Comments of Heart of America Northwest; Heart of America Northwest Research Center (HoANW) on Low-Activity Waste Pretreatment System, OUG 1 permit modification

August 7, 2020

Respond to office@hoanw.org and gerry@hoanw.org

Permitting can not proceed without SEPA and NEPA analyses and documentation accompanying the proposed permit for comment

HoANW believes that Ecology cannot proceed with permitting absent a Supplemental Environmental Impact Statement (SEIS) pursuant to both the State and National Environmental Policy Acts (SEPA and NEPA). We have voiced this concern repeatedly over the course of several years. We documented this lack of compliance with SEPA, NEPA and Ecology's own rules in our August 2019 comments on the draft permit and modifications for Direct Feed LAW (Low Activity Waste) System, of which the Tank Side Cesium Removal (TSCR) facility is an element of. Had USDOE listened to concerns, there would be no delay in permitting. However, USDOE has been intransigent and failed to prepare a SEIS.

Further, the proposal is not accompanied by any NEPA or SEPA analyses and determinations as required. There is no link provided for NEPA or SEPA documents in the public notice fact sheet for this comment period, nor in the permit application submission and draft from USDOE to Ecology, nor accompanying the permit modification proposal.

Each of these concerns was raised by our organizations In November 2016, for the initial review of this set of related draft permit additions and modifications. USDOE has now had four years to properly respond, and to prepare a SEIS.

Without an analysis of potential releases, accidents, upset conditions, variations in waste stream, and other elements which would be analyzed in a Supplemental EIS or new EIS specific to TSCR, Ecology can not determine if the proposed conditions in the permit are adequate to prevent or mitigate human health and environmental risks. For example, the contingency plan essentially is a house of cards resting on absolutely no analysis for permit conditions to respond to releases, accidents, upset conditions, etc. There is no analysis on the record for the public or Ecology to consider of the range of potential releases, accidents, upset conditions, exposures, etc... Therefore,

The purpose of a contingency plan as part of the permit, is laid out in WAC 173-303-350(1):

> The purpose of this section and WAC **173-303-360** is to lessen the potential impact on the public health and the environment in the event of any emergency event, including, but not limited to, a fire, natural disaster, explosion, or unplanned sudden or nonsudden release of dangerous waste, hazardous substance, or dangerous waste constituents to air, soil, surface water, or groundwater by a facility. A contingency plan must be developed to lessen the

> potential impacts of such emergency event, and the plan must be implemented immediately whenever such an emergency event occurs.

Without an EIS analyzing the range of reasonably foreseeable accidents, fires, or events causing an unplanned release, neither Ecology nor the public can ascertain if the contingency plan actually addresses all potentially significant events that have a reasonable potential to occur. This denies the public of our right to comment.

Without an EIS analyzing the range of potential significant impacts from all reasonably foreseeable events that may cause releases or exposures, neither Ecology nor the public can ascertain if the contingency plan is adequate to mitigate the impacts of such releases.

Without an EIS analyzing all reasonable alternatives to TSCR, including for specific equipment, configurations, potential for use of defense in depth containment, locations, piping, emission controls, etc. neither Ecology nor the public can ensure that requirements are met for mitigation of potential impacts, use of best available control technology, most effective treatment to ensure that final treated wastes disposed in Hanford IDF landfill will minimize releases of contamination over thousands of years. Nor is it possible to comment on alternatives and whether there are more effective environmental choices or safer technologies and configurations to be used.

While TSCR relies on Cesium removal, for example, reasonable alternatives to use of the partially abandoned High Level Waste Pretreatment Plant and current DFLAW plan might include additional removal of “key radionuclides” and variations on the extent of removal. Both of these alternatives have potential significant environmental and human health impacts in regard to the disposal of final treated wastes in the IDF landfill.

> USDOE is seeking a separate determination to allow High Level Waste Tank wastes treated through TSCR as part of DFLAW to be disposed in IDF based on ‘removal of key radionuclides to the degree practical.” This is the “Waste Incidental to Reprocessing” determination, for which a concurrent comment period is now underway along with proposed modifications to the permit for the IDF landfill to accept waste.
>
> These are inter-related proposals and their inter-related impacts and reasonable alternatives must be considered in one supplemental EIS. Ecology and USDOE cannot pretend that piece-mealing consideration of the degree to which key radionuclides are removed in one process is not related to the potential significant impacts from the determinations relating to disposal in a concurrent process.
>
> There is no consideration in the record of reasonable alternatives to ensure that some modification of TSCR is utilized to remove additional “key” radionuclides. This illustrates just one of many reasonable alternatives that have not been considered and should be considered in an EIS / SEIS accompanying this permit proposal. See WAC 197-11-360(3)(b)

197-11-600(b)(i) requires a supplemental or new EIS if there are “Substantial changes to a proposal so that the proposal is likely to have significant adverse environmental impacts”

It is indisputable that Tank Side Cesium Removal was never considered as a potential technology in the Tank Closure and Waste Management EIS (TCWMEIS: USDOE EIS-0391, December 2012; RoD 2013).

It is indisputable that Tank Side Cesium Removal is a major change to the system analyzed in the TCWMEIS.

It is indisputable that there are potential significant environmental impacts from Tank Side Cesium Removal.

However, there is not even a legally required threshold determination finding that there are no significant unanalyzed potential impacts accompanying the proposal. Without even that fig leaf, the proposed permit modification may not be granted.

