

FINAL DETERMINATION**Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) in the matter of disapproval of the Department of Energy's Change Control Form M-62-01-02.**

This Final Determination concludes efforts at resolving a dispute under the HFFACO between the Washington Department of Ecology (Ecology) and the U. S. Department of Energy (DOE) (hereafter the Parties). As such, this constitutes my final determination pursuant to HFFACO Part Two, Article VIII, Paragraph 30 (D). This determination has been made following review and consideration of Ecology's Administrative Record in this matter.

I. Introduction

The Hanford site is located in the southeast portion of Washington State from 5 to 20 miles north of the cities of Richland, Pasco and Kennewick, along the last free-flowing stretch of the Columbia River. Historically, Hanford served as part of a nationwide complex that was used in the production of nuclear weapons beginning in the 1940's. Activities at Hanford focused on the assembly and irradiation of nuclear fuels, and subsequent fuel rod reprocessing for the extraction of needed special nuclear materials. Hanford's role as a component in the nations weapons complex ended in 1989 when the site's mission was changed to cleanup.

Wastes left over from Hanford's production years represent a World War II and Cold War legacy of unprecedented magnitude. Wastes that are the subject of this determination are those high-level radioactive wastes held in DOE's aging underground waste storage tanks. These Hanford tank wastes represent approximately 60% of the nations extremely hazardous high-level radioactive waste, some 53,895,000 gallons.¹ Many of these tanks have already leaked, releasing waste into surrounding soils and groundwater.

Hanford's tank wastes are stored some 7 to 12 miles from the Columbia River. The Columbia is tremendously significant to the State of Washington, its people, and the people of the Northwest as a whole. Approximately 1.5 million people live in Washington and Oregon counties along the river from Hanford to the river's mouth. The Columbia is a major economic, natural resource, transportation, and recreational factor throughout the region. The river provides drinking water to the cities of Richland, Kennewick and Pasco. It provides hydroelectric power via four major dams below Hanford (McNary, John Day, the Dalles, and Bonneville). It passes numerous population centers and is inextricably tied to Northwest fisheries and the major agricultural role of the region.

Washington State is deeply concerned that wastes now migrating from Hanford's failing tanks will reach the Columbia. DOE's plans to address this risk by retrieval and treatment of its tank wastes have suffered repeated delays and are expected to take more than 20

¹ Waste Tank Summary Report for Month Ending April 30, 2001, B. M. Hanlon, CH2MHill Hanford Group Inc., HNF-EP-0182-rev157, May 2001.

additional years to complete. Additional delay in the cleanup of these wastes will risk further damage to the environment and endangerment of the public health.

II. Hanford Tanks and Tank Wastes

There are a total of 177 underground high-level radioactive waste storage tanks at the Hanford site. 149 of these tanks are “single-shell” tanks (SSTs), while the remaining 28 are double-shell tanks (DSTs).

DOE’s SSTs were constructed of a single wall of steel surrounded by reinforced concrete, and are buried beneath 6 – 11 feet of soil. The DSTs are newer, were constructed of two steel liners with an annulus space between the liners, and are buried beneath approximately 7 feet of soil. The outer steel liner of DOE’s DSTs is surrounded by reinforced concrete. The age of the SSTs ranges from 37 to 58 years while the age of the DSTs ranges from 15 to 33 years.

DOE’s SSTs were constructed with a design life of from 10 to 20 years. Consequently, the SSTs are from 17 to 48 years past their design life. The DSTs were constructed with a design life of from 25 to 50 years, with some of them now exceeding their design life.

DOE’s Hanford tanks vary in size as indicated in the following table.²

<u>Size of Hanford Radioactive Waste Tanks</u>		
<u>Single-Shell Tanks</u>		
<u>#. Of Tanks</u>	<u>Capacity</u>	<u>Size</u>
16	55,000 gal.	26’ h by 20’ w
60	530,000 gal.	26’ h by 75’ w
48	758,000 gal.	39’ h by 75’ w
25	1,000,000 gal.	44’ h by 75’ w
<u>Double-Shell Tanks</u>		
4	1,000,000 gal.	48’ h by 75’ w
24	1,160,000 gal.	48’ h by 75’ w

DOE’s SSTs presently hold approximately 35 million gallons of waste whereas its DSTs hold some 18 million gallons. DOE documents estimate that if the contents of the tanks were placed within an area with a footprint the size of a football field, they would form a column of radioactive waste 150’ tall. In addition to being highly radioactive, DOE’s tank wastes also contain a variety of heavy metals, organic constituents, spent solvents, and persistent and toxic wastes.³ Because the tank wastes contain both a radioactive component and non-radioactive hazardous components, they are classed as “mixed wastes” subject to State regulation.

² Hanford Tank Cleanup: A Guide to Understanding the Technical Issues, Gephart & Lundgren, PNL10773, 1998.

³ Attachment 1 is a listing of non-radioactive hazardous tank waste components and designation numbers from USDOE’s Single-Shell Tank System Hazardous Waste Facility Part A Permit Application, Revision 6, December 21, 1999.

DOE reports indicate that at least 67 (over 40%) of its SSTs have leaked a total of approximately 1,000,000 gallons, and that additional failures can be expected. Some DOE funded studies have indicated that due to the age of DOE's SSTs, and the difficulty of detecting leakage, it is likely that there are additional undetected leaks. DOE Under Secretary Ernest Moniz noted in his 1998 testimony to Congress that the total volume leaked from the tanks could be as much as 40% greater than the 1,000,000 gallons documented thus far.⁴ Leak mechanism types at DOE's Hanford tanks include stress-corrosion cracking, pitting/crevice corrosion, and uniform corrosion.

The integrity of DOE's newer DSTs is now increasingly in question as they age and corrode, and as information regarding their integrity accumulates.⁵ For planning purposes DOE has assumed that one SST will fail every 3 years, that one DST will fail by 2017, and that one additional DST will fail every 5 years thereafter.

Hanford's high-level waste tanks are located above the water table aquifer (unconfined aquifer) in the Ringold and Hanford formations beneath the surface of the Hanford site. The groundwater in the area flows from the upland portion of the site, where the tanks are located, toward the Columbia River. The tank farms in DOE's 200 East area, closest to the Columbia, are 7 miles away (straight-line distance) while the tank farms furthest from the river, in the 200 West area, are 12 miles away. Underneath the tanks the depth to groundwater ranges from about 180 to 260 feet, while near the river, groundwater is typically at less than 30 feet. Groundwater discharges directly to the river via riverbank springs and seeps and by upwelling through the stream bottom.

Leaks from Hanford tanks have contaminated soils, and in a number of cases, have moved through the soils to contaminate groundwater. Data from tank farm vadose zone (soil column) monitoring has documented many cases of extensive contamination. For example, a DOE report on its "SX" tank farm concluded that contamination at depth is due to contaminant transport through sediment, and that large contamination plumes exist in the vadose zone beneath the tanks. DOE noted within a recent report to congress that:

*"Some of this waste has reached the groundwater, threatening the section of the Columbia River that was recently designated as a national monument. It is urgent that this waste be vitrified (turned into glass) and stored or disposed of in a more secure location before more leaks and before tank infrastructure deteriorates to the point where cost and schedule for cleanup becomes prohibitive."*⁶

DOE's 2001 Report to Congress sounded an even more urgent alarm:

⁴ Statement of Ernest Moniz Before U. S. House of Representatives, Committee on Oversight and Investigations, Privatization Contract for the Treatment of Hanford Tank Waste, October 8, 1998 (first double-spaced page).

⁵ For example, See DOE Press Release "Office of River Protection Investigating Stained Areas in Double-Shell Tank at Hanford", May 2, 2001.

⁶ DOE, Office of River Protection, 2 Year Progress Report to Congress, December 15, 2000, DOE/ORP – 2000-27, p27.

“Radionuclides are moving faster and deeper into the ground than had been previously predicted, and some have reached the groundwater that flows to the Columbia River seven miles away. Risks to the environment and the people of the Northwest will increase as more radionuclides reach the groundwater. The highly toxic, highly radioactive tank waste presents a threat to human health and the environment, particularly the Columbia River – the economic lifeline of the region.”⁷

III. Washington State’s regulatory authority/responsibilities at the Hanford tanks

Washington State regulates DOE’s tank wastes and its SST and DST facilities pursuant to the Resource Conservation and Recovery Act (RCRA) 42 U.S.C. § 6901 et seq., Washington’s Hazardous Waste Management Act (HWMA) Chapter 70.105 RCW, and their implementing requirements.⁸ The State, through Ecology, is authorized to implement HWMA requirements in lieu of federal program requirements pursuant to 42 U.S.C. § 6926. As such, Ecology is responsible for assuring that facilities managing hazardous wastes⁹ within the state are operated in compliance with federal and state hazardous waste law. EPA retains authority for oversight of the State’s hazardous waste program and for elements of RCRA not yet authorized.

