



(Notation Vote)

October 30, 1998

SECY-98-251

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FOR:	The Commissioners
FROM:	William D. Travers
	Executive Director for Operations

SUBJECT: DECOMMISSIONING CRITERIA FOR WEST VALLEY

PURPOSE:

To request Commission approval on proceeding with proposed decommissioning criteria for the West Valley Demonstration Project (WVDP) and West Valley site and to inform the Commission of potential alternatives that may be necessary to ensure acceptable long-term control and care of the site.

SUMMARY:

The U.S. Nuclear Regulatory Commission's (NRC's) responsibilities under the WVDP Act include prescribing decontamination and decommissioning criteria for the U.S. Department of Energy (DOE). NRC's proposed decommissioning criteria will be a significant component of an environmental impact statement (EIS) being prepared jointly by DOE and the New York State Energy Research and Development Administration (NYSERDA) for decommissioning and closure of the site. NRC can also use the EIS to support its selection of criteria in accordance with the National Environmental Policy Act (NEPA). The staff is proposing decommissioning criteria, DOE and NYSERDA can consider the environmental impacts associated with attainment of the criteria and complete the EIS. Meeting these proposed criteria may require the removal and offsite disposal of large quantities of high-activity wastes, and that action may be difficult due to high cost and lack of access to offsite disposal capacity. For this reason, DOE/NYSERDA may consider leaving the wastes onsite under indefinite institutional control. Therefore, this paper also presents three regulatory alternatives, regarding long-term control of the site, that may need to be addressed in light of the proposed criteria described in this paper.

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BACKGROUND:

The West Valley site, the only commercial spent fuel reprocessing plant in the U.S., was licensed by NRC, and its predecessor agency, from 1966 until 1980, when the license was suspended to execute the 1980 WVDP Act. The WVDP Act authorizes DOE, in cooperation with NYSERDA, the owner of the site and the holder of the suspended NRC license, to carry out a liquid-high-level waste (HLW) management demonstration project that includes decommissioning of the HLW facilities. The status of the site was last described to the Commission in SECY-88-259, dated September 13, 1988. Although NRC suspended the license covering the site until completion of the WVDP, NRC has certain responsibilities, under the WVDP Act, that include prescribing decontamination and decommissioning criteria.¹ Further details of the legislative, legal, and regulatory history of the site are provided in Attachment 1.

The WVDP is currently removing liquid HLW from underground HLW tanks at the site, vitrifying it, and storing it onsite for eventual offsite disposal in the Federal repository. The vitrification operations are nearing completion. In addition to the vitrified HLW, the WVDP operations have also produced large quantities of low-level waste (LLW) and transuranic waste which, under the Act, must be disposed of in accordance with applicable licensing requirements. Elesides the HLW at the site, the historical spent fuel reprocessing and waste disposal operations resulted in large quantities of a full range of buried radioactive wastes and structural and environmental contamination at the site. Further details of the wastes at the site are provided in Attachment 2.

In 1989, DOE and NYSERDA began to develop a joint EIS for project completion and site closure, and to evaluate waste disposal and decommissioning alternatives. Because the WVDP Act requires NRC to prescribe decommissioning criteria for the project, NRC and DOE agreed on NRC's participation as a cooperating agency on the EIS, with DOE and NYSERDA, to aid NRC in its decision on decommissioning requirements. NRC staff raised many significant issues in comments on the draft EIS published in 1996. Further details of the draft EIS, which include potential costs and doses for the various alternatives, as well as the general NRC comments, are provided in Attachment 3.

After public review of the draft EIS, the WVDP convened a Citizen's Task Force (CTF) in early 1997 (in a process similar to Site-Specific Advisory Boards required under Subpart E of Part 20) to obtain stakeholder input on the EIS. The CTF recommendations for the preferred alternative in the EIS were completed in July 1998. The CTF generally does not believe the West Valley site is suitable for long-term isolation of the waste already at the site and, therefore, favors

¹ Under the WVDP Act, NRC's responsibility to prescribe requirements applies only to DOE's decontamination and decommissioning activities. However, NRC, DOE, and NYSERDA have long favored addressing environmental impacts on a site-wide basis. Therefore, the EIS, the decommissioning criteria, and long-term control alternatives discussed in this paper cover both DOE's completion of the project and NYSERDA's closure of the site. In addition, it is anticipated that, after DOE's completion of the WVDP, the NRC license would be reinstated and NRC decommissioning criteria would therefore apply to those portions of the site under NRC licensure.

disposal of the waste offsite at suitable and safe disposal facilities. Further details of the CTF process and a copy of the CTF recommendations are provided in Attachment 4.

DISCUSSION:

The staff has been involved in the West Valley joint EIS process from the beginning. This involvement includes participating in the CTF meetings to learn what is important to the local stakeholders. For the EIS to progress, NRC needs to provide proposed decommissioning criteria. Once this proposal is provided, DOE and NYSERDA can proceed with considering the environmental impacts and alternatives for site decommissioning and closure under the NEPA process, and developing a revised preferred alternative in a supplement to the draft EIS. This supplement is scheduled for release in July 1999.

Proposed Process for Establishing Decommissioning Criteria

The WVDP Act requires NRC to prescribe decontamination and decommissioning requirements for the WVDP. To do this the staff plans, with Commission approval, to propose the decommissioning criteria in this paper to DOE/NYSERDA. It is intended that DOE/NYSERDA will evaluate decommissioning and closure of the site, using the proposed criteria, and indicate a preferred alternative, in a supplement to their draft EIS that will be provided to the public for comment.

After DOE/NYSERDA considers the public comments on the supplement they will issue the final EIS and Record of Decision including the preferred alternative. If staff agrees that the preferred alternative conforms to the proposed decommissioning criteria and is adequately protective of the public health and safety and the environment, staff will seek Commission approval to prescribe the decommissioning criteria (by adjudication or by rulemaking) as the decommissioning criteria for the WVDP and thus fulfill NRC obligations under the WVDP Act. If the DOE/NYSERDA preferred alternative does not conform to the proposed decommissioning criteria, or if DOE/NYSERDA propose alternative criteria, then the staff will recommend an approach for approval by the Commission.

Decommissioning Criteria

The term "decommissioning criteria" is used broadly here to include criteria for potential waste disposal at the West Valley site. This discussion also assumes that some waste currently being stored or produced at the site (i.e., spent fuel in storage and vitrified HLW) will be removed and disposed of offsite, in accordance with the WVDP Act, and that no criteria are needed for such waste. Also, immediately adjacent to the project premises is a State-licensed pre-10 CFR Part 61 LLW disposal site called the State-Licensed Disposal Area (SDA). The SDA contains a large volume of LLW, including elevated concentrations of long-lived radionuclides such as transuranics. Because the SDA is not part of the WVDP, the prescription of decommissioning criteria, and other issues discussed in this paper, do not consider that area. However, the impacts from the SDA are considered in the site-wide EIS. In addition, it is assumed that all worker exposures and effluent releases during decommissioning will be constrained by existing operational limits.

In considering guidelines for the decommissioning criteria for West Valley, the staff evaluated NRC's precedents for disposal of similar wastes and decommissioning of other civilian and defense nuclear facilities. These precedents include: NRC's 1987 letter to DOE/NYSERDA, focusing on disposal of supernatant wastes at West Valley (Attachment 5); NRC's 1993 position on incidental waste, as applied to waste removed from HLW tanks at Hanford (Attachment 6); NRC's proposed approach to waste classification for closure of HLW tanks at Savannah River, contained in a memorandum to the Commission dated September 13, 1996; the performance objectives of 10 CFR Part 61; and NRC's License Termination Rule in 10 CFR Part 20, Subpart E. In addition, U.S. Environmental Protection Agency's (EPA's) standards in 40 CFR Part 191 may constrain the options for dealing with any residual HLW in the tanks or residual spent nuclear fuel² at the site.

Proposed Decommissioning Criteria

Based on these precedents, the staff proposes to inform DOE and NYSERDA that they should use NRC's License Termination Rule criteria as proposed decommissioning criteria for the completion of that portion of the EIS that covers areas of residual waste or the closure of existing waste disposal areas. The principles reflected in these proposed criteria would include:

- Dose to the average member of the critical group does not exceed 25 mrem/yr and is as low as is reasonably achievable (ALARA), for unrestricted use.
- Dose to the average member of the critical group does not exceed 25 mrem/yr and ALARA, for restricted use, with institutional controls in place.
- There is an allowance for institutional controls for up to 1000 years³.
- Dose to the average member of the critical group does not exceed either 100 or 500 mrem/yr and is ALARA, assuming institutional controls fail.

For any onsite disposal of liquid supernate waste removed from the HLW tanks and solidified or any material remaining in the HLW tanks after closure, the staff plans to inform DOE and NYSERDA that they should use the criteria (i.e., incidental waste criteria) described in the March 2, 1993, letter from R. Bernero, NRC, to J. Lytle, DOE (Attachment 6) as the proposed criteria for the completion of the EIS. These proposed criteria would include that the waste:

- Has been processed (or will be further processed) to remove key radionuclides, to the maximum extent that is technically and economically practical;
- · Will be incorporated in a solid physical form at a concentration that does not exceed

³Although 10 CFR Part 61 limits reliance on institutional controls, the Commission subsequently allowed reliance on such controls for up to 1000 years in the Statement of Considerations for the Final Rule on Radiological Criteria for License Termination (62 FR 39058), Section B.3.3.

²There is spent nuclear fuel at the site not only in the spent fuel pool (which DOE has committed to remove from the site), but also, as residual contamination, in the former reprocessing building, as well as buried waste, in the NRC-licensed disposal area portion of the site.

the applicable concentration limits for Class C low-level waste as set out in 10 CFR Part 61;

 Will be managed, pursuant to the Atomic Energy Act, so that safety requirements comparable to the performance objectives set out in 10 CFR Part 61 are satisfied.

