ORIGINAL COMMENTS

Commercial Low-Level Radioactive Waste Disposal Site

Richland, Washington

(3)

CITY OF KENNEWICK WASHINGTON

RECEIVED
OCT 2 7 2000
DIVISION OF RADIATION PROTECTION

October 25, 2000

Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection, Mail Stop 47827
Olympia, WA 98504-7827

RE: License Renewal for Commercial Low-Level Radioactive Waste Disposal Site

Dear Ms. Darling:

The City of Kennewick urges the State to expeditiously complete the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation to allow the Department of Health to renew the facility license and approve a facility closure plan.

We support the extension of the facility license with the following provisions:

- Extend the current US Ecology license for operation of the facility for an additional five-year period.
- Amend the facility license to permit the acceptance of up to 100,000 cubic feet per year of diffuse NARM material at the disposal site. This is consistent with the legal settlement and current disposal agreement between US Ecology and the Washington Department of Ecology.
- Washington Department of Health should approve the proposed US Ecology cover design as described in the 1996 Closure Plan.
- Washington Department of Health should approve the proposed closure schedule, which will close seven trenches immediately and the rest of the site in the year 2056.

Economic and Community Development

The commercial LLRW Facility is an important component of the economic infrastructure of the Tri-Cities area. As the DEIS states, without the facility millions of dollars in funding would be lost to Benton County and to the Hanford Area Economic Development Fund.

The Hanford Area Economic Development Fund Committee provides low interest loans and grants from waste surcharges to local government and business to stimulate the local economy. The fund is maintained through generator fees on low-level waste disposed of at the commercial facility.

210 W. 6th Avenue • P.O. Box 6108 • Kennewick, WA 99336-0108
(509) 585-4200 • Fax (509) 585-4445

Medical/Academic Research

A safe, reliable, economical low-level waste disposal facility is a necessary part of the medical research infrastructure. Medical research relies heavily on radioactive material, some of which ultimately requires disposal. The commercial LLRW facility on the Hanford Reservation has been and should continue to be part of that infrastructure.

Consistency with DOE Operations

Use of the 100-acre facility leased by the state from the federal government for low-level radioactive waste disposal is wholly consistent with DOE's surrounding land use and future planning.

Environmental impacts, if any, from the commercial facility are insignificant when compared to the larger DOE operation.

Analyses within the EIS and regulatory documents prepared by Washington Department of Health or the licensee in compliance with the license confirm that the facility can be safely operated for at least fifty more years and then closed in accordance with criteria that the state deems appropriate.

Conclusions

A primary benefit of having the disposal facility within the Northwest Compact is that fees associated with low-level radioactive waste can be maintained at a reasonable and fairly consistent level for generators.

Another regional benefit from the commercial LLRW disposal site is the attraction of new or existing industry to the region. The HAEIF receives $4.50 of the $6.50 surcharge assessed on each cubic foot of waste received for disposal. These monies are used to build and diversify the economy of the Tri-Cities.

Approximately $14 million in revenue to the county and $25 million in revenue to the Hanford Area Economic Investment Fund will not be realized if the US Ecology license is denied.

Having reasonable disposal costs benefits both individual businesses and the economic health of Washington State.

If the US Ecology license is denied, unavoidable impacts include loss of local revenue, loss of low-level waste disposal capacity for in-state and Northwest Compact generators, loss of local jobs, and loss of continued contributions to the Perpetual Care and Maintenance Fund.

No impacts to future land use are expected because relicensing the commercial LLRW disposal site is consistent with current US DOE land use recommendations.

This being said, it is also true that the US Ecology operated LLRW site is a burden to the communities of Benton County. The surcharges to the wastes deposited are too low given the long-term negative impact this site has on our area and its ability to compete for new business. Being known as one of only two licensed LLRW sites has a price for our communities, and those who benefit should pay to offset those negative impacts. The surcharges should not only be increased, but also be reallocated among all the general purpose governments represented in Benton County.

Sincerely,

James R. Beaver
Mayor

Cc: Senator Patricia Hale, 8th District
Representative Shirley Hankins, 8th District
Representative Jerome Delvin, 8th District
Bob Thompson, Mayor, City of Richland
Mike Garrison, Mayor, City of Pasco
Jerry Peltier, Mayor, City of West Richland
Max Benitz, Jr., Chairman, Board of Benton County Commissioners
Bill Martin, TRIDEC

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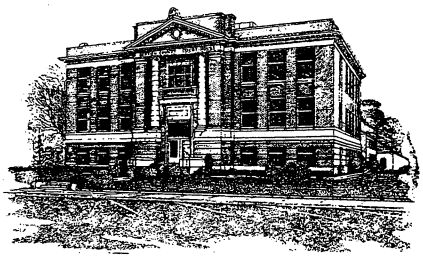

Board of County Commissioners
BENTON COUNTY

P.O. Box 190 • Prosser, WA 99350-0190
Phone (509) 786-5600 or (509) 736-3080
Fax (509) 786-5625

Leo Bowman
DISTRICT 1
Max Benitz, Jr.
DISTRICT 2
Claude L. Oliver
DISTRICT 3

November 6, 2000

Ms. Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection
P.O. Box 47827
Olympia, WA 98504-7827

Re: Benton County Comment on the Draft EIS for the Commercial Low-Level Radioactive Waste Disposal Facility

Dear Ms. Darling,

The attached resolution provides Benton County's public comment on the Washington State Department of Health (DOH) and Department of Ecology (DOE) draft Environmental Impact Statement regarding the license renewal of US Ecology, acceptance of naturally occurring radioactive materials and closure of the commercial low-level radioactive waste facility in 2056. The resolution confers Benton County's support for,

- extending US Ecology's radioactive materials license for another five years with the limitation on the eight isotopes of concern proposed by DOH and DOE;
- changing Chapter 246-249 of the WAC to reflect the settlement agreement between US Ecology and Washington DOH that limits the acceptance of naturally occurring radioactive material to 100,000 cubic feet per year; and
- the acceptance of the US Ecology *Site Stabilization and Closure Plan by* Washington DOH and DOE.

Benton County strongly encourages DOH and DOE to expedite the remainder of the Environmental Impact Statement process and to continue the operation of the US Ecology commercial low-level radioactive waste facility.

Sincerely,

BOARD OF BENTON COUNTY COMMISSIONERS

Max E. Benitz, Jr., Chairman

RESOLUTION

00 541

BEFORE THE BOARD OF COMMISSIONERS OF BENTON COUNTY, WASHINGTON:

IN THE MATTER OF PUBLIC COMMENT ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT REGARDING THE COMMERCIAL LOW LEVEL RADIOACTIVE WASTE DISPOSAL SITE

WHEREAS, the Washington State Department of Health (DOH) and Ecology (DOE) have asked for public comment on a draft Environmental Impact Statement (EIS) regarding the commercial low-level waste disposal facility located within Benton County on leased federal land; and

WHEREAS, the draft EIS reviewed three pending actions, which are:

- Renewal of the US Ecology, Inc., Washington State Radioactive Materials License to operate the commercial LLRW facility;
- Amendment of Chapter 246-249 of the Washington Administrative Code regarding acceptance of diffuse naturally occurring or accelerator-produced radioactive material;
- Approval of US Ecology's *Site Stabilization and Closure Plan* to close the site in 2056; and

WHEREAS, Washington is the host state for the Northwest LLRW Compact which exercises its authority to limit LLRW shipments from non-compact states to the commercial LLRW disposal facility; and

WHEREAS, the site has been open and operating safely since 1965; and

WHEREAS, the draft EIS indicates there is no significant increase in risk in operating the facility until closure in 2056; and

WHEREAS, the draft EIS indicates the risk of continued operation can be further reduced by limiting the acceptance of eight key radioactive isotopes; and

WHEREAS, the commercial LLRW disposal facility generates approximately $300,000 per year in disposal fees and approximately $55,000 per year in lease payments channeled through Washington Department of Ecology to Benton County; and

WHEREAS, commercial nuclear and research operations in Washington and Oregon generate approximately 90% of the commercial LLRW disposed of in the facility; and

RESOLUTION

00 541

BEFORE THE BOARD OF COMMISSIONERS OF BENTON COUNTY, WASHINGTON:

WHEREAS, the current location of the commercial LLRW disposal facility is optimal due to its:

- central location less than 250 miles from the majority of waste producers;
- location in an arid environment that receives less than 7" of rainfall per year;
- proximity to existing radiological contaminated areas;
- location in a supportive community that is well educated on the risks posed by LLRW; and

WHEREAS, financial surety of the closure fund and long-term monitoring fund requires the facility to continue operation until 2056; and

WHEREAS, the acceptance of 100,000 cubic feet of naturally occurring radioactive material will not impact the ability of the commercial LLRW facility to operate and close safely; and

WHEREAS, the near term closure of the facility would force research and medical institutions to store their waste in a potentially hazardous and unsafe manner; NOW, THEREFORE,

BE IT RESOLVED, that the Board of Benton County Commissioners hereby supports the extension of US Ecology's radioactive materials license for another five years with the limitation on the eight isotopes of concern proposed by DOH and DOE, changing Chapter 246-249 of the WAC to reflect the settlement agreement between US Ecology and Washington DOH that limits the acceptance of naturally occurring radioactive material to 100,000 cubic feet per year, and the acceptance of the US Ecology *Site Stabilization and Closure Plan by* Washington DOH and DOE.

Dated this 6th day of Nov, 19 2000

Mar E Bent
Chairman of the Board.

Leo M Bowman
Member.

Claude L. Olson
Member.

Constituting the Board of County Commissioners of Benton County, Washington.

Attest: Julie Lynn Cabbage
Clerk of the Board

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(G. Ballew will distribute)

BALLEW

(5)

Energy Sciences & Engineering
23309 S. 823 PR SE
Kennewick, WA 99338
(509) 627-0678

November 29, 2000

Mr. Gerald Pollet
Heart of America, Northwest
1305 4th Ave
Suite 208
Seattle, WA 98101

Subject: Completion of a Review of US Ecology Commercial Low-Level Burial Ground Environmental Impact Statement

Dear Mr. Pollet:

Please find attached a nine page document containing technical review comments resulting from a review of the subject document. The comments are organized as 17 comments on specific topics and 6 comments of a more general nature. Please note that the review primarily focused on the geotechnical and site characterization aspects of the EIS.

Many of the comments dealt with an apparent failure on the part of the Department of Health (DOH) and the Department of Ecology (Ecology) to appropriately identify, investigate, assess and include various contaminant sources in the EIS. For instance: there was no mention of the TRU waste that was placed in the facility in the late 1970's; there is no discussion of the great volume of liquid that was released at the site or remains as 55 gallon barrels of liquid; there is no mention of individual contaminants such as plutonium put into the trenches; the understanding of the nature and extent of contamination from the resin tanks has not been determined and this source remains unknown; there is no mention of the liquid effluent disposal caissons and what went into them. The reason for not including these contamination sources is not obvious from reading the EIS but I am certain these sources represent significant undetermined environmental risk that must be considered and assessed in the EIS.

Another major area of concern relates to the unresolved sources of groundwater contamination. TCE, strontium-90, cobalt, chloroform and most significantly, plutonium were all detected in the groundwater and their sources were not resolved. Instead an implication is presented that these contaminants originated from off-site and they are dismissed from further discussion in the EIS. To the contrary, my preliminary review of the data in the EIS and in the phase 1 and 2 facility characterization report as well as a cursory review of groundwater contamination data from the rest of the Hanford site, provides convincing evidence that those contaminants originated from the waste burial site. Regardless, the point of the EIS and the facility investigation is to conclusively determine the sources of the contaminants otherwise they should assume that the contaminants originated from the facility and that assumption must be given appropriate

consideration in the risk assessment.

The third major area of concern in the EIS relates to deficiencies in the modeling and risk assessment. The contaminant transport modeling is altogether too simplistic and is demonstrated to be unrealistic. As an example, the models do not predict the occurrence of any of the above mentioned contaminants in the groundwater. The source terms are not representative and the geologic environment is not appropriately represented. Because of these deficiencies in the modeling, the risk assessment is not representative of the true risks associated with this facility.

In summary, the EIS does not adequately assess the impacts to the environment or the health risks and it does not assess real alternatives to relicensing. Therefore, the EIS does not justify the proposed action of relicensing the facility. In addition, the proposed action of approval of the site closure plan is unwarranted because the closure plan does not consider or address the current contamination to the groundwater or the future groundwater contamination. Data from the phase 1 and 2 investigation demonstrate the closure plan is inadequate.

I hope my assessment helps you to provide constructive criticism of the EIS process and I hope it leads to a complete revision of the EIS and a more detailed, thorough and professional facility investigation. Currently, this is the only burial ground available to dispose of commercial low-level radioactive waste and it would be difficult to build another. However, this facility can only be relicensed if all of the environmental impacts are appropriately quantified and understood, along with alternatives, and we can justify accepting the potential environmental hazards for this site in order to have a place to put our waste. That is what the EIS is supposed to do!

If you have any questions or concerns about this review, please do not hesitate to contact me.

Very Truly Yours,

John R. Brodeur, P.E.
Principal
ES&E

via email and US Mail

Review Comments on "Draft Environmental Impact Statement, Commercial Low-Level Radioactive Waste Disposal Site, Richland, WA" August 2000

Review Comments by: John R. Brodeur, P.E.
Energy Sciences & Engineering
23309 S. 823 PR SE
Kennewick, WA 99338
509-627-0678

Review Comments Prepared for: Heart of America Northwest Research Center
1305 4th Ave Suite 208
Seattle, WA 98101

Comments on Specific Topics:

1. Trichloroethylene (TCE) was detected in the 3rd quarter of 1998 in the groundwater in well MW3 at a level of 5.70 ug/L and it increased in the 4th quarter of 1998 to a value of 10 ug/L (see US Ecology, 1999 Appendix H). This monitoring well is located on the downgradient side of the facility (East side). The only source of TCE that cold be considered upgradient of the Disposal Site is the disposal cribs in the 200 West Area. However, a review of the TCE contamination plume data from beneath the 200 W Area reveals that these small plumes are isolated as defined by a minimum contour of 5 ug/L. Further, if one reviews the data from the monitoring wells between the Disposal Site and the 200 W Area, one finds that no TCE is or has been detected in in most of the wells and the maximum values detected adjacent to but near the 200 W Area TCE plume is about 0.5 ug/L. Therefore, it is extremely difficult to support an argument that the TCE originated from "activities elsewhere on Hanford" as suggested or implied in the EIS (Errata Sheet, October 12,200 for pg 107-108).

The conclusion reached by this reviewer is that the TCE clearly originated from this Disposal Site. That conclusion along with all of the implications that the waste site contamination has already reached groundwater must be considered in the EIS. Additionally, before the Closure Plan can be approved (pending action in the EIS), there must be mitigation of the groundwater contamination according to MTCA and this contamination must be considered in the Closure Plan.

2. The Errata Sheet, states that "the concentrations for some of these radionuclides and hazardous substances are higher in the upgradient wells than in the downgradient well, indicating the source is, at least partly, from activities elsewhere on Hanford". This statement makes a broad conclusion about the source(s) of contaminants by grouping together several hazardous chemicals and radioactive constituents and implying that they all originated from the same off-site source. The EIS must deal with each contaminant and radioactive constituent separately and resolve the problem of identifying the source of each. Without a doubt, some contaminants such as tritium, nitrate and I-129 have originated from other Hanford sites, probably in addition to originating from the low-level waste Disposal Facility. But, the question of the sources of each of the individual contaminants must be resolved in a valid manner. If the source of a contaminant cannot be resolved, then the EIS must assume that the source is the Disposal Site and it must be

and it must be dealt with in the Closure Plan before that plan can be approved.

3. As with comments 1 and 2 above, groundwater contamination data indicate that chloroform contamination originated from this facility. A review of the chloroform concentration data from groundwater monitoring wells around the site do not support the argument that this contaminant originated from off-site. If additional data is available that supports the argument for another source, that information should be included, discussed and presented in such a manner that the another source is demonstrated. Otherwise, Disposal Facility should be designated as the source.

4. There is an argument presented in the statement in the EIS identified in comment 2 above, that because a contaminant or radionuclide is higher in concentration in an upgradient well than in a down gradient well, the contaminant could not have originated from the Disposal Site. This argument does not consider the fact that the groundwater gradient at this site is relatively flat and local inhomogeneities in the stratigraphy create local variations in groundwater flow direction as exemplified by this exact condition in the 200 West Area beneath the SX Tank Farm. With only six groundwater monitoring wells, there is not enough data to support the statement that all of the up-gradient wells are in fact, up-gradient of the waste trenches.

Additionally, the two up-gradient wells (MW9 and MW13) may be up-gradient relative to groundwater flow by they are probably not up-gradient relative to migration of the contaminants in the vadose zone. Contamination can migrate a considerable distance in the horizontal direction through the vadose zone to enter the groundwater at a point that is actually up-gradient in the groundwater relative to the monitoring wells. This point must be considered when attempting to assess the sources of groundwater contamination.

Finally, there is no consideration for past documented reversals in the groundwater flow direction due to releases of effluent in the 200 East Area as documented in Zimmerman, (et al., 1986). The area underneath the Disposal Site was subjected to such changes resulting from effluent releases in the 200 E Area and from the BC Cribs.

5. The Phase 1 and 2 investigation report states that the source of TCE and chloroform in the groundwater is not known. "The limited data are insufficient to provide conclusive trend information for these wells or to speculate regarding a potential source(s)" (US Ecology, 1999, page 4-2). This conclusion is carried over into the EIS but it is modified by emphasizing the potential for an off-site source. In addition investigation report says that "the apparent presence of uranium-234 is unexplained at this time" (page 4-3). Although this reviewer would not hesitate to support a position that adequate data are available to conclude that the source is the Disposal Facility, it is still prudent to investigate this question further. That investigation must be completed before approval of the closure plan and before approval of continued operation of the facility when additional wastes will be placed into the facility. Current data indicate that the contaminants put into the Disposal Facility are much more mobile than anticipated, they have already reached groundwater, and there is no basis for a conclusion that the environmental impacts are negligible as indicated in the EIS. Therefore, the justification for relicensing the Disposal Facility is not provided in the EIS and the proposed relicensing should be denied.

6. Questions remain about the environmental impacts of four caissons at the facility. These caissons are located between trenches 3 and 4 and are composed of 30 ft deep by 24 inch

diameter corrugated steel pipe. These caissons are discussed in the 1985 US Ecology Environmental Review in the DOE Hanford Site Report. They were used to dispose of radioactive and hazardous liquid waste which was dumped into the caissons and allowed to infiltrate into the sediment. There is no discussion about these caissons in the EIS or in the phase 1 and 2 facility investigation. Questions remain about what was released, how deep did the contaminants migrate and what are the environmental impacts. According to Department of Ecology employees, there was discussion of these caissons prior to conducting the phase 1 and 2 investigations and the possibility of additional investigation of the caissons was dismissed by DOH and Ecology officials. The justification for not investigating this waste and not determining the environmental impacts of what was released at the caissons must be stated and a complete discussion of the caissons must be included in the EIS before the EIS can be finalized. A key goal of any environmental site investigation is to review and assess potential environmental threats. In this case, it was not done as a part of the Facility Investigation.

7. The 1985 US Ecology Site Environmental Review indicates that from 1978 to 1980 (Table 2-1 and pg 2-30) approximately 25% of the waste shipped to and received at the Disposal Site was in the liquid phase. This liquid was either dumped directly into caissons, or pits, or it was buried in 55 gallon drums. The drums were tossed into the pit or simply placed in the pit at any angle with a crane and many of the drums began leaking as soon as they were put in the pits. Other drums rusted and leaked or will eventually leak. This very large volume of liquid waste and the liquid waste that will result when the remaining drums leak is not considered as a source term in the EIS and specifically in the risk assessment. Therefore this EIS must be considered to be inaccurate and inadequate for the intended purpose of justifying approval of the closure plan and approval of continued operation of the Disposal Facility. Questions remain about the environmental impacts of these liquid wastes and the EIS must answer those questions.

8. In 1991, tritium was measured in the vadose zone sediment at very high levels some distance from the burial trenches. This reviewer was involved in a discussion of that tritium detection in 1992 with the DOE. There is no mention of that event in any of the documents reviewed and it is not included in the EIS. That issue must be discussed as it should have been investigated in the phase 1 and 2 facility investigation. Until all such data and information are included in the investigation and the EIS, the pending actions in the EIS cannot be justified.

9. The 1985 US Ecology Site Environmental Review documents that by 1980, the site had received over 80 pounds of TRU waste that was predominantly plutonium (page 2-40). This source term is not discussed in the EIS and it is not considered in the modeling and risk assessment. Because TRU was released at this site, the site should be closed as a TRU waste site, not as a low-level waste site or the TRU must be dug up and removed from the site. In addition, NRC regulations for TRU waste must be applied to this waste site.

10. The levels of Pu-239/240 reported in Table 23, pg 107 of the EIS are not correct. According to the Facility Investigation report Appendix I, Pg 7, Pu 239/240 was detected in downgradient well MW3 at a level of 0.247 pCi/L and in an upgradient well at a level of 0.107 pCi/L. Both values are well above the 0.06 pCi/L MDA and are very significant relative to a potential health risk.

11. On page 106 of the EIS it states that the groundwater standards can be used as an indicator of environmental impacts. This reviewer is not familiar with the logic of this statement and it must be explained further. Current groundwater contaminant concentrations, whether or not they are correctly reported in the EIS, can only be used to predict future environmental impacts if there is a trend in the data that can be used to calibrate a contaminant migration model. The current level of contaminants relative to the groundwater standards is only an indicator of current environmental impacts. The purpose of the EIS should be to attempt to predict what will happen in the future. A comparison of the current contaminant levels only serves to bias the EIS by suggesting there will be no problem in the future.

12. Perhaps the most serious unanswered question in the EIS has to do with the plutonium in the groundwater. It is clear from comments 7 and 8 that plutonium was released at this facility in an uncontrolled manner. It was found in sediment samples taken from the limited vadose zone sampling program conducted under the phase 1 and 2 investigation and it is found in the groundwater. It was identified in the third quarter of 1998 groundwater sampling at levels well above the minimum detectable activity. Considering the potential health risk of plutonium, it must be asked, what is coming down the sewer pipe. The EIS must appropriately consider the concerns about the plutonium and obtain enough data to adequately predict what will happen with the plutonium in the future. The questions about and concern for the plutonium must be addressed by further investigation. Part of that investigation must be the third phase investigation that was previously proposed. Approval of the closure plan cannot proceed until the questions about the plutonium are answered with a complete, valid and objective subsurface characterization.

13. The phase 1 and 2 Facility Investigation report dismisses the occurrence of Pu in the vadose zone sediment as insignificant because "the deep distribution pattern of the respective concentrations is inconsistent for the two radionuclides discussed above (Pu and Sr-90); *the pattern is neither uniform*, as would be expected of background values, nor is it indicative of a release, *especially when the respective soil retardation factors are considered"* (emphasis added).
In other words, because the Pu does not fit the predicted contaminant migration patterns and migration rates, the conclusion is implied that the Pu occurrence deep in the vadose zone is not significant. This logic follows into the EIS by a complete lack of consideration for predictions of plutonium in the groundwater when the data shows that the plutonium has already reached groundwater and represents a serious near-term environmental impact.

This same flawed logic was adopted for over thirty years for the Hanford Tank Farms where it was assumed that the contamination that leaked from the tanks did not travel deep into the vadose zone sediment. The basis for that flawed logic was not known but we do know that it was not based on the collection and analysis of data. Using actual contaminant concentration data obtained from the vadose zone sediment, this reviewer helped to identify the fallacy of that flawed logic in the mid-1990's, resulting in a better understanding of contaminant migration patterns and contaminant migration rates. Radionuclides thought to be immobile are now known to have migrated considerable distances contrary to previous predictions. The Department of Ecology personnel, including the Nuclear Waste Program Manager, were intimately involved

with that work at Hanford in the mid-1990's. Unfortunately, it appears that the Ecology and DOH personnel and their consultants who performed the characterization work and prepare the EIS were not aware of the more recent understanding of the vadose zone contaminant migration that has been developed at Hanford.

Specifically in regard to plutonium, we know that if it is complexed with organic molecules, plutonium becomes very highly mobile. That is one of the reasons organic solutions were used in the separation processes at Hanford. Plutonium combined with organics was found to be responsible for highly mobile plutonium discovered at Oak Ridge and it has been identified in the groundwater at Hanford at locations where it has traveled through the vadose zone (see Johnson and Hodges, 1997 in a Department of Ecology publication). We know there was a large amount of organic liquid released at the Disposal Site and we know there was a significant amount of plutonium in both liquid form and solid form as TRU waste. Finally, we have already found Pu in the groundwater. Therefore, one can only reach the conclusion that the soil retardation factors used in the contaminant migration models are incorrect and the models grossly underestimate the impact of Pu on the groundwater.

In regards to the fact that the Pu distribution pattern is not uniform, there is no basis for the assumption that it should be. In fact, all one needs to do is to go down into one of the operating trenches and look at the vertical wall of the excavation and see the extensive crossbedding, vertical clastic dikes and other inhomogeneities in the stratigraphy to understand that there is no basis for predicting an homogeneous distribution pattern. Again, this reviewer would like to refer the authors of the EIS to the work that was completed at the Hanford Tank Farms where actual contaminant distribution patterns were measured in-situ. A very basic understanding of the site geology quickly leads one to expect to find a complex contaminant distribution pattern.

As a result of this apparent bias in both the characterization report and in the EIS and the associated modeling and risk assessment, the entire risk predictions are shown to be invalid and therefore the EIS is invalid and the proposed actions should not occur.

14. Related to comment 13, this reviewer finds that the contaminant transport modeling of the groundwater and vadose zone which was completed for the EIS and creates the basis of the risk predictions is entirely inadequate. Problems with the model include the following:

- S it uses a simplistic steady state rate of infiltration that does not account for massive snow melts or large precipitation events. Even if the steady state infiltration rate is conservatively high, it will not appropriately represent the driving force for the migration of contaminants.
- S it uses an homogeneous representation of the vadose zone sediment and does not consider the true complex nature of the sediment or contaminant migration patterns.
- S it is a simplistic, one-dimensional model with simple dispersion as the key distribution factor of which both have been shown to clearly not represent actual site conditions. Even if a conservative one-dimensional model is used it must be shown to be representative.
- S the uncertainty of the model is too high for the time greater than 10,000 years.
- S there is no basis for using the sorption coefficients that were selected, especially for plutonium and strontium.

S there is no calibration of the model of any sort with site data because the site data are inadequate for this purpose.

S The solubility limit of some radionuclides and specifically of uranium is too low.

A model predicting contaminant migration over a long period of time must be demonstrated to be correct by calibrating it with actual site data over a short time interval. As of the date of this review, no modeling has been completed at Hanford that is effectively calibrated or even demonstrated to represent site conditions. The modeling that was completed for this EIS is about the most simplistic model completed in recent times. This model has essentially been shown to be incorrect by the fact that several contaminants from the site have already reached groundwater. Because the model is the basis of the environmental risk assessment, this reviewer concludes that the identified and quantified risks in the EIS are incorrect and disapproval of the proposed actions in the EIS is strongly recommended.

15. In 1985 a letter from the Department of Ecology to US Ecology Inc. (Ecology, 1985) designated the resin tanks as extremely hazardous waste and required US Ecology to perform some drilling and sampling in an effort to characterize the nature and extent of contamination released from the tanks. That characterization was never completed and the phase 1 and phase 2 characterization just completed did not address this contamination.

Before the EIS is approved and the proposed actions take place, the contamination released from the resin tanks must be characterized and the distribution of that contamination in the vadose zone must be determined. Currently, there is not even an explanation of the chemicals and the chemistry of the resin that was released to the tanks.

16. Page 108 paragraph 1 states that it is not possible to determine from the data if the Disposal Facility is contributing to groundwater contamination. This reviewer concludes that there is enough data to provide a convincing argument that that statement is not true. TCE was found in the groundwater and the vadose zone sediment, and records indicate that it was released at the site. The same holds true for plutonium, chloroform and other contaminants. Regardless, this EIS should take a conservative position by assuming that the contaminants in the groundwater are from the Disposal Facility unless it can be proven that they are from another source.

In that same paragraph, it states that further sampling will be conducted to further understand the impacts. This characterization work must be completed before the EIS can be approved otherwise there is no basis for approving the continued use of the facility.

17. Section 4.3.2.1 of the EIS states that license renewal is "expected to have no impact on the phase 3 investigation". However, the concern should be, what impact will the phase 3 investigation have on license renewal. This reviewer does not understand how the two Washington State agencies involved, can approve the continued operation of the facility and the closure plan when it is apparent that there is little understanding of the contamination and the hydrogeologic system and when the risk assessment is shown to be incorrect? Obviously the phase 3 investigation is needed before license renewal can be justified especially when the phase 1 and phase 2 investigations point directly at the Disposal Site as the generator of waste that has already reached groundwater and represents a significant future environmental risk.

Comments on General Topics:

1. There appears to be no consideration in the EIS for installation of a liner in the facility when it is apparent that the existing facility has already contaminated the groundwater. From a technical standpoint the installation of a liner is based on common sense, especially when there is data showing the uncontrolled migration of contaminants through the sediment. When this reviewer asked about this deficiency, one Department of Ecology employee began justifying this lack of consideration with some obscure regulatory logic. However, regardless of the regulatory environment, the installation of a liner makes technical sense to the extent that less than one half a mile away, the Department of Energy has an operating disposal facility for low-level waste and that facility is lined. Apparently, the DOE justifies the logic of installing a liner regardless of the regulatory environment. This reviewer believes there is sound justification for installing a liner and that the EIS should consider a liner as an alternative in the risk assessment.

2. Generally speaking, the characterization of the groundwater and vadose zone beneath the site is inadequate for the proposed actions. There is almost no understanding of the distribution of contaminants in the vadose zone to the extent that the EIS concludes that the sources of contamination in the groundwater are not identified. Also, there is a lack of knowledge of the stratigraphy and variations in the sediment such that only overly simplistic vadose zone and groundwater models are used to predict contaminant transport. An argument is presented in the EIS that those models represent "conservative" assessments but the groundwater contamination data demonstrate this to be incorrect. With only five groundwater wells and a few vadose zone characterization boreholes, a true assessment of the subsurface conditions cannot be made. Because the subsurface investigation provides the basis of the risk assessment and the EIS, approval of the proposed actions is not justified.

3. From a technical standpoint, the EIS does not demonstrate that continued operation of the facility can continue without serious environmental impacts. A goal of the EIS should be to clearly identify the potential problems and the associated real or potential environmental impacts along with the uncertainties associated with the current knowledge or lack of knowledge of the system. Once this is done, then an appropriate value judgment can be made as to the potential risks of operating the facility relative to the real need for a low-level waste disposal facility and relative to other alternatives. In this reviewer's judgment, the EIS is biased on the side of presenting only data that will help justify the continued operation of the facility while minimizing or ignoring any data that could pose a problem for re-licensing. As a result, the value judgment is not properly represented and the EIS is not valid as a decision making document.

4. This reviewer is not an expert on the various environmental regulations but this EIS appears to have circumvented many regulations in an attempt to re-license the Disposal Facility. The two State agencies that prepared this EIS are the very organizations that are responsible for enforcing environmental regulations elsewhere at Hanford and throughout the state. It seems prudent that

those agencies should adopt for themselves, the most strict interpretation of the regulations that they are responsible for enforcing. Instead, it appears they are attempting to sidestep MTCA, they are ignoring NRC regulations by ignoring the TRU waste, and they are ignoring corrective action requirements of WAC 173-303 for identification of groundwater contamination sources. If these agencies do not adopt the regulations for themselves, how can they enforce those regulations at Hanford or elsewhere? Further, there appears to be a conflict of interest for this facility when the organization responsible for licensing the facility is the proponent for and author of an EIS for the facility. Who is regulating and overseeing the operation of this facility?

5. In reference to general comment 4 above, this reviewer is concerned about the apparent bias in the document in attempting to minimizing and ignore significant problems or potential problems discovered by the facility investigation. For example, the Errata Sheet, states that "the concentrations for some of these radionuclides and hazardous substances are higher in the upgradient wells than in the downgradient well, indicating the source is, at least partly, from activities elsewhere on Hanford". This statement was used as justification to dismiss and ignore the contaminants like TCE and plutonium that originated from the Disposal Facility. For a technical document written by two State Agencies that have the responsibility to protect the health and safety of the people of Washington State, the bias is unacceptable and it causes this reviewer to recommend that the EIS be rewritten by an independent, third party that is not under political pressure to re-license this facility.

6. In general, the EIS is a very poor and incomplete assessment of the risks and alternatives and the phase 1 and 2 characterization, which is the basis of the EIS, is extremely shallow and provides very little understanding of the hydrogeologic system or the contamination. To make matters worse, what little geologic data that was obtained from the characterization was not used to develop the models or perform the risk assessment. For instance, the large liquid source terms represented by the liquids in the barrels and at the caissons was not considered, there was no assessment of the plutonium, TCE, chloroform, and other contaminants in the vadose zone and groundwater, and there are conclusions, either state or implied, about contaminant migration and distribution that have no basis. The EIS does not discuss uncertainties and has not effectively determined the sensitivity of the risk assessment. As a result, this reviewer questions the competency of the State organizations, each as a whole, represented by the Manager of Ecology=s Nuclear Waste Program and by the DOH=s Director of the Division of Radiation Protection, both of whom approved the EIS, and by the principal authors of the EIS and phase 1 and 2 Facility Investigation Report.

To prevent this very situation, Washington State Law requires that the facility investigation and the EIS be conducted under the direction of a Washington State licensed Professional Engineer and that that engineer must approve the work.

Chapter 18.43 RCW defines the practice of engineering as:

"... any professional service or creative work requiring engineering education, training and experience and the application of special knowledge of the mathematical, physical and engineering sciences to such professional services or creative work as consultation, *investigation* ... in connection with any public or private utilities, structures, buildings, machines, equipment,

processes, works or projects." (emphasis added).

General provisions require
"In order to safeguard life, health, and property, and to promote the public welfare, any person in either public or private capacity practicing or offering to practice engineering ... shall be registered as hereinafter provided ..."

Under these regulations, the investigation of the low-level burial ground is defined as engineering work and employees of State agencies who practice engineering are specifically required to be licensed. The point of these regulations is to protect the health and safety of the public. In the case of this EIS, this reviewer does not believe the health and safety of the public is protected and perhaps part of the reason it is not, is because these State agencies violated this RCW by not having this work completed under the direction and review of a qualified and licensed Professional Engineer. As a result, this EIS should be withdrawn.

References:

Ecology, 1985 Letter from Richard A. Burkhalter, Supervisor, Department of Ecology to Mr. Stephen A. Carpenter, Facility Manager, US Ecology Inc., November 8, 1985

Johnson, V.G. and F.N. Hodges, 1997 "Mobile Transuranics: A Hanford Site Case History" Presented at the 2nd Symposium on the Hydrogeology of Washington State, State of Washington Department of Ecology, Olympia, WA

US Ecology, Inc., 1999, "Comprehensive Facility Investigation, Richland LLRW Disposal Facility, Phase 1 and 2 Report", US Ecology, Richland, WA

Zimmerman, D.A., A.E. Reisenauer, G.D. Black and M.A. Young, 1986 "Hanford Site Water Table Changes 1950 through 1980, Data Observations and Evaluation". PNL-5506 Pacific Northwest Laboratory, Richland WA

(6)

CITIZENS for MEDICAL ISOTOPES

Citizens for Medical Isotopes
Tri-Cities Chapter
Benton Franklin Title Bldg.
3315 W. Clearwater Ave.
Kennewick, WA 99336
Amy Evans
Director
(509) 737-8463
fax (509) 737-9524
cmi@owt.com
www.medicalisotopes.org

TO: Washington State Dept. of Health
Washington State Dept. of Ecology

FROM: Citizens for Medical Isotopes

RE: DEIS for commercial low-level radioactive waste facility at Hanford

DATE: October 23, 2000

Citizens for Medical Isotopes is a volunteer organization dedicated to furthering medical isotope treatments for cancer and other diseases. We are a group of concerned medical professionals, researchers, patients and citizens.

Medical isotopes are used 40,000 times a day in the U.S. for diagnosing disease. Now new treatments for cancer are moving forward, showing promise to more effectively battle this terrible disease.

Medical applications for radioactive isotopes are growing. For the public to benefit, infrastructure for handling the waste must be present. The commercial low-level radioactive waste disposal site at Hanford is a crucial component of the infrastructure that supports medical isotope utilization, and ultimately, new and better treatments.

The low -level radioactive waste disposal site at Hanford receives wastes from hospitals and research institutions around the region, including the University of Washington, Washington State University, and the Oregon Health Sciences University. It will also play a role in supporting the operation of the Fast Flux Test Facility should it be re-commissioned for medical isotope production.

Citizens for Medical Isotopes urges the State of Washington to complete the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation and allow the Department of Health to renew the license. It can be safely operated for at least fifty more years. During that time, it will benefit many people in our region and the nation through its support of the development of new and more effective treatments for cancer and other diseases.

Failing to support the infrastructure behind new medical isotope treatments is no different than failing to support the research itself. We owe it to our friends and family members with cancer to support better research, treatment and diagnosis. Washington State should also do its part by continuing to make low level radioactive waste disposal available.

ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

(7)

November 29, 2000
GO2-00-198

Washington Department of Health
Attn: Nancy Darling, Project Manager
Division of Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7827

Subject: **COMMERCIAL LLRW DISPOSAL FACILITY**
DRAFT ENVIRONMENTAL IMPACT STATEMENT

We have reviewed the draft environmental impact statement (DEIS) related to the operation and closure of the commercial low-level radioactive waste (LLRW) disposal facility on the Hanford Site. The evaluations in the DEIS clearly indicate that the continued operation of the facility under any of the NARM and closure cover alternatives will not have significant short-term and long-term impacts.

As the operator of the nearby commercial nuclear power plant, Energy Northwest's primary interest is with the issue of license renewal (notwithstanding the fact that decisions on NARM acceptance and closure design can affect disposal costs). We have concerns with the analyses of both alternatives to renewal of the existing license.

Under the "no-action" alternative the license would not be renewed and the facility would close. We believe that the impacts of this scenario are understated. For example, it is inconsistent to suggest that waste generators will send their wastes to other LLRW sites (DEIS pages 61 and 126) with longer trucking distances (page 127) and to also conclude that any transportation risk will be eliminated under the no-action alternative (pages 10 and 81). The existing negligible transportation risk may in fact be increased, if, as suggested in the DEIS, wastes are shipped to other disposal sites.

We also believe the discussion of socioeconomic impacts of the no-action alternative are understated in terms of the disruption of business activities in waste generation sectors including industrial, medical, research, and power generation. Admittedly, these impacts are much more difficult to quantify than specific impacts such as the dollar amounts related to taxes and surcharges. Nonetheless, the very brief summaries on pages 17 and 127 could be expanded to more fully describe the probable impacts of license denial. This expanded discussion should acknowledge impacts throughout the compact region, not just Washington State. In that manner, the DEIS would more closely align with the expectation that environmental issues be considered from a broad perspective (RCW 43.21C.030).

The other alternative to renewing the existing license is to renew with "enhancements." The enhancements are a suite of eighteen conditions that WDOH would presumably negotiate with US Ecology. Commenting on this alternative is problematic because the DEIS assessment is very subjective and we do not know which of the enhancements will be selected. Some of the enhancements listed in Table 10 appear to be of dubious benefit. The use of gamma spectroscopy to identify radionuclides and verify waste activity is credited with increased worker safety and increased knowledge of the source term. The increased knowledge aspect is speculative and the need or usefulness of the knowledge is not explained. The measurement process might, in fact, result in higher worker exposures.

Another enhancement, requiring solidification of all ion exchange resin, would result in greatly increased cost to waste generators without necessarily improving waste stability. (Note that the description of current practice in Table 10 does not reflect that Class A unstable waste can have cobalt-60 concentrations of up to 50 μCi/cc.) Increased point-of-origin inspections are cited as a possible enhancement. To us it seems inappropriate to consider inspections by WDOH at generator locations as a condition of the LLRW site operator's license. If such inspections are warranted, they should be conducted under other authorities. Regardless of the enhancements, if any, selected for inclusion in the renewed license, we hope that generators and site users will be afforded an opportunity to comment on those that directly affect their waste management practices. We say this recognizing that any "enhancements" imposed through the license will likely result in increased operating costs and, in turn, higher disposal costs.

A review of the DEIS impact summary for license renewal (Table 2) reveals that the impacts are minor and not measurably different for any of the renewal scenarios. Exceptions are the substantial socioeconomic impacts associated with license denial. We believe that the DEIS provides ample basis for WDOH to move forward on the pending action of license renewal. In fact, the assessment more than validates the determinations of nonsignificance (DNSs) that were the basis for previous renewals.

We have appreciated the opportunity to review and comment on the subject document. Again, we are hopeful that new license conditions posing significant impact to waste generators (such as resin solidification) will be discussed with those generators. If you have questions, I can be reached at (509) 377-4342.

Respectfully,

D. W. Coleman

D.W. Coleman (Mail Drop PE20)
Manager, Regulatory Affairs

(9)

DEPARTMENT OF THE NAVY
PUGET SOUND NAVAL SHIPYARD
1400 FARRAGUT AVENUE
BREMERTON, WASHINGTON 98314-5001

IN REPLY REFER TO
9210:BB:trp
Ser 105/739
November 30, 2000

Ms. Nancy Darling
Project Manager
Washington State Department of Health
Division of Radiation Protection
Mail Stop 47827
Olympia, Washington, 98504-7827

Ms. Darling:

This letter is in regard to the Draft Environmental Impact Statement (DEIS) for the Commercial Low-Level Radioactive Waste Burial Site in Richland, Washington, dated September 13, 2000. Puget Sound Naval Shipyard supports renewal of the US Ecology radioactive materials license application. The continued presence of the burial site ensures environmentally safe disposal of waste generated in the Northwest Compact.

One of the alternatives to renewal of the radioactive materials license is renewal with operational enhancements. We offer the following comments on some of the operational enhancements:

a. Proposal: Increase waste stability by reducing specific void space in Class A waste by including Class A Unstable in the <15% void space requirement.

Comment: Packing radioactive waste or filler material into void spaces in radioactive components such as tanks or large pumps requires workers to come in close contact with radioactive material and use complex ventilation and respiratory protection precautions. As part of the Shipyard's program for minimizing occupational radiation exposure, the Shipyard tries to reduce the need for such work. Therefore, the Shipyard would prefer not to add waste or filler material to meet the <15% void space requirement for Class A Unstable waste if another means of obtaining the stability objective is available. For example, one of the other proposed enhancements is to improve the stability of Class B, Class C, and Class A Stable waste by requiring Class A Unstable waste to be disposed of in a separate trench. If a separate trench is provided for Class A Unstable waste, it should not be necessary to impose the <15% void space requirement on

Class A Unstable waste. If the separate trench enhancement is not imposed and additional stability is needed for Class A Unstable waste, the Shipyard recommends that Washington State allow the option of meeting the stability requirement either by utilizing a concrete overpack or by having an inherently structurally strong item such as a very thick walled steel component.

b. Proposal: Require solidification of ion exchange resins to attain greater waste isolation and stability.

Comment: For well over a decade, both the Barnwell disposal site and the Richland disposal site have allowed radioactive waste generators two options for high activity ion exchange resins. One option was solidification using a process meeting U.S. Nuclear Regulatory Commission standards. The other option was to dispose of the resin in a State-approved high integrity container with an additional external concrete overpack to provide long-term physical stability. The Navy has consistently selected the second alternative. The reason for this is that it avoids the occupational radiation exposure associated with having Shipyard workers perform the solidification process. Also, the Navy had unsatisfactory results in the 1980's with both cement-based and non-cement solidification agents for ion exchange resin. Thus, the Shipyard considers the high integrity container/overpack option to be more reliable as well as reducing occupational radiation exposure. From an environmental perspective, the combination of the corrosion resistance of the high integrity container with the long term structural integrity of the concrete overpack provides protection at least as good as solidification. For low activity Class A Unstable ion exchange resins, there should be no need for any special solidification requirement.

c. Proposal: Improve waste characterization by requiring use of gamma spectroscopy to identify radionuclides and verify waste activity.

Comment: The Shipyard currently determines the radionuclide content of radioactive waste using methods consistent with the guidance of the U.S. Nuclear Regulatory Commission. The

radionuclide mixture common to naval nuclear propulsion plants is determined by extensive analysis of samples of Navy radioactive material using both high resolution germanium detector gamma spectroscopy for gamma emitting radionuclides and other radiochemical methods for non-gamma emitters. For individual waste packages, the cobalt-60 content is calculated using exterior gamma radiation level measurements. Then, scaling factors derived from the sampling process discussed above are used to assign the content of other radionuclides. Requiring gamma spectrum analysis of each individual waste package will increase occupational radiation exposure to Shipyard workers without necessarily improving the quality of the radionuclide inventory characterization. Problems with gamma spectrum analysis of each waste package include the following:

(1) If the gamma spectrum analysis is performed on a small sample of the waste, this sample might not be representative of the entire waste package, and determination of the total package curie content may not be accurate. The Navy's experience with a former requirement at the Barnwell disposal site illustrates this point. In the 1980's, the Barnwell site required that a sample be obtained from each package of ion exchange resin, and that the results of gamma spectrum analysis be provided with each resin package. For shipments of high activity ion exchange resin, the sample had to be only a few resin beads in order not to saturate the detection system. Since only a tiny fraction of the material could be measured this way, it was not possible to determine accurately the total curie content of the package. Further, due to the prevalence of cobalt-60, gamma emitters of regulatory interest such as niobium-94 were present in concentrations too small to be directly measured. Also, obtaining these samples involved additional worker radiation exposure. Barnwell no longer requires a gamma spectrum analysis for each resin container.

(2) If the measurements are made externally by a portable system, the results may be compromised by energy spectrum downscatter, particularly for shielded containers.

(3) Gamma spectrum analysis provides no additional information on important non-gamma emitters such as Sr-90, C-14, Tc-99, and H-3. Furthermore, very long lived gamma emitters such as Nb-94 are normally present in concentrations too small to be directly detected in the presence of the overwhelming cobalt-60 signal.

(4) Other than the dominant cobalt-60, the chief gamma emitting radionuclides that would be routinely detected by gamma spectrum analysis of Navy waste packages would be cobalt-58, manganese-54, and antimony-125. None of these radionuclides have limits that are significant with regard to waste classification, and none of these radionuclides were considered to be significant enough to be used in the source term for the DEIS radiological risk assessment. Thus, while gamma spectrum analysis would provide more accurate package-by-package ratios of these insignificant radionuclides, it would not provide demonstrably better information for waste classification or for ensuring that waste does not exceed disposal site limits.

If Washington State desires to proceed with the gamma spectroscopy requirement regardless of the above objections, the Navy would request that Washington State consider making the requirement applicable only to high activity Class C waste. The Navy would also request that there be an option for generators such as the Navy with a well defined and characterized radionuclide mixture to obtain an exemption from this requirement.

We appreciate the opportunity to participate in this decision making process. Please feel free to contact Mr. Russ Caswell of my staff at 360-476-2185 extension 500 if we can be of further assistance.

Sincerely,

G. A. DREVNIAK
Director of Radiological Control

(10)

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

RECEIVED
DEC 1 2 2000
DIVISION OF RADIATION PROTECTION

DEC 0 6 2000

01-RCA-064

Ms. Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection
1112 South East Quince Street
Olympia, Washington 98504

Dear Ms. Darling:

SUBMITTAL OF COMMENTS ON THE COMMERCIAL LOW-LEVEL RADIOACTIVE WASTE DISPOSAL SITE, RICHLAND, WASHINGTON, DRAFT ENVIRONMENTAL IMPACT STATEMENT AUGUST 2000

Thank you for the opportunity to comment on the subject document. Attached are the comments from the U.S. Department of Energy, Richland Operations Office. The comments are divided into two sections, Minor and Editorial Comments, and Major Comments. Documents mentioned in the comments are being provided under a separate cover. If you have any questions, please contact me on (509) 376-6667.