Regulatory requirements applicable to DOE’s tank wastes and tank waste systems include but are not limited to those specifying requirements for waste designation, permitting, storage, treatment, disposal, response to releases, and site closure. Hazardous Waste regulatory requirements of note in the context of this Final Determination include:

- Authorization of revisions to the State’s hazardous waste program enabling regulation of the hazardous components of radioactive mixed wastes (52 Federal Register 35556 (September 22, 1987)).

Washington’s Dangerous Waste Regulations, Chapter 173-303 WAC, including but not limited to:

- 173-303-140: Land disposal restrictions.
- 173-303-145: Spills and Discharges into the Environment.
- 173-303-400: Interim Status Facility Standards.
- 173-303-640: Tank Systems.
- 173-303-645: Releases from Regulated Units.
- 173-303-646: Corrective Action.
- 173-303-600 & 610: Final Facility Standards, Closure and Postclosure.

⁷ U.S. Department of Energy, Office of River Protection, Report to Congress under the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, pp1-2.

⁸ See Hanford Site Hazardous Waste Permit Applications (Part A) for DOE’s Single-Shell and Double-Shell tank systems, September 26, 1996.

⁹ This includes radioactive mixed wastes.

The Federal Resource Conservation and Recovery Act, including but not limited to:

- RCRA Land Disposal Restrictions at 40 CFR Part 268.

DOE's Hanford tank wastes are subject to Part 268 Land Disposal Restrictions, which are incorporated by reference into the state program pursuant to WAC 173-303-140 (2) (a). These restrictions include prohibitions banning storage of waste restricted from land disposal unless certain conditions are met, including provisions requiring that storage is solely for the purpose of accumulating such quantities of hazardous waste as necessary to facilitate proper recovery, treatment or disposal.

The Federal Facility Compliance Act of 1992:

- 42 U.S.C. § 6961, waiving sovereign immunity for violation of RCRA requirements and authorized State "RCRA" programs.
- 42 U.S.C. § 6939c, establishing requirements for the preparation of Site Treatment Plans (STP) in order to ensure compliance with federal and state hazardous waste requirements including LDR (the pre-existing HFFACO was recognized as serving the purpose of a STP).

IV. Ecology efforts to bring DOE's tanks into compliance with federal and state hazardous waste law, 1985 to March 2000

The history of the State's attempts to bring DOE into compliance has been long and difficult. In the mid 1980's DOE claimed that it was not subject to hazardous waste law, a stance which generated some 2 years of Congressional hearings, and associated litigation. These activities eventually resulted in DOE recognizing that it is subject to hazardous waste law to the same extent as the private sector.

Following this recognition, State, EPA, and DOE staff worked with one another over the course of nearly 2 years to hammer out necessary compliance requirements. Their efforts produced the Hanford Federal Facility Agreement and Consent Order (HFFACO),¹⁰ which in the instance of tank waste cleanup stands as an Administrative Order issued under the authority of Washington's *Hazardous Waste Management Act* (Ch. 70.105 RCW). Agreed-to schedules were thought to be technically sound, reasonable, and fiscally achievable.

Tank waste compliance schedules established on approval of the initial HFFACO included the following:

- 1. Major milestone series M-01-00:** These work schedules governed the stabilization and disposal of the low-activity phase of Hanford's tank waste. These wastes were to be stabilized within cementitious grout and were to be subsequently disposed of within engineered subsurface disposal vaults.

¹⁰ The Hanford Federal Facility Agreement and Consent Order was approved by the Parties on May 15, 1989.

- 14 vaults were required to be constructed and were to receive 1.4 million gallons each of grouted double shell tank waste by September 1994. Follow-on schedules setting the number of vaults to be filled each year were to be established as HFFACO milestone requirements after initial operations.
- 2. Major milestone series M-02-00:** These work schedules governed the pretreatment of DOE's tank waste.
- Pretreatment was required to begin by October 1993, and was to maintain currency with needed low-activity and high-level waste feed streams thereafter.
- 3. Major milestone series M-03-00:** These work schedules governed the construction and initiation of operations of a Hanford site high-level tank waste (vitrification) treatment plant.
- Construction of the Hanford Waste Vitrification Plant was required to be underway by July 1991. The plant was to be vitrifying waste by December 1999.
- 4. Major milestone series M-05-00:** These work schedules governed the interim stabilization of DOE's single-shell tanks (removal of pumpable liquid waste).
- DOE was required to interim stabilize 3 to 9 tanks per year and to complete the interim stabilization program by September of 1995.
- 5. Major milestone series' M-06-00, M-07-00, M-08-00, and M-09-00:** These work schedules governed the development of single-shell tank waste retrieval technology, retrieval itself, and final tank farm cleanup and closure.
- SST waste retrieval technologies were to be developed and implemented in full-scale beginning in 1997. Waste retrieval and closure of an initial tank farm was required to have begun by 2004, with waste retrieval and cleanup and closure of all SST tank farms to be completed by 2018.

The 12 years following establishment of HFFACO tank waste RCRA requirements have seen little progress on the project's major objectives. DOE has repeatedly approached the State with requests that tank waste cleanup schedules be delayed or modified. Examples of revisions and extensions include the following:

HFFACO Revision 2, incorporating 1st, 2nd, and 3rd amendments, September 1992:

A. Major milestone series M-01-00: Work schedules governing the stabilization and disposal of the low-activity phase of Hanford's double-shell tank waste.

- As part of this revision the required completion date for constructing and filling 14 grout vaults (stabilizing some 14 million gallons of tank waste) was delayed by over 2 years to December 1996. A total of 4 vaults were constructed. All but 1 stands empty today.

B. Major milestone series M-02-00: Work schedules governing the pretreatment of DOE's tank waste.

- DOE dropped its plans to utilize "B Plant" as a pretreatment facility and to initiate pretreatment services by October 1993. The corresponding HFFACO requirement was deleted and the schedule for initiating pretreatment of tank wastes was modified to "To Be Determined".

C. Major milestone series M-03-00: Work schedules governing the construction and initiation of operations of a Hanford site high-level tank waste (vitrification) treatment plant.

- Start of construction of the Hanford Waste Vitrification Plant was delayed by 9 months to April 1992. The operational date of December 1999 was left in place in hopes that compliance could still be achieved.

D. Major milestone series' M-06-00, M-07-00, M-08-00, and M-09-00: Work schedules governing the concurrent development of SST waste retrieval technology, waste retrieval itself, and final cleanup and closure of the tank farms.

- Waste retrieval progress began to fall behind schedule. HFFACO schedules were left in place in hopes that substantive compliance might still be achieved.

HFFACO Revision 3, January 1994:

A. Major milestone series M-50-00 (renumbered): Work schedules governing the pretreatment of DOE's tank waste.

- Work schedules for the pretreatment of DOE's tank waste were modified to require low level tank waste (LLW) pretreatment facilities to be under construction by November of 1998 and to be operational by December 2004. High-Level tank waste (HLW) pretreatment facilities were required to be under construction by June of 2001 and operational by June of 2008. Little progress had been made to meet earlier required schedules.

B. Major milestone series M-51-00 (renumbered): Work schedules governing the construction and initiation of operations of a Hanford site high-level tank waste (vitrification) treatment plant.

- The deadline for initiation of construction of the Hanford Waste Vitrification Plant was delayed by over 10 years to June of 2002. Its operational date was delayed to December 2009. Completion of HLW processing now set at December 2028.

C. Major milestone series M-60-00 (renumbered): Work schedules governing the construction and initiation of operations of a Hanford site Low-Activity (tank) Waste (LAW) vitrification plant.

- Initiation of construction of a LAW vitrification facility was set at December 1997 with initial operations required by June of 2005. Completion of LAW processing was set at 2028.

D. Major milestone series M-45-00 (renumbered): Work schedules governing concurrent development of Single-Shell tank waste retrieval technology, waste retrieval itself, and final cleanup and closure of the tank farms.

- SST waste retrieval schedules were delayed. With the exception of high heat tank C-106, initial full-scale tank waste retrieval demonstration schedules were delayed by nearly 6 years to September 2003. Waste retrieval and closure of the first SST farm was delayed 10 years to March of 2014. Completion of waste retrieval was now set at 2018 with completion of closure delayed to September 2024.

HFFACO Revision 4, February 1996:

Tank waste milestone series were left in place though DOE was making little progress in tank waste pretreatment, LAW vitrification, HLW vitrification, or tank waste retrieval.

HFFACO Revision 5, December 1998:

Revision 5 of the HFFACO incorporated what is often referred to as DOE's "privatization" initiative. Privatization of tank waste treatment at Hanford focused on using the competitive forces and expertise within the private sector in the acquisition of tank waste treatment services. Modifications included the following:

A. Major milestone series M-50-00: Work schedules governing the pretreatment of DOE's tank waste.

- Schedules for initiation of construction of LAW pretreatment facilities were deleted and marked "To Be Determined (TBD)" (dependent on award of construction contract). The hot operations requirement of December 2004 was deleted. Little progress had been made to meet required schedules.

