

Facilities

Comments

L-0041/034

None of the alternatives considered includes a surface barrier capable of containing a three-year maximum rainfall without releasing water to the subsurface. The Hanford Prototype Barrier is able to contain such events. The modified Resource Conservation and Recovery Act (RCRA) C barrier has less water holding capacity and is not able to contain these events. This potentially increases the likelihood that the barrier will become saturated and release relatively large amounts of water to the subsurface.

L-0041/061

Following establishment of siting criteria, and investigation of potential sites, DOE should construct geotechnical test pads that represent proposed capping and lining systems to verify their constructability and performance in the Hanford environment. It has been previously noted that the modified RCRA Type "C" cover is inadequate to store the moisture volume that would infiltrate from a 5-year storm. This inadequacy drives the need to develop a robust cover that can withstand the anticipated meteorological variabilities of the Hanford site. Establishing and testing the proposed cover at the field scale should be a key "go, no-go" decision for the permitting of a MLLW or citing a LLW disposal facility due to the numerical model's dependence upon 0.01 cm/year of infiltration through the vadose zone. Additionally, the waste cover design should include specific consideration for drainage of excess water to controlled points that preclude it impacting wastes. Such drainage systems might include deep drains into the subsurface to route water past all waste disposals.

Response

Both the Hanford barrier and the modified RCRA Subtitle C barrier contain an asphalt layer that would divert water to the sides of the barrier in the event of a large rainfall event. The Prototype Barrier Treatability Test Report (DOE-RL 1999a) indicates the following regarding a 0.15-m Asphaltic Concrete Coated with Fluid-Applied Asphalt: Essentially no drainage of water through the barrier silt-loam layers was observed under ambient and extreme (3 times normal precipitation including 1,000-year storms) precipitation conditions. The upper silt-loam layers and capillary barrier functioned to effectively store precipitation for subsequent removal by evapotranspiration, thereby preventing drainage. As expected, drainage did occur for the gravel and riprap side slopes, but was effectively diverted by the sloped asphalt layer. No change in water content or drainage was observed under the asphalt layer except at its very edge.

Comments

F-0015/005, TSE-0014/005

Accidents, fires and earthquakes will release plutonium, chemical, and radioactive wastes[.]

THR-0003/003

Another concern I have is fire, as far as this radioactive waste is concerned, what are the fire hazards. I have no idea at this point.

Response

The impacts of reasonably foreseeable accidents, including fires and earthquakes, are discussed in Volume I Section 5.11. The DOE defines "design basis" as the set of requirements that bound the design of systems, structures, and components within its facilities. Design requirements include consideration of safety, efficiency, reliability, and maintainability. Some aspects of the design basis are important to safety, although others are not. Design basis accidents (DBAs) are used in DOE safety analyses to provide the design parameters for release barriers and mitigating systems. The major categories of DBAs are internally initiated operational accidents (e.g., fires, explosions, spills, criticality); natural phenomena events for the site (e.g., earthquakes, tornadoes) that could affect the facility; and externally initiated, man-made events such as airplane crashes, transportation accidents, adjacent facility events, etc., that can either cause releases at the facility under examination or have a major impact on facility operations. The DOE also evaluates "beyond"

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DBAs to provide additional perspective. The insight from beyond DBA analyses has the potential for identifying additional facility features that could prevent or reduce severe beyond DBA consequences. In evaluations of beyond DBAs, it is understood that as frequencies become very low, little or no meaningful insight is attained. Operational beyond DBAs are operational accidents with more severe conditions or equipment failures than are estimated for the corresponding DBA. Natural phenomena beyond DBAs are defined by the frequency of the natural phenomenon event itself (i.e., frequency of occurrence less than DBA frequency of occurrence). Beyond DBAs are not evaluated for external events.

Comments

L-0033/008

...install legal groundwater monitoring and leachate collection[.]

L-0055/014

This analysis is in part incomplete without a better analysis [of] subsurface hydrologic characteristics to determine the best location for these disposal cells. Instead the current analysis in the HSWEIS justifies a weaker less protective design because of in part already existing ground water contamination and uncertainties associated with climatic assumptions. This is troubling in that DOE has only relatively recently began open discussions of options for ground water remediation.

