

**1. WTP Construction and Startup.**
The milestones referred to in Section IV above are as follows:

| Project | Description | Date |
|---|---|---|
| A-1 | Achieve initial plant operations for the Waste Treatment Plant | 12/31/2022 |
| A-2 Interim | HLW Facility Construction Substantially Complete | 12/31/2016 |
| A-3 Interim | Start HLW Facility Cold Commissioning | 06/30/2018 |
| A-4 Interim | HLW Facility Hot Commissioning Complete | 12/31/2019 |
| A-5 Interim | LAB Construction Substantially Complete | 12/31/2012 |
| A-6 Interim | Complete Methods Validations | 12/31/2017 |
| A-7 Interim | LAW Facility Construction Substantially Complete | 12/31/2014 |
| A-8 Interim | Start LAW Facility Cold Commissioning | 12/31/2018 |
| A-9 Interim | LAW Facility Hot Commissioning Complete | 12/31/2019 |
| A-12 Interim | Steam Plant Construction Complete | 12/31/2012 |
| A-13 Interim | Complete Installation of Pretreatment Feed Separation Vessels FEP-SEP-00001A/1B | 12/31/2015 |
| A-14 Interim | PT Facility Construction Substantially Complete | 12/31/2017 |

| Project | Description | Date |
|---|---|---|
| A-15 Interim | Start PT Facility Cold Commissioning | 12/31/2018 |
| A-16 Interim | PT Facility Hot Commissioning Complete | 12/31/2019 |
| A-17 | Hot Start of Waste Treatment Plant | 12/31/2019 |
| A-18 Interim | Complete Structural Steel Erection Below Elevation 56' in PT Facility | 12/31/2009 |
| A-19 Interim | Complete Elevation 98' Concrete Floor Slab Placements in PT Facility | 12/31/2014 |
| A-20 Interim | Complete Construction of Structural Steel to Elevation 14' in HLW Facility | 12/31/2010 |
| A-21 Interim | Complete Construction of Structural Steel to Elevation 37' in HLW Facility | 12/31/2012 |

"Substantially complete"[1] means that the Start-up Organization has certified that the facility and its subsystems are ready to be turned over to the Start-up Organization.

[1] Because under Milestones A-5 and A-7, the LAW and LAB facilities must be substantially complete several years before "Hot Start of Waste Treatment Plant", equipment in those facilities that might become obsolete or require upkeep if installed at that early time would be installed later, such as: Communications systems; Melter assembly and movement into the LAW building; Hi-purity piping tubing systems; Distributed control system (DCS); Selected instrumentation subject to damage or obsolescence; Penetration sealing and heating, ventilation, and air-conditioning (HVAC) balancing; Piping insulation; Selected architectural finishes/components subject to damage; Cable installation and other fire-load materials, which would cause the permanent plant fire protection systems to become required for fire protection; Fire detection systems; Batteries; Master-slave Manipulators; Shield Windows; Carbon media in carbon bed adsorber; High-efficiency particulate air (HEPA) and other filters in HVAC systems. If DOE wishes to defer installation of equipment that is not substantially similar, then DOE shall seek approval from Ecology, with any dispute to be resolved under Section IX. The following items will not be considered substantially similar for purposes of delayed installation: All major civil, structural, piping, mechanical, and electrical power equipment installed and inspected; Electrical raceway installed except that required for systems/components not installed for obsolescence or maintenance

"Start Cold Commissioning" means the introduction of feed simulants for the purpose of determining individual facility functionality.

"PT Facility Hot Commissioning Complete" means the point at which the PT Facility has demonstrated its ability to separate liquids from solids using radioactive materials to produce acceptable feed for high level waste (HLW) and low-activity waste (LAW) glass production.

"HLW Facility Hot Commissioning Complete" means the point at which the HLW facility has demonstrated its ability to produce immobilized HLW glass of acceptable quality.

"LAW Facility Hot Commissioning Complete" means the point at which the LAW facility has demonstrated its ability to produce immobilized LAW glass of acceptable quality.