B. Major milestone series M-51-00: Work schedules governing the construction and initiation of operations of a Hanford site high-level tank waste vitrification plant.

- HFFACO requirements for construction of HLW vitrification facilities were not modified. Completion of HLW processing remained December 2028. Little progress had been made to meet required schedules.

C. Major milestone series M-60-00: Work schedules governing the construction and initiation of operations of a Hanford site Low-Activity Waste tank waste (vitrification) treatment plant.

- Schedule Requirements for initiation of construction of a LAW vitrification facility by December of 1997 were deleted and noted as TBD (dependent on award of construction contract). LAW vitrification facility hot operations were now required to be achieved either

under a “primary” path (December 2002) or a pre-agreed to “alternate” path should DOE encounter difficulties in procurement. Required completion of LAW tank waste treatment was set at December 2024 or as late as 2028 (optional alternate path).

D. Major milestone series M-45-00: Work schedules governing concurrent development of Single-Shell tank waste retrieval technology; waste retrieval, and final cleanup and closure of the tank farms.

- Tank waste retrieval milestone series were left in place though DOE was making little progress towards full-scale retrieval and tank farm closure.

The preceding are but a few of the many modifications to tank waste cleanup requirements that have taken place over the years. Two other specific tank waste subprojects represent examples of the State’s growing frustration with DOE’s failure to comply with HFFACO requirements, and DOE’s seeming inability to move tank waste cleanup forward in a timely and cost effective manner.

V. The interim stabilization of DOE’s Single-Shell Tanks

As noted in the preceding text, completion of the removal of pumpable liquid wastes from DOE’s SSTs was initially required no later than September of 1995 (HFFACO milestone M-05-00). Following establishment of this deadline, DOE and DOE contractor inefficiencies resulted in delays year after year. Ecology was particularly frustrated by a unilateral action taken by DOE stopping interim stabilization work by way of a directive that its contractor “...*place an immediate moratorium on startup of saltwell pumping on additional tanks*”¹¹ Following this action, Ecology saw DOE cripple its interim stabilization program by reducing FY1998 funding from near \$15 million to \$4 million. The State’s frustration eventually resulted in it denying requests for further delays, actions that caused DOE to invoke the HFFACO dispute resolution process.

After efforts to resolve the dispute failed, the Director of Ecology issued (2) Final Determinations denying DOE requests for further extensions and noting that:

“I am deeply concerned that DOE’s inefficient management of this program over the years and recent unilateral actions to drastically cut the program’s budget and halt work have crippled the program. I am also concerned that your staff have suggested that completion of the stabilization project may be delayed by an extra 3-6 years. This is entirely unacceptable considering that we now have conclusive evidence that tank wastes have reached the aquifer beneath Hanford, and threaten the Columbia River, the most valuable waterway of our State.”¹²

¹¹ Letter, 97-MSD-256: Jackson Kinzer, Assistant Manager, Tank Waste Remediation System, USDOE Richland Operations Office to H. J. Hatch, President, Fluor Daniel Hanford Inc., July 25, 1997.

¹² Letter, Final Determination pursuant to Hanford Federal Facility Agreement and Consent Order (Agreement) in the matter of the disapproval of the Department of Energy’s Change Control Form # M-41-97-02, Tom Fitzsimmons, Director, Washington Department of Ecology to John D. Wagoner, Manager, DOE Richland Operations Office, March 10, 1998.

Despite these determinations, DOE continued with its efforts to gain State approval to delay this program, and to renegotiate HFFACO schedules again. These actions led the State to break with the HFFACO for the first time in its history and to issue its June 8, 1998 “Notice of Intent to Sue for Violations of the Hanford Federal Facility Agreement and Consent Order.” In doing so, Governor Locke and Attorney General Gregoire noted that DOE’s proposals exhibited:

“...blatant disregard of the State’s final decisions denying requested extensions, ...[and that] The citizens of Washington cannot accept the untenable position in which they have been put by Energy’s inaction. The State has concluded that this vital work will be accomplished in a timely manner only if a court intervenes and maintains oversight of the interim stabilization milestones until they have been met.”¹³

Subsequent negotiations between the State, the DOE and the U. S. Department of Justice (DOJ) resulted in the development of an interim stabilization Consent Decree, approved by the U. S. District Court, in the Eastern District of Washington in September of 1999. DOE accelerated the interim stabilization program, and has thus far met the decree’s schedule for removal of pumpable liquids.

VI. The retrieval of wastes from SST C-106

This particular tank presented a very real risk of major environmental incident in that due to its radioactivity, it was inherently hot enough to be classed as “self boiling”.¹⁴ In response, DOE’s practice was to periodically add water. Should C-106 have failed, and begun to leak, DOE had informed the State that it would have been forced to continue to cool tank contents with water additions, thereby exacerbating the release of tank contents to adjacent soils and area groundwaters.

HFFACO interim milestone M-45-03A had been created in January of 1994, as part of modifications to DOE’s tank waste cleanup program, and as an effort to halt delays and force DOE to get on with tank waste cleanup. Retrieval of C-106 wastes was required to begin by October of 1997.

Ecology subsequently denied DOE requests that it agree to project delays, issued a Final Determination affirming its disapproval, and notified DOE that it was subject to enforcement. Ecology made it clear that it expected DOE to resolve the threat that this tank represented.

“It is our understanding that DOE plans to begin sluicing retrieval of tank C-106 by November 30, 1998. Factually (given our denial of DOE’s Change Request Form M-45-97-03) DOE will be in violation of milestone M-45-03A as of November 1, 1997. As a result, stipulated penalties under Agreement Article IX may be assessed. Ecology will

¹³ Letter, “Notice of Intent to Sue for Violations of the Hanford Federal Facility Agreement and Consent Order”, Washington Governor Gary Locke and Attorney General Christine Gregoire to Federico Peña, Secretary of Energy, and John D. Wagoner, Manager, DOE Richland Operations Office, June 8, 1998.

¹⁴ Tank C-106 held some 229,000 gallons of high-level radioactive waste.

hold assessment of stipulated penalties in abeyance provided that... retrieval of tank 241-C-106 wastes will be completed no later than December 31, 1999."¹⁵

DOE's response was to appeal Ecology's Final Determination to the Washington State Pollution Control Hearings Board (PCHB), an appeal it subsequently lost. In issuing its order on this appeal, the PCHB found that DOE "is responsible for complying with... state hazardous waste law, whether it performs the work itself or through contractors;" that "good cause for extending [DOE's request for delays] does not exist;" and that, "Ecology's final determination denying the requested extension ... is affirmed."¹⁶ Following the PCHB's order, DOE accelerated its C-106 project and has since successfully completed it.

VII. Increasing Concerns regarding lack of DOE accountability

The State's frustration with ineffective project management and DOE's propensity to ignore HFFACO requirements has continued to increase. Nowhere has this been more evident than in the instance of DOE's tank waste retrieval and treatment projects. Examples contributing to this frustration over time include, but are not limited to the following:

1. DOE failure to implement tank waste critical path management requirements established on January 25, 1994.

Recognizing the growing concern of the State and its citizens, and as a reaction to DOE's decision to halt (required) construction of the Hanford Waste Vitrification Plant in April of 1993, DOE and Ecology amended the HFFACO to require that DOE develop and implement several rigorous project management systems. These new requirements were aimed at minimizing additional delay, and required that work be managed consistent with HFFACO tank waste requirements. The system was to be fully operational by September of 1994. Despite the fact that these requirements were negotiated in good faith and were a key element of the parties' 1994 settlement, DOE failed to implement them.

2. DOE's baseline change control process.

DOE oversees its tank waste work, and issues work directives to its contractor(s) through the approval of project "baseline change control" documentation issued by its chief Contracting Officer. Unfortunately, DOE has knowingly directed its contractors to proceed with work inconsistent with HFFACO tank waste requirements, and without prior authorization of the lead regulatory agency.¹⁷ This practice has had a debilitating effect on the HFFACO, and sends the

¹⁵ Letter, Final Determination pursuant to Hanford Federal Facility Agreement and Consent Order (Agreement) in the matter of the disapproval of the Department of Energy's change control form M-45-97-03, Tom Fitzsimmons, Director, Washington Department of Ecology to John D. Wagoner, Manager, DOE Richland Field Office, October 8, 1997.

¹⁶ Washington State Pollution Control Hearings Board, Case No. 97-157, Findings of Fact, Conclusions of Law, and Order, September 29, 1998.

¹⁷ E. g., Letter with Attachments, 98-PID-596: Contract No. DE-AC06-96RL13200 – Approval of Baseline Change Request (BCR) TWR-98-033R2 "Fiscal Year 1998 Multi-Year Work Plan Baseline Revisions (Bridge

message to DOE and DOE contractor staff that HFFACO requirements are not to be taken seriously.