L-0055/028

The proposed facilities are inadequately designed to prevent the release into the soil and ground water and are not designed for contingencies to allow for identification, retrieval, and removal. Without these attributes incorporated into the design of all alternatives this action essentially identifies that certain resources at the Hanford site are sacrificed as irretrievable and the effects of the decision are irreversible.

L-0057/001

I find it irresponsible for my governmental agencies to use my taxes to bury hazardous chemical and radioactive wastes - in unlined trenches - near a major waterway.

TPO-0024/002

Throw this EIS out. It's a joke. This stuff has to be contained...When we can leave the stuff where it is, take the time to really find out how to treat it and contain it, to characterize it, to have it be retrievable if it's leaking somewhere. Do it right.

Response

Federal RCRA Subtitle C and related state hazardous waste management regulations require that radioactive mixed waste land disposal units meet minimum technical standards to prevent the release of hazardous substances. The standards include a system of multiple liners to prevent leakage into groundwater, a leachate collection system, groundwater monitoring wells, a multi-layer cap to prevent infiltration of rain and snow, stringent waste treatment standards, and a program of monitoring, inspection, and reporting during the period of operation and after closure. These standards will apply to all new mixed waste disposal units evaluated in the HSW EIS. Volume I Section 2.2.3 discusses disposal facilities and their environmental protection features.

The preferred alternative as described in Volume I Section 3.7 is to dispose of low level waste in newly constructed lined disposal facilities as soon as they are available. For purposes of analysis the HSW EIS assumes this would occur by 2007. MLLW is currently being, and will continue to be, disposed of in lined facilities.

However, the use of unlined trenches for disposal of low level waste is an established, legal, and environmentally protective method of low level waste disposal at both DOE and commercial facilities. As such, it is a reasonable alternative, under CEQ regulations, and must be analyzed. The HSW EIS considers a wide range of alternatives for disposal of low level waste in both lined and unlined facilities. Lined trench

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alternatives include leak detection and leachate collection capabilities. In addition, groundwater monitoring would be done in compliance with applicable RCRA and State hazardous waste, TPA, and DOE requirements to validate the performance of the disposal facilities.

Groundwater monitoring is conducted according to TPA requirements, the Hanford Dangerous Waste Management permit, and DOE Orders. Groundwater monitoring will be expanded as necessary according to agreements between DOE and regulatory agencies to support future waste management operations.

Groundwater contamination beneath the Hanford Site is being studied and remediated by the ongoing CERCLA program in accordance with the Tri-Party Agreement. The CERCLA process considers legally applicable Federal, State, and local laws or relevant and appropriate requirements (ARARs). Any decisions reached by DOE on the basis of analysis in the HSW EIS would be implemented in accordance with applicable Federal, State, and local laws and regulations. See Volume II Appendix N, Section N.2.4.

Comments

L-0044/093

Sec. 2.2.2, pp.2.16 ff The status of the Proposed Modified Treatment Facility: Mobile TRU Processing Facility (Box, p. 2.19) vis-à-vis the EIS is confusing. Other boxed items in the section are included in the analysis, but apparently the APLs are not?

Response

The "Advanced Process Lines" as discussed in the text box on Volume I Section 2 page 2.19 is synonymous with the term "Mobile TRU Processing Facilities." APLs are analyzed as part of Alternative Group B. The text has been revised to more clearly indicate this.

Comments

TPO-0015/004

Regarding this EIS, a 60-year liner is a joke, you know. And that's before the earthquake.

TPO-0015/006

The caps on the trenches also are a joke. They are dangerous cover-ups. Let's call them what they are. And the waste should be classified and retrievable if they start leaking.

Response

Liners and Caps (barriers) are established components of the RCRA hazardous waste disposal program and CERCLA/MTCA cleanup programs. Liners are relied upon primarily during the operational time period. Caps are designed to provide long term protection after closure.

Comments

TSE-0027/008

The problems of liners and caps are legendary and they are discussed in the DEIS. Water in and around the trenches need to be collected and treated.

Response

Liners and Caps (barriers) are established components of the RCRA hazardous waste disposal program and CERCLA/MTCA cleanup programs. Liners are relied upon primarily during the operational time period. Caps are designed to provide long term protection after closure.