For other stored project wastes, any onsite disposal of that waste will meet the performance objectives of Part 61 (see Attachment 5). The EIS will evaluate the potential impacts of various decommissioning alternatives, and is expected to support NRC's selection and prescription of decommissioning criteria for WVDP completion and site closure. NRC staff plans to rely on the results of the EIS to recommend for Commission consideration final decommissioning criteria for WVDP depart from any of the proposed criteria described in this paper to complete the EIS, the EIS will need to show scme justification such as that adherence to the proposed criteria would cause more human or environmental harm than good or be prohibitively expensive/technically infeasible, and that any alternative criteria chosen demonstrate a sufficient level of protection of human health and safety and the environment, reflect a reasonable balance of costs and benefits, and represent a viable approach.

The final EIS is expected to consider a complete range of decommissioning and closure alternatives and their associated impacts. Consideration of options for the Commission's prescription of decommissioning criteria will be better informed by the EIS. However, at this time the staff has identified several potential implications of these proposed criteria. The proposed criteria are compatible with the regulations and guidance produced by NRC under the authority of the Atomic Energy Act of 1954, as amended. Their application could also be interpreted as being consistent with the CTF recommendations if they resulted in safe offsite disposal of most of the radioactive waste and contamination (see Attachment 4). This approach is also generally consistent with the dose limits in DOE's proposed draft regulations in 10 CFR Part 834, "Radiation Protection of the Public and the Environment," dated March 3, 1997.

However, assumption of the eventual failure of institutional controls, under Parts 20 and 61, runs counter to the assumption, made by DOE/NYSERDA in the draft EIS, of an unlimited institutional control period, which is allowed by draft Part 834. Because of long-term erosion and source-term release problems at the West Valley site, applying the NRC assumption of time-limited institutional control will likely make all alternatives, in the draft EIS, that leave residual and stored wastes onsite, nonviable under the proposed decommissioning criteria, and might require a long and costly (possibly prohibitively expensive) remediation (see Table 1 of Attachment 3 for preliminary DOE/NYSERDA estimates of the potential costs of remediation). Besides cost, offsite removal of significant amounts of waste may be difficult to implement because of lack of access to offsite waste disposal. Relocating the radioactive waste offsite may be controversial and may substantially delay site decommissioning and closure.

Potential Alternatives for Long-Term Control of the Site

Most of the alternatives in the draft EIS rely on long-term control of the site in order to meet decommissioning criteria. Therefore, it is possible that DOE/NYSERDA may choose a preferred decommissioning alternative in the EIS that requires extended reliance on institutional controls. In anticipation, the staff has identified the following regulatory alternatives for potential long-term control of the site:

- Issuance of a license, for an extended period of time, similar to the SAFSTOR concept of reactor decommissioning or the extended interim storage concept of LLW, until such time as the hazard is removed from the site (could exceed 100 years).
- Seek new legislative authority to allow implementation of the decommissioning alternative justified by DOE/NYSERDA as a means for protecting the public and environment (similar to DOE's proposed requirements in Part 834).
- 3) As a last resort, adopt a strategy, as outlined in NRC's Strategic Plan for fiscal years 1997-2002 (NUREG-1614, Vol. 1), of transferring the regulation of decommissioning to EPA if there is no workable remedy under NRC's authority. EPA's authorization under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, §121(c), includes allowing long-term control remedies at contaminated sites (e.g., the Maxey Flats LLW disposal site).

If DOE/NYSERDA's preferred alternative relies on long-term institutional control, NRC may have to evaluate one of, or some combination of, the above alternatives, or some other alternative for the long-term control of the site. The staff will keep the Commission apprised of staff's participation in the West Valley process and will return to the Commission, on completion of the West Valley EIS, for approval of an approach for prescribing decommissioning requirements.

RECOMMENDATION:

The staff recommends that the Commission:

- 1. Approve of the approach described in this paper, for providing DOE and NYSERDA with proposed criteria for decommissioning the WVDP and West Valley site.
- Note the potential alternatives for long-term control of the site.
- 3. Note that NRC action to actually prescribe the decommissioning requirements in accordance with the WVDP Act will take place at a later date, after completion of the EIS process.

COORDINATION:

The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections. The Office of the General Counsel has reviewed this Commission Paper for legal implications and has no legal objection.

William D. Fravers Executive Director for Operations

Attachments:

- 1. West Valley Legislative, Legal, and Regulatory History
- 2. Background on Radioactive Waste at West Valley
- 3. Details of the West Valley EIS
- 4. Details of the West Valley Citizen's Task Force
- 5. Ltr to W. Bixby, DOE, from M. Knapp, NRC, dtd 8/18/87
- 6. Ltr to J. Lytle, DOE, from R. Bernero, NRC, dtd 3/9/93

Commissioners' completed vote sheets/comments should be provided directly to the Office of the Secretary by COB <u>Tuesday</u>, November 17, 1998.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT November 9, 1998, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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WEST VALLEY LEGISLATIVE, LEGAL, AND REGULATORY HISTORY

1. INTRODUCTION

From 1966 to 1972, under an Atomic Energy Commission 10 CFR Part 50 license, Nuclear Fuel Services (NFS) reprocessed 640 metric tons of spent fuel at its West Valley, New York, facility. In 1972, the facility shut down, for modifications, to increase its seismic stability and expand capacity. In 1976, without restarting the operation, NFS withdrew from the reprocessing business and returned control of the facilities to the site owner, the New York State Energy Research and Development Authority (NYSERDA). The reprocessing resulted in 600,000 gallons of liquid high-level waste (HLW), stored below ground in HLW tanks, and other radioactive wastes and residual radioactive contamination, as described in Attachment 2.

2. WEST VALLEY DEMONSTRATION PROJECT ACT

In 1980, Congress passed the West Valley Demonstration Project (WVDP) Act, PL 96-368, to authorize the U.S. Department of Energy (DOE) to carry out a liquid HLW management demonstration project at the site. Therefore, the facility's license was amended in 1981 to give DOE exclusive possession of the central portion of the site containing the buildings and facilities, known as the project premises, and to suspend the Part 50 license until the WVDP was completed.

The WVDP Act directs DOE to solidify, transport, and dispose of the HLW at the site. It also directs DOE to dispose of low-level waste (LLW) and transuranic waste produced by the WVDP, in accordance with applicable licensing requirements, and decontaminate and decommission facilities used for the WVDP, in accordance with requirements prescribed by the U.S. Nuclear Regulatory Commission (NRC). NYSERDA is responsible for site facilities and areas outside the scope of the WVDP Act.

3. MEMORANDUM OF UNDERSTANDING

The WVDP Act directed DOE and NRC to enter into an agreement to establish arrangements for NRC's informal review of, and consultation on, the project. On September 23, 1981, NRC entered into a Memorandum of Understanding (MOU) with DOE on the basic policy guidelines and mechanisms for coordinating the informal review and consultation between NRC and DOE. The MOU also established an NRC monitoring program for onsite evaluations of project activities. Currently the NRC monitoring visits occur three times per year.

4. STIPULATION OF COMPROMISE

After DOE and NYSERDA began operating the site in 1980, they began onsite disposal of LLW. This action resulted in litigation by the Coalition on West Valley Nuclear Wastes and the Radioactive Waste Campaign. As a result of this litigation, DOE agreed to a settlement called the Stipulation of Compromise, in 1987. The Stipulation of Compromise includes an agreement that DOE initiate a site closure environmental impact statement (EIS) process and designates certain items to be within the scope of the EIS, including onsite LLW disposal. Further details of the EIS, including NRC's involvement (NRC was not a party to the Stipulation of Compromise), are provided in Attachment 3 of this Commission Paper.

Attachment 1

BACKGROUND ON RADIOACTIVE WASTE AT WEST VALLEY AFTER VITRIFICATION OPERATIONS

1. INTRODUCTION

A description of the wastes in each Waste Management Area (WMA) identified in the draft environmental impact statement (EIS) is attached. Background information on certain WMAs and on certain types of waste at the site are provided below.

2. SPENT NUCLEAR FUEL

Spent nuclear fuel (SNF) in fuel assemblies that were accepted at the facility during operations, but never reprocessed, is currently being stored in a spent-fuel pool. The U.S. Department of Energy (DOE) has taken title to this SNF and has committed to removing it from the site and will dispose of it in the Federal repository. SNF also exists in the former process building in the form of fine particles or possibly as sheared pieces of fuel assemblies. SNF that was damaged in such a way that it could not be reprocessed was also disposed of in a U.S. Nuclear Regulatory Commission (NRC)-licensed disposal area (NDA) (see below, under previous disposals) by the original licensee, Nuclear Fuel Services (NFS). Spent fuel hulls, that contain residual amounts of SNF, and other irradiated and contaminated fuel structural hardware, were disposed of in the NDA and possibly remain in the process building. Spent fuel hulls and hardware fall under the classification of incidental waste, as discussed in the promulgation of 10 CFR Part 50, Appendix F (34 <u>FR</u> 8712).

3. HIGH-LEVEL WASTE

There is liquid high-level waste (HLW) in four (two 750,000-gallon and two 13,500-gallon capacity) underground tanks at West Valley. The majority of the approximately 600,000 gallons of liquid HLW in these tanks is being incorporated into glass through the vitrification program and will be disposed of as HLW in the repository. Attached to the bottom of the large tanks is a steel grid structure that will make it somewhat difficult to completely remove all of the HLW from the tanks. Therefore, it is assumed that 3 percent (or about 400,000 Ci of Cesium-137, 200,000 Ci of Strontium-90, and 3400 Ci of transuranics) of the original HLW activity in the tanks will remain after vitrification is complete. Possibly, there is also HLW remaining in the process building, from operations. In addition, the components of the vitrification system that had direct contact with the liquid and vitrified HLW are contaminated with residual HLW.