VIII. Evolution and Failure of DOE's Privatization Initiative

A. Initiation of DOE's Privatization Approach

In 1995, DOE proposed that it pursue tank waste treatment capacity utilizing a new, "privatized" approach. This approach was designed to take advantage of the competitive forces of the private sector. Unlike the ordinary "government-owned, government-operated" approach, privatization contemplated that one or more contractors bear the expense and risk of constructing and operating the treatment complex. DOE would pay only for treatment services.

Washington State was leery of this approach, and advised DOE that it appeared to have a high risk of failure.¹⁸ Nonetheless, State officials hoped this tact would prove successful and agreed to negotiate revised regulatory requirements reflecting its concerns, and incorporating DOE's new initiative. The State's concerns were eventually reflected by the inclusion of requirements designed to avoid another cycle of delay should DOE's competitive based approach to privatization fail. These terms were based on the concurrent establishment of an alternate set of HFFACO requirements (an alternate path) which would automatically govern DOE tank waste actions should it decide to abandon its primary path. Under this alternate approach DOE was bound to pursue a course of action resulting in construction and startup of a low-activity tank waste treatment facility no later than December 30, 2003.

*"The alternate path forward, or "alternate path" will be undertaken in the event that the primary path is determined to be unfeasible by DOE. This path is controlled by milestones...[documented in the Change Request Form] which serve as a fall back technical and regulatory path for Privatization of the ...[tank waste] program. These milestones become enforceable only in the event that DOE is not maintaining adequate progress and elects to pursue the alternate path rather than the primary path. Should DOE elect to pursue the alternate path, these milestones will automatically become enforceable under the terms of the agreement."*¹⁹

In June of 1998 DOE notified the state that it had "elected to implement the Privatization "alternate path" governed by the M-61 series of Tri-Party Agreement milestones."²⁰ It did so

FY 1997 to FY 1998)", Sally A. Sieracki, Contracting Officer, DOE Richland Operations Office, to Mr. H. J. Hatch, President, Fluor Daniel Hanford Inc., April 2, 1998.

¹⁸ Internal DOE memoranda prior to July 7, 1995 videoteleconference between DOE Assistant Secretary Thomas P. Grumbly and Ecology Deputy Director Dan Silver, Donald Vieth through Jackson Kinzer and John Wagoner to Thomas P. Grumbly (all of DOE), July 1, 1995 and July 6, 1995.

¹⁹ See HFFACO Change Requests M-50-95-01 and M-60-95-03, July 24, 1996.

²⁰ Letter, 98-WDD-065: George H. Sanders, TPA Administrator, DOE Richland Field Office to Mike Wilson, Program Manager, Nuclear Waste Program, Washington Department of Ecology, and Doug Sherwood, Hanford Project Manager, EPA Region 10, June 18, 1998.

regardless of the fact that it was not working towards, and had no intention of meeting the alternate path requirement (milestone M-61-02) to “Initiate Hot Operations of [the] Phase I LAW Pretreatment and Immobilization Facility: 12/31/2003”. Ecology notified DOE of its concerns, and repeatedly asked that DOE provide documentation supporting its claim.²¹ DOE did not respond. In fact, in contrast to DOE’s assertion that it was implementing the HFFACO alternate path, DOE and its contractors were working openly to schedules far different from those of the HFFACO.²²

B. DOE again requests renegotiation of tank waste requirements.

As the July 31, 1998 due date for selection of tank waste treatment contractors approached, DOE provided two briefings for senior Ecology management. In a July 2, 1998 briefing, DOE informed Ecology that it had (unilaterally) decided to allow its contractor to first construct a high-level tank waste vitrification facility, rather than treatment facilities vitrifying (high volume) low activity tank wastes as required by the HFFACO alternate path. In addition, at a July 21, 1998 briefing, DOE hand delivered a letter transmitting a draft HFFACO change request (M-62-98-01).²³ This letter noted that DOE’s change request reflected the terms of a contract it had been negotiating with British Nuclear Fuels Ltd. (BNFL) and that DOE was seeking “...to enter formal negotiations with the Parties to incorporate the TWRS Privatization project into the Tri-Party Agreement.” Subsequent discussions between the Parties resulted in Ecology committing to provide DOE a draft negotiations Agreement In Principle (AIP).

C. DOE negotiation stance forces more delay.

Ecology provided DOE its draft AIP on October 14, 1998.²⁴ Unfortunately, and unbeknownst to Ecology, its proposal that the Parties commit to negotiate HFFACO requirements designed to effectively drive all major aspects of the tank project ran counter to an as yet unstated DOE management policy to agree to few if any requirements. As a result, DOE balked repeatedly in the following months as the State, EPA, and Pacific Northwest stakeholders increasingly urged the Parties to finalize an AIP and begin negotiations in earnest.²⁵ An AIP committing to

²¹ Letters (2): Michael A. Wilson, Manager, Nuclear Waste Program, Washington Department of Ecology to George Sanders, Hanford Tri Party Agreement Administrator, DOE Richland Field Office, July 8 and November 30, 1998.

²² Listing of DOE and its contractor’s schedules at: “Report to Congress – Treatment and Immobilization of Hanford Radioactive Tank Waste”, Section 5.4, DOE, July 1998.

²³ Letter, 98-EAP-382: George H. Sanders, Tri-Party Agreement Administrator, U. S. Department of Energy, to Mike Wilson, Program Manager, Nuclear Waste Program, Washington Department of Ecology and Doug Sherwood, Hanford Project Manager, U. S. Environmental Protection Agency Region 10, July 21, 1998.

²⁴ Inter-agency memorandum, “Ecology proposed Draft TWRS “privatization” (TPA) negotiations AIP”, Roger Stanley, Nuclear Waste Program, Washington Department of Ecology to George Sanders, U. S. Department of Energy, Richland Washington, October 14, 1998.

²⁵ Letters (6): 1) Marilyn Reeves, Chair, Hanford Advisory Board to James Owendoff, Assistant Secretary of Energy, Office of Environmental Management (USDOE), John Wagoner, Manager, USDOE Richland Field Office, and Tom Fitzsimmons, Director, Washington Department of Ecology, December 4, 1998. 2) Mike Wilson, Manager, Nuclear Waste Program, Washington Department of Ecology to Lloyd Piper, Deputy

negotiations was finally approved by DOE, Ecology, and the EPA on May 24, 1999.²⁶ In approving this AIP, the parties committed to the development and establishment of a broad range of revised HFFACO (RCRA) requirements governing the acquisition and operation of a Hanford site tank waste treatment complex. Commitments included, but were not limited to the following:

a. *“AGREEMENT MODIFICATIONS ASSUMING SUCCESS OF DOE’S PRESENT “PRIVATIZATION” PATH FORWARD”*

“The Parties recognize that DOE’s present procurement path envisions the award of a fixed unit price contract for treatment and immobilization services for the initial segment of Hanford’s tank wastes, i.e., Phase I.²⁷ In recognition of this primary path forward, the Parties’ negotiations will focus on requirements in support of this effort.”and,

b. *“AGREEMENT MODIFICATIONS ASSUMING FAILURE TO ACHIEVE FINANCIAL CLOSURE UNDER THE PRESENT “PRIVATIZATION” PATH FORWARD”*

“The Parties recognize that the project may not be able to achieve financial closure, thus not allowing DOE to issue an Authorization to Proceed with construction and operation under its present “privatization” contract. In recognition of this fact the Parties agree to establish initial requirements which will: a) govern acquisition of tank waste treatment facilities should alternate financing and contracting be necessary, and b) do so in a manner which minimizes delay in treatment facility acquisition.”

The Parties’ AIP also included terms recognizing that their negotiations were to stand in lieu of dispute resolution under Part Two of the HFFACO, and that should the Parties fail to reach agreement, the Director of Ecology was required to issue a final decision or determination pursuant to HFFACO, Part Two, Article VIII.

Manager, USDOE Richland Field Office and Jackson Kinzer, Acting Manager, Office of River Protection, USDOE Richland Field Office, January 4, 1999, 3) Tom Fitzsimmons, Director, Washington Department of Ecology to Marilyn Reeves, Chair, HAB, January 5, 1999, 4) 99-EAP-119, Lloyd Piper for James C. Hall, Manager, USDOE Richland Field Office to Michael A. Wilson, Program Manager, Nuclear Waste Program, Washington Department of Ecology, January 12, 1999, 5) Tom Fitzsimmons, Director, Washington Department of Ecology to James C. Hall, Acting Manager, USDOE Richland Field Office, January 28, 1999, and 6) Marilyn Reeves, HAB Chair, to Chuck Clarke, Regional Administrator, USEPA Region 10, Tom Fitzsimmons, Ecology Director and James Hall, Acting Manager, USDOE Richland Field Office, March 26, 1999.

²⁶ Letter, Tom Fitzsimmons, Ecology Director to Richard T. French, Manager, USDOE Office of River Protection and Keith Klein, Manager, USDOE Richland Field Office, May 19, 1999 (May 24 AIP attached).