The HSW EIS barrier performance analysis takes into account degradation of the modified RCRA Subtitle C barrier. No guidance is available for specifying barrier performance after the design life. However, it is likely

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that this specific barrier will perform as designed far beyond its design life. The modified RCRA Subtitle C barrier (see Volume I Section 2.2 for description of this barrier) has a design life of 500 years in the absence of any active institutional controls or maintenance 100 years after closure. The starting infiltration rate used in the release modeling begins at 0.01 cm/yr, after which the assumed rate increases in five steps over 500 years after the start of cover degradation (See Volume II Figure G.3). After 500 years of degradation, the infiltration rate used in the release modeling is assumed to be equivalent to the rate used to represent recharge for the natural surrounding environment (0.5 cm/yr). This rate was used during the remaining 9,000 years of this assessment. Groundwater impacts based on these assumptions are in Volume I Section 5.3 and Volume II Appendix G. A sensitivity analysis was also performed that assumed the cap would be maintained beyond 100 years after closure. Groundwater impacts from this sensitivity analysis are in Volume II Appendix G Section G.4.

Comments

E-0012/006

[Stop] burying radioactive waste in unlined soil trenches - period.

E-0014/001

Both the Department of Energy and its various contractors have shown themselves unwilling or unable to prevent nuclear waste leaking into the soil and thence into the Columbia River.

E-0014/004

We also understand this nuclear waste will be put in 'unlined trenches'. That's a fancy term for digging a hole and pouring it in! It would be illegal for us to do that with household waste. Again, we don't think the government should be allowed to do it.

E-0043/013, EM-0217/013, EM-0218/013, L-0056/013, LM-0017/013, LM-0018/013

All action alternatives continue disposing MLLW in unlined trenches until they are completely filled before even beginning construction of new disposal facilities. The continued use of unlined trenches cannot reasonably be considered as an option since disposing of MLLW in unlined trenches is illegal.

E-0043/054, EM-0217/054, EM-0218/054, L-0056/054, LM-0017/054, LM-0018/054

The disposal of MLLW in unlined trenches should cease immediately. Alternatives that assume no further disposal in unlined trenches are needed. Unlined trenches are a major contributing source of pollution to the Hanford Reach. One could not legally dispose of kitchen garbage in unlined trenches.

E-0048/004

When disposal trenches will be lined and monitored is not clearly specified. No more radioactive waste should be put into unlined trenches. The current EIS would allow unlined trenches to continue.

E-0050/009

Although the EIS contains alternatives that provide for lining and monitoring burial trenches, it provides no timeline for implementing these actions. Burial of waste in unlined trenches should be stopped as soon as possible, by the end of 2003 at the very latest.

E-0055/001

You and I can not dump our kitchen garbage in unlined soil trenches, it is illegal. Our local governments can not dump our municipal garbage in unlined soil trenches, it is illegal. USDOE must immediately stop dumping deadly radioactive wastes – which it has frequently allowed to illegally contain hazardous and toxic wastes – in Hanford's massive unlined trenches. These trenches are typically over 1,000 feet long. They are contaminating ground water and will continue to do so. They contain wastes with unknown hazardous substances, subjecting the burial grounds to state and federal hazardous waste laws. Yet, USDOE has illegally expanded trenches and added new ones since state law forbade expanding or building new unlined soil disposal trenches over a decade ago.

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We call for USDOE to end dumping in unlined trenches by December, 31, 2003. It can and must be done. USDOE proposes, on the contrary, to keep using unlined soil trenches indefinitely and to formally designate Hanford as a national radioactive waste dump after issuing a final version of this EIS.

E-0055/016

Heart of America Northwest Research Center has embarked on an extensive, detailed "cross-site comparison of USDOE's low-level waste landfills and alternatives", which conclusively shows that, amongst USDOE's landfill alternatives, the least environmental impact occurs if USDOE's offsite Environmental Restoration Program wastes are disposed in a lined, regulated landfill in Utah. That landfill, in Clive, Utah, operated by "Envirocare of Utah", has never released waste, has leachate collection systems and both ground water and soil column (vadose zone) monitoring that far exceed USDOE's low-level burial grounds, and is not located above drinkable ground water. Disposal charges at the Envirocare site include, as a permit condition, the costs of long-term monitoring and closure.