Sincerely,

Paul F. X. Dunigan, Jr.
NEPA Compliance Officer

RCA:ALR

Attachment

General	The EIS appears to not consider the fact that the commercial disposal site is situated within a much larger restricted area but considers offsite as just off the commercial site proper, rather than off the Hanford Site. This can have significant impact on the determination of doses to the public in unrestricted areas (WAC 246-221-060). Little consideration is given to designed, anticipated, or expected performance of covered wastes in the long term. Intruder scenarions are overly emphasized. Poorly quantified inventories plus excessive conservatism in impact estimates yields results that in some cases are said to exceed limits. Actually the results may be far less than the limits. The probablilty estimates of the appended material help, but are not brought forward and are likely unnoticed by most readers. The absence of uncertainty analysis in the inventories of Tc-99 and I-129 seriously detracts from the utility of this latter analysis. Need a commitment from US Ecology and State of Washington that cost of cover designs and their implementation will be fully funded and this requirement is figured into the generator fees. Need to use current, correct reference citations consistently throughout the EIS. Neitzel 1996 has been replaced by Neitzel 2000 (PNNL-6415-Rev. 12). This version provides current information on the Hanford Monument Declaration and other U.S. Department of Energy land use planning decisions. A copy will be provided under a separate cover.
Cover letter and elsewhere	Suggest replacing "pending" with "proposed". While this usage of pending is not incorrect, most readers would think of it as a preposition ,e.g., "while awaiting," giving the impression that the decision had already been made.
P. 1, Footnote 1	Tank disposition should be placed in the text. What was the extent of the closure in 1985?
P. 5, Section 1.2	Title is "Purpose...of Pending Actions", yet first sentence gives purpose of the EIS, which is awkward. Suggest deleting the first sentence followed by: "the three proposed actions considered in this EIS are:" Moreover, the thrust should be the impacts on the affected environment, not "at the commercial LLRW disposal site."
P. 5 Section 1.2.1	In discussion with WDOH staff on 11/29/00 (all of whom were exceptionally helpful), learned that a binder containing a complete license amendments history is maintained by WDOH. The relationship between "timely renewal" status (footnote 26, page 61), license amendments (footnote to Table 10, pages 62-63), and relicensing application process should be placed in the text of this EIS. It would be useful to have a chronology similar to Figure 3, page 48. (This would help to clarify items like Amendment #23 which is an Entirity and not a renewal, but looks like one).

P. 8, Table 1 and p. 41, para 5	The No Action Alternative: Deny License Renewal with the ensuing stop of operations and p.41, para. 5 begin closure seems to be stated too simplistically. If the U.S. Ecology license is denied and Washington State Department of Ecology does not approve their sub-lease, could another sub-lease be let? There is no discussion of the impacts/requirements relative to the Northwest Compact and the Rocky Mountain Compact and other possible agreements, nor the Washington State and U.S. Department of Energy lease and closure impacts, including financial commitment for closure.
P. 8, Table 1	Under 3a, No Action: per WAC 246-250-110, the application for closure must be filled at least one year prior to proposed closure, so it would now appear that 2002 would likely be the earlilest that closure would be initiated.
P. 10 - 40, Tables 2,3,4,5	Resource Commitments do not appear to have been addressed in the Tables. These are particularly important in terms of fossil fuel consumption and use of silt-loam soils and bentonite clay.
P. 42, Section 3.3, para 3	Final sentence should have the addition: ".Washington Pollution Control Hearing Board by US Ecology and U.S. DOE". Note that DOE is requesting that the Hanford Site RCRA Permit not comprise the US Ecology Site.
P. 46, Table 6	WDOH Hanford Guidance for Radiological Cleanup: Use of wording "Discretional applicability for WDOH-licensed sites" appears to indicate that the State intends to hold itself and US Ecology to a less stringent cleanup standard than the State expects DOE and other parties to meet. This needs to be explained.
P. 49, para 1	The issue of disposal costs is never dealt with. What have the disposal cost ranges been over time? Comparative table entries such as Table 8, page 58 where disposal costs are listed as "variable" should either be omitted or an approximation given. This becomes a particularly sensitive issue for the site landlord because of closure costs. Current and anticipated closure reserve cost data need to be provided.
P. 54 para 5, p. 42 para 3	The U.S. Ecology Site Investigation results are key to the validity of this EIS for operations, evaluation of the site uncovered, and evaluation of covers. Additionally, corrective action requirements at the U.S. Ecology site are under proposed revision temporarily deferred pending a full evaluation of this study. Appendices II and III provide methodology and calculational results in tabular succinct form. However, these are focused on cover design evaluation. The lack of a detailed discussion and data particularly historical and current in a useable form (pages 54-58 and 105-109, both original and errata sheets) makes the connection very difficult and this does not give the Investigation its just due. The EIS needs to be expanded to include: monitoring locations, discussion of monitoring actions in general including historical data, current data, and resulting conclusions, environmental profile of the uncovered site, and how this data can/will be used to make decisions/influence closure strategy.

P. 55 and 56	Non-Rad and Rad are treated separately. Need to consider the possible combinations and effects of organics and radionuclides as a way of explaining why radionuclides may be at depths where not expected.
P. 57	Conclusions: A number of Hanford studies have indicated changes in the direction of groundwater flow direction. Will this have an impact on the LLRW facility?
P. 60	Projections of impacts within the EIS use differing acceptance levels for NARM. Indicate why a particular value is used.
P. 61, 2nd para	This is not a No Action Alternative. Choosing to not renew the license constitutes an action. The true No Action is reflected in footnote 26. Recommend Footnote 26 be fleshed out to become the No Action, and that "Deny License Renewal" be evaluated as a full alternative. Also, Site closure in the year 2000 is discussed here and elsewhere in the document. Based on the review and issuance cycle for this document, this does not seem possible. Please update to current schedule.
P. 62 and 63 Table 10	Table 10, as presented is misleading since it includes already adopted enhancements as if they are to be added through this license renewal action. Suggest those enhancements already adopted in the February 17, 1999, License Amendment 25, be removed from this table and presented as part of the currently existing license conditions.
"	Table 10 indicates the use of engineered concrete barriers (ECB) as operational enhancements. Consider use of the encasement option now used at the 200 West Area Burial Grounds. Specifically, the new monolith encasement will replace the HIC vaults by directly encasing waste in the trench, indirectly as one large encasement, because the common walls of one become the walls of another. The objective is to minimize trench area and volumes to dispose of each waste package and stabilize the waste at a reduced total cost.
"	The new concrete encasement is intended to increase the isolation of the waste from the hydrogeologic environment, and to deter inadvertent human intrusion after the period of instutional control. The individual monolith encasements described are 9-feet wide by 21-feet long by 13-feet high. The following is the sequence of events involved in this encasement process: 1. The concrete/grout base slab is prepared to receive waste packages. 2. Waste, in boxes and drums, is stacked on the prepared base using forklifts and other waste handling equipment. 3. Reinforcement steel is prepared and placed around and over the waste stack. 4. Concrete forms are constructed around the exterior waste stack reinforcing cage. 5. A special concrete grout is poured to encase the waste and form a cap. 6. The sequence is repeated for adjacent monolith valuts utilizing common walls.

P. 64 Section 3.3	Site Closure: The paragraph states that institutional control will be maintained for a 100 year post-closure period (2056-2156). However, the lease expires in 2064. Is this action commiting DOE to continue institutional control after reversion to federal control or will the state continue to bear the cost?
"	Site closure and cover designs need to address the problem that specific site soils/loam may not necessarily be available from a Hanford site source, due to limitations imposed by the Monument Declaration and other land use planning decisions. Transportation activities, evaluations, and accident scenarios have not been included for cover materials.
P. 64 - 66 Section 3.3.1	Closure Cover Design: The source of the cover material and the impacts of acquiring the cover material are not discussed. These need to be disclosed in the EIS. The impacts that should be considered include: habitat and cultural resource destruction at the borrow site, and accidents and road wear from transportation of fill material from the source site to the US Ecology Site. Closure design does not appear to consider removal or stabilization of the treatment/storage tanks or remediation of the contaminant plume.
P. 66, para 4	Closure of the chemical trench only (since hazardous waste is no longer accepted) and that closure strategy with projected cost and validation by the U.S. Ecology Investigation results should be separately discussed.
P. 69 -74 Figures 7-12	The term "site sand" used on these figures is not defined. If the term is to imply that soil from the area surrounding the US Ecology site would be pushed up over the disposal site, the environmental impacts of that action need to be analyzed in this EIS. Specifically, the amount of Washington State designated "priority habitat" shrub-steppe that would be destroyed should be disclosed. Actions to mitigate habitat destruction should also be discussed.
P. 70, Section 4.1.1.2	There appears to be nowhere an analysis of the risks of transporting cover material for closure. This needs to be added.

P. 100
Section 4.1.3

The DEIS covers "Risk from Non-Radioactive Hazardous Waste". The basic conclusion on p. 101 is that there is not "unacceptable risk" from exposure to contaminated soil. However, the discussion in Section 4.1.3 states that available data regarding suspected chemical releases has not been fully considered. Specifically, Section 4.1.3 states that the Final Chemical Risk Assessment for the Commercial Low-Level Radioactive Waste Disposal Facility does not consider the 1999 US Ecology Site Investigation. The EIS should be revised to fully consider the 1999 US Ecology Site Investigation. The Washington Department of Ecology in consultation with the DOH should clarify its position concerning the adequacy of the proposed closure plan in view of the latest data. Failure to take this approach may result in needless duplication of effort and unnecessary expenditure of resources by Ecology and DOH. To the extent practical, any suspected releases should be addressed under the corrective action or closure provisions of US Ecology's Washington State Radioactive Materials License.

P. 116
Section 4.2.5

This entire section should be re-written in consultation with the Hanford Cultural and Historical Resource program manager, Dee W Lloyd. Some of the problems with this section and other areas of the EIS that refer to cultural resources are:

The proposed actions constitute a federal undertaking as defined under the National Historic Preservation Act (NHPA) Section 301 (those activities requiring a Federal permit, license, or approval and those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency) and will need to have a cultural resource review completed to identify and evaluate impacts to all cultural resources on the Hanford Site as required under NHPA Section 106. Please refer to the Hanford Cultural Resource Management Plan (HCRMP) for guidance and direction in completing a cultural resource review. A copy of the most recent version of the HCRMP will be sent to Ecology.

The EIS references 36 CFR Part 61, which is a regulation about approval of State and Local historic preservation programs. The reference to the Act and the Regulations in the EIS on page 46 and 116 is incorrect.

It is inaccurate to say the NHPA protects cultural resources. The NHPA provides for the preservation of Heritage Resources and the consideration of impacts to these resources by agencies.

The definition of Cultural Resources on page 139 is inaccurate. The Hanford Site Preservation Officer has worked with interested parties, Tribes, and regulators over the past 6 years to establish a definition agreeable to everyone. Please use the definition from the HCRMP.

Section 4.2.5 discusses only cultural resources important to Tribes. A cultural resource review will identify and assess impacts on all types of resources such as Anti-Aircraft Sites and Plutonium production facilities near the landfill. A cultural resource review is needed to identify impacts. It is very probable that the review will find no impact to cultural resources. This information should then be presented in the EIS.

The reference to *Harper 1998* should be used with caution. The statement may not represent all the Tribes who have cultural and religious ties to the Hanford Site. The Tribes also include the Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Wanapum Band, and the Colville Tribe.

Not all Tribes that occupied the Hanford Area are Treaty Tribes, therefore, change reference to Tribal Nations on page 116 to Native Americans.

There is no discussion about how impacts to cultural resources have been determined in Section 4.2.5.1 and pages 14,15,30,38. Impacts to Cultural Resources on the Hanford Site need to be discussed with and concurred to by the Hanford Site Preservation Officer. Consultation on impacts to cultural resources on the Hanford Site is required.

Please summarize any consultation the DOH may have completed with Tribes, Public, Federal Agencies, or other interested parties as it relates to Historic Properties.

Remove reference throughout (e.g. page 117 & 132) to future Native American traditional use of the landfill such as sweat lodges. This area was not traditionally used for sweating or the construction of Sweat lodges. The U.S. DOE will not allow or approve of the building of sweat lodges or traditional gathering on or near a landfill. It would be incorrect to imply an impact to Tribal use that never existed at this location and would not be likely to occur in the future.

Pages 15, 23, 30, 38, and 117, refer to Consultation which needs to include the Hanford Site Preservation Officer

P. 116

PNNL 1997 is not a cultural resources survey of the "commercial LLRW disposal site." It is instead a survey of five sand dunes about 1.5 miles south of the US Ecology Site that US Ecology was considering as sources of capping material for closure of the US Ecology site.

P. 116

Closure cap designs will rise 13 feet above the current land grade. Should this change in the topography and sight lines be analyzed as part of cultural resources or ecology?

P. 118
Section 4.2.6.1

Mitigation Measures: Will the use of long term surveillance commit DOE to an action after expiration of the lease and the reversion of the land to federal control? Will the state bear this cost from the closure account?

P. 128
Section 4.2.9

This section does not appear to consider potentially significant contributions to cumulative effects. Specifically, it ignores contributions from non-DOE sources including Siemens, ATG, and Energy Northwest, as well as DOE cleanup actions performed under CERCLA or RCRA. Recent publications by the U. S Environmental Protection Agency and the Council on Environmental Quality on consideration of cumulative effects are being sent under separate cover.

P. 132	Impacts of Site Closure: This paragraph is stating the risk of cancer in absolute terms. This contradicts page 97 which states "The above risk predictions are used only to compare relative risks as alternatives, and should not be considered an assessment of actual risk." It would be more accurate to add a sentence emphasizing these are relative risks and should not be construed as portraying actual cancer fatality risk.
P. 135 Section 4.3.3	This section does not appear to discuss the potential costs for removal or remediation of hazardous wastes. Consequently, the adequacy of the closure fund seems subject to question. Sufficient funds must be provided by the State in the closure fund to cover any reasonalble cleanup without diverting DOE cleanup funds.

P. vi	WAC 197-11-448 (2) would suggest that "socioeconomic" not be used.
P. xi Acronyms	Suggest using only those acronyms that are used repeatedly and suggest omit computer code names.
"	DEIS and U.S. NRC: each appear twice.
"	Add EIS to the list
"	"C" should be Commission not Council in ICRP
"	MDC should read "minimum detectable concentration"
"	Should NARM use "and" **or** "or"? Do a global on whichever is decided.
"	Add NORM to the list
Foreword, p. xii	"Foreward" incorrect - should be "Foreword."
Line 1	Suggest: "...reader understand ionizing radiation and its effects...." The discussion is not about radioactivity, the property of some substances.
Line 5	Add clarity by deleting "most" and "elect to."
Line 7	Suggest delete sentences beginning, "Some people...." and "These may...." The case has been made sufficiently with the previous material and the cited material is vague to perhaps incorrect.
Box title	Suggest using: "Terms" would be preferrable to "Measurements." Decay is not a measurement.
Box: Decay	Submit using: "...due to spontaneous disintegration." Radiation typically accompanies "decay," but is not the cause of it.
Box: Curie	Suggest using: "The unit of the quantity of a radionuclide in terms of activity, or rate of radioactive decay. Equal to 37 billion disintegrations per second."
Line 1, below Box	Change to read, "The amount of radiation an individual receives is called a "dose" and...of millirem (mrem)." Note it is not typically referred in the plural.
Line 2, below Box	Write out DEIS as this is the first time it is used.
¶ 2, below Box	Suggest this be replaced with: "The annual US average background dose amounts to about 300 mrem, which includes about 27 mrem from cosmic ray sources, 28 mrem from terrestrial sources, 39 mrem from internal sources, and 200 mrem from radon." (NCRP Report 93)
Box p. xiii	Suggest use of Table 3 in WDOH Special report on *Radon in Washington* instead of this material. Also suggest omit entry on Closed Commercial site - it is not likely that a dose as high as the standard will be realized, nor is the value parallel to measured values (experience) in the table.

P. xiii, Section ii: Radiation Risk - ¶ 1, p. xiii	Please note that: "High radiation exposures over brief periods of time (4 days or less) pose serious and sometimes fatal consequences. An exposure of 400,000 mR (measured in air) may reasonbly represent the median value for lethality, that is one half of those so exposed would die within 60 days in the absence of medical treatment (NCRP 1974)."
p. xiii, ¶ 2., line 3	Change to read, "...doses. For radiation protection purposes it is assumed that there...." Then delete next to last sentence.
P. 1, Section 1.1, 1st para	Line 2: add (LLRW)
P.1, line 4:	Recent Hanford documents are using "about 586 square miles." If so, "about" would work better with 590.
P. 1, line 9:	Suggest replace "adjacent" with "within 15? miles of."
P.1, ¶ 2, line 2:	Suggest replace "intensive" with "extensive" and change to read, "...associated with the waste legacy of ... production during World War II and the Cold War era."
P. 1, line 4:	Typically these "areas" are initial capped as in "200 East Area."
P.1, ¶ 3, line 2	Suggest revise statement on size of trenches, as the figure shows a variety of sizes. Perhaps, "up to 800 feet...."
P.1, ¶ 4, line 3 and elsewhere	Where hazardous, mixed and dangerous relate to regulated waste it would highlight that distinction if the words were initial capped as Hazardous, Mixed, and Dangerous.
P.2, ¶2, line 2:	Suggest, "Radionuclides that have contaminated groundwater include...."
P.3, Figure1:	Suggest naming figure, "Location of US Ecology Within the Hanford Site." Needs scale. 200 East Area and 200 West Area need to be reversed.
P.4, Figure 2.	Suggest, "Diagram" instead of "Map." Needs scale and also a legend to explain the "hatched" area. Show the waste management channel designed to control surface water drainage discussed in Appendix I, page 5. Also, should show a map for locations of the 9 permanent environmental monitoring stations discussed in Appendix I, page 6, and the 7 other stations throughout the site, also include the 11 wells.
P. 5: Section 1.2	Title is Purpose...of Pending Actions, yet first sentence gives purpose of EIS, which is awkward. Suggest delete first sentence followed by, "The three proposed actions considered in this EIS are:" Moreover, the thrust should be the impacts on the affected environment, not "at the commercial LLRW disposal site."
At 2. And elsewhere	Suggest include the subsection(s) of WAC to which reference is made.
P.6 ¶2, line 4	Suggest spell out units or use abbreviations, but not both.
P.6, Section 1.2.2, ¶2	With the court imposed 100,000 ft3/year limit on NARM acceptance, is there a generator requirement (previously 1,000 ft3/year per WAC-246-249-080) to obtain WDOH approval prior to shipment? If so, please add a discussion of the requirement.

P.6 ¶5	Has the projection basis for NARM been currently analyzed. 8,600 ft3 to 100,000 ft3 is a significant increase. What is the basis for either the 36,700 ft3 or the 50,000 ft3 which are used or stated in the EIS, The discrete versus diffuse NARM content waste discussion needs to be clarified. It appears that the discrete is still being received in small quantity but is not separately called out, and that both the discrete and diffuse NARM are now NARM.
P 6: Footnote 3	"naturally accelerated radioactive material:" garbled?
P. 8: Table 1, Alt 1:, and elsewhere	It would seem more correct to say, "Renew License with Additional Operational Constraints." The constraints would lead to enhanced protection of the public, workers and the environment.
P. 8: Item 2	Probably should state, "Amendment of WAC...."in short title, as the amendment is the action.
P. 8: Item 3	Title of proposed action should be "Approval of Site Closure Plan."
No Action under 3a,	Under WAC 246-250-110 the application for closure must be filed at least one year prior to proposed closure, so it would now appear that 2002 would likely be the earliest that closure would be initiated.
Section 1.2.3 Site closure here and elsewhere.	Unable to reconcile the descriptions given for the alternatives here on covers with the figures presented in section 3.3. It would help to use for a reference point the minimum distance between the waste and grade. The minimum distance is important for the water infiltration or intrusion path from surface to the top of the waste. Backfilling covers the waste to grade. The closure cover is something placed above grade. The use of ranges for the thickness of layers makes it all the more confusing. (With a 45' depth of trench, only the "37'" and 96 inches of backfill make sense - that's site sand from grade to bottom of trench.) Should not mix units in Figures.
No Action Alternative	Presumably, here, under No Action, WDOH would not approve Cover - then what? Is it the presumption that WDOH would approve the other mentioned alterative cover in this case? This is not at all clear. Footnote 26 on p. 61 would probably be helpful here. Are there really three alternatives to this the licensing action, Approve license renewal, Deny license approval, and the No Action Alternative, as given in footnote 26?
Alternative closures	These alternative descriptions do not reflect the statement at 3.3.1 (p. 64) that these closures need not be followed exactly, "but...must meet or exceed the performance and reliability of the selected alternative. However, what that performance and reliability must be is not apparent.
P. 9, Filled Site Alternative	Have been unable to see the utility of this alternative as a stand alone alternative. It might be profitable to use the "filled" concept for all alternatives to form a bounding case. Can the site be filled within the next 5-year license period? If not, the projected inventory at the end of the next license period should be used for impact analysis.
P. 10, Table 2	This Table should indicate which trenches are filled and which remain empty.
P. 12, Table 2	Water - Filled Site Alternative: It is not clear how 216 pCi/L is an increase of 36 pCi/L over the pending action (101 to 220 pCi/L).

P. 15 and 16 Table 2	Land Use, Filled Site Alternative: The table identifies "Potential conflict with U.S. DOE Comprehensive Land Use Plan". There does not appear to be a corresponding discussion in the text.
P. 28, Table 4	Water - No Action Alternative: The increase over the pending action appears to be 40 pCi/L (180 to 220) not 42 pCi/L.
P. 10 - 40: Tables 2, 3, 4, and 5	Many of the aspects considered are insignificant and appear to be added simply to complete the matrix. Much of the material presented appears to be as a result of adherence to the matrix design rather than significance. To simplify would remove Mitigation Measures as well as Significant Unavoidable Adverse Impacts from the matrix and provide as a one sentence summary for the alternative where significant. There are no commitments to the mitigation measures and if needed they should be in the license, additional constraints, or plan.
"	The aspects to be considered in the summary could easily be limited to Air Quality (Criteria Pollutant standards), Water Quality (State groundwater regulations), Resource Commitments (fossil fuels, silt-loam and bentonite clay), and Operational and Long-Term impacts on Public and Worker health and safety (releases of radionuclides to atmosphere, groundwater to Columbia River, and hypothetical intruder incidents.
Tables 2,3,4,5 Long-Term Public Health	Long-term public health impacts should present the inevitable, namely the migration of radinuclides to the Columbia River and what, if any, significant contribution they may make to the individual and collective dose to the public.
Tables 2,3,4,5 Cumulative Impacts	Although SEPA requires consideration of direct, indirect and cumulative impacts, there appears to be no requirement to address cumulative impacts according to the CEQ NEPA prescription, namely in association with past and reasonably foreseeable future actions. However, the summary does not really summarize the material in Section 4.2.9, but appears to only rollup the preceding impacts of the summary.
Tables 2,3,4,5 Resource Commitments	Resource commitments do not appear to have been addressed. These are particularly important in terms of fossil fuel consumption and use of silt-loam soils and bentonite clay.
P. 41, Section 2.1, line 1	U. S DOE should be "AEC", to be consistent with the next sentence and the designations in use at the time.
P. 43 Section 2.2.1, ¶ 2, line 6:	Suggest change to read, "In the field of radiation protection, this concept is known as ALARA and means that exposure to radiation should to be kept to as low as reasonably achievable, economic and social factors being taken into account." (NCRP 101) Delete next sentence.
P. 44, Table 6	Priority habitat and biological review requirement citations are not included.
P. 45, Table 6	A requirement/constraint is missing: WADFW should be added for priority habitat designation for shrub-steppe.
P. 48, Figure 3	Suggest adding significant RCRA Regulation dates for completeness.

P. 49: Section 2.3, ¶ 1	It would be helpful to have the inventories by radionuclide provided, at least in an appendix, rather than have to seek out *Elsen 2000*. It appears that there are about 20 years of waste receipts for which little is know as to its characterization. Elsewhere (p.62) it appears that Class C waste may be placed in HICs, but there is no requirement to do so. If NRC Class C waste is comparable to DOE Category 3 waste, for which either disposal in HICs or in-trench grouting is required, it would seem a similar requirement would be established for Class C waste disposed of in the commercial disposal site.
"	Footnote 13: It is not clear why 2172 was selected for the curie content estimate. The rest of the document discusses closure in 2056, thus setting closure plus 100 years at 2156.
P. 52: Section 2.3.2, ¶ 1, line 4.	Suggest wording change to, "The majority of the activity is expected...." (One would not say the majority of the pounds of something....) The presence and significance, if any, of Ni-59 should be noted.
P. 53	The NARM curie content after 100 years of post closure is estimated in 2156. This is inconsistent with the LLRW 100 year post-closure curie estimate date of 2172 discussed in footnote 13, page 49. Please explain the inconsistencies.
P. 53, Figures 5 and 6	It is not clear what year Figures 5 and 6 are referring to. Figure 4 (p. 51) implies to 1999. However for clarity, suggest adding "...as of 1999 or whatever year is appropriate" to both Figures.
P. 54 Section 2.5	If this "Investigation" is really site monitoring, perhaps that word should be used.
P. 55	The 1st full paragraph that discusses borings is confusing. The first sentence says there were eight borings. The last sentence says there were two borings at each trench for a total of four. Please clarify the types and numbers of borings for these trenches.
P. 55, last ¶, line 2	Suggest change to read, "...indicates past releases and the likelihood for future releases...." (The word "threat" is unnecessarily alarming.
P. 57, Table 7	Suggest adding a map to show where these wells are and the direction of groundwater flow.
Page 58, Table 8	Under Geographical Area for Clive, Utah - the last half of the sentence contradicts the first half. Is waste accepted from "all states" or "all other states"?
P. 59 Section 3.0, second #2, line 2	Suggest to read, "...that accomplishes the stated objectives and affords...."
P. 61 Section 3.1	For **all** alternatives, suggest rather than stating the purpose of the alternative, state that, "Implementing alternative x would....". Also, under the No Action Alternative, last sentence: The language is inexact. Suggest changing "...to close its doors to ..." to "to not accept Low-Level Radioactive Waste from...".
p. 61, ¶ 1	There is a disparity between the time of closure of the commercial site and the Hanford Solid Waste program sites, namely 2056 in the former and 2046 in the latter. What are the implications of this difference?

P. 61 ¶ 3, line 3	Suggest change to read, "...and public health protection."
P. 62, Table 10	What constitutes an "unstable waste?" Please add definition.
"	What is the meaning of "below cover surface grade?" Presume it means from the top of the closure cap to the top of the disposed waste, but it is not clear.
P. 76, Section 4.1.1.1.1, ¶ 2, last sentence	The statement, "Annual monitoring has consistently shown levels below the 400 mrem/yr (Fordam 2000)" is surely understatement. According to the 1999 DOE annual report the total dose to the MEI from Hanford operations was 0.008 mrem for 1999.
P. 77, Section 4.1.1.1.2, 1st sentence	Suggest that the word "acceptable" be avoided, to obviate the "Well, it is not acceptable to me!". The sentence is really not needed anyway. (Can always compare to some other familiar industries' experience, if perspective is needed.)
P. 77, ¶ 1, second sentence	Something appears missing. Perhaps, "...analyzes worker dose for comparison with applicable dose limits."
P. 77, Footnote	There is something wrong with the formula or Table 11. There are three non-zero incident rates for which there were no lost work days. The number of FTEs should be shown in Table 11 for each year
P. 78, Table 12	Suggest the maximum doses and number of workers involved also be provided. From that the collective worker dose can be calculated (and provided). Also, the more common term for a RCT is "Radiological Control Technician".
P. 78, Section 4.1.1.1.4	There is no quantitative support for the statement that dose limits for the general public will be met. ("results that show dose limits to be consistently below regulatory requirements" appears to be an error. The regulatory requirements are the dose limits.) There is no need to make a statement on mitigation if there are no impacts to mitigate.
"	Here and elsewhere, suggest section titles read, "... Impacts of Normal Operations," or whatever the subject is. The reader is apt to lose track of what is being summarized.
"	Here and elsewhere these "Summary of Impacts..." appear to be qualitative summaries of impacts, but unfortunately there does not appear to be a quantified basis on which to make these conclusionary statements.
P. 79 Section 4.1.1.2	It is not clear whether or not non-radiological accident risks are taken into account in Transportation Risk. The non-radiological accidents should be quantified and their consequences presented.
P. 79, Seection 4.1.1.2, ¶ 2, line 2	Suggest to delete the clause: "some of these incidents had the potential for such impacts." If there has been no release of radioactive or hazardous material as a result of transportaton accidents, say so.
P. 80 Footnote 32	Suspect this refers to the external exposure rate at a given distance from the transport vehicle. If so, the limit should be provided. If undetectable, perhaps it could be stated as indistinguishable from natural background radiation.

P. 81, ¶ 2	While it may be appropriate to discuss packaging violations somewhere in the EIS, it is not a risk to the public, *per se*, and should be removed from the material presented here.
P. 81 Section 4.1.1.2.3	Transportation risks apparently do not include transport of materials such as required by site closure, nor are they found elsewhere in the EIS. Considerable amounts of silt-loam soil and bentonite clay or other cover materials will be needed and transport of these materials needs to be discussed.
	There should be a one to one correspondence between the waste shipments (assuming roughly the same mix of waste types) and the risk. If the filled alternative is to remain in the EIS the impacts of transportation should be quantified.
P. 82 Section 4.1.1.3	The analysis should include the number of worker hours involved in construction of covers and using standard injury/illness factors present the impacts of construction. The impacts should be in direct proportion to the amount of covers needed and as a consequence re-licensing which will result in larger covers will increase the construction risks, possibly by a significant factor, even though the totals are small.
	There appears to be no consideration given to the materials required for construction of the covers. Considerable quantities of silt-loam soil, bentonite clay, and other materials would be required for the covers and fossil fuel will be consumed in the heavy equipment used in construction.
P. 82 Section 4.1.1.3.1	Under Impacts of License Renewal, 1st sentence: sentence reads awkwardly.
P. 83 Section 4.1.2, ¶ 1, line 4	Have been unable to locate where the likelihood that an individual will live on or near the commercial site is addressed. Submit that this is a postulated hypothetical scenario fabricated in response to regulation (if so) and for which no likelihood has been established.
"	The source term used in the analysis should be appended to the EIS, both in terms of activity and volume by waste type. In the case of the nearly 20 years of unclassified waste, it could be asserted that a reasonable estimate would be activity proportional to recent acquisitions plus any known special cases, e.g. radium wastes.
P. 83, ¶ 2	More needs to be made of the location of the commercial site within the Hanford Site and its relation to US DOE's Hanford Comprehensive Land-Use Plan EIS. In the "industrial exclusive" area the commercial site is bounded on two sides by US DOE facilities including the ERDF just to the west of the commercial site.
5th bullet	The FEIS is cited in the references. (NUREG-0945)
P. 84, Section 4.1.2.1 Table 13	Reference should be made to the analysis that leads to the qualitative assessments in the table, particularly the water infiltration rates.
"	It would seem reasonable to assume that native vegetation would re-establish itself even on the site soils cover within 100 years. If this assumption is the basis for the 2 cm/yr recharge, it should be so stated. Also if infiltration rate is assumed to be the same as groundwater recharge, it should be so stated.

P. 84 Footnote 34	A reference should be provided for 0.001 mm/year infiltration. Why was 0.5 chosen rather than 0.1 or less - what is the basis for the conservatism?
P. 84 Footnote 35	Conflicts with the statement in 4.1.2.1.1.
P. 85 Section 4.1.2.1.2, ¶ 2	Bentonite in this arid climate may crack and asphalt may do likewise. Therefore, it may not be reasonable for credit to be given for any of the barrier layers for retardation of gas emanation. Please discuss whether gas emanation has been shown to be enough of a problem to warrant attempts at control over that provided by the water infiltration barriers.
P. 86 Section 4.1.2.1.3, last ¶	Uranium-234 is conspicuous by its absence from consideration. It has a dose factor essentially the same as the other uranium isotopes and will typically be the same as or more than U-238 (by activity). Also, need to add "i" to "29". Also, provide some calibration or history matchiing results to demonstrate goodness of fit of modeling results.
P. 87 Table 14	The method for obtaining the gross beta should be discussed. Gross beta values less than the sum of the isotopic values needs to be explained.
"	Inventories of the specified nuclides should be given. That may help explain why the concentrations are higher for the Filled Site alternative with proposed cover closed in 2215 (date?) than the close now with site soils cover.
P. 89 Section 4.1.2.3	This section should be expanded to include the most likely scenario that there are no intrusions of individuals on to the Hanford Site and thus none onto the commercial site. Even if no intrusions, there will still be additions of nuclides to groundwater and their movement on to the Columbia River adding additional amounts of contaminants (albeit, surely trivial) to drinking water systems. The material provided in Table 15 does not support the result of expected performance of the disposal system and should be preceded by parameters used for downstream communities using Columbia river water.
"	It appears that the "Offsite General Population" scenario is placed adjacent to the commercial LLRW disposal site for evaluation of normal operations and anticipated performance of the site in the long-term. This is inconflict with standard practice of placing the populations off the Hanford Site for such evaluations and evaluating the unplanned onsite scenarios separately. It also appears to conflict with the intent of WAC 246-221-070 regarding unrestricted areas and may lead the reader to unrealistic conclusions.
P. 90	Under Ambient Air Dose, 1st sentence: sentence is awkward.
P. 90 Table 16	The 1999 Hanford Site MEI was 0.008 mrem/yr.
P. 91 Table 17	How does the volume of NARM effect groundwater concentrations of the nuclides shown?
p.93, ¶ 1 under Table 18b	This paragraph states that the air pathway includes the air inside the home for Table 18b. The 3rd paragraph implies indoor radon is the primary source of ambient indoor dose. Footenote 40 states the Maximum Ambient Onsite Air Dose in Table 16 does not include indoor Radon. This appears to cause an inconsistency in determining the onsite dose. Please clarify the inconsistency. Also a reference is needed for the 15 mrem/yr WDOH guidance for Hanford.

"	This and the following paragraph would be better placed beneath Table 18a as the discussion is easily confused with Table 18b.
P. 93, 4th sentence	This sentence is confusing - all except the Site Soils Cover meet or exceed. Suggest delete "or exceed."
"	The reader should be reminded that these are hypothetical and highly unlikely scenarios requiring entry onto a presently restricted area. This applies for both the onsite and offsite scenarios given in this EIS.
P. 93, ¶ 2	For perspective all of the covers yield doses of about 10% or less of that from natural background radiation. How important can this all be?
"	A fuller explanation needs to be given to "two mrem/year that can be attributed to relicensing the site." It is surely the implications of relicensing and not the act itself.
P. 94, Footnote 44	Believe it ill advised to talk about exceeding certain values and then noting that they really do not apply. That is unnecessarily alarming. It also implies that the US Ecology Site will not be cleaned up to the same standards as the federal lands at Hanford. This needs to be explained.
P. 98, Section 4.1.2.5	The referenced Tables appear incorrect. They should be 18a and 18b. The conclusion appears incorrect for the stated alternative analyzed. Page 5 states that license renewal is for 5 years. The analysed doses are for operations for 56 years or 11 renewals. Wouldn't the incremental dose increase be 1/11 of the values listed in the tables based on a single renewal? This comment applies to similar analyses throughout the document.
Page 100, Section 4.1.3, 1	We strongly recommend that the Chemical Risk Assessment be redone using the data from the U. S. Ecology Site Investigation.
P. 102, Section 4.2.1	This Section should use the "Neitzel 2000" Rev. 12, September 2000.
P. 102, Section 4.2.1	Semi-arid is probably more apporpriate than "dry, arid", as some vegetation is supported. The key aspects favoring the site are low precipitation rates and high evapotransportation rates that result in low rates of infiltration of water to wastes, thus lowering release of contaminants to goundwater.
P. 103 Section 4.2.1.1, ¶ 2	Delete the first sentence - Richland is not in the vicinity of the commercial disposal site. Second sentence likely applies to the commercial disposal site, but is incorrect for Richland.
P. 104, under Table 22	What is the basis of the following conclusions? "Minor fluctuation in soil radionuclide levels...and worldwide fall-out levels." Statements like this and elsewhere in the document are usually source referenced.
P. 104, Section 4.2.1.3 Last sentence.	"was" should be changed to "were"
P. 106, Section 4.2.2.1, 3	Last paragraph, 3rd sentence: for clarity, suggest the following change: "...but none exceeded the screening levels".
P. 107, Table 23	MDC means "Minimum Detectable Concentration"

P. 107, Section 4.2.2.2	Include discussion of Cold Creek and Dry Creek as surface water bodies. Also in 200 East, groundwater is used from 2 wells for emergency cooling of tanks and fire suppression.
P. 108, Top of page	This paragraph appears to contradict the 3rd paragraph on page 107. It is stated here that "it is possible to determine from the date if the commercial LLRW disposal site is contributing to the groundwater concentrations". This includes tritium. The previous paragraph stated the "Increases in tritium and gross beta have been attributed to U.S. DOE activites elsewhere at Hanford".
P. 109	Need space between 50 and pCi/L
P. 110 Section 4.2.2.4	Uranium-234 is missing.
"	The conclusion on the Impacts of License Renewal appears incorrect for the stated alternative analyzed. Page 5 states the the license renewal is for 5 years. The analyzed gross beta level increase is for 56 years of operation or 11 renewals. Presenting the data in this method overstates the impact of a 5 year license renewal by a factor of 10. Please explain.
P. 4.2.3 Section 4.2.3, ¶ 3	The discussion cites an increase, however data for only one year are given.
P. 111 Table 25	Presume the source of 60-day half-life I-125 is medical sources, but it would help to identify. How is it that it is around to monitor?
"	Suggest consistent units be used throughout table. Need somewhere to define what is included in gross alpha and gross beta and "Gamma emitters." Radon-222 is an alpha emitter (and weak gamma emitter).
"	Explain "reporting level".
P.111, Section 4.2.3	This section needs to include consideration of impacts on air quality from borrow pits and other areas where cover materials will be removed, as well as materials blowing off trucks during transportation of cover materials to the U. S. Ecology site.
Page 112, Section 4.2.4	This section should consider the impacts on the State priority habitat shrub-steppe if "site sands" for cover materials are obtained locally. Habitat destruction at other cover material sites should also be considered. Mitigation measures for the borrow sites need to be discussed.
P.113, Section 4.2.4.1, ¶ 1	Refer to the Hanford Site rather than just "Hanford."
P. 114	Reference PNL 1977 is not listed in the References section.
P. 114, Section 4.2.4.2	Last sentence in 1st paragraph: "zeroed" should be "zero"
P. 115	Under Impacts of Site Closure - 2nd paragraph - this appears to be the only use of the term "Prototype Schedule".
P. 116	1st bullet is a repeat of the last bullet on page 115.

P.116, Section 4.2.5	This section also needs to address the impacts on cultural resources of obtaining closure materials.
P. 118, 1st para, lines 4 and 5 and also page 148, lines 3 and 4	The correct title for U. S. DOE, 1992 is: *The Future for Hanford: Uses and Cleanup, The Final Report of the Hanford Future Site Uses Working Group*, Westinghouse Hanford Company, Richland, Washington. 1992. This was an input to the Hanford comprehensive land-use planning process, not a DOE position paper.
P. 118, 1st para, lines 5 and 6 and also page 148, lines 8 through 10	The correct title for U.S. DOE 1999 is: *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, DOE/EIS-0222-F, United States Department of Energy, Hanford Site, Richland, Washington. September 1999.
P. 118, Section 4.2.6.1	Under Impacts of License Renewal, line 3; Impacts of NARM Acceptance, also line 3; Impacts of the Filled Site Alternative, line 3: Replace "recommendations" with "plans".
P. 119, Section 4.2.7.1	This section should discuss Yakima River flooding.
P. 121, Section 4.2.7.5	Update this Section with the two reports that will be provided on the 24 Command Fire for 2000.
P. 125	Under Benefits to the State of Washington, the 1st sentence states that the Department of Ecology has landlord oversight responsibility. However, page 42 lists the U.S. Department of Energy as the landlord. This is inconsistent.
P. 126	Under Impacts of License Renewal, 2nd paragraph: the reference to Section 5.3.3.1 shoud be 4.3.3.1.
P. 128, Section 4.2.9, 2nd para	Line 4: Insert "fuel" after "...K basins". Lines 4 and 5: Delete "replacement of the cross-transfer system". Replacement of the cross-site transfer system was completed several years ago and its operation is covered in the TWRS EIS. Lines 6 and 7: Even though this paragraph is sort of summarizing the cumulative effects discussion from U. S. DOE 1996, the TWRS EIS, delete "and the operation and closure of the commercial LLRW disposal site" since this EIS is discussing that site's operation and closure.
P. 128, Section 4.2.9, 3rd para	The Hanford Remedial Action DEIS is not included in the references. Note it was finalized as the *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, and, at the request of the regulators, the FEIS does not discuss remedial actions specifically. Also, on the 3rd line, DEIS should be FEIS. The FEIS is cited on page 146.
P.131, Section 4.3.1	One method to illustrate possible EJ is to show the relationship between doses for Native Americans and others in the intrusion scenarios. In this case, because of the radon artifact, there would appear to be no EJ issue for the commercial disposal site.
"	There is no mention of the African American population in the area. Although very small, there could be a sentence or two stating the percentage and why they will not be affected by the proposed action.

P. 131, 3, line 1	State the number of miles rather than "several miles".
P. 131, ¶ 3, line 4	The sentence on the Monument is inadequate as is and should be expanded. A map should be provided to show the distant relationship to the commercial site. A statment that the implications of the Monument on the Hanford Site are under study would be useful.
P. 135	Under Mitigation Measure, 2nd bullet: should this bullet be "if the site is not relicensed..."?
P. 138	Under Impacts of Filled Site Alternative: suggest changing to "...compensate for the higher costs."
P. 139, Glossary of Terms	Begin definition of affected environment as that portion of the existing environment that may be affected by implementing the proposed action or one of its alternatives as described in the EIS.
P. 139 Background radiation	It is helpful to differentiate between the inescapable naturally occuring background radiation and that from nuclear weapons fallout and elective sources such as consumer products and medical uses.
P. 139, Dose	Suggest the reference to chemical dose be parenthetical since Dose is followed by "(or radiation dose)". Suggest change to read, "(For chemicals, dose refers to the quantity taken into the body.)" Delete the part about "generally denotes...."
P. 141, Inadvertent intruder	Suggest the end be revised to read, "...at any time when institutional controls are absent." This avoids the need to address active controls such as patrols, fences, etc. and passive controls such as land deeds, covenants, etc.
P. 140, Half-life	Suggest deleting the word "constant." It is true only in gross amounts.
P. 141 MEI	Request deleting, "who lives near Hanford and," This nomenclature is independent of site.
P. 142 Offsite	Needs to be compatible with Hanford Site. Offsite as used in EIS is still within the restricted access area of the Hanford Site.
P. 142 Radioactivity	Suggest replacing with: "The property of some nuclides whose nuclei spontaneously disintegrate emitting alpha, or beta particles and sometimes also gamma rays."
P. 142 Rem	Suggest replacing with: "The rem is a special unit of dose equivalent, effective dose equivalent, etc. The definition given has not been in use by the International Commission on Radiation Units and Measurements for decades."
P. 142 Risk	Suggest replacing with: "Typically, the product of the probability of an event occurring and the consequences of that event in terms of individual or collective detriment."
P. 142 Shrub-steppe	Suggest change, "having a" to "occurring in."

P. 143 Source term	Should be the total activity, by radionuclide, of wastes disposed of in the commercial LLRW disposal site.
P. 146	The correct title of PNNL 1997 is: *Cultural Resources Report Narrative #96-200-123, U. S. Ecology Sand Dune Sampling,* Pacific Northwest National Laboratory, Richland, Washington. A copy will be sent under separate cover.
P. 149, line 3	"challenging" should be "Challenging"
App I, p. 3, Section 3.0	Earlier the reader was told that the trenches were 800 ft in length. Please explain the difference of 200 ft.
App I, 1st para, line 3	Typo: "980" should be "1980"
App I, p. 6, Table 1	No footnote provided for the * on Vadose zone.
Appendix II, p. 5, Section 1.0, line 3	Correct this to state that the disposal site is located "near" Richland, but not "in" Richland.
Appendix II	This Appendix addresses offsite scenarios that while off the US Ecology Site are in fact on the federal government controlled Hanford Site and not the usual "offsite" environment of urban and rural residences, etc.
App II, p. 7, Section 3.0	There is no scenario that describes the more likely scenario of no intrusion and the only impacts will be those of movement of contaminants through the vadose zone to groundwater and on to the Columbia River.
App II, p.8, ¶ 2	The utility of this paragraph is not understood. A basis should be supplied to show that the conclusion presented here is "conceivable", or suggest deleting or qualifying as "conceivable but unlikely".
App II, page 10	Last bullet: NUREG 5512 is not in reference list
App II, p. 12, Section 3.2, ¶ 2, line 4.	This section is internally inconsistant. The section title refers to a offsite critical population, but the cited line states that the individual is assumed to live a lifetime on the site.
App. II, p.19, ¶ 3, line 6	"Dose projections" should read "doses projected"
App II, p.19, ¶ 4, line 2,3	"rem" is not typically initial capped.
App II, p.20 first bullet	Sentence needs minor repair: " All of the waste contributing to the source term..."
App II, p. 23, Section 4.1.2	This is an extremely important section that should have been highlighted early in the EIS. Why would one estimate fission product activities (Tc-99, I-129) based on Co-60 which is principally an activation product, just because it is readily measurable? If the results presented in the EIS are divided by 100 to 10,000 the "impacts" become less than trivial.

App II, p. 24, Footnote 19	On what basis is it assumed that all C-14 is available in a gaseous form?
App II, p. 25, first two bullets	These conversions could easily be misapplied-besides the first is incorrect. Suggest replacing with 1 Sv = 100,000 mrem. 1 Bq = 27 pCi.
App II, p.28 Eq.5	Printing went awry. Don't see activity in Bq.
App II, p. 30, first bullet	Conversion is incorrect.
App II, p. 33, Footnote 37	Provide the basis for the assumption that the Rn-222 and Rn-220 concentrations are the same.
App II, p.82 Section 8.7, ¶ 1	Delete the 3rd and 4th sentences and replace with: "The largest dose calculated was for the pocket mouse and amounted to 0.03 rad/d. The doses to all other organisms would be expected to be below that figure by at least a factor of 10."
App II, Table 51, p. 83	Suggest the following headings: "Biota and Exposure Pathway" and "Dose Rate." Then on left, "Plants, root uptake." Delete "dose rate" from all lines. "Mouse, External sources." "Mule deer, Ingestion."
App II, p.87, Section 10, last ¶, first sentence	While the uncertainty analysis appears to be well done for the parameters considered, the cited sentence and the last sentence of ¶ on p. 90, "...the potential uncertainty in Tc-99 and I-129 source term is not considered...." seriously detracts from analysis and will surely confuse the reader.
App II, p. 96, Section 10.6	Last sentence wording is not clear.

(12)

CITY OF PASCO

MAYOR (509)545-3404 / Scan 726 -3404 / Fax (509)545-3403
P.O. Box 293, 525 North 3rd Avenue, Pasco, Washington 99301

November 27, 2000

Nancy Darling
Washington Department of Health,
Division of Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7827

RE: US Ecology's Low Level Waste Disposal Facility at Hanford

Dear Ms. Darling:

This letter expresses the City of Pasco's support for prompt completion of the EIS for US Ecology's operation of a commercial low-level radioactive waste disposal facility on the Hanford reservation and for issuance of a new five-year lease to US Ecology.

US Ecology's facility is an exceedingly important component of the economic infrastructure of our area. Waste surcharges generated by waste disposal at US Ecology's facility provide a large amount of funding to Benton County and to the Hanford Area Economic Development Fund, which, in turn, provides low interest loans and grants to local government and to business. These loans stimulate and diversify the local economy.

Additionally, US Ecology's facility employs 24 people directly and indirectly in the local community. Although this number is small relative to employment levels at Hanford, employment at the facility contributes to employment diversification in our area.

A safe, reliable and economical waste disposal facility is a necessary part of the medical research infrastructure. Medical research relies heavily on radioactive material, some of which ultimately requires disposal at the facility. It is important that medical researchers have a safe and reliable site at which they can dispose of their research-related waste.

The new lease with US Ecology would be consistent with the Department of Energy's surrounding land use and future planning and the facility's environmental impacts are insignificant when compared to the larger Department of Energy operations.

If the new lease is denied, our area will suffer unavoidable impacts including the loss of local revenue, the loss of jobs, the loss of low-level waste disposal capacity for in-state and Northwest Compact generators and the loss of continued contributions to the facility's perpetual care and maintenance fund.

Accordingly, the City of Pasco recommends approval of the new lease with US Ecology for its commercial low-level radioactive waste disposal facility on the Hanford reservation.

Sincerely,

Michael L. Garrison,
Mayor

MG/TA/tlz

(13)

Hanford Communities

*Richland * Kennewick * Pasco * West Richland * Benton County * Port of Benton*

P.O. Box 190, Richland, WA 99352
Telephone (509) 942-7348 Fax (509) 942-7379

November 13, 2000

Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection, Mail Stop 47827
Olympia, WA 98504

Dear Ms. Darling,

The Hanford Communities urge the State of Washington to move expeditiously to complete the Environmental Impact Statement (EIS) Process for the US Ecology low-level radioactive waste disposal facility. The facility has operated safely on the Hanford reservation since 1965 and serves an important function for this region. It provides a safe, reliable waste disposal option to accommodate waste from medical research and treatment as well as commercial operations.

The site is centrally located for waste generators including Energy Northwest and is in an arid region that receives on average 7 inches of rainfall per year. It is remotely located on the Hanford Site and poses no risk to the general public and there are no nearby residents. If the Fast Flux Test Facility is restarted, it would be ideal to have a waste disposal facility nearby that would dispose of waste without ever leaving the Hanford Site.

