Comments

E-0048/006

The EIS assumes hazardous and radioactive waste can be adequately buried at Hanford. This encourages increased production of such waste. However, since there really is no safe way to dispose of toxic materials with half lives longer than humans will probably be around, the sensible thing to do would be to not produce toxic wastes in the first place.

F-0002/005

Stop creating radioactive and hazardous waste[.]

L-0011/004

STOP GENERATING THE WASTE!

L-0020/005, TSE-0021/005

I will settle for nothing less than the complete halt of the manufacturing of radioactive nuclear waste, and the immediate clean-up of the DOE's deplorable legacy has left our children to contend with. The people of this country will not stand for this type of behavior.

P-0054/001

Stop the production.

TPO-0013/010

We will never have a sane, responsible process for clean up until we eliminate the source of the wastes.

TPO-0016/001

Number one is, this site has done a tremendous amount of damage to the environment already. In terms of nuclear weapons complex overall within the United States, it has the lion's share of nuclear waste…..Hanford's done its share.

TSP-0003/005

I want to see us stop creating this waste.

TSP-0014/002

Well, we have had 50 years to work out the emergency situation and figure out what we are going to do with this radioactive material. And instead all we do is generate more of it. And don't solve the problem at all.

Response

Some additional wastes will be generated as part of the cleanup of Hanford Site and other DOE sites. However, plutonium production, the source of most of the waste created, has stopped at Hanford. TRU waste, high-level waste, and spent nuclear fuel will be sent to underground repositories in other states that have been designed to safely contain the waste.

DOE is committed to cleaning up the Hanford Site in accordance with the Tri-Party Agreement (TPA) and applicable environmental requirements under federal and state laws and regulations. As of February 1, 2003, DOE had met 99% of its TPA milestones on or ahead of schedule. A lot in the way of cleanup has happened at Hanford over the last decade. Portions of the site have already been cleaned up, removed from the National Priority List (NPL), and released for other uses (e.g., the 1100 Operable Unit). As part of the river corridor cleanup, DOE is remediating contaminated soil sites, decommissioning the plutonium production reactors and associated facilities, removing production reactor fuel from the K Basins to interim storage in the 200 Area, and treating groundwater contaminated by past operations. Groundwater contamination beneath the Hanford Site is being studied and remediated by the ongoing CERCLA program in accordance with the Tri-Party Agreement. See Volume II Appendix N, Section N.2.4. See Volume III Section 2.0, Item 6 of the CRD for more examples of cleanup at Hanford.

Waste

DOE is responsible for the cleanup of dozens of sites around the country. DOE's approach is to consolidate and dispose of radioactive waste from all its cleanup efforts in the safest and most cost-effective manner possible. Hanford and other sites would be available for the disposal of low-level waste and mixed low-level waste; WIPP is used for the disposal of TRU waste; Yucca Mountain is expected to be used for the disposal of high-level waste and spent nuclear fuel. Many more curies of waste will be sent offsite from Hanford than will be received from offsite. Analysis indicates that these wastes could be handled without complicating future remediations, or diverting resources or disposal capacity from other Hanford cleanup activities.

The Hanford clean-up effort is expected to be completed in 2035, followed by a long-term stewardship program that ensures waste remaining onsite is appropriately managed.

Comments

THR-0014/002

… if they kept this waste where it's produced, San Francisco, Los Angeles, "Phila-dam-delphia" [sic], wherever, if they stored the waste where it came from, we wouldn't have this problem. But do you know what, I'd bet they'd think twice about manufacturing as much waste as they manufacture.

Response

Some additional wastes will be generated as part of the cleanup of Hanford Site and other DOE sites. However, plutonium production, the source of most of the waste created, has stopped at Hanford. TRU waste, high-level waste, and spent nuclear fuel will be sent to underground repositories in other states that have been designed to safely contain the waste.

DOE's radioactive waste will continue to be disposed of in several states around the country where there are existing DOE and commercial disposal facilities. See Volume I, Figure 1.2.

Comments

L-0014/011, L-0022/011

The 618-10 and 11 waste disposal sites must be addressed as priority items due to their proximity to Energy Northwest facilities and the Columbia River.

Response

Waste streams resulting from Hanford cleanup actions are factored into the HSW EIS cumulative impact analysis. In some cases, waste streams are directly considered as part of the alternatives evaluation. For example, processing and certification of TRU waste from cleanup of the 618-10 and 618-11 Burial Grounds is part of the projected TRU waste volumes analyzed in all alternative groups.

Comments

TSE-0031/001

It [the DEIS] does not include high-level waste.

TSE-0031/003

It [the DEIS] does not include spent nuclear fuel.

TSE-0031/008

It [the DEIS] does not include commercial nuclear fuel.

TSE-0031/009

It [the DEIS] does not include high-level waste from other sites.