F-0002/003

Ban unlined trenches of waste at Hanford[.]

F-0011/005

Burying nuclear waste in unlined trenches anywhere, particularly next to the Columbia River is a horrifyingly dangerous idea which DOE refuses to recognize.

F-0014/001

Unlined trenches for radioactive waste is an unsound idea with frightening environmental effects, particularly considering the longevity of radioactive compounds.

F-0021/004

To that end, dumping waste in unlined trenches is unacceptable[.]

F-0022/004

[I want to see in the EIS a] study of the effects for not lining the dump sites according to the highest standards of safety that we in and around the Hanford facility deserve and demand!

F-0025/005

There are no plans in place to line and monitor the trenches.

F-0027/002

...all waste [trenches] should be LINED. We believe this is a PRIORITY!

F-0029/002

However, the current EIS is inadequate. It does not give a commitment to end the DOE's use of unlined trenches to store radioactive wastes (which the DOE is currently doing despite the fact this is illegal and goes against the commitment of DOE staff to end this practice).

F-0030/002

Where are the guarantees to NOT use unlined trenches?

L-0007/002

I understand that the plan even proposes dumping this new waste into unlined trenches; if this is true, the irresponsibility of such a proposal is truly spectacular.

L-0017/005

The continued use of unlined burial grounds for radioactive waste is unacceptable. We recommend that the use of unlined trenches cease by the end of 2003.

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L-0018/003, TSE-0001/003

This Draft EIS fails to clarify one major uncertainty; the date at which the Department of Energy will stop the unacceptable practice of dumping radioactive wastes in unlined soil trenches. I am working with my colleagues in Congress to require the burial of all new radioactive wastes in lined facilities, and I encourage the DOE to implement such a requirement at the earliest date possible.

Lined landfills with leachate collection and monitoring would prevent the leakage and contamination of groundwater that has been documented by Washington State to have occurred at Hanford's Low-Level Burial Grounds while they remain open. This is why all other landfills in our state and nation are required to have liners, leachate collection and monitoring. I believe that the same standard should be met by the U.S. Department of Energy.

Based on press accounts I have seen and statements by DOE officials, it is my understanding that while the Department recognizes the importance of putting all wastes in lined facilities, this Draft EIS does not contemplate doing so until years into the future. I believe this is unacceptable. In today's day and age, there is no reason we should be dumping radioactive wastes in unlined landfills, particularly at Hanford where history has demonstrated that what we put in the ground often ends up in the Columbia River.

L-0018/005, TSE-0001/005

In addition to protecting the Columbia River and the public from possible harmful exposure to radiation, insisting on lined facilities will also save taxpayers dollars. There is no question that we will eventually dig up all wastes in unlined soil trenches and transfer them to more stable lined facilities. Making the modest and clearly needed investment now will save taxpayer dollars in the long term.

L-0019/003, TSE-0002/003

Lack of a timeline to cease burial in unlined trenches [is a an open issue in the revised draft.]

L-0021/005, TSE-0015/005

There are 1,400 waste sites at Hanford, typified by rusty barrels and unlined trenches. It would be illegal for me to store my household garbage in such a manner, yet the Department of Energy continually ignores the law and stores extremely radioactive wastes directly on the ground. Already, an estimated one million gallons of high-level radioactive waste have leaked into the soil. Plumes of contaminants have reached the groundwater. Since USDOE will not voluntarily even consider stopping its dumping of waste in unlined soil trenches this year, we are pleased that Representative Inslee and others are introducing legislation to accomplish this long overdue compliance with standards.

L-0027/002

Unlined trenches provide no protection from soil and groundwater contamination. Contaminated groundwater would flow into the Columbia River for thousands of years! Birth defects and cancer would be our legacy to countless future generations in the Columbia Basin and beyond.

L-0030/004

The waste dump at Hanford must be made safe with proper lining and further dumping must not occur.

L-0033/007

...line the trenches[.]

L-0033/011

DOE has a legal responsibility to treat contaminated soils at Hanford by 2018, but proposes to bury waste in unlined trenches through at least 2046. Once again, your credibility is suspect.

L-0035/005

...shut down the unlined god-awful trenches.

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L-0037/003

Also stop burying radioactive wastes in unlined trenches immediately.