Waste surcharges at the disposal facility provide a direct benefit to the region by providing revenue to the Hanford Area Economic Development Fund that is used to stimulate the local economy.

The Hanford Communities support the three pending actions that are evaluated in the EIS.

- The license to operate the commercial facility should be renewed.
- The Washington Administrative Code should be amended to establish a 100,000 cubic foot per year limit for diffuse naturally occurring or accelerator produced radioactive waste.
- The Site Stabilization and Closure Plan submitted by US Ecology should be approved. Closure standards and a cover design approved by state regulatory agencies will protect public health and the environment.

A safe regulated facility with reasonable disposal costs is of great benefit to the region. It assures that low-level radioactive waste is not accumulated at medical or commercial facilities due to the lack of an appropriate disposal option.

The Hanford Communities appreciate the opportunity to comment on the actions that are evaluated in the EIS.

Sincerely,

Larry Haler, Chairman
Hanford Communities Governing Board

Fluor Hanford
P.O. Box 1000
Richland, WA 99352

(14)

FLUOR GLOBAL SERVICES

November 28, 2000

FH-0006155

Nancy Darling, Project Manager
Washington Department of Health
Division of Radiation Protection
Mail Stop 47827
Olympia, Washington 98504-7827

Dear Ms. Darling:

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE U.S. ECOLOGY COMMERCIAL LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITY

It is important that the environmental impact statement for the U.S. Ecology commercial low-level radioactive waste disposal facility recognize the importance of this facility to the Tri-Cities' economy. Economic development funds, which are generated by a state surcharge on waste shipped to the facility, have helped grow many businesses in the community. Funds are administered by the Hanford Area Economic Investment Fund Committee (HAEIFC). Over five years, HAEIFC has invested about $6 million into 13 businesses in the Tri-Cities region, creating more than 600 jobs for the region. Several months ago, LaMarr Motor Coach decided to relocate its manufacturing operations to Pasco, partly because of HAEIFC funding. It is expected to create 200 jobs over the next five years.

U.S. Ecology provides another important service to the Tri-Cities. Several large employers depend on the facility to meet their environmental requirements. These include:

- Energy Northwest operates the Columbia Generating station, which disposes low-level radioactive waste at U.S. Ecology. Energy Northwest employs more than 1,000.

- Siemens Power fabricates fuel rods and elements for the nuclear industry, and uses U.S. Ecology for radioactive waste disposal. Siemen's Richland plant employs more than 800.

- Allied Technology Group (ATG) is a leading provider of environmental technology and hazardous and radioactive waste management services. The company offers a comprehensive set of thermal and non-thermal treatment solutions for hazardous and radioactive wastes including work in support of Fluor Hanford. Much of its treated waste is sent to U.S. Ecology. ATG employs about 200.

We encourage the strategic economic importance of the U.S. Ecology site in the Tri-Cities be included in the environmental impact statement.

Sincerely,

T. J. Harper, Vice President
Site Services

elr

TRIDEC - S. Volpentest

US Ecology, Inc.
P.O. Box 638
1777 Terminal Drive
Richland, Washington 99352

509/946-4945
Fax: 509/946-5495

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USEcology

an *American Ecology* company

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NOV 2 8 2000

DIVISION OF RADIATION PROTECTION

November 22, 2000

Ms. Nancy Darling
Project Manager
Washington Department of Health
Division of Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7827

Dear Ms. Darling:

US Ecology appreciates the opportunity to comment on the Draft Environmental Impact Statement August 2000 (DEIS) related to the commercial low-level radioactive waste disposal facility near Richland, WA. US Ecology recognizes the significant effort devoted to this document by the state, and encourages timely completion of the Final EIS so decision-making on the issues considered may proceed. As facility operator, we offer the following general comments and text-specific suggestions in the interest of improving the final document for both public disclosure and subsequent decision-making purposes.

General Comments

US Ecology believes that material contained within the DEIS, coupled with other reports and analyses performed by the state, provide a sound basis for license renewal, continuation of current NORM limits and approval of a site closure and stabilization plan. In conjunction with material in the DEIS, two circumstances support this conclusion: 1) The US Ecology LLRW facility has been safely disposing of waste in accordance with state and federal regulations under a license administered by WDOH for thirty-five years and; 2) The U.S. Department of Energy (DOE) has designated the 200 areas of Hanford's central plateau as waste management complexes "for at least the next fifty years" *(Final Hanford Comprehensive Land Use Plan Environmental Impact Statement.* DOE/EIS-0222-F). Comments made herein reflect these circumstances.

The DEIS supports the current NORM volume limit of 100,000 cubic feet per year. In the dose assessment in Section 4.1.2.3.1, the state, for comparison purposes , aggregates dose contributions associated with 36,700 cubic feet per year with those of other radionuclides. Offsite incremental doses presented in Appendix II, Table 53 indicate that a source term including NARM volumes up to 100,000 cubic feet per year would not have significant dose consequences. This is true for the cover proposed by US Ecology and reasonable alternatives.

Continued delays in closure plan approval and subsequent capping of formerly used trenches is not in the best interests of environmental protection. For this reason, US Ecology encourages the state to choose a suitable design and authorize initiation of capping work as a high priority. Tables 13 and 31 indicate that there are several cover concepts that meet, or could be modified to meet the regulatory and performance objectives of the responsible state agencies.

Implementation of the approved site closure plan will provide for restoration of natural vegetation and related biotic communities at the site. This restoration will occur during the site's institutional control period and well within the timeframe during which the Hanford central plateau will be a restricted area based on DOE activities. For these reasons, preservation of 15 relatively undisturbed acres at the site is unnecessary. The habitat associated with the 15 acres is not a unique resource, and the size of the proposed mitigation area is insignificant compared to the overall regional shrub-steppe habitat on the Hanford Reservation. Moreover, full mitigation of the temporary site surface disturbance will be provided by closure and stabilization of all disposal units and reestablishment of vegetation. The DEIS recognizes (p. 115) that most cover designs considered "are expected to encourage the shrub-steppe habitat to eventually return and most likely thrive due to the silt loam soil in the covers."

As noted in the DEIS, any future subsurface investigations to address Resource Conservation and Recovery Act (RCRA) issues should be closely coordinated with closure plan decisions. Prompt capping of formerly used trench areas, as suggested on page 102, offers the greatest opportunity to enhance isolation of radioactive and RCRA constituents at the site. Maintaining cover system integrity should guide future subsurface site investigation decisions. US Ecology will continue to assist the state in conducting investigations as may be needed through use of existing Closure Fund reserves, provided that such investigations are not counterproductive to the goal of expeditious closure of the older trenches.

The DEIS Appendices provide a helpful explanation of pathway analyses, dose and risk assessment, including recognition of the inherent conservatisms and uncertainties associated with long term predictions. We recommend that the final EIS include additional text references to appendix material within the dose and risk assessment sections of Chapter Four. Specific comments in this regard are presented below.

The DEIS correctly defines risk (p.143) as a function of both the probability of an adverse impact and the consequences of its potential occurrence. Accordingly, the final EIS should acknowledge that all of the scenarios presented in Tables 18 and 20 have an extremely low probability of occurring, and that the most likely future land use scenario is as a dedicated waste isolation area under the institutional control of the federal government. Further, Appendices II and III acknowledge that the hypothetical doses and health risks presented in Section 4.1 derive from very conservative estimates of radioactive source term, radionuclide solubility, and (for some cover alternatives), moisture infiltration rates. Simplifying calculational assumptions also increase conservatism. Taken together, these conservatisms yield hypothetical doses and

associated risks that are significantly higher than those that would be predicted using more realistic assumptions and parametric values.

The October 12, 2000 errata sheet prematurely attributes the presence of trace concentrations of hazardous constituents in samples from two site wells to US Ecology operations. For accuracy, the final EIS should acknowledge that these particular constituents have also been found in multiple U.S. DOE wells near the US Ecology facility. Conclusions about the origin of these constituents awaits additional investigation.

Specific Comments:

US Ecology is pleased to offer the following specific comments for your consideration. Many of the specific comments relate also to statements and representations in Tables 2,3, and 4 in Section 1.4. We suggest that changes made in response to these comments also be reflected in the summary tables.

Page xii, "Measurements" Table. We suggest replacing definitions (except for "Decay") given herein with those provided in the "Glossary of Terms" beginning on page 139. The latter are more complete and precise definitions.

Page xiii, Radiation Doses. We suggest deletion of "Closed LLRW Site" from "Average Radiation Dose" Table. The comparison of a standard to actual value ranges is misleading.

Page 6, Section 1.2.2, NARM Acceptance. Delete footnote 3 from first sentence and add after first sentence: "A component of NARM is naturally occurring radioactive material (NORM). Unless otherwise explicitly stated, references to NARM include diffuse NORM."

Page 8, Table 1, Pending Actions and Alternatives. Add a footnote to "Pending Action: Site Closure noting "Other operational, design and institutional aspects of *US Ecology's 1996 Site Stabilization and Closure Plan* as required by WN-I019 condition 66 are assumed constant for all alternatives assessed."

Page 16, Table 2, Socioeconomic Impacts. Under "Alternative 1" add "This is due to increased operating costs included in the facility rate base. These costs would be pro rated over disposed waste and paid by facility users."

Page 17, Table 2, Cumulative Effects. For reasons explained below, there are no significant unavoidable adverse impacts associated with actions and alternatives considered with the contemplated mitigation measures.

Page 18, Table 2, Environmental Justice. Change response under "Impacts" to "None". See discussion re. Page 131 below.

Page 22, Table 3, Significant Unavoidable Adverse Impacts (NARM) . Change response to "None." As discussed below, all significant adverse impacts can be mitigated to insignificant levels.

Page 26, Table 4, Cover Construction Risks . "Impacts" response should state for Pending Action and All Alternatives: "Normal construction risks associated with a large scale earth moving construction project."

Page 29, Table 4, Significant Unavoidable Adverse Impacts. Add preface "According to mathematical models employing very conservative assumptions,....."

Page 39, Table 4, Impacts re: Cumulative Effects . Change second sentence: "Impacts associated with actions considered are expected to be minor in comparison to those associated with U.S. DOE Hanford operations."

Page 41, Section 2.0, Background. A discussion is essential describing U.S. DOE plans for future land use in the 200 area as publicly disclosed in its recently issued Comprehensive Land Use Plan. This is critical to realistic assessment of traditional tribal or alternative land usage patterns in the foreseeable future. Specifically, add the following from DOE/EIS-0222-F: "This Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP-EIS) considers several land uses for the Hanford Site planned for the next 50 years (p. 1-1)" and "Lands within the central plateau geographic area would continue to be used for the management of radioactive and hazardous waste materials. These management activities would include collection and disposal of radioactive and/or hazardous waste materials that remain onsite, contaminated groundwater management, current offsite commitments, and other related and compatible uses." (p.3-15 and elsewhere)"

Page 41, Section 2.1, Site History. Change next to last sentence, first paragraph, to read: "...the site was authorized to dispose of material..."

Page 42, Section 2.2, Regulatory, Legal, and Policy Considerations. In first paragraph, add "Washington State Patrol" to state agencies having regulatory authority.

Page 42, Section 2.2, Regulatory, Legal, and Policy Considerations. Last paragraph: delete "Contamination at" from beginning of first sentence.

Page 44, Table 6, WAC Radiation Protection Standard. Delete reference to 500 mrem/yr and footnotes 9 and 10 since US Ecology is bound by the 100 mrem/year regulatory requirement.

Page 55, Section 2.5, US Ecology Site Investigation, Non-Radioactive Hazardous Constituents. Delete last sentence. As reported in the hazardous constituent site investigation and as noted on the state's 10/12/00 errata sheet, trace concentrations of

TCE and chloroform were detected in some groundwater samples. US Ecology has recommended augmented groundwater monitoring to confirm the presence of these constituents and evaluate trends (*Comprehensive Facility Investigation,* p. 4-3). It is also important to disclose that groundwater monitoring data from nearby U.S. DOE operations indicates slightly elevated concentrations of TCE and chloroform.

Page 55, Section 2.5, US Ecology Site Investigation, Conclusions. The first sentence is misleading and should be deleted. Minute concentrations of RCRA constituents in soil gas within the buffer zone adjacent to disposal units are reasonably expected as a result of disposal practices prior to November 1985 and do not represent a threat to the environment. This is supported by the DEIS discussion of the state's chemical risk assessment (Section 4.1.3).

Page 56, Section 2.5, US Ecology Site Investigation. Under "Groundwater Samples", change first sentence of last paragraph to read: "Some radiological results were not entirely consistent with historical data."

Page 57, Section 2.5, US Ecology Site Investigation. Under "Conclusions", change first sentence to read ".....radionuclides within the buffer zone beneath disposal units at the commercial..." It should also be noted that, per 10CFR Part 61 and WAC equivalent, the point of compliance for site operations is the site boundary and the top of the saturated zone beneath the site.

Page 59, Section 3.0, Second Item #2. We suggest that the final EIS adopt the definition of "reasonable alternative" contained in the SEPA Handbook @ p. 44: "A reasonable alternative is a feasible course of action *that meets the proposal's objective* (emphasis added) at a lower environmental cost."

Page 61, Section 3.1, License Renewal. Change last sentence on page to read: "....the specifics of enhanced practices such as the examples presented in Table 10 will be..."

Page 63, Table 10. Within the Objective "Minimize radon emanation from trenches" US Ecology believes "Enhanced Administrative Controls" is the preferred alternative. We agree with the objective of minimizing radon emanation from trenches. However, this objective can best be met using administrative controls directed at reduction of worker exposure in conjunction with current NARM disposal methods. Optimal long term protection will be afforded by a properly engineered final cover placed over the entire disposal area.

Page 65, Section 3.3.1, Closure Cover Design. Under "Pending Action," amend footnote 29 to read "Analyses within this EIS have a different focus than those in previous analyses which were regulatory in nature. The EIS analyses consider, for the purpose of comparison of alternatives, hypothetical impacts on sensitive populations such as Native Americans and children."

Page 75, Section 4.1, Public Health Risk. Change third sentence to read: "Short term risks are those risks associated with site operations, transportation, and construction of the cover at closure."

Page 76, Section 4.1.1.1.1, Operational Risks to Public Health. Delete "significant" from the last sentence of the first paragraph and substitute the word "measurable".

Page 77, Section 4.1.1.1.2, Operational Risk and Worker Safety. In Table 11, change "Incident Rate" to "0" for 1988, 1990, and 1997 in order to be consistent with "0" "Lost Work Days". Change second sentence under Table 11: ".....shows little if any correlation between waste volume and accidents."

Page 78, Section 4.1.1.1.4, Summary of Impacts. Under "Impacts of License Renewal", substitute "concentration" for "dose limit" in the last sentence, second paragraph.

Page 79, Section 4.1.1.2.1, Historic Transportation Risk. Delete "Although" and "some of these incidents.....impacts." from the first sentence, second paragraph. We are aware of no factual basis for this speculative statement.

Page 81, Section 4.1.1.2.3, Summary of Impacts. Change last sentence under "Impacts of License Renewal" to ".....and redirect transportation risk to other locations."

Page 88, Section 4.1.2.3, Radiation Dose to Individual. Add to end of first paragraph: "Dose and risk results reported have a less than one in twenty chance of occurring (95 percentile). Expected exposure (and risk) to individuals would be less (in most cases far less) than single point estimates reported. See Appendix II, Chapter 10 for more complete information on uncertainty."

Page 90, Footnote 39. Change "Table 14" to "Table 16"

Page 91, Section 4.1.2.3.1, Dose Assessment. In Table 17, correct values for I-129 consistent with those in Table 14.

Page 92 and 93, Tables 18a and 18b. To enhance public understanding, we suggest noting that approximately 80% of the maximum hypothetical doses presented in these tables are associated with material that has already been disposed of.

Page 93, Table 18b. The quantification of dose to the on-site intruder expands the intent of 10CFR Part 61 (and Washington Administrative Code) as it relates to inadvertent intruder protection. NRC used the concept of the inadvertent intruder to require specific administrative controls to further isolate the most hazardous and long lived waste class. In its final rulemaking, NRC rejected any quantification of dose associated with a hypothetical intruder. Instead, NRC required (as does WDOH) prescriptive administrative controls to minimize both opportunities for, and consequences of

inadvertent intrusion absent institutional controls. Hypothetical doses to hypothetical intruders are not relevant to quantitative evaluation of site performance because of the long time frames, and conservative assumptions about site performance and speculated human activities in the distant future.

Page 93-94, Section 4.1.2.3.1, Dose Assessment. Delete paragraph beginning at bottom of Page 93. As written, the paragraph implies that the doses presented in Table 18b are actual expected doses rather than hypothetical maximum, analytically derived values developed for the purpose of qualitative alternative comparison. Alternatively, language such as that contained in the paragraph on the top of page 99 of Appendix II would provide useful perspective.

Page 94, Section 4.1.2.3.2, NARM Contribution to Dose. The title for Table 19 may be confusing. We suggest: "Maximum Dose to Rural Resident Onsite Intruders through 10,000 Years-Relative Impact of Different NARM Volumes."

Page 95, Footnote 46. Delete last part of disclaimer starting with "due predominantly..." There are numerous factors which contribute to uncertainties in long term predictions. The reader can be directed to Appendices II and III where uncertainties are discussed.

.Page 97, Table 21. Most closure regulation/guidance is based on 1000 years, not 10,000 years. It is extremely difficult to predict barrier performance and doses beyond 1000 years, and small differences in Kds and infiltration rates can have major impact on >1000 year dose calculations. We suggest that maximum doses for first 1000 years also be presented (as they are in various tables in Appendix II) and a clear discussion of >1000 year estimating uncertainties be included.

Page 99, Section 4.1.2.5, Impacts on Site Closure. We suggest changing first paragraph to read: "Cover efficiency is a key factor in controlling long-term impacts to public health through waste isolation. Various cover designs have been evaluated for long term effectiveness and reliability. Each cover design considered has advantages and disadvantages. Based on both quantitative and qualitative evaluation, alternative cover designs are ranked as follows in terms of overall effectiveness and reliability:....."

Page 99, Section 4.1.2.5, Impacts on Site Closure . Under "Mitigation Measures" change third bullet to read: "Select a NARM Acceptance Level for which associated projected doses can be mitigated with proper administrative controls."

Page 100, Section 4.1.2.4, Significant Unavoidable Adverse Impacts (re: Cancer Risk). We suggest amending the last sentence to reflect analysis contained in Appendix II, Chapter 10: "...combinations are predicted to slightly increase the risk..... The most likely cancer risk from offsite exposure from the site is less than one in one million. The most likely cancer risk predicted for the hypothetical onsite intruder is approximately one in 500,000 (Appendix II @ p. 97 & 100)."

There are no significant unmitigated impacts of the proposed project or alternatives given the conservative approach taken by the state to transport modeling, surrounding land use and residence and dose uptake assumptions. Within the scientific community there is honest debate regarding biological impacts (or lack thereof) at extremely low levels of radiation. The numerical values stated, even if accepted as valid, are well below values known to cause harm and are within the range that many radiation safety professionals doubt biological significance. For instance, in a 1996 position statement, the Health Physics Society stated ".. for a population in which all individuals receive lifetime doses of less than 10 rem above background, collective dose is a highly speculative and uncertain measure of risk and should not (emphasis added) be quantified for the purposes of estimating population health risks." (HPS 1996, attached). Any combination of scenarios projected to have regulatory significance (e.g. exceed the 25 mrem off site standard) can be adequately mitigated as stated in the DEIS.

Page 101, Section 4.1.3, Risk from Non-Radioactive hazardous Waste. Delete third sentence of last paragraph and replace with: "For ground water, only vinyl chloride has a calculated exposure point concentration (EPC) which exceeds its risk based concentration (RBC). Since numerous conservative assumptions went into calculating the EPC, the resultant value significantly overestimates the actual maximum EPC. (Kirner 1999)"

Page 107, Section 4.2.2.2, Groundwater. Change first sentence of third paragraph: "Table 23 reproduces selected portions...."

Page 109, Section 4.2.2.3, Fourth paragraph. We suggest it be noted that because of attenuation, diffusion, dispersion and radioactive decay, predicted groundwater concentrations of radionuclides presented in Table 14 (page 87) will dissipate several orders of magnitude before potentially reaching a surface water outlet at the Columbia River. Further, according to U.S. DOE, contributions from the commercial LLRW facility would be "minimal" (DEIS p. 129) in comparison to those from DOE sources.

Page 110, Section 4.2.2.4, Significant Unavoidable Adverse Impacts (re: ground water) We suggest changing response to "None". Actual on-going monitoring data indicate that ground water quality has been maintained. The conclusion that the 50 pCi/L gross beta standard will be exceeded sometime in the future is based on pathway analysis employing highly conservative assumptions. These conservative parametric values as well as the over representation of Tc-99, discussed on p.109, provide a sufficient basis to question the hypothetical projection of gross beta concentrations in excess of state groundwater quality standards.

Page 115, Section 4.2.4.3; and Page 117, Section 4.2.5.1, Mitigation Measures. Delete bullet: "Protect undisturbed 15 acres in northwest corner of site during operations and closure." The affected habitat is not a unique resource, and the size of the proposed mitigation area is insignificant compared to the overall regional shrub-steppe habitat on the Hanford Reservation. Mitigation of this temporary, insignificant impact will also be

fully provided by closure and stabilization of all disposal units and reestablishment of vegetation. The DEIS recognizes (p. 115) that most cover designs considered "are expected to encourage the shrub-steppe habitat to eventually return and most likely thrive due to the silt loam soil in the covers." In summary, any adverse impacts will be fully mitigated by proper closure and stabilization of disturbed areas at the site, as contemplated in the Site Closure and Stabilization Plan.

Alternately, arbitrary restriction of future development on the 15 acres may adversely affect future operational flexibility. Such adverse effects may restrict best practices and application of ALARA principles during operation and /or negatively affect economical use of available land to the detriment of facility rate-payers.

Page 116, Section 4.2.5.1, Impacts of License Renewal. License renewal or denial will have no significant impact on tribal cultural resources. The US Ecology facility is on federal government property that will remain so for at least the next 50 years (DOE/EIS-0222-F). We suggest replacing the first paragraph as follows: "Relicensing will have no impact potential tribal land uses since such land uses could only occur after site closure, natural surface habitat restoration, and termination of institutional control by the state."

Page 117, Section 4.2.5.1, NARM. We suggest replacing last two sentences: "While it is conceivable that there would be a contribution from buried NORM to indoor radon through hypothetical Native American sweat lodge use, any actual impact would likely be insignificant and dependent on depth of burial, waste volume and spatial distribution, cover integrity, dwelling design and occupancy factors."

Page 117, Section 4.2.5.1, Significant Unavoidable Adverse Impacts. In light of the above comment about tribal cultural resources, we suggest changing response to "None".

Page 118, Section 4.6.2.1, Impacts of Site Closure. We suggest the deletion of the beginning of the next to last sentence through "because". Add "because of U.S. DOE waste management activities" after "2156".

Page 120, Section 4.2.7.1, Flooding. Remove the "Local Ponding" discussion from the "Catastrophic Events" discussion. Local ponding is not a catastrophic event. Impacts can be easily anticipated and mitigated through existing facility operating procedures. Change Table 28 accordingly.

Page 121, Section 4.2.7.5, Fire. We suggest updating this section to note that the summer 2000 fire did not result in known radiological releases from US Ecology or U.S. DOE facilities.

Page 122, Section 4.2.7.5, Fire. Change first full sentence at top of the page to read: "...minimal because all waste is disposed in nonflammable containers and therefore is not combustible." Also, change last sentence: "Waste in open trenches may potentially be..."

Page 125, Section 4.2.8, Socioeconomic Considerations. Change next to last sentence on page to read "....waste, but future access to that site to out-of-compact waste will be significantly restricted starting in 2001 and completely eliminated by 2008."

Page 126, Section 4.2.8.1, Summary of Impacts. Change second sentence in second paragraph: "Section 4.3.3.1 compares..."

Page 128, Section 4.2.9, Cumulative Effects. The Department of Energy's (DOE) projected cumulative dose for the entire central plateau of six mrem of which "the contribution from the commercial LLRW facility would be minimal" (DEIS p. 129) is at odds with predictions for the LLRW site alone given in Table 18a and Table 18b. For full disclosure, we suggest adding the following sentence at the end of the first full paragraph on page 129: "The conservative modeling and pathway assumptions employed in this EIS resulted in significantly higher predicted hypothetical doses than those predicted by DOE. This is further explained in Chapter 10 of Appendix II."

Page 129, Section 4.2.9.1, Summary of Impacts (re: Cumulative Effects). Quantitative dose values recited are inconsistent with those of U.S. DOE and should be placed in perspective for the reader's benefit. See above comment.

Delete last sentence in the first paragraph. Given comparative modeling assumptions and parametric values, US Ecology facility contributions to gross beta groundwater concentrations would be insignificant in comparison to U.S. DOE sources.

Under "Impacts of License Renewal", we suggest adding: "..under some hypothetical scenarios over a 10,000 year period." to the end of the last sentence, first paragraph. Also, add a sentence: "A more likely additional dose would be about 8-10 mrem/yr according to the frequency histogram in Chapter 10 of Appendix II, @ p. 98."

Page 130, Section 4.2.9.1, Summary of Impacts. We suggest changing the first paragraph under "Impacts of NARM Acceptance": "NARM is not predicted to significantly contribute to the cumulative dose outside the boundary of the commercial LLRW disposal site, but mathematical modeling calculates a significant dose to the hypothetical inadvertent intruder in certain scenarios. The contribution of NARM to the onsite intruder is discussed in Section 4.1.2.3.1."

Page 130, Section 4.2.9.1, Summary of Impacts. Under "Significant Unavoidable Adverse Impacts", delete emphasis on the word "known."

Page 131, Section 4.3.1.1 Summary of Impacts re: Environmental Justice. Environmental justice impacts should relate to material addressed in Section 4.3.1, which discusses existing and reasonably foreseeable area demographics. We suggest replacing all responses in this section with: "There are no reasonably foreseeable incremental adverse impacts on Native Americans or other minority or low-income populations."

Page 133, Section 4.3.2, US Ecology Site Investigation. We suggest changing the second sentence of the first paragraph: "....indicate the presence of minute concentrations of hazardous substances and the potential for continued migration of small amounts of these substances from disposal units into the buffer zone adjacent to disposal units." We also suggest adding a sentence preceding the last sentence of the first paragraph: "As was the case with Phases 1 and 2 of the site investigation, it is envisioned that work deemed necessary in Phase 3 will be paid for out of the existing site closure fund."

Page 134, Section 4.3.2, US Ecology Site Investigation. In Table 31, add footnote to "US Ecology Proposed Cover" and "Enhanced Bentonite Cover" to acknowledge that these covers can be readily modified to meet RCRA design requirements.

Page 134, Section 4.3.2.1, Summary of Impacts. Under "Impacts of License Renewal" add after the second sentence: "This would also draw down the closure fund with no opportunity for future replenishment."

Page 135, Section 4.3.2.1, Summary of Impacts. Under "Mitigation Measures," delete phrase "If the site is relicensed" from each bullet. The phrase is unnecessary since relicensing is an explicit consideration of the DEIS.

Page 135, Section 4.3.3, Costs and Surety. We request that the state delete the third sentence, second paragraph. All such costs should be included for comparison purposes and footnoted if deemed appropriate.

Page 138, Section 4.3.3.2, Summary of Impacts. Change the last sentence under "Impacts of Site Closure: ".....design/schedule alternatives as well as Phase 3 of the site investigation could be..."

Change last sentence under "Suggested Mitigation Measures" to read: "....and closure schedule alternative as well as the work effort required to implement Phase 3 of the site investigation, the Department...."

Potential Responses to Public Comments

Based on concerns expressed by various citizens in public hearings on October 23, 24 and November 14, we offer the following comments for response purposes.

A concern was expressed regarding the need to address potential US Ecology disposal of low-level radioactive waste from operation of the Fast Flux Test Facility (FFTF). The DEIS, we believe correctly, presents a radiological risk assessment based on overall potential site inventory and radionuclide source term regardless of contribution from individual generators. It is our understanding that, should FFTF be recommissioned, waste volumes and waste streams that may be eligible for disposal at the commercial

facility would be well within the bounding conditions considered in the risk assessment. This should be noted for public disclosure purposes. It is unnecessary to predict what individual generators of low-level radioactive waste may or may not contribute to this "bounded" source term. All present and future LLRW generators would, of course, be required to meet waste acceptance criteria established by the state for the facility.

A concern was raised that the impacts of transportation of radioactive waste to the facility were not adequately considered, particularly with regard to the potential increased NARM shipments. The DEIS evaluates the radiological risk associated with NARM receipt up to 100,000 cubic feet per year and concludes that the incremental risk is less than one in a billion for individuals living along transportation routes (DEIS @ p. 81). This might be highlighted for response purposes, along with a brief discussion of the overall excellent radioactive waste transportation safety record since the State of Washington implemented its Port of Entry inspection program. We understand that the rigorous vehicle inspection program implemented by the Washington State Patrol has contributed to a "zero incident" radioactive waste transportation record for the past decade.

An adjunct transportation concern was raised regarding the recent authorized air transport of NARM originating in a foreign country to a Port of Entry at Moses Lake. Radioactive waste is generally shipped to the Richland facility by over-the-road carriers, which is already adequately addressed. The recent air shipment was a "one time only" event which was accomplished in compliance with all applicable U.S. Department of Transportation rules and requirements. We suggest that this be noted.

A public concern was expressed about the presence of hazardous constituents at the Richland facility. The sporadic identification of trace quantities of hazardous constituents within the soil, soil gas and ground water immediately adjacent to the facility represent no significant incremental health risk to any member of the public. As addressed in the DEIS, introduction of hazardous constituents to the facility occurred in two ways. For a brief period in the mid 1960s, non-radioactive chemical waste was disposed of in a dedicated trench on the northern portion of the facility. This was done with the full knowledge and regulatory oversight of the Department of Health. Also, until 1985, radioactive waste disposed at the Richland facility in accordance with license number WN-I019 was allowed to contain incidental quantities of constituents now defined as hazardous under RCRA. This material was also accepted in full compliance with the operating license. Starting in November 1985, waste material was acceptable only if its sole hazard was radioactive. Subsequent efforts to characterize the presence of minute concentrations of hazardous constituents in soil adjacent to disposal units and ground water beneath the facility were the subject of a report submitted to the state in September 1999 and discussed in the DEIS.

A public concern was raised that the DEIS proposes that the site be allowed to leak radiation resulting in doses to the public of 25 millirem. It should be noted that, rather than permitting leaks, the 25 millirem dose standard chosen by state and federal radiation

protection officials was set at a level considered fully protective of public health and safety, and well within the range of natural background fluctuation. Adherence to these standards is further enhanced through application of the "ALARA" principle, generally requiring that radiation exposures be "as low as reasonably achievable."

A related public concern suggests that the 25 millirem standard might allow 3 in 100 Native American children along the river to develop fatal cancer. The 3% figure may derive from Table 20b @ page 96 of the DEIS, relating to future inadvertent on-site intruders, not current or reasonably anticipated future circumstances. As stated on page 97, there are substantial conservatisms and uncertainties inherent in long term risk projections and, therefore, "risk predictions are used only to compare the relative risks of alternatives, and should not be considered a assessment of actual risk." Actual exposures are not projected.

Given the apparent misunderstanding on this point, we suggest noting that there is currently **no** risk to the general public from current operation of the facility because no member of the public receives any exposure from the facility.

US Ecology appreciates the opportunity to comment on the Draft Environmental Impact Statement and looks forward to prompt completion of the Final EIS in support of timely relicensing, codification of the 100,000 cubic foot per year NORM limit and selection of a cap design for formerly utilized trench areas. If you have any questions, please contact me at 509-946-4945.

Sincerely,

Thomas R. Hayes
Vice President

cc: M. Wilson, WDOE
L. Goldstein, WDOE
J. Erickson, WDOH
G. Robertson, WDOH
Z. Naser, American Ecology
S. Romano, American Ecology
J. Shaffner, US Ecology

(17)

National Association of Cancer Patients

November 10, 2000

Ms. Nancy Darling, Project Manager
Washington Department of Ecology
Nuclear Waste Program
PO Box 40117
Olympia, WA 98504-0117

Subject: DEIS for the Commercial Low-Level Radioactive Waste Disposal Site, Richland, Washington

Dear Ms. Darling:

The National Association of Cancer Patients supports the relicensing of the commercial low-level radioactive waste (LLRW) disposal facility on the Hanford Federal Reservation, urges the Department to approve the facility closure plan submitted by the site operator, US Ecology, and supports the permanent establishment of a 100,000 cubic foot per year limit for disposal of NARM at the facility.

A safe, reliable and economical low-level radioactive waste disposal facility is absolutely necessary to support promising medical research to develop new and improved treatments for cancer and other life-threatening diseases, and eventually a cure for cancer. Many treatments in use today to slow the advance of cancer and improve the quality of life for cancer patients also require the use of radioactive materials. These activities generate small amounts of LLRW that must be safely disposed of. We have already seen that in other parts of the nation where reliable access to LLRW disposal facilities is not available, medical research has been slowed or halted altogether. The commercial LLRW facility at Richland is an essential element in allowing important medical research in the Pacific Northwest to continue.

The 35-year safety record of the facility in question is excellent, and the analyses within the DEIS and supporting documents prepared by the State and the applicant confirm that the facility can be safely operated for at least another fifty years. The use of 100 acres on the Hanford Reservation for LLRW disposal is totally consistent with surrounding land uses, and will have insignificant environmental impacts. Please expeditiously conclude the DEIS process so that we can have assurance that this needed LLRW facility will continue to be available. Thank you.

Sincerely,

Nicki Hobson
Executive Director

6119 Vista de la Mesa • La Jolla, CA 92037 • (619) 459-9344 or (760) 598-8289

(19)

COLUMBIA GORGE AUDUBON SOCIETY

The following comments are given by Daniel Lichtenwald, P.O. Box 1200, Goldendale, WA, on behalf of the Columbia Gorge Audubon Society in reply to the Washington State Departments of Health and Ecology Draft EIS for an existing commercial radioactive waste site operated by US Ecology, Inc. at the USDOE's Hanford reservation. The comments were given at a public hearing at White Salmon, WA on 14 November 2000.

This proposal amounts to further weakening the already inadequate standards at the commercial waste site for protecting all of the inhabitants of eastern Washington and the air, land and water on which all life in the region depends. The commercial dump, which USE operates by agreement with the State of Washington, for the deposit of hazardous, toxic nuclear waste, has coasted outside of the standards for monitoring, and leachate control that apply to similar sites at Hanford. By the State of Washington's unconscionable acquiescence, and the operator's priorities, precedences have been made, outside of agency and public review, for the acceptance of waste from the USDOE enterprise of weapons and labs and even from foreign sources, transported by air.

Following on the heels of these failures and inconstancies with the priorities of health and safety, it is now asked that the annual intake of the dump be doubled, that the operator's license for continued bad operation of the site be renewed for 5 years, and that a plan to close the site in 56 years be approved.

On the face of it, then, our state agencies suggest that there will be half a century of further intake, at double the past rate, of nuclear toxic waste at a facility that is inadequately monitored and where leachate is not controlled. Those agencies leave the door open for acceptance of waste from sources far afield, doubling the level of radioactive waste cruising the highways and byways, and even the skies, of eastern Washington.

This is deplorable, for it shows that our own state agencies take an approach to eastern Washington that would be more recognizable when a waste entrepreneur is making a deal with a dictator for deposit of toxic trash in a third world country.

The DEIS fails to address cumulative risks for cancer arising from all conditions at the site. It selectively segments components of the proposal and doesn't consider the realistic total impact of what exists and what will be at the site.

The DEIS fails to confirm the State's policy to not accept USDOE wastes, including FFTF reactor and plutonium processing radioactive waste, and shipments from other USDOE weapons sites and labs. And in that respect, it also fails to consider the types and effects of these wastes in future scenarios.

The DEIS abnegates the State's humanitarian and treaty responsibilities by effectively accepting certain increased cancer rates to be borne by native Americans. This is similar to our foreign policy with respect to devastation of Iraqi youth: we think the price is worth it.

The DEIS is not worthy of the State of Washington's citizens and is not in their interests.

Governor Locke and the Departments of Health and of Ecology need to rewrite this one.

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DIVISION OF RADIATION PROTECTION

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STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE
1701 S 24th Avenue • Yakima, Washington 98902-5720 • (509) 575-2740 FAX (509) 575-2474

1315 W. 4th Ave.
Kennewick, WA 99336

30 November, 2000

Nancy Darling
Project Manager
Washington Department of Health
Division of Radiation Protection
P.O. Box 47827
Olympia, WA 98504-7827

Dear Ms. Darling:

Subject: Comments on the document titled *Draft Environmental Impact Statement: Commercial Low-Level Radioactive Waste Disposal Site Richland, Washington, August 2000.*

The Washington Department of Fish and Wildlife (WDFW) appreciates the opportunity to provide comments on the draft Commercial Low-Level Radioactive Waste Disposal (Disposal Site) Environmental Impact Statement (EIS). Our review focused on potential impacts to fish and wildlife from potential releases of radioactive and hazardous substances from the Disposal Site and closure activities. We concluded that the analysis lacks sufficient details to determine impacts to fish and wildlife and their habitat.

From information provided in the document, radionuclides and hazardous organic substances have been detected in the groundwater beneath the Disposal Site, and the origin of these contaminants may be from the Disposal Site. Of those contaminants, trichloroethylene (TCE) is known to be toxic to aquatic organisms and several of the radionuclides detected have extremely long half-lives. We know that some contaminants originating from U.S. Department of Energy (USDOE) waste management operations on the Central Plateau have reached groundwater and migrated to the Columbia River. Although the Disposal Site is more than a few miles from the river, without any corrective actions, these contaminants would be expected to reach the river. The EIS needs to provide an analysis of expected travel time for the detected contaminants to reach the Columbia River. We support Washington Department of Ecology's (Ecology) and Washington Department of Health's (Health) recommendations to further characterize the Disposal Site for presence of non-radioactive hazardous contaminants and impacts on the environment. As part of that additional work, we recommend that a biological exposure assessment be conducted. If contaminants of biological concern are

detected during this assessment, we recommend that a biological effect assessment be conducted.

WDFW has concerns about potential biological impacts related to closure activities. The closure analysis fails to identify potential source locations of geologic resources that will be needed to construct a protective barrier. In addition, it fails to bound the volume of geologic materials required, or potential impacts that may occur to biological resources at locations where the resources would be extracted. Early on, we were led to believe by Ecology staff involved with this action, that the soils for constructing the barrier would come from the Disposal Site, but that information is not presented anywhere in the document. Since the document is lacking in details, we are requesting additional information on this issue to determine appropriate wildlife mitigation measures regarding this action. Finally, the closure analysis limits soil materials to the use of silt loam when a study conducted by USDOE determined that fine sandy loam is also suitable for constructing protective barriers. We believe the project needs to analyze this as well.

In conclusion, WDFW supports Ecology's and Health's recommendation for the need to conduct further characterization for presence of non-radioactive hazardous substances and impacts to the environment. We believe that more information is needed regarding closure activities, particularly potential geologic source sites and consideration for using fine sandy loam as a barrier construction material.

Thank you for the opportunity to comment on this action. If you have any questions about our comments, please contact me at 509/736-3095.

Sincerely,

Jay McConnaughey

cc: Larry Goldstein, Ecology
Ted Clausing, WDFW

(22)

Washington PEER
Public Employees for Environmental Responsibility
P.O. Box 2618 • Olympia, Washington 98507
Phone and Fax: (360) 528-2110
e-mail: wapeer@peer.org • http://www.peer.org/washington

Ms. Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection
Mail Stop 47827
Olympia, Washington 98504-7827
e-mail: nancy.darling@doh.wa.gov.

November 30, 2000

Dear Ms. Darling:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Commercial Low-Level Radioactive Waste Disposal Site dated August 2000. WA PEER's substantive comments are attached along with a copy of the Code of Ethics for Government Service.

WA PEER is supported by citizens, employees, scientists, and elected officials who work to ensure that environmental laws are enforced and that public employees work in an ethical and professional environment where scientific integrity is maintained.

The US Ecology landfill is a complex site with a complex history. Actions taken at the site will have a major bearing on future cleanup decisions, public health, the environment, and tribal rights. Although the draft EIS represents a significant amount of work, it raises serious questions about the state's commitment to enforcing environmental laws and making responsible decisions.

WA PEER believes that the draft EIS is inadequate and the license renewal, final closure plans that will be legally binding to all parties, lease agreements and other associated actions must not be finalized until state regulators accurately assess the situation and present viable alternatives.

Headquarters: 2001 S Street, NW • Suite 570 • Washington, D.C. 20009 • 202-265-PEER (7337) • fax: 202-265-4192
e-mail: info@peer.org • website: http://www.peer.org

As drafted, the EIS:

- Ignores the fact that 15 years ago US Ecology was found to be violating dangerous waste regulations and remains out of compliance today;
- Obscures the nature of the uncertainties to suggest that most of the non-radioactive hazardous contamination is from off site sources;
- Postpones critical decisions as items "to be negotiated" with US Ecology;
- Presents vague alternatives that do not state how, if at all, any the proposed covers for the landfill will ensure that corrective actions required under MTCA can be pursued;
- Addresses groundwater contamination through a last minute errata sheet that plants the impression that the groundwater contamination is from off-site sources;
- Fails to discuss the potential costs and revenue sources to finance future investigations, closure, and post closure monitoring;
- Violates SEPA, violates Ecology's responsibilities under its RCRA delegated authorities from EPA, and violates the Model Toxics Control Act (MTCA);
- Draws into question the ability of the Department of Ecology and the Department of Health to be accountable for the state laws governing this site and for the federal laws for which they have been delegated authority by the EPA.

The EIS must be redrafted to address these problems and incorporate the results of a thorough site investigation to better characterize the site and support scientifically based alternatives, including consideration of concrete stabilization, that comply with the laws applicable to this site. WA PEER understands the need to cover the trenches as soon as possible to avoid further infiltration at the site. However, this need should not subvert the requirements for a credible scientific process that includes a thorough characterization of the site and the need to clean up any hazardous wastes that are found to warrant remediation beyond the proposed closure cover.

Under the current proposal, the US Ecology site is flying under the radar. Regulators are ducking their responsibilities with a vague promise to invoke their authority at some undetermined time in the future through an undefined process that the public is not privy to. This is not acceptable.

Had regulators acted responsibly years ago we would not be where we are today – behind schedule and scrambling to get the site closed. For the past 20 years, staff at Ecology, Health, and the Department of Energy, legislative reports, site assessments, and other available records have documented the need to address the liquid hazardous wastes in the landfill.

Actions at this site will set precedents for other facilities. It is critical that the significant errors in the draft EIS be corrected. Failure to do so places the departments of Ecology and Health at risk of violating SEPA, squandering federally delegated authorities, and violating the Code of Ethics for Government Service. Please consider WA PEER's comments in the spirit in which they were intended- to hold governments accountable for their actions as they relate to environmental enforcement and public employee rights and responsibilities. Thank you for the opportunity to comment. Attached are WA PEER's comments for your review.

Sincerely,

Lea Mitchell, Director Washington PEER
Cc: Dan Meyer, PEER General Counsel

The comments submitted herein are based on WA PEER's review of the draft EIS and public documents available from the Washington State Library, US EPA, and a public records request to the Washington State Department of Ecology. Lack of comment on portions of the document, such as the analysis of radiological public health risks, should not in any way be interpreted as concurrence with that element of the EIS.

The comments address the following core conclusions reached by WA PEER:

I. The Draft EIS Contains Factual Omissions
II. Significant Technical Comments Have Been Ignored
III.The EIS Contains False and Misleading Information
IV. MTCA Has Been Put Out to Pasture
V. The Alternatives Presented are Vague and Inadequate
VI. The Financial Analysis is Incomplete
VII. The draft EIS does not comply with RCW 18.43.010
VIII. The Draft EIS does not comply with SEPA

I. The Draft EIS Contains Factual Omissions

Relevant facts that were omitted from the draft EIS are listed below. In order for the EIS to be complete and accurate, these items need to be added to the final document.

1. Comment: Information about the lease is misleading and must be corrected.
Remedy: The EIS should a) state the parameters of the upcoming lease renewal; b) define the lease clauses that will be up for discussion; c) incorporate renewal decisions into the alternatives presented by the draft EIS; and d) add an appendix to the EIS to include a copy of the state's lease to US Ecology. The pending lease decisions should be described in the discussion of regulatory, legal, and policy considerations (section 2.2) and all other relevant portions of the EIS.

Discussion: As drafted, the document describes the expiration date of the lease between DOE and the State of Washington but is mute on the sublease between the State of Washington (Ecology) and US Ecology. The sublease between US Ecology and the State of Washington expires at midnight on July 28, 2005. Pursuant to RCW 43.200.080, a public hearing is required.

2. Comment: Information on RCRA corrective action requirements is omitted.
Remedy: Modify Table 6, page 44, and associated discussions to recognize that US Ecology is currently out of compliance with state laws, subject to corrective action requirements and that US Ecology has appealed the RCRA permit conditions that would require them to fulfill corrective action requirements in accordance with RCRA.

Discussion: Given that The Pollution Control Hearings Board is scheduled to hear US Ecology's appeal of the corrective action requirements on January 24, 26, 2001, the results of their hearing should be incorporated into the final EIS and the alternatives it presents.

3. Comment: Information on future site investigation is omitted.
Remedy: The EIS must be modified to more thoroughly define the scope and timing of the Phase 3 Investigation and other site investigations needed to ensure compliance with MTCA and other applicable regulations. The EIS must also discuss how the results will be used to manage and remediate the site.

Discussion: Many decisions, including closure requirements and RCRA corrective actions required by Ecology, were deferred by Ecology pending further evaluation/investigation of the site. Failure to discuss the investigation and its implications effectively sets the stage for the investigation results to be ignored. The investigation needs a place at the table now.

4. Comment: The EIS is silent on the need for a MTCA assessment.

Remedy: Modify Table 6, page 44 and associated discussions to state that the US Ecology site is on the Toxics Cleanup Program's list to get a site hazardous assessment under MTCA. If the intent was for the facility site investigations to serve as the MTCA site assessment, as has been stated by the project leads, than this should be clearly stated in the EIS along with a clear discussion of the site investigation vs. the parameters of a site assessment under MTCA.

Discussion: The US Ecology site has been on the list for 12 years and is identified as site number 311 with a TCP ID# of C-03-0013-000. **(1)** However, a MTCA site assessment has not been done.

II. Significant Technical Comments Have Been Ignored

5. Comment: Extensive technical comments regarding the inadequacy of the groundwater model appear to have been ignored. As a result, the accuracy of the draft EIS is in jeopardy.

Remedy: Along with other detailed technical on the EIS, these comments should be reviewed, referenced in the bibliography, entered into the public record, and responded to. The EIS should be modified as needed to address them and clarify how the proposal will meet all applicable groundwater standards, including MTCA level b, and mandate additional monitoring needed to clear up the uncertainties. Selectively ignoring comments and information relevant to the decision at hand goes beyond using "discretion" and flirts with obfuscation.

Discussion: Through a public records request, WA PEER obtained significant technical comments submitted to the project lead on March 21, 2000. The comments concluded that the groundwater monitoring is inadequate and should not be relied on to support decisions regarding the site. Associated comments stated that the DOH risk assumptions should be re-assed by taking into account the results of recent studies at the Hanford Tank Farms which indicate that radionuclides are transported through the vadose zone at a greater rate than was previously assumed **(2).** There are currently only 8 groundwater wells that are monitored quarterly (page 6, draft EIS) on the site. This equates to one well for every 12.5 acres. How does this compare to other dangerous waste landfills required to do site characterization?

It is an abuse of discretion to ignore technical comments that have significant bearing on the alternatives being considered by an EIS.

III. The EIS Contains False and Misleading Information.

6. Comment: The EIS contains false information that leads to erroneous conclusions
Remedy: The draft EIS must be revised to incorporate all available and relevant data that describes the characteristics of the US Ecology site and that has a bearing on the actions needed to protect public health and the environment and comply with all state and federal laws that apply to this site. Examples of false and misleading information that must be corrected are provided below. Public officials responsible for preparation of the EIS should modify their practices as needed to ensure that they are obeying the Code of Ethics for Government Service and federal laws governing truth in government (18 U.S.C. 1101).

Discussion: The draft EIS ignores data that was readily available to the project proponents during the preparation of the EIS. This in turns leads to potential falsification of this document and inaccuracies that could lead to erroneous conclusions about the site. Data omissions include data regarding the nature and extent of groundwater contamination, past practices at the US Ecology site, recognized inadequacies of the groundwater model and other elements described by the comments submitted herein.