Prior responses that the TCWMEIS considered the full range of potential impacts from TSCR are disingenuous and do not stand up to the slightest scrutiny. Even if the bounds of all accidents were theoretically considered for pumping and treating High Level Nuclear Wastes from Hanford's tanks, it is indisputable that TSCR is a substantial change to the proposal with a new range of reasonable alternatives and potential impacts to be considered, along with potential for mitigation. Thus, WAC 197-11-600 requires either a Supplemental EIS or new, stand alone EIS to accompany the proposal.

The TCWMEIS considered constructing and operating a massive "Pretreatment" plant and High Activity Waste treatment plant in addition to the LAW facility. This DFLAW system is dramatically different than the system and facilities analyzed in the Tank Closure and Waste Management Environmental Impact Statement (TCWMEIS). USDOE acknowledges in a formal Supplemental Analysis, January 2019, that one facility included in this permit proposal, the Effluent Management Facility (EMF) was never considered in the TCWMEIS; and, acknowledges that other related key facilities with potential significant impacts such as unenclosed Tank Side Cesium Removal (TSCR) were never considered in the TCWMEIS.

Notice and opportunity to comment on this USDOE's Supplemental Analysis (SA) (EIS-0391-SA-02, January 2019); and, the Supplemental Analysis did not meet the legal requirements under SEPA or NEPA to justify the decision not to prepare a SEIS**. The SA cannot be relied upon by Ecology in lieu of a Supplemental EIS** (even if it were adequate, the agencies failed to ensure that it accompanied the proposed permit for public review).

It is important to note that this meager Supplemental Analysis (SA) is NOT part of the record for the current draft permit. It does not accompany the draft permit and there is no link to it, or even a notice of its existence, on Ecology's document webpage for this draft permit (See Appendix in which we have copied the entire contents of the Ecology web page). The public, tribes and other governmental agencies were all deprived of our rights to be able to review and comment on the SA, even if it was legally permissible to substitute a meager SA for an SEIS.

There are potential significant impacts from these major changes from the system considered in the TCWMEIS to DFLAW, which were never considered in the TCWMEIS (which USDOE refers to as the "baseline" configuration). The SEIS should accompany the draft permit for Ecology to be able to consider if alternatives or additional mitigation in the form of permit conditions should be required pursuant to SEPA. An SEIS is also vital for the public, advisory board and tribes to be able to comment effectively in regard to whether proposed permit conditions for the new DFLAW configuration will appropriately protect health, safety and the environment.

USDOE made a major change in the entire programmatic approach to High Level Nuclear Waste treatment at Hanford, substituting Direct Feed LAW and Tank Side Cesium Removal (TSCR) in replacement of the massive derailed Pretreatment Plant. This dramatic change

required a supplemental EIS, considering the changes in safety envelopes, waste streams, final waste form and leachability characteristics, potential air emissions and solid wastes from secondary waste streams from LAW and EMF, which are the focus of the current permit modification request.

USDOE attempts to portray the change from the use of a massive, permitted contained Pretreatment plant with DFLAW as a potentially temporary arrangement. Even so, the change requires a Supplemental EIS. But, USDOE has repeatedly acknowledged in budget and TPA filings that it may not be able to construct and operate the Pretreatment Plant in the decade of the 2020's, and perhaps not during the 2030's.

As USDOE and Bechtel said in the draft permit for DFLAW operations: "The DFLAW configuration is independent of the Baseline configuration." The DFLAW configuration was not analyzed in the TCWMEIS. The dramatic changes in this configuration with potential significant impacts include: the use of facilities to treat waste that are not in containment, e.g., TSCR; the EMF facility which was never envisioned in the TCWMEIS; delays in emptying leaking or potentially leaking Single Shell Tanks or potentially leaking Double Shell Tanks; not removing sludges from tanks when retrieving for DFLAW because the LAW plant cannot accept tank sludge; and treating wastes without removal of all the waste streams utilizing ultrafiltration analyzed for the Pretreatment Plant.

In the Supplemental Analysis, USDOE admits that TSCR utilizes an entirely different cesium removal technology (non-elutable ion exchange ["IX"]) than analyzed in the TCWMEIS (elutable). The difference in technologies may have serious potential environmental impacts in regard to vitrification feasibility and challenges for the Cesium bound to ion exchange columns (non-elutable) in comparison to Cesium which would have been removed from ion exchange and more readily fed back into the High Activity Waste stream for vitrification.

> "The "cesium ion exchange" function in the WTP Pretreatment Facility is designed to use elutable IX columns that would temporarily bind the cesium to the IX media and then chemically strip the media to return the cesium to the feed stream for the HL W Facility for vitrification (TC& WMEIS, Section E.1.2.3.1.1). The cesium removal system for DFLAW proposes to use non-elutable IX columns that permanently bind the cesium to the IX media; therefore, the spent IX columns would be stored until the media containing the cesium could be sent to the HL W Facility for vitrification."

Supplemental Analysis at 2.3.

USDOE totally fails to provide any analysis of either reasonable alternatives for non-elutable ion exchange in TSCR or of the potential impacts from having to store and vitrify the non-elutable Cesium Ion Exchange Columns on outdoor pads for indefinite periods of time – likely to be decades, with no end in sight.

The Supplemental Analysis has NO analysis of potential significant environmental impacts from a dramatic change in the safety envelope for pretreatment and Cesium Removal changing from a massive nuclear safety in depth designed pretreatment plant to a portable unshielded TSCR without any containment. Nor is there any analysis of the emissions or potential range of accidents or exposures (to both chemical dangerous waste vapors from transfers and TSCR as well as radionuclide exposures).

The sum total of consideration in the SA is the false claim that the potential impacts, accidents, releases, etc from TSCR were "bounded" in the TCWMEIS:

> The potential impacts of the WTP Pretreatment Facility were evaluated in the TC& WM EIS and impacts from the DFLA W cesium removal capability, with the exception of column storage, are bounded by the analysis in the TC&WM EIS (see Table 3-1).