L-0041/018

In the HSW-EIS, DOE's preferred alternative includes waste disposal in lined trenches. Oregon supports the use of lined trenches and encourages DOE to discontinue any further disposal of LLW in unlined trenches.

L-0051/002

[I am asking you and DOE] not to bury waste in unlined trenches there [Hanford].

L-0051/004

Then about the unlined soil trenches; its hard to believe this is still being done, even for the short-term. It doesn't seem to be in line with DOE's promises to clean up Hanford. Apparently there is some provision in DOE's Solid Waste EIS revision to line these trenches by the end of this year; this seems like the very least that could be done.

L-0057/006

Please develop a timeline for the alternatives to line and monitor the burial trenches.

P-0023/003

[Please] end Radioactive waste disposal in unlined soil ditches.

P-0029/001

I am concerned that radioactive material already at Hanford is not being adequately contained. I am concerned that material is leaching into the Columbia River and ground water.

P-0033/002

We must end Radioactive waste DISPOSAL IN UNLINED SOIL DITCHES.

P-0075/002

End radioactive waste disposal in unlined soil ditches.

P-0101/001

How can you possibly even consider putting radioactive waste in unlined pits - especially so near the Columbia river!!!!!!!!!!

P-0101/002

You [the federal government] are betraying the public [with unlined pits that are UNSAFE].

P-0109/002

Please end all radioactive waste disposal in unlined soil ditches!

P-0127/002

I understand waste is going into unlined tanks/trenches. Please stop this practice.

P-0148/001

I request you immediately stop burying radioactive waste in unlined soil trenches.

P-0149/002

Please also line the inadequate burial trenches during this current year! 2003.

THR-0002/002

Number two, disposal practices. DOE, the Solid Waste EIS proposes to continue dumping low-level waste in unlined dirt ditches. And that's the way DOE has been doing it for the last 40, 50 years.

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THR-0002/003

DOE does not have a plan in this EIS to line and monitor all the burial grounds at Hanford, which should be in this EIS.

THR-0005/006

Why is the mixed low-level waste disposal going into a trench? The plan is that[?]

TLG-0008/001

The idea of lining the trenches is certainly a big advance, especially from professional scientists. It seems to at least indicate that we've left the primitive stages behind. It seems to me that given the geology of that part of the world, it really is one of the solutions. So thank you for that.

TPO-0019/002

Despite the Department of Energy's revisions, I still have concerns regarding the use of unlined soil trenches for unspecified periods of time.

TPO-0020/001

And people say the Hanford area, I don't know if many people know across the river, right across the river, at White Bluffs, that's where Chief Joseph hid. And that's all Native American. And that whole land, all that area in there was the Native American ceded grounds. I mean, they used to go do their gathering there. I mean, I hear "Just put it -- dig the trenches. Put the stuff in the lined trenches." And it's business as usual.

TRI-0001/007

Under the new alternatives sadly the revised draft predicts an increase in waste import to one million cubic feet a year, which is approximately enough to cover a football field 65 feet deep per year. And we do not have any commitment made at the outset of this EIS, which we expected to see clearly made, that the Department of Energy would end dumping in unlined burial grounds as soon as feasible. Instead we have alternatives as just mentioned in the question period that extends the timeline for continuing to use these illegal burial grounds.

TSE-0003/008, TSE-0004/008, TSE-0005/008, TSE-0006/008, TSE-0007/008

Line all the low-level waste grounds. Ensure they are safe for all time[.]

TSE-0009/002

I request that you withdraw this EIS and that you shut down the unlined soil trenches, stop dumping in unlined trenches, period.

TSE-0010/006

The unlined soil ditches cannot be a destination for radioactive waste. Real leachate collection must be in place now.

TSE-0013/001

I first would like to concur with Congressman Inslee's read statement and his interest in prohibiting any more waste put in unlined trenches.

TSE-0019/002

And the Department of Energy also needs to shut down the unlined burial grounds at Hanford immediately.

TSE-0026/002

Lined landfills, groundwater monitoring and leachate collection are clearly the minimum necessary to begin to cope with the existing contamination, let alone any additional waste.

TSE-0030/004

And of course the use of unlined burial grounds is unacceptable, and that should be halted by the end of this year.