Examples of false and misleading information include the following:

a) **The document construes the findings of the US Ecology site investigations** and it initially ignored critical data from the investigation. The Site Investigation reports were published July 23, 1998 and August 16, 1999, were available to the drafters of the EIS, and are briefly summarized on page 54-57 of the draft EIS. The data regarding groundwater contamination was readily available to the lead agencies who prepared the draft EIS. Although an errata sheet was issued after the EIS was published, the information in the errata sheet was supplied as an insert to the document as if it had no bearing on remedies that would be appropriate to the site.

   Along with ignoring the ramifications of the data regarding groundwater the draft EIS presents a selective summary of the facility site investigation and in doing so, flirts with falsification of information. The errata sheet, section 4.2.2.2 of the EIS and associated groundwater discussions are in error. Discussions regarding the presence of TCE, chloroform, plutonium, and uranium: a) dismiss some contaminants as being from other sources but provide little supporting information for such conclusions; b) fail to discuss the fact that some of the contaminants are very likely from on-site sources; and c) obscures the nature of the uncertainties regarding the contaminants. (See errata sheet and draft EIS groundwater discussion section 4.2.2.2).

   The summary provided in the EIS fails to mention the site investigation findings that: 1) methane and/or carbon dioxide generation at the site may force chemicals into the vadose zone if the gases are trapped by the landfill cover; 2) the investigation findings that this potential should be further examined to ensure an adequate closure design; or 3) the investigation's conclusion that the soil gas samples from the west end of trench 5 indicate that organic decomposition may be transporting chemical and radioactive wastes into the vadose zone (Comprehensive Facility Investigation, August 16, 1999 page 4-2).

Overall, the greatest concern is that the discussion of uncertainties regarding the source and nature of the contamination is repeatedly stated to imply that the hazardous waste contamination is from off-site sources. This is misleading at best. While some of the contamination may be from off-site, the facility investigation and historical site data clearly indicate that a portion of it is from on-site. The uncertainty is not whether any is from on-site but how much is from on-site sources and what should be done with it.

b) **The EIS fails to discuss past practices at the site and associated hazardous waste manifests** which document the receipt of hazardous waste and would lead a reasonable person to conclude that there are leaking containers of hazardous waste buried in the landfill and contributing to site contamination;

c) **The document delicately obscures why the US Ecology site was shut down in 1979.** The documents state that "transportation and shipping problems" caused the closure (page 41). The document fails to mention that the "transportation and shipping problems" also included leaking containers that were ultimately buried in the trenches. From 1962-1971, six commercial landfill in Illinois, Kentucky, Nevada, New York, South Carolina, and Washington were licensed to bury radioactive wastes into shallow trenches. At the time, regulators thought that the wastes would undergo radioactive decay to a level approaching natural background levels. They discovered that this was not the case. By March 1979, three of the six facilities were permanently shut down due, in part, to leaking containers that were being buried. Four months later, Nevada and the Washington State shut down their sites for similar reasons. Under pressure from Congress, Washington re-opened the US Ecology site several months later **(3).** It is reasonable to assume that Ecology and/or DOH had access to this GAO report and associated Congressional testimony provided in 1979 and would have obtained it as part of their site characterization work for the EIS.

d) **The document ignores data indicating that past practices at the US Ecology site suggest that in some areas, the site itself, not offsite migration from the 200 area alone, is contributing to the chemical contamination that has been found.** For example, in its efforts to characterize the wastes present at the US Ecology site, the draft EIS limits the discussion of the presence of non-radioactive hazardous wastes to one paragraph and cites US Ecology, the site operator, as the source of the information (page 54) this level of research would not be acceptable for most high school term papers. The discussion ignores relevant data available from the Facility Investigation (i.e. presence of freon in older trenches), site manifests, site photos, or previous site investigations conducted by the Department of Ecology and EPA. Collectively, and on their own merits, these data sources indicate that the hazardous wastes buried at the site are not inconsequential and exceed the draft EIS estimate that 17,000 cubic feet of wastes were buried at the site from 1965-1970;

e) The document fails to mention or cite the recommendations and findings of an August 1985 report to the Joint Legislative Committee on Science and Technology of the Washington State Legislature. Along with recommending a groundwater system be installed, the report recommended that liquid releases inside the trenches should be monitored. This report is not mentioned in the draft EIS or Section 2.2 which discusses Regulatory, Legal, and Policy Considerations.

7. Comment: There is long standing evidence that US Ecology managed hazardous wastes in a manner that violated state laws. This information was omitted from the EIS.

Remedy: Do a thorough records search of all public records available for the site and incorporate the significant conclusions from them into the EIS and the documents in the public record you are creating as part of this project.

Discussion: In 1985 an inspector for the Department of Ecology described the US Ecology site as "a site, which has almost totally ignored dangerous waste management" **(4).**

As part of the 1985 site assessment conducted jointly with EPA, Ecology staff noted that the US Ecology site is a facility which has, and continues to receive solid wastes subject to both RCRA and Washington State dangerous waste regulations. The site inspection resulted in 14 violations of the state's dangerous waste laws including failure to identify the waste before burial, failure to use the waste manifest system required by law, and failure to comply with performance standards for the site that required the new trenches to be lined and serviced by leachate collection systems **(5).**

Fifteen years have passed, US Ecology has still not lined the trenches or installed leachate collection systems, the state is quietly planning to renew US Ecology's lease, and the public is left with an EIS that postpones toxics clean-up under MTCA indefinitely.

Further evidence of the site history is available through RCRA compliance data. In 1980, US Ecology submitted an EPA RCRA, Part a permit for the site and noted that they would be disposing asbestos, benzene, toluene, xylene, and sodium azide at the site. The 1985 site assessment and analysis conducted by the Department of Ecology further concluded that over 10,000 cubic feet of organic scintillation waste were dumped at the site in 1984. These wastes are organic solvents usually composed of xylene, toluene, or dioxane and classified as dangerous wastes **(6).**

EPA has previously stated that the EIS should model the worst case scenario of the amount of free liquids that may be present in the trenches; that the site contains hazardous wastes; that there may be free liquids in the trenches, that there is a potential for hazardous constituents other than volatiles, and that it is possible that hazardous wastes have migrated from the trenches **(7).**

In 1985, approximately 2,000 drums of liquid waste were removed from resin tanks on the site. The majority of the wastes were determined to have been hazardous as defined by Ch. 173-303-WAC. In 1986, Ecology determined that the following chemicals were present in the resin tanks: Ethyl benzene, 1.3, dimethyl benzene, 1.2. dimethyl benzene, 1.2.4. Trimethyl benzene, phenols, naphthalene, 1,2, benzene dicarboxlic acid, 2,5, diphenyl oxazole, tretramethyl butyl , phenoxy ethanol, methyl benzene, 2 hexanol, ethyl benzene. (Ecology memo to file, 1986).

Finally, truck shipment records that are kept by US Ecology and available to site regulators indicate that for five years, from 1965-1970, the "Chemical Trench" was used to "dump waste phenol", "drums of chemical waste", and "phenolic resin wastes. The records further indicate that most of the waste was from Crown Zellerbach in Camas, Washington, where specialty chemicals were manufactured. Other facilities that are known to have dumped hazardous wastes at the site include the Boeing Company and the University of Washington. What additional records would Ecology and Health be able to obtain about this site if they asked? Did they make such a request to US Ecology as part of the preparation for this EIS? Did they review past site assessments that they had conducted? Why not?

IV. MTCA Has Been Put Out to Pasture

8. Comment: MTCA is being ignored and reserved for some unknown, undefined, time in the future. This contradicts state law and past discussions that requested a MTCA analysis for the site. For example, a year ago Ecology wrote to the Department of Health requesting that the US Ecology EIS evaluate two cleanup standards; 1) a modified MTCA Method B residential scenario and 2) a modified MTCA Method C industrial scenario. The memo stated that this was needed in order to assess exposure risk from the hazardous substances at the US Ecology site. The memo concluded by stating that Ecology "looks forward to assisting DOH with integrating the modified MTCA scenarios into the EIS document." **(8)**. Public records also indicate that comments initially provided by Ecology staff to the attorney general suggested edits to the EIS to state that Ecology will use its authority under MTCA . Somewhere along the line MTCA fell by the wayside.

Remedy: MTCA must be applied to the site and discussed in the alternatives. Conversely and as another alternative, the EIS must openly discuss: a) Ecology's scientific and legal basis for not applying MTCA to the cleanup of the US Ecology site at this time and the criteria and process that Ecology will use to decide if, when, how to apply MTCA to the site in the future. Finally, the EIS must define and discuss what - if any- provisions are made by the proposed alternatives to ensure that the 1994 MOU between Ecology and Health is abided by and the goals of capping the landfill can be met expeditiously without compromising or ignoring the need to cleanup up the hazardous wastes buried at the site.

This is particularly prudent given that The Department of Health has acknowledged that placing a final cover will close any window for further characterization of the waste and would also make it more difficult to do slant borings under some of the trenches.

Discussion: Public records indicate that technical staff have stated that if this site were given a site hazard assessment under MTCA, it would likely receive the maximum score under the groundwater contaminant due to its past site history and the fact that there is no liner, no cover, and no leachate containment on the site even though it was ordered to be installed in 1985 and it is still operating and accepting waste.

Ecology's delegation of authority to DOH appears to conflict with the MOU between Ecology and Health that was signed in 1994. It also appears to put Ecology at risk of failing to faithfully execute the authorities delegated to them by EPA under RCRA. The 1994 MOU explicitly defines Ecology as the lead agency (under RCW 70.105) at sites containing a combination of radioactive and nonradioactive hazardous materials. Given this MOU and RCW 70.105, it is unclear how Ecology "used its discretion under MTCA to recognize WDOH as the overall lead agency" for the cleanup and closure of the US Ecology site.

The discretion in MTCA is intended to be applied if Ecology determines "that another laws is more appropriate." (WAC 173-340-110). It is unclear what other law Ecology has determined is more appropriate than MTCA. Failure to apply MTCA at this site while also failing to openly discuss on what basis it was tabled, is a major omission.

Finally, the DOH standards regarding risk exposure to radioactive waste – and intended in part to replace the need for other standards - is out of compliance with standards recommended by EPA as defined by their office of Air and Radiation and discussed in their December 1999 guidance on Radiation Risk Assessment at CERCLA sites and associated

communications regarding the type of standards needed to be protective of human health and the environment (9).

9. Comment: The US Ecology site is a hazardous waste site and its operation and closure plans must recognize this. Instead, regulator are skirting around Washington's hazardous waste laws. This sets a bad precedent for other sites, creates inequities, and contributes to the continued release of contaminants to the air, soil, and groundwater.

Remedy: The EIS needs to include alternatives that recognize that US Ecology is a hazardous waste site and that both the closure, and potential license renewal must comply with RCRA and MTCA. At a minimum, a RCRA complaint cap should be required along with a RCRA lining, and a leachate collection system.

Project managers have stated concerns about the fact that site remediation and clean-up could create unacceptable risks for site workers. If that is the rationale for dismissing the need for more actions, it should be openly discussed it the EIS, supported by data, and discussed in contrast to other clean-up needs at Hanford where similar risks are evident.

Discussion: Although existing information may not be adequate to fully characterize the site and the type of remediation needed, it is sufficient to confirm it as a hazardous waste site. Failure to acknowledge this compromises the entire draft EIS and the alternatives that are presented.

V. The Alternatives Presented are Vague and Inadequate

Along with the above comments regarding the need for an adequate site characterization, WA PEER submits the following.

License Renewal

10. Comment: As drafted, Alternative 1 is a fake alternative with no substance for the public to evaluate.

Remedy: The License Renewal, Alternative 1: Renew License with Operational Enhancements must be re-written to specify the enhancements that will be required for the license renewal.

Per all previous comments, the license should not be renewed under the current circumstances. Currently, this facility is not complying with RCRA, has not shown a good faith effort to comply with the law as evidenced by past site violations and their current appeal, and is operating without being subject to MTCA.

Discussion: Current language stating that the 18 enhancements will be required "as appropriate" or "as needed" following negotiations with US Ecology is irresponsible. Core elements of the negotiation must be defined and presented in the EIS, not decided after the fact.

Either the operational enhancements will be required or they won't. The public has a right to know what the enhancements will be. As drafted, the enhancements are subject to the results of negotiations with US Ecology. This approach effectively isolates the public from participating in the decision making process.

11. Comment: The alternatives ignore the state's lease with US Ecology.
Action: EIS needs to include a scenario whereby the state of Washington does not renew their lease with US Ecology and it expires in 2005 (no action alternative, do not renew lease). In addition, the EIS needs a scenario whereby the lease is modified to address liability and remediation needs.

Discussion: See previous comments regarding the lease, public hearing requirements, and SEPA requirements for related issues to be considered together.

NARM Waste – defined as "any naturally occurring or accelerator produced radioactive material except byproduct, source, or special nuclear material"

12. Comment: NARM Acceptance alternatives are inadequate and limited in scope.
Action: The EIS needs to include two additional alternatives. One that would set the NARM limit at 0 and one that would set it at the amount needed to dispose of waste generated in Washington and Oregon only.

As drafted, the EIS fails to describe the duration of the court order or the reason why the limit was initially set at 8,600 cubic feet/year. Lacking this information, this alternative cannot be reasonably evaluated.

Closure Requirements and Schedule

13. Comment: The Closure alternatives must not be limited to consideration of a site cover.
As drafted, the site closure alternatives presented in the EIS make no room to incorporate the results of the additional site investigations and associated corrective actions that could be required.

As a result, the landfill could end up with a mighty fine cover that prevents infiltration from rainwater but does little to address seepage into groundwater from leaking containers.

Remedy: The EIS must include alternatives that would apply MTCA to the site.

In addition, the alternatives proposed here are fatally flawed and need to be further developed to include site closure alternatives and contingency plans, to address the "uncertainties" that both Ecology and DOH vaguely alluded to and vaguely committed to solving.

Finally, all closure alternatives should explore the feasibility and cost/benefits, if any, of pursuing remediation and possible leachate collection in conjunction with other adjacent sites that may be facing the same fate.

Discussion: As drafted, the EIS makes it clear that Ecology reserves the right to invoke MTCA at some undetermined time in the future under some unstated scenario that the public is not privy to. Dismissing MTCA, and an alternative that would ensure compliance with MTCA, brings into question the entire validity of the draft EIS. The final EIS must openly discuss why MTCA does not apply to this site at this time and also present an alternative that would be required if MTCA were to be enforced at the US Ecology site..

14. Comment: The draft EIS contains flawed logic and a misplaced concern by stating that the "agencies are coordinating their activities and are committed to ensuring the Phase 3 US Ecology Site Investigation does not adversely impact the closure schedule. (page 134, EIS).

Remedy: This statement and the logic behind it must be revoked.The draft EIS should be rewritten to state that the agencies will ensure that any accelerated closure plans or actions taken prior to the completion of the Site Investigation and associated site characterizations will not in any way preclude the need to take remedial actions to address the findings of the investigations and the need to protect public health and the environment from toxic releases at the site.

15. Comment: All alternatives presented must meet the 15mrem/yr cleanup guidance from EPA. As drafted, only the enhanced asphalt cover and the enhanced bentonite cover comply with this standard.

16. Comment: The alternatives presented fail to comply with WAC 246-250-0505 regarding the closure of sites used to dispose of radioactive waste.
Remedy: Ensure compliance with WAC 246-250-0505.

Discussion: None of the alternatives discuss or provide for the elimination, to the extent practicable, of long-term disposal site maintenance or a discussion of design features intended to facilitate disposal site closure and to eliminate the need for ongoing active maintenance. Given the size and complexity of the site, it is understandable that some level of ongoing maintenance will likely be required. However, the closure plan should attempt to minimize the need for maintenance and include alternatives that address this.

17 Comment: The risks posed by the proposed license renewal and closure plan violate WAC 246-20-090.
Remedy: Comply with WAC 246-20-090.
Discussion: The risk analysis presented in the draft EIS states that comparison of the results to the MTCA acceptable risk of 1 in 100,000 shows that, " all of the results are greater than the acceptable free-release criteria and would indicate the need for some type of institution controls to limit the dose received by individuals." This finding is buried on page 102 of Appendix II of the draft EIS. Based on this data, license renewal and closure plans constitute an unreasonable and ongoing risk to the health and safety of the public.

18. Comment: The proposed closure plan does not provide adequate assurances that the long-term performance objectives of WAC 246 will be met. Nor does it isolate the wastes from groundwater, as required by WAC 246-250-300, or have in place a monitoring system capable of providing early warning releases of waste from the site as required by WAC 246-250-340.

Remedy: Comply with WAC 246.

VI. The Financial Analysis is Incomplete

19 Comment: The document does not adequately discuss 1) the finances available for site closure, remediation, and maintenance; 2) estimated costs of an adequate site characterization and RCRA compliant closure plan; 3) revenues available; or 4) revenues

that would be made available if Ecology exercised its authority to charge a fee to US Ecology for the Closure Fund.

Remedy: The EIS needs a complete and accurate financial analysis that includes the parameters above and also discusses different scenarios if Ecology does, or does not, charge US Ecology closure fees.

Why aren't closure fees charged? Who is benefiting from this policy? When and how is it going to be objectively assessed? What are the ramifications to the taxpayers if fees are not assessed? If MTCA financing methods are not used? These are critical questions that must be addressed.

Discussion: Although the Department of Ecology currently has the authority to assess a fee to US Ecology for the Closure Fund, they are not exercising it (page 125 of the draft EIS). Given the size and complexity of the site, the stated need for additional investigations, and the likely need for future remedial actions, it seems prudent for the draft EIS to evaluate the need for Ecology to assess a closure fee at the US Ecology site.

VII. The draft EIS does not comply with RCW 18.43.010

20.Comment: State law requires that, *" In order to safeguard life, health, and property, and to promote the public welfare, any person in either public or private capacity practicing or offering to practice engineering or land surveying, shall hereafter be required to submit evidence that he is qualified so to practice and shall be registered as hereinafter provided; and it shall be unlawful for any person to practice or to offer to practice in this state, engineering or land surveying, as defined in the provisions of this chapter, or to use in connection with his name or otherwise assume, use, or advertise any title or description tending to convey the impression that he is a professional engineer or a land surveyor, unless such a person has been duly registered under the provisions of this chapter. "*

RCW 18.43.010 defines engineering and the "practice of engineering" as: *" The term "practice of engineering" within the meaning and intent of this chapter shall mean any professional service or creative work requiring engineering education, training, and experience and the application of special knowledge of the mathematical, physical, and engineering sciences to such professional services or creative work as consultation, investigation, evaluation, planning, design and supervision of construction for the purpose of assuring compliance with specifications and design, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects..." and "A person shall be construed to practice or offer to practice engineering, within the meaning and intent of this chapter, who practices any branch of the profession of engineering; or who, by verbal claim, sign, advertisement, letterhead, card, or in any other way represents himself or herself to be a professional engineer, or through the use of some other title implies that he or she is a professional engineer; or who holds himself or herself out as able to perform, or who does perform, any engineering service or work or any other professional service designated by the practitioner or recognized by educational authorities as engineering.. "*

Based on these definitions, it does not appear that this EIS, or the process used to create it and the associated supporting documents, comply with this law.

Remedy: If you have complied with this law, the draft EIS must clearly state how. Otherwise, the process used to draft and finalize this document and associated site decisions must be revised to ensure that associated engineering work conducted by Health or Ecology is performed and approved by a licensed engineer.

VIII. The Draft EIS Does Not Comply with SEPA

Along with the substantive comments provided above, WA PEER believes that the draft EIS does not comply with several elements of SEPA, as follows. Several of the comments submitted below may be redundant. They are provided here in light of SEPA requirements.

21.Comment: The draft EIS glosses over the uncertainties that envelop this site and the decisions being made about it. SEPA requires that an EIS directly discuss uncertainties. WAC 197–11–440 EIS requires that the EIS summary *" shall briefly state the proposal's objectives, specifying the purpose and need to which the proposal is responding, the major conclusions, significant areas of controversy and uncertainty, if any, and the issues to be resolved, including the environmental choices to be made among alternative courses of action and the effectiveness of mitigation measures."*

Remedy: Modify all discussion of the uncertainties in the summary and throughout the document to clarify the nature of the uncertainty, how it will be resolved, and if it will not be resolved, discuss the consequences. For example, the draft EIS states that the results of the US Ecology Site Investigation suggest inaccuracies and that WDOH will resample the groundwater and the vadose zone to better understand the radionuclides in them (page 57). When will this occur? How will it impact the license renewal and closure plan?

22.Comment: The alternatives presented do not comply with SEPA requirements because they do not include actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation. The alternatives appear to make a trade off by proposing covers that will help remedy short-term contamination from infiltration but do not address long-term contamination from liquid and hazardous wastes present in the landfill. Regarding NARM wastes, the EIS alternatives are limited as well because they do not include an alternative to limit the NARM waste to 0 or to an amount needed to safely dispose of wastes generated in Oregon and Washington.

Remedy: Modify the alternatives per comments submitted.

23.Comment: WAC 197-11 requires an EIS to " *Discuss the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. The agency perspective should be that each generation is, in effect, a trustee of the environment for succeeding generations. Particular attention should be given to the possibility of foreclosing future options by implementing the proposal.* "

Action: Be honest. If you are proposing to close the landfill with little or no additional site characterization, you must discuss that openly in the EIS.

24.Comment: Ecology and Health should not hide behind SEPA language that allows them to dismiss environmental impacts that are "speculative." If available information had been utilized, the presence of hazardous wastes at the site and in the groundwater would not need be considered "speculative."

Remedy: Incorporate historical site data, the site investigation, and other data relevant to the US Ecology site. Characterize it as an out of compliance MTCA site. Define the true nature of the speculation which is not the presence of hazardous wastes and contamination in the groundwater but the source and extent of the contamination.

25.Comment: The impacts discussion also violates SEPA rules requiring the EIS to discuss ***" ...the likelihood that the present proposal will serve as a precedent for future actions."***

Remedy: Comply with SEPA by discussing precedents that will be set by the proposal and associated alternatives you are putting forth.

26.Comment: The EIS violates WAC 197–11–080 which requires that "*When there are gaps in relevant information or scientific uncertainty concerning significant impacts, agencies shall make clear that such information is lacking or that substantial uncertainty exists.*" SEPA rules further require that "*If information relevant to adverse impacts is important to the decision and the means to obtain it are speculative or not known; Then the agency shall weigh the need for the action with the severity of possible adverse impacts which would occur if the agency were to decide to proceed in the face of uncertainty. **If the agency proceeds, it shall generally indicate in the appropriate environmental documents its worst case analysis and the likelihood of occurrence, to the extent this information can reasonably be developed.***

Remedy: Comply with SEPA. Include a worst case analysis scenario where the landfill is capped, hazardous waste seeps into the groundwater at amounts greater than estimated, the radioactive waste standards used are determined to be inadequate to protect public health, and due to job opportunities in the clean-up industry, your children's children move to the area.

27.Comment: The references and public record for the draft EIS are incomplete. WAC 197–11–090 requires that, *"If an agency prepares background or supporting analyses, studies, or technical reports, such material shall be considered part of the agency's record of compliance with SEPA, as long as the preparation and circulation of such material complies with the requirements in these rules for incorporation by reference and the use of supporting documents.*
"

Remedy: Comply with SEPA. Per previous comments, add all agency technical comments and associated site documents (i.e. the 1985 site assessment) to the public record.

28 Comment: Due to the substantial errors in the draft EIS and the complexity of the topic, WA PEER requests that the project proponents respond to commentors by using all of the following options available under WAC 197 – 11- 560, including actions to: (a) Modify alternatives including the proposed action; (b) Develop and evaluate alternatives not previously given detailed consideration by the agency; (c) Supplement, improve, or modify the analysis; (d) Make factual corrections; (e) append all substantive comments to the final statement and provide them in an appendix; (f) add to the public record all substantive comments provided by Ecology, Health, and technical staff on the draft EIS; (g) respond individually to all substantive comments

and define corresponding changes in the EIS or clearly state why no changes were made;(h) hold additional public hearings on the final document and modified alternatives.

Referenced materials were obtained through public documents available from the Washington State Library, the US EPA, the WA PEER library, and a formal public records request WA PEER made to the Washington State Department of Ecology.

Annotated Footnotes

(1) Department of Ecology Toxics Cleanup Program Site Data Summary, facility ID 311. May, 2000. 1 page. These printouts are readily available upon request to the department. They indicate the status of sites that have been identified as needing a MTCA assessment. The status sheet for US Ecology is blank.

(2) Washington State Department of Ecology, Memorandum to Larry Goldstein. US Ecology Groundwater Pathway Analysis Comments. March 21, 2000. 6 pages. Public records obtained by WA PEER indicate that these comments were not fully transmitted into Ecology's formal comment letter to the Department of Health by Ecology project manager Larry Goldstein. Additional public documents on this topic include: a) Doug Mosich, Department of Ecology Nuclear Waste Program, memo to Jim Shaffner, US Ecology. January 19, 2000. This memo discusses groundwater contamination, expresses concerns about the presence of TCE in groundwater, and raises other concerns about the findings presented in US Ecology's Comprehensive Facility Investigation, Phase 1 and 2 Report, August 1999; and b) a memo signed by Mike Wilson, Nuclear Waste Program, memo to John Erickson, Comments on Internal Review Draft Commercial Low-Level Radioactive Waste Disposal Site Environmental Impact Statement. March 31, 2000. This memo provides Ecology's comments on the internal draft of the US Ecology EIS. Page 9 of the memo includes Ecology's comments regarding the presence of hazardous waste in the groundwater and the fact that some constituents exceeded MTCA-B-groundwater limits.

(3) Low-level Radioactive Wastes-States are Not developing Disposal Facilities. GAO RCED-99-238. Report to the Chairman, Committee on Energy and Natural Resources, U.S. Senate, September 1999. 60 pages. WA PEER has submitted a formal records request to Congress for a transmittal of the 1979 Congressional testimony on this topic.

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(4) Roger Stanley, Washington State Department of Ecology Memo to Marc Horton, October 9, 1985. Cover letter to Compliance Assessment Report.1 page.

(5) Roger Stanley, Washington State Department of Ecology, Compliance Assessment, WAD 060048360, Chapter 1730303 WAC, September 11, 1985. pages 4-6. This report documents numerous violations at the site, the presence of dangerous wastes, and the need to bring the site into compliance with state and federal laws. 7 pages plus attachments.

(6) Ibid, page 2, section titled Regulatory History and Wastes Received. This section also footnotes additional sources of data regarding site history.

(7) Meeting minutes, EPA and Ecology meeting regarding the US Ecology site. May 2, 1997.

(8) Stats, Phil, memorandum to Nancy Darling. US Ecology Environmental Impact Statement (EIS) Inclusion of Modified Model Toxics Control Act (MTCA) Scenarios. September 2, 1999. 4 pages.

(9) United States EPA, Radiation Risk Assessment at CERCLA Sites: Q&A. Directive number 9200.4-31P, EPA 540/R/99/006. 3 pages. See alsoUnited States EPA, Robert Perciasepe, Assistant Administrator for Air and Radiation and Timothy Fields Jr., Assistant Administrator for Solid Waste and Emergency Response, memorandum to Charles Hardin, Executive Director Conference of Radiation Control Program Directors, Inc, July 27, 2000, and April 19, 1999 date stamped, 2 pages each.

Code of Ethics for Government Service

Authority of Public Law 96-303, unanimously passed by the Congress of the United States on June 27, 1980, and signed into law by the President on July 3, 1980.

Any Person in Government Service Should:

I. Put loyalty to the highest moral principles and to country above loyalty to persons, party or Government department.

II. Uphold the Constitution, laws, and regulations of the United States and of all governments therein and never be a party to their evasion.

III. Give a full day's labor for a full day's pay; giving earnest effort and best thought to the performance of duties.

IV. Seek to find and employ more efficient and economical ways of getting tasks accomplished.

V. Never discriminate unfairly by the dispensing of special favors or privileges to anyone, whether for remuneration or not; and never accept, for himself or herself or for family members, favors or benefits under circumstances which might be construed by reasonable persons as influencing the performance of governmental duties.

VI. Make no private promises of any kind binding upon the duties of office, since a Government employee has no private word which can be binding on public duty.

VII. Engage in no business with the Government, either directly or indirectly, which is inconsistent with the conscientious performance of governmental duties.

VIII. Never use any information gained confidentially in the performance of governmental duties as a means of making private profit.

IX. Expose corruption wherever discovered.

X. Uphold these principles, ever conscious that public office is a public trust.

(23)

SIEMENS

November 16, 2000
JHN:00:104

Ms. Nancy Darling
Washington State Department of Health
Division of Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7827

Dear Ms. Darling:

Subject: EIS Process for Hanford Commercial Low Level Waste Disposal Facility

Siemens Power Corporation (SPC) wishes to express its support for renewal of the facility operating license for the Hanford Commercial Low Level Waste Disposal Facility (Hanford LLWDF) and for expeditious completion of the ongoing Environmental Impact Statement (EIS) process. SPC operates a commercial nuclear fuel fabrication plant located at Richland, Washington under radioactive materials licenses issued by the U.S. Nuclear Regulatory Commission (NRC) and Washington Department of Health (WDOH). SPC and its predecessors have operated successfully at this location for thirty years. With a current employment level of approximately 750, SPC is one of the largest private employers and taxpayers in the City of Richland and in Benton County.

As part of its nuclear fuel fabrication activities, SPC generates a variety of radioactive wastes containing low-enriched uranium that we have routinely shipped to the Hanford LLWDF. The ability to dispose of our low-level radioactive wastes in a safe and cost-effective manner is a business necessity for SPC. To have such a disposal option based in our own Northwest Compact is a decided benefit in that it allows SPC and other regional radioactive waste generators to directly interface with the commercial site operator and the pertinent governmental regulatory agencies. In this regard, SPC highly values its open and productive commercial interactions with U.S. Ecology relative to waste volumes, disposal rates, and other site operational variables. Furthermore, SPC believes its interests are best understood and appreciated in the regulatory arena when the affected regulators are from our own region, in this case our own Washington Departments of Health and Ecology. Consistent with this, we have had the privilege of directly interfacing with State staff who issue our site use permit and who regulate and inspect our waste shipments.

As with its own operations, SPC places a high value on the environmentally safe operation of the Hanford LLWDF. We support the state's efforts to confirm such operations via an expeditious and scientifically-based process. We believe the Hanford LLWDF is particularly well placed to minimize its environmental impacts. The surrounding Hanford Site provides consistent and highly compatible land use and the extensive Hanford environmental surveillance program provides a unique opportunity to effectively detect and evaluate potential site impacts.

Siemens Power Corporation

James H. Nordahl
President
Chief Executive Officer

2101 Horn Rapids Road
Richland, WA 99352

Tel: (509) 375-8630
Fax: (509) 375-8777

The history of the Northwest Compact in the establishment and successful operation of the Hanford LLWDF is one of the bright spots in the handling of low-level radioactive waste in the U.S. The site constitutes a valuable asset to key industrial and medical activities within the region and its operator is a good corporate citizen within the Tri-Cities area. SPC strongly supports state efforts to complete the environmental impact assessments needed to allow renewal of the license for this operation. If you have questions regarding SPC's position as provided above, please feel free to contact me at 509-375-8630.

Very truly yours,

James H. Nordahl

gdh

cc: J. Erickson, WDOH
G. Robertson, WDOH
L. Goldstein, WDOE

CITY OF WEST RICHLAND
3801 W. Van Giesen ❖ West Richland, WA 99353 ❖ (509) 967-3431 ❖ FAX (509) 967-5706 ❖ www.westrichland.org

October 24, 2000

U.S. Department of Ecology
Kennewick, Washington 99336

RE: Comments on the Deparment of Ecology Draft Envirnomental Impact Statement (EIS) for Commercial Low-Level Radioactive Waste

On behalf of the City of West Richland, I would like to encourage the Department of Ecology to renew the operation license of the U.S. Ecology. The commercial disposal site has successfully operated since 1965 and has produced significant economic benefits to the County and Cities. Some notable benefits are:

1. Lease payments to Benton County.
2. Consistent fees for Northwest Compact customers.
3. A portion of the fee goes directly to support Tri-City economic diversity.

The operation has produced no health or safety risk to the public during its 35-year operational history. Future health risks to the public are minimal because the only actual risk would be to people living directly adjacent to the site. Since the site is currently located in the center of the U.S. Department of Energy site at Hanford, which is a 540 square mile restricted area, exposures at the site would be non significant to the general public. Therefore, public exposure is not a factor. U.S. Ecology workers are monitored and trained to prevent above normal exposure.

The following three actions are being proposed by the Department of Ecology:

- Renewal of the U.S. Ecology, Inc. Washington State Radioactive Materials License to operate the commercial Low Level Radioactive Waste Disposal site;

- Amendment of Chapter 246-249, Washington Administrative Code, establishing a 100,000 cubic foot per year limit for diffuse naturally occurring or accelerators produced radioactive material disposed at commercial low-level radioactive waste sites; and,

- Approval of the July 1996 "Site Stabilization and Closure Plan" submitted by U.S. Ecology to close the site in the year 2056 .

These are the best alternatives to successful and safe operations at the site. These operational enhancements will protect public health, worker safety and the environment. In addition to the current mission, the U.S. Ecology site has the potential of accepting Fast Flux Test Facility (FFTF) waste if the reactor is restarted. I would encourage the State to explore the potential of disposing of the FFTF low-level waste.

Analysis within the EIS, and regulatory documents prepared by Washington Department of Health, or the licensee in compliance with the license, confirmed that the facility can be safely operated for at least fifty more years and then closed in accordance with criteria that the state deems appropriate.

Sincerely,

Jerry A. Peltier
Mayor

(29)

Heart of America Northwest
"Advancing our region's quality of life."

November 13, 2000

Governor Gary Locke
Legislative Building
Olympia, Washington 98504

RE: Washington Departments of Health and Ecology consideration of proposal to allow dramatic increase in radioactive wastes imported to Washington for burial at commercial Low-Level Radioactive Waste Dump at Hanford

Dear Governor Locke:

The Washington Department of Health continues to consider amending its rules, as sought by the operator of the commercial Low-Level Radioactive Waste Dump at Hanford (US Ecology, Inc.), to allow more than a ten fold increase in radioactive "NARM" wastes imported to Washington and buried at the dumpsite. This level would effectively double the total amount of radioactive wastes imported into Washington State.

The Departments of Health and Ecology have released a joint EIS on relicensing US Ecology, increasing the amount of NARM radioactive wastes disposed and on the company's proposed plan for eventual closure (in 2056) and capping of the dumpsite.

This EIS fails to consider the health and environmental impacts, and policy implications, of doubling the transport of radioactive wastes into Washington - most of which would go through downtown Spokane or have to cross the Blue Mountains and Columbia River. Previous published results of State Patrol inspections of the commercial radioactive waste truckers entering Washington showed that some shippers had between 25% and 50% of their trucks "arrested" at the border for safety violations. The EIS fails to consider the new impacts of air transport or foreign waste import. (You will recall your own concern this past summer when the company imported NARM waste, via air, from Spain for disposal). Proposed license and permit conditions do not ban either, despite clear legal authority to do so.

Of great concern is the failure of the Departments to identify an alternative of simply barring use of this commercial Low-Level Radioactive Waste disposal site for disposal of radioactive NARM wastes, which is outside of its intended purpose. In the past, we have proposed limiting disposal of NARM waste to the estimated quantity produced in Washington and Oregon and requiring disposal. This is constitutional, is consistent with national and state policy on hazardous waste facilities, and is a rational limit - but the Departments have not considered it.

Nor have the Departments considered the impacts of allowing USDOE to dispose of the wastes from restart of Hanford's FFTF Nuclear Reactor and Plutonium processing in the commercial Low-Level Radioactive Waste Dump. In order to avoid the public relations problem

1305 Fourth Avenue • Suite 208
Seattle WA 98101
206/382-1014 • fax 206/382-1148 • e-mail: office@heartofamericanorthwest.org
www.heartofamericanorthwest.org

of adding wastes to Hanford's problems, USDOE announced that it was proposing to send the wastes from FFTF and associated Plutonium processing (which produces extremely problematic wastes) to commercial disposal sites and not Hanford USDOE facilities. What USDOE officials tried to avoid disclosing to the public is that: the only Low-Level Radioactive Waste dumpsite that will be an option for most of these wastes from FFTF and decades of new Plutonium or isotope processing is the commercial site's unlined trenches in the middle of the Hanford Nuclear Reservation.

Washington State, through your Administration, has consistently worked with Oregon, the National Association of Attorneys General, the National Governors' Association, the Northwest Congressional Delegation... to ensure that USDOE did not change its policy against use of commercial Low-Level Waste dumps for USDOE wastes. There are very important environmental and policy reasons for precluding USDOE use of the compact Low-Level Waste disposal sites (E.g.: avoiding disposal of wastes from an unregulated generator; inability to effectively inspect and monitor the USDOE generators, who have a long history of noncompliance with state and federal hazardous waste characterization requirements; avoiding making the state, as lessor and landlord, potentially liable for disposal of USDOE wastes; reserving the sites for commercial uses; the different chemical and radionuclide content of USDOE wastes; and, the inability of the state and compact to bar wastes imported from other USDOE sites, once this facility is opened to any USDOE wastes...).

It is, therefore, bizarre that Health and Ecology fail to address the impacts of changing this policy in the EIS and fail to propose that the permit and license preclude the formal proposal of USDOE to use the state run dumpsite for USDOE wastes.

Any USDOE wastes disposed in this dumpsite will still add to the total risk and contamination threat to the Columbia River from Hanford.

How serious is that risk???

Ecology has recently confirmed that the commercial Low-Level Radioactive Waste Dumpsite has already leaked hazardous wastes all the way to groundwater in excess of state MOTCA standards - a rate of contamination spread that the model used in the current EIS predicted would take hundreds of years. (Incredibly, due to what the agencies claim was a bureaucratic oversight, the fact that the site is already contaminating groundwater with chloroform, Trichloroethylene and Tritium above standards, and that other hazardous wastes are migrating, was left out of the EIS - despite the data having been known for eight months).

It is irresponsible for State agencies to propose adding new waste streams (the NARM wastes are far more long-lived radionuclides and USDOE wastes from chemical processing of Plutonium pose unique hazards) without even investigating how much waste is spreading out of the waste dump and how fast.

The risk assessment accompanying the EIS reveals that radionuclide releases from the commercial Low-Level Waste Dump would result in fatal cancers for three percent (3%) of Native American children exposed due to a reasonably foreseeable intrusion!!!

The Health Department has improperly and inexcusably chosen to ignore that our state hazardous waste cleanup law, the Model Toxics Control Act (MOTCA, RCW chapter 70.105D), establishes a standard for maximum allowable cancer risk from potential releases of hazardous substances, including radionuclides. (Health calls the MOTCA standard a "consideration" for some decisions and not applicable at all to other decisions about how much waste can be released to the groundwater and air from this site). Ironically, your Administration and EPA insist that USDOE clean up adjacent Hanford burial grounds to a residual contamination level that is far more protective of the health of future generations than Health proposes to apply to this dumpsite!!!

US Ecology's proposed cap and closure plan for 2056 would result in at least forty four (44) times more cancer to exposed offsite Native American children and Native American adults exercising Treaty rights than the state MOTCA standard allows. This violation does not even

include the additional cancer risk from the uninvestigated release of non-radioactive hazardous wastes, which has already exceed the maximum allowable risk level in MOTCA!!!

Hidden in the Risk Assessment appendix to the EIS is the admission that every single proposed alternative in the EIS would violate the acceptable cancer risk levels in state law (Risk Assessment at 102).

Adding 100,000 cubic feet per year of radioactive NARM wastes would increase the already illegal level of future cancer risk from this site by over 25%. Adding USDOE wastes would increase the risks by an unknown level. Even the best "enhanced cover" alternatives proposed by Health result in cancer risks twenty three times higher than allowed under state law.

We, therefore, urge you to:

1. Establish a firm policy that Washington State will not change its regulations to allow more radioactive NARM wastes to be imported and disposed in the commercial Low-Level Waste site than the quantity generated and requiring disposal annually in Washington and Oregon; and, ensure that the environmental and health benefits of both this alternative and a no NARM waste alternative are added to the EIS. You should not be the Governor to allow a doubling of the amount of radioactive wastes imported to Washington.
2. Establish a firm policy and include in the permit and license for the site provisions that bar use of the commercial Low-Level Radioactive Waste Dump for USDOE generated wastes; foreign wastes; air transported wastes.
3. Direct Health and Ecology to apply the standards of our State's Model Toxics Control Act for determining the maximum allowable offsite cancer risk from this commercial radioactive waste dumpsite; and, ensure that the State does not seek to apply a far weaker standard for protecting future generations from releases from this dumpsite than Ecology and EPA are requiring USDOE to meet for cleanup of adjacent sites. You should not find it acceptable for a State run dumpsite to cause forty four times or twenty three times more cancer in Native Americans offsite than state law calls a maximum acceptable risk from released hazardous substances.
4. Ensure that there is a full investigation of the acknowledged release of hazardous wastes from this dumpsite - before any decision allows additional waste streams or quantities to be disposed, and before the license is renewed; and, insist that the agencies consider whether other companies, with review of environmental records, should be offered the opportunity to operate the site.
5. Phase out the use of unlined trenches, and burial of unencapsulated wastes; require the same monitoring, tracking, leachate collection and liners that Ecology and EPA required for the adjacent Hanford Clean-Up waste landfill. Require the use of more protective cap and limit on total radionuclide source term disposed in order to ensure that this dumpsite will not exceed MOTCA's maximum allowable cancer risk standard.

The proposed actions to relicense the company operating the dump and amend state regtulations to allow more waste to be imported seem to seriously undermine numerous policies of the State. We urge you to act to take effective action to protect these important policies and protect future generations.

Sincerely yours,

Gerald Pollet

Gerald Pollet, JD
Executive Director

ATT: news release, presentation slides
CC: Tom Fitzsimmons, John Ericson

HEALTH PHYSICS SOCIETY

RADIATION RISK IN PERSPECTIVE

POSITION STATEMENT OF THE HEALTH PHYSICS SOCIETY*

Adopted: January 1996

Contact: Richard J. Burk, Jr.
Executive Secretary
Health Physics Society
Telephone: 703-790-1745
Fax: 703-790-2672
email: HPS@BurkInc.com
http://www.hps.org

In accordance with current knowledge of radiation health risks, the Health Physics Society recommends against quantitative estimation of health risks below an individual dose of 5 rem[1] in one year or a lifetime dose of 10 rem in addition to background radiation. Risk estimation in this dose range should be strictly qualitative accentuating a range of hypothetical health outcomes with an emphasis on the likely possibility of zero adverse health effects. The current philosophy of radiation protection is based on the assumption that any radiation dose, no matter how small, may result in human health effects, such as cancer and hereditary genetic damage. There is substantial and convincing scientific evidence for health risks at high dose. Below 10 rem (which includes occupational and environmental exposures), risks of health effects are either too small to be observed or are non-existent.

Current radiation protection standards and practices are based on the premise that any radiation dose, no matter how small, can result in detrimental health effects, such as cancer and genetic damage. Further, it is assumed that these effects are produced in direct proportion to the dose received, i.e., doubling the radiation dose results in a doubling of the effect. These two assumptions lead to a dose-response relationship, often referred to as the linear, no-threshold model, for estimating health effects at radiation dose levels of interest. There is, however, substantial scientific evidence that this model is an oversimplification of the dose-response relationship and results in an overestimation of health risks in the low dose range. Biological mechanisms including cellular repair of radiation injury, which are not accounted for by the linear, no-threshold model, reduce the likelihood of cancers and genetic effects.

[1]The rem is the unit of effective dose. In international units, 1 rem=0.01 sievert (Sv)

ATTACHMENT

The goal of managing LLRW is to ensure the safety of workers and the public and to protect the environment. To achieve this goal, disposal, not long-term storage, is the safest approach. Present knowledge and technology are sufficient to allow such disposal safely. Comprehensive regulations and practices are in place for the design, operation, and closure of LLRW disposal sites. The orderly, safe, and efficient disposal of radioactive waste can be facilitated by using all available options, including private commercial facilities. In view of these considerations, the LLRW Policy Act should be amended or replaced to allow existing facilities and commercial development to provide access to existing and new waste disposal capacity.

* The Health Physics Society is a non-profit scientific professional organization whose mission is to promote the practice of radiation safety. Since its formation in 1956, the Society has grown to approximately 6,000 scientists, physicians, engineers, lawyers and other professionals representing academia, industry, government, national laboratories, the department of defense, and other organizations. Society activities include encouraging research in radiation science, developing standards, and disseminating radiation safety information. Society members are involved in understanding, evaluating, and controlling the potential risks from radiation relative to the benefits. Official Position Statements are prepared and adopted in accordance with standard policies and procedures of the Society. The Society may be contacted at: 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101; Telephone: (703)790-1745; FAX: (703)790-2672; e-mail: HPS@BurkInc.com

be referred to as "controllable dose," the S&PIC realized that discussion of action levels at a few percent of natural background gave a sense of credibility to the notion that actual risks are known to exist at those levels (HPS 2000c). The Society stated in that paper that "The HPS believes that the proposed "Trivial Risk" level of a few tens of micro-Sieverts [i.e., a few tenths of a milli-rem] is so low that it carries no concern for adverse health effects and should not, therefore, be incorporated into a radiation-protection system." We believe that same position applies to doses in the range of a few tenths of a milli-Sieverts (i.e., a few milli-rem), which is the range of the March 1993 position statement recommendations for an assessment threshold screening level.

In addition, in September 1999 the Society adopted a position that recommended a constraint level of 0.01 mSv (1 mrem) per year be adopted for the clearance of materials from radiological controls (HPS 1999). Although this is considered to be a trivial dose, it is a recognition that constraint levels may be selected based on social and economic considerations rather than strictly radiological considerations. This is consistent with the principle of ALARA and is, therefore, consistent with our recommendations in the August 2000 position statement.

Elimination of Collective Dose Statements

The March 1993 position statement includes several statements regarding the use and application of collective dose in setting general public radiation-safety standards. These statements have been removed in the August 2000 position.

In its 1996 position statement the Society stated ". . . for a population in which all individuals receive lifetime doses of less that 10 rem above background, collective dose is a highly speculative and uncertain measure of risk and should not be quantified for the purposes of estimating population health risks." (HPS 1996) The Society continues to endorse that position and did not repeat it in the August 2000 position statement.

All recommendations relating to doses to members of the general public in the August 2000 position statement refer to doses to individuals, with no discussion of collective dose or its use in setting general public radiation-safety standards. This is consistent with the Society's position on collective dose.

Elimination of Discussion of Intervention Levels on Natural Radiation Sources and Potential Doses

The March 1993 position statement differentiated between actual or planned doses to real people, intervention where real people are already receiving elevated doses from natural sources of radiation, and potential doses to hypothetical individuals that someday may receive exposure. This differentiation is addressed in the March 1993 position statement because it was introduced in the then newly issued ICRP recommendations (ICRP 1991).

The S&PIC does not believe such differentiation is necessary and considers it complicates the system of radiation-safety standard setting. This differentiation is not made in actual practice in the United States.

Regarding intervention to elevated natural radiation sources, the August 2000 position statement excludes natural radiation sources in the environment from the definition of a controllable source, and thus does not recommend regulatory action be taken to intervene or regulate such sources. The position statement does include in the definition of a controllable source technologically enhanced, naturally occurring radioactive material (TENORM) (i.e., radiation exposure from natural radiation sources that occurs due to man's activities) making it subject to consideration for regulation. Although indoor radon can be considered a type of exposure from TENORM, it is separately identified as a controllable source for the following reason.

The recommendations for dose limitation and constraint exclude indoor radon, but not TENORM, because indoor radon is a unique source of public exposure. Indoor radon exposure is unique due to its extreme variations and its occurrence primarily in the privacy of an individual's home. For this reason, the Society has a separate position statement regarding the approach to general public protection from radon in the home (HPS 1990) and indoor radon is not, therefore, included in the scope of the August 2000 position statement.

Comments of Heart of America Northwest, Heart of America Northwest Research Center, Legal Advocates for Washington Commercial Low-Level Radioactive Waste Disposal Site Draft Environmental Impact Statement

on:

Relicensing Site,
Radioactive NARM Waste Disposal Quantities Allowed,
Closure Plan

Supplementing comments delivered orally at public hearings and materials presented

Background:

The commercial Low-Level Radioactive Waste Dump at Hanford, operated by the US Ecology company on land leased to the State of Washington by the U.S. Department of Energy, has a controversial history in our region. The voters of Washington voted to shut the site to out of state wastes when they adopted Initiative 383 (Don't Waste Washington), whose policy statements finding that any added radioactive waste imported to Washington has high health and environmental impacts, are still the law of Washington, despite the restriction against out of state wastes having been found unconstitutional. The initiative was a major spur to Congress' adoption of the Low-level Waste Policy Act, which created a system of regional compacts around the nation and set the national policy based on each region of the nation disposing of its own radioactive wastes.

In 1992, the U.S. Environmental Protection Agency (EPA) found that hazardous liquid wastes had probably been released from the site and an investigation under EPA's RCRA authority was begun.