In Table 3-1, USDOE presents this claim that the TCWMEIS bounded the consideration of facility accident consequences:

> The proposed DFLAW facilities are functionally equivalent to those evaluated in the TC& WM EIS, would be located in the same Industrial-Exclusive Zone,a and would not introduce new or substantively different accident risks relative to public and occupational health and safety beyond those evaluated for Alternative 2B. However, the TC&WM EIS did not specifically analyze the IX Column Storage Pad or storage of the IX columns on the pad. These elements of the Proposed Action are evaluated in more detail in Section 3.3 of this SA.

USDOE improperly conflates having considered total human risks from one set of accidents in a shielded, contained facility with the risks and impacts from a set of totally different potential accidents / events that have a totally different potential for occurring. For example, if the potential for release of radionuclides from the pretreatment plant due to an earthquake is one in a thousand years with a hypothetical human consequence of 100 excess cancers that analysis can not be said to "bound" the consequences of a hypothetical release resulting in 20 excess cancers if the likelihood of occurrence is once every ten years.

USDOE admits it has no analysis of TSCR accidents and their likelihood. It only has a consideration of dropping a stored Cesium column and radiation exposure during normal operations while stored (no discussion of exposures and risk from operations in, or transfers to and from, TSCR).

USDOE claims the bounding analyses include aircraft crashes into WTP or a deliberate event (Sec 3.3.2). But, an accident or deliberate event at a large shielded facility with negative air pressure zones and thick concrete walls cannot be said to bound the likelihood or consequences of an event at a portable lightweight TSCR with no containment. NEPA and SEPA require that the basis for the claims regarding doses, potential consequences and likelihood of events be transparent and available – which has not been met.

The environmental, safety and health impacts of the entire system are required to be considered throughout the administrative processes by both USDOE and WA Ecology. Because the permitting of the DFLAW system is phased, with permits for different system elements being prepared and issued for comment on a staggered schedule, it is vital for the impacts of the entire system to be considered in a Supplemental EIS.

Federal regulations require preparation of a Supplemental EIS when, as here, there has been a major change in the federal agency's proposal based on technical inability to utilize one technology (pretreatment) and substituting another set of technologies and facilities which have not been previously evaluated for potential impacts on human health, safety and the environment (Tank Side Removal taking place in facilities that lack basic containment features

for releases or accidents, changes in transfer lines, changes in waste composition for LAW vitrification and byproduct waste treatment (EMF). None of these examples were examined in the TCWMEIS or TWRS EIS.

While the TCWMEIS and prior chapter of the draft permit describe secondary containment and extensive emission / ventilation controls for processing Hanford tank wastes at the Pretreatment Facility and related storage or transfer tanks, the DFLAW configuration "bypasses" pretreatment and utilizes a "Tank Side Cesium Removal" process that does not have secondary liquid or air containment and other important safety measures. The potential risks and impacts from this new configuration have never been analyzed in an EIS. They are not described in any environmental analyses accompanying this proposed permit modification.

Importantly, *the Supplemental Analysis (January 2019,* DOE/EIS-0391-SA-02) *issued by USDOE utterly fails to discuss or consider the lack of a safety envelope for TSCR, and differences in controls for emissions and in event of releases between an unenclosed tank side Cesium removal equipment and the massive controlled Pretreatment Plant*. The environmental, safety and health impacts of the entire system are required to be considered throughout the administrative processes by WA Ecology for permitting any element of this system.

The "Supplemental Analysis" is NOT a Supplemental EIS and does not come close to the requirements for a Supplemental EIS.

40 CFR 1502.9 requires:

> (c) Agencies:
> (1) Shall prepare supplements to either draft or final environmental impact statements if:
> (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
> (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
> (2) May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.
> (3) Shall adopt procedures for introducing a supplement into its formal administrative record, if such a record exists.
> (4) Shall prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council.

Pursuant to CEQ guidance for when supplemental EISes are required, this permit modification must be accompanied throughout the decision making process by a Supplemental EIS since there has not been a NEPA review of these massive changes:

i. "As a rule of thumb […] EISs that are more than 5 years old should be carefully reexamined to determine if the criteria in Section 1502.9 compel preparation of an EIS supplement.
ii. "If an agency has made a substantial change in a proposed action that is relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts, a

> supplemental EIS must be prepared for an old EIS so that the agency has the best possible information to make any necessary substantive changes in its decisions regarding the proposal. Section 1502.9(c)"

Ecology's own rules similarly require a Supplemental EIS for the substantive change to the DFLAW program with new facilities, new risks and new waste streams that were never contemplated or considered in the old TCWMEIS:

> (4) A supplemental EIS (SEIS) shall be prepared as an addition to either a draft or final statement if:
> (a) There are substantial changes to a proposal so that the proposal is likely to have significant adverse environmental impacts; or
> (b) There is significant new information indicating, or on, a proposal's probable significant adverse environmental impacts.
> Preparation of a SEIS shall be carried out as stated in WAC 197-11-620.
> (5) Agencies may use federal EISs, as stated in Part Six

WAC 197-11-405.

The DFLAW system has numerous wastes whose form, quantities and composition are likely to have changed significantly with the switch to DFLAW and removal of pretreatment. Disposition of these wastes, such as entrained resins or dangerous mixed liquid wastes, has potential significant impacts for hundreds and thousands of years. Yet, these changes have not been considered in a Supplemental EIS.