**2. WTP Construction and Startup Concerns and Assumptions**

The milestones and schedule set forth in Section IV of the Decree and this Appendix thereto are based upon project planning that requires assumptions to be made and raises concerns about a broad range of circumstances and events, including unforeseen circumstances. Below is a non-exhaustive identification of some of the concerns and assumptions for the circumstances

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considerations; All piping hydro-tested to confirm capability to meet design requirements; Buildings enclosed and weather-tight, as required by design; Interior partition walls completed except for penetrations and penetration sealing and caulking; Major instrumentation racks and associated tubing installed except for those portions subject to obsolescence or maintenance; Permanent lighting for the facilities complete.

and events. The identification in this Appendix of certain circumstances and events and certain concerns and assumptions regarding circumstances and events does not create a presumption that any particular circumstance, event, concern, or assumption described in this Appendix will provide the basis for a good cause extension in any particular case. These concerns and assumptions are subject to the requirements for establishing good cause under Section VII-D, including the requirement that DOE exercise reasonable diligence.

a. Unforeseen safety concerns that, because of the nature of the concerns and the time required to address them, may require that milestone dates and the schedule be extended. These concerns may include but are not limited to worker and public safety or impacts to the environment. Construction and start-up of the WTP involves unique characteristics and hazards including industrial, electrical, thermal, chemical, and radiological hazards.

b. Because of the highly complex nature of the WTP, the milestones and schedule cannot anticipate all of the requirement changes and unknown technical obstacles that may be encountered and that may require time to remedy. These include but are not limited to difficulties in achieving the Maximum Achievable Control Technology standards during performance testing, difficulties in adoption of laser ablation technologies resulting in extended sample turn-around times, integrated control software obsolescence,

formation of hazardous mercury compounds in the evaporators, or technical issues that result from unforeseen tank waste characteristics.

c. Although the milestones and schedule were developed assuming that equipment failures will occur and that time to respond will be required, these failures may take place more often and require more time to remedy than anticipated in development of the milestones and schedule. Examples may include but are not limited to components such as melters, agitators, compressors, material handling systems, crane systems, evaporators, and ultrafilters. Failures may occur during construction, testing, start-up, and operations. During WTP start-up and operations, failures in the Site infrastructure (e.g., Double-shell Tank system; 242-A Evaporator; Liquid Effluent Retention Facility, Effluent Treatment Facility, Integrated Disposal Facility, and the 222-S Laboratory) may occur.

d. Although the milestones and schedule were based upon nominal delivery timelines developed through DOE and contractor experience, actual delivery times from suppliers of needed construction commodities and specialty equipment are affected by worldwide economic conditions and demand for the same or similar commodities and equipment; these conditions limit the ability of DOE and its contractors to secure required delivery dates to meet the milestones and schedule set forth above. Examples of these

conditions include but are not limited to building steel, emergency diesel generators, piping and valves, and other commodities.

e. DOE's ability to meet the milestones and schedule is dependent upon multiple regulatory actions and can be adversely impacted by forces outside its control, including but not limited to, obtaining operating permits and decisions from regulatory agencies on a timely basis, or legal intervention by third-parties under existing agreements or statutory provisions.

f. DOE's ability to meet the milestones and schedule assume that required staffing levels can be achieved and sustained. The availability of skilled professionals and craft can be adversely impacted by competing projects in the nuclear, mining, chemical, oil and gas, refining and petrochemical industries, both domestic and international, and by local and regional projects, as well.

**APPENDIX B:**

**1. Tank Waste Retrievals**

| Project | Description | Date |
|---|---|---|
| B-1 | Complete retrieval of tank wastes from the following remaining SSTs in WMA-C: C-101, C-102, C-104, C-105, C-107, C-108, C-109, C-110, C-111, and C-112. | 9/30/2014 |
| B-2 | Subject to the requirements of Section IV-B-3, DOE will advise Ecology of the 9 SSTs from which waste will be retrieved by 2022. Subject to the requirements of Section IV-B-3, DOE may substitute any of the identified 9 SSTs and advise Ecology accordingly. | 9/30/2014 |
| B-3 | Of the 9 SSTs referred to in B-2, DOE will have initiated startup of retrieval in at least 5. | 12/31/2017 |
| B-4 | Complete retrieval of tank wastes from the 9 SSTs selected to satisfy B-2. | 9/30/2022 |

"Initiate startup of retrieval" means that actual pump operations in the SST have commenced and that transfers from the SST have totaled an estimated 5% of the waste in the tank.