In 1996, the importation of radioactive NORM and NARM to the site became controversial. Washington Department of Health, which licenses and regulates the site under authority delegated to it from the U.S. Nuclear Regulatory Commission (NRC), promulgated a rule limiting the annual disposal of NARM wastes (which are not in the legal category of Low-Level Wastes, and, therefore, escape the restriction against use of the Northwest Compact site [the US Ecology company site] for disposal of out of region wastes) to 8,6 00 cubic feet per year. Our organizations were represented on a Department of Health advisory committee that reviewed the issue of restriction for NORM wastes. The US Ecology company filed suit challenging the state's adoption of that regulation.

Without public comment or notice, Washington Department of Health signed a settlement with US Ecology, in which Washington Department of Health (DoH) agreed to: propose a rule allowing the import and disposal of 100,000 cubic feet per year of NORM radioactive waste (allowing this to be a cumulative limit and the amount not used to carry over into the future), to inform the USDOE that the Washington Department of Health would support the use of the commercial Low-Level Radioactive Waste Dump on state leased land for disposal of USDOE nuclear weapons production, and other USDOE facilities', wastes. There was little doubt that Washington Department of Health could legally defend the 8,600 cubic feet NORM Waste Disposal limit, raising serious questions as to why it signed such a settlement without any public notice or comment, and without considering the environmental and human health impacts of either increasing the import and disposal of NORM/NARM wastes (which approximately equated to a doubling of the total annual quantity of wastes imported to the site) or the impacts of accepting USDOE wastes. Heart of America Northwest and other public interest groups told the Washington Department of Health that we would sue if Health attempted to adopt the increased NORM/NARM waste disposal

regulation or allow USDOE wastes to be dumped into the state run dumpsite, without an Environmental Impact Statement and public process.

In August, 2000, USDOE announced that it "preferred" to use the US Ecology commercial Low-Level Radioactive Waste Dump for wastes from its proposed restart of the Hanford FFTF Nuclear Reactor and proposed processing of Plutonium and other isotopes from the reactor, rather than be subject to criticism that the wastes would add to USDOE's own waste burdens at Hanford (ignoring that the commercial site is at Hanford and is contaminating groundwater already). Thus, at the time of this Draft EIS in October, 2000, Washington Department of Health is again considering import of 100,000 cubic feet of NORM or NARM waste per year (with a rollover to allow more than that amount in some years) and USDOE is formally promoting use of the US Ecology dump for its own wastes - acceptance of which would be "a reversal of state policy"[1].

The Spokesman-Review reported the private deal struck between Health and US Ecology as follows:

> *"Nearly 12 times more mildly radioactive waste than now allowed may be coming to Washington state's Hanford dump* as a result of a legal challenge to the state's waste import policies.
>
> In addition, Washington Department of Health officials are considering a plan to accept more intensely radioactive defense wastes from weapons sites nationwide.
>
> The May 15 settlement agreement between the U.S. Department of Ecology (sic - should be US Ecology company) and the state health agency has astonished some officials, who said parts of it go too far.
>
> 'We were surprised by this, frankly,' said Jeff Breckel, Gov. Mike Lowry's liaison at the Washington Department of Ecology.
>
> 'It has certainly grabbed a lot of attention that we might be inviting out-of-state defense waste into the region. I don't know what the Department of Health was thinking,' Breckel said.
>
> It has also angered a Seattle environmental group, which called the state Health Department a 'rogue agency' for agreeing to the deal.
>
> 'This is contrary to established Washington state policy to limit radioactive waste imports,' said Gerald Pollet of Heart of America Northwest. ...
>
> ***'I'm not defending this deal - it's not my deal. It does seem surprising that we didn't know,'*** said Dan Silver, state Ecology's assistant director for waste management who oversees Hanford cleanup.'"

Spokesman-Review, June 20, 1996, "Deal May Lift Cap on Nuke Waste", Karen Dorn-Steele, italics added.

This "deal" is still reflected in the proposed actions in this EIS, and the EIS still fails to consider the impacts of a change in policy to accept any increase in NARM wastes or the disposal of USDOE wastes at the state leased US Ecology company commercial Low-Level Radioactive Waste Dumpsite.

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[1] Spokesman-Review, June 20, 1996 "The agreement"

Heart of America Northwest, Heart of America Northwest Research Center and Legal Advocates for Washington have a longstanding concern that the commercial Low-Level Radioactive Waste Dumpsite poses risks to the health of our members, to future generations and the environment. To accomplish our review, we utilized the professional services of a geophysicist and licensed engineer who has extensive experience regarding the groundwater and vadose zone at Hanford and the transport of contaminants through the vadose zone.[2] The review by Energy Sciences & Engineering is attached. Those findings were coupled with our own extensive research regarding the site's risk assessment, the appropriate standards applicable for the site, the need for remedial investigation of hazardous substance releases, review of issues that the EIS failed to address.

Major Findings in Summary:

A. The Draft EIS is legally inadequate under the standards of the State Environmental Protection Act (SEPA), which requires disclosure and consideration of: all reasonably foreseeable impacts of proposed actions; all reasonable alternatives to those actions and their impacts; disclosure of known data indicating that the facility has already had significant impacts to human helath or the environment, and examination of the cumulative impacts of related decisions (whether or not they are by the same agency).

Some examples of these inadequacies are:

- Failure to disclose to the public and agency decision makers that liquid[3] and TransUranic wastes were disposed in the site, and that the presence of liquids could increase the migration of contaminants;
- Failure to properly disclose that hazardous wastes from the dumpsite trenches have already reached groundwater at levels that exceed MOTCA (Washington's Model Toxics Control Act, RCW Chapter 70.105D, also referred to as the state hazardous substances cleanup law or state superfund law) standards for protection of public health from cancer risks due to exposure to releases of hazardous substances (including radionuclides). Further, the EIS fails to identify that the groundwater model, human health risk assessment and chemical risk assessment relied on in the EIS failed to predict this actual condition, and were not redone to reflect actual data;
- Failure to disclose "a long list of violations of our dangerous waste regulations"[4] by the site operator and the potential for those conditions, including improper disposal of wastes and disposal of hazardous wastes that are barred from land disposal, to increase the release rates of contaminants and increase health and environmental risks.

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[2] The comments prepared by John Brodeur, P.E. are attached to these comments and are submitted as part of the comments of the organizations. The review of the EIS and related groundwater and vadose zone documents by John Brodeur were Supported by a grant from the Citizens' Monitoring and Technical Assessment Fund.

[3] E.g. disposal of organic solvent liquids, often xylene, toluene of dioxane. Each of these are considered probable carcinogens as well as having other dangerous waste characteristices, and posing signficant likelihood of mobilizing other contaminants that the EIS and models presume to have limited mobility (e.g., Plutonium). SEE Washington Department of Ecology Compliance Assessment for US Ecology, Hanford Site, Richland, Washington, September 1985. Other evidence of disposal of liquid wastes exists, including disposal in caissons and in 55 gallon barrels. None of these liquids are disclosed in the EIS or taken into account in the risk assessments.

[4] Washington Department of Ecology, October 9, 1985 Memo of Roger Stanley to Marc Horton regarding proposed order to comply with state regulations. The EIS fails to disclose that the Washington Department of Ecology considered the LLW Dumpsite to be a dangerous waste facility (TSD) facility as early as 1985. In the Draft EIS and supporting documentation, the DoH and Ecology justify use of standards other than Washington and federal hazardous waste laws (RCRA) by claiming that the facility was not a TSD facility.

- Failure to disclose findings that the groundwater monitoring system around the dumpsite is not adequate and would not likely reveal increased levels of contamination from the site;
- Failure to disclose that the sublease to US Ecology expires in 2005, and considering the benefits to the environmental management of the site from recompeting the lease with signficant operational improvements and consideration of the operational environmental record of the bidders and their financial abilities to perform. This is a related action that should have been disclosed and its impacts and alternatives considered in this EIS.
- Failure to disclose that, and consider the impacts of, the USDOE has formally proposed to begin disposal of wastes from its FFTF Reactor and Plutonium and isotope processing operations at the US Ecology Low-Level Waste Site, and that this related action (requiring state approval via the Northwest Interstate Compact and permitting and license decisions), has significant environmental impacts, including the addition of new types of wastes, which are not considered at all in this EIS. Rather, the focus sheet and other agency statements in this process improperly say that the state will consider USDOE's proposal in other contexts - for which there is no public participation and no anticipated EIS. Addition of USDOE wastes would reverse publicly stated policy of Washington State, and open the door to the state becoming liable for releases of USDOE wastes from the dumpsite as well as opening the door to USDOE sending waste from other USDOE facilities. USDOE refuses to honor its prior commitment to subject its radioactive waste generating processes to NRC or NRC delegated state regulation. Thus, the USDOE wastes would be the only non-regulated generator wastes disposed at US Ecology, while USDOE records provided to Washington State by Heart of America Northwest and Heart of America Northwest Research Center acknowledge repeated failure of USDOE generators to properly characterize and segregate dangerous wastes from low-level wastes.
- Failure to disclose that US Ecology imported NARM waste by airplane to the site in 2000, and failure to consider the risks of air transport and failure to propose barring air transport of waste to the site in the site license;
- Failure to disclose that US Ecology imported foreign source NARM waste to the site in 2000, and failure to consider the environmental impacts of the import and disposal of foreign source wastes, including the inability of state regulators to impose generator penalties and inspections on foreign generators, and failure to consider how this violates the state policy that Washington State is only willing to host the site for purposes of doing our state's share of regional waste disposal.
- Failure to discuss the environmental benefits from, and legal applicability of, the closure standards for dangerous waste landfills in Washington's Dangerous Waste law (RCW chapter 70.105) and regulations. Instead the EIS cites only DoH requirements, yet, Ecology has formally recognized that the dumpsite is a dangerous waste landfill.
- **Failure to consider reasonable alternatives** to proposed actions, which would mitigate the site's violation of MOTCA standards and the finding in the risk assessment that future releases will result in exposures resulting in cancer risks far greater than MOTCA standards consider acceptable, including, but not limited to the following alternatives:
    - Use of liners and leachate collection systems instead of continuing to use unlined trenches[5];

[5] In 1985, Ecology first proposed to require use of liners and leachate collection for new trenches at the site, and found that the company's failure to do so violated state dangerous waste regulations. Ironically, Heart of America Northwest has recently urged that this same standard be required for both the US Ecology dumpsite and USDOE Hanford Low

- Adoption of measures to meet the MOTCA standards instead of using the far more lax Washington DoH standards, which were adopted without consideration of their impact on human health and the environment - over the objections of our groups and many others in the public - and, which would allow the site to cause between five and one hundred times more fatal cancers in exposed children than MOTCA allows;
- Limiting the annual acceptance of NARM radioactive wastes to the quantities generated in Washington and Oregon annually, which require proper disposal (wit no roll-over provision for use of prior year's unused allotments); or the reasonable alternative of barring the commercial Low-Level Waste site from accepting wastes that are not Low-Level radioactive wastes subject to the Northwest Interstate Low-Level Waste Compact (i.e., banning NARM wastes, which have other disposal options);
- Not relicensing the site and competing the sublease with new requirements for appropriate environmental standards and consideration of the prior environmental and safety record of the bidders;
- Barring, in the site license, use of the site for disposal of USDOE wastes, foreign wastes or air transported wastes, discrete NARM[6];

As the region's leading voices for the cleanup of the entire Hanford Nuclear Reservation, we can not ignore the following significant impacts to human health, the Columbia River and the environment from this disposal facility, and urge Washington DoH and Ecology to address each of these concerns in their decisions and revision to this EIS:

1. continued disposal of radioactive wastes into unlined trenches, with no leachate collection and inadequate groundwater and vadose zone (soil column) monitoring - while nearby, we require the wastes from Hanford cleanup activities to be put in a landfill with liners, leachate collection and a superior monitoring system;
2. longstanding evidence that the commercial Low-Level Radioactive Waste Dumpsite has been releasing hazardous wastes (including radionuclides) to the environment, and that wastes have reached the groundwater (which flows to the Columbia River) in concentrations that exceed the health risk standards in our State's Model Toxics Control Act (MOTCA, Chapter 70.105D, RCW);
    - This was not disclosed in the EIS text, but, rather, this critical information was disclosed in an "Errata Sheet" handed out at the public hearings to those persons who wanted the full Draft EIS.[7]

Level Burial Grounds, while Ecology staff in meeting swith us and the Hanford Advisory Board have questiooned whether they have the authority to require liners and leachate collection. SEE Compliance Assessment at 5, item m.

[6] Discrete NARM, which has higher activity levels, poses unique risks which are never considered or disclosed in the EIS.

[7] In responding to comments, we expect the State agencies to fully explain why the contamination of groundwater from the site was not included in the text of the Draft EIS, and why the belated acknowledgement of the releases at concentrations above MOTCA standards did not result in the redrafting of the EIS to reflect the application of MOTCA authority and standards. A review of records by our organization found that Ecology knew in November, 1999 that groundwater was contaminated by hazardous substances released from the site at levels exceeding MOTCA standards. Fourth quarter monitoring results further indicated a dramatic increase in groundwater concentrations of two hazardous substances.

Please explain why this was not fully disclosed in the text of the EIS, and why the Chemical Risk Assessment and groundwater models, which did not utilize this data and failed to predict it, were not entirely redone? These actions must be taken prior to a Final EIS, and must be based on completion of a full release

- Evidence strongly indicates that the hazardous wastes found in groundwater beneath, and in the vicinity of, the site are from the site. Examination of data reveals that the claims made that the sources of these contaminants are from other Hanford plumes are not supported by actual data - to assist us in our review of this critical issue, we had an independent geophysicist examine the EIS and its groundwater model, the hazardous waste investigation data and other groundwater monitoring data. The results and comments from that independent examination are attached to these comments, and are part of our comments.
- The EIS was written to rely upon inappropriate radiation dose standards and repeatedly fails to consider - as required by SEPA - the application of the MOTCA standards.

3. documented prior improper disposal of liquid wastes (including liquid waste disposal caissons, 55 gallon barrels of liquid wastes and organic solvents in scintillation liquids)[8] and hazardous wastes, which will mobilize other wastes and cause their migration to groundwater at rates far greater than acknowledged;
4. that the Department of Health, at the request of the dumpsite operator (US Ecology, Inc.) has proposed to double the total amount of radioactive wastes imported to the state for disposal at the site and increase the total amount of NARM wastes imported and disposed twelvefold;
5. that the U.S. Department of Energy, in a cynical public relations effort, has formally proposed to dump wastes from the restart of Hanford's FFTF Nuclear Reactor and related Plutonium and isotope processing activities into the commercial Low-Level Radioactive Waste Dump, in order to avoid charges that the restart added to the Hanford Environmental Management Program's waste disposal burdens - - a move that would

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investigation, rather than a screening survey investigation (which was not designed to determine the extent of contamination release, migration or for the design of remedial action).

The agencies' failure to fully disclose the existence of known information has prejudiced the ability of the public to comment on the Draft EIS, and violated SEPA. The Errata Sheet, in which the contamination of groundwater was disclosed in October, 2000, was not included in the version of the Draft EIS posted on the DoH website, and to which many members of the public, including these organizations initially, were referred to for development of their comments. Thus, the failure to disclose vital information that was known for at least eleven months, harmed the ability of the public to comment and injured their rights to a healthful environment. SEE Washington State Department of Ecology, Nuclear Waste Program, Comments on Internal Review Draft Commercial Low-level Radioactive Waste Disposal Site Environmental Impact Statement, November 29, 1999.

Even if the agencies do not agree (with us or each other) about whether they are legally required to plan to remediate and adopt closure and license requirements that meet MOTCA, SEPA requires full disclosure and consideration of the use of MOTCA as an applicable requirement and guidance value. Further, initial investigation results clearly require Ecology to require a site hazard assessment and full investigation of the extent of releases and potential for continuing releases at this facility. Under Ecology guidelines for Site Hazard Assessments, this site would rank high as requiring both investigation and remedial action due to the lack of a liner and leachate collection system; the increasing levels of contamination found in the initial screening investigation, the knowledge that both liquid wastes and illegal disposal of hazardous wastes occurred, the persistence, toxicity, carcinogenicity and mobility of the hazardous substances disposed. *This relevant information must be fully disclosed in the Draft EIS, and all closure (especially cap) decisions, relicensing and decisions regarding allowing additional quantities or waste types must be held in abeyance until the outcome of that investigation is known, and appropriate remedial action is designed.*

[8] See Attached comments of John Brodeur, P.E.; items 6 and 7.

violate prior statements of state policy adopted to protect against serious environmental impacts from disposing of USDOE wastes at the commercial dump, and state policy to avoid becoming a liable party for the cleanup of USDOE wastes pursuant to CERCLA for allowing USDOE wastes to be dumped into a state leased, state permitted landfill. Note: the State has in the past expressed concern that the USDOE has reneged on prior commitments to subject its waste generating nuclear operations to NRC or state delegated regulation. USDOE's wastes would be the only non-regulated generator wastes disposed at the commercial site; and, Ecology and Health are aware that internal USDOE records reveal a pattern of USDOE generators failing to meet waste acceptance criteria and Washington requirements for designation, characterization, segregation and tracking of dangerous wastes (these records have been made avilable to Ecology by Heart of America Northwest Research Center);

6. that the Health Department's own risk assessment for this EIS found that proposals for continued operation and final capping under consideration would result in rates of fatal cancer as high as sixty times the state's maximum allowable cancer risk standard for releases from hazardous waste sites (pursuant to MOTCA) -for an offsite person;
7. the Health Department's own risk assessment found that in the event of a reasonably foreseeable "intrusion" via a groundwater well (which the Company's proposed cap and other "enhanced" cap alternatives, with the exception of asphalt, would do little to deter), three percent (3%) of onsite Native American children would die of fatal cancer from exposure pathways, and even with the US Ecology company proposed cover, that fatal cancer rate would be approximately 1% - while MOTCA requires attempting to meet risk levels that are 1,000 times more protective of the health of exposed individuals.
    - The Health Department and Ecology chose to improperly ignore that the US EPA has issued a formal determination that the standards relied upon by the Department of Health in this EIS (e.g.: to compare whether caps for closure would meet standards[9]) are "not protective of human health and the environment" for use at federal Superfund (CERCLA) sites

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[9] Draft EIS, P.94: "All cover designs, except the Site Soils Cover, are below the 500 mrem/year onsite intruder guidance. However, only the Enhanced asphalt cover is below the 100 mrem/year level of the 100/500 mrem/year consideration value recently adopted in the Radiation Cleanup Standards (Chapter 246-246, WAC)."

This standard is ultra vires, having been adopted by Washington Department of Health in 2000 without complying with SEPA and considering the human health and environmental impacts of the rule in an Environmental Impact Statement. The Draft EIS improperly fails to acknowledge that the standard's adoption is under appeal. As with this Commercial Low-Level Waste Dumpsite Draft EIS, Washington Department of Health failed to consider that ***U.S. EPA has repeatedly informed states considering use of such a standard that it was deemed by EPA to not be protective of human health or the environment*** at Superfund sites where there has been a release of hazardous substances, including radionuclides. Indeed, EPA informed interested states that use of a dose based standard for cleanup, instead of the human risk standard, was inappropriate. MOTCA, like CERCLA, uses a human risk standard. The Department of Health rule, and this EIS, rely upon a dose based standard, and this dose translates into human health risks that allow between five and one hundred times more fatal cancers than the MOTCA standard that is applied at all other hazardous substance release sites in Washington.

Because: a) there has been a release of hazardous wastes in excess of MOTCA Method B cleanup standards (or "screening levels"); b) the site has been on the MOTCA Site list (Facility Site ID # 311) as updated in 1992 (and still awaiting a required Site Hazard Assessment); c) it is now confirmed that the site has released hazardous and carcinogenic substances to the environment and groundwater in excess of MOTCA standards, and will continue to do so unless remediated; and, d) because US EPA ordered a RCRA

- Any basis for the claims that MOTCA provided solely a "consideration" value (Page 83) evaporated when the agencies knew that the site had already released to groundwater hazardous substances above MOTCA standards, which requires (pursuant to both RCRA corrective action requirements and MOTCA) further investigation and corrective action that is protective of human health and the environment pursuant to MOTCA standards (which Washington State utilizes for RCRA corrective action).
    - as noted above, EPA has determined that the standards relied on in the Draft EIS (WAC 246-250 and 246-246) are NOT PROTECTIVE of human health and the environment for sites with releases of radionuclides. The only reason that the US Ecology site is not part of the Hanford CERCLA National Priorities List site is that the investigation to determine if there was a release had not yet occurred at the time of the 1989 listing of the remainder of the Hanford Site. The RCRA investigation begun by EPA in 1992, was delegated to the State, based on Washington utilizing the corrective action authority and standards in RCW 70.105 and 70.105D and WAC chapter 173-343. Ecology may not substitute standards to apply at the site of a release, when "EPA has determined that the dose limits established in this rule as promulgated generally will not provide a protective basis for establishing preliminary remediation goals (PRGs)

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investigation in 1992 (which the State took over under its delegated RCRA authority, which utilizes MOTCA for corrective action requirements), the **APPLICABLE standard is the MOTCA** Method B health risk from residual contaminants or release standard of one additional cancer per one hundred thousand persons exposed to all carcinogens from the site, based on the maximum reasonable exposure scenarios.

In reviewing the NRC proposed Radiological Criteria for License Termination, upon which Washington DOH has based its adoption of the same standard, and which it proposes to apply as the standard for closure of the Commercial Low-Level Waste Dump, the US EPA "determined that the dose limits established in this rule (25 mrem/year) as promulgated generally will not provide a protective basis for establishing preliminary remediation goals (PRGs) under CERCLA..." and that the guidance relied upon by Washington DoH "is similarly not protective under CERCLA..." United States Environmental Protection Agency, August 22, 1997, OSWER No. 9200.4-18.

If the standard being applied by Health and Ecology is not protective under CERCLA for a release, then it is not appropriate or protective under Washington Ecology's delegated RCRA authority, under which it is conducting the release investigation, and pursuant to which corrective action must be taken.

In fact, Washington Ecology and DoH violated the terms of their Memorandum of Understanding by continuing to allow DoH to be the lead agency once a release of hazardous substances, as opposed to purely radioactive, was identified at the site. This also, therefore, violated the terms of the delegation of RCRA authority to the State, as does reliance on an authority for the cleanup other than MOTCA and which utilizes a standard for radionuclide cleanup, or prevention of threatened release exposure, that EPA has found is not protective of human health or the environment.

Thus, the EIS should be re-done and re-released for public comment after the completion of the hazardous substance release investigation, with Ecology as the lead and recognizing that the applicable standards to be met for exposure and cleanup are those in MOTCA. Of course, an EIS should clearly disclose the differences between those standards and the impacts of using the DoH standard instead of MOTCA - the current Draft EIS fails to meet this SEPA requirement. *And, of course, no state agency should be proposing to allow the release of hazardous substances, including radionuclides, at levels that will exceed the maximum allowable risk from exposure under MOTCA!!!* To do so violates the agencies' statutory duties, the statutory rights of individuals to a healthful environment, the agencies' trust responsibilities in that regard, and failure to consider meeting the MOTCA standard violates SEPA.

under CERCLA. The NRC rule set an allowable cleanup level of 25 millirem per year (equivalent to approximately 5 x 10-4 increased lifetime risk) as the primary standard with exemptions allowing dose limits of up to 10 millirem per year (equivalent to approximately 2 x 10-3 increased lifetime risk)... cleanups at these sites will typically have to be more stringent than required by NRC dose limits in order to meet the CERCLA and NCP requirement to be protective."[10] Thus, the State DoH standards - which are based upon the NRC standard referred to in the EPA determination - relied upon are not protective of human health and the environment for cleanup of releases involving radionuclides, as determined by EPA. The same standard for corrective action under RCRA would apply. Even if it were not legally "applicable" because of the lack of a current release, *it would violate the State agencies' trust responsibilities under MOTCA and SEPA (regarding the individuals' right to a healthful environment) for State agencies to use a standard that is not protective of human health for determining the adequacy of closure and remedial actions (i.e., leachate collection, monitoring, etc...) at the landfill, knowing that future releases would result in violation of MOTCA's cancer risk standards for future generations.* <u>In any event, the failure to consider in the EIS, as a reasonable alternative, imposing conditions and limits to meet the CERCLA or MOTCA standards violates SEPA</u>.

- The EIS, at Page 3, improperly states that "no orders for remedial action apply..." As discussed elsewhere in these comments, MOTCA and RCRA requirements and the RCRA part B permit all require remediation following a more complete characterization and investigation of the now documented releases to groudnwater that exceed MOTCA cleanup levels.

8. Comments provided to the agencies during scoping are not presented, or responded to. Examples include comments of the Oregon Hanford Waste Board regarding the rollover provisions for NARM waste and of our organizations regarding consideration of a zero quantity for NARM or limiting NARM to the quantities generated annually in Washington and Oregon. Other examples include route specific concerns for the dramatic increase in truckloads of NARM waste that would cross Oregon's Blue Mountains (including cumulative impacts in conjunction with other USDOE decisions to increase waste shipments to and from Hanford), use of I-90 through downtown Spokane, and the safety violation record of shippers / trucking firms importing waste to the site.

<u>Comments on Specific Proposed Actions and Portions of the Analysis:</u>
(Note: these are in addition to the comments pertaining to each of these areas in the background, summary of major concerns, findings and recommendations, and consultant's report)

Use of the term "pending actions": If DoH has made decisions to take actions, which are, therefore, pending, then the decisions were made in advance of considering the environmental impacts and in violation of SEPA. This term should be removed from the EIS, unless it accurately depicts that DoH has made decisions or adopted preferences.

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[10] USEPA OSWER No. 9200.4-18 at 3. See Also USEPA final guidance "Radiation Risk Assessment at CERCLA Sites" , 1997.

License Issues:

- EIS fails to consider reasonable alternative of having a different licensee operate the site, and to consider the licensee's record regarding investigation of releases from this site, operation of other sites in a manner that prevents releasesfrom the sites, remedial action history at other sites, etc...
- EIS fails to consider the link between the end of the sublease and renewal fo the license, and the benefits of competing the sublease with consideration of environmental and safety records of applicants / bidders;
- EIS fails to consider alternatives to use of "random disposal" methodology, including benefits of requiring licensee to track placement of all wastes, to utilize methods of disposal that prevent subsidence of wastes when capped and minimize moisture in trenches and backfill;
- License enhancements proposed are never disclosed - this is a major violation of the requirements under SEPA to propose mitigation measures. EIS should consider benefits of requiring encapsulation of all wastes disposed, and define the required improvements in groundwater and vadose zone monitoring (which need to be based, in part, on characterization of releases);
- License should limit the total source term to prevent potential for the facility to release radionuclides at levels that will exceed MOTCA Method B standards for health risk;
- EIS improperly states that MOTCA is not applicable in the chart at Page 46, and calls it a "consideration value"only. The EIS then fails to show any consideration of reasonable alternatives to meet MOTCA standards. In any event, MOTCA is applicable, pursuant to the requirement for a field investigation under RCRA, pursuant to the Hanford Site Part B RCRA permit, and due to the finding that groundwater has been contaminated from releases at levels exceeding MOTCA Method B standards. License must specify that MOTCA is applicable, and that the licensee must comply with the investigation and cleanup requirements of MOTCA and RCRA, and must operate the site in a fashion that it does not cause future violation of MOTCA standards, creating a future liability and remedial action requirement.
- Consideration of the license renewal must include cumulative impacts from renewal; e.g.: the EIS presents the impact of license renewal (improperly ignoring the impact of increasing NARM volumes to100,000 cubic feet) as adding 2 millirem of additional annual dose to a Native American child. However, the analysis fails to consider the cumulative impact from all license renewals through 2056 under the same scenario would result in the exposed Native American children having increased cnacer risks that are 44 times the allowable maximum cancer risk under our State Model Toxxics Control Act.

NARM Issues: Our comments and recommendations on NARM are interspersed. Per Recommended Action #1, This EIS must consider alternatives of limiting the NARM import and disposal to the quantities expected to be generated in Washington and Oregon in a given year, and an alternative of not allowing any NARM disposal. Alternatives for disposal of NARM do exist, but are not disclosed in this EIS, nor does the EIS disclose and consider the impacts of changing the State policy to discourage radioactive waste imports, use the Compact commercial Low-Level Waste Dump for only Compact generated Low-Level Wastes, and State policy to limit radioactive wastes imported and disposed in Washington to do our state's share of handling regional burden for disposal.

Risk Issues:

- EIS (and standards improperly called applicable or guidance, in lieu of RCRA and MOTCA standards) fail to disclose and consider the reasonable risk of institutional controls failing and the resultant exposure and risk. DoH rules fail to require the cleanup or closure to meet the same risk level for exposure scenarios where the institutional controls do not fail, despite reasonable

likelihood that they will fail (i.e., caps proposed except asphalt will not even hinder the drilling of a groundwater well, and the EIS fails to disclose how institutional controls will be maintained). MOTCA, on the other hand, requires that the exposure scenario include the reasonable likelihood of institutional controls failing.

- EIS must fully consider meeting MOTCA's health based risk standard, including use of MOTCA's maximum reasonable exposure scenario requirements for loss of institutional controls.
- EIS must consider the cumulative risks from the other sources on the Hanford site to the exposed population. From the US Ecology site alone, offsite risks to the Native American exposed population (with no failure of institutional controls) exceeds MOTCA standards for cancer risk by 44 times (for the US Ecology proposed cover and without increasing NARM wastes).
- The risk to the Native American population exercising Treaty rights to live on, etc... ceded lands creates a liability for Washington State if the site closure plan and license are not changed to prevent exposure in excess of MOTCA standards. This is also the minimally protective action that our state should take as a matter of principle.
- The entire EIS totally fails to consider the cancer risks from non-radioactive, chemical wastes leaking from the dumpsite. Both SEPA and MOTCA require consideration. MOTCA requires that the cleanup (and therefore, the state must design closure to meet this standard) levels be based on the cumulative cancer risk from both radionuclides and other hazrdous substances.

Recommended Actions:

1. Establish a firm policy that Washington State will not change its regulations to allow more radioactive NARM wastes to be imported and disposed in the commercial Low-Level Waste site than the quantity generated and requiring disposal annually in Washington and Oregon; and, ensure that the environmental and health benefits of both this alternative and a no NARM waste alternative are added to the EIS.
2. Establish a firm policy, and include in the permit and license for the site, provisions that bar use of the commercial Low-Level Radioactive Waste Dump for USDOE generated wastes; foreign wastes; air transported wastes.
3. Apply the standards of our State's Model Toxics Control Act for determining the maximum allowable offsite (or onsite) cancer risk from this commercial radioactive waste dumpsite; and, ensure that the State does not seek to apply a far weaker standard for protecting future generations from releases from this dumpsite than Ecology and EPA are requiring USDOE to meet for cleanup of adjacent sites. It is not acceptable for a State run dumpsite to cause forty four times or twenty three times more cancer in Native Americans offsite than state law calls a maximum acceptable risk from released hazardous substances.
    - Stop attempting to use a standard for cancer risk from the site that US EPA has determined is not protective of human health or the environment at CERCLA sites with radionuclide contamination, and for which, DoH failed to consider the health or environmental impacts of adoption.
4. Ensure that there is a full investigation of the acknowledged release of hazardous wastes from this dumpsite - before any decision allows additional waste streams or quantities to be disposed, and before the license is renewed; and, insist that the agencies consider whether other companies, with review of environmental records, should be offered the opportunity to operate the site. Full characterization of the releases and sources must occur before apporval of a final closure plan. Interim capping should occur to mitigate impacts, with full understanding that RCRA and MOTCA requirements may well require retrieval of wastes, installation of liners and use of additional or entirely different forms of caps.[11]
5. End the use of unlined trenches, and burial of unencapsulated wastes; require the same monitoring, tracking, leachate collection and liners that Ecology and EPA required for the adjacent Hanford Clean-Up waste landfill. Require the use of more protective cap and limit on total radionuclide source term disposed in order to ensure that this dumpsite will not exceed MOTCA's maximum allowable cancer risk standard.
6. Require the site to have a groundwater monitoring system that meets the requirements of RCRA and Washington's Dangerous Waste law; and, require, the closure plan to meet the requirements of Washington's Dangerous Waste rules for closure of dangerous waste landfills;
7. Redo the contaminant transport modeling and risk assessment - after completion of the Phase 3 release investigation and site hazard assessment pursuant to MOTCA - to reflect actual data and mobilizing contaminants present;
8. Revise the EIS to reflect, and base decisions on, the likelihood that detected contaminants in groundwater and soil, such as TCE, chloroform and Plutonium, are being released from this site, per recommendations and comments by John Brodeur, P.E., which are attached.

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[11] Ecology must disclose what is the likely cost of remediation and closure, and why it is not currently collecting additional closure and perpetual care and maintenance fees. Licensing considerations must include the ability of the operating company to fully pay for remediation, as well as closure. Ecology needs to explain why it would pay for a responsible party to perform the investigation of its own site under MOTCA or RCRA, especially when the closure and maintenance fund is not likely to fully cover those costs.

9. Require a complete RCRA Facility Investigation and Corrective Measures Study, or the equivalent MOTCA Remedial Investigation/Feasibility Study, and MOTCA Site Hazard Assessment.[12] The results of these investigations must be fully disclosed and considered in the EIS (i.e., nature and quantities of hazardous substances disposed, pathways for release, health impacts from each contaminant of concern....), and no decision on closure or relicensing made without these results.[13] Characterization of the contamination from the resin tanks, designated by Ecology as Extremely Hazardous Wastes, must occur before the EIS is reissued and decisions are made on closure or licensing conditions. SEE Brodeur at Comment # 15.
10. Compete the site sublease with consideration of applicants' environmental records and financial capabilities, and include consideration of the lease expiration in the EIS along with the license restrictions recommended above.
11. Recognize that the only cap alternative considered in this EIS which approaches MOTCA standards for human health risk is the enhanced asphalt cover, and that in and of itself, this cover will not be adequately protective and that subsidence in the trenches may reduce its protectiveness. Therefore, additional caps must be considered along with limits on total radioactive source term, liners and other measures to attain a closure that will not cause cancer risks to offsite or onsite Native Americans or rural residents, with or without reasonably foreseeable intrusion to the dumpsite.
12. Recognize that the proposed addition of 100,000 cubic feet of NARM Wastes per year results in a 420 mrem/ year dose to the onsite resident after a groundwater well intrusion with the US Ecology proposed cover and 120 mrem per year with the enhanced asphalt cover. This equates to a fatal cancer risk of 4.2 E-3 (.42%)[14]. MOTCA's standard of one additional cancer per one hundred thousand persons exposed is exceeded by either of these covers by 840 and 240 times respectively. Thus, addition of 100,000 cubic feet of radioactive NARM waste per year must be totally unacceptable,[15] as is an increase to 36,700 cubic feet per year.

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[12] Pursuant to Part III.B.2 of the Hanford RCRA Part B Permit, HSWA portion, as well as MOTCA and state Dangerous Waste Rules, these investigations and assessments are now required after the initial investigation has found releases exceeding MOTCA Method B standards and that the contaminant levels are increasing. These investigations should establish pathways; source terms for all hazardous constituents; toxicity, carcinogenicity, ecoimpacts, helath risks from individual constituents and symbiotic effects. This information should be fully disclosed in the EIS and considered before decisions on capping and licensing are made. Nor can the State justify making decisions or allowing new types of waste to be disposed in an unpermitted dangerous waste landfill that is releasing when these investigations and corrective action measures have not been taken.

[13] Because the State of Washington is a Potentially Liable Party / Potentially Responsible Party under CERCLA and MOTCA for remediation of these releases, in its role as site landlord, lessee and licensing and permitting agency, the EIS and investigation should be conducted with Ecology staff as lead agency utilizing a "Chinese Wall" legally erected to prevent undue influence by officials who may be concerned about state liability for the releases - or, to have EPA resume the role of lead agency. The failure of the two agencies to disclose that releases to groundwater had occurred and that the releases were in excess of MOTCA levels (thus, creating a liability) would be sufficient prima facie evidence that the fears of state liability had unduly influenced the duties of the agencies under SEPA, MOTCA and RCRA, justifying EPA to withdraw its delegation of authority. This is further evidenced by the EIS failing to correct groundwater model flaws identified and the agencies paying the primary liable party, US Ecology, to conduct the investigation of its own releases. The scope, quality of that investigation and of the data inputted to this EIS is limited in such a manner as to indicate a desire to ensure that the investigation did not meet stautory requirements.

[14] Calculated by increasing DoH's risk shown for 36,700 cubic feet per year of NARM by the percentage increase in dose shown when increasing the volume from 36,700 to 100,000 cubic feet. The risk shown for 36,700 cubic feet was 3.2E-3.

[15] Risks provided in the text of the Draft EIS at pages 96, 97 were based on a volume of 36,700 cubic feet per year of NARM, rather than the DoH proposed rule of 100,000.

13. Consider the impacts of groundwater migration from the site to the Columbia River, cumulative impacts from all contaminated groundwater seepage along the River and do the ecological risk assessment required for a hazardous substance release site.
14. License must specify that MOTCA is "applicable", and that the licensee must comply with the investigation and cleanup requirements of MOTCA and RCRA, and must operate the site in a fashion that it does not cause future violation of MOTCA standards, creating a future liability and remedial action requirement.[16]

Unless the DoH and Ecology change the EIS and adopt license and closure plans to reduce the expected releases of contaminants under each alternative proposed in this EIS, the agencies will turn the US Ecology site into a major Superfund site requiring a great deal of cleanup cost, because each of the alternatives presented create cancer risks for the reasonable maximum exposure scenario that are far in excess of our State MOTCA cancer risk standard.

Attached are the comments and recommendations of our independent technical consultant, John Brodeur, P.E., of Energy Sciences & Engineering. These comments and review were supported by a grant from the Citizens' Monitoring and Technical Assessment Fund.

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[16] SEPA requires consideration of the impacts of related actions in the same EIS. During the development of this EIS, DoH chose to adopt a related rule (WAC246-246), which it then relied upon repeatedly in this EIS for closure guidance or standards for consideration (allowing a licensee's site to be deemed releasable for public use if it results in radiation doses of 25 millirem offsite per year and up to 500 mrem per year under certain circumstances). During consideration of the adoption of WAC 246-246, DoH failed to disclose that it would be relying upon that standard in this EIS, while DoH improperly failed to consider the helath and environmental impacts of that proposed rule in an EIS. Any reliance upon WAC 246-246, without fully considering alternatives to it and the health impacts of 246, will fatally flaw this EIS as well. E.g.: In this EIS and in adoption of WAC 246-246 and WAC 246-250, DoH never considered the much higher cancer rate that would result from developing license, closure and NARM limit standards which only meet 246-246 or 246-250, instead of meeting MOTCA Method B cancer risk standards for releases of hazardous substances. Nor did DoH ever disclose and consider the differences in methodology for assessing cancer risk and exposures between MOTCA and the DoH rules. Whereas MOTCA has highly specific, uniform processes in WAC chapter 173-343, DoH has no rules or guidance for cleanup, risk assessment and determination of exposures. Therefore, DoH can not assert that its methodology will mitigate releases or be protective of human health or the environment. Nor did DoH ever consider in adoption of WAC 246-246 or in this EIS, that US EPA has determined that the standard relied on in theis EIS and in 246-246 is not protective of human health or the environment at CERCLA sites where there has been a relase of radionuclides, and that the dose based methodology is also not protective. The US Ecology site is in the midst of a CERCLA site, its release co-mingles with the CERCLA releases, and it is required to be a coordinated part of the CERCLA/TPA cleanup pursuant to the Hanford RCRA permit. Thus, the license and EIS should recognize that MOTCA and RCRA provide applicable standards, rather than rely upon either WAC 246-246 or WAC 246-250.

Ban the proposed additional import and disposal of 100,000 cubic feet of "NARM" radioactive waste per year

- far more long-lived radionuclides and emit radioactive gas in greater amounts than other wastes currently disposed in the dumpsite
  - Cause great long-term increase in dose and cancer to offsite residents or Native Americans
  - up to 1,000 more trucks of rad waste per year
    - Across the Blue Mountains and Through the Gorge
    - As many as 50% of rad waste shippers trucks "arrested at border for safety violations

Ban the dumpsite from taking wastes from Hanford's FFTF nuclear reactor or Plutonium processing operations

- License and permit should ban USDOE wastes, consistent with past State policy
  - This site is supposed to be for "commercial" and medical only
- If open the door to one USDOE waste stream, will have to take waste from all USDOE nuclear weapons plants and labs
  - Documented horrendous record of USDOE violating hazardous waste laws and illegally sending hazardous wastes to Low-Level radioactive waste burial grounds
  - EIS totally fails to analyze the higher risks from FFTF and Plutonium processing waste streams
  - Makes Washington State liable for FFTF waste disposal

Require a full investigation and cleanup of the hazardous wastes leaking from the site before re-licensing the site:

- *EIS fails to disclose hazardous wastes and Tritium have reached groundwater already beneath site*
  - Fails to even consider threat to Columbia River
  - Model used ignored reality of waste actually reaching groundwater in thirty years, not hundreds of years:
    - Model on which EIS is based assumed that "It is expected that the amount of waste that has been mobile during this first 30 years of operation is minimal…" App.III at 5.
- Dramatic Increase in concentrations of chloroform and TCE in groundwater in late 1999 - but monitoring stopped
  - EIS fails to disclose how bad leakage is, what part of dump it is from, or how to clean it up

3% of Native American Children Exercising Treaty Rights To Live on Ceded Hanford Land Would Die From Cancers Caused From This Commercial Low-Level Radioactive Waste Dumpsite -
realistic "intruder" scenario with site soil cover

- **Unconscionable and Illegal Cancer Risk Level Proposed For All Alternatives in this EIS**
  - For every alternative proposed in this EIS: "all of the results are greater than the acceptable free-release criteria" Risk Assessment at p.102.
  - Every proposal greatly exceeds State Hazardous Waste Law (MOTCA) requirement that Cancer Risk not exceed one additional cancer for every one hundred thousand persons exposed
- **Company's proposed cover would kill 1%**

Health and Ecology Propose to Allow ***Unconscionable Violation of the Cancer Risk Standard in State Hazardous Waste Law***

- Cancer Risk to offsite resident (without any intrusion into the dump) would be:
  - 44 x allowable cancer risk w/ US Ecology proposed cap
  - 60 x allowable cancer risk w/USEcology cap and filled site
  - 23 x allowable cancer risk w/ enhanced asphalt cap
  - 23 x allowable cancer risk w/enhanced bentonite cover, if close dumpsite and cap this year, instead of 2056
- Illegally fails to include cancer risk from hazardous, nonradioactive wastes leaking from dump
- Risks go up by >25% if US Ecology is allowed to dump 100,000 cubic feet of NARM per year.
  - EIS failed to use conservative and realistic assumptions about exposure or mobility of wastes (inc. presence of hazardous wastes)

EIS fails to consider replacing the company that operates the site with another company

- Hazardous wastes already leaking from dump
- company lobbies to increase amount of waste imported, even flying waste in from Spain
- financial capabilities of company to meet requirements for cleanup, long term monitoring and closure in question - state should be increasing required financial assurances and bonds
    - Company's proposed cap and closure in 2056 would violate state hazardous waste law allowable cancer risk level by at least 44 times.

Permit and License Conditions Needed to Protect the Columbia River, Native Americans with Treaty Rights and Our Children:

1 Greatly reduce the total quantity of radiation allowed to be dumped in the site ("source term"), so as not to violate maximum cancer risk levels in state law (MOTCA); and, ban disposal of NARM and USDOE wastes;

2 End the practice of dumping radioactive wastes into unlined trenches;

3 Require: tracking where wastes are disposed, more monitoring and leachate collection, wastes to be encapsulated before burial, and require the burial trenches to be capped with long-term truly protective covers.

- The State of Washington and EPA required the dumpsite used for Hanford cleanup wastes, which is less than a mile away from the commercial radioactive waste dump, to have liners, leachate collection, far more monitoring and to close with a far better cover.

30

RADIATION CENTER

OREGON STATE UNIVERSITY

100 Radiation Center
Corvallis, Oregon
97331-5903

Telephone
541-737-2341

Fax
541-737-0480

November 7, 2000

Nancy Darling, Project Manager
Washington Department of Ecology
Nuclear Waste Program
P.O. Box 40117
Olympia, WA 98504-0117

Ms. Darling:

Thank you very much for the copy of the Draft Environmental Impact Statement for the Commercial Low-Level Radioactive Waste Disposal Site, Richland, Washington. As the Senior Health Physicist at the Oregon State University Radiation Center, I see firsthand the benefits that research with radioactive materials provides to the public. We have been involved in a variety of research at the Radiation Center that has included: age-dating of materials; neutron activation of geological and lunar samples; forensic analysis in criminal investigations; radio tracer studies; radiation effects on materials; uranium uptake studies; determination of isotope properties; and more. In addition, we educate professionals in radiation safety. All these uses generate small volumes of radioactive wastes that need to be disposed of safely.

This year I am also the President of the Cascade Chapter of the Health Physics Society. We are a group of more than sixty professionals in Washington and Oregon employed in government, universities, industries, the military, and hospitals that are committed to radiation safety and the safe disposal of low-level radioactive waste.

One statement in the draft EIS stands out in my mind. In Section 4.1 Public Health Risk: "At this time, there are no known existing significant health risks to the public or site workers from the commercial LLRW disposal site (Fordham 2000) (Department of Ecology 2000)." If this is the case, U.S. Ecology's license should be renewed. The 100,000 cubic foot upper limit should continue and the approval should be given for the *Site Stabilization and Closure Plan*. I recently heard a joke about an inventor that developed a cure for a disease that had not been discovered. In many ways, the options explored are very similar. If there is no significant risk, why not continue the upper limit at 100,000 cubic feet? If there is no significant risk, why not use the *Site Stabilization and Closure Plan*? What is the cost/benefit to the public on being more restrictive?

Sincerely,

David S. Pratt

David S. Pratt
Senior Health Physicist
President, Cascade Chapter HPS

BENTON P·U·D

(31)

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NOV 0 6 2000
DIVISION OF RADIATION PROTECTION

November 3, 2000

Nancy Darling
Project Manager
WASHINGTON DEPARTMENT OF HEALTH
Division of Radiation Protection
P. O. Box 47827
Olympia, WA 98504-7827

Re: ***In Support of the Continued Operation of the Commercial Low Level Waste Disposal Facility at Hanford***

Dear Ms. Darling:

Benton PUD supports the continued operation of the commercial LLRW facility located at Hanford and recognizes it as an important component of the economic infrastructure of the Tri-Cities area.

Without the LLRW, millions of dollars in funding would be lost to Benton County and to the Hanford Area Economic Development Fund. Benton County benefits from the commercial LLRW disposal site through lease payments and disposal fees.

The Hanford Area Economic Development Fund Committee provides low interest loans from waste surcharges to local government and businesses to stimulate and diversify the local economy. If the U.S. Ecology's license is denied, approximately $14 million in revenue to the county, and $25 million in revenue to the Hanford Area Economic Investment Fund, will not be realized.

Use of the 100-acre facility leased by the state from the federal government for low-level radioactive waste disposal is wholly consistent with the Department of Energy's surrounding land use and future planning. No impacts to future land use are expected because re-licensing the commercial LLRW disposal site is consistent with current U.S. DOE land use recommendations.

Analyses within the EIS and regulatory documents prepared by the Washington State Department of Health confirm that the facility can be safely operated for at least 50 more years and then closed in accordance with criteria that the state deems appropriate.

Very truly yours,

James W. Sanders
General Manager

2721 West 10th Avenue • P.O. Box 6270 • Kennewick, WA 99336-0270 • (509) 582-2175 Tel • (509) 586-1710 Fax

(33) RECEIVED
OCT 24 2000
OAH - YAKIMA

RESOLUTION 2000-01

A RESOLUTION SUPPORTING THE RENEWAL OF U.S. ECOLOGY'S LICENSE TO OPERATE A LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITY ON THE HANFORD RESERVATION.

WHEREAS, U.S. Ecology has submitted a request to the Washington State Department of Health and the Washington State Department of Ecology for renewal of their Washington State radioactive materials license to operate a low-level radioactive waste disposal site on the Hanford Reservation;

WHEREAS, a Draft Environmental Impact Statement (DEIS) for the Commercial Low-Level Radioactive Waste (LLRW) Disposal Site, Richland, Washington was issued September 13, 2000

WHEREAS, the Hanford Area Economic Investment Fund was established by the Washington State Legislature (RCW 43.31.422) to support economic development and diversification projects in Benton and Franklin counties;

WHEREAS, the Hanford Area Economic Investment Fund is maintained through surcharges paid by waste generators for each cubic foot of waste disposed of at the low-level radioactive waste disposal site currently operated by U.S. Ecology (RCW 43.200.235);

NOW, THEREFORE, BE IT RESOLVED that the Hanford Area Economic Investment Fund Committee urges the state to expeditiously complete the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation to allow the Department of Health to renew the facility license held by U.S. Ecology, Inc.

Approved at the regular meeting of the Hanford Area Economic Investment Fund Committee this 23rd day of October, 2000.