4. NDA

During the site's licensed period, more than 430C m³ of a wide variety of radioactive wastes were disposed of on the project premises in the NDA. The West Valley Demonstration Project (WVDP) disposed of an approximately equal volume of radioactive wastes in the NDA, between 1981 and 1986 (but with only about 1/1000th of the activity). Most of the waste disposed of by NFS would be considered low-level waste (LLW) or transuranic waste as defined by the WVDP Act, although some of it may be classified as greater-than-class C waste, as defined by 10 CFR Part 61, or SNF (see discussion on spent fuel, above). The waste disposals made during the licensed period were approved by the Atomic Energy Commission.

Attachment 2

The disposal of about 185 m³ of spent fuel hulls took place in the NDA between 1966 and 1973. The acid leaching of the spent fuel from the hulls was an incomplete process that left approximately 0.17 percent of the spent fuel activity in the hulls. In 1969, NFS also disposed of three 30-gallon cans (0.34 m³ total volume) filled with 42 spent fuel assemblies from the N-Reactor at Hanford. The cladding on the spent fuel was too badly damaged to permit reprocessing. The spent fuel and spent fuel hulls were disposed in 50- to 70-foot-deep shafts in glacial till. NFS also disposed of about 4300 m³ of a wide variety of other wastes from the reprocessing plant in the NDA. The table below shows the NDA source term characteristics of the NFS disposals.

Waste Category	Volume		Fission Product Activity*		Plutonium Mass	
	m ³	% of Total	Ci	% of Total	Kg	% of Total
Spent Fuel	0.34	0.008	7,100	15	0.8	15
Leached Hulls	185	4	38,000	81	3.7	67
Rest of NDA	4,115	96	1,900	4	1.0	18
Total NDA	4,300	100	47,000	100	5.5	100

Table. NDA Source Term Characteristics of NFS Disposals

*Sr-90 and Cs-137 activity adjusted to present day.

5. State-Licensed Disposal Area (SDA)

The SDA is adjacent to the project premises but not part of the WVDP. The SDA was a pre-Part 61 LLW disposal area, run by NFS, that disposed of LLW from the NFS operations and also accepted outside LLW for disposal. As the name implies, the SDA is licensed by the State and the responsibility for regulating the closure of that facility lies with the State. Because of the proximity of the SDA to the project premises, it is being evaluated as an area whose environmental impact must be considered in combination with the rest of the facility, in the EIS.

6. REMAINDER OF THE SITE

The remainder of the site includes buildings, structures, groundwater, soils, and sediments that were contaminated during operations, and from operational occurrences.





WMA 1 -- Process Building Area

Radiologically-contaminated facilities: (in order of greatest to least contamination)

Process Building:

- Was used to recover uranium and plutonium from irradiated reactor fuel. Houses evaporators for the liquid waste treatement system. Will be used to temporarily store solidified high-level waste (350 borosilicate glass containers) generated by the vitrification facility
- Though, to be the source of the contaminated groundwater plume in the north plateau
- Most radiological contamination is concentrated in a few central, interior cells (rooms) that handled fuel
- Total inventory of the building is:

3,040 Ci Sr-90 3,400 Ci Cs-137 1,100 Ci Pu-239 7,900 Ci Pu241 (inventories of other nuclides are less than 65 Ci)

Inventory of the 350 borosilicate canisters is:

10,150,000 Ci Cs-137 9,450,000 Ci Sr-90 119,000 Ci Am-241 105,000 Ci Pu-241 (inventories of other nuclides range from 1,000 to 9,500 Ci)

Residual surface contamination will be present on floors and walls

01/14 Building:

- Mouses ventilation equipment and the cement solidification system
- Residual contamination will be inside equipment (less than 0.2 Ci)

WMA 2 - Low-Level Waste Treatment Facility Area

Radiologically-contaminated facilities: (in order of highest to lowest contamination)

02 Building:

- Houses processing equipment used for treating liquid
- Surface contamination will be present on walls and floors and inside process .
- equipment and piping
- Inventory less than 10 Ci, mostly Sr-90 and Cs-137

Deactivated Lagoon 1:

- An unlined pit that was constructed in the sand and gravel layer which held up to 300,000 gallons of liquid waste. Lagoon 1 was deactivated by transferring liquid . waste to lagoon 2, filling with debris, some of which was contaminated, and co ering it with a clay cap and topsoil
- More than 99% of the contamination is in the original sediment; the remaining . contamination is in the debris and clay cap
- Inventory is: .
 - 100 Ci Cs-137 260 Ci Pu-241 24 Ci Sr-90 (inventories of other nuclides are less than 10 Ci)

Contaminated Groundwater Plume in the North Plateau

- Most is in WMA 2, some in WMAs 1 and 4. Refer to Section C.3.2.2 and Figure . C-13.
- The contaminated groundwater plume is in the sand and gravel layer and is contaminated with Sr-90; the plume extends from the process building (possible • source of contamination) (WMA 1) to the drainage ditch north of the CDDL (WMA 4)
- Maximum concentration in groundwater is 1,000,000 pCi/L
- Maximum concentration in soil is 6,300,000 pCi/g .

WMA 2 - Low-Level Waste Treatment Facility Area (continued)

Lagoon 2:

- An unlined pit constructed in the sand and gravel layer which holds up to 2,400,000 gallons of low-level radioactive wastewater from all site activites.
- Contamination is present in the bottom sediment.

Inventory is:

- 6.1 Ci Cs-137
- 5.8 Ci Sr-90
- 2.7 Ci Pu-241

(inventories of other nuclides are less than 0.05 Ci)

Lageon 3:

- An unlined pit constructed in the sand and gravel layer which holds up to 3,300,000 gallons of treated wastewater before discharging to Erdman Brook
- Contamination is present in the bottom sediment. Inventory is less than 1 Ci.

Lagoon 4 and Lagoon 5:

- Lined lagoons, each of which can hold up to 200,000 gallons of treated liquid effluent from the 02 building before transfer to lagoon 3 and then Erdman Brook
- Contamination is present in the bottom sediment. Inventory of each lagoon is less than 1 Ci.

Neutralization Pit:

- Concrete storage tank used for neutralizing liquid
- Surface contantination on the walls, floor, and steel liner. Inventory is less than 0.01 Ci (mostly Cs-137 and Sr-90).

Interceptors:

- Old interceptor is a concrete storage tank used to store contaminated liquids that are greater than effluent standards
- Old interceptor contamination is present in the concrete floor and walls; inventory is less than 0.01 Ci (mostly Cs-137 and Sr-90)
- New interceptors are two concrete storage basins used to hold liquids for sampling
- New interceptor contamination is present in the steel liner; inventory is less than 0.01 Ci (mostly Cs-137 and Sr-90)

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WMA 3 - High-Level Waste Storage and Vitrification Facility Area

Radiologically-contaminated facilities: (in order of highest to lowest contamination)

High-Level Waste Storage Tanks and Vaults:

- Tanks are made of steel and are housed in undergo and vaults made of concrete. Tanks 8D-1 and 8D-2 are each located in their own vault. Tanks 8D-3 and 8D-4 are co-located in one vault.
- Tank 8D-1 inventory from residual contamination:

200,000 Ci Cs-137 (from zeolite) 600 Ci Pu-241 400 Ci Sr-90 (inventories of other nuclides are 80 Ci or less)

Tank 8D-2 inventory from 2,400 cubic feet of sludge remaining:

200,000 Ci Sr-90 200,000 Ci Cs-137 2,000 Ci Am-241 1,000 Ci Eu-154 (inventories of other nuclides are 200 Ci or less)

Tank 8D-3 inventory from residual contamination is about 0.7 Ci

Tank 8D-4 inventory from 45 cubic feet of waste remaining:

1,000 Ci Cs-137 900 Ci Sr-90 (inventories of other nuclides are 10 Ci or less)

Vitrification Facility:

- Contains processing equipment that will be used to convert the liquid HLW in Tanks 8D-2 and 8D-4 into borosilicate glass
- Residual contamination will be present in the melter and off-gas scrubber

WMA 3 -- High-Level Waste Storage and Vitrification Facility Area (continued)

Inventory in melter is:

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6,000 Ci Cs-137 5,000 Ci Sr-90 (inventories of other nuclides are 70 Ci or less)

Inventory in off-gas scrubber is:

1.000 Ci Cs-137 100 Ci Sr-90 (inventories of other nuclides are less than 10 Ci)

WMA 4- Construction and Demolition Debris Landfill

Construction and Demolition Debris Landfill:

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- A 1.5-acre landfill excavated into the sand and gravel layer; does not have a liner.
- Was used for burying nonradioactive construction, office, and shop waste (about 235,000 cubic feet), but the waste and intermingled soil (about 557,000 cubic feet) . has become radioactively contaminated as a result of contact with the contaminated groundwater plume in the north plateau which originated from the process building).
- Gross beta concentrations that would be present in the landfill (year 2000) are . estimated to be 10,000 pCi/L.

WMA 5- Waste Storage Area

Lag Storage Building and Lag Storage Additions 1, 3, and 4:

- These buildings store packaged Class A, B, C, and GTCC waste and mixed waste resulting from operations, decontamination, maintenance, and construction activities
- Approximately 454,000 cubic feet of waste would be present
- Inventory of lag storage building and lag storage additions would be:
 - 1,560 Ci Cs-137 1,450 Ci Sr-90 820 Ci Pu-241 (inventories of other nuclides are less than 87 Ci)

Chemical Process Cell Waste Storage Area (CPC WSA):

- Stores packaged Class A, B, C, and GTCC waste which consists of contaminated teel equipment that was removed from the CPC in the process building
- Approximately 27,700 cubic feet of waste is present
- Inventory of waste is:
 - 200 Ci Cs-137
 - 200 Ci Sr-90
 - 200 Ci Pu (all isotopes)

Foundation of Dismantled Lag Storage Addition 2:

2,600 cubic feet of concrete footings and crushed stone; was used to store slag produced during solidification of radioactive waste

Cesium Prong

- Most is in WMA 5, some in WMAs 3 and 4. Refer to Section C.3.4.1 and Figure C-15).
- This area is surface soil contaminated with Cs-137 resulting from reprocessing plant ventilation system failures.
- 95% of the contamination is in the top 4 inches of soil:
 - Maximum onsite concentration is 80 pCi/g Cs-137
 - Maximum offsite concentration is 30 pCi/g Cs-137
- Contaminated material is estimated to be 2,600 cubic feet of low-level waste.