Response

DOE plans to dispose of HLW and spent nuclear fuel from commercial nuclear power and DOE facilities at the Yucca Mountain National Repository being developed under the Nuclear Waste Policy Act. Storage of HLW or spent nuclear fuel is not within the scope of this EIS.

Comments

L-0041/035

The large representative elemental volumes used to conduct the numerical fate and transport modeling will tend to minimize DOE's ability to predict contaminant fluctuations at specific vadose and groundwater monitoring wells. Oregon recommends that DOE conduct more specific numerical modeling studies of the proposed waste trenches to verify environmental impacts. Revised modeling should include key model performance and design expectations and refined inventories (based upon mass), while incorporating smaller scale geologic features that have been demonstrated to effect lateral and vertical transport. This modeling can then be used to establish the mass capacity of each trench.

Response

The HSSWAC would be revised as needed, based on periodic performance assessment updates prepared during disposal facility operations, to ensure that long-term impacts would not exceed established dose standards. The HSSWAC may also incorporate requirements for greater confinement of higher-activity LLW and MLLW through disposal in high-integrity containers, or by grouting the waste in place in the disposal facility.

The maximum point of impact from multiple and widely dispersed sources may not necessarily be directly underneath the Low Level Burial Grounds or at the Low Level Burial Ground boundary. To model the groundwater impacts from multiple and widely dispersed disposal units over long periods of time, a 1-km point of analysis location was deemed to be more appropriate and representative than a regulatory point of compliance well location, for purposes of NEPA analysis. The point of analysis approach is considered technically appropriate for a NEPA evaluation of groundwater impacts over the long-term (10,000 years) time period analyzed. The 1-km point of analysis is not intended to represent the proposed locations for actual monitoring wells that would be used during the operational and closure time period. Groundwater impacts at the facility boundary (about 100 meters) have been added to the impacts identified for the preferred alternative and are discussed qualitatively for the other alternatives. A discussion of the differences between the 1-km point of analysis and the disposal facility boundary is provided in Volume I Section 5.3 and Volume II Appendix G.

Comments

F-0030/001

How much new waste is to be brought in?

Response

The HSW EIS evaluates a range of waste receipts at Hanford to encompass the uncertainties regarding quantities of waste that would ultimately be managed at the site. The waste volumes evaluated include a Lower Bound waste volume consisting mainly of Hanford waste, and an Upper Bound volume that includes additional quantities of offsite waste that Hanford might receive consistent with WM PEIS decisions. The HSW EIS includes an evaluation of Hanford Only waste. The Hanford waste evaluation provides a basis with which to determine the impacts of varying quantities of offsite waste at Hanford. See Volume I Section 3.3 and Volume II Appendices B and C for a description of the waste volumes.

Comments

E-0043/010, EM-0217/010, EM-0218/010, L-0056/010, LM-0017/010, LM-0018/010

The HSW EIS also fails to give an exact quantity of waste that would be imported. Instead, it gives lower and upper boundaries. This quantification is error because

1) each extreme of these ranges could produce very different environmental
2) there is no clear estimate of pre-1970 TRU waste;
3) the EIS is vague about what "suspect" TRU encompasses; and
4) the EIS should specify whether waste generated from tank remediation is included in the estimates.

The EIS should 1) pinpoint the exact quantity and source of each type of waste to be disposed at Hanford; 2) state explicitly the relative proportions of waste going to Nevada Test Site versus the Hanford Site; and 3) elaborate on the nature of "suspect" TRU.

Also, the HSW EIS fails to include an inventory or classification of several radionuclides that occur in sufficient quantity to be 'of interest' (ex: iodine-129). The draft HSW EIS is not complete without this data.

Response

The HSW EIS evaluates a range of waste receipts at Hanford to encompass the uncertainties regarding quantities of waste that would ultimately be managed at the site. The waste volumes evaluated include a Lower Bound waste volume consisting mainly of Hanford waste, and an Upper Bound volume that includes additional quantities of offsite waste that Hanford might receive consistent with WM PEIS decisions. The HSW EIS includes an evaluation of Hanford Only waste. The Hanford waste evaluation provides a basis with which to determine the impacts of varying quantities of offsite waste at Hanford. See Volume I Section 3.3 and Volume II Appendices B and C for a description of the waste volumes.

More quantitative analysis of Iodine-129 and cumulative impacts has been added to Volume I Section 5.14 and Volume II Appendix L.

The HSW EIS evaluates the consequences of various site-specific alternatives to the ongoing waste management program at Hanford, consistent with WM PEIS (DOE 1997b) decisions regarding certain TRU waste, LLW, and MLLW streams. Site-specific waste management actions at Hanford involve transportation, treatment and processing of TRU waste and MLLW, disposal of LLW, MLLW and ILAW, and storage of LLW, MLLW, and TRU waste. A discussion of the WM PEIS and other NEPA review documents relevant to the HSW EIS can be found in Volume I Section 1.5.