Carl Strode, Chair
Hanford Area Economic Investment Fund Committee

(34)

City of Connell

EASTERN WASHINGTON'S HARVESTLAND

P.O. BOX 1200 • CONNELL, WASHINGTON • 99326-1200
(509) 234-2701

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NOV 0 1 2000
DIVISION OF RADIATION PROTECTION

October 24, 2000

Washington Department of Health
Division of Radiation Protection
7171 Cleanwater lane, Bldg. 5
PO Box 47827
Olympia, WA 98504-7827

Dear Nancy Darling, Project Manager:

At the City of Connell's October 23, 2000 Council Meeting, the Mayor and Council directed staff to draft a letter of support for the expeditious completion of the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation to allow the Department of Health to renew the facility license and approve a facility closure plan.

The Council supports the extension of the license with the following provisions:

1) Extend the current US Ecology license for operation of the facility for an additional five year period.

2) Amend the facility license to permit the acceptance of up to 100,000 cubic feet per year of diffuse NARM material at the disposal site. This is consistent with the legal settlement and current disposal agreement between US Ecology and the Washington Department of Ecology.

3) Washington Department of Health should approve the proposed US Ecology Cover Design as described in the 1996 Closure Plan.

4) Washington State Department of Health should approve the proposed closure schedule, which will close seven trenches immediately and the rest of the site in the year 2056.

The Commercial LLRW Facility is an important component of the economic infrastructure of the Tri-Cities area. As the DEIS states, without the facility millions of dollars in funding would be lost to Benton and Franklin Counties and to the Hanford Area Economic Development Fund.

The Hanford Area Economic Development fund was created a number of years ago and is administered by a local committee. The fund provides low interest loans from waste surcharges to local government and business to stimulate the local economy.

The fund is maintained through generator fees on low-level waste disposed of at the commercial facility.

Because of the economic impact on the local communities, Connell supports the renewal of the five year lease and approval of the facility closure plan. If you have any questions regarding this issue please contact me at (509) 234-2702

Sincerely,

Art Tackett
City Administrator

(35)

TRI-CITY INDUSTRIAL DEVELOPMENT COUNCIL

901 N. Colorado, Kennewick, WA 99336-7685 USA 1-800-TRI-CITY 509-735-1000 509-735-6609 fax tridec@tridec.org www.tridec.org

November 10, 2000

RECEIVED
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DIVISION OF RADIATION PROTECTION

Mr. John Erickson, Director
Washington State Department of Health
Division of Radiation Protection MS 47827
Olympia, WA 98504-7827

Dear Mr. Erickson:

DRAFT ENVIRONMENTAL IMPACT STATEMENT
COMMERCIAL LOW LEVEL WASTE DISPOSAL SITE
RICHLAND, WASHINGTON

The Tri-City Industrial Development Council (TRIDEC) has reviewed the subject Environmental Impact Statement and submits for record purposes the attached comments regarding this document. A summary of these comments was presented at the October 24 hearing in Kennewick, Washington.

We strongly support the extension of the lease agreement and continued operation of the waste disposal site by US Ecology. Specifically, our position on the issues evaluated in the Draft Environmental Impact Statement are as follows:

- The radioactive materials license should be extended for another five years. The indecision of source term limits in the license extension is a reasonable action by the State of Washington to further protect the public.

- We support licensing of the facility to accept up to 100,000 cubic feet per year of diffuse NARM. This limit is consistent with the current settlement agreement between the state and US Ecology.

- We support the adoption of the trench closure cover proposed by US Ecology as a standard trench cover for the site. This proposed cover design provides an adequate degree of protection for the waste with minimal environmental impact.

- We also support adoption of the US Ecology schedule for the near term closure of seven existing waste trenches at the site. Under this option the balance of the

trenches would be closed in the year 2056, when operation of this disposal site is planned to be completed.

This waste disposal facility provides a necessary and beneficial public service and benefit, has been successfully operated without any major problems, does not constitute a public health threat to residents of this region, and has no significant environmental impact. We support its continued operation.

Please include these comments in the hearing record and record of decision process.

Very truly yours,

Sam Volpentest

Sam Volpentest
Executive Vice President

SV/bc

Enclosure

TRI-CITY INDUSTRIAL DEVELOPMENT COUNCIL

901 N. Colorado, Kennewick, WA 99336-7685 USA 1-800-TRI-CITY 509-735-1000 509-735-6609 fax tridec@tridec.org www.tridec.org

PUBLIC COMMENT STATEMENT REGARDING DRAFT ENVIRONMENTAL IMPACT STATEMENT REGARDING COMMERCIAL LOW LEVEL RADIOACTIVE WASTE DISPOSAL SITE RICHLAND, WASHINGTON

October 24, 2000

This statement is submitted by the Tri-City Industrial Development Council (TRIDEC) regarding the subject Environmental Impact Statement prepared by the State of Washington, Departments of Health and Ecology.

TRIDEC is a nonprofit organization whose objective is the economic development and enhancement of the Tri-Cities area. Our membership is composed of over 500 business firms, public agencies, organizations, and individuals having an interest in the economic development of the Tri-Cities. These comments represent the view of our membership on this subject.

The commercial low-level radioactive waste disposal site, which is located on the Hanford site, has been operated by the US Ecology Company under a lease agreement with the State of Washington. The site has operated for over thirty years without any significant problems, environmental impact, or hazard to the public. Its contribution to regional public radiation dose rates is insignificant compared to natural background radiation and radiation releases from the Department of Energy's Hanford site and the related cleanup program activities.

We strongly support the extension of the lease agreement and continued operation of the site by US Ecology. Specifically, our positions on issues evaluated in the Draft EIS are as follows:

- The radioactive materials license should be extended for another five years. The indecision of source term limits in the license extension is a reasonable action by the State of Washington to further protect the public.

- We support licensing of the facility to accept up to 100,000 cubic feet per year of diffuse NARM. This limit is consistent with the current settlement agreement between the state and US Ecology.

- We support the adoption of the trench closure cover proposed by US Ecology as a standard trench cover for the site. This proposed cover design provides an adequate degree of protection for the waste with minimal environmental impact.

- We also support adoption of the US Ecology schedule for the near term closure of seven existing waste trenches at the site. Under this option the balance of the trenches would be closed in the year 2056, when operation of this disposal site is planned to be completed.

SUPPORTING INFORMATION AND COMMENTS

The commercial waste disposal site at Hanford is one of the three such disposal sites in the United States. It is the only available disposal site generally available for users of radioactive materials in eleven western states. The site does not accept mixed wastes or any materials other than NARM and low level medical, research, and industrial waste.

Major users of the site include many hospitals and other medical facilities, research universities, nuclear power plants, and industrial facilities that utilize radioactive materials. The facility does not accept Department of Energy wastes.

The continued operation of this site for the disposal of these waste materials is vital to the economic and social stability – the quality of life – for the Western United States.

Economic and Community Development

The commercial LLRW facility is an important component of the economic infrastructure of the Tri-Cities area. As the DEIS states, without the facility millions of dollars in funding would be lost to Benton County and to the Hanford Area Economic Development Fund.

Approximately $14 million in revenue to the county and $25 million in revenue to the Hanford Area Economic Investment Fund will not be realized if the US Ecology license extension is not approved.

If the US Ecology license is denied, unavoidable impacts include loss of local revenue, loss of low-level waste disposal capacity for in-state and Northwest Compact generators, loss of local jobs, and loss of continued contributions to the Perpetual Care and Maintenance Fund.

The Hanford Area Economic Development Fund Committee (HAEIFC) provides low interest loans from waste surcharges to local government and business to stimulate the local economy. The fund is maintained through generator fees on low-level waste disposed of at the commercial facility.

HAEIFC has invested around $6 million into 13 businesses in the Tri-Cities region. These businesses are expected to create over 600 jobs for the region. Recently, LaMarr Motor Coach moved to Pasco in an effort funded by HAEIFC that will create over 200 new family wage positions.

Energy Northwest – The Columbia Generating station uses the US Ecology facility for the disposal of low-level radioactive waste materials. Energy Northwest employs between 1,000 and 1,100 employees.

Siemens Power – Siemens fabricates fuel rod and elements for the nuclear industry and uses the US Ecology site for radioactive waste disposal. Siemen's Richland plant employs 800 to 900 persons.

Medical/Academic Research

A safe, reliable, economical low-level waste disposal facility is a necessary part of the medical research infrastructure. Medical research relies heavily on radioactive material, some of which ultimately requires disposal. The commercial LLRW facility on the Hanford Reservation has been and should continue to be part of that infrastructure.

Consistency with DOE Operations

Use of the 100-acre facility leased by the state from the federal government for low-level radioactive waste disposal is wholly consistent with DOE's surrounding land use and future planning.

Environmental impacts, if any, from the commercial facility are insignificant when compared to the larger DOE operation.

PUBLIC SAFETY AND ENVIRONMENTAL IMPACTS

The site has operated for over thirty years without significant problems or environmental impacts. The potential releases of radiation to the environment from the unlined disposal trenches are insignificant when compared to the surrounding DOE facilities. There have been no significant problems or public impacts resulting from over thirty years of trucking wastes to the site for disposal. The primary trucking routes I-82 and I-84 are safe, modern, all-weather highways. Traffic to the US Ecology site is insignificant when compared to the high volume of hazardous and toxic materials routinely transported on these highways.

The availability of this site for the disposal of radioactive medical waste is a necessary component of the regional medical infrastructure. The potential and current benefits to the public resulting from nuclear medicine and radioisotope diagnosis and therapy are significant and an accepted part of public health practices.

The disposal site recently provided the State of Oregon with a readily available, economical, and effective method of disposing of radioactive materials from decommissioning of the Trojan power reactor. The use of the Hanford site for the purpose was of direct benefit to the State of Oregon.

In summary, this disposal site provides many benefits to the Western United States without significant impact to the public and the environment.

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Darling, Nancy

From: Hill, Tim [tihi461@ECY.WA.GOV]
Sent: Monday, September 18, 2000 9:52 PM
To: Wuennecke, Mary Anne; Goldstein, Larry; Darling, Nancy
Subject: FW: U.S. Ecology EIS

Nancy, I'll give you a call in the morning.

-----Original Message-----
From: Amber Waldref [mailto:amber@heartofamericanorthwest.org]
Sent: Monday, September 18, 2000 8:40 AM
To: 'tihi461@ecy.wa.gov'
Subject: U.S. Ecology EIS

Tim Hill,
Washington State Dept. of Ecology

On behalf of the Cascade Chapter of the Sierra Club I want to express my

concern for the plan to import nuclear waste to a commercial dump site at
Hanford and to process of FFTF waste at that same commercial site. It seems that, once again, there is a push to increase the amount of nuclear
waste at Hanford while failing to keep promises regarding cleanup and safe
management of nuclear waste already there.

There should be an EIS; and hearings should be held throughout the region,
especially in Portland and Seattle.

Please add these comments to the record on the EIS. Also, please forward
this message to Tom Fitzsimmons.

Carole Woods
Hanford Issues Specialist
Cascade Chapter, Sierra Club
woods@sinclair.net

(38)

Washington Physicians for Social Responsibility

Committed to public health through the elimination of nuclear weapons and other weapons of mass destruction, the reduction of human violence, and the promotion of a sustainable environment and economic and social justice.

October 23, 2000

Mike Wilson, Program Manager
Nuclear Waste Program
WA Department of Ecology
PO Box 47600
Olympia, WA 98504-7600
and
John Erickson, Director
Division of Radiation Protection
WA Department of Health
PO Box 47827
Olympia, WA 98504-7827

Dear Mike Wilson and John Erickson:

We, members of the Board of Physicians for Social Responsibility and of the WPSR Hanford Task Force, would like to express our deep concern about the joint WA Department of Health and Department of Ecology DEIS on re-licensing the commercial nuclear waste dump at Hanford Nuclear Reservation.

We are dedicated to the public and environmental health of the citizens of Washington State. As the two State departments concerned with human and environmental health, we expect you to stand firm against any further import of waste to Hanford, at least until the current high level tank waste and solid waste sites are remediated.

But on the contrary, we read in your DEIS that a renewal of the US Ecology, Inc. from Washington State for operation of the commercial low-level radioactive waste disposal site is being proposed. We staunchly oppose this renewal until significant progress in Hanford cleanup, as noted above, is achieved. There is no safe level of radioactivity in the environment, and Hanford is far and away the most contaminated nuclear site in the nation. We are particularly concerned that this license does not prohibit the disposal of radioactive wastes from the Fast Flux Test Facility (FFTF) and associated plutonium processing if that reactor were to be restarted. As you know, we adhere to the TPA mission for Hanford of cleanup, and oppose any Hanford production and further waste except as required to remediate present waste sites. We urge you not to renew this license. Any potential economic benefit to the State of Washington, is far out-weighed by the clear signal such action sends to the nation: got nuclear waste, then send it to Washington.

Second, the DEIS considers increasing the number of cubic feet of diffuse NARM (Naturally Occurring or Accelerator Produced Radioactive Material) up to 100,000 cubic feet per year. We strongly oppose increasing the limit of radioactive waste at any site at Hanford. We are most concerned about this potential doubling of the

4554 12th Ave NE, Seattle WA 98105 • phone: (206) 547-2630 • Fax: (206) 547-2631 • www.wpsr.org

radioactive wastes moving across our state's highways. Ominously, transport is not limited to land and to waste from this nation, as the air shipment of Spanish NARM waste to Moses Lake this past July demonstrates.

Third, the DEIS considers the closure plan for a waste site which will remain radioactive for 10,000 years.
This radioactivity is not contained, as the DEIS proposal to allow 25 millirem doses to the public shows. How can the Departments of Health and Ecology approve allowing such health risks that exceed the MOTCA limits? Given the immense health burden on our State at Hanford already, we urge your Departments to schedule the earliest possible closure of this site.

Protecting the health of Washington State citizens may not be popular with commercial site operators. But our job as physicians and yours as the State departments that are mandated to help prevent threats to the health of our public and environment is to PROTECT HEALTH. As physicians, until Hanford's high level waste is stabilized and the current solid waste sump sites contained, we prescribe no renewal of the license for the site, no more import of waste, and the earliest possible closure plan.

Thank you for considering these comments from the health professionals of our Hanford Task Force.

Sincerely,

[signatures]

WPSR Hanford Task Force

(42)

Oct. 28, 2000

RECEIVED
OCT 30 2000
DIVISION OF RADIATION PROTECTION

Dear Nancy Darling.
Project Manager
WA. State Dept. of Health
Division of Radiation Protection
Mail Stop 47827
Olympia WA. 98504-7827

I'm a state employee here in Omak, and I write as a concerned citizen and concerned human creature, about the radioactive wastes at Hanford. I will say directly that I thank God for the work of persons like those in Heart of America, Hanford, who it seems to me, look not so much at the economic effects, but first of all at the bigger picture — the effects on health, water, earth, air, all of Life, & not only for now but for ages to come.

Please use your position to prevent further dumping, further pollution, and to see that the proper steps are taken to clean-up what has already ruined so much Life & continues to do so. I know that a "healthy economy" is important, but we need to look for & support new ways of doing business that are truly healthy for all. Thank you.

Manita Bernet
PO Box 3745
Omak WA. 98841

509-826-6742

(43)

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NOV 2 8 2000
DIVISION OF RADIATION PROTECTION

Kimberly Burkland
PO Box 401
Hood River, OR 97031

November 14, 2000

Nancy Darling, Project Manager
Washington State Department of Health, Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7827

To Ms. Darling:

Thank you for the opportunity to sumbit comments on the proposed doubling of radioactive wastes imported to the commercial Low-Level radioactive waste dumpsite on the Hanford Nuclear Reservation.

A study by state agencies admits that the dumpsite would result in as many as 3% (three percent) of Native American children living in the vicinity of the dumpsite, as allowed by Treaties after Hanford is cleaned up, to die from fatal cancers from exposure to the wastes in the dumpsite.

First, I implore the Washington State Departments of Health and Ecology to address the impacts and risks of allowing 400-1,000 more truckloads of radioactive waste being imported to Washington every year for fifty years, of allowing air transportation of radioactive wastes, and from allowing import of foreign radioactive wastes (including liability issues).

Second, I demand that the DEIS address the cumulative impacts of allowing more radioactive waste shipments along I-84 and I-90 and from adding large quantities of long-lived radioactive NARM wastes to Hanford's soil and contaminated groundwater plumes.

Next, the Washington State Departments of Health and Ecology should follow the following action items, including:

- Ban the proposed additional import and disposal of 100,000 cubic feet of "NARM" radioactive waste per year (these wastes are far more long-lived radionuclides and emit radioactive gas in greater amounts than other wastes currently disposed in the dumpsite);

- Ban the dumpsite from taking wastes from Hanford's FFTF nuclear reactor or Plutonium processing operations, or any USDOE wastes, consistent with past State policy;

- Require a full investigation and cleanup of the hazardous wastes leaking from the site before re-licensing the site, and consider replacing the company that operates the site with another company; and

- End the practice of dumping radioactive wastes into unlined trenches; and require tracking where wastes are disposed, more monitoring and leachate collection, wastes to be encapsulated before burial, and require the burial trenches to be capped with long-term protective covers.

Finally, I assert that the DEIS should examine the benefits of not allowing any NARM waste, or an amount equal only to the amount generated in Washington state annually (with no carryover). Thank you for the opportunity to comment.

Sincerely,
Kimberly Burkland
Kimberly Burkland
(541) 386-7793

(46) 10-22-00

Dear Ms. Darling,

Re: "Brief: Commercial Low-Level Radioactive Waste Disposal Facility E.I.S."

I favor "Site Closure".

You-folks are already spending millions of tax dollars cleaning up the mess you made at Hartford. The Salmon and Columbia River are poisoned by 2015. Why create more of a mess?

Cannot the desert in Nevada handle this waste? Few people live there and there is little water to contaminate never-by.

thank you. Scott Corwin

48

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DEC 1 2 2000

DIVISION OF RADIATION PROTECTION

November 14, 2000

Nancy Darling
Project Manager
Washington State Department of Health, Radiation Protection
Mail Stop 47827
Olympia, WA 98504-7828

Dear Ms. Darling:

I have recently stumbled across research on the illegally dumped and buried hazardous wastes just outside the city limits of Hanford. I was greatly discouraged to hear that high-level radioactive wastes were being dumped near the Columbia River. This is not only affecting the wildlife in this region but human life also. Further research states that the drinking water in this area is also contaminated as in not available for drinking or irrigating the land. Is there another water supply for the people living in this area? As a science major attending Concordia University in Austin, I am greatly interested in the reforms occurring at this time to dispose of this hazardous waste. I support your cause of wanting to improve this area and the ban of other hazardous material being tested or produced in this area or any area. The cleanup process does take a great deal of time it is just disturbing that the proposed plan for cleanup soil will not be completed until the year 2011. It is also disturbing that the groundwater renovation will not be completed until the year 2018. It is such a tragedy that the people of this area will never acquire the resources and environment that were so abundant in the past. The wildlife is destroyed and will never regenerate. I thoroughly support your efforts in this cleanup process and would encourage the reforms to be completed more promptly.

Sincerely,

Shelly Hensley
3400 IH 35 North
Box 95
Austin, Texas 78705

49

Darling, Nancy

From: Michelle [shelby@gorge.net]
Sent: Thursday, November 23, 2000 1:53 PM
To: Nancy Darling
Subject: Hanford feedback

Dear Ms. Darling,

This letter is in responce to the latest hearing held in White Salmon, WA on 11-14-00 regarding future activity at Hanford.

I request that you:

Ban the proposed additional import of NARM radioactive waste.

Ban the dumpsite from taking wastes from Hanford's FFTF nuclear reactor or Plutonium processing operations, or any USDOE wastes.

Require a thorough investigation and cleanup of the hazardous wastes leaking from the site .

End the practice of dumping radioactive wastes into unlined trenches and require comprehensive tracking of all disposed wastes.

Thank you,

Michelle Hoffman
Cook, WA

50

Darling, Nancy

From: Krista [avery@gorge.net]
Sent: Tuesday, November 14, 2000 9:20 AM
To: nancy.darling@doh.wa.gov
Subject: Hanford

Dear Ms. Darling:

My husband, son and I live in White Salmon, Washington, downstream from Hanford. I have a Bachelors of Science in Botany with a strong background in Environmental Chemistry. It is vital that governmental agencies see to it that Hanford radioactive waste is fully contained. Industry will not do it.

Thank you for your efforts along these lines and please continue until it is all cleaned up.

Sincerely,

Krista Thie Hoyt
1549 W. Jewett Blvd.
White Salmon, WA 98672
(509) 493-2626

51

Darling, Nancy

From: Hill, Tim [tihi461@ECY.WA.GOV]
Sent: Friday, September 15, 2000 3:43 PM
To: 'bjack8@bossig.com'; Darling, Nancy; Goldstein, Larry
Subject: FW: Comments on US Ecology Radioactive Waste Disposal Site

I am forwarding your comments to Nancy Darling and Larry Goldstein. They are the WDOH and WDOE project leads for the DEIS.

-----Original Message-----
From: Robert Jackson [mailto:bjack8@bossig.com]
Sent: Friday, September 15, 2000 10:21 AM
To: tihi461@ecy.wa.gov
Subject: Comments on US Ecology Radioactive Waste Disposal Site

I am concerned about the obsolete waste disposal practices at the US Ecolcgy Commercial Radioactive Disposal site at Hanford Washington, and at other sites. Please make these comments a part of the record on the current EIS for that site.

I have spent almost my entire career, as a Mechanical Engineer, in the field of Nuclear Energy.
After 4 years in mechanical design and testing I began my career in the Nuclear Industry by
working about 2 years on the Nuclear Aircraft project, then spent 6 years at the Lawrence
Livermore National Laboratory involved in weapons testing. This was followed by 21 years
designing and operating the Fast Flux Test Reactor at Hanford. My last position on this project
was to determine the technical suitability of fueled experiments for irradiation in the FFTF.
Subsequently, I was invited to work, as a loaned employee, at DOE HQ in Germantown. My
assignment was to assist the Transportation Management Branch oversee transportation of all
DOE radioactive materials. My major specific assignment was to travel to all major DOE sites
and assess their level of compliance with the Department of Transportation packaging regulations
for the many thousand shipments of radioactive materials made each year.

My visits to the DOE sites were conducted in the period 1985 through 1988, at which time the
DOE was just beginning to change from a production mode to a clean-up mode. It was during

these visits while discussing the practices for on-site transfer of radioactive material that I first heard concerns, by the contractor employees, about burying radioactive materials and the resulting soil and ground water contamination. As a result of those various discussions, which were side lines to the primary business of safe transportation of radioactive material, I began to understand that almost all DOE sites had areas of contaminated soil and ground water.

Later, a company, CEP-US (www.cep-us.com), with a line of containers made from long life durable concrete asked me to determine if their containers were suitable for long-term storage or disposal of radioactive material or waste. Results from a very extensive and well designed test program showed the durable concrete has a lifetime 25 times longer than standard concrete. These concrete container designs had been tested and qualified as Department of Transportation Type A containers. Thus, they were high quality containers with a proven level of structural strength and durability. Because these concrete containers were more expensive that the currently used wooden or metal burial containers it was necessary to determine if the additional container quality warranted the additional expense. An assessment of the current disposal practices revealed the currently used wooden or metal containers deteriorated and exposed their contents to the ground for migration in a few tens of years compared with the concrete containers which has a lifetime of a few thousand years. This assessment also showed that this buried radioactive material had migrated, in some cases several miles.

In summary, the current practice of burying radioactive waste permits migration of the radioactive material. This contaminates both soil and ground water Documents available to the public show migration of radioactive material has occurred over large areas of some DOE sites. The largest plumes that I know of are where liquid radioactive material was injected into the ground. However, significant plumes exist around many of the "burial grounds" where solid materials were buried. In some cases the ground water contamination exceeds the EPA limits. The incorrect predictions that the heavy metals bind with a soil atom and are

prevented from migration require
revision and updating. I believe meaningful predictions of radioactive material migration are
impossible, now and in the foreseeable future. This is because migration science is immature and it
is impossible to obtain enough detailed geological description around radioactive disposal sites.

These experiences and observations have led to the conclusion that all radioactive waste should be
contained in durable concrete. Preferably burial of radioactive material should be stopped and all
radioactive material, which is not in process, should be stored above ground in durable concrete
containers. Any buried radioactive waste should be contained in a durable concrete package or
vault. This conclusion was not appropriate 15 years ago when the clean up phase was begun but
it credible now with the development of the durable concrete which is supported by lifetime testing
results. While there is some uncertainty about the total useful lifetime of durable concrete because
the lifetime depends upon the chemical make-up of the soil. However, it is clear that the durable
concrete has a lifetime 25 times longer than standard concrete in the most aggressive soil. In less
aggressive soils the useful lifetime of durable concrete would be even longer. Structures, made of
a concrete like material, are still standing today a few thousand years after their construction.
Using durable concrete containers for storage or disposal of radioactive material has no apparent
down side risk and it is only slightly more expensive that standard concrete..

A decision to stop burying radioactive material and to store it above ground in durable concrete
appears, to me, to be very timely for several reasons. First, knowledge of the migration of
radioactive materials into the ground and the potential for getting into city drinking water is being
reported in more newspapers. The current burial practices for most radioactive material retards
onset of migration for a time period varying from zero to some tens of years. Storage of
radioactive material in a Type A container made of durable concrete would retard the start of
migration for a time period greater than 500 years and probably thousands of years. A proactive
stance which provides this safer long term storage, will minimize the

potential for public exposure
to radioactive sources.

Second, the recent decision by DOE to assume some responsibility for chronic medical problems
resulting from long term exposure to low levels of radiation acknowledges incomplete knowledge
about the effects of such exposure and infers a harmful effect. Stopping burial of radioactive
material is consistent with this recent DOE acknowledgment because by limiting the migration
source to that already buried. This, in turn will minimize the amount of "remediation" necessary to
limit the migration of existing buried radioactive waste. This approach minimizes the potential
public exposure from radioactive material migrating into the ground water and simultaneously
minimizes the taxpayer cost for radioactive waste disposal.

Third, storing all radioactive material securely above ground retains the option of a future use of
that material in an effective way. For example, the future benefits from yet-to-be-discovered
medical isotopes are incalculable. Industrial uses for radioactive uses that are
yet-to-be-discovered may also provide great benefit and financial income. Thus, there is potential
for both societal benefit and financial income from such material. This is a vastly superior stance
than to bury the waste, not knowing how fast it will migrate and become a human problem of
unknown proportions.

Fourth, above ground retrieval storage of radioactive material provides time for development of
bio-remediation, transmutation, separation, or other appropriate waste processing or treatment
techniques. The development of these processing or treatment techniques could, and probably
will, be co-developed with future uses of radioactive material, currently viewed as waste.

Fifth, using containers which are approved by the Department of Transportation as Type A
containers permits some waste streams to be transported over the road and then stored or
disposed of in the same containers. In addition, using these DOT approved concrete containers
for on-site transfers of radioactive material minimizes the radiation exposure to the waste handlers.

The radiation exposure is minimized by the relatively thick container walls of dense material.

Sixth, using DOT approved containers will provide safer on-site transfers of radioactive than that provided by the currently used wooden and metal containers.

I conclude there are many good reasons, both technical and political, to immediately change disposal requirements for radioactive materials so all radioactive waste will be contained by durable concrete.

Although it is difficult to obtain verifiable information I understand that these harmful burial practices, with their associated material migration are continuing at most DOE sites in the United States. Locations, other than Hanford, which immediately come to mind include Savannah River Site(South Carolina), Oak Ridge production facilities (Y12 and K25) (Tennessee), Oak Ridge National Laboratory (X10)(Tennessee), Idaho National Engineering and Evironmental Laboratory(Idaho), Rocky Flats(Colorado), West Valley(New York), Fernald Production Facilities(Ohio), Portsmouth Gaseous Diffusion Plant (Ohio), Paducah Gaseous Diffusion Plant (Kentucky), Nevada Test Site (Nevada), Lawrence Livermore National Laboratory (California), Los Alamos National Laboratory (New Mexico), Brookhaven National Laboratory (New York), Argonne National Laboratory (Illinois), and Mound Laboratory (Ohio).

I will, of course, be happy to answer any questions which you may have about these issues

Robert J. Jackson
309 Catskill
Richland WA 99352

Phone 509 946 7884
Fax 509 943 2324
e-mail bjack8@bossig.com

(52)

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NOV 2 0 2000

DIVISION OF RADIATION PROTECTION

3206 NE 12th Avenue
Portland, Oregon 97212
November 18, 2000

Nancy Darling, Project Manager
Washington State Department of Health
Radiation Protection
Mail Stop 47827
Olympia, Washington, 98504-7827

Dear Ms. Darling:

I am writing to you out of concern for the safety and well-being of populations living on both sides of the Columbia River. Our environment is increasingly at risk of severe radiation contamination due to the failure of the Department of Energy to carry through plans to clean up the Hanford Nuclear Reservation. Instead of dealing with the problem of existing nuclear waste, we find the USDOE plans to expand the radioactive waste dump.

Further, the Washington State Department of Health has become involved in seeking to raise the limits of NARM (Naturally Occurring and Accelerator Produced Radioactive Materials) to 100,000 cubic feet per year. The Washington Departments of Health and Ecology must carefully reconsider the environmental and public health hazards posed by the transport of nuclear waste from all sources -- by air and by truck -- into the Northwest.

It is high time that our governmental agencies, entrusted with the responsibility to monitor such hazards to the public health and well-being, take action to ensure that the waste is cleaned up, and that the hazards of radioactive waste handling are not expanded. The consequences are too grave to imagine.

As a grandmother, I am particularly concerned about protecting the health of our environment so that future generations with have a healthy ecosystem. We need to repair the damage done by past policies, set clear limits now, and map a more intelligent course for the future.

Sincerely,

Denise B. Jacobson

(53)

ROBERT L. JAMES
18025 TWENTY-NINTH AVENUE NORTHEAST
SEATTLE, WASHINGTON 98155

RECEIVED
NOV 06 2000
DIVISION OF RADIATION PROTECTION

NANCY DARLING -
DEPT OF HEALTH ?

11-4-00

HOW CAN THE DOH EVEN BEGIN TO THINK ABOUT ALLOWING MORE RADIOATIVE WASTE TO BE PRODUCED & DUMPED IN WASHINGTON ????

THIS SURE LOOKS LIKE A SNEAKY DEAL BETWEEN YOU & US ECOLOGY.

NOT LOOKS LIKE ! BUT IS !

Robert L James

(54)

November 18, 2000

Department of Health and Ecology,

Please reconsider the shipment of additional radioactive waste to Hanford. I live on the Columbia River and the safety of the river is very important to me. My husband is a windsurfer and already has sinus problems every time he is in the river. Please keep this area clean. It affects so many people!

Sincerely,

Pamela A Jansen

Pamela A Jansen

PO Box 902
Stevenson WA 98648

55

Darling, Nancy

From: Albert Kaufman [recife@sprynet.com]
Sent: Tuesday, October 17, 2000 12:15 PM
To: nancy.darling@doh.wa.gov
Subject: I oppose more waste at Hanford

I oppose importing another 100,000 cubic feet of NARM waste at Hanford.

I oppose using this facility in the future for any purpose until
everything
is cleaned up first.

Sincerely,

Albert Kaufman
2810 16th Ave. S.
Apt. 201
Seattle, WA 98144

56

Darling, Nancy

From: David_B_Bruce_Klos@RL.gov
Sent: Thursday, October 26, 2000 8:53 AM
To: nancy.darling@doh.wa.gov
Subject: Comments on DEIS for Commercial Low-Level Radioactive Waste Dispo sal

The following are my comments with regard to the pending actions of the subject document:

* I support the 5 year license renewal for the U.S. Ecology operation of the Low-Level Waste Disposal Site at Hanford

* I support the revision to 100,000 cubic ft per year of diffuse NARM waste with rollover provisions

* I support the proposed closure plan that provides for early closure of the 7 existing waste trenches.

D. B. Klos
3906 S. Anderson St.
Kennewick, WA 99337

57

Darling, Nancy

From: Stella Kondilis [drstellak@msn.com]
Sent: Friday, October 20, 2000 3:49 PM
To: nancy.darling@doh.wa.gov
Subject: I oppose more waste at Hanford

Stop using Hanford as a disposal site for toxic, hazardous and dangerous waste products (i.e. plutonium processing by-products). It is time to take responsibility in addressing the grave risks involved in transportation and disposal of radioactive waste. Our state is not a dump site for toxic products. If we would not want to live near Hanford, why should someone's sister, brother, mother, father, or child have to risk their health and their life to eating food or drinking water that has been contaminated from hazardous waste disposal.

Cordially,
In Health,
Dr. Stella Kondilis

(60)

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OCT 2 6 2003
DIVISION OF RADIATION PROTECTION

From Deacon George Lukach A.F.S.P.A. Deer Park, Wa.

To Nancy Darling, Project Manager Wa. St. Dept. Of Health.
Division of Radiation Protection.

We have grave concerns about the Hanford Nuclear Reservation Draft Environmental Impact Statement [DEIS].

Concerns with the DEIS.
The amount of waste imported under this proposal would add to the already many cancer cases in this state, especially affected by Hanford Nuclear Reservation waste disposal.
The proposed commercial license does NOT prohibit disposing of wastes from restarting FFTF and Plutonium processing, although this would violate existing USDOE and WA State policies.
The DEIS reveals that the US Ecology site improperly accepted and buried hazarous and dangerous wastes.

61

Darling, Nancy

From: David McGraw [crowfather@hotmail.com]

Sent: Tuesday, October 17, 2000 10:30 AM

To: nancy.darling@doh.wa.gov

Subject: I oppose more waste at Hanford

I was recently informed of a DOH plan to increase the amount of NARM wastes at Hanford -- I am a WA state resident, and I believe that adding to the Hanford's already unprecedented and unsafe load is intensely foolish. If you go through with this, you will only make a mockery of your department, and increase the cynical skepticism we as American citizens have for our institutions - - David McGraw, Seattle

(62)

Joseph L. Miller Jr., M.D.(ret'd)
52815 SE Marmot Rd.,
Sandy,OR, 97055 (503) 668-4497

Nov. 7,2000

To: Nancy Darling, Project Manager,
Washington Dep't of Health,Radiation Protection,
Mail Stop 47827,
Olympia Wa, 98504-7827

This is my input for current hearings on commercial radioactive waste imports: prospect of their increase:

I write from the point of view of people who from time to time depend on drinking water from wells close to the Columbia, in the Portland (OR) area.

The threat of radioactivity from Hanford endangering the quality of drinking water for the Portland metro area (30% of Oregon's population)- has existed for many years.

I have been deeply concerned in Portland's Bull Run Water supply (which these wells from time to time have supplemented) for many years.

The problem, from my perspective,has been lack of public information concerning this risk, which I regard as an exremely serious one.

Please help promote public information about the additional risk that will result from importing radioactive wastes from elsewhere.

Sincerely, Joseph L. Miller Jr. MD(ret'd)

Joseph L. Miller Jr., M.D. (retired)
(retired Portland internist)
(participant, Bull Run Interest Group)

copy to Heart of America Northwest

63

6 Cleveland Court
Rockville, MD 20850-3719
November 29, 2000

Nancy Darling, Project Manager
Washington State Department of Health
Division of Radiation Protection
Olympia, WA 98504-7827

Re: Draft Environmental Impact Statement for U.S. Ecology Richland Site

Dear Ms. Darling:

I saw a brief description of the DEIS for the Richland facility in the October 24, 2000 issue of The International Radioactive Exchange and this note is to offer a few comments on the proposed cover design.

Subsidence:

> The likelihood of subsidence should be considered when the final cover is chosen. There is a lot of void space in the waste packages at the Richland facility so subsidence is a reasonably anticipated event.
>
> If there is appreciable subsidence multi-layered covers must fail. Reestablishment of a layered system after subsidence failure is a difficult undertaking and is exacerbated by the increasing complexity of the layered system. The failure potential of in-ground layered systems during the subsidence period argues for the development of an easily repairable surface barrier for use during that period (NUREG/CR 4918, Vol. 10, page 1 by Schulz et al.).

The Evaporative Cover

> As an alternative to a multi-layered cover, U.S. Ecology might consider a simpler design which will lend itself to remedial action following subsidence. To cite one example, DOE has been sponsoring research at Sandia on alternative covers for arid regions. Steven Dwyer is the Sandia project manager. Preliminary results were published in Civil Engineering about a year ago and they showed that the "evaporative cover" to be promising for arid sites. The "evaporative cover" consists of little more than a thick soil cover. Presumably as subsidence takes place, the site operator would manage the subsidence by adding more soil and revegetating as needed.

I hope this information proves to be of use to you in your evaluation of the DEIS.

Sincerely,

Edward O'Donnell, Ph.D.
Geologist

To: Washington State Dept. of Health
From: James N. Paglieri
1734 Horn Ave.
Richland, WA 99352

10-24-00
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OCT 24 2000
OAH - YAKIMA
65

The low-level radioactive waste site at Hanford is an important and fundamental source of modern medicine for our citizens. Medical isotope treatments are increasingly being used successfully for diagnosis and treatment of various diseases, including cancer. An indicator of the potential need is that the lifetime risk of getting cancer is one-out-of-three for women and one-out-of two for men. Also, there is a three-out-of four chance of cancer striking one's family. These grim statistics are based on American Cancer Society data. To deny patients treatments because of failure to provide adequate commercial low-level radioactive waste disposal at Hanford is not acceptable. Such a facility can be operated safely with minimal environmental impact.

The EIS process should be completed and the license granted to continue operation of a low-level radioactive waste disposal site at Hanford.

11/8/2000

(66)

Nancy Darling, Project Manager
Washington State Department of Health
Radiation Protection
mail Stop 47827
Olympia, WA 98504-7827

RECEIVED
NOV 13 2000
DIVISION OF RADIATION PROTECTION

Dear Ms Darling:

This is a gloom and doom potential that 1) we want to restart FFTF 2) we ~~[illegible]~~ want to continue dumping 3) we want to close site in 2056.

1) I went to a meeting held in one of the Lloyd Center buildings protesting the restart of FFTF. How come we are rehashing that when the protesters gave reasons of health to Columbia River and health to people in both Oregon and Washington.

2) Isn't it be proven all the time that what goes in our soil affects the health and longivity of animals and people? Isn't it proven that radioactive wastes disperses hundreds of years later? Why do we want to ~~[illegible]~~ continue ruining our land

3) Do we want to kill our youth by prolonging the close of the site?

It's proven that a lot of our diseases come from the contaminants in our soil, in our water and air. You can see it by the mutilated fish, the harm done to the wild birds eggs and the birds themselves?

Are you trying to slowly killing the population ~~with~~ and animals that habitat the land and water with your methods because its working. Think twice about what you are doing with our lives and yours—don't let shortsightedness and greed, money or power decide your decision.

Sincerely,

Barbara J Pereira
1213 SE Umatilla
Portland, OR 97202

(67)

9727 45th Ave NE
Seattle, Wa., 98115
Nov. 2, 2000

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NOV 07 2000
DIVISION OF RADIATION PROTECTION

Nancy Darling
Project Director

Dear Director

As parents of our son Scott who died of cancer in 1975 we now know we lived "downwind" in the 1950's. For this reason we add our voices to thousands who fell victim to Hanford.

Please listen to those of us who plead to keep USDOE wastes out of Hanford with the attendent transportation problems.

Most importantly do not aid the restart of FFTF. I believe the U of Wash. faculty who say there is no need for isotopes from Hanford.

Sincerely

Shari + Dan Peterson

69

Darling, Nancy

From: Barbara Platz [bplatz@home.com]
Sent: Sunday, November 12, 2000 6:58 PM
To: nancy.darling@doh.wa.gov
Subject: Hanford

Please register the following as formal comments regarding use of Hanford for further radioactive waste disposal:

1. The current priority at Hanford must be resumption of the inexcusably tardy cleanup plan to stop current leakage and contamination of groundwater and the Columbia River.
2. Plans for restart of the Fast Flux Reactor should be abandoned, and adamantly opposed by our elected representatives as dangerous, unnecessary and tremendously wasteful.
3. The state should firmly oppose disposal of USDOE wastes at the commercial dumpsite.
4. The state must respect its own policy which prohibits USDOE waste disposal at Hanford.
5. Govenor Locke should take the lead in informing USDOE that Wa. will not allow implementation of the plan to open Hanford to increased radioactive waste disposal.

Thank you,
Eric L. Platz, MD
1524 S. Sunset Drive
Tacoma, WA.
98465-1237

70

Darling, Nancy

From: Kathy Roberg [kroberg@hscis.net]
Sent: Wednesday, October 18, 2000 2:28 PM
To: Nancy Darling
Subject: DEIS-flaws

Dear Nancy Darling:
I live In Walla Walla, WA, and even though I'm not near the Hanford Nuclear Reservation, I'm very concerned about the issue of the proposal to restart the FFTF. I attended a hearing in Kenniwick in Sept. and was very upset in regard to the situation. I know many people who are battling with Cancer, MS, and other infirmities who live in this area, and I can't help but wonder if this whole mess of Nuclear waste has something to do with it.
I recently heard of a 100-acre commercial low-level radioactive waste dump, one of only three in the country, that is located near the center of Hanford. About 100,000 cubic feet of low-level radioactive waste is buried every year in this dump. Now Washington's Department of Health (DOH) proposes to double that amount by importing another 100,000 cubic feet of NARM waste (Naturally occuring or Accelerator produced Radioactive Material) each year. And the US department of Energy (USDOE) proposes to use this dumpsite in a scheme to smooth the way for restart of the FFTF Nuclear Reactor.
I am concerned that:

the amount of waste imported under this proposal would cause more cancer than that which is alreay here, along the Columbia River

The DEIS fails to address risks involved in air transport of radioactive waste.

The DEIS reveals that the US Ecology site improperly accepted and buried hazardous and "dangerous" wastes.

Can we afford to have a still greater disaster, as a result of restarting FFTF, and adding more contamination to the ground soil and waters that are sources of life for fish, irrigation sources, and people who are living in either the up-grade or down-grade flow of air and water from Hanford Nuclear Reservation.

Please do all you can in your power to speak up for the truth of a restart of this FFTF. Millions of lives are affected by decision made.

Thank you,
Kathryn Roberg

(72)

Nancy Darling, Project Manager
Washington State Dept of Health & Radiation
Protection. Mail Stop #7827
Olympia, WA 98504-7827

November 15, 2000

To: Nancy Darling, Project Manager

I am appalled to hear that a deal between Washington's Department of Health and the Company running Hanford's Low-Level Nuclear Waste Dumpsite led to a proposal that could double the amount of Radioactive Wastes transported into Washington State.

"The Draft Environment Impact Statement proposes allowing the yearly import and disposal of 105,000 cubic feet of radioactive wastes called NARM (Naturally occurring and Accelerator Produced Radioactive Materials) wastes. This could mean between 400 and 1,000 more truckloads of radioactive waste on our roads every year." (Heart of America Northwest Newsletter)

The air we breath and the water we drink have no barriers. Without good air and water, we are dead!!!

Everyone is impacted ... humans, animals, habitats, lakes, and rivers, etc. Most certainly, the health and safety of everyone will plummet.

Cancer is escalating at a faster pace. The enclosed article is a wake-up call. Nancy ... please reconsider the health and safety of future generations ... including ALL habitats!!!

I would appreciate a reply.

Thanking You Sincerely,

Lynora Saunders

13790 S.W. KNAUS Rd,
LAKE Oswego, OR
97034

CANCER RISKS TO EXCEED ALLOWABLE LEVELS

The US Ecology company's commercial Low-Level radioactive waste dumpsite improperly accepted and buried hazardous and "dangerous" wastes. These wastes are leaking from the trenches, and will exceed the hazardous waste cleanup trigger levels in Washington's Model Toxics Control Act (MOTCA). However, the DEIS fails to consider the total cancer risk to future public and Native American users of the site and River. The estimates in this DEIS show that the cancer risk from the dumpsite will greatly exceed the maximum cancer risk level allowed under MOTCA.

The DEIS proposes that the site be allowed to leak radiation resulting in doses to the public of 25 millirem. This is a level causing more cancers than the State law allows for *all* carcinogens that leave a hazardous waste site.

Instead of requiring the dumpsite to clean up its release of hazardous wastes and plan to accept only a level of wastes that will not cause more cancers than state law allows, the Health Department **piecemeals consideration of cancer risks** and uses a standard that separates the radionuclide cancers from the cancer risks from the leaking hazardous wastes.

The DEIS fails to disclose what the additional cancer risks from the hazardous wastes leaching out of the dumpsite will be. Nor does it require US Ecology to remove the illegally placed dangerous and hazardous wastes, to clean up the releases leaking towards groundwater (evidence suggests that at least one radioactive contaminant from the dumpsite has reached groundwater), or to have monitoring and closure plans that comply with hazardous waste laws.

Hazardous waste dumps in Washington are required to have soil and groundwater monitoring systems as well as leachate (leaking materials) collection systems. The US Ecology site does not have leachate collection or adequate monitoring. State Law requires Hazardous Waste Dumpsites to fully investigate and remediate releases. This DEIS fails to require cleanup of the releases or removal of the hazardous wastes, while proposing to allow the site to keep burying radioactive wastes.

Suggested Comments and Action:

Tell Ecology and Health to:

1. Require the commercial radioactive waste dump's closure and monitoring plans to meet Washington State's hazardous waste laws, including reducing by 50 times the cancer risk from this dump.
2. Stop separating the radionuclide cancer risks from cancer risks from other hazardous wastes in the dumpsite.
3. End "random disposal" dumping of wastes without tracking exactly where wastes end up in the trenches; require greatly improved vadose zone (soil) and groundwater monitoring, and require leachate collection.
4. Consider the cumulative impacts on the Columbia River and salmon from wastes that leak out of the dump and into plumes of contamination from other Hanford wastes.

77

Darling, Nancy

From: kaythode@juno.com
Sent: Wednesday, November 15, 2000 12:39 PM
To: nancy.darling@doh.wa.gov
Subject: DEIS for Hanford commercial site

Dear Ms. Darling:

I was very surprised to hear that Washington's Department of Health is proposing to permit the importation of an additional 100,000 cubic feet of NARM waste to the commercial site at Hanford. The DEIS does not address the risks involved in transport of such waste. It does not prohibit disposing of wastes from a restart of FFTF and Plutonium processing should FFTF be restarted, despite the fact that disposal of such wastes would violate existing USDOE and Washington State policies.

The DEIS also does not take into account the additional cancers which Native American children living along the Columbia river would be at risk
for with the doubling of low-level waste buried at this site.

I cannor conceive of any rationale that would justify the importation of such great quantities of additional waste, given the fact that hazardous and "dangerous" wastes have already been improperly buried at this site. For heavens sake, get Hanford cleaned up and stop the leaking of redioactive materials into the ground water and the Columbia river before
you consider importing an additional l00,000 cubic feet of NARM waste. The proposal does not even consider the option of reducing the amount of such waste to be imported or of continuing to import the same amount of waste as is currently imported.

Washington state has had more than its share of hazardous waste. We don't want and we don't need to import such massive additional quantities
of waste, whether it be low level or high level.

Sincerely,

Kay Thode
7233 36th Ave. S.W.
Seattle, WA 98126

78

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OCT 2 4 2000
OAH - YAKIMA

Good evening, I'm Jim Watts, I'm the recent past President of PACE Union Local 8-369. For years, members of our union have comprised the dedicated rad workers and safety technicians at the U.S. Ecology site. It's my belief that US Ecology management and our members have formed a topnotch team to make their Hanford facility a safe, regulatory compliant workplace. I've always been profoundly impressed with the level of training afforded to the site workers as well as US Ecology's emphasis on industrial and radiation safety. US Ecology has always had an immediate response to any of our concerns or suggestions about safety. That's not always the case with companies we have under contract, but US Ecology has always been a good employer as well as a responsible neighbor.

As a spokesman for PACE and its 2200 members, I encourage the state to complete the on going Environmental Impact Statement process for the facility so that the Department of Health can complete the license renewal. We believe that it will benefit the entire community if US Ecology continues to operate in a manner similar to the way they have in the past...safely and in full compliance with all the state laws and regulations.

We would also urge the state to approve a closure plan that will allow the opportunity to properly decommission some of the older trenches at the site. We believe that early decommissioning of these trenches would not only improve environmental protection but also enhance site workers safety.

We have read discussions about naturally occurring radioactive material, I believe its called NORM in the Environmental Impact Statement. It seems to me that, given the past history of safely accepting this material, that there is every reason to believe that the facility can continue to accept this material at up to 100,000 cubic feet a year.

I agree with several statements in the Environmental Impact Statement. On page 124 it says Quote "The commercial disposal site employs 24 people...actually it's 28...in the local community. Although this number is small relative to employment levels at Hanford, employment at the commercial low-level waste disposal site contributes to employment diversification in the local area."

And on page 126 it says, quote: "Another regional benefit from the commercial low-level radioactive waste disposal site is the attraction of new or existing industry into the region." This, I understand, is a result of the Hanford Area Economic Investment Fund which is funded by waste surcharges.