NEPA and SEPA require the environmental assessments, including assessments of risk with potential mitigation strategies and conditions, to accompany and be considered on the record PRIOR to permitting. USDOE seeks to replace this with an "environmental risk assessment" for critical risks arising from processes, waste characterization, analysis and acceptance criteria. However, the draft permit is not even accompanied by this undefined risk assessment (a risk assessment would be expected to be incorporated by reference into, and summarized in, the Supplemental EIS).

Risks were never considered in the TCWMEIS from use of Tank Side Cesium Removal without the defense in-depth containment in a massive Pretreatment Plant for emissions or releases and additional potential radiological exposures.

USDOE inherently acknowledges that the portable TSCR without permanent constructed containment, ventilation, etc. has additional, unanalyzed risks compared to a permanent concrete and steel TSCR facility. See SA Section 2.3.2. USDOE has failed to consider the potential significant impacts and alternatives, including holding off cesium removal until a permanent facility is constructed, in any NEPA or SEPA analyses, as required by both statutes. Ecology cannot issue permits for the related facilities that rely on a system with potential significant impacts and alternatives which have never been considered.

In the Supplemental Analysis, USDOE failed to consider the potential for "facility accidents" to include seismic, fire, pressurization, accidental or other events causing a release from the unshielded, uncontained Tank Side Cesium Removal unit and equipment. **This failure is inexcusable**. Instead, in section 3.3.2, USDOE considered the straw man potential for a fire or dropping of a dry cesium exchange capsule on the storage pad and concluded that this risk was too low with a low probability of release to justify further

analyses. The analysis considered only radiological dose from a fire involving the dry ion exchange column storage pad, not chemical or radionuclide release and exposure from a fire, leak, or over pressurization, valve failure, etc. during operations of the TSCR equipment (it's not as if USDOE has never had an accidental release of High Level Waste during transfers in tank farms). The risk from release during operation, however, is much greater than from the storage of the columns – ranging from vapor exposures to natural or human caused major accidental releases.

> An example of risks that have not been evaluated along with reasonable alternatives are the use of hose in hose transfer lines from Tank 241-AP-107 to TSCR and the use of an alternative to cathodic protected hard transfer lines from TSCR to LAW Waste Treatment Plant.
>
> The hose in hose lines have potential for leakage or spray release, including at junctions and entry points. In the Response to Comments on the proposed operating permit for DFLAW issued in June, 2020, USDOE and Ecology appear to acknowledge that there are potential risks and respond that these will be mitigated by replacement of the hose in hose lines after three years, and consideration of hard cased lines if the TSCR is to be utilized beyond five years (rather than operation of the Pretreatment Plant):
>
> > "The HIHTLs will have a 3- year service life, after which time the lines will be replaced with another set of HIHTLs. If TSCR operates beyond the approximate 5-year expected duration, the HIHTLs will be replaced with hard-walled piping."
>
> Response to Comment 1-3-9; Response to Comments, Direct Feed Low Activity Waste Operating Permit, February 10 to March 26, 2020, Summary of a public comment period and responses to comments; June 2020; Publication no. 20-50-020; https://fortress.wa.gov/ecy/publications/documents/2005020.pdf
>
> However, operation of the pretreatment plant in a five year window is something that USDOE has formally acknowledged will not occur. See budget documents and request for renegotiation of milestones and consent decree schedules.
>
> **Thus, a reasonable alternative to mitigate risks (and save scarce cleanup funds) would be to require hardened lines with cathodic protection and leak detection rather than hose in hose for Tank 107 to TSCR and for TSCR to WTP**.
>
> At minimum, consideration of the risks, alternatives and mitigation should accompany the draft permit for Ecology and public review in the form of a Supplemental EIS.

USDOE seeks to justify rushing forward with a Tank Side Cesium Removal to meet the TPA milestone for operating LAW facility by December 31, 2023. See SA inset box at page 2-7. A TPA milestone cannot legally justify proceeding with construction and operation of a dangerous facility, creating new unanalyzed waste streams, in violation of NEPA and SEPA. Further, USDOE has been urged to comply with NEPA and SEPA by preparing a Supplemental EIS for the TSCR and permanent cesium removal facilities and DFLAW configuration by many parties for several years. Any failure is due to USDOE's intransigence.

USDOE does acknowledge that the outdoor storage of the highly radioactive cesium ion exchange (IX) columns with new chemical wastes, resulting from the substitution of TSCR and DFLAW for the analyzed pretreatment facility, was never considered in the EIS:

> "the TC&WM EIS did not explicitly analyze interim storage of spent IX columns loaded with IX media and cesium, nor did it specifically address the construction and operation of an IX Column Storage Pad."

Supplemental Analysis at Table 2-1, page 2-3.

However, USDOE did not even prepare a Supplemental EIS for the indefinite storage of the ion exchange columns. Instead in SA Section 3.3, USDOE justifies failure to prepare a Supplemental EIS for the storage of the Cesium Ion Exchange columns by pointing out that USDOE did complete a full NEPA analysis in the TCWMEIS for storage of dry casks with Cesium and Strontium capsules from B-Plant. This actually illustrates that NEPA and SEPA required a Supplemental EIS for the DFLAW Cesium Ion Exchange column storage.