The WM PEIS was a comprehensive evaluation of DOE nationwide waste management. The WM PEIS evaluated a broad suite of alternatives for waste management across the DOE complex, including managing most waste at generator facilities, or consolidating waste management at fewer sites that have existing facilities suitable to accept waste from other facilities. The impacts of those alternatives were compared for a variety of waste volumes at different DOE sites, including larger quantities of waste than are evaluated in the HSW EIS. The general result of the WM PEIS was that radioactive and hazardous wastes generated at a DOE site should be disposed of at that site unless the site was not capable of or not technically able to support those actions. DOE determined there was sufficient information in the WM PEIS to support decisions regarding the sites that were suitable for long-term waste management missions. Those decisions included processing and disposing of Hanford waste at Hanford, and the importation of wastes from other sites that could not adequately handle them. Decisions made as part of the WM PEIS made Hanford available for the disposal of low-level waste and mixed low-level waste from other DOE generators. The initial WM PEIS decisions related to LLW, MLLW, and TRU waste were issued between January 1998 and February 2000.

Comments

L-0044/112

Waste volume forecasts do not include significant inventories of waste and contamination that may, under reasonably expected actions, require storage, treatment, and/or disposal in Hanford's waste management facilities. Cumulative impact analysis is based on incomplete inventories of waste and contamination and an incomplete understanding of contaminant movement in the vadose zone and groundwater.

Groundwater analyses suggest that if full inventories of contaminants were included, and impacts were projected at facility boundaries as required by regulation, drinking water standards would be exceeded, even if only the "Hanford-only" waste volumes were assumed. These incomplete analyses suggest likely exceedences, given margins of uncertainty that must be associated with the calculations. Yet, the Revised HSW-EIS does not discuss measures that could mitigate these potential impacts, such as increased groundwater and vadose zone monitoring, or more complete waste treatment.

Response

The HSW EIS uses best available data for estimating inventories of hazardous and radioactive wastes. These data are obtained from information management systems maintained at Hanford and other DOE sites. Most of the waste will be generated by environmental restoration activities, and there is uncertainty about the amounts that will be generated. Areas of uncertainty are discussed in Volume I Section 3.5.

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The maximum point of impact from multiple and widely dispersed sources may not necessarily be directly underneath the Low Level Burial Grounds or at the Low Level Burial Ground boundary. To model the groundwater impacts from multiple and widely dispersed disposal units over long periods of time, a 1-km point of analysis location was deemed to be more appropriate and representative than a regulatory point of compliance well location, for purposes of NEPA analysis. The point of analysis approach is considered technically appropriate for a NEPA evaluation of groundwater impacts over the long-term (10,000 years) time period analyzed. The 1-km point of analysis is not intended to represent the proposed locations for actual monitoring wells that would be used during the operational and closure time period. Groundwater impacts at the facility boundary (about 100 meters) have been added to the impacts identified for the preferred alternative and are discussed qualitatively for the other alternatives. A discussion of the differences between the 1-km point of analysis and the disposal facility boundary is provided in Volume I Section 5.3 and Volume II Appendix G.

Several mitigation measures have been built into the alternatives addressed in the final HSW EIS, including installation of barriers, liners, and leachate collection systems in disposal facilities; treatment of MLLW to

meet applicable RCRA and state requirements; and in-trench grouting or use of HICs for Cat 3 LLW and MLLW. Revised analyses in the final HSW EIS indicate that such measures would reduce the estimated releases and levels of groundwater contamination. As set forth in Volume I Section 5.3, for the action alternatives, constituent concentrations in groundwater at 1 km from the disposal facilities are expected to be below the benchmark drinking water standards. Water quality in the Columbia River would be virtually indistinguishable from the current background levels.

Comments

L-0044/085

Appendix C, pp. C.1-4 The summary (p. S.2) links the proposed action to cleanup and closure of DOE sites across the country. Sec. A.1.2 deals with equity issues, focusing on integrated cleanup. When one comes to Appendix C, however, it is not clear whether the forecasts of off-site waste include only waste from cleanup and closure of sites, or wastes from continuing operation. Paths to Closure (June 1998) [DOE 1998a], one of the sources cited in Appendix C, "was developed under the assumption that the EM program will not accept any newly-generated, non-EM waste after FY 2000." (P. S.11 of Paths to Closure.) It is not clear from the text or tables in Appendix C whether other sources used (which have differing assumptions, time frames, etc.) are also limited to wastes generated before FY 2001 or to be generated only by EM in its cleanup activities. If the forecasts include wastes generated by other DOE programs in the future, then the scope of the activities in the EIS go beyond supporting an integrated national cleanup of legacy wastes and closure of sites.