Uncontaminated facilities:

Hazardous Waste Storage Lockers (used for short-term storage of hazardous wastes)

WMA 6- Central Project Premises

Radiologically-contaminated facilities:

North and South Sludge Ponds:

- Are unlined basins excavated in the sand and gravel layer that received site
- wastewaters Contamination is present in the sediment of both ponds .

Cooling Tower:

.

- Houses equipment for cooling the process building
- Contamination is present on the lower stairs and nearby soil .

Rail Spur:

- Connects main railroad to the process building for receiving spent nuclear fuel; is
 - not currently in use There is contaminated soil along a 100-foot length of track

Proposed Contaminated Soil Consolidation Area:

- Not yet built, but planned to consist of a lined pad with a leachate collection
 - Will store up to 216,000 cubic feet of uncontainerized soil, covered with a tarp
 - .

Uncontaminated facilities:

Effluent mixing equalization basin

- Lined basin in sand and gravel layer that received site wastewaters and is used for
 - a settling pond

Old warehouse

Stores parts, equipment, supplies, and has office space .

Sewage treatment plant

Uses eight tanks for treating sanitary wastewater .

Incinerator

0

Was used in the past to burn non-contaminated solid waste

WMA 7-- NRC-Licensed Disposal Area and Associated Facilities

Radiologically-contaminated facilities:

Nuclear Fuel Services (NFS) and WVDP Disposal Areas:

- Constructed in the clayey glacial till
- NFS area was used by NFS for disposing radioactive wastes from fuel reprocessing and associated activities, such as decontamination and decommissioning; waste is disposed in holes, including 239 holes.
- WVDP area was used for disposing WVDP waste, which consisted of decontamination and decommissioning waste from cleanup activities; waste is disposed in two trenches and four caissons. Trenches had liners and caps.
- Approximately 190,000 cubic feet of waste was disposed at the NFS area, and approximately 200,000 cubic feet of waste was disposed at the WVDP area
- Inventory of all waste is:
 - 47,000 Ci Cs-137
 - 29,000 Ci Sr-yu
 - 30,000 Ci Co-60
 - 32,600 Ci Pu (all isotopes)
 - 10,000 Ci H-3

(inventories of other nuclides are 1,000 Ci or less)

- Approximately 740,000 cubic feet of soil was used as fill and may have become contaminated from being intermixed with the waste
- Approximately 935,000 gallons of leachate could be present in the holes and trenches; maximum gross alpha concentration is 0.01 μCi/mL and maximum gross beta concentration is 0.1 μCi/mL

Trench Interceptor Project:

- Consists of a 12 to 16-feet deep trench along the northeast and northwest boundaries of the disposal area to intercept contaminated groundwater migrating from the NDA
- Trench is connected to a liquid pretreatment system, consisting of seven tanks used for holding, prefiltration, activated carbon treatment, and post-filtration holding (this system has never been used)
- Some areas of the trench could be contaminated

Interim Waste Storage Facility:

- Stores liquid mixed wastes (estimated to be mixed LLW); also stores liquid wastes that could be radioactive only, non-contaminated, or recyclable pending evaluation and transfer
- Stored volume fluctuates, but is about 1,500 cubic feet

WMA 7- NRC-Licensed Disposal Area and Associated Facilities (continued)

Hardstand:

- Three-sided structure with cinderblock walls on a pad of crushed rock; was used . to stage radioactive waste before disposal in the NDA
- Material is assumed to be contaminated .

Inactive Leachate Transfer Line:

- Transferred leachate from the pumphouse near the NDA to the LLWTF; has been . taken out of service
- Has low levels of radioactive contamination .

Former Lagoon:

Collected surface water runoff, but was filled with contaminated soil .

WMA 8-- State-Licensed Disposal Area and Associated Facilities

Radiologically-contaminated facilties:

Disposal Trenches:

- LLW is disposed in 14 trenches, generally consisting of special purpose reactor wastes, commercial power reactor wastes, nuclear fuel cycle waste, institutional wastes, isotope production wastes, and industrial wastes
- Approximately 2,400,000 cubic feet of waste was disposed in the trenches
- Inventory of disposed waste is:
 - 40,000 Ci Cs-137
 - 31,000 Ci Sr-90
 - 62,265 Ci Pu (all isotopes)
 - 16,000 Ci Co-60
 - 1,600 Ci H-3

(inventories of other nuclides are 270 Ci or less)

- Approximately 1,900,000 cubic feet of soil was used as fill and may have become contaminated from being intermixed with the waste
- Approximately 2,100,000 gallons of leachate could be present in the holes and trenches; maximum concentrations of key nuclides are 2,000,000 pCi/L H-3, 500 pCi/L Cs-137, and 5,000 pCi/L Sr-90.

Three Filled Lagoons:

- The northern and southern lagoons were unlined and collected leachate pumped out of the SDA trenches; the lagoons were closed by backfilling and capping with clay material
- The inactive lagoon was unlined and also collected leachate pumped out of the SDA trenches; the lagoon was closed by installing a liner and backfilling with native clay
- · Approximately 5,000 cubic feet of contaminated sediment is expected to be present

Mixed Waste Storage Facility:

- · Comprises three tanks that will be used to store leachate pumped from trench 14
- Residual contamination would be present in the tanks

Citizen Task Force

WMA 9- Radwaste Treatment System Drum Cell

Radiologically-contaminated facilities:

RTS Drum Cell:

- Stores containers of cement-solidified radioactive waste on concrete blocks on crushed stone, underlain by geotextile and clay
- The stored volume is approximately 21,500 containers, or about 1,526,500 gallons of waste
- Inventory of stored waste is:

1,000 Ci Cs-137 1,000 Ci Sr-90 4,000 Ci Tc-99 3,400 Ci Pu (all isotopes) (inventories of other nuclides are 10 Ci or less)

WMA 10- Support and Services Area

Radiologically-contaminated facilities:

None

Uncontaminated facilities

OB-1 office building

New warehouse (stores supplies, chemicals, industrial waste, and lead)

Administration building and 73 office trailers

Parking lots

Expanded laboratory (environmental laboratory and analytical annex)

Two security gate houses

Two meteorological towers

WMAs 11 and 12 on the Balance of the Site

WMA 11

Rauiologically-contaminated facilties:

None

Uncontaminated facilities:

Bulk storage warehouse

Stores furniture, supplies, and equipment .

Scrap material landfill

Trench where uncontaminated construction and demolition debris was disposed .

Test wells

Injection well and monitoring wells .

WMA 12

Radiologically-contaminated facilties:

None

Uncontaminated facilities:

Old schoolhouse

Used as a training center .

Live firearms range

Borrow pits

Gravel pit quarries

Two earthen dams and two reservoirs

DETAILS OF THE WEST VALLEY ENVIRONMENTAL IMPACT STATEMENT

In 1989, the U.S. Department of Energy (DOE) and the New York State Energy Research and Development Administration (NYSERDA) began to develop the joint environmental impact statement (EIS), to evaluate the environmental impacts of waste disposal and decommissioning alternatives for completion of the West Valley Demonstration Project (WVDP), and closure of the site. DOE funds the EIS project 72 percent and NYSERDA funds the project 28 percent. Because the WVDP Act directs DOE to apply applicable licensing requirements for waste disposal, under U.S. Nuclear Regulatory Commission (NRC) review and consultation, and requires NRC to prescribe decommissioning criteria for the WVDP, NRC entered a cooperating agency agreement with DOE and NYSERDA, to review the EIS. NRC's cooperation in the EIS would support NRC's decisions in prescribing decommissioning criteria. Therefore, NRC avoids the need to prepare a separate environmental evaluation to comply with the National Environmental Policy Act (NEPA) in support of NRC's Federal action in prescribing criteria.

The draft EIS divides the site into 12 waste management areas (WMAs)(see below), some of which are used by the WVDP; others of which are the responsibility of NYSERDA; and some of which are under shared responsibility. Responsibility for decommissioning the various WMAs will be partitioned between DOE and NYSERDA, under a mutual agreement to be negotiated at a later date. A draft EIS was issued in 1996. NRC provided DOE and NYSERDA with extensive comments on the draft EIS. In response to these and other comments, DOE and NYSERDA are preparing a supplement to the draft EIS, to be issued in 1999. DOE and NYSERDA expect to issue a final decision document in mid-2000. The EIS WMAs at the West Valley site are:

- 1 -- Process Building
- 2 -- Low-Level Waste Treatment Facility
- 3 -- High-Level Waste Storage and Vitrification Facility
- 4 -- Construction and Demolition Debris Landfill
- 5 Waste Storage Area
- 6 -- Central Project Premises
- 7 -- NRC-Licensed Disposal Area
- 8 -- State-Licensed Disposal Area (not part of the WVDP)
- 9 -- Radwaste Treatment System Drum Cell
- 10 -- Support and Services Area
- 11 -- Bulk Storage Warehouse and Hydrofracture Test Well Area
- 12 -- Balance of Site

Further details about each WMA are provided in Attachment 2 to this Commission Paper.