²⁷ *“Phase I waste processing as defined within CLIN 004A through 004D of DOE/BNFL contract DE-AC06-96RL13308, August 1998.”*

Unfortunately, over the ensuing months, and despite explicit commitments within the agencies' AIP, DOE negotiators refused to commit to any agreements of substance, noting that their management had directed them to agree to few if any enforceable compliance requirements (e.g., *"The operative concept here is a Department policy not to make enforceable commitments before a reasonable project-planning basis is constructed."*^{28,29} As a result of this impasse, negotiations were first extended by 2 weeks,³⁰ and then suspended to allow for a meeting between the principles.³¹

The importance of establishing a firm DOE compliance requirement to move forward with tank waste retrieval and treatment was the subject of a September 10, 1999 meeting between Secretary of Energy Richardson and Governor Locke. Of particular note was the Secretary's resulting commitment to the State that DOE would *"Begin initial retrieval and treatment of Hanford's liquid high level waste, with hot start of treatment facilities by 2007..."*³² Following this basic commitment, HFFACO Senior Executive Committee members met on September 17, 1999. Agency management attending included the Director, Washington Department of Ecology; the Administrator, U. S. Environmental Protection Agency, Region 10; the Manager of the DOE's Office of River Protection and the Manager of DOE's Richland Field Office. During the course of this meeting DOE stated that due to the Secretary's commitment to hot start of treatment facilities by 2007 a dual path (contractual) approach to treatment complex acquisition was no longer necessary. Discussion consequently focused on identifying principal tank waste treatment complex construction and operational requirements for incorporation within the HFFACO. A number of AIP commitments between the Parties were neither discussed nor modified. This meeting did not result in agreement between the Parties, and consequently triggered a two-week HFFACO time period at the end of which the Director of Ecology was required to issue a Final Determination in this matter. This period was subsequently extended through November 15, 1999.³³

Following the Parties' September 17 meeting, DOE management distanced themselves from their May 24, 1999 AIP, and focused instead on the development of an agreement reflecting the September 17, 1999 meeting. This latter agreement between the Parties was subsequently

²⁸ Letter, 99-EAP-422, Richard T. French, Manager, DOE Office of River Protection and Keith A. Klein, DOE Manager, Richland Field Office, to Tom Fitzsimmons, Director, Ecology, and Chuck Clarke, Administrator, EPA Region 10, July 30, 1999.

²⁹ Letter, Chuck Clarke, Administrator, EPA Region 10 to Richard T. French, Manager, DOE Office of River Protection and Keith A. Klein, Manager, DOE Richland Field Office, September 10, 1999

³⁰ Extension of Tank Waste Remediation System (TWRS) Negotiations, Ecology, EPA and USDOE, July 31, 1999.

³¹ Suspension of Tank Waste Remediation System (TWRS) Negotiations, Ecology, EPA and USDOE, August 12, 1999.

³² STATEMENT OF PRINCIPLES, Bill Richardson, Secretary of Energy and Gary Locke, Governor of Washington, September 10, 1999.

³³ Extension of Period for Issuance of Final Determination, Ecology, EPA and USDOE, October 1, 1999.

approved by the agencies on November 15, 1999.³⁴ Though abbreviated in length, this agreement left the substantive scope of needed negotiations essentially unmodified by: a) specifically identifying 9 key tank waste treatment complex construction and operational milestones to be incorporated into the HFFACO,³⁵ b) listing specific commitments between the parties regarding issues yet to be agreed to, and c) sending agency negotiators back to the table to convert regulatory commitments to HFFACO Change Request format. The Parties' November 15, 1999 agreement specifically directed agency negotiators to reinstate negotiations in order to develop HFFACO commitments including but not restricted to the following:

- HFFACO language making it clear that the standing requirement for completion of (all) tank waste processing by 2028 was not modified.
- HFFACO requirements as necessary to ensure DOE accountability, e.g., work, critical path, change control, and reporting provisions.
- HFFACO revisions requiring that Hanford contractor baselines be consistent with Agreement requirements.
- HFFACO milestones, target dates and associated HFFACO language which require that DOE and its contractors complete all actions necessary to ensure timely delivery of tank waste feed.
- HFFACO milestones, target dates and associated language which establish: a) a specific schedule for the Parties to revisit and negotiate HFFACO modifications pertaining to tank waste retrieval, and b) a specific schedule for the Parties to revisit and negotiate HFFACO modifications pertaining to the processing of the remainder of Hanford tank wastes ((Post Phase I treatment), and

Following approval of the Parties' November 15, 1999 agreement, negotiations were reset to be completed no later than January 31, 2000 (The Director of Ecology was again required to issue a final determination should agreement not be reached). Unfortunately, DOE's negotiators soon made it clear that their management remained in basic opposition to additional milestone establishment (including milestones called for in the Parties' November 15, 1999 Agreement). Scheduling of the deadline for an Ecology final determination was consequently again reset, first to February 14, 2000, then to March 15, 2000, and finally to March 29, 2000. Ecology, DOE, and EPA management and staff continued attempts to resolve areas of disagreement. Though some progress was made, disagreements regarding how, and the extent to which DOE would be held accountable remained unresolved.

³⁴ "Agreement on Principal Regulatory Commitments Pertaining to Hanford Tank Waste Treatment Complex Construction and Operations", Tom Fitzsimmons, Ecology; Chuck Clarke, EPA Region 10; Keith Klein, DOE Richland Operations Office and Dick French, DOE Office of River Protection, November 15, 1999.

³⁵ These milestones included the July 31, 2001 start of construction milestone at issue in this Final Determination.

The Parties consequently failed to reach agreement. Ecology, supported by EPA, issued its tank waste Final Determination on March 29, 2000.^{36, 37}

IX. Ecology issues initial tank waste treatment Final Determination.

When the time for reaching a negotiated agreement expired, Ecology, EPA and DOE staff had reached tentative agreement on all issues except one, that being the modification of HFFACO terms holding DOE more clearly accountable to perform required work and to periodically report compliance status (the accountability requirements). However, failure to reach agreement on the accountability requirements resulted in failure to reach formal agreement on the entire package.

The Final Determination established HFFACO tank waste work schedules that reflected DOE's path forward (The specific language of these schedule requirements had been developed jointly by DOE and Ecology negotiation team members during the preceding months). These included a new milestone series governing the procurement, construction, and operation of the planned tank waste treatment complex, and associated schedules for necessary supportive work and the retrieval of SST wastes.

Tank waste treatment complex requirements included but were not limited to:

- The submittal of compliance status reports as DOE implements HFFACO requirements,
- The issuance of a DOE contractual "Authorization to Proceed" with the treatment complex project no later than August 31, 2000.
- Start of full scale treatment complex construction no later than July 31, 2001,
- A commitment to establish 2 additional enforceable construction progress milestones within 60 days of issuance of DOE's Authorization to Proceed,
- The initiation of treatment complex (hot) operations no later than December 31, 2007, and
- The achievement of treatment complex steady state operations no later than December 31, 2009.

Ecology's final determination also required that phase I processing of Hanford tank wastes be completed no later than 2018, and that processing of all tank wastes be completed by 2028.

³⁶ Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) in the matter of Hanford site high-level radioactive tank waste treatment capacity acquisition, tank waste treatment and associated tank waste work requirements, Tom Fitzsimmons, Ecology Director, Chuck Clarke, Administrator, EPA Region 10 to Carolyn Huntoon, Assistant Secretary for Environmental Management, DOE, Richard T. French, Manager, Office of River Protection, DOE, and Keith Klein, Manager, Richland Field Office, DOE, March 29, 2000.

³⁷ Ecology's administrative record for this March 29, 2000 tank waste Final Determination is hereby incorporated as part of the record for today's Final Determination.

Final Determination accountability requirements required that: a) DOE's internal work schedules and work directives to its contractors be consistent with the requirements of the HFFACO, b) DOE perform sufficient work to assure with reasonable certainty that it will meet HFFACO waste treatment requirements, and c) DOE submit semi-annual project compliance reports that document, among other things, whether DOE and its contractors have completed sufficient work to remain in compliance.

DOE appealed Ecology's Final Determination to the Washington State Pollution Control Hearings Board (PCHB) on April 27, 2000. It did not challenge the dates or schedules associated with acquisition of a tank waste treatment complex. DOE's appeal focused on the "accountability provisions" included by Ecology.^{38, 39}

X. DOE abandons its privatization initiative

Throughout 1999 and early 2000, DOE had been working with its selected tank waste treatment contractor (British Nuclear Fuels Ltd. (BNFL)) in order to award a contract extension to proceed with the project. However, when it received BNFL's April 24, 2000 proposal and cost estimate, DOE decided that BNFL's projected cost of privatizing treatment complex construction and operations was unacceptably high (BNFL projected a cost near 15 billion while similar DOE estimates were near 10 billion⁴⁰). As a result, DOE terminated its contract with BNFL.⁴¹

XI. DOE appeal of Ecology's Final Determination moves forward as Agencies try to find common ground

DOE's cancellation of the BNFL contract was a bitter disappointment. What followed was a series of parallel activities by the agencies, both individually and together, throughout the remainder of 2000.