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TSP-0003/004

It's obviously absurd to have unlined trenches. It's absurd to be dumping waste at all.

TSP-0011/003

I did also, I was impressed by the fire last summer. 400 yards. And we are being told that we can have modern unlined ditches? It's absurd.

Response

The preferred alternative as described in Volume I Section 3.7 is to dispose of low level waste in newly constructed lined disposal facilities as soon as they are available. For purposes of analysis the HSW EIS assumes this would occur by 2007. MLLW is currently being, and will continue to be, disposed of in lined facilities.

However, the use of unlined trenches for disposal of low level waste is an established, legal, and environmentally protective method of low level waste disposal at both DOE and commercial facilities. As such, it is a reasonable alternative, under CEQ regulations, and must be analyzed. The HSW EIS considers a wide range of alternatives for disposal of low level waste in both lined and unlined facilities. Lined trench alternatives include leak detection and leachate collection capabilities. In addition, groundwater monitoring would be done in compliance with applicable RCRA and State hazardous waste, TPA, and DOE requirements to validate the performance of the disposal facilities.

Comments

L-0041/056

In the preferred alternative, as described on page 3-60 [of the revised draft HSW EIS], Oregon concurs that all future facilities must meet more stringent design standards than the present unlined LLW design standards. Oregon suggests that DOE incorporate various components to provide redundant features to sequester contaminants. These components include:

- a) Meet RCRA Land Disposal Restrictions, meet Universal Treatment Standards, treat to immobilize waste, and reduce the source terms.
- b) Disposal features should include reactive barriers within the liner system, providing sequestering agents (zeolites, phosphates, or proprietary agents) in the cushion layer. Additionally, DOE should consider providing bulk treatments to reduce the leachability of the buried waste. The leachate collection system should include a leak detection system to determine the source of the leachate to indicate potential leak source and to suggest potential solutions.
- c) Closure features should include modified cap designs to provide engineered failure components to enhance future performance in the event of failure. These features could include aggregates that decompose to clays, amendments that mobilize and react with deeper materials, use of self-healing natural materials, and air-voids to inhibit deep root growth.
- d) Monitoring requirements should be clearly established in the ROD to define essential components for monitoring the vadose zone and aquifer beneath each disposal site. Monitoring should incorporate a full range of potential technologies, including sensors that would be installed during construction such as time domain reflectometry waveguides, neutron probes, and electrical resistivity tomography pairs. Groundwater wells should be constructed using both single and multiple screening levels to allow for vertical segregation.

Response

Federal RCRA Subtitle C and related state hazardous waste management regulations require that radioactive and hazardous mixed waste land disposal units meet minimum technical standards to prevent releases. The standards include a system of multiple liners to prevent leakage into groundwater, a leachate collection system, groundwater monitoring wells, a multi-layer cap to prevent infiltration of rain and snow, stringent waste treatment standards, and a program of monitoring, inspection, and reporting during the period of operation and after closure. These standards will apply to all new mixed waste disposal units evaluated in the HSW EIS. The RCRA Subtitle C regulations are not applicable to radioactive wastes that do not exhibit

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hazardous waste characteristics or contain listed hazardous waste, and RCRA standards are not applicable to LLW land disposal units. Although disposal of low level waste in unlined trenches is an established, legal, and environmentally protective disposal method, the preferred alternative includes the use of Hanford LLW disposal unit designs that have essentially the same engineering controls as RCRA mixed waste disposal units (liners, leachate collection, and caps). Volume I Section 2.2.3 discusses disposal facilities and their environmental protection features as evaluated in this EIS. As permitting and design work on the selective alternative is conducted, DOE may consider enhancing these facility designs. For example, permeable reactive barriers are discussed in Volume II Appendix D Section D.4.

Comments

TSP-0012/002

30 year liners for millions of years of by-product. That's just asinine. Excuse my language. But how can anybody possibly think that a 30 year liner is going to do any good?

Response

The purpose of a liner is to minimize the waste getting to the groundwater while the trench is open. Once the trench is closed, groundwater mitigation is provided by a cap consisting of various layers of materials that is designed to minimize the amount of infiltration and intrusion.

Comments

L-0044/095

CRD, p. 3.87 Original comment #51 stresses the need to look at T Plant as a TSD and to identify what mods to T Plant are anticipated. DOE's response refers the reader to Section 2.2.2; however, that sections doesn't provide much in detail.