Response

The HSW EIS uses best available data for estimating inventories of hazardous and radioactive wastes. These data are obtained from information management systems maintained at Hanford and other DOE sites. Most of the waste will be generated by environmental restoration activities, and there is uncertainty about the amounts that will be generated. Areas of uncertainty are discussed in Volume I Section 3.5.

Assumptions regarding waste volume identification and selection methodology are presented in Volume II Appendix C Section C.1.

Comments

E-0043/047, EM-0217/047, EM-0218/047, L-0056/047, LM-0017/047, LM-0018/047

DOE stated on page 1-42 of that study that "DOE still does not have sufficient information on the volume or contaminant composition of [the ER transferred wastes] to perform a meaningful impact evaluation at this time," and "very little information is available to DOE about the composition of environmental wastes."

L-0055/042

The Performance Management Plan targets cleanup to 2035 or sooner, but the technical baseline which forecasts waste volumes doesn't accommodate these accelerated initiatives yet. This next level of detail will not be available until January 2004. This EIS seems to be early. DOE needs a better ideal of waste volumes to be able to target cleanup and management. Otherwise, these are just guesses.

Response

The HSW EIS uses best available data for estimating inventories of hazardous and radioactive wastes. These data are obtained from information management systems maintained at Hanford and other DOE sites. Most of the waste will be generated by environmental restoration activities, and there is uncertainty about the amounts that will be generated. Areas of uncertainty are discussed in Volume I Section 3.5.

Volume II Appendix N in the revised draft EIS and the final HSW EIS expand on the C3T process and the HPMP (DOE-RL 2002). See also Volume I Section 1.4.

Comments

E-0047/027

Fails to consider waste minimization, like compaction etc.

Response

Waste minimization and pollution prevention practices are used at all DOE sites to control waste management costs and to comply with regulatory requirements. The Pollution Prevention Act is discussed in Volume I Section 6.17. DOE's pollution prevention/waste minimization program is discussed in Volume I Section 2.2.5 and Volume II Appendix N.

The programmatic NEPA document, addressing DOE waste management practices, is the Waste Management Programmatic EIS (WM PEIS, DOE 1997b). DOE's pollution prevention program is evaluated in Appendix G of the WM PEIS .

Comments

L-0019/007, TSE-0002/007

Failure to address options for source reduction by aggressively pursuing non-nuclear alternatives [is a an open issue in the revised draft.]

Response

Waste minimization and pollution prevention practices are used at all DOE sites to control waste management costs and to comply with regulatory requirements. The Pollution Prevention Act is discussed in Volume I Section 6.17. DOE's pollution prevention/waste minimization program is discussed in Volume I Section 2.2.5 and Volume II Appendix N.

The programmatic NEPA document, addressing DOE waste management practices, is the Waste Management Programmatic EIS (WM PEIS, DOE 1997b). DOE's pollution prevention program is evaluated in Appendix G of the WM PEIS .

The HSW EIS does not evaluate proposals for power production.

Comments

L-0014/013, L-0022/013

The proposed disposal of the K Basin sludge as TRU wastes following interim storage of the wastes in the T Plant has not been adequately analyzed. The Environmental Assessment (EA), which was prepared several years ago for the packaging and movement of the sludge to the T Plant for interim storage did not address the processing and packaging of these wastes for disposal at the WIPP. Information must be provided regarding the acceptability of these materials for disposal of WIPP.

Response

Radioactive solid wastes, including those containing polychlorinated biphenyls (PCBs) and other substances regulated under the Toxic Substances Control Act (TSCA), considered within this HSW EIS are shown in Volume I Section 2 Figure 2.1. Descriptions of the waste streams are contained in subsequent sections. PCB-commingled waste is discussed in Volume I Section 2.1.3.3, and K Basin sludge is discussed in Volume I Section 2.1.3.7. Information on the volume of waste associated with each stream is contained in Volume I Section 3.4. The impacts of these waste streams are analyzed in Volume I Section 5.

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.

Comments

L-0044/141

Health impacts from disposal of chemicals is absent from the RHSW EIS. Ecology maintains that chemical inventory must be estimated and added risk to the health of workers, the public, and future residents evaluated

Response

The HSW EIS includes the impacts of all LLBG previously disposed waste in its evaluations of long-term groundwater impacts in Volume I Section 5.3, Volume I Section 5.11, Volume I Section 5.14, and in Volume II Appendixes F, G, and L. LLBG previously disposed waste includes LLW disposed of since 1962, LLW disposed before and after the regulatory definition of TRU promulgated in 1970, and wastes disposed before and after the application of RCRA hazardous waste management standards to certain Hanford LLW streams in 1987. The HSW EIS impact estimates are based on chemical and radionuclide inventories. Past-buried LLBG wastes will be addressed within the framework for managing RCRA past practice and CERCLA units established under the TPA.