³⁸ Letter, 00-OCC-0135, Notice of Appeal from Department of Ecology Final Determinations Pursuant to Hanford Federal Facility Agreement and Consent Order Regarding Tank Waste and Land Disposal Restrictions, Barbara D. Williamson, Office of Chief Counsel, DOE, Richland Operations Office to Ms. Judy Greear, Washington Pollution Control Hearings Board, April 27, 2000.

³⁹ DOE's appeal initially included a number of issues in addition to those associated with the accountability provisions (e.g., schedules associated with SST waste retrieval and compliance requirements associated with federal and state hazardous waste Land Disposal Restrictions). These additional issues were abandoned by DOE during the course of litigation.

⁴⁰ Government Fair Cost Estimate, River Protection Project – Privatization Phase I, Part B, Prepared for the U. S. Department of Energy by K. D. DeTienne, Informatics Corporation and A. D. Edmondson, Raytheon Engineers & Constructors, Inc. Rev 0, April 2000.

⁴¹ Letter, 00-BMA-052: Contract No. DE-AC27-96RL13308 – Stop Work Order, Section I Clause Federal Acquisition Regulation 52.242-15, Michael K. Barrett, DOE, Office of River Protection to Maurice J. Bullock, BNFL Inc., May 15, 2000.

First, DOE's appeal of Ecology's tank waste Final Determination began to move through the legal process. During the course of the appeal, Final Determination schedule requirements remained in effect.

Second, it became clear that DOE would not meet the August 2000 HFFACO deadline for issuance of an "authorization to proceed" (ATP) to BNFL. With DOE in turmoil, its Manager of the Hanford Tank Waste Remediation System was removed from his position and DOE embarked on an effort to minimize time lost, preserve treatment complex design, and to award a government owned / government operated (GOCO) contract for a waste treatment complex. In order to avoid litigation over DOE's missing of the ATP milestone, DOE agreed to modify the parties' existing interim stabilization consent decree to require that DOE award a new tank waste treatment contract by January 15, 2001. This agreement was put to public comment, and eventually forwarded to the court and approved.⁴² DOE subsequently awarded a tank waste treatment complex contract to Bechtel National Inc. on December 11, 2000.

XII. Washington's Pollution Control Hearings Board dismisses DOE appeal

DOE's appeal focused on claims that Ecology's accountability requirements were unreasonable and exceeded the federal government's (RCRA) waiver of sovereign immunity. DOE further claimed that including the accountability requirements within Ecology's Final Determination exceeded its abilities under HFFACO dispute resolution provisions. The Board, on review of a lengthy record of pleadings filed by both parties, upheld the Final Determination and held that Ecology's accountability requirements were designed to serve a reasonable function in requiring that cleanup be "*continually gauged against meeting the milestones.*" Having found that no issues of material fact had been raised, the Board awarded summary judgement to Ecology and dismissed DOE's appeal.⁴³

XIII. New Administration budget proposal would cause widespread additional delay

In January of 2001 President George W. Bush took office, and soon after proposed the administration's DOE budget for federal fiscal year 2002. This proposal would be a drastic cut of funds for hazardous waste compliance and cleanup at the Hanford site. In the instance of Hanford tank wastes, the administration proposed \$814 Million for Office of River Protection activities (\$500 Million for its planned Waste Treatment Plant (WTP), and \$314 Million for work necessary to support the plant and for day to day operations). The Office of River Protection has projected its needs as near \$1.1 billion.

Impacts would include, but would not be limited to a 3-4 year delay in treatment complex construction and support activities. It would also bring SST waste retrieval activities to a halt as well as cutting funds necessary to identify, track and assess the nature and extent of contamination from Hanford tank leaks.

⁴² FIRST AMENDMENT TO CONSENT DECREE, No. CT-99-5076-EFS, United States District Court, Eastern District of Washington, September 29, 2000.

⁴³ PCHB NO. 00-051, SUMMARY JUDGEMENT AND ORDER OF DISMISSAL, Washington State Pollution Control Hearings Board, April 26, 2001.

Governor Locke and Attorney General Gregoire noted how seriously they took these potential cuts in a March 14, 2001 letter to the President:

“The Department of Energy has been working to address this cleanup for more than a decade and has recently awarded a contract with Bechtel National, Inc. to design and build a facility to treat the tank waste. This is an important step toward satisfying the federal government’s legal obligation to clean up these wastes. Meeting the construction deadlines established in the contractual agreements and regulatory orders, however, is critically dependent on annual funding by Congress. It has been reported that your administration is considering substantial cuts from the U. S. Department of Energy’s budget for cleaning up these nuclear wastes. If that occurs, it would significantly threaten the Department of Energy’s ability to meet its legal obligations and further delay any meaningful progress in constructing the facility to address this problem.

The design and construction of the treatment facility must move forward now in order to complete this cleanup in our lifetime. It is vital that sufficient federal funding be made each step of the way to ensure the project is completed on time. Neither of us wants to leave the legacy of this untreated nuclear waste for yet another generation. You have been quoted as saying that cleaning up nuclear waste is a priority for you – but the budget cuts that your administration is proposing belie your statements. We respectfully request that you demonstrate your unequivocal support for cleaning up Hanford within the agreed-to timelines by requesting and advocating the appropriate level of funding that is needed.”⁴⁴

As of today the administration has not increased its FY2002 DOE budget proposal for tank waste cleanup.

XIV. History of this Dispute

1. February 26, 2001: DOE forwards draft (unsigned) proposals to modify HFFACO tank waste requirements.

Recognizing that it had not completed sufficient work to meet a number of HFFACO tank waste schedule requirements, DOE forwarded Ecology a “CHANGE REQUEST PACKAGE” consisting of a letter of transmittal and three (3) draft (unsigned) requests to modify HFFACO requirements.⁴⁵ DOE noted its opinion that its proposed modifications were warranted “as a result of the termination of the BNFL contract and failure of privatization...” DOE further described actions it and its contractors were taking to develop their internal work schedules, and that it expected to have “...a fully integrated project baseline by September 1, 2001.” With this understanding, DOE stated that its proposed modifications were “...necessary to provide

⁴⁴ Letter, Washington Governor Gary Locke and Attorney General Christine Gregoire to the Honorable George W. Bush, March 14, 2001.

⁴⁵ Letter (01-ORP-044), Harry L. Boston, Manager, DOE Office of River Protection and Keith A. Klein, Manager, DOE Richland Field Office to Tom Fitzsimmons, Ecology Director and Charles E. Findley, Administrator, EPA Region 10, February 26, 2001.

consistency between Tri-Party Agreement [*HFFACO*] milestone language, completion schedules for contract No's DE-AC27-01RV14136 [*DOE's contract for treatment complex construction with Bechtel National Inc.*], DE-AC27-99RL14047 [*DOE's contract for tank farm operations and work in support of treatment complex acquisition and operations*] and the ORP baseline schedule.

DOE's draft proposals would make a number of significant modifications to HFFACO tank waste requirements, including but not limited to the following:

- a) The HFFACO's July 31, 2001 deadline for start of construction of the tank waste treatment complex would be deleted, and replaced by the notation "TBD" (To Be Determined).
- b) HFFACO terms requiring the establishment of 2 treatment complex construction progress requirements would be modified by delaying indefinitely the date by which those milestones would be set, as well as the dates by which they would be performed.
- c) DOE and Ecology would again renegotiate and "revise or confirm" tank waste treatment complex start of construction and construction progress milestones by June 30, 2001.
- d) HFFACO terms requiring that the tank waste treatment complex achieve steady state (commercial) operations no later than December 31, 2009 would be deleted, and replaced by a requirement that the treatment complex would achieve "hot commissioning" (the equivalent of steady state operations), but on a schedule delayed by sixteen (16) months (to April 30, 2011).
- e) DOE proposed that this revised April 30, 2011 due date again be renegotiated, and either revised or confirmed by December 15, 2001.

DOE's proposal stated that any modification of its proposed start of construction, construction progress, or hot commissioning milestones would be consistent with initial operation of the complex by December 2007, and by the completion of treatment of no less than 10% of Hanford's tank wastes by 2018. DOE also proposed several other changes that are not at issue in this dispute.