Response

Further details on T Plant modifications can be found in the Technical Information Document (FH 2003). Design, at this time, is at a preconceptual stage. Conceptual modifications are primarily in-canyon installation of equipment.

Comments

E-0043/065, EM-0217/065, EM-0218/065, L-0056/065, LM-0017/065, LM-0018/065

What are soil fixants and what are the potential short and long-term hazards and/or risks associated with fixants? What specific fixants is DOE considering? Any hazards and/or risks associated with fixants should be included within this HSW EIS.

Response

DOE expects to use soil fixants to minimize dust generated during construction activities, waste disposal, and final closure activities. Soil fixants used to accomplish these tasks are expected to be water or other non-regulated substances suitable for spray application. Prior to initiating work, manufacturer's descriptive literature describing product components and application instructions shall be submitted for approval and must meet technical specifications for earthwork and excavated material handling at the Hanford Site.

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L-0055/063

DOE's preferred alternative is the disposal of LLW, MLLW, and ILAW in a single, lined facility at the Central Plateau. If all of these wastes are in one trench, this may interfere with retrieval operations. It would be difficult to retrieve one type of waste and not disturb the others once the site is buried. It would also be difficult to determine where leakage or compromised containers are located. Could leakage or a degraded container located next to others have an influence on adjacent waste types? The CTUIR believes the "lined" trench is a good option but this disposal in a lined, retrievable process should be accelerated.

Response

During final design a combined-use disposal facility could be configured in numerous ways. Different waste types could be disposed of in separate cells within a combined-use disposal facility, or different waste types could be disposed of in the same cell (commingled). Little interaction between the different waste types is anticipated because MLLW, LAW, and the melters would meet applicable regulatory requirements for disposal. In addition, all waste types would need to meet the waste acceptance criteria for that disposal facility. The separate cells could be permitted under RCRA where appropriate, or the entire facility could be operated under a single regulatory program (See Volume I Sections 3.1.5 and 3.1.6).

Comments

E-0035/001

What I have read about the dumping of 70,000 truckloads of radioactive and hazardous waste in unlined soil trenches at Hanford concerns me deeply. Of special concern is a lack of possible alternatives with associated cost and benefits analysis. I am already concerned about the potential ground water contamination of the Columbia River from the existing conditions at Hanford. The current waste plan raises the possibility of this potential problem of contamination almost to a certainty, maybe not in my lifetime, maybe not in yours, but surely during my children or their children's lives.

Response

The HSW EIS considers a wide range of alternatives for disposal of low level waste in both lined and unlined facilities. Lined trench alternatives include leak detection and leachate collection capabilities. In addition, groundwater monitoring would be done in compliance with applicable RCRA and State hazardous waste, TPA, and DOE requirements to validate the performance of the disposal facilities. The preferred alternative is to dispose of low level waste in newly constructed lined disposal facilities as soon as they are available. For purposes of analysis the HSW EIS assumes this would occur by 2007. MLLW is currently being, and will continue to be, disposed of in lined facilities. The EIS includes discussion of the cumulative effects of past, present, and reasonably foreseeable actions. See Volume I Section 5.14 and Volume II Appendix L.

The HSW EIS estimates that up to 33,900 shipments of LLW, MLLW, and TRU waste could be shipped to Hanford if the upper bound waste volumes are realized. The actual number of shipments is expected to be less than this.

The HSW EIS evaluates impacts to the Columbia River and downstream populations for about 10,000 years. For all alternatives analyzed in this HSW EIS, DOE has analyzed the long-term movement of contaminants through soil and groundwater to the Columbia River. In all cases, it found that the water quality of the Columbia River would be virtually indistinguishable from the current river background levels. The concentrations of all the constituent contaminants were well below benchmark drinking water standards at a hypothetical well located near the Columbia River. The impacts of groundwater reaching the river are discussed in Volume I Sections 5.3 and Volume II Appendix G. See also Volume I Section 5.11 and 5.14 and Volume II Appendixes F and L.

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Comments

L-0014/009, L-0022/009

The potential disposal of low level and mixed waste in the chemical processing canyons is supported, provided that engineering studies and environmental analyses support the validity of this concept.