Hazardous chemicals in MLLW have been characterized and documented since the implementation of RCRA at DOE facilities beginning in 1987. MLLW currently in storage, and MLLW that may be received in the future, would be treated to applicable state or federal standards for land disposal. Therefore, disposal of that waste is not expected to present a hazard over the long term because the hazardous constituents would either be destroyed or stabilized by the treatment. Inventories of hazardous materials in stored and forecast waste are either very small, or consist of materials with low mobility. See Volume II Appendixes F and G.

Inventories of hazardous chemicals in waste were not generally maintained by industries in the United States prior to the implementation of RCRA. Consistent with these general practices, inventories of hazardous chemicals in radioactive waste were not required to be determined or documented before the application of RCRA to radioactive mixed waste at DOE facilities in late 1987. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater has been added to Volume I Section 5.3 and Volume II Appendix G.

In addition, the October 23, 2003 Settlement Agreement contains proposed milestones in the M-91-03-01 Tri-Party Agreement Change Package for retrieval and characterization of suspect TRU waste retrievably stored in the Hanford LLBGs (United States of America and Ecology 2003). As part of that agreement, DOE will manage the retrievably stored LLBG waste under the following assumptions: (1) all retrievably stored suspect TRU waste in the LLBGs is potentially mixed waste; and (2) retrievably stored suspect TRU waste will be managed as mixed waste unless and until it is designated as non-mixed through the WAC 173-303 designation process.

Interactions among different types of waste that could potentially mobilize radionuclides have also been considered as part of the HSW EIS analysis. However, such interactions typically require specific chemical environments or large volumes of liquid as a mobilizing agent, neither of which are known to be present in the solid waste disposal facilities currently in use (see discussion in Volume II Appendix G). Possible effects of this type could be mitigated by selecting candidate disposal sites to avoid placing waste in locations where previous contamination exists.

Waste

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of tank wastes is anticipated in the "Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site" (68 FR 1052). The cumulative groundwater impacts analysis in the HSW EIS also includes those wastes, as described in Volume I Section 5.14 and Volume II Appendix L.

DOE plans to characterize pre-1970 inactive burial grounds and contaminated soil sites, as well as the active LLBGs considered in the HSW EIS alternatives, under the RCRA past practice or CERCLA processes to determine whether further remedial action would be required before the facilities are closed. As part of that process, the long-term risks from these wastes would either be confirmed to be minimal, or the waste would be remediated by removal, stabilization, or other remedial actions to reduce its potential hazard. In all cases, the impacts from these previously disposed wastes would be the same for all alternative groups considered in the HSW EIS, and would not affect the comparisons of impacts among the alternatives or the decisions made regarding disposal of waste received in the future.

Comments

E-0047/010

During the siting process for the Environmental Restoration Disposal Facility DOE and EPA made a commitment to the public that this facility would not be used for the treatment of or disposal of off-site waste and CRK feels strongly that DOE should continue to honor this commitment.

Question # 16- Does DOE and EPA have any plans to back out of its earlier commitment that the Environmental Restoration Disposal Facility would not be used for the treatment or storage of off-site waste?

Response

This EIS does not evaluate a proposal to dispose of waste from offsite generators in the ERDF. Some of the alternatives in the HSW EIS evaluate cases where offsite waste would be disposed of near the ERDF site. However, this was modeled and evaluated as a facility near ERDF rather than as a part of ERDF.

Comments

E-0047/015

[The HSWEIS fails to assess:] The inventories and associated impacts from chemicals known to be already land disposed (nitrates, carbon tetrachloride).

E-0047/016

Failure to include all waste streams inventories and its associated impact from the huge amount of chemical known to be disposed at solid waste burial grounds (e.g. 6.2 tons of nitrate at solid waste burial grounds).

L-0017/007

Many hazardous wastes known to be present in Hanford's low-level burial grounds are not included in USDOE's evaluation. These contaminants include, among others, mercury, beryllium and carbon tetrachloride (known carcinogen). These omissions are irresponsible for health and jurisdictional reasons. The State of Washington regulates mixed wastes but cannot regulate purely radioactive waste. We need the State's help in protecting the people of the Northwest. Better characterization of these mixed wastes is needed

L-0039/008

Hazardous or mixed wastes buried in the low-level burial grounds, and releases from the burial grounds [are

not adequately analyzed in this EIS.]

L-0044/004

The RHSW EIS lacks adequate data on the inventory of waste through characterization. There is very little information about the inventory of dangerous wastes in the burial grounds.

P-0092/001

The new draft EIS which is supposed to analyze the risks of importing and burying radioactive and chemical waste at Hanford, reissued in April, still fails to adequately address citizen's concerns.

TSE-0027/004

The amount of toxic chemicals is amazing. And then all the mixes of wastes are mind boggling.