The TSCR ion exchange generates significant new wastes, whose storage and disposal has not been considered, compared to the Pretreatment Facility housed cesium removal ion exchange analyzed in the TCWMEIS. The Pretreatment Plant was analyzed on the basis of using "elutable" ion exchange column technology. Elutable ion exchange means that the cesium is not permanently bound to the ion exchange medium and would be regularly "washed" out or removed from the ion exchange. This would greatly reduce the volume of highly dangerous ion exchange wastes to be disposed in the IDF landfill. However, USDOE now intends to use "non-elutable" cesium ion exchange resins columns. See SA at 2-3. This will greatly increase the wastes for disposal. The impacts of the increased waste generation and disposal, or increased difficulties in vitrifying the ion exchange columns with Cesium, have never been considered. Additional wastes from "dewatering" the cesium ion exchange columns would be generated and added back into the AP High Level Waste tanks. SA page 2-6 and 2-7.

It is reasonable to forecast that at least 780 of these extremely radioactive ion exchange columns would be sitting in some unanalyzed "temporary" outdoor site prior to any startup of the WTP's High Activity Waste (HAW) facility. See SA page 2-7 (120 columns with as much as 150,00 Ci of Cs produced every five years per TSCR unit. USDOE proposes two units. HAW cannot start operations, according to USDOE, prior to 2035 without a massive, unanticipated influx of construction funds).

The generation of these numerous additional wastes is NOT consistent with Washington's Waste Management Priorities pursuant to RCW Chapter 70.105 and WAC Chapter 173-303.

Ecology has a duty under Chapter 70.105 and SEPA to analyze the impacts from the additional generation of wastes and to use its authorities under Chapter 70.105 and SEPA to mitigate impacts by requiring use of technologies that generate less dangerous wastes.

In the Supplemental Analysis, USDOE acknowledges that the total secondary wastes will increase from the amounts considered in the TCWMEIS, but fails to disclose what those amounts or types of wastes will be, or how they will be disposed: "the secondary waste generated as a result of DFLAW would represent an additional, but small, fraction of the waste streams presented in the TC&WM EIS (see Tables 4-86 and 4-155)." SA at 3-12.

The potential impacts from the admitted increase in secondary wastes need to be fully considered in a Supplemental EIS. Ecology has a duty under the IDF permit to ensure that

these impacts are considered and that the permit conditions barring disposal in IDF are not exceeded. If they may be exceeded, the SEIS must address where the wastes will be disposed. Furthermore, HoANW does not believe that USDOE can legally dispose of non-elutable Cesium Ion Exchange columns or the Cesium from the columns in IDF, because it is High Level Waste (the NWPA bars disposal of High Level Waste in landfills, as does the IDF permit). The SA fails to consider that being "non-elutable", it will not be easy to remove and vitrify the Cesium. See SA 2-3. This should be considered, with alternatives, in a Supplemental EIS.
The quantities and characteristics of highly radioactive dangerous resin wastes (mixed waste) from use of non-elutable Cesium ion exchange columns in a portable facility, and the potential significant impacts from generating, treating and disposing of these new waste streams have never been considered. A Supplemental EIS is required to consider them. Further, Ecology has a duty to examine if there are alternatives to minimize the production of these wastes pursuant to RCW Chapter 70.105, and to consider mitigating conditions in all permitting actions.

The SA baldly, and falsely, asserts that the cumulative impacts from the new DFLAW system are within the bounds of cumulative impacts considered in the TCWMEIS. However, USDOE admits that the secondary waste streams will exceed – and differ from – the secondary waste streams considered in the TCWMEIS.

The assertion on cumulative impacts is based on the non-sequitur that will not operate TSCR or a hypothetical permanent new Cesium removal facility at the same time as it operates the Pretreatment Facility. However, as we noted earlier, at best, USDOE will not operate the Pretreatment Facility until the mid-2030's. Of course, the Pretreatment Plant may never operate. As we have shown, TSCR will create different waste streams using more dangerous uncontained equipment (there is no definitive plan for a permanent Cesium removal facility, which would also trigger an EIS requirement) that lacks the confinement and containment of the Pretreatment Facility:

> "DOE does not intend to operate the Pretreatment Facility at the same time as the EMF and the cesium removal system. Therefore, potential environmental and human health impacts associated with those facilities would not result in added cumulative impacts compared to the impacts presented in the TC&WM EIS for the WTP Pretreatment Facility."

Supplemental Analysis at 2-1.

The cumulative impacts from entirely new liquid waste streams, which will be treated in a new facility (EMF), cannot be said to be the same as under the prior system just because they will not operate simultaneously. USDOE acknowledges that the Pretreatment Facility analyzed in the TCWWMEIS utilized extensive "ultrafiltration" processes to pretreat waste, in addition to use of cesium ion exchange to remove cesium. However, in the DFLAW / TSCR proposal, ultrafiltration is entirely dropped. There is no discussion in the Supplemental Analysis of the potential impacts from the removal of ultrafiltration. This may change characteristics and treatability of the waste streams entering the LAW Facility, impact final glass formulation and will change secondary wastes streams.

The potential for significant changes to liquid waste streams in comparison to those considered in the TCWMEIS is high. This draft permit modification includes the Effluent Management Facility. There is no record of consideration of those changes to waste effluents, evaporation emissions, liquid waste discharges and treatment processes. The SA has a one sentence acknowledgement that total secondary waste streams will be greater than analyzed in the TCWMEIS, without discussion of quantities or types / characteristics of the additional waste.

All of these numerous potential impacts are required to be considered in a Supplemental EIS for tribal and public comment, as well as for decision makers to consider before permitting. We urged Ecology and USDOE to prepare a Supplemental EIS starting in 2016. There is no excuse for USDOE's intransigence. Ecology should not reward that failure by proceeding without a Supplemental EIS. If Ecology does proceed, Ecology's action is likely to be successfully challenged. There is no record of decision makers from USDOE and WA Department of Ecology considering the significant impacts, risks, alternatives, and mitigation for those risks as part of the record for this draft permit.