**2. Tank Retrieval Milestones and Schedule Concerns and Assumptions**

The milestones and schedule set forth in Section IV of the Decree and this Appendix thereto are based upon project planning that requires assumptions to be made and raises concerns about a broad range of circumstances and events, including unforeseen circumstances. Below is a non-exhaustive identification of some of the concerns and assumptions for the circumstances

and events. The identification in this Appendix of certain circumstances and events and certain concerns and assumptions regarding circumstances and events does not create a presumption that any particular circumstance, event, concern, or assumption described in this Appendix will provide the basis for a good cause extension in any particular case. These concerns and assumptions are subject to the requirements for establishing good cause under Section VII-D, including the requirement that DOE exercise reasonable diligence.

a. Unforeseen safety concerns that, because of the nature of the concerns and the time required to address them, may require that the milestones and schedule be extended. These concerns may include, but are not limited to, worker and public safety or impacts to the environment. The wastes contained within each tank have their own unique characteristics and hazards.

b. The wastes associated with each tank or group of tanks have their own unique characteristics. Because of this, the milestones and schedule cannot anticipate all of the requirement changes and technical obstacles that may be encountered and that may require time to remedy. These may include but are not limited to unknown physical, chemical, and radiological characteristics present in the wastes; differences between the assumed and actual configurations of the tanks and tank farms; changes to the hazardous waste

management requirements; and significant changes in the nature and extent of assumed environmental contamination.

c. Although the milestones and schedule were developed assuming that equipment failures will occur and that will require time to respond to, these failures may take place more often and require more time to remedy than anticipated in the development of the milestones and schedule. Examples may include but are not limited to failures in the Single-shell Tank waste retrieval systems, tank farms, and supporting infrastructure (e.g., Double-shell Tank system; 242-A Evaporator; Liquid Effluent Retention Facility, Effluent Treatment Facility, Integrated Disposal Facility, and the 222-S Laboratory).

d. Although the milestones and schedule were based upon delivery timelines developed through DOE and Contractor experience, actual delivery times from suppliers of needed construction commodities and specialty equipment are affected by worldwide economic conditions and demand for the same or similar commodities and equipment; these conditions limit the ability of DOE and its Contractors to secure required delivery dates to meet the milestones and schedule. Examples of these conditions include but are not limited to specialized waste retrieval systems

and components, piping and valves, and spare parts for aging tank systems.

e. DOE's ability to meet the milestones and schedule is dependent upon multiple regulatory actions and can be adversely impacted by forces outside its control, including but not limited to, obtaining operating permits and decisions from regulatory agencies on a timely basis, or legal intervention by third-parties under existing agreements or statutory provisions.

f. DOE's ability to meet the milestones and schedule assume that required staffing levels can be achieved and sustained. The availability of skilled professionals and craft can be adversely impacted by competing projects in the nuclear, mining, chemical, oil and gas, refining and petrochemical industries, both domestic and international, and by local and regional projects, as well.

**APPENDIX C:**

A Tank Waste Retrieval Work Plan (TWRWP), for a tank or set of tanks covered by Section IV-B of the Decree, may cover an individual tank or a group of tanks and will address only those actions associated with waste retrieval. Such TWRWPs shall contain a Part 1 and Part 2, which shall include the information required only by Parts 1 and 2 below. Processes not covered by a TWRWP (e.g., tank closure) are not established under this Consent Decree.

Part 1: Required Retrieval Technologies

For retrieval of the tanks covered by Section IV-B of the Decree, Part 1 of the TWRWP will describe the retrieval technology or technologies to be implemented by DOE for the tank retrievals covered in the TWRWP and the rationale for selecting these technologies to meet the requirements of this Decree for tank waste retrieval. For each tank or group of tanks, the TWRWP shall establish two retrieval technologies that shall be deployed to each of their "limits of technology" in an effort to obtain a waste residue goal of 360 cubic feet of waste or less for each tank. The "limits of technology" means that the recovery rate of that retrieval technology for that tank is, or has become, limited to such an extent that it extends the retrieval duration to the point at which continued operation of the retrieval technology is not practicable, with the consideration of practicability to include matters such as risk reduction, facilitating tank closures, costs, the potential for exacerbating leaks, worker safety, and the overall impact on the tank waste retrieval and treatment mission.

If 360 cubic feet is reached with the first retrieval technology, the first retrieval technology shall be used to the "limits of technology" and a second retrieval technology shall not be required. If the waste residual goal of 360 cubic feet is not achieved using the established two technologies, an additional retrieval technology established in a revised TWRWP shall be deployed to the "limits of technology;" provided that DOE may request that the State agree that DOE may forego implementing a third retrieval technology if DOE believes implementing such technology is not practicable under the criteria set forth above. If DOE and Ecology are unable to reach agreement, the resolution of the issue of whether a third retrieval technology shall be deployed shall be resolved through the dispute resolution process set forth in Section IX of this Decree. After such retrieval technologies have been deployed, retrieval for a tank will be complete.

Submittal of the TWRWP shall be accompanied by a schedule provided for informational purposes only. The schedule will include design, construction, and field retrieval activities.