Response

Hazardous chemicals in MLLW have been characterized and documented since the implementation of RCRA at DOE facilities beginning in 1987. MLLW currently in storage, and MLLW that may be received in the future, would be treated to applicable state or federal standards for land disposal. Therefore, disposal of that waste is not expected to present a hazard over the long term because the hazardous constituents would either be destroyed or stabilized by the treatment. Inventories of hazardous materials in stored and forecast waste are either very small, or consist of materials with low mobility. See Volume II Appendixes F and G.

Inventories of hazardous chemicals in waste were not generally maintained by industries in the United States prior to the implementation of RCRA. Consistent with these general practices, inventories of hazardous chemicals in radioactive waste were not required to be determined or documented before the application of RCRA to radioactive mixed waste at DOE facilities in late 1987. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater has been added to Volume I Section 5.3 and Volume II Appendix G.

In addition, the October 23, 2003 Settlement Agreement contains proposed milestones in the M-91-03-01 Tri-Party Agreement Change Package for retrieval and characterization of suspect TRU waste retrievably stored in the Hanford LLBGs (United States of America and Ecology 2003). As part of that agreement, DOE will manage the retrievably stored LLBG waste under the following assumptions: (1) all retrievably stored suspect TRU waste in the LLBGs is potentially mixed waste; and (2) retrievably stored suspect TRU waste will be managed as mixed waste unless and until it is designated as non-mixed through the WAC 173-303 designation process.

Interactions among different types of waste that could potentially mobilize radionuclides have also been considered as part of the HSW EIS analysis. However, such interactions typically require specific chemical environments or large volumes of liquid as a mobilizing agent, neither of which are known to be present in the solid waste disposal facilities currently in use (see discussion in Volume II Appendix G). Possible effects of this type could be mitigated by selecting candidate disposal sites to avoid placing waste in locations where previous contamination exists.

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of tank wastes is anticipated in the "Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site" (68 FR 1052). The cumulative groundwater impacts analysis in the HSW EIS also includes those wastes, as described in Volume

Waste

I Section 5.14 and Volume II Appendix L.

DOE plans to characterize pre-1970 inactive burial grounds and contaminated soil sites, as well as the active LLBGs considered in the HSW EIS alternatives, under the RCRA past practice or CERCLA processes to determine whether further remedial action would be required before the facilities are closed. As part of that process, the long-term risks from these wastes would either be confirmed to be minimal, or the waste would be remediated by removal, stabilization, or other remedial actions to reduce its potential hazard. In all cases, the impacts from these previously disposed wastes would be the same for all alternative groups considered in the HSW EIS, and would not affect the comparisons of impacts among the alternatives or the decisions made regarding disposal of waste received in the future.

Comments

P-0126/001

The EIS does not fully address the impact of additional wastes to be shipped to Hanford. The wastes currently buried in trenches is not completely characterized and its treatment, and the costs connected thereto, will be complicated and increased if more waste is accepted at the Hanford site.

Response

Hazardous chemicals in MLLW have been characterized and documented since the implementation of RCRA at DOE facilities beginning in 1987. MLLW currently in storage, and MLLW that may be received in the future, would be treated to applicable state or federal standards for land disposal. Therefore, disposal of that waste is not expected to present a hazard over the long term because the hazardous constituents would either be destroyed or stabilized by the treatment. Inventories of hazardous materials in stored and forecast waste are either very small, or consist of materials with low mobility. See Volume II Appendixes F and G.

Inventories of hazardous chemicals in waste were not generally maintained by industries in the United States prior to the implementation of RCRA. Consistent with these general practices, inventories of hazardous chemicals in radioactive waste were not required to be determined or documented before the application of RCRA to radioactive mixed waste at DOE facilities in late 1987. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater has been added to Volume I Section 5.3 and Volume II Appendix G.

In addition, the October 23, 2003 Settlement Agreement contains proposed milestones in the M-91-03-01 Tri-Party Agreement Change Package for retrieval and characterization of suspect TRU waste retrievably stored in the Hanford LLBGs (United States of America and Ecology 2003). As part of that agreement, DOE will manage the retrievably stored LLBG waste under the following assumptions: (1) all retrievably stored suspect TRU waste in the LLBGs is potentially mixed waste; and (2) retrievably stored suspect TRU waste will be managed as mixed waste unless and until it is designated as non-mixed through the WAC 173-303 designation process.

Interactions among different types of waste that could potentially mobilize radionuclides have also been considered as part of the HSW EIS analysis. However, such interactions typically require specific chemical environments or large volumes of liquid as a mobilizing agent, neither of which are known to be present in the solid waste disposal facilities currently in use (see discussion in Volume II Appendix G). Possible effects of this type could be mitigated by selecting candidate disposal sites to avoid placing waste in locations where previous contamination exists.

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals

and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of tank wastes is anticipated in the "Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site" (68 FR 1052). The cumulative groundwater impacts analysis in the HSW EIS also includes those wastes, as described in Volume I Section 5.14 and Volume II Appendix L.