In sum, as we have commented repeatedly (including in August 2019 in regard to the proposed DFLAW operating permit) 40 CFR 1502.9 and WAC 197-11-405 require a Supplemental EIS because USDOE has proposed numerous substantial changes to the proposal, with probable significant impacts, including: replacing Pretreatment with TSCR and proposing new waste streams and substantial new risks. There is substantial new information and circumstances since issuance of the TCWMEIS more than five years ago, including that the analyzed Pretreatment Facility may never be used. Ecology cannot accept or rely upon the inadequate SA issued by USDOE.

At minimum, Ecology should set a permit condition limiting the time allowed for USDOE to store "orphaned" Cesium Ion Exchange columns. Storage and alternatives to non-elutable IX and for removal of additional "key radionuclides" must be considered in a Supplemental EIS. Ecology could condition the permit on consideration of changing the TSCR technology, transfer lines, use of a permanent and safer constructed facility with defense in depth for a five year period. This would coincide with USDOE's claim that the proposed permitted TSCR is only intended for five years. In sum, an appeal for the violations of SEPA and NEPA might be averted if the permit limited TSCR to five years and committed to preparation of a proper Supplemental EIS considering: the potential significant impacts of the current proposed facilities and system; a reasonable alternative to utilize a permanent facility with additional radionuclide removal capacities, alternatives to non-elutable Cesium removal, hardened pipelines, etc.; and, mitigation measures for potential impacts.

Appendix 1: Agencies' notice and links to documents – which do not include link to any SEPA or NEPA documentation:

Low-Activity Waste Pretreatment System, OUG 1 permit modification Public Comment Period Notification

The Washington State Department of Ecology is providing notification of a 45-day public comment period starting June 22 to August 7, 2020. This comment period will address proposed modifications to add the Low-Activity Waste Pretreatment System Operating Unit Group 1 (LAWPS OUG 1) to the Part III of the *Hanford Facility Resource Conservation and Recovery Act Permit, Revision 8C* (Sitewide Permit). The Permittees are the US Department of Energy and Washington River Protection Solutions. The LAWPS OUG 1 is located on the Hanford Site in southeastern Washington.

What Changes are being proposed?

The proposed modification (8C.2020.3D) provides design and construction details for Phase One of the LAWPS OUG 1.

The LAWPS OUG will be operated in phases, with LAWPS Phase One as a Tank Side Cesium Removal (TSCR) unit that will operate for approximately 5 years. The first phase of the LAWPS OUG will include three dangerous waste management units: the TSCR, the Ion Exchange Column (IXC) storage pad and the IXC staging area.

How to Comment

Ecology invites you to review and comment on this proposed LAWPS OUG 1 Permit Modification. Electronic copies of the proposed modification are located in the Administrative Record and Information Repositories. In addition, the proposed modification is online at the Nuclear Waste Program's public comment page.
Please submit comments by **August 7, 2020**
Electronic submission (preferred):
Mail or hand-deliver to:
Daina McFadden
3100 Port of Benton Blvd
Richland WA 99354
Fax 509-372-7971

Public Hearing

A public hearing is not scheduled, but if there is enough interest, we will consider holding one. To request a hearing or for more information, contact:
Daina McFadden
Hanford@ecy.wa.gov
509-372-7950

Copy of all materials and links on Ecology's public comment web page for the permit modification – note that there is no link or disclosure of a Supplemental EIS, EA, Threshold Determination or Supplemental Analysis of DFLAW for the public to review and comment on:

Low-Activity Waste Pretreatment System, OUG 1 permit modification

June 22, 2020 – Aug. 7, 2020

We're proposing a modification to Part III of the Hanford Sitewide Permit. The proposed changes affect the dangerous waste portion for the treatment, storage, and disposal of dangerous waste. A new operating unit group will be added to this portion of the permit. The permittees are the U.S. Department of Energy and Washington River Protection Solutions.

This proposed draft permit modification would add the Low-Activity Waste Pretreatment System Operating Group Unit Group 1 (LAWPS OUG 1) to the Sitewide Permit. The proposed modification provides design and construction details for phase one of the LAWPS OUG 1.

Overview/Background

The LAWPS OUG 1 will be operated in phases, with LAWPS Phase One as a Tank Side Cesium Removal (TSCR) unit that will operate for about five years. The first phase of the LAWPS OUG 1 will include the dangerous waste management units: Tank Side Cesium Removal (TSCR), Ion Exchange Column (IXC) Storage Pad, and the IXC Staging Area.

Proposed changes

This proposed draft permit modification will add LAWPS OUG 1 to Part III of the Sitewide Permit. The modification includes design and construction details to support the LAWPS OUG 1, Phase One. The modification includes:

- Unit Specific draft permit conditions
- Draft Interim Compliance Schedule
- Addendum A, Part A Form
- Addendum B, Waste Analysis Plan

- Addendum C, Process Information
- Addendum E, Security Requirements
- Addendum F, Preparedness and Prevention
- Addendum G, Personnel Training
- Addendum H, Closure Plan
- Addendum I, Inspection Plan
- Addendum J, Contingency Plan
- Appendices that include the necessary supporting design media (specifications, calculations, reports, and engineering drawings)

Review and comment

Copies of the application for the proposed permit and supporting documentation are available below, at the public information repositories listed at the bottom of this page, or at the Hanford Administrative Record.

Please submit comments by **Aug. 7, 2020,** electronically (preferred), or deliver to:

Daina McFadden
3100 Port of Benton Blvd
Richland, WA, 99354
Fax 509-372-7971

Public hearing

A public hearing is not scheduled, but if there's enough interest, we will consider holding one. To request a hearing, contact Daina McFadden by email or call 509-372-7950.