2. March 1, 2001: Ecology forward's request for written clarification.

On receipt of DOE's proposal, Ecology requested it be provided with a number of written clarifications to aid it in its review.⁴⁶ These included thirteen (13) specific requests for clarification. For example, a number of questions inquired whether DOE was proposing that Ecology approve DOE proposed modifications, or if its proposals constituted initial DOE positions to be taken up by agency negotiators. Ecology's letter also raised concerns that DOE's

⁴⁶ Letter, Roger Stanley, Policy and Negotiations, Washington Department of Ecology Nuclear Waste Program to Mary E. Burandt, DOE Office of River Protection, March 1, 2001.

change request did not include all information required by the HFFACO and necessary for Ecology's review of DOE's proposals.⁴⁷

3. May 2, 2001: DOE forwards signed proposals to modify HFFACO tank waste requirements.

Ecology received no response to its request for clarifications throughout March and April of 2001. However, on May 2, DOE forwarded Ecology slightly modified, signed proposals for (HFFACO) tank waste work schedule modifications.⁴⁸

These proposals again asked the state to delete the existing treatment complex start of construction deadline and associated construction schedule requirements, that they be replaced either with the notation "TBD" (To Be Determined) or by extended due dates. DOE's proposal further noted that "There may be additional changes required once the Fiscal Year 2002 budget impacts are evaluated," and proposed that following Ecology's acceptance, revised tank waste treatment complex requirements be revisited and "revised or confirmed" by December 31, 2001.

DOE's signature on this M-62-01-02 change request triggered the time constrained HFFACO procedure for consideration and issue resolution.⁴⁹

4. May 16, 2001: Ecology disapproves DOE requests for modification.⁵⁰

Pursuant to HFFACO Action Plan section 12, Ecology was required to either approve or disapprove DOE's proposals within a 14-day period. Ecology disapproved DOE's proposals on May 16, 2001, noting that DOE had not established that "good cause" exists for modification of the HFFACO schedule in the manner requested by DOE, and that DOE's proposals were technically deficient because they did not contain all the information the HFFACO requires for requests for extensions. Ecology also noted that despite its March 1, 2001 request for written clarifications, DOE had as yet provided no response. Ultimately, Ecology concluded that

⁴⁷ For example, DOE's proposal did not include the length of extension requested, a description of DOE's rationales demonstrating good cause for each modification proposed, and a listing of all associated schedules that would be effected should DOE's proposal be approved.

⁴⁸ Letters (3)(01-ORP-063, 01-ORP-064 and 01-ORP-065), Change requests proposing revision of HFFACO milestone series including M-45-00 (SST waste retrieval), M-62-00 (tank waste treatment complex construction and operation), and M-90-00 (acquisition of facilities necessary for the disposal of treated Low Activity tank wastes), James E. Rasmussen, DOE Office of River Protection to Michael A. Wilson, Washington Department of Ecology, Nuclear Waste Program, May 2, 2001.

⁴⁹ On May 2, 2001, DOE also transmitted two other proposals that are not at issue in this dispute. One of these proposals requested changes to the HFFACO's M-45 milestone series, and the other requested changes to the HFFACO's M-20 and M-90 milestone series. This dispute focuses only on DOE's proposed changes to the HFFACO M-62 milestone series.

⁵⁰ Letter, Disapproval of U. S. Department of Energy (DOE) Hanford Federal Facility Agreement and Consent Order (HFFACO) Change Requests M-45-01-01, M-62-01-02, and M-90-01-01, all dated May 2, 2001, Mike Wilson, Manager Nuclear Waste Program, Washington Department of Ecology to James E. Rasmussen, U. S. Department of Energy, Office of River Protection, May 16, 2001.

“Approving DOE’s requests would likely perpetuate the delays that this crucial project has suffered for many years despite the continued deterioration and risks posed by DOE’s high-level radioactive waste storage tanks.”

5. May 21, 2001: DOE resubmits its requests, and asks that Ecology reconsider its May 16 disapproval, and that it toll or extend the seven (7) day period for initiating dispute under the HFFACO.⁵¹

This transmittal apologized for not responding to Ecology’s March 1, 2001 request for written clarification, provided additional justification for DOE’s proposals, and resubmitted its proposed modifications to the HFFACO M-45-00, M-62-00 and M-90-00 milestone series’. In making this request for reconsideration DOE noted that:

“...we feel delaying formal dispute and/or appeal of this matter until the Parties are in possession of additional information to be developed later on, e.g., more definitive Fiscal Year (FY) 02 and FY 03 Budget data, is in the best interest of both agencies.”

DOE reiterated its belief that its proposed modifications were necessary to bring the HFFACO in line with DOE’s tank waste treatment contracts and its “ORP” baseline. It further asserted its belief that its proposals constituted good cause for modification pursuant to HFFACO paragraphs 119, 120.A, 120.D, 120.E, 145, 145.F, 145.G, and HFFACO Action Plan section 12.0.

DOE’s May 21, 2001 resubmittal also provided by attachment, a DOE response to Ecology’s March 1, 2001 request for written clarification. DOE’s M-62-01-03 and M-90-01-02 Change Requests were approved by signature of the DOE ORP Manager, and dated May 21, 2001.

6. May 23, 2001: Ecology disapproves DOE request for reconsideration and that Ecology toll or extend the seven (7) day deadline for DOE to invoke dispute.⁵²

Following a DOE request that Ecology conduct a rapid review of DOE’s proposal, Ecology rejected DOE’s requests for reconsideration and delay of dispute resolution. Ecology’s letter noted that Ecology had carefully considered DOE’s proposal and that:

“...while DOE has added additional explanatory language and associated information to its May 2, 2001 requests for change, the proposed modifications to the HFFACO itself are identical to those proposed within Change Requests M-45-01-01, M-62-01-02, and M-90-01-01, which Ecology has already disapproved.”

⁵¹ Letter (01-ORP-074), Harry L. Boston, Manager, DOE Office of River Protection to Michael A. Wilson, Manager, Ecology Nuclear Waste Program, May 21, 2001.

⁵² Letter, “Disapproval of U. S. Department of Energy (DOE) Hanford Federal Facility Agreement and Consent Order (HFFACO) Change Requests M-45-01-01, M-62-01-02, and M-90-01-01, all dated May 2, 2001., Michael A. Wilson, Manager, Washington Department of Ecology, Nuclear Waste Program to Harry L. Boston, Manager, U. S. Department of Energy, Office of River Protection, May 23, 2001.

Ecology also noted, *“We see no reason to create a second line of dispute in this matter. While we will certainly take DOE’s additional explanatory language and information into consideration whether or not DOE invokes dispute resolution provisions; we decline to reconsider our May 16 disapproval or to extend the HFFACO deadline for initiating dispute resolution. Be advised that Ecology’s May 16, 2001 disapproval of DOE’s request stands.”*

Ecology telefaxed its May 23 denial to DOE.

7. May 23, 2001: DOE initiates HFFACO dispute resolution procedures.⁵³

On receipt of Ecology’s May 23 denial, DOE invoked the HFFACO dispute resolution procedures and noted that it would make reasonable efforts to informally resolve the dispute with Ecology project managers.

8. June 21, 2001: DOE submits its Statement of Dispute covering its Change Request M-61-01-01.⁵⁴

In submitting this Statement of Dispute DOE: (1) withdrew its dispute of Ecology’s disapproval of DOE’s HFFACO Change Requests M-45-01-01 and M-90-01-01, (2) focused its dispute on Ecology’s disapproval of DOE’s CR M-62-01-02, and (3) elevated this dispute to the agencies’ Interagency Management and Integration Team (IAMIT) for consideration.

DOE’s statement documents its assertions regarding the nature of the dispute, DOE’s position, the history of attempted resolution, and supporting information DOE felt was pertinent.

DOE notes its belief that the dispute centers on HFFACO interim milestone M-62-06 (start of construction of the tank waste treatment complex), invokes the force majeure provisions of the HFFACO, and asserts that it has shown good cause for Ecology to approve its M-62-01-02 Change Request. DOE summarizes its good cause bases as follows:

“Good cause for Change Request M-62-01-02 exists under HFFACO Article XLVII, Paragraph 145.G, insufficiency of appropriated funds – because of the unacceptably high and unfunded cost of the privatization proposal submitted by BNFL in April 2000 that caused DOE to terminate the contract; Article XLVII, Force Majeure, paragraph 145.F, delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of due diligence – this resulted from the need to issue and award a new contract to design, build and commission the waste

⁵³ Letter (01-ORP-075), “Initiation of Dispute Resolution for Change Requests (CR) M-45-01-01, M-62-01-02, and M-90-01-01”, Harry L. Boston, Manager, DOE Office of River Protection to Michael A. Wilson, Manager, Ecology Nuclear Waste Program, May 23, 2001.