Response

Information about the canyon facility disposal initiative can be found in Volume I Section 3.2.3.

Comments

L-0041/059

DOE should consider siting new waste disposal facilities in areas that already contain vadose zone contamination. The clean excavated surface soils can be stockpiled for future caps use. The contaminated soils can be segregated into lightly contaminated soils for daily cover and more contaminated soils requiring remediation and stabilization. A strategy that uses contaminated areas will help minimize long-term impacts on the environment.

Response

Use of contaminated soil may involve problems with worker safety and containment of radioactive contamination. Some new waste disposal facilities analyzed in this EIS, would be sited in other areas of the industrial-exclusive zone, set forth in the Hanford Comprehensive Land Use Plan EIS.

Comments

L-0044/129

The RHSW EIS does not include analyses of significant adverse environmental impacts that may result from operation of facilities needed for characterization, processing, treating, and storing TRU and TRU-M.

L-0055/061

Key facilities necessary to treat waste have not been built and interim storage is a crucial management option often reflected in this decision document. Some of the most important topics have been incorporated into sections on controversial issues or uncertainties.

Response

The completion of this HSW EIS is one of the major steps needed in obtaining the required processing and certification capabilities for RH TRU waste. The impact of storing, processing, and certifying TRU waste (including mixed TRU waste) is analyzed in the HSW EIS. See Volume I Section 5 and associated Volume II appendices.

An expanded discussion of uncertainties associated with the HSW EIS impact analyses is included in Volume I Section 3.5.

Comments

L-0034/004

USDOE says the imported RH TRU will eventually be shipped to the Waste Isolation Pilot Plant (WIPP) in New Mexico. However, the SWEIS notes that the capacity to process, certify, and ship RH TRU to WIPP is not available anywhere, and would require new facilities and processing operations at Hanford. It also notes that DOE's hazardous waste permit for WIPP, issued by the state of New Mexico Environment Department, currently authorizes neither the disposal of RH TRU nor TRU commingled with PCBs.

Facilities

TSP-0006/002

I feel that the EIS does not adequately consider proper facilities, buildings, and being in place. The liners for the ditches, they are not ready, and they have already started, have been transferring in the transuranic waste.

Response

The completion of this HSW EIS is one of the major steps needed in obtaining the required processing and certification capabilities for RH TRU waste. The impact of storing, processing, and certifying TRU waste (including mixed TRU waste) is analyzed in the HSW EIS. See Volume I Section 5 and associated Volume II appendices.

EPA authorization to dispose of RH-TRU waste at WIPP is pending. Approval of the permit by New Mexico Environment Department is expected in the FY 2006 timeframe.

EPA has granted WIPP authorization to dispose of polychlorinated biphenyls (PCBs). In March 2002, WIPP applied for changes to its permit to allow it to dispose of waste containing PCBs. Approval of the permit revision by the New Mexico Environment Department is pending. Based on the assumption that the changes will be accepted, PCB treatment would not be required. See Volume I, Section 2.1.3.

These TRU wastes are not expected to be stored onsite for an extended period of time. However, they are expected to be stored above ground at the Central Waste Complex and T Plant and (in the case of remote handled, non-mixed TRU waste) underground in concrete boxes so that they will have no contact with the soil. The storage of these wastes will be monitored in compliance with applicable RCRA, State of Washington dangerous waste regulations, and/or DOE requirements.

Comments

L-0014/008, L-0022/008

Funding must be provided for the cost of facilities to perform these functions [importation of TRU wastes from other DOE sites for repackaging, certification, and storage prior to shipment offsite for disposal] and the related operational costs.

L-0014/010, L-0022/010

If new or expanded facilities for the repacking and certification of both low level and mixed wastes are needed at Hanford, they should be provided as expeditiously as possible. Provisions must be made in DOE planning for long-term stewardship of the site through some process other than annual appropriations, such as trust funds, tipping fees, or other sources of protected funding.

Response

Volume I Section 2.2 describes existing and proposed facilities for each alternative group. Consolidated cost estimates for the continued operation of existing facilities, the modification of existing facilities, construction of new facilities, and operation of the new or modified facilities are summarized in Volume I Table 3.21.

DOE requests funds from Congress based on its cleanup schedules.