NRC and other stakeholders had significant criticisms of the draft EIS (i.e., there was no preferred alternative and the EIS assumed permanent institutional control). However, the draft EIS identified four viable alternatives (I-IV) for terminating the WVDP and closing the site. They are:

Alt. I - Removal of all waste and residual contamination from the site and release of site, to allow unrestricted use;

Alt. II - Packaging and on-premises storage of all waste and residual contamination, with restricted release;

Alt. III - In-place stabilization of all non-containerized waste and residual contamination and on-premises disposal of previously packaged low-level waste (LLW), with restricted release; and

Alt. IV - No action, with restricted release and monitoring and maintenance.

The estimated cost for each alternative by, WMA is in Table 1. The potential onsite dose for or.e scenario under each alternative, by WMA, is presented in Table 2.

WMA	Estimated Cost per EIS Alternative (M\$)			
	Alt. I	Alt. II	Alt. III*	Alt. IV
1	492	345	82-420	152
2	176	69	42-43	159
3	304	185	99-150	189
4	667	195	34	75
5	461	226	115-223	188
7	1860	883	200-209	250
8**	3800	1690	290-345	259
9	144	3	169-178	250
6, 10, 11, 12	573	36	24-28	0.5
Groundwater Plume***	310	250	70	70
Total	8787	3882	1125-1700	1593

Table 1. Cost in Millions of Dollars by WMA, for the Various EIS Alternatives

Alternative III range because of difference between LLW disposal onsite vs offsite.

**Not part of the WVDP.

***Contaminated ground-water plume that crosses several WMAs.

		AH 11		(
	AIL. 1	Alt. II	Alt. III	Alt. IV
1	0	1,500	380	5,800
2	0	15	220	220
3	0	110,000	.07	1,100,000
4*	0	0	1	1
5	0	1,600	280	1,600
7	0	15,000	NA**	6,500
8	0	17,000	NA**	310
9	0	0.44	.029	0.44
6, 10, 11, 12	0	0	0	001

Table 2. Potential Onsite Doses If Site Restrictions Fail within 1000 Years

WEST VALLEY CITIZEN'S TASK FORCE

The New York State Energy Research and Development Administration (NYSERDA), with the participation of U.S. Department of Energy (DOE), formed a Citizens' Task Force (CTF) to assist in the development of a preferred alternative for the completion of the West Valley Demonstration Project (WVDP) and closure of the site. The CTF process was conducted in addition to the public comment process on the environmental impact statement (EIS). The CTF resembled a Site-Specific Advisory Board, as allowed under 10 CFR 20.1403 of the U.S. Nuclear Regulatory Commission (NRC's) "Radiological Criteria for License Termination; Final Rule." The CTF met two evenings per month, from January 1997 to June 1998, to learn about the site and to discuss the various alternatives for completion of the WVDP and closure of the site. NRC participated in these meetings by making periodic presentations and by videoconference.

The CTF's goal was to report recommendations to DOE and NYSERDA, to consider in their decision-making process on the future of the site, and to support the EIS. The CTF finalized its recommendations on July 29, 1998 (see attached). The CTF essentially recommended that all contamination be removed from the site, but recognized that there may be some practical limitations as to the timing of removal, and that whatever waste remains on site in the interim needs to be stabilized and monitored indefinitely. The CTF has also described its concerns for the future of the site in a letter (see attached) to the Honorable Amo Houghton, U.S. Representative from New York's 31st Congressional District, which covers the West Valley site and surrounding area.

West Valley CITIZEN TASK FORCE



West Valley Citizen Task Force Final Report

July 29, 1998

West Valley Citizen Task Force Final Report July 29, 1998

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Appendix 2 Seneca Nation of Indians Resolution

Acknowledgments

The West Valley Citizen Task Force members wish to acknowledge the participation of two members who were unable to remain with the Task Force until the completion of these recommendations.

The Task Force dedicates this Report to the memory of Elaine Belt, who passed away in June 1998. Elaine Belt contributed greatly to the success of the Task Force; her enthusiasm and dedication to the community will be remembered.

The Task Force also extends its appreciation to Richard Timm, former Supervisor of the Town of Concord, for his participation and support.

West Valley Citizen Task Force Final Report July 29, 1998

I. INTRODUCTION

This report has been prepared and submitted by the West Valley Citizen Task Force ("CTF") to the New York State Energy Research and Development Authority ("NYSERDA") and the United States Department of Energy ("USDOE"), the Site Managers, so as to provide direction and advice on the development of a Preferred Alternative for the completion of the West Valley Demonstration Project and cleanup, closure and/or long-term management of the facilities at the Western New York Nuclear Services Center (hereafter referred to as the Center¹).

The CTF acknowledges that the vitrification process, which is more than half completed, is of great importance to the overall safety of the Center, human health and the environment. Converting the liquid wastes to a solid and emptying the high level tank will remove a grave risk that has threatened the health and safety of the entire area. The CTF commends the Site Managers and all those who have made this possible.

The CTF expects that the Site Managers will develop a Preferred Alternative which complies with the Policies and Priorities contained in Section III and responds to the Guidelines in Section IV.

The CTF expects the Site Managers to recommend policies and criteria that will offset, ameliorate, or replace the losses to the community from the reduction in economic activity at the Center.

Upon selection of the Preferred Alternative, the CTF expects for the Site Managers to present such alternative to the CTF and the public with all supporting information. Such presentation to the CTF may precede the commencement of a formal public participation process but is not a substitute for full formal public participation and the development of a Record of Decision.

The CTF also expects that the Site Managers will continue to actively manage and monitor the Center during the development of the Preferred Alternative. The CTF further expects that the Site Managers will immediately take any steps necessary to prevent the further spread of wastes.

¹The term "Center" refers to the 3300 acres of the Western New York Nuclear Services Center, including the West Valley Demonstration Project (WVDP) premises and the Statelicensed Disposal Area (SDA). The term "Site" refers to the 200 acre-WVDP premises and SDA only.

BACKGROUND П.

On January 29, 1997, the CTF held its first meeting at the Ashford Office Complex. The CTF was convened by NYSERDA and USDOE. The CTF has met twice a month since January 1997, except for short recesses. The members of the CTF are listed in Appendix One.

The CTF was formed to "assist in the development of a preferred alternative for the completion of the West Valley Demonstration Project and cleanup, closure and/or long-term management of the facilities at the site."2

Presentations were made to the CTF regarding:

- Center history,
- applicable law, rules and regulations, administrative policies, governmental agreements, and court decisions,
- the draft environmental impact statement and the five alternatives which it considered.
- radiation hazards.
- the twelve waste management areas into which the Center was divided
- licensing issues,
- new or alternative technologies,
- institutional controls, and
- special concerns such as the North Plateau Plume.

CTF POLICIES AND PRIORITIES III.

1. The CTF expects that the Preferred Alternative will protect human health and the environment from all risks associated with the Center. Because proximity to the Center increases potential risk, the CTF believes that special attention should be paid to the long-term health and safety of people residing in the adjacent towns.

2. The Seneca Nation is an indigenous, distinct, sovereign Nation of People whose past and future existence is dependent upon, among other things, the protection and preservation of its natural resources. Closure options that may contaminate these resources to any extent (i.e., animal and fish life, herbs, plants and forest areas, water, air, and soil, including viable land for home sites), are of overwhelming concern to the Nation and its people. The CTF recognizes this concern.

The CTF does not believe (based on currently available information) the Site is 3. suitable for the long term, permanent storage or disposal of long-lived radionuclides (such as carbon-14 with a half life of 5,730 years, uranium-238 with a half life of more than 4 billion years, plutonium-239 with a half life of 24,100 years, and Technetium-99 with a half life of 217,000 years). The site is in an area that has an average rainfall of 40 inches, has a relatively

² Ground Rules of the Citizen Task Force, as revised and approved on January 29, 1997.

high and mobile water table which is hydrologically connected to the surface and perhaps in the future to subsurface aquifers, has sand lenses that are irregularly distributed through the clay on which the site sits, is on or near active earthquake faults and is located on a tributary of Lake Erie. The population density in the area and the large number of people who rely on Cattaraugus Creek, Lake Erie, the Niagara River, and Lake Ontario for drinking water (over one million people for Lake Erie alone), fishir 3, recreation, etc. is of great concern. The height of the water table, the discharge of groundwater at the site, the surface geological processes at the site (such as erosion) would preclude, under current criteria, the siting of a new nuclear waste storage or disposal facility at this location³.

4) The CTF recognizes that portions of the Center are not fully characterized and therefore cannot be judged with certainty to be either suitable or unsuitable for long-term, permanent storage or disposal of wastes under current regulations. Under present conditions, the CTF does not believe that any portion of the Center can be considered suitable for long-term, permanent storage or disposal of wastes. The CTF may reconsider its opinion of site suitability if new evidence based on site characterization is presented to the CTF in the near future.

5. The CTF recognizes that some wastes will remain at the Site for a prolonged period of time. The CTF expects that all decisions regarding such wastes will be guided by the belief that the only appropriate, final action with regard to these wastes is for them to be removed from the Site. The CTF does not believe any solution should be chosen which makes retrieval significantly harder. Thus, for instance, the CTF does not support any alternative in which a large solid, permanent "monolith" would be created.

6. The CTF expects that the logs and remaining fuel rods will be removed from the Site as soon as possible.

7. The CTF expects that, other than to the extent necessary to manage the Center safely and to achieve the Policies and Priorities of the CTF, all wastes that remain at the Site will be managed in a manner to ensure that contamination does not spread and that uncontaminated soils and other materials will be protected from contamination. The CTF does not want to have the amount of material contaminated increase, thus increasing the expense and problems associated with clean up of the Site.

8. The CTF expects that all wastes that remain at the Site, whether stored above or below ground, will be stored in a manner that allows for its monitoring to readily, safely and regularly determine if the materials are leaking or migrating.