I'd like to conclude my remarks by saying that someone has to handle and dispose of these materials. Medical and Academic Research as well as treatment is a necessary part of the medical infrastructure. The medical community relies heavily on radioactive materials, some of which ultimately requires disposal. The commercial Low Level Radioactive Waste facility on the Hanford reservation has been and should continue to be the facility that deals with these wastes. To do less would either shut off these medical benefits, or create mini-disposal sites throughout our region stored, and handled by untrained personnel.

The Draft Environmental Impact Statement has got it right. These are good reasons for assuring continued operation of this vital facility.

I thank you for the opportunity to address this issue.

NOV 14, 2000 (79)

TO: NANCY DARLING, WDOH.

I would like to add the following comment to my oral comment this evening. Time constraints by the moderator made it impossible for me to complete this orally. This was not the moderators fault. She did an excellent job.

I urge the WDOH & WDOE to ban any wastes from the FFTF reactor permanently, regardless of restart currently proposed.

The hazardous wastes that are currently leaking and have not been fixed and other problems there have not been included in the DEIS. This facility is inadequate and should be permanently closed, not relicensed and replaced with a high-teck, state of the art, safer facility.

The DEIS completely ignores and does not discuss impact to the Columbia River or any species therin. This must be included, and the contaminated groundwater address.

I also request that a thorough analysis be done for impacts to every species of animals, insects, fish, and plants of all these hazardous wastes. This should be projected for the entire life of each substance in the facility and proposed to be put there AND include in this analysis, the cumulative impacts of all other wastes there. Each species of the above must be identified, documented through all migration/seasons. When the species which leave the site defocate & reproduce + mate with others outside the site, what mutations and weaknesses will occur.

I will be reviewing the Final EIS. and expect to see all of my comments thoroughly addressed.

Thank you,
Yellow Thunder Woman

EIS PUBLIC HEARING TRANSCRIPT
BELLEVUE
October 23, 2000

This is Administrative Law Judge and I am presiding over an informal environmental meeting and also public hearing regarding the Washington State Department of Health and Ecology Draft Environmental Impact Statement for commercial low-level radioactive waste disposal site near Richland, Washington. Today's date is October 23, 2000, and we are convened tonight at the Department of Ecology, Northwest Regional Office, located at 3190 160th Ave SE, Bellevue, WA. The time is currently 7:23 p.m. The public hearing aspect is scheduled to begin at 8:00. We have heard a presentation from Larry Goldstein of the Washington Department of Ecology and Nancy Darling of the Washington Department of Health to introduce the question and answer period to start at 7:30. We have reserved time for one of the stakeholders in these issues to make a formal presentation and then to go to the question and answer. Mr. Gerald Pollet will be speaking, and Mr. Pollet, I'll turn it over to you at this time. I'd ask you simply to identify yourself for the record with your name and spelling and also your address. Mr. Pollet, thank you.

Gerald Pollet (29)
Thank you. I am Gerald Pollet. I'm Executive Director of the Citizens Group Heart of America Northwest, 1305 Fourth Ave, No. 208, Seattle, 98101, and I want to thank you for agreeing to have an alternative presentation at the outset which hopefully will encourage questions and comments. Unfortunately we don't have a very big public turnout tonight, and that saddens me because there are a great deal of major issues presented by the proposed or pending actions with very major impacts to policies adopted by the state of Washington, and let me start by saying, we very firmly believe that an environmental impact statement must address policy choices, when there are clear policy choices to be made, such as whether or not to accept foreign waste and the clear policy choices accept or reject, and each has environmental impacts and there's a state policy, then one should address that state policy and the environmental benefits of rejecting foreign waste. Likewise, the state of Washington for very strong environmental reasons has said, we oppose the use of commercial low-level waste sites for the U.S. Department of Energy's low-level wastes, and there are very good reasons for this, and the U.S. Department of Energy has adopted a policy which precludes in most instances the use of commercial low-level waste sites for disposal of its wastes except in unusual circumstances, and again, these are rooted in environmental concerns. Failure to address these issues means that you have not addressed the requirements of SEPA of reasonable alternatives and their impacts being addressed. There is a current proposal, and I use the word proposal to ship FFTF nuclear reactor and plutonium processing wastes few miles from one site at Hanford to the commercial low-level waste disposal site in question tonight. If the state was to accept this, then the state action would engender the full range of FFTF and plutonium processing restart impacts and this is a state action. Therefore, as the first state action towards allowing the restart of plutonium processing, for instances, with a unique set of waste streams not considered in this EIS, the full range of impacts needs to be considered. If the Department of Energy gets to

send waste from one operation at Hanford to this site, then the state has a tough road to follow if it wants to limit other U.S. Department of Energy weapons plans from sending their wastes, and their record of characterizing their wastes and complying with our state's hazardous waste laws is abysmal. But we'll hear more about that later tonight I am sure. There are three truly major issues that we'd like to encourage the public to consider and address. 1) The FFTF reactor restart and its impacts and taking U.S. DOE wastes at a commercial low-level waste site. 2) The non-waste proposal doubles the amount of low-level radioactive wastes coming into this site. It has significant transportation impacts. 3) The issue of what level of risk should the combination of the closure cap on the site, the practices allowed for disposal and total amount of waste allowed into the trenches, what amount of risk from exposure should be allowed and that question deals with our state law referred to earlier by Larry Goldstein, our Model Toxics Control Act which is our state's superfund or hazardous waste cleanup law. Let me start with that. This EIS essentially proposes a plan by which one location at Hanford is allowed to leach and expose the public to a much higher level of risk then the other areas that we're cleaning up at Hanford and other burial grounds that are going to be remediated. This EIS would allow, under pending actions and proposals, US Ecology's proposed cover, for instance. It would allow risks from exposure to 25 milligrams of radiation as a dose and we're cleaning up everything else around it so that burial grounds do not result in a total combined dose greater than 15 milligrams, so why should we not limit this site to what we're paying with our tax dollars, billions of dollars to clean up to 15 milligrams. In fact, the citizen groups and Native American Tribes, however, have pointed out repeatedly that 15 milligrams results in a dose that isn't allowed at your corner gas station, the Boeing cleanup down the road, or any other hazardous waste site in the state of Washington. MTCA requires that the residual risk of exposure to a child or a most exposed person not cause more than one cancer for every 100,000 people exposed. Under the US Ecology proposed cover, the off-site Native American child would receive a life time cancer risk 44 times higher then what we require the local gas stations to clean up to or any other superfund site in the state of Washington. It's 4.4 times 10 to the minus 4^{th}, if you want it in technical terms, for the record. That's unacceptable, and that doesn't even include increasing the amount of NARM in that calculation. The standard for MTCA, our state law, says you must consider the sum total of all carcinogens that leach from a site in determining how much you have to clean it up. This EIS deals solely with the radionuclides leaching from the site. Tonight I was handed an errata sheet that says what we had already heard, that this site has probably already leached hazardous wastes that are carcinogens above our state cleanup standards to ground water. So we already should be talking about not closing it just to meet the radionuclide standard, but the hazardous wastes dumped in this site need to be cleaned up, along with the radionuclides that are already leaching and that is not considered here. And the sum total of the hazardous wastes, plus the radionuclides, should be a fatal cancer risk that is 44 times lower than proposed under the US Ecology proposed cover and far lower then under the enhanced covers as well. This EIS fails to include the risk of institutional controls failing and calculating that as part of the total allowable cancer risk. Instead it says 23 milligram here but when an intruder on the site goes through the fence and Ecology recognizes in its superfund rules that a fence is an attractive nuisance going to be reached. When under Ecology

rules you have to consider the likelihood of it being breached and the total risk still can't exceed 1 in 100,000. Here you have doses ranging upwards to 500 milligrams, in incredibly high doses. The filled site alternative with US Ecology's cover is 780 times higher then MTCA for rural resident child or adults. That's 7.8 fatal cancers for every child, every 1,000 children exposed to the site, and there is no cumulative risk analysis in the real meaning of the word required by the law in this EIS right now. SEPA, our State Environmental Policy Act, requires you to say, what are the radionuclides, what are the hazardous wastes and sum them. For MTCA purposes we must consider that sum as well, as I said. There's no analysis of that. It's as if the hazardous wastes were swept under the rug here, but we need to go investigate and clean them up and the closure alternatives would essentially ignore that. The second cumulative risk ignored is the most obvious one. This EIS pretends that the US Ecology site is not in the middle of the Hanford Nuclear Reservation. It is in the middle, and if this site gives a total risk of say, 4.4 times 10 to the minus 4^{th} or kills 4.4 out of every 10,000 children, then you sum up the rest of the Hanford site, and for the law the site is one unit, then think about the total cumulative risks we're talking about from Hanford, and that is not discussed here at all. In conclusion, we believe that Ecology and Health need to require the commercial dumps closure and monitoring plans to limit the total amount of radionuclides going in, and redo the closure cap and redo the operational requirements to include things like encapsulation and tracking every waste that goes in to reduce the total cancer risk from this site to what is required by Washington's Model Toxics Control Act so in 10 years, 50 years, or a thousand years, we don't have a new superfund site. That is state policy and that's what we should be striving for. We need to stop separating the hazardous waste cancer risk from the radionuclide cancer risks. We need to end random disposal dumping of wastes so we know exactly what went where and consider the cumulative impacts, not just on human beings, but incredibly enough there's no discussion of cumulative impacts to the Columbia River from the leaching of this site. On NARM wastes and transportation the cumulative risks are also not covered. What is the risk of adding 100,000 cubic feet of transported waste per year, some years perhaps 400,000 cubic feet, other years less? What are those risks by transportation routes when we're talking about I-90 through downtown Spokane and I-84 over the Blue Mountain Pass? This EIS does not also consider the reasonable alternative of saying no to NARM. Just say no to NARM, simple, easy to repeat – no to NARM. Why do we need to take it at all? Why should we take this waste? Well, another alternative might be, well, some of it is generated in this region. How much? It's much less than 8,000 cubic feet per year, so a reasonable alternative would be to say, we will limit the amount of NARM disposed to the reasonably projected quantity of NARM that Oregon and Washington produce in a year. That's what we do for hazardous wastes. That's explicitly what we do under EPA proposals for hazardous waste dumps, and we should do it here. There is a significant transportation impact and this EIS ignores, and the Health Department has ignored the fact that Initiative 383's policy on importing more radioactive waste to Washington State is still the law, and it says, adding more has risks that are unacceptable, and they are significant and everything should be done to discourage adding more. So, we urge people to support and Ecology and Health to go back to the drawing board and come up with a NARM waste alternative that is reasonable and is either at zero a reasonable alternative, or a NARM waste alternative that is based on much lower level of how much

waste is generated only in the two state region, which is what the Sierra Club tribes, Heart of American Northwest and other groups, urged the Department of Health to do some five or six years ago when you had a NARM waste task force. That closes our comments for now. We have a lot more technical issues, but let me close by summarizing. U.S. DOE wastes coming into the commercial low-level waste dump violates state policy that's set for many good reasons and is the first state action towards restart of plutonium processing and the FFTF reactor and therefore those impacts need to be considered and we will do whatever it takes to require that to happen. Secondly, MTCA, our state cleanup standard can't be violated by the operation of this dump site. That means limiting the amount of waste further, limiting the total quantity of waste, the source term. It means limiting, changing operational requirements and it means changing the closure requirements, including the cap. And lastly for NARM, you've got to have a zero or a much lower limit then 8,000 cubic feet and the impacts justify that. Thank you very much.

We're back on the record at this time. The parties have made presentations on both sides of the issue. I have before me the attendance list. There have been two lists circulated at the door, one for those who simply were attending, registering attendance and allowing you to put yourselves on a mailing list for the future notifications on this particular environmental review and then the second list is for those who wish to testify. I'm going to go by order. I have four speakers identified. Mr. Pollet has already made his comments. The next speaker is Stanley Addison. If you would come up here and make your comments from here.

Stanley Addison (1)
Thank you. My name is Stanley Addison. I'm the radiation safety officer at the University of Washington. I really don't have much to say and from the perspective of the University of Washington, I really cannot comment on the environmental impact statement. However, I want to make a point that it's imperative to keep the site open for a number of reasons, but certainly for the diagnosis and treatment of human disease, the use of radioactive materials cannot be replaced, and so we'd like to see that every effort is made to keep the site open and to keep allowing medical or research waste to go into the site. Thank you.

Thank you Mr. Addison. Next speaker is, and I'm going to apologize up front. I'm probably going to be butchering names in pronunciation, but Boll – have I got that correct? Bell.

Eldon Ball.

Thank you, and the pronunciation again?

Eldon Ball.

Thank you, and I'm sorry about that. Just please, again identify yourself and your address.

Eldon Ball (40)
My name is Eldon Ball, my address is 11244 Dreamwood Ave. N., Seattle. My comments are very brief. I think we should allow the lowest amount of waste essentially maybe what's generated in Washington and Oregon. I think that if they're dumping this into ditches, that's essentially stupid, unlined ditches. They should be fully lined so nothing will leach into the soil, and I don't think today we even allow garbage to be dumped on bare ground. I think that has to be lined. Why shouldn't nuclear waste be lined, the ditches? That's the first comment. The second, I don't think we should allow anything from the past ____ test facility to be put there. If and when that is ever allowed to restart. That's it.

Thank you Mr. Ball, and this is just a reminder, but your comments tonight are welcome both on the methodology of the EIS as well as the substance of the matter reported, and simply your requested to be as specific as possible and I certainly haven't had any problems with any of the comments so far. The next speaker is Ruth Yarrow.

Ruth Yarrow (38)
I'm Ruth Yarrow, with Washington Physicians for Social Responsibility, 4554 12th Ave NE, Seattle, 98105. I'm here instead of Physicians tonight because we had an all afternoon meeting and they're having a board meeting right now and so I was the one that was able to come, but I'm here to read a statement that the Hanford Task Force of WPSR has written to express their feelings about the site. We the members of the Board of Physicians for Social Responsibility and the WPSR Hanford Task Force, would like to express our deep concern about the joint Washington Department of Health and Department of Ecology DEIS on relicensing the commercial nuclear waste dump at Hanford Nuclear Reservation. We're dedicated to the public and environmental health of citizens of Washington State. As the two state departments concerned with human and environmental health, we expect you to stand firm against any further import of waste to Hanford, at least until the current high level tank waste and solid waste sites are remediated, but on the contrary, we read in your DEIS that a renewal of the US Ecology license from Washington State for operating the commercial low-level radioactive waste disposal site is being proposed. We staunchly oppose this renewal until significant progress and Hanford cleanup as noted above, is achieved. There is no safe level of radioactivity in the environment and Hanford is far and away the most contaminated nuclear site in the nation. We're particularly concerned that this license does not prohibit the disposal of radioactive wastes from the Fast Flux Test Facility (FFTF) and associated plutonium processing if that reactor were to be restarted. As you know we adhere to the TPA mission for Hanford of cleanup and oppose any Hanford production and further waste except as required to remediate the present waste sites. We urge you not to renew this license. Any potential economic benefit to the state of Washington is far outweighed by the clear signals such an action sends to the nation. Got Nuclear Waste? Then send it to Washington. Second, the DEIS considers the increasing number of cubic feet of diffuse NARM waste up to 100,000 cubic feet per year. We strongly oppose increasing this limit of radioactive waste to any site at Hanford. We're most concerned about this potential doubling of radioactive wastes moving across our

state's highways. Ominously, transport isn't limited to land and to waste from this nation as the air shipment of Spanish NARM waste to Moses Lake this past July demonstrates. Third, the DEIS considers the closure plan a waste site which will remain radioactive for 10,000 years. This radioactivity is not contained as the DEIS proposal to allow 25 milligram doses to the public shows. How can the departments of Health and Ecology approve allowing such health risks that exceed MTCA limits? Given the immense health burden on our state at Hanford already, we urge your departments to schedule the earliest possible closure of this site. Protecting the health of Washington State citizens may not be popular with commercial site operators, but our job as physicians and yours is as the state departments that are mandated to prevent health threats to our public and environment are mandated to protect health. As physicians, until Hanford's high level waste is stabilized and the current solid waste dump sites contained, we prescribe no renewal of the license to the site, no more import of waste, and the earliest possible closure plan. Thank you for considering these comments from the health professionals of our Hanford Task Force. Signed, Tim Takaro, M.D., Patricia Blako, M.D., Charles E. Weims, M.D., Don Colby, M.D., and the staff of WPSR. Thank you.

Thank you Ms. Yarrow, and I'm going to go off the record for one moment to change the tape.

This is side 2 of Tape number 1 in the public hearing regarding the draft Environmental Impact Statement for the Hanford LLRW disposal site, and our next speaker has not signed in. Your name is?

Hyun Lee (59)
Hyun Lee, 1305 4th Ave, Suite 208, Seattle, WA 98101. Three things: first, the draft EIS needs to consider the very real environmental impacts of accepting waste from possible restart of the Fast Flux Test Facility nuclear reactor at Hanford and its associated plutonium processing waste streams. In the context of accepting waste from FFTF, how did American Northwest is documented that US DOE's waste acceptance criteria for acceptance of DOE wastes from around the country and off-site sources is entirely inadequate. US DOE sent numerous illegal shipments of Washington designated waste or RCRA hazardous waste to Hanford's low-level waste only burial grounds. These documents had to be obtained through the Freedom of Information Act because DOE in Richland would not willingly provide this information to the public when asked for them by stakeholders. Quite a few boxes of this material in the office, and this documents a long history of mispackaging wastes, transporting them improperly, mislabeling them. This long history of mismanagement of hazardous wastes has to be taken into consideration before moving forward with the DEIS. Permitting disposal of these improperly packaged, improperly transported, and improperly disposed of wastes at US Ecology adds to the existing threat that was documented in today's errata sheet. Furthermore, acceptance of these wastes will open the door – will be the first step in terms of the state actions to opening the door to restart the FFTF which would then be operated by the same management system as DOE and produce wastes from the same agency that has penetrated that long history of waste mismanagement. This has to be

taken into consideration in the EIS. Second, acceptance of additional waste quantities at US Ecology needs to be examined in terms of the context of the US Ecology site investigation. It stated that there was acetone, trimethylbenzene, PCE, toluene, and xylene, which are dangerous wastes. Health and Ecology, the state regulators, need to reexamine the waste acceptance criteria for wastes at US Ecology before moving anywhere near forward with a closure plan. More specifically, the waste acceptance criteria needs to be redone and the generator's sites must be inspected to see if they're packaging and transporting and manifesting practices do comply with state law and requirements. Third, the proposals will allow US Ecology to accept additional wastes at the site to ____ degradation resulting in doses to the public of 25 mil run is unacceptable, especially in the context of the US EPA, their Office of Emergency and Remedial Response and the Office of Solid Waste Emergency Response ___ Guidance that says that guidance that provides for cleanup standards where contamination exceeds 15 millirem, which is about 3 in 10,000, is not protective and generally should not be used to establish cleanup levels. Taking that into consideration, the cleanup standards proposed ____, the dose scenario proposed for US Ecology needs to be rethought of and the EPA guidance has to be taken into consideration.

Thank you. Go ahead. Just identify your name and – identify yourself by your name and your address.

Amber Waldref (36)
My name is Amber Waldref, and I'm with Heart of America Northwest, 1305 N Avenue, Suite 208, ____, and I was just going to make some brief comments about this draft EIS. My comments are directed towards the kind and amount of waste transported into Washington State to the low-level reactive waste dump, especially the increase in the NARM waste, and I have some concerns that the EIS doesn't adequately address the impacts or the risks of allowing the 400 to 1,000 more truckloads of radioactive waste that would be brought into Washington State each year if you bring the amount of waste up to 100,000 cubic feet, and I read through the EIS, the pages 79-81, talk about transportation risks, and I saw some basic transportation risks explored but I wasn't really satisfied that each route of where the waste would be coming from, was adequately looked at. Especially, as Jerry mentioned earlier, the I-90, Spokane route and the I-84 Umatilla route. I want to make sure that the people on those routes are safe and that all the risks are explored and the draft EIS proposes – I'm sorry, the pending action is to allow that the disposal of 100,000 cubic feet of NARM per year, and that would double the amount of radioactive waste transported to the site, and this may more then double the risk of transportation accidents. And the reason I say this is because the amount going in under the pending action, the rolling over from year to year of the waste, that could mean, if I understand it correctly, that more then 100,000 cubic feet could be brought in one year if less is brought in another year. I didn't see this taken into account in the transportation risks, so on page 81 it does say the contribution of NARM to future transportation risks is extremely low. However, less NARM that is shipped to the site means less potential for a transportation risk. So I would advocate that you adopt the alternative that keeps NARM to 8,600 cubic feet a year or less with no rollover. In fact, I would like to see the alternative of no NARM wastes, but that would

be included in the EIS. Finally, the US Ecology accepted a shipment of the Spanish NARM waste by air into Moses Lake in July, which I think was mentioned before, but this EIS as we talked about before, fails to address the risks involved in the air transport of radioactive waste, and that's something I find really astonishing because I'm sure folks in Moses Lake and around that region would want to know the risk to them involved in the foreign transport. So I would just hope that would be included in the EIS.

Thank you. Anybody else who wishes to speak? Before we adjourn tonight, I want to remind everybody that written comments may still be submitted to the Department of Health. Address them to Nancy Darling, Project Manager, at the Washington State Department of Health. You can submit them by mail or email, and the deadline they must be received or postmarked no later then November 30, 2000. Well that seems to be the conclusion of the comment. Thank you everybody for attending and we'll adjourn this hearing at this time. Thank you.

EIS PUBLIC HEARING TRANSCRIPT
KENNEWICK
October 24, 2000

… October 24. The public hearing section for our Draft EIS and our first witness is Gary Ballew. Would your state your name and spell your name?

Gary Ballew (2)
Yes. Gary Ballew. I'm here representing Benton County; motto, stakeholders representing stakeholders. I'm the sustainable development manager for Benton County and we are addressing the first pending action on relicensing. We will address the two other pending actions in our written comment later by the November 30 deadline. Benton County believes that the current location of the Northwest Compact Low-Level Waste Disposal facility is the best alternative from an environmental and public health standpoint. The facility is centrally located to the majority of the waste producers, I believe which is 90 percent Oregon and Washington. Being centrally located significantly decreases the hazards arising from the transportation of the waste. The facility is in an area of existing radiological contamination caused from years of weapons production at the DOE facilities in the 200 West, 200 East areas. We believe it is unsound. It contaminates pristine areas when existing contaminated areas already exist. Also we believe that any long-term stewardship measures taken by the Department of Energy to mitigate the long-term risk in the 200 West and 200 East areas in the Hanford Reservation will also mitigate much of the smaller risk that's at the commercial facility. The facility is located in an arid region, receiving an average of 7 inches of rainfall per year, thus decreasing the risk of radionuclide transportation to human and ecological receptors. There is a supportive community here and is well educated on the risk associated with radioactive waste and a disposal facility containing such. The community is strong and doing fairly well in an economic diversification mission, lessening environmental justice concerns that plague municipal waste facilities in areas such as Clotis. The alternatives to us seem ludicrous, contaminating clean land, creating regulatory nightmares, the waste was disposed locally rather than regionally, creating long and risky transportation routes to send the waste to other radiologically contaminated areas in Idaho and Utah. Financial surety of the closure funds and potential long-term monitoring funds seems to require that the facility be open until 2056 become financially sure. Benton County strongly encourages Department of Health to approve the five-year license extension for the Northwest Low-Level Radioactive Waste Compact Disposal Facility managed by US Ecology. That's the end of my comments. Thank you.

Next is Carl Strode.

Carl Strode (33)
I'm Carl Strode. I'm wearing a lot of hats tonight. First since we had a lot of comments and questions about ground water and contamination and that sort of thing, I want to tell you that I personally have 25 years experience in the processing, handling, storage, and disposal of hazardous and nuclear waste, both commercial and government generated.

In addition, I designed the 200 ZP1 groundwater pump and treat for the groundwater vadose project on the 200 area plateau. I'm currently providing engineering oversight for that and as I have reviewed the EIS and personally inspected the US Ecology site, it's clear to me that there is no indication that any continued operation of this site will increase any dangers to the public, to the environment, or to the employees of US Ecology. One of the other hats I'm wearing – you've probably guessed already – is I am the Chairman of the Hanford Area Economic Investment Fund Committee, which, as I stated before, consists of appointed directors selected and appointed by the Governor of the state of Washington. This committee has been operation for several years and its mission is to provide diversification of our economy here in the Benton and Franklin county areas. To date, the funds that we have received indirectly from US Ecology, which is our only source of funds, is approximately $5 million. Every one of those dollars is being reinvested in our local community here for the generation of new businesses and the creation and retention of jobs. To date we have created 500 new jobs directly due to the funding provided from the state of Washington in conjunction with the operation of the US Ecology site. It's crucial that this economic development effort continue to ensure the health and welfare of the citizens impacted by the operations at Hanford. At our last board meeting the Hanford Area Economic Investment Plan Committee unanimously passed a resolution which I'd like to read into the record. This is Resolution 2000-01, a resolution supporting the renewal of US Ecology's license to operate a low-level radioactive waste disposal facility on the Hanford Reservation. Whereas, US Ecology has submitted the request to the Washington State Department of Health and the Washington State Department of Ecology for renewal of their Washington State radioactive materials license to operate a low-level radioactive waste disposal site on the Hanford Reservation. Whereas a draft environmental impact statement for the commercial low-level radioactive waste disposal site, Richland, WA, was issued September 13, 2000, and whereas the Hanford Area Economic Investment Fund was established by the Washington State Legislature, RCW 43.31.422, to support economic development and diversification projects in Benton and Franklin counties; whereas, the Hanford Area Economic Investment Fund is maintained through surcharges paid by waste generators for each cubic foot of waste deposited at the low-level radioactive waste disposal site currently operated by US Ecology. Now therefore, be it resolved that the Hanford Area Economic Investment Fund Committee urges the state to expeditiously complete the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation, to allow the Department of Health to renew the facility license held by US Ecology Inc. This was approved at the regular meeting of the Hanford Area Economic Investment Fund Committee this 21st day of October 2000. I have a copy for you. Two of my other hats are as a member of the Pasco City Council and as a member of the Board of Directors of Benton/Franklin District Board of Health. I can't speak officially for those two bodies here tonight but as an individual member from both of those bodies, I assure you that this EIS and the relicensing of this activity at the Hanford site has my full support.

Thank you. Mr. Oliver.

Claude Oliver (24)
Thank you. Claude Oliver, Benton County Commissioner. Mr. Ballew already delivered testimony on behalf of Benton County that is in the record and reflected statement well delivered. Mr. Strode also wore multiple hats tonight. I also, as the Chairman of the Board of Benton/Franklin Health District, Benton and Franklin counties, am in firm support of renewal of the license of this project and want to urge you, it continued forward. Previously as a treasurer in Benton County we worked to bring about the $6.50 surcharge that is now applied and going into $4.50 the Economic Development Fund and $2.00 continued to Benton County. I think that was a threshold during 1987 to 1991 when we established this legislation, getting the community involved in terms of diversifying our economy and benefiting from this activity, that really helped a regional approach, a lot of people throughout this region for this service. So we would urge that this service be continued. All indicators are that it is a safe, sane, well defined site, and we want to continue your oversight and your good reporting to the public about what this site is all about. Thank you for holding this hearing and we urge that you renew the license.

Thank you Mr. Oliver. Mr. Peltier.

Jerry Peltier (27)
Good evening. I'm Jerry Peltier, the Mayor of the City of West Richland. On behalf of the City of West Richland, I would like to encourage the Department of Ecology to renew the operational license of the US Ecology. The commercial disposal site has successfully operated since 1965 and has produced significant economic benefits to both the counties and the cities. Some notable benefits are, of course, lease payments to Benton County, consistent fees for the Northwest Compact or customers, and a portion of the fees go directly to support the Tri-Cities economic diversity. The operation has produced no health or safety risk to the public during its 35-year operational history. Future health risks to the public are minimal because the only actual risk would be to the people living directly adjacent to the site, since the site is currently located in the center of the US Department of Ecology site at Hanford, which is a 450 mile square restricted area, exposure to the site would be nonsignificant to the general public. Therefore, public exposure is really not a factor. US Ecology workers are monitored and trained to prevent above normal exposures. The three pending actions proposed by the Department of Ecology, which are the renewal of the existing license, amendment of the Washington Administrative Code and approval of the site stabilization closure plans are the best alternatives to successful and safe operations at the site. These operational enhancements will protect the public health, worker safety, and the environment. In addition to the current mission, the US Ecology site has the potential for accepting FFTF waste if the reactor is restarted. I would encourage the state to explore the potential of disposing of the FFTF low-level waste. Analysis within the EIS and the regulatory documents prepared by the Washington Department of Health and of course the licensee in compliance with the current license, confirm that the facility can be safely operated for at least 50 more years and then closed in accordance with the criteria that the state deems appropriate. Therefore, the City of West Richland would like to encourage you to renew the license and get on with it.

Thank you. Mr. Lane.

Mike Lane (58)
My name is Mike Lane. I live at 1210 Puttin St, Richland, WA. I'd like to comment on the draft statement from my perspective as a retired financial officer for US Ecology customer and 35 years of residence in Richland. I'd like to specifically address the three pending actions. Regarding NARM waste, I believe it is important that all customers of the US Ecology facility that no further limitations be placed on the amount of NARM authorization. Prior to my retirement I was – my company's representative to a collaborative group of US Ecology customers. Our task was to work with US Ecology in formulating a fair basis for disposal charges. As a result of this collaboration effort, the disposal profits at US Ecology's receipts from NARM disposal are shared with their non-NARM customers. This provides industry, hospitals, and universities with the ability to maintain access to such a facility at a low disposal cost, is very important. Since the draft statement suggests, there's no technical reason to lower the current limit of 100,000 cubic feet per year, and since there are tangible reasons to maintain the limit, I recommend no change be made. With respect to licensing renewal; US Ecology has operated the facility in a safe manner for many years. It is a matter of public record that no violations to their license have been noted by the Department of Health for over 10 years. I recommend the license be renewed. And number 3, the closure of older trenches; it seems logical that US Ecology be allowed to proceed with the early closure of the older trenches. I recommend that the closure plan be finalized and work on the closure of the older trenches begin as soon as possible. Thank you.

Thank you Mr. Lane. Mr. Rogers.

Gordon Rogers (71)
I am Gordon Rogers, and I am speaking tonight as a private citizen. However, I am very familiar with this subject. I am a public at large member of the Hanford Advisory Board and vice chairman of the Board's Environmental Restoration Committee which has worked very closely with Bechtel Hanford in development of the groundwater vadose zone project which is the Hanford counterpart on a much larger scale of this effort. While I don't claim to be a professional in this matter, I have long had a great deal of interest in it. In the interest of brevity I will just make three recommendations. First, that you proceed promptly with the renewal of the US Ecology license without any additional enhancements that might further reduce the already very, very small public health and other risks. Second, I would support the continuation with the rollover option of the 100,000 cubic feet per year NARM regulation. And lastly, I support very strongly, the early closure as proposed in US Ecology's schedule of the already filled waste sites, and that you accept, without further ado, their proposed closure plan. I have some further comments, and in the interest of time, I will make those in written testimony before the comment close deadline. Thank you very much.

Thank you Mr. Rogers. Marlene Oliver.

Marlene Oliver (25)
I'm Marlene Oliver. I've been asked to speak to you tonight on behalf of the National Association of Cancer Patients, and I also am going to speak to you as a private citizen. My background is as a research biologist. I have a Master's Degree in terrestrial and freshwater ecology. I also have over 20 years of experience introducing new medical technologies working with everything from small startup companies to companies listed on the New York Stock Exchange. Projects that I have worked on for the last, at least the last year and a half, have lead me to speak with many of these companies around the country and around the world, not just in this area, and many of these companies are located in areas of the United States that are not agreement states, and when I tell them we have a low-level waste site here they have shown great interest and perhaps if not relocating their entire company, but in relocating at least a portion of their company or starting up a new company branch in this region. To give you an idea of what would happen if this license were not renewed, I just came back from a trip to Europe where they are much more reasonable about how they deal with their wastes. They have a lot less regulation at a lot less cost. That's number one. That should be considered in the EIS how we can reduce some of these regulations and costs associated with disposing of some of these wastes and use our common sense in doing so. Number two, if you go into areas where there are not agreement states, if this license is not renewed, this waste from radionuclides, specifically, piles up. In Texas, I've seen it in Texas, in California, in New York. You name it, wherever there's not an agreement state, in hospitals, in parking lots, under stairwells, piled up in hallways. They have no place to put this waste. Not just in hospitals, but most of the medical companies out there, and in the state of Washington alone the growth of the biotechnology industry is at a minimum of 20 percent per year in the numbers of companies that are starting or relocating to this region. So I would urge you not only to in your EIS consider keeping the level of waste at a minimum 100,000 cubic feet per year, but also to include in your estimates the projected growth that some of these companies will show in the level of waste that they contribute to this area, not just from these new companies, but also the increase in research funding that's being conducted at the universities in the region, also in the number of research projects and in continuing development of testing projects done at companies such as Boeing that used radionuclides to test their materials and the strength and the computer industry and etc. All of these companies rely on radionuclides to produce their product and contribute to the economic viability of this community and this region. So please in your EIS consider what the growth of some of these technologies mean, that it will continue to grow because we are in an agreement state and the word is getting out there that we are an agreement state and that we can take this waste. So, as far as cancer patients go, the treatment of cancer with radionuclides is growing rapidly. We are getting more media attention. You will be getting more media attention by helping to further the responsible disposal of waste associated with cancer patient treatments. In many cases people are finding out that radionuclides are the only way to effectively cure, and we can use the word cure now because 5 and 12-year studies are in. Some of these cancers that were previously incurable. Thank you.

Thank you. Laurel Piipo. Oh, thank you. Are you Mr. Fitzgerald?

Yes I am.

All right. We'll go out of order. Mr. Fitzgerald.

Dennis Fitzgerald (47)
Your Honor, this is Nancy Darling – Mr. Goldstein. My name is Dennis Fitzgerald. I'd like to speak to you as one voice, one perspective from life from the trenches of America, not to be confused with the trenches out in US Ecology. I'm concerned just with the one element that is the relicensing. I'm positively for that and particularly I want to talk about the relicensing in relationship to the startup of the FFTF. The FFTF will have the most significant impact in our community and really in the health of the nation in any decision that this Administration has made in the last eight years. American Cancer Society says that 1500 people die each day from cancer. One out of two men in their lifetimes will have cancer. One out of six men will have prostate cancer. One out of three women will have cancer in their lifetime. One out of eight women will have breast cancer. Medical isotopes, particularly now for men with prostate cancer has been a great alternative to the cut and burn type syndrome that they've had to go through in the past and for women with breast cancer it offers relief from having disfiguring surgery. It's a life saving tool. Unfortunately, 90 percent of our isotopes are imported now. I'm very concerned about an organization like the Heart of America Northwest that has 16,000 reported members. They seem to have a disproportion of view, not only in the EIS for the restart of FFTF but also for this operation. Unfortunately, I don't think they fully realize that 40 percent of them will fall in the percentages of more than likely getting cancer, and I assure you after having three cancers removed from myself and two bouts of radiation, and I just finished up 8 months of chemo for colon cancer, that the alternative is a much kinder and gentler one when you have isotopes that are available to you, and unfortunately a lot of the clinical studies are not being started or being delayed because we don't have an adequate supply of medical isotopes. Now why does it have to get back to our issue tonight? Because when FFTF restarts, and I believe it will restart, we have to have the infrastructure in place that will support that. Not only that, it's very important that the Department of Ecology and Department of Health be very supportive and proactive and strategically look at the impact it's going to have on our community so that we can develop what can be the Mayo Clinic of use of medical isotopes in our area. So it's very important that we look at this strategically and how it impacts our area here, and certainly if you take away one of the key elements of the infrastructure that's disposal, you in essence have defeated the purpose of having an effective and cost reductive way of bringing FFTF online. Thank you.

Thank you. Ms. Piippo.

Laurel Piipo (68)
I'm Laurel Piippo, and if it looks wrong, it's probably right. I've lived in Richland since 1951. I'm an expert on garbage disposal. For 51 years I've been putting out the garbage every week and the truck comes along and takes it away out to a place I don't know, but as long as it's where it doesn't stink, doesn't cause disease, doesn't seep into the water,

I see no reason to be concerned. I didn't know that licensing a disposal plant was even an issue until I got about 10 things on my email. Since I hit the big time in USA Today yesterday where I got more press than Gerald Pollet, I'm now an authority. Also when I had surgery for breast cancer in 1989, I knew that they'd cut off my breast and throw it away. I never thought about where they might have thrown it, and when the doctor put a knife in my back and removed my left lung lobe for lung cancer, I never thought about where he threw that lung lobe either. However, when I went out to FFTF for the first time, I've lived here since 1951, I'd never seen all that Hanford stuff out there. I'm a retired teacher, retired travel agent, and I have become a vehement political activist over this issue, because I've had killer cancer three times, and it is incomprehensible to me how Gerald Pollet and his Heartless of America with their policy of suffer and die, don't do anything about cancer treatment or research until you have cleaned up Hanford, because everybody throughout the United States who ever got cancer, got it from Hanford. In fact I wonder why any of them ever come here, because they might get it. So I understand there is a waste dump out there that is a big issue. We create any – any human activity creates garbage. When I went out and visited FFTF because some guy running for governor was having a press conference, a scientist who was there said, FFTF would create about the same amount of waste as two state universities. So I thought well that's a good quotable quote, whatever it means, and I have to take the words of the scientists, but there has to be a responsible way of disposing of waste. I understand that FFTF would create very little waste. It would create medical isotopes for a kinder, gentler treatment of cancer. Marlene, would you get out my shirt so I can wave my flag please? When I became a political activist, long before the Committee for Medical Isotopes was ever thought of, I went out and had my political activist tee shirt made so that when I was not allowed to speak at hearings I would walk all around. This says what you were talking about: The good traditional, it did cure me. I'm definitely alive. Stop/Burn Poison. The surgery, the burn, the chemotherapy till you blister and bleed, the poison with chemotherapy till you throw up and all your hair falls out from head to foot. So then I show them this side: Start FFTF medical isotopes and so get that waste – whatever it is, licensed. I can't imagine anyone being fool enough to say no, let's not license a waste dump. Let's shut it down then they can scatter all the blood, guts and the bandages and the corruption all over under stairwells.

Mr. Smith. You get to follow Ms. Piippo. It's a hard act to follow. Is it Keith Smith?

Keith Smith (32)
Well I represent the Hanford Atomic Metal Trade Council and I can tell you this, that the unions that are represented by that council are in favor in relicensing this site. Not that we have anything to do with operating it, which is probably unusual for us to be so much in favor of something we don't operate, but I do want to say that it is essential, as Ms. Piippo said, to have some place to put things that you don't want to have scattered all over creation, and a good – this site has proved to be a good one in the past, and I believe that it will be a good one in the future and if it's properly managed, it should provide a safe place for us to dispose of hazardous wastes that we don't want scattered through the environment. Thank you.

Thank you very much Mr. Smith. Harold Heacock.

Harold Heacock (15)
I'm Harold Heacock, and I'm representing the Tri-City Industrial Development Council tonight. Tri-Deck is a nonprofit organization who's objective is the economic development and enhancement of the Tri-City area. A membership composed of over 500 business firms, public agencies, organizations, and individuals having an interest in the economic development of the Tri-Cities. These comments represent the views of our membership on this subject. The commercial low-level radioactive waste disposal site, which is located on the Hanford site, has been operated by the US Ecology Company under waste agreement with the state of Washington. The site has operated for over 30 years without significant problems, environmental impact, or hazard to the public. Its contribution to regional public radiation dose rates is insignificant compared to natural background radiation and the radiation releases from the Department of Energy's Hanford site and related cleanup program activities. We strongly support the extension of the lease agreement and continued operation of the site by US Ecology. Specifically, our positions on issues evaluated in the draft EIS are as follows: The radioactive materials license should be extended for another five years. The inclusion of source term limits in the license extension is a reasonable action by the state of Washington to further protect the public. We support licensing of the facility to accept up to 100,000 cubic feet per year of diffuse NARM. This limit is consistent with the current settlement agreement between the state and US Ecology. We support the adoption of the trench closure cover proposed by US Ecology as a standard trench cover for the site. This proposed cover design provides an adequate ___ of protection for the waste with minimal environmental impact. We also support adoption of the US Ecology schedule for the near-term closure of the seven existing waste trenches of the site. Under this option the balance of the trenches would be closed in the year 2056 when operation of this disposal site is planned to be completed. And we have several pages of additional supporting information on the users facility, economic community development, medical and academic research, consistency with DOE operations, and public safety and environmental impacts. And submit that to the record. I also have a statement from the city of Connell, which was sent to me to submit tonight, and I'll submit it for the record. In summary, it supports extension of the license, extension for five years and 100,000 cubic foot per year limit.

Brian Peppindoneau (28)
I'm Brian Peppindoneau. I'm director of Contracts and International Business for Lampson International and Neil F. Lampson, Inc. It's a local family-owned heavy lifting company headquartered here in the Tri-Cities. Our company has had a longstanding business relationship with US Ecology and disposal site. For several decades Lampson has been pleased to team with US Ecology for disposal of extremely heavy waste packages. Just last summer, Lampson provided heavy lifting services to help dispose of the Trojan Reactor vessel at the US Ecology facility. The close proximity allowed us – that close proximity allowed us to observe first hand the diligent efforts of US Ecology to ensure complete and proper adherence to regulations and good practice. We've always known US Ecology a good corporate neighbor and its employees to be assets of the

community as a whole. We at Lampson believe that the commercial low-level waste facility is an important component of the Tri-Cities economic infrastructure. For this reason we urge the state to quickly complete the EIS process to allow the Department of Health to renew the facility license and to allow the facility to continuously provide safe reliable service that its customers are used to. We would also urge the state to approve a closure plan that will allow for safe closure and decommissioning of the facilities in 50 years or so. In keeping with the closure plan, we believe that the decommissioning of some of the older trenches sooner rather later, makes sense. Doing so would improve environmental protection and provide a greater opportunity to evaluate performance of closure caps while the site is still operating, and US Ecology is still on the job. We also think that allowing disposal of at least 100,000 cubic feet of naturally occurring radioactive material makes sense. The DEIS says that there are covers which can be enhanced with bentonite to safely isolate this material, along with the rest of the waste. And the economic benefits to the Tri-Cities are significant. The EIS itself acknowledges that the commercial disposal site employs 24 people. While this number is small, relative to the employment level at Hanford, it does add to employment diversity in this area. And surcharges attached to the waste disposal help bring new industry into the area. For these reasons it makes good sense to complete the process and complete the relicensing effort. Thank you.

Thank you. James Paglieri.

James Paglieri (65)
James Paglieri. I have a handwritten copy of my notes I'll give you. I'll be reading from them for conciseness. The low-level radioactive waste site at Hanford is an important and fundamental part of modern medicine for our citizens. Medical isotopes treatments are increasingly being used successfully for diagnosis and treatment of various diseases, including cancer. An indicator of the potential need is that the lifetime risk of getting cancer is one out of three for women, and one out of two for men. Also, there is a three out of four chance of cancer striking ones family. These grim statistics are based on American Cancer Society data. To deny patience treatments because of failure to provide adequate commercial low-level radioactive waste disposal at Hanford, is not acceptable. Such a facility can be operated safely with minimal environmental impact, as has been shown by past history. The EIS process should be completed and the license granted to continue operation of a low-level radioactive waste site at Hanford. Thank you.

Thank you. Cheryl Paglieri.

Cheryl Paglieri (64)
Cheryl Paglieri, housewife, Richland. Thank you for the opportunity to speak on the extremely important issue of operating a low-level radioactive waste site at Hanford. Like many people we have both lost both relative and neighbors to cancer. Also we have both relatives and friends that are currently suffering from cancer. A sobering statistic is that every 30 seconds an American gets cancer. There are a number of medical isotopes that show great promise in treating cancer and other diseases. For

example, cell directed therapy that seeks out and destroys cancer cells. However, without adequate low-level radioactive waste sites, these treatments will not be available. Living in the vicinity of a low-level site, our home is in Richland, is not a personal safety concern. For example, there would not be a concern with Richland drinking water that is taken from the Columbia River. Also cleanup of the other radioactive wastes at Hanford can and will proceed. Other activities are currently being done at Hanford and cleanup is progressing. Operation of the WNP-2 reactor. Based on a comparison of the risk versus the benefits, clearly the EIS, an operating license for low-level radioactive waste disposal site at Hanford should be issued. Considering the cancer in other patients whose health and very life depend on medical isotopes should definitely be made to renew the license.

Thank you. Amy Evans.

Amy Evans (11)
My name is Amy Evans, and I'm speaking as the Executive Director of a local volunteer organization called the Citizens for Medical Isotopes. You've heard already from some of our members. I'm proud of you guys. Citizens for Medical Isotopes Board, since some of you may not be familiar with who we are, I just thought I'd let you know who some of our Board of Directors are. Jack Briggs, Dr. Al Corado, Dr. Richard Gever at the Cancer Center, Suzanne Heston, Floyd Iving, Mike Lawrence, Rick Lock, Wanda Mon, Ed Ray, Dr. Hackonrogday from the Seattle area who is a world recognized pioneer in developing medical isotope treatment for prostate cancer that uses a procedure called breaky therapy. Ray Robinson, Dr. Robert Shenter and Margaret Yoshino. So this is a statement from this organization. Citizens for Medical Isotopes is a volunteer organization dedicated to furthering medical isotope treatments for cancer and other diseases. We are a group of concerned medical professionals, researchers, patients, and citizens. Medical isotopes are used 40,000 times a day in the U.S. for diagnosing disease. Now new treatments for cancer are moving forward showing promise to more effectively battle this terrible disease and others, by the way. Medical applications for radioactive isotopes are growing. For the public to benefit, the infrastructure for handling the waste must be present. The commercial low-level radioactive waste disposal site at Hanford is a crucial component of the infrastructure that supports medical isotope utilization and ultimately new and better treatments. The low-level radioactive waste disposal site at Hanford receives wastes from hospitals and research institutions around the region, including the University of Washington, Washington State University, and the Oregon Health Sciences University. It will also play a role in supporting the operation of the Fast Flux Text Facility should it be recommissioned for medical isotope production and other purposes. Citizens for Medical Isotopes urges the state of Washington to complete the EIS process for the commercial low-level radioactive waste disposal facility on the Hanford Reservation and allow the Department of Health to renew the license. It can be safely operated for at least 50 more years. During that time it will benefit many people in our region and the nation, through its support of the development of new and more effective treatments for cancer and other diseases. Failing to support the infrastructure behind a new medical isotopes treatments is no different then failing to support the research itself. We owe it

to our friends and family members with cancer to support better research, treatment, and diagnosis. Washington State should also do its part by continuing to make low-level radioactive waste disposal available. Thank you.

Herald Anderson.

Herald Anderson (39)
Herald Anderson, 1106 Wilson St, Richland, and I'm speaking as a citizen of Benton County. Many of you have spoken eloquently to points that I'd like to make, but I'd just like to amplify one point, but first I'll start off by stating that I support the renewal of the site license and the second pending action of adopting an upper limit of 100,000 cubic feet per year, and approval of the cover design and closure scheduled proposed by US Ecology. I also would be supportive of the use of asphalt and large amounts of silt loam that is the best cover that could be put on, because if we look at the investment in terms of 10s of thousands of years, it will be very small. But a lot of people earlier made the point that there's no endeavor that we undertake that doesn't generate some kind of waste. And so I'd like to draw up on you a bit of wisdom from Proverbs 14.4, where no oxen or the crib is clean but much increase comes from the strength of the ox and there are those that are farmers and they support life by hard work. Some of that hard work includes cleanup and so I think that we need this facility and shouldn't shy away from picking up the shovel one more time.

Thank you. Those are the individuals who signed up to testify. Was there anyone who wanted to testify and didn't have an opportunity to sign up? I don't see anyone raising a hand or rushing forward to the microphone. I want to thank you very much for your coming here this evening. I wanted to note that Larry and Nancy will both be on hand here as our meeting ends, if you have additional questions for them, and I also wanted to remind you that the comment period is November 30. Nancy, do you want to say something further with regard to acceptance of written comments after today?

You can send in written comments either via email. My email address is on the information in the back _____. Or you can send written comments to the address. It just needs to be postmarked by November 30 or if it's emailed, it needs to be emailed by midnight that night.

Thank you. There being no further testimony offered, our public hearing is adjourned.

EIS PUBLIC HEARING TRANSCRIPT
WHITE SALMON
November 14, 2000

…and the public hearing of the draft environmental impact statement, presented by the Department of Health and the Department of Ecology for the state of Washington. We are in White Salmon, Washington. Today's date November 14, 2000. Administrative Law Judge Jeanna L. Hale is presiding. We have a presentation and if you indicate your name, spell it and the group you represent, please.