Documents

Table of contents

Transmittal Letter	Addendum D: Reserved
Response to Comments	Addendum E: Security Requirements
Focus Sheet	Addendum F: Preparedness and Prevention
Fact Sheet	Addendum G: Personnel Training

LAWPS OUG 1 Part III permit conditions	Addendum H: Closure Plan
Addendum A: Part A Form	Addendum I: Inspection Plan
Addendum B: Waste Analysis Plan	Addendum J: Contingency Plan
Addendum C: Process Information	

Appendix 1.0: Low-Activity Waste Pretreatment System Interim Compliance Schedule

Appendix 2.0: Low-Activity Waste Pretreatment System

Appendix 2.1: Process Flow Diagrams

H-14-111242, Rev. 2

Appendix 2.2: Piping and Instrumentation Diagrams

H-14-020803-14_R0	H-14-042603-53_R0
H-14-020803-15_R0	H-14-042603-54_R0
H-14-024857-6_R3	H-14-042603-55_R0
H-14-024857-7_R3	H-14-042603-56_R0
H-14-024857-8_R3	H-14-042603-57_R0
H-14-024857-9_R3	H-14-042603-58_R0
H-14-024857-10_R3	H-14-042603-59_R0
H-14-024857-13_R3	

Appendix 2.3: System Description Documentation

Appendix 2.4: General Arrangement Drawings

H-14-111244-1_R3	H-14-111250_R3
H-14-111244-2_R3	H-14-111251-1_R3
H-14-111244-3_R3	H-14-111251-2_R3
H-14-111244-4_R3	H-14-111252_R3
H-14-111244-5_R3	H-14-111253_R3
H-14-111244-6_R3	H-14-111301_R0
H-14-111244-7_R3	H-14-111331-1_R0
H-14-111244-8_R3	H-14-111331-2_R0
H-14-111244-9_R3	H-14-111331-3_R0
H-14-111246-1_R3	H-14-111331-4_R0
H-14-111246-2_R3	

Appendix 2.5: Civil, Structural, and Architectural Criteria and Typical Design Details

H-14-111280-1_R1	H-14-111603-1_Rev0
H-14-111280-2_R1	H-14-111604-1_Rev0
H-14-111293-1_R0	H-14-111609-1_Rev0
H-14-111293-2_R0	RPP-CALC-62464_R1
H-14-111293-3_R0	RPP-CALC-62547_Rev0
H-14-111293-4_R0	RPP-CALC-62647_R0
H-14-111321_R0	RPP-CALC-62660_R0
H-14-111371-1_R0	RPP-CALC-63060_Rev0
H-14-111371-2_R0	

Appendix 2.6: Mechanical Drawings

DS-1813-00_Rev1	DS-1813-96_Rev0
DS-1813-01_Rev1	H-14-111357-1_R0
DS-1813-02_Rev1	H-14-111357-2_R0
DS-1813-03_Rev1	H-14-111373-1_R0
DS-1813-04_Rev0	H-14-111373-2_R0
DS-1813-06_Rev0	H-14-111373-3_R0
DS-1813-79_Rev0	H-14-111373-4_R0
DS-1813-80_Rev0	H-14-111375-1_R0
DS-1813-81_Rev0	H-14-111375-2_R0

Appendix 2.7: Specifications

RPP-14859-14-Record	RPP-SPEC-62663-00
RPP-SPEC-62054-02	RPP-SPEC-62666_R0

Appendix 2.8: Engineering Calculations

RPP-CALC-62458_R2	RPP-CALC-62500_R2
RPP-CALC-62465_R2	RPP-CALC-62504_R2
RPP-CALC-62472_R2	RPP-CALC-62528_R0
RPP-CALC-62484_R2	RPP-CALC-62532_R0
RPP-CALC-62495_R0	RPP-CALC-62574_R0
RPP-CALC-62496_R3	RPP-CALC-62577_R0
RPP-CALC-62497_R2	RPP-CALC-62607_R0
RPP-CALC-62498_R2	RPP-CALC-62640_R0
RPP-CALC-62499_R2	

Appendix 2.9: Material Selection Documentation

RPP-RPT-61282_R2

Appendix 2.10: System Equipment, Instrument List

Appendix 2.11: IQRPE

DA-314470-01_Rev0	DA-317076-01_Rev0
DA-316542-01_Rev0	

Appendix 2.12: Installation Plans

Appendix 2.13: Instrument Control Logic and Narrative Description

RPP-RPT-61220_R2

Appendix 2.14: Descriptions of Instrument Installation and Testing Procedures

Appendix 2.15: Operating Documents

Public meetings and hearings

Not all comment periods include a public meeting or hearing. If one is already scheduled, it will be included in the announcement above. Otherwise, if you want to request one, please contact us.

Appendix 2: Regulations Regarding Contingency Plan and Requiring SEPA Analysis to Accompany the Draft Permit for Comment:

WAC 173-303-350

Contingency plan and emergency procedures.

(1) Purpose. The purpose of this section and WAC 173-303-360 is to lessen the potential impact on the public health and the environment in the event of any emergency event, including, but not limited to, a fire, natural disaster, explosion, or unplanned sudden or nonsudden release of dangerous waste, hazardous substance, or dangerous waste constituents to air, soil, surface water, or groundwater by a facility. A contingency plan must be developed to lessen the potential impacts of such emergency event, and the plan must be implemented immediately whenever such an emergency event occurs.