Part 2: Required Information in a TWRWP

To support planned retrieval activity, Part 2 of the TWRWP shall provide the information set forth below:

1. Tank(s) and/or ancillary equipment condition and Configuration;
2. Leak detection monitoring and mitigation plan, including technology description, rationale for selection,

configuration, inspection and monitoring requirements, mitigation response, and anticipated performance goals;

3. Operational requirements during retrieval;

4. A pre-retrieval risk assessment of potential residuals, consideration of past leaks, and potential leaks during retrieval, based on available data and the most sophisticated analysis available at the time. The purpose of this risk assessment is to aid operational decisions during retrieval activities. This risk assessment will not be used to make final tank retrieval or closure decisions. The risk assessment will contain the following, as appropriate:

- Long-term human health risks associated with potential leaks during retrieval and potential residual waste after completion of retrieval:
    - Potential impacts to groundwater, including a WMA-level risk assessment
    - Potential impacts based on an intruder scenario
- Process management responses to a leak during retrieval and estimated potential leak volume
- The pre-retrieval risk analysis will be based on the following criteria:
    - Using the WMA fence line for point of compliance
    - Identify the primary indicator contaminants (accounting for at least 95% of impact to

groundwater risk) and provide the incremental lifetime cancer risk (ILCR) and hazard index (HI)

- Using ILCR and HI for the industrial and residential human scenarios as the risk metric
- Calculated concentration(s) of primary indicator contaminant(s) in groundwater (mg/L, and pCi/L).

5. Functions and associated requirements necessary to support design of proposed waste retrieval and leak detection monitoring and mitigation system(s);

6. Preliminary isolation evaluation including a list of ancillary equipment associated with the specific component, plans for ancillary equipment removal or waste retrieval, available characterization information for waste contained within ancillary equipment, and anticipated interrelated impacts of various retrieval actions;

7. Any TWRWP that identifies the use of new aboveground tanks, tank systems or treatment systems (not otherwise permitted, and to be operated only during the retrieval duration) shall include the following additional information:

- General arrangement diagrams
- System description

- Piping and instrumentation drawings (P&ID) for the retrieval system
- Process flow diagrams
- Information to demonstrate compliance with WAC 173-303-640
- Describe the disposition of the system at completion of the retrieval.

Part 3: Integration with HFFACO

A. Those portions of the TWRWP that address Part 1 of Appendix C for a tank or set of tanks covered by Section IV-B, established either by approval of Ecology or after resolution of a dispute by the Court under Section IX of this Decree, shall be enforceable under the Decree. Those portions of such a TWRWP that address Part 2 of Appendix C shall not be enforceable under this Consent Decree; rather, once a TWRWP is established, Part 2 shall for the purposes of any HFFACO enforcement claims be governed by the HFFACO, as set forth herein.

1. Once a TWRWP is established for a tank or set of tanks covered by Section IV-B (either by approval of Ecology or after resolution of a dispute by the Court pursuant to Section IX of this Decree), Part 2 of that TWRWP shall for purposes of HFFACO enforcement constitute an Action Plan primary document under the HFFACO within the meaning of Appendix I, Section 1.0,

with each party retaining the rights they otherwise have regarding the enforcement of that TWRWP under the HFFACO, and

2. Sections 2.1.4 and 2.1.5 of Appendix I of the HFFACO (except for the references to start dates and schedules), and Section 2.1.6 of Appendix I of the HFFACO, and only these portions of Appendix I of the HFFACO, shall apply according to their terms to the retrieval activities undertaken by DOE under Part 2 of the TWRWP, with each party retaining the rights they otherwise have regarding enforcement of these provisions under the HFFACO.

3. Upon the establishment of a TWRWP for a tank or set of tanks covered by Section IV-B (either by approval of Ecology or after resolution of a dispute by the Court under section IX of this Decree), the requirements and schedules of the TWRWP shall be incorporated by reference into the Hanford Sitewide HWMA permit to satisfy any HWMA permit requirements.

B. Notwithstanding the requirements of Part 1 of Appendix C, DOE has, prior to the entry of this Consent Decree, submitted TWRWPs under the HFFACO that Ecology has already approved, or may hereafter approve, for certain tanks covered by Milestone B-1 in Appendix B to this Consent Decree. These tanks are subject to the requirements of Appendix C. However, such approvals, including the deployment of technologies to the limits of technology pursuant to such TWRWPs, shall count towards satisfaction of DOE's obligations under Part 1 of Appendix C. This Consent Decree shall not be interpreted to prohibit DOE from continuing to conduct retrieval activities

under such approved TWRWPs, including in a situation where a revised TWRWP may be required under this Consent Decree.