9. The CTF expects that all wastes that remain at the Site will be stored in such a way that they can be retrieved if the containment system and/or packaging fails. Retrieval may be

³ For instance, see comments of Center for Nuclear Waste Regulatory Analyses, August 1996, Review of DEIS For Completion of the West Valley Demonstration Project and Closure or Long-Term Management of the Facilities at the Western New York Nuclear Service Center, beginning at page 3-1.

necessary as part of the ultimate disposal plan or due to a gradual (slow erosion) or dramatic (earthquake or rapid erosion from a flood) reduction in the integrity of the containment or packaging system. The CTF expects that an alternative storage system will be developed so as to be readily available should the primary containment system fail.

10. The CTF expects that all wastes will be isolated from ground water. In order to achieve this goal, the CTF acknowledges the slightly higher risk to intruders (trespassers) and site personnel that accompanies the storage of wastes above ground in structures.

11. The CTF prefers that all wastes be excavated and placed in a structure where monitoring and retrieval for repackaging and recontainment, if necessary, will be relatively easy. The CTF recognizes that for some wastes excavation and storage may not be appropriate in the near term. For such wastes the CTF expects that the Preferred Alternative shall describe when and how such wastes shall be excavated.

12. The CTF expects that any structures built in the ground or above the ground at the Site to contain wastes will be constructed to withstand severe natural events such as tornadoes, earthquakes, and the hazards of flooding and erosion.

13. The CTF expects that the risks and costs associated with the Center will be borne in large part by our generation. The CTF wants to limit, as much as possible, the extent to which future generations bear the risks and costs of the Center, and its monitoring and cleanup.

14. The CTF expects that the Preferred Alternative will comply with all applicable local, state, and federal laws, rules, and regulations including the provisions of the West Valley Demonstration Project Act (Public Law 96-368), Article 29 of the New York State Environmental Conservation Law and subparagraph a of paragraph 1 of Section 1854-a of the New York State Public Authorities Law which prohibits the location of a low level waste repository at the Western New York Nuclear Services Center.

15. The CTF expects that the Preferred Alternative will not rely upon man made structures over a long period of time. The CTF believes that over a prolonged period of time nature's processes will prevail over engineered solutions.

16. The CTF expects that the Preferred Alternative will include the restoration of the Center to alternative uses (such as educational, industrial, commercial or recreational uses) as much as is possible and as soon as possible.

17. The CTF expects that cost considerations will not be a primary factor in the development of the Preferred Alternative.

18. The CTF expects that the Preferred Alternative will provide for a continuing presence by USDOE so long as Project wastes as defined by the West Valley Demonstration Project Act remain at the Center. As such, USDOE will continue to participate in the management of the Center and in the funding of activities associated with implementation of the

Preferred Alternative. In addition, the CTF requests that USDOE remain on the Center so long as any waste remains at the Center, especially waste from federal defense activities and from federal research, development and defense contracts.

IV CTF GUIDELINES FOR PREFERRED ALTERNATIVE

1. The Preferred Alternative shall to the maximum extent possible achieve the CTF Policies and Priorities contained in Section III of this report.

2. The Preferred Alternative shall state the applicable law(s) under which it has been developed, and if the Preferred Alternative complies with such law(s). In particular, the Preferred Alternative shall indicate if the "decontamination and decommissioning" requirements of the West Valley Demonstration Project Act⁴ will be achieved.

3. The Preferred Alternative shall detail all licensing issues including a statement of any licenses that will be required, the standards that will apply and if the Preferred Alternative complies with current licensing requirements. In addition, the Preferred Alternative shall indicate if any special variances or special licensing issues will be sought. In particular, the Preferred Alternative shall indicate if policies of the Nuclear Regulatory Commission regarding reliance upon "institutional controls" can be achieved.⁵

4. The Preferred Alternative shall detail the role of other state and federal agencies including New York State Department of Environmental Conservation (NYSDEC), NYS Department of Health (NYSDOH), NYS Department of Labor (NYSDOL), and Army Corps of Engineers.

5. The Preferred Alternative shall detail the extent to which "institutional controls" and "active maintenance" will be relied upon and shall identify the associated specific actions.⁶ This shall include the extent to which a continued human presence at the Center is required to provide monitoring, site control and restoration of protective features.

6. The Preferred Alternative shall detail the extent to which structures and other engineered solutions are relied upon. The Preferred Alternative shall not use incineration at the Center.

7. The Site Managers shall indicate when the logs, rods and other materials that are the results of the vitrification process will be removed from the Site. This shall include who is

⁶ See West Valley Draft EIS, January 1996, Glossary, page A-9 and 10CFR§61.2.

⁴ Public Law 96-368- October 1, 1980, Section 2(a)(5)

⁵ See 10CFR§20.1403(e) and §61.59(b)
responsible for the removal action, what steps will be taken to insure removal in a timely fashion and how and where these wastes will be stored until removal. The Site Managers shall indicate if this schedule will affect the development and implementation of any alternative.

8. The Preferred Alternative shall provide a detailed statement of how the costs and responsibilities for implementing the Preferred Alternative will be divided between the Site Managers. This shall include a statement of who will be responsible for management of the Center, statutory authority for such management activities, and who will be responsible for the costs of implementing the Preferred Alternative and for long term management of the Center, and for all future funding including but not limited to planned and emergency remedial and removal actions and for insuring compliance with the CTF Policies and Priorities and Guidelines.

9. The Preferred Alternative shall provide a reliable method to assure that funding will be available whenever necessary, but particularly over the long term, to carry out all remediation, relocation (pending appropriate environmental review) on Center premises, monitoring, institutional controls, and removal.

10. The Preferred Alternative shall provide a reliable method of review and implementation to assure that all issues are reopened at regular intervals and to monitor the success at achieving the goal of eventual removal of all wastes from the Site. This method, or "trigger," to cause a review and appropriate action should be automatic after the passage of a certain time period and also discretionary if circumstances at the Center change or new technology is developed.

11. The Preferred Alternative shall specify how immediate or emergency issues will be dealt with such as the sudden deterioration of protective features, the migration of the North Plateau Plume and other issues that require prompt action. This shall include a statement of who will be responsible for decision making, statutory authority for such decision making, and in what way there will be readily available funds to carry out any action that may be required.

12. The Preferred Alternative shall specify the extent to which local emergency response will be required over the long and short term. If emergency response is required, the Preferred Alternative shall state the extent to which it will be required and identify a source of funding to acquire and maintain equipment and to provide the necessary training and planning for emergency response.

13. The Preferred Alternative shall specifically detail a comprehensive plan for addressing the North Plateau Plume, including the source area, and shall clearly establish the authority under which the plan will be implemented over the long term.

Respectfully Submitted,

West Valley Citizen Task Force Members

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July 1998

APPENDIX 1

CTF Membership

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Appendix 2

Seneca Nation of Indians

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1490 ROUTE 438 IRVING, NEW YORK 14081

> Tel. (716) 532-4900 FAX (716) 532-6272



Treasurer - Rae L. Snyder

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AT THE SPECIAL SESSION OF COUNCIL THE SENECA NATION OF INDIANS HELD ON JULY 23, 1998, AT THE G.R. PLUMMER BUILDING ON THE ALLEGANY INDIAN RESERVATION, SALAMANCA, NEW YORK 14779

EXECUTIVES PRESENT:

PRESIDENT MICHAEL W. SCHINDLER CLERK GERALDINE HUFF TREASURER RAE L. SNYDER

- WEST VALLEY TASK FORCE / APPROVAL
- Motion by Lanny Bennett, Seconded by Karen Bucktooth, that Tribal Council approve the following resolution:
- WHEREAS, the Seneca Nation of Indians has a vested interest in the future of the West Valley Nuclear Services Center; and
- WHEREAS, Lana Redeye was appointed to represent the Seneca nation of Indians at the west Valley Citizen Task Force; and
- WHEREAS, the Citizen Task Force Draft Report incorporates the viewpoints and concerns of the Senece Nation and its people, provided the following additions are made to Section III item 2:

The Seneca Nation is an indigenous, distinct, sovereign Nation of People whose past and future existence is dependent upon, among other things, the protection and preservation of its natural resources. Closure options that may contaminate these resources to any extent (i.e., animal and fish life, herbs, plants, forest areas, water, air, and soil, including viable land for home sites) are of overwhelming concern to the Nation and its people. The CTF recognizes this concern. SPECIAL COUNCIL SESSION JULY 23, 1998 PAGE 2

WEST VALLEY TASK FORCE / APPROVAL, (CONTINUED)

NOW, LET IT BE RESOLVED, that the Seneca Nation of Indians concurs with the policies, procedures and guidelines contained in the Citizen Task Force Draft Report and authorizes Lana Redeve to sign the report as the Seneca Nation's representative.

ALL IN FAVOR

MOTION CARRIED

CERTIFICATION

I hereby certify the foregoing extract is a true and correct copy from the minutes of the Special Session of Council of the Seneca Nation of Indians held on the Allegany Indian Reservation, original of which is on file in the Clerks Office of the Seneca Nation of Indians.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and cause the seal to be affixed at the William Senace Administration Building on the Cattaraugus Indian Reservation, Irving, New York on the 28th day of July 1998.

ATTEST:

(SEAL)

GERALDINE HUFF, CLERK THE SENECA NATION OF INDIANS

West Valley CITIZEN TASK FORCE



May 6, 1998

The Honorable Amo Houghton United States House of Representatives Washington, DC 20515

Dear Representative Houghton:

The West Valley Citizen Task Force (CTF) Members thank you for taking the time to talk with us via video conference on the evening of April 21, 1998. We also appreciate your generous offer of holding an additional video conference with our group in the future.

The CTF shares your praise of the current success of the high-level waste vitrification at the West Valley Demonstration Project. The CTF's mission is to provide recommendations to the U. S. Department of Energy (DOE) and the New York State Energy Research and Development Authority (NYSERDA) concerning the cleanup, closure and/or long-term management of the facilities at the site (after vitrification). This work will involve decontamination and decommissioning of the facilities at the site and management of the wastes resulting from the WVDP and the wastes disposed of at the site before the WVDP when the site operated during the 1960s and 1970s.