DOE plans to characterize pre-1970 inactive burial grounds and contaminated soil sites, as well as the active LLBGs considered in the HSW EIS alternatives, under the RCRA past practice or CERCLA processes to determine whether further remedial action would be required before the facilities are closed. As part of that process, the long-term risks from these wastes would either be confirmed to be minimal, or the waste would be remediated by removal, stabilization, or other remedial actions to reduce its potential hazard. In all cases, the impacts from these previously disposed wastes would be the same for all alternative groups considered in the HSW EIS, and would not affect the comparisons of impacts among the alternatives or the decisions made regarding disposal of waste received in the future.

The Hanford Only waste volume has been evaluated in all action alternatives and the No Action Alternative to provide a better comparison with the impacts of adding offsite waste. The incremental impacts of offsite waste are the differences between the Lower and Upper Bound Volumes and the Hanford Only impacts for a given alternative.

Comments

E-0019/003, L-0026/003

The draft HSW-EIS has failed to include as a waste source the largest single contributor to groundwater contamination. The excluded source term is the packaged WTP salt waste from the Liquid Effluent Treatment Facility (LETF) (Reference 3, page 4-39). WTP process condensates containing technetium and iodine are treated in LETF and soluble salts removed as a solid salt and packaged for disposal. All the WTP processes produce process condensate and scrubber solutions treated by the LETF. The quantity for each process or supplemental technology is a function of the ILAW process conditions and the flowsheet for process condensate treatment. Some of the processes may result in exceeding the regulatory limit for groundwater radiation exposure.

Response

The Solid Waste Integrated Forecast Technical (SWIFT) Report was the basis for solid radioactive waste expected to be generated in the future at the Hanford Site. This report includes estimates of waste expected from the Liquid Effluent Treatment Facility (LETF), including the salt wastes associated with the treatment of liquid effluents from the Waste Treatment Plant. These salt wastes are included in the Hanford Only volumes of LLW and MLLW analyzed in the HSW EIS. In addition, the radionuclide inventory associated with the salt waste from LETF is a substantial contributor to the 3,200 curies of technetium and 5 curies of iodine in the Hanford Only inventory.

Comments

E-0026/007

It [the EIS] fails to address hazardous waste disposal.

Response

The HSW EIS evaluates the disposal of MLLW, which is radioactive solid waste that also has status as hazardous waste under RCRA and State of Washington regulations. Hanford's non-radioactive hazardous waste is disposed of at offsite commercial facilities, consistent with previous NEPA decisions.

Comments

TSE-0011/008

Secondarily, it's [waste is] not going to be retrievable in the form that it's being currently put.

Response

Waste disposed in LLBGs is not expected to be retrieved once disposed of.

Comments

E-0055/017

Also, incredibly, USDOE fails to adopt the approach of the Washington Departments of Ecology and Health in not issuing a final EIS on the disposal site until the investigation of releases is completed, and alternatives can be presented for changing operations, closure and remediation. We urge USDOE to adopt the same approach and not issue a final EIS until the Hanford LLBGs are investigated for releases and inventoried for the wastes they contain, and alternatives for their closure and remediation can be presented – along with consideration of the cumulative impacts from all Hanford Low-Level Waste Burial Grounds.

L-0052/005

There appear to be no plans to retrieve or mitigate impacts from pre-1970 TRU. We submit that the level of risk associated with these burials remains significantly uncertain. DOE may be confident that contamination from alternative actions presented in this EIS will not compound already existing contamination because the existing plumes should have moved by the time the new contamination would reach those areas. However, we contend that the overall uncertainties of inventory and its status already in the vadose zone and/or groundwater at Hanford do not leave room for such sweeping confidence the zones will be relatively clean when new contaminants enter them.

L-0054/009

Second, it [the SW EIS] needs to address pre-1970 TRU waste that is buried in the low-level burial grounds (LLBG) which clearly is under the purview of the Solid Waste Program.

L-0059/003

Some of the radioactive material that was discarded prior to 1970 is what we would now designate as TRU waste [is missing from this EIS]. There is a limited number (many fewer than the total) of waste sites at Hanford that should be characterized to determine which sites in addition to 618-10, 618-11 and the caissons in 200-W contain TRU waste in non-RCRA-compliant burials. Then the portions of each site containing TRU waste should be retrieved, packaged, and shipped to WIPP for permanent disposal.

THR-0002/004

DOE needs to acknowledge that these contamination risks are going on right now, and these need to be included in the Environmental Impact Statement so we know what the risks are from adding more wastes to these burial grounds.