⁵⁴ Letter (01-ORP-096), “The U. S. Department of Energy Submittal of Statement of Dispute for Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Request M-62-01-02”, James E. Rasmussen, DOE Office of River Protection to Michael A. Wilson, Manager, Washington Department of Ecology, Nuclear Waste Program, June 21, 2001.

treatment plant (WTP), consuming time that otherwise would have been used to prepare for start of construction of the WTP; and, in the alternative, Article XL, paragraph E, any other series of events mutually agreed to by the Parties as constituting good cause – this mutual agreement between DOE and Ecology is the September 19, 2000 approved amendment to Consent Decree No. CT-99-5076-EFS, in which DOE was required to award a contract to replace the terminated privatization contract for the design, construction, and commissioning of a Phase I WTP by January 15, 2001.”⁵⁵

XV. DOE Proposed Resolution

DOE’s proposed resolution of this dispute is best stated by DOE itself at section II of its Statement of Dispute. i.e., *“Under the terms and conditions of the HFFACO and the facts discussed herein, DOE believes that good cause exists to extend milestone M-62-06 as requested in Change Request M-62-01-02.”*

XVI. Findings and Final determination

Since negotiation of the Parties’ initial HFFACO in 1989, Ecology has worked to establish tank waste treatment facility (and associated) compliance work requirements which are reasonable, achievable, and which may be met in coordination with other Hanford cleanup (HFFACO) requirements. It is disappointing that DOE has failed to comply with federal and state hazardous waste law as they pertain to DOE’s Hanford site tank wastes. DOE has repeatedly changed course, has failed to put in place adequately structured compliance management systems, and continues to argue for HFFACO terms that would not hold it accountable to comply with the law. This history requires that Ecology carefully and critically evaluate DOE’s request for additional extensions.

DOE’s stated justifications for its most recent proposals do not satisfy the good-cause bases required by the HFFACO, for the reasons described below.

Article XL of the HFFACO provides for modification of a HFFACO timeline or deadline “upon a timely request for extension and when good cause exists for the extension.” One basis for good cause is a Force Majeure as set forth in Article XLVII. Paragraph 145 of the HFFACO defines Force Majeure events as “any event arising from causes beyond the control of a Party that causes a delay in or prevents the performance of any obligation under this Agreement.” DOE relies on the same basic statement of facts as justifying all the changes requested in its M-62-01 change request: The extension is necessitated by the delay caused by DOE’s termination of the BNFL contract because, *“among other things, BNFL’s cost estimates suddenly and inexplicably escalated to \$15.5 billion, far in excess of the government fair cost estimate of \$6.6 billion and available congressional funding approvals.”*

As manager of the multi-billion dollar privatization contract, DOE should have anticipated the possibility that BNFL’s proposal would not be acceptable to DOE, and should have provided for sufficient contingencies to enable DOE to meet the HFFACO deadline for start of construction. During its 1998-2000 attempts to gain DOE approval of a renegotiated tank waste course of

⁵⁵ DOE’s June 21, 2001 Statement of Dispute at: II. DOE’s Position on the Dispute.

action, Ecology proposed that DOE adopt a parallel course in order that DOE not suffer additional delays should the privatization effort fail. DOE declined to agree to such terms, and banked entirely on the success of its privatization effort.

DOE's reliance on HFFACO Article XLVII, Paragraph 145.G, is misplaced. That paragraph defines as a Force Majeure event the "insufficient availability of appropriated funds, if DOE shall have made a timely request for such funds as part of the budgetary process as set forth in Article XLVIII . . . of this Agreement." First, DOE did not make a timely request for funds sufficient to award the contract at BNFL's proposed price. Second, DOE's inability to meet the July 2001 start of construction deadline was not "caused" by the unavailability of funds, but rather DOE's failure to build in sufficient contingency. Finally, as indicated in Paragraph 147 of the HFFACO, Ecology does not agree that insufficiency of funds is a basis for Force Majeure.

DOE's reliance on HFFACO Paragraph 145. F is also misplaced. That paragraph governs "delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence." Here again, the delay was not "caused" by DOE's need to comply with these procurement requirements; it was caused by DOE's failure to implement a contingency plan sufficiently in advance to enable timely start of construction.

In the alternative to the above, DOE relies on Article XL, Paragraph 119. E, which indicates that "good cause" for modification of the HFFACO includes "any other event or series of events mutually agreed to by the parties constituting good cause." DOE contends that amendment to Interim Stabilization Consent Decree No. CT-99-5076-EFS executed by the parties and approved by the Court in September 2000 constituted an agreement to extend the deadline for start of construction of the WTP. The consent decree contained no such agreement, however. As DOE acknowledges in its statement of dispute, the Consent Decree was negotiated in lieu of litigation over DOE's failure to issue an Authorization to Proceed with the WTP project, which HFFACO milestone M-62-05 required be issued by August 31, 2000. The amendment deleted the M-62-05 milestone, but expressly indicated that it did not otherwise modify DOE's obligations under the HFFACO.

Although not raised as a justification in DOE's change request, DOE also noted in its statement of dispute that Ecology, other state regulators, and the U.S. Environmental Protection Agency have not yet issued the environmental permits necessary for start of construction under the existing HFFACO M-62-06 milestone. While Ecology agrees that DOE has not yet obtained the regulatory approvals required for start of construction, this results from DOE's own delay in developing its proposal—not from any dilatory behavior on the part of the regulatory agencies. Indeed, the regulators have worked hard to aid DOE and its contractors to meet HFFACO requirements, and, when DOE was not able to meet those terms, to do everything in our power to minimize delays resulting from DOE failures.

Even if the provisions DOE relies on were a basis for some extension of the start of construction and other milestones included in DOE's M-62-01-02 change request, they are *not* good cause for the open-ended modifications requested by DOE. DOE proposes that the state approve the deletion of the regulatory requirement that DOE start construction of its tank waste treatment

complex by July 31, 2001, that such requirement simply be noted as “To Be Determined,” and that this modified language be revisited and either revised or confirmed by December 31, 2001. As such, DOE’s proposal is that the state delete regulatory requirements that have been established after years of delay for vague language which the federal government may or may not agree to modify. DOE would also have the state agree now, that: “There may be additional changes required once Fiscal Year 2002 budget impacts are evaluated.” DOE’s proposal would, without either negotiation or opportunity for public comment, set the stage for additional repeated delays in the construction and operation of tank waste treatment facilities, and in the timely retrieval of Single-Shell Tank wastes.

Moreover, DOE’s (M-62-01-02) proposal is contrary to federal and state hazardous waste law which, among other things, prohibits the extended storage of land disposal restricted wastes unless such storage is exclusively in support of enforceable schedules which have been established for and which govern the contracting for, construction of, and operation of associated waste treatment facilities.

Finally, regardless of the merits of DOE’s justifications for extension to the deadline for start of construction and for the other M-62 series milestones referenced in DOE’s change request, the specifics of DOE’s proposal do not meet the requirements of the HFFACO and are otherwise unacceptable. DOE has not specified the length of the extensions sought as required by Section 12.3.2 of the HFFACO Action Plan. Instead, DOE has proposed that the existing milestones be taken immediately out of force, and be subject to a potentially endless cycle of future negotiations.

I make the following additional findings:

- Timely action is necessary to address the risks that these tank wastes pose to human health and the environment.
- Further negotiations in this matter under the HFFACO are not likely to succeed.

Consequently, in light of the Administrative Record and the findings outlined above, and in an effort to ensure the safe and timely retrieval and treatment of DOE’s Hanford site mixed high-level tank wastes, my final determination in this matter is as follows:

- (1) DOE’s proposal in this matter (Change Request M-62-01-02) is unacceptable and is hereby disapproved.
- (2) Failure to start construction as defined at HFFACO interim milestone M-62-06 will constitute a violation of HFFACO requirements.

Tank Waste Final Determination
July 26, 2001

Approved and issued this 26th day of July 2001.

Tom Fitzsimmons, Director
Washington Department of Ecology
(As issuing agency)

Chuck Findley, Acting Administrator
U. S. Environmental Protection Agency, Region 10
(As oversight agency in support of issuance)

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DOE listing of non-radioactive hazardous tank waste components and designation numbers within its *Single-Shell Tank System Hazardous Waste Facility Part A Permit Application, Revision 6*, (based on a computer model and process knowledge).

- D001 – Ignitability
- D002 – Reactivity
- D003 – Toxicity
- D004 – Arsenic
- D005 – Barium
- D006 – Cadmium
- D007 – Chromium
- D008 – Lead
- D009 – Mercury
- D010 – Selenium
- D018 – Benzene
- D019 – Carbon Tetrachloride
- D022 – Chloroform
- D028 – 1,2-Dichloroethane
- D029 – 1,1-Dichloroethylene
- D030 – 2,4-Dinitrotoluene
- D033 – Hexachlorobutadiene
- D034 – Hexachloroethane
- D035 – Methyl ethyl ketone
- D036 – Nitrobenzene
- D038 – Pyridine
- D039 – Tetrachloroethylene
- D040 – Trichloroethylene
- D041 – 2,4,5-Trichlorophenol
- D043 – Vinyl chloride
- F001 – spent halogenated solvents used in degreasing
- F002 – spent halogenated solvents
- F003, F004 & F005 – spent non-halogenated solvents
- WP01 – Organic compounds with a total concentration greater than 1.0%
- WP02 – Halogenated waste with a total concentration equal to or greater than 0.01% and less than 1.0%.