Consistent with our mission, the CTF has spent the last year and a quarter focusing on the residual contamination that will remain after the vitrification process is complete. This includes wastes in the underground high-level waste storage tank; the main processing plant that is highly contaminated with radioactive materials; two below-ground radioactive waste disposal areas; a plume of radioactive contaminated groundwater; radioactive waste-water lagoons; and the waste storage and handling areas at the site.

As you know, a draft Environmental Impact Statement (DEIS) was prepared and issued in March 1996 for public review. The DEIS analyzed the environmental implications of five clean-up options for the remaining wastes (after vitrification) and facilities at West Valley. Attached is a fact sheet that clearly shows the magnitude of the clean-up options. For example, the option of leaving the wastes in place (monitoring and maintenance) would cost \$17 million to implement (over a five year period) plus \$30 million a year in perpetuity. On the other hand, to be able to release the entire site for unrestricted use, it would cost more than \$8 billion over about a 25year period to totally remove all radioactive wastes and facilities and sending them elsewhere for disposal. The CTF has reviewed the cleanup options for various facilities and wastes at the site and is preparing a report of our recommendations to be used by DOE and NYSERDA in their decisions regarding the future of the site. Our interest in seeking your input on this matter concerns the uncertainty of future funding or resources for the necessary long-term maintenance of the site if radioactive waste remains. This concern stems from the fact that radioactive materials with long half-lives that are buried on the site present a future risk if they escape into the environment through erosion or other natural forces. It is clear to the CTF that wastes will remain at the West Valley site at least over the short term and active oversight and maintenance will be needed. The CTF would like to see a Federal Government presence or funding to assist New York State.

We also appreciate your initiative in examining the following issues as discussed at our meeting:

- the responsibility for wastes remaining at the site (including the North Plateau Groundwater Plume); and
- the percentage of federally-generated waste that is present in the State-Licensed Disposal Area.

The CTF recommendations report will be sent to you when it is completed, prior to our next video conference with you. The CTF appreciates your willingness to work with us on this very important matter.

Sincerely,

West Valley Citizen Task Force

cc: M. Holland (Clean Sites) P.L. Piciulo (NYSERDA) T.J. Rowland (DOE)

Enclosure

Summary of Alternatives

Environmental Impact Statement for Completion of the West Valley Demonstration Project and Closure of Facilities at the Western New York Nuclear Service Center

ALTERNATIVE	DESCRIPTION	DURATION OF	COST (1996\$)
I. Removal	Remove waste, structures, and contamination such that there are minimal remnants from nuclear operations. All wastes disposed off site.	26 Years	\$8.4 Billion
II. On Premises Storage	Remove waste, structures, and contamination such that there are minimal remnants from nuclear operations. Store these materials in a new on site waste storage facility.	28 Years	\$3.7 Billion (to implement) \$2.8 Million (annually thereafter)
IIIa. In-Place Stabilization Backfill	Contaminated structures and buried wastes are stabilized in- place. Process building and vitrification cell are backfilled with concrete and waste generated is entombed inside.	10 Years	\$400 - \$500 Million - (to implement) \$11 Million (annually thereafter)
IIIb. In-Place Stabilization Rubble	Contaminated structures and buried wastes are stabilized in- place. Process building and vitrification cell are reduced to a rubble pile and capped. Waste generated is disposed in a new on- site disposal facility.	26 Years	\$990 Million to \$1.1 Billion (to implement) \$11 Million (annually thereafter)
IV. Monitor and Maintain	Manage site as-is and provide long-term monitoring and maintenance. Minimal actions taken to facilitate long-term monitoring and maintenance.	5 Years	\$17 Million (to implement) \$30 Million (annually thereafter)
V. Discontinue Operations	No remedial actions taken. Site is abandoned.	Assumes abandonment in the year 2000	No implementation or annual maintenance costs



UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

AUG 1 8 1987

Dr. Willis W. Bixby, Director West Valley Project Office - Idaho Operations U.S. Department of Energy P.O. Box 191 West Valley, New York 14171

Dear Dr. Bixby:

The NRC staff has received a copy of the Compromise Settlement (Settlement) between the Coalition and DOE. This letter presents our position on the 10-100 nCi/gm issue discussed in the Settlement (Enclosure 1).

As we read the Settlement, DOE is to seek a determination or prescription from the NRC as to whether waste material which contains elements having an atomic number greater than 92 in concentrations greater than 10 nCi/gm but less than or equal to 100 nCi/gm are transuranic wastes or low-level wastes within the meaning of the West Valley Demonstration Project Act (Act). I would like to outline our position concerning the disposal of wastes contaminated with transuranic (TRU) radionuclides.

An affidavit (Enclosure 2, p. 42) submitted by Robert Blickwedehl, engineer for the contractor to DOE at West Valley, describes the reason for treating wastes contaminated with transuranic radionuclides in concentrations greater than 10 nCi/gm but less than or equal to 100 nCi/gm as low-level waste. Mr. Blickwedehl bases this position on Section 6 (5) of the Act, which states:

The torm "transurar c waste" means material contaminated with elements which have an atomic number greater than 92, including neptunium, plutonium, americium, and curium, and which are in concentrations greater than 10 nanocuries per gram, or in such concentrations as the Commission may prescribe to protect the public health and safety.

Mr. Blickwedehi cites (Enclosure 2) the NRC's promulgation of 10 CFR Part 61 and the publication of the supporting environmental impact statement (EIS) for 10 CFR Part 65 as the NRC prescription, pursuant to Section 6 (5) of the West Valley Demonstration Project Act, for TRU concentration limits for West Valley Demonstration Project wastes (Project wastes).

We are not ready at this time to endorse the applicability of the Part 61 waste classification system to Project wastes. The waste classification system in 10 CFR Part 61 contains radionuclide concentration limits that apply to commercial wastes and some federally-generated wastes. These wastes can be disposed of at commercially operated LLW disposal facilities. The upper bound for disposal of commercial wastes that are contaminated with alpha emitting transuranic

radionuclides with a half-life greater than 5 years is 100 nCi/gm. This limit is not directly applicable to the Project wastes since wastes resulting from the reprocessing of spent fuel were not analyzed as a part of the commercial or federal source term used in the EIS that provides the decision basis for 10 CFR Part 61. Further, the inclusion of TRU radionuclides in the Part 61 waste classification system was not intended to change the character of the TRU contaminated waste to something else. It simply means that NRC has authorized the commerical near surface disposal of TRU contaminated wastes within the Part 61 waste classification limits.

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This is not to say that 100 nCi/gm may not be an acceptable concentration limit for the disposal of Project wastes. However, before NRC considers accepting a concentration limit other than 10 nCi/cm for transuranic radionuclides, DOE must conduct additional analyses to support its proposed use of any other concentration limit. While detailed guidance on these analyses are beyond the scope of this letter, the analyses should consider: the specific physical, chemical and radiological properties of the Project wastes; the proposed methods of disposal; and site specific conditions. These analyses should show that the mix of Project wastes expected to be disposed of will meet the performance objectives in Part 61, given the specific concentrations of radionuclides expected in that waste. Project waste disposal should be evaluated against the performance objectives in 10 CFR Part 51 to demonstrate protection of public health and safety. We would be pleased to meet with you to discuss this in greater detail.

Sincerely,

John A. Greeves for

Malcolm R. Knapp, Director Division of Low-Level Waste Management and Decommissioning

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Enclosures: As stated Mittle Sough Manufacture and a survey of



U.S. Department of Justice

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United States Attorney Western District of New York OFFICE OF THE CHEF COUNSEL



Brett Bowhan, Esq. U.S. Department of Energy Idaho Operations Office 785 DOE Place Idaho Falls, Idaho 83402

Greg Fess U.S. Department of Energy 6H-065/FORS, GC-21 Washington, D.C. 20585

RE: Coalition, et al v. U.S.A.

Gentlemen:

Enclosed please find a copy of the Stipulation of Compromise Settlement which has been signed and approved by Judge Curtin. I anticipate forwarding a copy of the Stipulation dealing with the attorney's fees within the very near future.

Thank you for your attention to this matter.

Very truly yours,

ROGER P. WILLIAMS United States Attorney

MARTIN J. LITTLEFIELD

Assistant Dnited States Attorney

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BY:

MJL/ds

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Enc.

UNITED STATES	DISTRICT COURT CT OF NEW YORK	
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COALITION ON W	EST VALLEY	:
NUCLEAR WASTES	& RADIOACTIVE	:
WASTE CAMPAIGN	1,	:
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	Plaintiffs,	:
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		:
DEPARTMENT OF	ENERGY,	:
UNITED STATES	OF AMERICA,	. :
		:
	Defendant	:
		:

CIVIL NO. 86-1052-C

STIPULATION OF COMPROMISE SETTLEMENT

WEEREAS plaintiffs have filed this action challenging certain proposed actions of the United States Department of Energy relating to the disposal of low-level radioactive wastes generated from the solidification of high-level radioactive waste, and

WHEREAS plaintiffs and the defendant have met during the course of this litigation in an attempt to resolve through compromise the issues raised in the litigation, and

WHEREAS plaintiffs maintain that the defendants "Finding of No Significant Impact" dated August 6, 1986, which supported approval of disposal of certain radioactive wastes in two facilities situated at the Western New York Nuclear Service Center in West Valley, New York, should be annulled as contrary to the National Environmental Policy Act in that an Environmental Impact Statement (EIS) should have been prepared beforehand, and that

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certain radioactive wastes which the defendant intends to dispose of are not "low-level wastes" but are instead "transuranic wastes," and that an EIS should be prepared by a date certain and that judicial review is necessary for other reasons as well, and

WHEREAS the defendant maintains that the Environmental Assessment undertaken which ultimately resulted in a Finding Of No Significant Impact proceeded in a manner within all statutory mandates of the National Environmental Policy Act and the guidelines promulgated thereunder, including those promulgated by the Council on Environmental Quality,

WHEREAS the defendant during discussions with plaintiffs, has made representations to the plaintiffs based on preliminary evaluations done by the defendant in good faith, which the plaintiffs utilized in arriving at this settlement. Those representations are as follows:

- a. should the Class B/C wastes have to be moved from the existing emplacement as a result of the Environmental Impact Statement, it is estimated that there would be minimal occupational radiation doses associated with such potential future movement of the stored Class B/C wastes which would be further evaluated during the Environmental Impact Statement process; and
- b. the defendant estimates that the cost of construction at the tumulus location for emplacement purposes is approximately \$2,000,000 and the costs of converting the storage facility into a tumulus as approved by defendant is approximately \$18,000,000.