Response

Waste in inactive burial grounds closed before 1970, tank waste residuals, and other contaminated soil sites are not within the scope of alternatives considered in the HSW EIS. Wastes placed in the LLBGs before 1970 consist of a relatively small volume (less than 10,000 m3) and the radionuclide inventories have been included in the HSW EIS alternatives analyses. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater is presented in Volume I Section 5.3 and Volume II Appendix G.

Waste

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of the risks from Hanford tank waste is anticipated in the Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site (68 FR 1052). The cumulative groundwater impact analysis in the HSW EIS also includes an evaluation of these wastes, as described in Volume I Section 5.14 and Volume II Appendix L.

DOE plans to characterize pre-1970 inactive burial grounds and contaminated soil sites, as well as the active LLBGs considered in the HSW EIS alternatives, under the RCRA past practice or CERCLA processes to determine whether further remedial action would be required before the facilities are closed. As part of that process, the long-term risks from these wastes would either be confirmed to be minimal, or the waste would be remediated by removal, stabilization, or other remedial action to reduce its potential hazard. In all cases, the impacts from these previously disposed wastes would be the same for all alternative groups considered in the HSW EIS, and would not affect the comparisons of impacts among the alternatives or the decisions made regarding disposal of waste received in the future.

TPA Milestone M-15-00C requires all 200 Area, non-tank farm, pre-record of decision site investigation activities to be completed by December 31, 2008. Site characterization information generated from TPA remedial investigation and LLBG RCRA permitting activities has been used in development of the HSW EIS.

Comments

L-0055/006

A large section of the people that commented on the draft Hanford Solid Waste EIS wanted DOE to demonstrate the ability to quantify and address the waste on the Hanford Site before accepting off site materials. Instead a sliding scale of upward and lower bounds of estimated waste to be received by Hanford is presented. It is extremely unclear that if after over a decade that DOE has real solid estimate in the amount both in physical volume and radioactivity and location of all its sources of waste. The large sliding scale of projected waste volumes is disconcerting and potentially very alarming. It is clear that a fixed volume for storage should be established then more detailed analysis can be refined and completed.

Response

The HSW EIS does not use a "sliding scale" with respect to the waste volumes analyzed. Rather, the EIS evaluates projected waste volume totals that could be expected at Hanford if only Hanford's waste were processed as compared to the maximum total waste volume that could be received at Hanford. This permits a comparison of potential impacts that would encompass the uncertainties regarding quantities of waste that could ultimately be managed at the site. The waste volumes evaluated also include a Lower Bound waste volume consisting mainly of Hanford waste.

The Hanford Only waste volume has been evaluated in all action alternatives and the No Action Alternative to provide a better comparison with the impacts of adding offsite waste. The incremental impacts of offsite waste are the differences between the Lower and Upper Bound Volumes and the Hanford Only impacts for a given alternative.

Comments

THR-0011/003

...what they're calling low-level waste is not low-level waste. Some of it's so radioactive and so dangerous, and yet it's termed low-level waste merely because it doesn't fit into any of the other categories. It's not a measure of how radioactive or how dangerous it is.

Response

DOE appreciates the need for careful management of low level waste.

Comments

L-0041/022

The EIS discusses the disposition of failed low-activity waste melters but does not include any information on the fate of the high-level waste (HLW) melters. This discussion should include the proposed waste classification of the HLW melters, how this classification was arrived at, and where the HLW melters will be disposed.

L-0041/023

The EIS discussion on the disposal of failed low-activity waste melters is inadequate. In particular, the EIS needs to discuss the condition of any partially vitrified waste remaining in the failed melters, its waste immobilization performance characteristics, and the performance characteristics of the melters themselves as waste containers. This analysis should be conducted for varying amounts of partially vitrified waste in the melters up to the maximum expected for any type of failure.

L-0054/008

The EIS analysis has several major problems associated with it. First, it addresses high-level waste (immobilized low-activity waste/high-level waste melters), which does not fall under the purview of the Solid Waste Program, but is regulated by the Nuclear Waste Policy Act as defense waste. Analysis of impacts from this waste stream needs to be decoupled from the SWEIS analysis.

L-0059/004

The HLW melters removed from the Waste Treatment Plant will not necessarily meet the requirements for disposal in a RCRA-compliant facility at Hanford. This is particularly true if the outlet of the melter plugs and HLW solidifies inside the melter. I understand that this general subject is to be addressed in the Tank Waste EIS.

Response

For purposes of analysis, this HSW EIS analyzed the disposal of 6,825 cubic meters of Hanford WTP melters that would meet applicable requirements, such as those under the HSSWAC for onsite disposal of MLLW. The disposition of all melters from vitrification at Hanford will be addressed in DOE's Tank Retrieval and Closure EIS. In addition, the Yucca Mountain Repository Environmental Impact Statement evaluated transportation and disposal of melters from Hanford as part of the cumulative impacts analysis (see DOE 2002c - Volume II, Appendix A). The text of the final HSW EIS has been clarified. See Volume I Section 2.1.