(2) Contingency plan. Each owner or operator must have a contingency plan at their facility for use in emergencies or any sudden or nonsudden releases which threaten human health and the environment. If the owner or operator has already prepared a spill prevention control and countermeasures (SPCC) plan in accordance with Part 112 of Title 40 C.F.R., or some other emergency or contingency plan, they need only amend that plan to incorporate dangerous waste management provisions that are sufficient to comply with the requirements of this section and WAC 173-303-360. The owner or operator may develop one contingency plan that meets all regulatory requirements. Ecology recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to nondangerous waste (non-Hazardous Waste Management Act or nondangerous waste regulation) provisions in an integrated contingency plan, the changes do not trigger the need for a dangerous waste permit modification.

(3) The contingency plan must contain the following:

(a) A description of the actions which facility personnel must take to comply with this section and WAC 173-303-360;

(b) A description of the actions which will be taken in the event that a dangerous waste shipment, which is damaged or otherwise presents a hazard to the public health and the environment, arrives at the facility, and is not acceptable to the owner or operator, but cannot be transported, pursuant to the requirements of WAC 173-303-370(6), Manifest system, reasons for not accepting dangerous waste shipments;

(c) A description of the arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services as required in WAC 173-303-340(4);

(d) A current list of names, addresses, and phone numbers (office and home) of all persons qualified to act as the emergency coordinator required under WAC 173-303-360(1). Where more than one person is listed, one must be named as primary emergency coordinator, and others must be listed in the order in which they will assume responsibility as alternates. For new facilities only, this list may be provided to the department at the time of facility certification (as required by WAC 173-303-810 (14)(a)(i)), rather than as part of the permit application;

(e) A list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities; and

(f) An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe the signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes.

(4) Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:

(a) Maintained at the facility; and

(b) Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

(5) Amendments. The owner or operator must review and immediately amend the contingency plan, if necessary, whenever:

(a) Applicable regulations or the facility permit are revised;

(b) The plan fails in an emergency;

(c) The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in a way that changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

WAC 173-303-355

Superfund Amendments and Reauthorization Act Title III coordination.

(1) Owners or operators must coordinate preparedness and prevention planning and contingency planning efforts, conducted under WAC **173-303-340** and **173-303-350**, with local emergency planning committees established pursuant to Title III of the 1986 Superfund Amendments and Reauthorization Act.

(2) Appropriate and generally accepted computer models should be utilized to determine the impacts of a potential catastrophic air release due to fire, explosion, or other accidental releases of hazardous constituents. Evacuation plans prepared pursuant to WAC **173-303-350** (3)(d) must include those effected persons and areas identified through these modelling efforts.

WAC 173-303-360

Emergencies.

(1) Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (that is, available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, required by WAC **173-303-350**(2), all operations and activities at the facility, the location and properties of all wastes handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(2) Emergency procedures. The following procedures must be implemented in any emergency event identified in WAC **173-303-350**.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or their designee when the emergency coordinator is on call) must immediately:

(i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(ii) Notify appropriate state or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials.

(c) Concurrently, the emergency coordinator must assess possible hazards to human health and the environment (considering direct, indirect, immediate, and long-term effects) that may result from the release, fire, or explosion.

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment, they must report their findings as follows:

(i) If their assessment indicates that evacuation of local areas may be advisable, they must immediately notify appropriate local authorities. They must be available to help appropriate officials decide whether local areas should be evacuated; and

(ii) They must immediately notify the department and either the government official designated as the on-scene coordinator, or the National Response Center (using their 24-hour toll free number (800) 424-8802).

(e) Their assessment report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health or the environment outside the facility.

(f) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other dangerous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(g) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(h) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(i) The emergency coordinator must ensure that, in the affected area(s) of the facility:

(i) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(j) The owner or operator must notify the department, and appropriate local authorities, that the facility is in compliance with (i) of this subsection before operations are resumed in the affected area(s) of the facility.

(k) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen days after the incident, they must submit a written report on the incident to the department. The report must include:

(i) Name, address, and telephone number of the owner or operator;

(ii) Name, address, and telephone number of the facility;

(iii) Date, time, and type of incident (e.g., fire, explosion);

(iv) Name and quantity of material(s) involved;

(v) The extent of injuries, if any;

(vi) An assessment of actual or potential hazards to human health or the environment, where this is applicable;

(vii) Estimated quantity and disposition of recovered material that resulted from the incident;

(viii) Cause of incident; and

(ix) Description of corrective action taken to prevent reoccurrence of the incident.

WAC 197-11-055

Timing of the SEPA process.

(1) **Integrating SEPA and agency activities.** The SEPA process shall be integrated with agency activities at the earliest possible time to ensure that planning and decisions reflect environmental values, to avoid delays later in the process, and to seek to resolve potential problems.

(2) **Timing of review of proposals.** The lead agency shall prepare its threshold determination and environmental impact statement (EIS), if required, at the earliest possible point in the planning and decision-making process, when the principal features of a proposal and its environmental impacts can be reasonably identified.

(a) A proposal exists when an agency is presented with an application or has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal *and* the environmental effects can be meaningfully evaluated.

(i) The fact that proposals may require future agency approvals or environmental review shall not preclude current consideration, as long as proposed future activities are specific enough to allow some evaluation of their probable environmental impacts.

(ii) Preliminary steps or decisions are sometimes needed before an action is sufficiently definite to allow meaningful environmental analysis.

(b) Agencies shall identify the times at which the environmental review shall be conducted either in their procedures or on a case-by-case basis. Agencies may also organize environmental review in phases, as specified in WAC **197-11-060**(5).

(c) Appropriate consideration of environmental information shall be completed before an agency commits to a particular course of action (WAC **197-11-070**).