Gerald Pollet (29)
My name is Jerry Pollet, and I'm Executive Director. I'm representing Heart of America Northwest, which is a 16,000-member Washington/Oregon public interest group and we've collaborated with other public interest groups in putting together our presentation tonight, and I want to thank you all for getting out in this chilly building and we're going to give an alternative point of view from the Hanford public interest network group's perspective. Let me start with this: what you have here tonight and in front of the departments of Health and Ecology is a question of whether or not our state government is going to breach its trust and fiduciary responsibilities towards our children, our grandchildren, and our grandchildren's grandchildren. Whether or not they're going to breach our state policies and our responsibility to limit the amount of radioactive waste imported to the state of Washington which, in Initiative 383, the public set a policy which is still state law that any increase in radioactive wastes imported is a significant health and environmental threat. 2) That allowing the use of a commercial radioactive waste site for US Department of Energy wastes violates state policies that have been longstanding, and is tantamount to the state of Washington taking a state action to assist the US Department of Energy in reopening the FFTF reactor. Thirdly, why this comes down to such a breach of trust, this EIS clearly demonstrates that this dump site right now poses an unacceptable health risk to future generations. What was left out of this EIS is the fact that the dump site has already leaked hazardous wastes which have already reached ground water, and they will flow into the Columbia River, and they will continue to leach and all the assumptions in this EIS are based upon a statement and a model that wastes couldn't reach groundwater for hundreds of years. But more importantly, why are we adding more wastes to a dump site that's leaking and the Health Department risk assessment already establishes that if you take the least protective cover proposed here and the least protective alternative, 3 percent of Native American children and families exercising their treaty right to live on ceded lands after Hanford is theoretically cleaned up, 3 percent would die of fatal cancers caused by this dump site alone and even without any intrusion into the dump site in the future, this proposal, under the best of all alternatives causes 23 times more fatal cancers then our state law allows for any hazardous waste site. We require, we, the state, and the people of Washington State, and US EPA, are requiring the Department of Energy to have a Hanford cleanup landfill a mile away from this site with liners. Not without liners. Far more protective then this dump site is. And we require the cleanup of ground soil sites at Hanford to be far more protective then the state is saying it's going to license this dump site to continue polluting. What are we talking about? Let me take you through

these points and urge you to comment on them. 1) We believe that the state needs to flat out bar the additional import of 100,000 cubic feet per year of this nonradioactive waste. It doubles the amount of radioactive waste that would be imported, cross the Blue Mountains up by 84, or through downtown Spokane into Washington State. These radionuclides are far more long lived then others in the dump site. In fact, the NARM proposal actually dramatically increases dose and cancer risk from this leaking dump site over the next thousand years. There's no consideration of the import of a thousand truckloads of radioactive waste in this EIS and what the risks are. There's no consideration of the fact that the State Patrol documented that up to 50 percent of individual trucking companies bringing radioactive waste to this dump site had their trucks arrested at the state border for safety violations. 2) Why we need to bar this dump site from taking wastes from the FFTF reactor and plutonium processing operations. Not all radioactive wastes are created equal. The state has a longstanding policy with good environmental cause to say, if we can't regulate the generator of radioactive wastes and we cannot at this time regulate nuclear operations on the Hanford nuclear reservation or any other US DOE site, if we can't regulate your generation, then you can't use the commercial disposal sites which this state is liable for cleaning up. It is the lessee and lessor of this site. It is the operator of this site. We are liable as taxpayers for the pollution from this site. If we open the door to any US DOE waste stream, we open it to all US DOE waste streams under federal law. We also have a horrendous record not considered by the state at all of US DOE violating Washington's hazardous waste laws in failing to characterize the hazardous wastes they've mixed in to their low-level wastes. At Hanford's low-level burial grounds US DOE admits in the past five years they've illegally buried unknown quantities of hazardous wastes in unlined burial grounds. Do we want to be liable for that? So, there are environmental reasons why this EIS must consider this and why it is irresponsible of the state of Washington to either not flat out ban it or you have a legal requirement that you must consider the impacts of taking the waste. Third, we need to have a full investigation and cleanup of the hazardous wastes that are now admitted to be leaking from this site before this site is relicensed. It is unconscionable to admit that belatedly, it's not in the EIS, even though the information was known a year ago, that wastes have already leaked from this site. They exceed our state cancer risk guidelines and standards already in ground water, and the model use for this EIS risk assessment actually says that it's based upon an assumption that the wastes couldn't have moved in 30 years that this dump site has operated. The model doesn't work. The risks are probably far greater then the risks I'm going to be talking about. We're talking about dramatic increases in chloroform and trichloroethylene in late 1999 in groundwater underneath this site. Talking about tritium, we're talking about metals and organics and there's no discussion of the health risks of this in this EIS, nor where they came from, nor how we're going to clean them up. It's unconscionable to talk about relicensing without talking about investigating and cleanup first. What are the risks? The EIS admits, even with it's flawed risk assessment and its flawed model, that 3 percent of Native American children living on the Hanford Reservation after it is open as ceded lands pursuant to the treaties of 1855, would die of cancer from this dump site alone if there is an intrusion into the dump site for a ground water well, which is considered likely under both US DOE and the Health Department scenario. It's an unconscionable

and illegal risk. State law says we have to clean up hazardous waste dump sites to a degree that protects every possible exposed person to a risk level of just one additional cancer for every 100,000 people exposed after taking into account the likelihood that someone will do something in the future like drilling a ground water well there, which cannot be ruled out. Even without the intruder scenario though, every single one of the alternatives proposed by Health and Ecology violate our state hazardous waste cancer risk law by at least 23 times, even without an intrusion. The off-site resident under US Ecology's proposed cap, and it is shocking to hear that this was worked on and agreed to with the state because it is in gross violation of our state Health's cancer risk standards. Forty-four times what is allowed for cancer risk. At best if you shut it down now, 23 times with an enhanced asphalt cap or bentonite cap, if you close it this year. Yes.

What you're saying right now is without any new dumping that is happening right now?

The Health Department risk assessment says if we put on a better cover then US Ecology proposes, shut it down right now, not 2056 but right now, this dump site will still cause 23 times more fatal cancers then we allow for any other hazardous waste site in the state of Washington.

Mr. Pollet, I'm going to give you about another minute to draw this to a close so we can give other people an opportunity.

Okay. I'm going to be taking questions in a minute with others, I take it. The EIS fails to consider replacing this company with a more responsible company, which is a reasonable alternative. It fails to consider the hazardous wastes already leaking from the site. It fails to consider the fact that the company has already used airplanes to import waste to this site, and those of course are risks that are incredible. It fails to increase the financial assurance to stop the company from importing waste by air. We need to greatly reduce the total amount of radionuclides that are proposed to be disposed in this site, not just investigate, but totally reduce the total amount of radionuclides in order to get it into an acceptable cancer risk level. We need to end the practice of using unlined trenches. That is going to be the only way we get to an acceptable cancer risk level. We need to track where wastes are disposed. We need to consider encapsulating them before burying them. We need to have leachate collection. We need to require, in this dump site, everything we require a mile down the road at the Hanford cleanup landfill. Let me just close with this, the state Health Department proposes that it is acceptable under its radionuclide and cancer risk regulation to expose people to 25 millirems of radiation from this dump site off site. A hundred or 500 millirem on-site. The US EPA in 1997 had this to say about the NRC regulation that the state Health Department has adopted and seeks to use here instead of our own state's cancer risk law. US EPA, August 20, 1997, dose limits in NRC's rule are not protective. EPA reviewed the dose limits contained in NRC's radiological criteria the license termination. The NRC rule allows the cleanup level of 25 millirem per year … these limits are beyond the upper bound of the risk range generally considered protective under CERCLA. That's the federal Superfund law. In addition, they present risks that

are higher then levels EPA has found to be protective for carcinogens, in general, and for radiation in particular, in other contexts. The risk levels corresponding to the 25 to 100 millirem per year range allowed by the NRC rule are unacceptably high. The federal Superfund law allows 10 times more fatal cancers then our state law does. EPA said this standard was unacceptably high. Now it's up to us, the people of the state of Washington, to tell our Health Department to enforce our state law, our state cancer risk standard, and not to allow a state leased and operated dump site to violate it. Thank you all. I'd like to submit a copy of my slides and a letter we sent yesterday to the Governor.

Are there any other individual groups that would like to present an alternative, or are there questions that can be answered? Did you have a question sir, or did you want to make a presentation?

Are we doing questions on the record?

No, we're not doing questions on the record. We are back on the record in the matter of the draft EIS hearing. Mr. Meek, if you'd state your name, spell it and indicate the group that you represent, please.

Tom Meek (21)
My name is Tom Meek, and I'm a radiation protection manager at the Trojan Nuclear Plant. I represent Portland General Electric. I'm a certified health physicist and have been working in the health physics field radiation protection specialist for 25 years. I just want to make a couple general comments in support of the EIS. I'd like to thank the Department of Ecology and Health for a chance to come here and talk about this issue. We'd like to provide our support for the continued operation of the facility. We believe that the state Health and Ecology have been doing a very good job of regulating the facility. That's through our experience with our disposal activities. They're both in regulating through regulations and laws, but also through the inspection process that occurs at the facility with their on-site inspection and the inspection at our facility to ensure our processes and procedures are appropriate for disposal. We feel the disposal facility supports the national objectives having a compact facilities for the disposal of radioactive materials, especially for medical wastes, and that it supports the ability of universities and other research institutions to continue the process of developing treatments for many of the diseases that we're talking about here. As an example, my daughter had Hodgkin's Disease when she was in high school, and through a lot of the work that took place in research facilities around the country, she was treated for the Hodgkin's Disease and now is disease free for four years, and a lot of that was based on the chemotherapy and radiation treatments that she received during that and many of those were proven through the use of radioisotopes that had to be disposed of when they finished the process. The third thing is we believe that the facility has excellent geological and hydrological characteristics, and that it is ideally suited for the disposal of radioactive material, and in fact probably one of the best facilities located in the United States, and that we believe US Ecology's operating the facility in a responsible manner, and support that the facility would be relicensed. Not going to comment on NORM or

NARM. I don't feel it's within my area of specialty. However, I would like to support the selection of a closure plan for the facility. We believe that a closure is probably the most – is the key for the protection of the public and that the facility presently, inactive trenches should be closed and don't support any of the specific closure plans. However, I believe that Ecology and Health and the facility operators should choose one and get that process going. The only other comments I have on the EIS is to do with the method of assessing risk and a lot of people here have been talking about risk and the potential hazards associated with the radiation dose, and I just want to reiterate something that – a comment that was made earlier, and that there are a lot of conservatisms that go both into the dose modeling and the risk assessment associated with the factors that are used in the EIS to determine potential health hazards. The dose calculation models and where you model what happens to them as the material is released from the facility and can move through the environment and reach a human being are very conservative models. They greatly over estimate the hazards that exist in reality. And then on top of that, the linear no threshold model of determining potential hazards, the risk from the radiation dose, is an exceptionally conservative model. There's much data available for the health physics community, the radiation protection community, and indicates that for every study indicating there's a health risk with radiation exposure, there's study indicating there's no health risk at all, is not detectable. When we put all these conservatives together we end up with a result that reached around the area and probable and in fact probably impossible. And calculating a hypothetical deaths based on this we feel is something that when you add all these conservatives together it results in a very emotional and over stated case, and that in fact Health Physics Society in many physician papers, and I'll provide comments of those position papers to you as a national body of radiation protection specialists indicated that any EIS or any assessment of risks needs to include the fact that at very low doses and dose rates you need to include zero as one of the risks. That there is no health risks at these low doses and dose rates, and it should refer to the Health Physics Society's position statement on risk assessment that was issued in April 1995 and the radiation risk in perspective that was issued in 1996 is peer reviewed throughout the United States by radiation protection specialists. Thank you.

Next will be Molly See, then Yellow Thunder, and then John Brodeur. So Molly See, if she's here.

Molly See (74)
My name is Molly See. I was born and raised in Hood River, Oregon, and now I live in White Salmon with my husband, and our children and grandchildren live not far away. I've been concerned for a long time about Hanford, many, many years, and I'm concerned about living here now and I'm concerned for my family. I've tried in many hearings to have some effect. Now after all this, this new EIS boggles my mind. It dismays me. Here are a few points I'd like to see in the EIS; that no FFTF wastes be added to a landfill already leaking. No NARM waste be taken on and that the total amount of waste should be reduced because of cancer risks that exceed our state's standards. Thank you.

Yellow Thunder Woman (79)
My name is Yellow Thunder Woman. I have quite a few comments which I would like to enter into the record this evening. I'm a low dose radiation victim from the early days and because of the high incidences of tumors and thyroid disorders and immune suppression system problems within my own family and among the people that I spend time with and myself we gather a lot of food and use it both for ceremonial purposes as well as just general eating. And so I've ingested these things over a long period of time and I definitely feel the effects in my health as well as my family and extended family. The cumulative risks of this additional waste on this site, in combination with other high and low-level wastes in the area are not addressed. You can't, in my opinion, and I am requesting that you include all of the other contamination factors throughout the entire site, and come up with a more realistic model of how many illnesses and people will be affected and how, based on the fact that there's more then one thing on the site. The draft EIS did not include all health risks, but it assures us that only 3 percent of the Native American children would die from this, and that is unacceptable. It's sick to me to even consider that you would consider going forward with it after making that analysis. Why you wouldn't even just shut the book. It appears to me that you have not included all of the new information that you have in the draft EIS and you've said to me that you don't have time. Well these processes can be extended legally and I would expect that you would do so with the new information that you have at hand with the groundwater. The additional waste at this site are basically 3,000 times the state health standard. The local corner gas station is allowed to produce 1 in 100,000 cancer fatalities, but in the best case scenario in this analysis, there would be two fatal cancers in a thousand people. These are unacceptable and also illegal levels. I would say that my input would be to ban importation of anymore high or low-level waste because it has already been proven that the people managing the site can't handle what's there, or even do the one simple task of stop leaching of existing waste into groundwater. This specific site is inadequate and shouldn't be used because it's unlined, it's completely uncontained. And as a result of that and the past blunders and the not quite truths that you've fed the public, I would say that this facility should not be relicensed. How dead is dead? Is it low-level dead? Is it high level dead? Is it metal dead? Is it radioactive dead? Dead is dead. You have demonstrated that the whole area is susceptible to uncontrolled wildfire, that we've been lied about in the releases from that fire for quite some time and finally they're kind of coming clean about what's been going on up there, and what was actually released in the fire and basically we've never been voluntarily told the truth about the entire system up there. The Department of Health and other agencies, federal agencies as well, have lied and hidden and downplayed the health risks of high and low-level radiation, even in the face of independent and well read studies, which include all the health problems that the Health Department has chosen to ignore. I would also like to say that I do not support any NARM waste coming to this site. In conclusion, I would also like to add that the predicted transportation risk is low statement, is in my opinion, not correct and inadequately addressed. It's just basically not addressed. Transportation of these anticipated wastes increase health risks of many kinds. This is inadequately dealt with in the draft EIS. To be included is the emergency room factor, regional and local hospital emergency room officials and others. Workers there have told me that they are absolutely not prepared to deal with a catastrophic nuclear event.

They couldn't protect themselves physically from the patients who are radioactive and they wouldn't be able to adequately treat them at all. So they, in some facilities they just haven't bothered to do the drill because they couldn't handle it. So that's something that the Health Department has to address in this EIS. EMS, locally EMS response teams do not have the facility, training, or equipment to handle high level, low-level, or moderate exposure to these materials. This information must be included in the EIS with actual facts from all hospitals, ambulance, fire services, and others who would be subjected to handling the catastrophic problems which could arise in transportation accidents, and I do expect to see this in the final. Thank you.

Next is John Brodeur, and then Elizabeth See.

John Brodeur (5)
I have some questions and I'd like to sit down and go through those.

How many questions do you have sir?

A number of questions I'd want on the record.

So just that you're aware, we have several other people who would like to testify and I'm going to give you a little time then I'll probably have to cut you off, and you're certainly free to ask them questions at the end, but there are a lot of people who signed up for the opportunity to testify.

I'd prefer to be on the record.

Well, that's fine, but I'm not going to let you take the rest of the evening.

I understand.

I'll give you five minutes.

That's not enough.

All right, well how much time do you think? In fairness to your neighbors, how much time do you think?

Ten minutes.

I'll give you eight. It's just that we do have at least ten other people who would like to testify and they've been waiting some time to do so.

My name is John Brodeur. I'm a consultant in engineering, geophysics, and geohydrology. I'm also a licensed professional engineer and spent just over 15 years out at Hanford. I had some concerns mainly about centering on a lot of it on plutonium. First of all in August '85, a review by – it was a 1985 review of the facility. The bottom

line is there's at least 80 pounds of TRU waste put in the facility and according to the document it was mainly plutonium in terms of activity on the TRUs waste. The question is if plutonium was received in 1980, my concern again is that it's just now discovering it in the groundwater. The question is, what's coming down the pike, and I guess I don't expect an answer on that right now, but the main thing I wanted to know, I was at the Kennewick meeting, not having read the EIS I did read the little errata sheet that was delivered and I was struck by what I thought was, appeared to me a significant bias on the part of the Department of Health and Department of Ecology. It says here that radionuclides detected in the groundwater include various items; alpha, gross beta, tritium, cobalt, tech 99, and TU39240. I checked into table 23. It shows the plutonium level .006 and then I pulled up the information in the facility investigation report and looked at plutonium wells 3, the value was .24, .25 approximately with an MBA of .06, so it was clearly above ____ a significant in terms of detection level and everything else. Significant detection of plutonium and in well 13. Now well 3, I believe, which one of those is upgradient and the other one is downgradient. Correct me if I'm wrong. One is – no. 3 is downgradient and number 13, the other well where plutonium was detected is upgradient. That was detected at .1 with an MBA of .06. So basically your table .3 is incorrect, but that's not the real significant point, but the question is, here is, if we've got plutonium in the upgradient well, we've got plutonium in the downgradient well, and very low-level, but the significant point is it's there, and the document here correctly assumes that the plutonium, because it's down, it was detected at 30 feet, the plutonium was not from another facility on the Hanford site, but we also detected plutonium in the soil samples in the RCRA investigation and you're familiar with that, I assume. So we've got plutonium in the vadose zone. We've got records of plutonium that has been disposed of at the site. We've got plutonium in the ground water. And then – it says here, it is not possible to determine from the data if the commercial low-level rates at the radioactive waste disposal site is contributing to ground water concentrations. Okay, further samplings can then be conducted. Does that mean that we don't need to worry about that? I mean we can go ahead with this EIS and we can go ahead with this? I'm trying to understand what your reasoning is for saying that there's no – that we can go ahead with this EIS when we don't understand the hydrogeologic system apparently. Maybe you can answer that. I don't know. Problems with your ground water model. First of all it uses a steady ____ infiltration rate which isn't the case. What we're dealing with out there is typically chinooks and massive water melts. It assumes homogeneous layers with constant moisture contents and no hetrogeneities in the sediment itself. I've been in a lot of pits and actually been in the low-level burial ground pit, the US Ecology pit and you see it's full of plastic dikes. It's full of stratigraphic and homogeneities. The model's a one-dimensional model using simple dispersion calculations for in a contaminant transport which is basically totally inadequate. It's the same similar models that they use out at tank farms or to estimate the fission product migration out there and basically we've shown that that's totally inadequate and totally inaccurate in terms of …

You have another 30 seconds.

I guess I'd like to get at the bias, if I could, in the document. I've talked with three individuals within the Department of Ecology who indicated to me that the team involved

in preparing this EIS clearly went into this thing with a bias that this is the low-level waste site and the health effects are insignificant compared to the rest of the Hanford site, so there's no sense in doing – so this sort of a bias was built into the document and in fact I do see that in the statements. Basically here just dismissing the fact that we've got TCE. In fact there was a statement in there about the plutonium saying that the presence of plutonium does not fit with the model – it doesn't fit with what we'd normally consider the distribution of plutonium. In other words, plutonium doesn't fit our conceived concept of that migration of that – of that radionuclide so therefore it cannot be. That's essentially what the document's saying.

All right, and I'll ask you to conclude at this point Mr. Brodeur.

The other question is, the main concern here is plutonium when it's bound with organics has been shown to be highly mobile. That wasn't considered in this thing. The main problem is you have to answer the question of where the plutonium came from before you can even proceed with this EIS, and how you can continue with the EIS without a phase 3 investigation, without having complete knowledge of the hydrogeologic system or demonstrated knowledge of the hydrogeologic system is beyond me. I can't support issuance of the continuation of the operation of the landfill. I have a lot more.

I understand, but I'm not going to allow you to take over the meeting. I want to take what you have in writing.

When I submit – If I'm going to submit something in writing, I usually end up getting paid for something like that, and I don't see this bias team going into this whole thing. I don't see where it's totally worth my time to do that.

Well you're certainly free to do that, and I will certainly forward any of the written comments that you or anyone else has. Thank you for your time.

Next will be Elizabeth See.

Elizabeth See (73)
I'm Elizabeth See and I am opposed to the reissuing of any permits or licenses for this waste disposal and I'm against the importation of any NARM waste to this disposal or the burial of any waste that can be produced by the FFTF reactor in this disposal. I think it should be shut down completely and no more wastes should be brought into Washington, and no more wastes should be produced in Washington of the radioactive variety. Thank you.

Mr. Greg DeBruler, and I apologize for anyone's name that I mispronounce.

Greg DeBruler (8)
My name is Greg DeBruler, and tonight I'm representing the Columbia River Keeper. We have a fundamental problem with this whole process. One is, this dump site is out of compliance. It has contamination that has impacted ground water and what we really

think is the smart thing to do is stop spending anymore money studying this thing. Shut it down, and if you're going to have to bring in low-level waste, build a new dump that's state of the art. There's no reason that we should be a 19 in the year 2001 practically, dumping waste in an unlined trench. It makes absolutely no sense. And so I think it's unconscionable that the state, either Ecology or Department of Health, could even think about going further and allowing this site to continue dumping more stuff. What's interesting is the site was opened in 1965 and you think back in 1965, how much characterization of waste did they do in 1965? Zip. Probably in 1980 they did very little. Probably in 1990, they did very little. There was a comment that was generated in the back that said they have a 99 percent knowledge of what was dumped in the site and I'm going, yea right! This EIS fails to consider the cultural and natural resources that are there and as far as the protection of the ecology and the ecosystem. In the eco-risk section is four and a half pages long. Granted, it's a dry site. Granted, it's in the middle of nowhere, some people would think, but if you look out in the year 2056 or the year 2100 and you think about the trust responsibility to the tribes, when the Wanapum people were here they were told one thing; we're going to take your land for a while and then we're going to give it back to you. And John Erickson said something really well – thank you John, I love that you're here. We expect one thing of a commercial facility when they come in here, we expect that when you come in do your job, when you leave, leave it as clean as you can, but with a dump site it's really hard to do that. But it is unconscionable to sit here and think that we're going to allow these people to continually dump more waste in there when it's unlined. So alternative number one; deny the license, close it down is definitely the logical one. The other thing that's really missing is that we all get into this little box that we jump into and we say, okay, well we're going to look at this one facility. Well, if the one facility, as the numbers have been reported out, 3 percent chance of the fatal cancer to a small child that's an indigenous person, you have to look at not only that site, but you have to look at the whole site because you have to remember that the person living there might not just live on top of that dump but they might go over to Inn Springs or they might go over to the river and go float down the river, and they might be eating a whole bunch of fish, they might be taking the shellfish off – or the clam shells off the Columbia River and putting them around their neck as necklaces, and a hundred years from now they'll be eating the game, and where's all this dose coming in? And then you have to think about all the agricultural pesticides and everything else that's out there. We fail to look holistically when we look at EISs. We look at one little box. I think the EIS addresses some things kind of expanding out, but I think there's some conservative factors in there. But realistically, if you think about a person living there, in a hundred years from now or a thousands years from now, we're creating a risk that is unconscionable. We're saying, here, we can continue to dump the way we used to dump in 1965 and we don't want to change our practices because we haven't learned. Well, I think we have learned, and the only logical thing is, stop it! Don't license this facility, and build a new one. Other then that, I think I'm done for tonight. Thank you.

Mr. Don Segna.

Don Segna (75)
I'm Don Segna and my concern is that you guys have a job ____ everybody and I think everybody does have a viewpoint and you need to weigh those and obviously I've got my viewpoint and we've heard a lot of other people from both sides, and my feeling is that there is a present need for that site. For one indication there are 500,000 cancer patients a year that die, and what is bad about this whole thing is that most of them have gone through chemotherapy, and not only once, but usually three times, and about 30 percent of those patients died of the chemo versus the cancer. Now Fred Hutchinson Cancer Research Center discovered the use of medicalized targeted medical isotopes so you don't get it all over the whole body. Now I know most of you have heard this story many times, and I guess we have to keep repeating it because we're talking different entities here and that particular concept that they came up with, targeted isotopes to cancer, has now been in research since, when I first got involved in '92 and it's continued to be in research, and not one of the targeted concepts have yet been approved but they should be in the next couple of years and hopefully next year, the first one will get approved, and it's especially for a cancer that is growing quite rapidly, and that's non-Hodgkin's Lymphoma ____ cancer that you may get treated with chemo one year. I mean, get treated for it the first time. You may last a year to five years, but then once you treat it the second time, it's just a progressive nature because you get it again. Now what you need to look at is that you've got to weigh both sides. There's definitely a risk. There's a risk for building a road that we drive a car on. There's a risk of driving an SUV with Firestone tires on it, and all of those have got to be considered. That type of stuff has got to be considered. You cannot have no risk for one side and just let the other risk say, well I'm sorry about that. There's more people saying that you can't have this other risk, we'll allow this risk. You've got to weigh it to be fair to both sides, and that side, if there is needed for those people who produce medical isotopes for both diagnostics and for therapeutic use, and the diagnostics are used about 40,000 times a day in this country alone, and the diagnostic is a way to monitor, detect cancers that otherwise you wouldn't detect soon enough or you'd detect wrong. You give improper treatments as a result of not having these around, and now all of a sudden PET is on the market which now will even show you a function of the cancer. It goes to a cancer that is functioning and you can see it, with very small amounts. Now that PET uses extremely short like isotopes, like 18 hours. We're not worried about this thousand years for that, but there is some waste associated with it that we have to have a place, and it's also dangerous if you don't have a place, what are you going to do with it? You go in some hospitals in California and you'll see them stored under stairways. You've heard this, I'm assuming during the FFTF too, so I hate to keep repeating the same thing over again, but that is there and you need to go investigate that to make sure that you understand the risk to both sides, and I think with that, I'm going to close. Thank you.

Mr. Michael Contini.

Michael Contini (45)
Good evening. My name is Michael Contini. I'm a resident of Franklin County, Washington and a member of the Citizens for Medical Isotopes. Tonight I am speaking

as a private citizen and a cancer survivor. We need medical isotopes. I support the three actions stated in the Washington State Department of Ecology brief. I also support the concepts of covering the trenches as they are filled and the concept of future trenches being lined. These actions must be included in any license granted. There seems to be a great concern regarding the inclusion of FFTF low-level radioactive waste. The opponents to the proposed actions have not read the following statement from the Department of Ecology's brief. If US DOE proposes use of the US Ecology's site would need to notify the Northwest Compact. In addition, US DOE would need to obtain a site use permit from the Department of Ecology and the Department of Health would need to ensure US DOE waste met the site license requirements. This means that the FFTF low-level waste being deposited is a separate reviewable issue. The opposition is clearly using their dislike of anything FFTF to attempt to frustrate the legitimate disposal of natural occurring and accelerator produced wastes. Accelerator produced wastes would come from the processing and usage of accelerator produced medical isotopes. In a USA Today article by Patrick McMann, dated October 23 this year, page 3A, Part of America Northwest, Executive Director, Jerry Pollet, states he would support building a smaller accelerator instead of FFTF restart at Hanford that would make the same kind of isotopes. Mr. Pollet at one time said he would support FFTF if it did not produce weapons materials. He has obviously recanted. We want our cancer patients to believe in Heart of American Northwest and their friends. They say they support medical isotope production but their past and present actions speak louder. I ask the drafters of the DEIS to remember groups such as Columbia River Keeper, Heart of America Northwest, etc., have no accountability for their actions or statements. I see no signatures affixed to their junk sign study. I do not believe any statement that they subscribe to. Thank you for your time.

Mr. Harold Heacock.

Harold Heacock (16)
My name is Harold Heacock, Kennewick, WA, and I'm submitting this statement on behalf of Hanford communities. Hanford communities composed of the local governments immediately surrounding the Hanford Reservation, including four cities and counties, and a number of other governmental agencies. As such, communities are responsible for the health and safety of the residents and are also supported by technically qualified people who are analyzing and aware of the issues related to Hanford. Of ____ communities urge the state of Washington to move expeditiously, complete the environmental impact statement process for US Ecology low-level radioactive waste disposal facility. The facility has operated safely on the Hanford Reservation sine 1965 and serves an important function for this region. It provides a safe, reliable waste disposal option to accommodate waste from medical research and treatment as well as commercial operations. The site is centrally located for waste generators, including Energy Northwest as on average it receives on the average 7 inches of rainfall per year. Remotely located on the Hanford site imposes no risk to the general public and there are no nearby residents. _____ the test facility is restarted it would be ideal to have a waste disposal facility nearby that would dispose of waste without ever leaving the Hanford site. Waste surcharges of the disposal facility provide a

direct benefit to the region by providing revenue to ____ economic development fund that is used to stimulate the local economy. The Hanford communities support three pending actions that are evaluated in the EIS. The license to operate the commercial facility should be renewed. The Washington Administrative Code should be amended to establish a 100,000 cubic foot per year limit for defuse naturally occurring accelerator produced radioactive waste. The site _____ closure plan submitted by US Ecology should be approved. Closure standards and a cover design approved by state regulatory agencies will protect public health and the environment. A safe regulated facility with reasonable disposal costs is of great benefit to the region. It assures that low-level radioactive waste is not accumulated at medical or commercial facilities due to the lack of an appropriate disposal option. The Hanford communities appreciate the opportunity to comment on the actions that are evaluated in the EIS. Signed by Larry Heiler, Chairman.

Thank you. Mr. Daniel Lichtenwald.

Daniel Lichtenwald (19)
The following comments are given by Daniel Lichtenwald, PO Box 1200, Goldendale, WA, on behalf of the Columbia Gorge Audubon Society, in reply to the Washington State Departments of Health and Ecology draft EIS for an existing commercial radioactive waste site operated by US Ecology Inc., at the US DOE's Hanford Reservation. The comments were given at a public hearing at White Salmon, WA, at 14 November 2000. This proposal amounts to further weakening the already inadequate standards at the commercial waste site for protecting all of the inhabitants of eastern Washington in the air, land, and water in which all life in the region depends. The commercial dump, which USE operates by agreement with the state of Washington for the deposit of hazardous toxic nuclear waste has coasted outside of the standards for monitoring and leachate control that apply to similar sites at Hanford. By the state of Washington's own conscionable acquiescence and the operator's priorities, precedences have been made outside of agency and public review for the acceptance of waste from the USDOE enterprise of weapons and labs and even from foreign sources transported by air. Following on the heals of these failures and inconsistencies with the priorities of health and safety, it is now asked that the annual intake of the dump be doubled, that the operator's license for continued bad operation of the site be renewed for five years, and that a plan to close the site in 56 years be approved. On the face of it then, our state agencies suggest that there will be half a century of further intake at double the past rate of nuclear toxic waste at a facility that is inadequately monitored and where leachate is not controlled. Those agencies leave the door open for acceptance of waste from sources far afield, doubling the level of radioactive waste, cruising the highways and byways, and even the skies of eastern Washington. This is deplorable. For it shows that our own state agencies take an approach to eastern Washington that would be more recognizable when a waste entrepreneur is making a deal with a dictator for deposit of toxic trash in a Third World country. The DEIS fails to address cumulative risks for cancer arising from all conditions at the site. It selectively segments that's the Hanford site. It selectively segments components of the proposal and doesn't consider the realistic total impact of what exists and what will be at the site.

The DEIS fails to confirm the state's policy to not accept US DOE wastes, including FFTF reactor and plutonium processing radioactive waste in shipments from other US DOE weapon sites and labs, and in that respect it also fails to consider the types and effects of these wastes in future scenarios. The DEIS abnegates the state's humanitarian and treaty responsibilities by effectively accepting certain increased cancer rates to be born by Native Americans. This is similar to our foreign policy with respect to devastation of Iraqi youth. We think the price is worth it. The DEIS is not worthy of the state of Washington citizens and is not in their interests. Governor Locke and the departments of Health and of Ecology need to rewrite this one.

Ms. Laurel Piippo.

Laurel Piipo (68)
My name is Laurel Piippo. If it looks wrong, it's right. I live in Richland, WA. I've lived there since 1951. There are now 13 Piipos in the family and only one of them has had a problem with cancer. At the Hood River ____ hearings I brought three of my friends and one of them is 88 years old. She lived in Richland since the 1940s with her husband, four children born and brought up there. They have a home on the river and those children played in the river. They grew up and married and she now has 18 grandchildren and 13 great grandchildren, none of who have cancer. You're approaching this from a very localized point of view, I think. Believe it or not cancer exists in Massachusetts. One of my friends wrote to me from Massachusetts telling about six of her various friends and neighbors who had one form of cancer or another. It sounded like they had ____. So cancer does exist some place other than in Washington State. Now, at the Hood River hearing I had some statistics from the American Cancer Society whom the anti-nuke people don't seem to believe. There's a higher incidence of cancer in Hood River County then there is in Benton County where Hanford is. So if you want to have a better, safer environment, you'd better move to Benton County. Now the waste dump out at Hanford, as I understand it, is about 20 miles away from any residential area and I wouldn't be living there with my grandchildren if I perceived it to be a threat. A young lady asked, why are we even considering licensing this waste dump? Well I have a few reasons. I'm a three-time cancer survivor and the first time I came to _____ I had a red tee shirt made. It said, Stop, Cut Slash Burn on the front, and on the back it said, Stop, FFTF, Medical Isotopes. FFTF seems to be an issue in this hearing and I _____ I hope you license the waste disposal facility. I think you should definitely line the trenches and do this cover because I had three major concerns, which I wish we all shared. One is, clean up Hanford. We all know it's a godawful mess, and the government doesn't seem to do a terribly efficient job of cleaning it up. The second is protect our beautiful river, and if it takes putting cover or whatever it is, we all love the beautiful river. We want it to be safe, and you talked about playing in the river, my kids did and their children have. We ate salmon for years and as I say, one out of 13 of us got cancer. I don't like statistics. I'm not a scientist. I taught high school English for 22 years and I sold ____ for 23 years. I'm not a scientist and I'll probably ____ the statistics. But it's my understanding that 40 percent of the people in the United States at some time in their lives will get cancer. I noticed you love the word unconscionable. It is absolutely unconscionable that you should oppose opening a facility that will ____

medical isotopes for a much less agonizing cure of cancer then the current methods. I've had them all, slash burn poison. Slash burning many surgeries; breast cancer twice on the same side, lung cancer once, and also got that kind you get from the sun on your nose. It's not life threatening but if you don't do something, your nose rots off. But I never thought about waste until these hearings came along. I mean, when they cut off my breast I didn't think about where did they toss it. When I had all the bandages and needles and a catheter inserted my chest to administer the poison, the chemotherapy and the thing had to be clean, changed, once a week, I never thought about where the waste was going. When the surgeon skewered my lung and removed it by stabbing me in the back and cutting around, I never wondered what did he do with that lung, but since you're concerned with waste, a major concern why we need this waste disposal is hospital waste. There is all kinds of it and where do you want it? At the parking at Safeway, under the stairway? I never thought about where my 18 cancerous lymph glands were floating around, which I hope they're not. You have to have a contained monitored place for medical waste from hospitals, from universities.

About 30 more seconds.

Oh, I'm just getting wound up.

Well, about 30 more seconds.

I mean other people run off at the mouth, why not me. At least you can hear me, I think. But the side effects, the reason I'm here is for your benefit. Why are we even thinking about FFTF? These are the diseases that medical isotopes can treat. I know that medical isotopes relieve pain from bone cancer. I don't know about rape. A young woman 26 died of brain cancer. Guess what, she lived in Seattle and people brush off, oh, tri-cities. Of course they get cancer. Everybody gets cancer in the Tri-Cities. No we don't. Everybody in Hood River gets it. Also medical isotopes treat thyroid. That is being done successfully on several kinds of thyroid. Prostate. Guys, think about prostate. If there's anything guys can't stand it's prostate cancer. Well you can have surgery where I don't know what they cut off, but I'm sure you'd miss it if they did. Or they can use radiation so that you'll be incontinent and impotent, or you can have a medical isotope. Oh no, medical isotopes. Don't open FFTF. It'll produce as much waste as two universities, according to a scientist, but I know you don't trust scientists. You trust your Heartless of America out there, and I hope that any of you who get cancer or have somebody you love gets cancer, get up in the morning and look in the mirror and say, I did everything I could to prevent a kinder, gentler treatment of cancer. I'm going to read you one more thing. A friend of mine in Richland, he was junior high school teacher for 40 years, and I suppose cancer germs walked it over and got him right between the legs. He says, let's hope Pollet and his anti-Hanford buddies in Seattle never have to hope there's a source for radioactive seeds if they are facing prostate cancer as I did last summer. My radiation oncologist told me she had to get her supply of isotopes from France. See, we import 90 percent of the isotopes we need from Russia and Canada and South Africa. We could be producing them right at Hanford with a minimal amount of waste, which is going to be taken care of by a company that's been in business 35

years. She has never been able to understand why the Heartless of America Northwest is so opposed to the FFTF, a state of the art facility that can produce medical isotopes in this country without burn slash poison, that's the reason.

Thank you.

Ms. Rebecca Stonestreet.

Rebecca Stonestreet (76)
My name is Rebecca Stonestreet, and I represent myself and the Earth. I asked the state of Washington representatives here about the benefits of this relicensing and I proposed one benefit as money and I don't think I really got any other kind of benefits. I believe there was something to do with laws that you have to dump somewhere. The isotope thing I think is a different issue. Again, I'm kind of ignorant about this whole thing but I think that that's a different thing that's going to be produced at the site. We're talking about things going to be coming in to this site, so the isotope thing, I'm going to say for now is not a benefit for what I think the issue we have going on here. I hope I'm right on that, but anyway, what I do is I try to say, okay, were there benefits? Are there benefits? And you know, you come from a government kind of thing and they're kind of money oriented. Where I believe in my heart that organizations such as the Columbia River Keeper and the Heart of America Northwest come from the heart. They go beyond just money. They go beyond just the face value and they look at generations to come. And you know what, that's what we've got to start doing here. Generations to come, okay. So, what I ask, plead, beg, and threaten the state of Washington to do is to not relicense and if you can't do that, then I ask you to ban the proposed additional import and disposal of 100,000 cubic feet of NARM radioactive waste per year. I ask you, plead, beg, and threaten to ban, to require a full investigation and cleanup of the hazardous waste leaking from the site before relicensing the site. That would probably be a really good thing to do. And the last thing is end the practice of dumping radioactive waste into unlined trenches. We're talking about people here. Thank you.

Kathy Carlson.

Kathy Carlson (44)
Hi, my name is Kathy Carlson and I'm here tonight representing my family. I'm a grandmother and I hope there's something left for my great grandchildren by the time we get done. Today on the way over here, just before I came over here, I heard on NPR radio, they said that DOE released a report today saying that the response to the fire that they had in Hanford last summer was delayed by five hours because DOE inadvertently thought that there had been some radioactive release of contamination and so they didn't send the firefighters out there for an extra five hours, so I thought that was pretty interesting, pretty scary. I have a little article here that says, this is August 8, The Oregonian. It says, Hanford will never be clean, the study says. The report was prepared by the National Research Council, which is an offshoot of the National Academy of Science and the National Academy of Engineering. It provides scientific and technical advice under a congressional charter, and what it said was that the sites

will never be clean. The DOE ordered this study and it goes on to say that all the technology that we have today will eventually fail. It's just not going to take care of it. So, I really don't think that we should create or accept anymore waste and that we should close this – that they should not renew the licensing to this. We can see how close we've come to disaster, like this summer at Los Alamos. I read a minute-by-minute description of what happened there and they said that the scientists went into the underground, whatever they have there, and there was 16 of them and a blind dog. The man had gone home and got his old dog and took him in there, and they said when they closed the door they didn't expect to come out because the fire was headed in that direction and there was tons of plutonium there. Three times they said, one ounce was enough to wipe out the city of Denver, so I know what three tons would do, but that's what was stored in that dump there. We didn't even talk about that here, but at the last minute – in two hours they expected to be dead. When they came out the wind had shifted five degrees and that's what kept that facility from burning up and they talked about the fires roaring at locomotion speeds down through those valleys – I didn't know I was going to get so emotional but I just can't see how we can possibly create and keep accepting and pretending that this isn't going to kill every living thing on this earth. We can't keep creating more of it.

Robin Klein.

Robin Klein (18)
My name is Robin Klein. I'm with Hanford Action of Oregon and I apologize, I don't have a big voice but I'm going to try. I want to say that, first, I don't see that this is – that we're really meeting here to discuss the virtues of medical isotopes, and that's not what I wanted to discuss. I came here to discuss the acceptance of additional waste to this site, and I have to say – you know, you have to ask, what are we doing even considering accepting additional or new waste to this site that we all know is – the cliché – it's the most contaminated land mass in the western hemisphere. It's sounding like a cliché, but it's real and it's got a long history of being grossly mismanaged. I don't think anybody on any side would argue that, and we are considering bringing in new waste. New wastes that are not associated with the cleanup of this site, and so I think this goes back to the principles – the very basic principles and policies and common sense that have been iterated and reiterated to the state, to the agencies, over and over again. There are no new wastes to be accepted at the Hanford site or in that vicinity. We can talk about cumulative impacts. We know they're not considered. We can talk about models and speculate on dosages, and those are all in dispute and they're always going to be in dispute, and risks and virtues of medical isotopes and not having medical isotopes, but that's not what this is about. This is on principle and until that site is under control, we'll never know the full impacts of synergistic and cumulative – the way these things add up. We're always going to be debating it, so my comments are simple tonight, and on behalf of my organization in Oregon, which is affected, it's potentially affected by the greater side, part of the greater ecosystem, we urge you not to accept any new additional wastes to this disposal site. Thank you.

Barry Preston. Or is a Marg Preston? Is there anyone else who wishes to testify who's not had the opportunity to do so? Yes sir. State your name please. Come on up.

Scott Bergeron (41)
My name is Scott Bergeron. I didn't know I was going to get a chance to speak. I have a lot of compassion with what this woman said about suffering from cancer. I imagine that is a terrible, terrible experience and to have the hope of a new medicine which can lessen pain and save lives is very worthwhile, it's a very powerful thing. I can only speak for myself. If I was in a position to – in a similar position where maybe I'm about – I have a terminal disease and the doctor holds up to me, I can save you, but my saving you is going to cause the pain and suffering of who knows how many people down the road. We know Hanford's leaking. We know there are poisons coming into the Columbia River. Like the gentleman said before, this is only the headway of what's following behind it. We know that it's been mismanaged. We know that there are trenches without linings in there. When you talk about bringing in more of these chemicals which, how do we know if they're going to leach? Finding a place to store stuff is important. We've got to have medical waste, we do. I've had operations myself. They throw bones away, it's got to go somewhere, but I would never accept taking a cure or a lesser of pain knowing that other people or other animals are going to suffer. It's not worth it to me. Whatever you do to the least of my brothers that you do unto me, and that to me means everything; the fish, the trees, the plants, the water, and I'm not going to poison it just so I might have less suffering. That's not a fair trade, so I suggest that you do not relicense this. I would suggest maybe we could look into building a new plant that's high-tech and will contain these things until alternative cures can be found. I think there are a lot of alternative cures out there that people aren't exploring because the AMA and the Medical Society focuses people's attention onto this one area and they don't really share knowledge that is global and world-wide, and in fact, universal. There are other ways to treat diseases and they're coming out all the time. So I'll just leave it at that. It wouldn't be a fair trade to me. I would not take a cure knowing that someone else or something else is going to suffer in my place, and I think we should not relicense and maybe look into building a new one, a new plant. Thanks.

Is there anyone else who would like to testify who's not had an opportunity to do so? If not, I thank you all very much for your time. Yes sir. We'll give you five minutes, but I'm going to cut you off after five minutes.

You are?

Yes sir.

Commenter Not Identified
I wanted to read from the RCRA facility investigation put out August '99, page 312, talking about radionuclides. While each radionuclide screened above is anthropogenic, not naturally occurring, each appears in samples that were taken at least 30 feet below the original ground surface, where presumably the soils have not been exposed to impacts of past Hanford site operations. And even if they release from the US Ecology

trenches is postulated, the chemical trench is not known to have contained radioactive constituents. They're talking specifically about the chemical trenches. Moreover, the deep distribution pattern of the respective concentrations is inconsistent to the two radionuclides discussed above, and the two radionuclides they're talking about are plutonium and strontium 90. Plutonium 239/240, I believe. So the pattern is neither uniform as would be expected of background values, nor is it indicative of a release, especially when the respective soil retardation factors are considered. In other words, it doesn't fit the model so therefore it can't be. I guess I want to know where they came up with the statement here in the errata sheet? Do you have a copy of that by any chance? Okay, they're talking about the TCE and the radionuclides that were detected, and it says, US Ecology investigation also provided data on ground water below the commercial radioactive waste site. Radionuclides detected include gross alpha, beta, tritium, cobalt, tech-99 and Pu-239/240. In general, the ground water results from the US Ecology investigation show the concentrations for some of the radionuclides and hazardous substances are higher in upgradient wells then in downgradient wells, indicating the source is at least partly from activities elsewhere in Hanford. So what does that mean? Does that mean you're going to ignore the radionuclides, or what was it planned to do about that in this EIS?

Mr. Brodeur, I understand that you're free to ask questions that will be on the record, but the department representatives are not going to be answering them on the record. So if you want to get your question on the record, that's fine, but it's my understanding they won't be answering those questions on the record.

John Brodeur (5)
How come we don't record the answers? Isn't it a question/answer period?

The understanding I have is that the testimony that people have come to give is what is considered part of the record and what is recorded, and people are certainly free to provide…

State officials don't want their answers to be on the record because _____? (inaudible)

(inaudible)

Fine. In 1985, a letter from the Department of Ecology to US Ecology designated the residents' tanks as extremely hazardous per WAC 173-303. In that letter they requested specific information on the tanks, what was in them. They requested a sampling plan. They also requested a sampling of the soils around the tanks in a statistically relevant manner - statistically relevant for sampling data. In other words, nature and extent of contamination that was released from the tanks, those resin tanks now. Now also they have out there these caissons. That wasn't discussed in there in the EIS. In the caissons they released free liquid out at the low-level burial grounds, in addition to all of the liquid that was released in the 55-gallon drums that were placed out there roughly 25 percent was wet reactor waste for 1978-1980, was all disposed of 55-gallon drums,

which I'm assuming was a fission product or liquid contaminated with fission product and _____ product. Again, the point is that we've got relatively good information that there was plutonium released at the site in liquid form. It was bound with organics. We've got it in the ground water and then the conclusion of the Department of Ecology in the EIS is that, well basically they're attributing it to off-site to another site, and I guess in this case two and two just doesn't add up, and until you can demonstrate that you know where that contamination came from – for instance, the TCE. I looked at the ground water data and tried to determine if there was a path from the WEPs area over to that TCE and clearly it wasn't there. We know it's released there. It was released at the low-level burial grounds. We found it in the vadose zone and we found it in the ground water. So I think that's pretty conclusive evidence that in fact the ground water has been impacted by the waste site. So, this has not been taken into account in the risk assessment. It hasn't been considered in the hydrogeo study which was extremely simplistic, and well essentially what – a quarter of a mile away we've got the ERTA facility, the line, specially designed lined facility to handle low-level waste in a proper manner. I mean, I'm different from a lot of people in the room, and I strongly believe that we have to have a low-level waste disposal facility, but not this one, not an unlined disposal facility when we've got adequate geologic evidence and contamination evidence that an unlined facility is not adequate in this area, especially considering the geology. I think the EIS is bias and what you're main job in the EIS is to identify the uncertainties, identify the potential problems and do a sensitivity analysis to try to understand what potential impact those problems could have. That's the whole purpose of the risk assessment and sensitivity analysis is all about. I don't see that in this EIS. You need to do this so that you can properly put the value decision in the hands of the public and so that they understand what the value decision is here, and evaluate the – produce a proper value decision by balancing the potential environmental risks against the need for a low-level waste disposal facility.

Can you take another 30 seconds?

Okay. Back in the – from the 40s to the 60s, we made a lot of mistakes in disposing of our radioactive waste out there in an effort to win World War II and the Cold War. My concern is that we don't seem to have learned anything and a relicensing of an unlined facility, we're making the same mistakes all over again, albeit low-level waste, but it's still the same thing. So I guess that's all I've got.

I have the written statements of three individuals. If anyone else would like to provide written statements, I'll make sure that they get forwarded, otherwise you do have until November 30 to mail your written comments in. My thanks to each of you for coming and for your sincere and well thought out comments. We stand adjourned.