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WHEREAS, each of the parties is desirous of resolving this lawsuit so that one of the foremost objectives of the West Valley Demonstration Project Act can be met, that is, the immobilization of the liquid high-level radioactive waste located at the Western New York Nuclear Service Center (hereinafter referred to as "Center"), and

WHEREAS, the parties desire to avoid extended litigation and concomitant delay to the West Valley Demonstration Project and the parties further desire to advance the best interests of the public health and safety in light of the high-level nuclear wastes located at the Center, now

IT IS HEREBY STIPULATED AND AGREED by and between the plaintiffs, Coalition on West Valley Nuclear Wastes & Radioactive Waste Campaign, and the defendant, United States of America and the United States Department of Energy, by and through their respective attorneys as follows:

1. As used herein, the term "defendant" shall mean the United States of America and the United States Department of Energy and the term "plaintiffs" shall mean the Coalition on West Valley Nuclear Wastes and the Radioactive Waste Campaign.

2. The parties acknowledge that this agreement shall not constitute an admission of liability or fault on the part of the plaintiffs or the defendant or on the part of their agents,

- 3-

contractors or employees; this agreement is being entered into so that the best interests of the public and their health and safety can be served by the expeditious solidification of the high-level radioactive wastes located at the Western New York Nuclear Service Center and by the transport of said waste to an appropriate federal repository for permanent disposal in accordance with provisions of the West Valley Demonstration Project Act, Public Law 96-368. The procedures and actions set forth in the provisions of this agreement shall in force and in effect supersede the "Pinding of No Significant Impact [PONSI] for Disposal of Project Low Level Wastes", dated August 6, 1986.

3. The Department of Energy had planned to prepare an Environmental Impact Statement concerning closure for the post-solidification phase of the project. The defendant hereby agrees that the scope of that Environmental Impact Statement shall include the following:

a. Disposal of those Class A wastes generated as a result of the activities of the Department of Energy at the West Valley Demonstration Project as mandated by the United States Congress under the West Valley Demonstration Project Act. However, in lieu of undertaking such an EIS, the defendant reserves the right to:

- i. dispose of the Class A wastes in accordance with applicable law at a site other than the Center; or
- evaluate disposal of those Class A wastes in a separate BIS; or

-4-

iii. seek and obtain Nuclear Regulatory Commission (NRC) review and approval of any proposed disposal methodology for such Class A wastes at the Center.

b. The disposal of those Class B/C wastes generated as a result of the activities of the Department of Energy at the West Valley Demonstration Project as mandated by the United States Congress under the West Valley Demonstration Project Act.

4. The parties hereby agree that the closure Environmental Impact Statement process -- including the scoping process -- shall begin no later than 1988 and that this process shall continue without undue delay and in an orderly fashion consistent with applicable law, the objectives of the West Valley Demonstration Project, available resources and mindful of the procedural processes (including public input) needed to complete the aforesaid Environmental Impact Statement. The defendant agrees to provide a six (6) month public comment period for the draft EIS.

5. Pending such Environmental Impact Statement, the plaintiffs withdraw and waive any objection or claim concerning immobilization of the Class B/C wastes in a cement form consistent . with the applicable Nuclear Regulatory Commission "Technical Position on Waste Form, May 1983, Rev. **9**".

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6. The plaintiffs withdraw and waive any objection or claim concerning the placement of the solidified Class B/C wastes in the "RTS Drum Cell" already under construction at the West Valley Demonstration Project pending a determination of the disposal of these solidified Class B/C wastes as a result of the Environmental Impact Statement. The Class A and Class B/C wastes shall be retrievably and temporarily stored pending the EIS or in the case of Class A wastes until fulfillment of the alternative disposal provisions under paragraph 3(a), supra.

7. The parties agree that for consideration of any on-site disposal, the defendant in the EIS shall evaluate erosion impacts and erosion control impacts and the need for erosion control measures.

8. While this agreement will not in and of itself subject the Department of Energy to formal NRC procedures, nor to actions required by law for licensed activities, it is hereby agreed that every good-faith effort shall be made to evaluate the site and the design(s) relative to the provisions of 10 C.P.R. §61.50 and §61.51. Similarly, if the Class B/C waste form does not satisfy or meet otherwise applicable NRC regulations and guidelines at the time of the draft Environmental Impact Statement, the defendant agrees that the scope of the Environmental Impact Statement shall

and a

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evaluate reasonable additional site suitability and disposal facility design safeguards to provide reasonable assurance that exposures to humans are within regulatory limits and guidelines established by the NRC.

9. The defendant agrees to hold and undertake meetings on a quarterly basis at a location at or near the West Valley Demonstration Project site to which members of the local geographical, educational, clientific and political communities -- including plaintiffs -- shall be invited, so that the defendant can advise such participants of the status of the Environmental Impact Statement process including current results and in order to receive public comment. The meetings shall commence during or prior to the EIS scoping process.

10. The defendant agrees to make available to the plaintiffs at the West Valley Demonstration Project Public Reading Room for public inspection upon reasonable notice, at reasonable hours and without a search charge, those documents requested with reasonable specificity which are reasonably related to the preparation of the EIS for the West Valley Demonstration Project including background information which would be available under a Freedom of Information Act request to the Department of Energy in accordance with the provisions of that Act. Should any person wish to have

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copies, they may have such at nominal charges provided for under the Freedom of Information Act.

11. The defendant agrees to expeditiously seek and abide by a determination or prescription provided for under the West Valley Demonstration Project Act from the Nuclear Regulatory Commission (NRC) as to whether waste material (other than high-level waste) intended for disposal by the Department of Energy in conjunction with the West Valley Demonstration Project which waste material contains elements having an atomic number greater than 92 in concentrations greater than ten (10) nanocuries per gram but less than or equal to 100 nanocuries per gram, are transuranic wastes or low level wastes within the meaning of the West Valley Demonstration Project Act, Public Law 96-368 for disposal at the Center. For disposal at locations other than the Center, such disposal will be in accordance with applicable law. This determination or prescription shall be binding upon all parties except that plaintiffs reserve their right to seek judicial review of such determination or prescription of the Nuclear Regulatory Commission to the extent that such determination or prescription is arbitrary and capricious, an abuse of discretion or otherwise reviewable as not in accordance with the law.

12. The parties agree that this agreement shall fully and finally settle all the claims set forth in the Complaint and shall

-8-

....ding upon the plaintiffs for themselves, their successors or igns and shall release the defendant of liability for all those ims set forth in the Complaint. However, such release is ditioned upon compliance with the terms of this agreement. itionally, it is expressly acknowledged that this agreement is igned to ensure that an ELS process is undertaken in accordance in the terms of this agreement and consistent with applicable . However, the plaintiffs reserve all their rights to llenge the contents of any ELS under applicable law once the process is completed.

EP P. WILLIAMS States Attorney I District of New York Opiced States Courthouse faio, New York 14202

TIN J. LITTEEFIELD istant United States Attorney

YC E. WADE, II

3. Department of Energy lager, Idaho Operations Office

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-BAVID J. SEEGER Attorney for Plaintiffs

RAYMOND C. VADGOAN,

ACTING CHAIRMAN On behalf of the Coalition on West Valley Nuclear Wastes

CAROL MONGERSON

Vice Chairperson, On Behalf of the Radioactive Waste Campaign

SO ORDERED: EGNORABLE JOHN CURTIN т. UNITED STATES DISTRICT JUDGE May 27, 1987. Dates

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Enclosure 2

74. The current regulatory criteria set by the U.S. Nuclear Regulatory Commission for differentiating between low-level and TRU waste is set forth in Table 1 of 10 CFR 61.55(a)(3), which limits the concentration of "alpha emitting transuranic nuclides with a half life greater than five years," to 100 nanocuries per gram. These regulations were promulgated in 1982. Other agencies of the U.S. government including the DOE use a similar definition of TRU waste.

75. In Section 6(5) of the "West Valley Demonstration Project Act of 1980" (PL 96-368), the congress defined transuranic (TRU) waste as:

> "... material contaminated with elements which have an atomic number greater than 92, including neptunium, plutonium, americium and curium, and which are in concentrations greater than 10 nanocuries per gram, or in such other concentrations as the (Nuclear Regulatory) Commission may prescribe to protect the public health and safety."

76. In 1980 when PL 96-368 was enacted the criteria used by the NRC and other agencies for differentiating TRU waste was that the concentration of transuranic isotopes could not exceed 10 nanocuries per gram. This value was derived from a comparison with the naturally occurring element radium.

77. The original draft of the 10 CFR 61 regulations, which were issued in 1981, used the 10 nanocurie per gram limit. During the course of the public comment period of the EIS

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for the regulations, numerous commenters on this issue (24 out of 28), including technical societies and state regulatory authorities recommended increasing the limit to 100 nanocuries per gram since it would still provide adequate protection for the health and safety of the workers, intruders or the public (USNRC, 1982).

78. In a separate report issued on February 5, 1982 the National Council on Radiation Protection and Measurements (copy attached hereto (Exhibit I) recommended that the 10 nanocurie per gram limit be abolished in favo: of site specific controls based on pathway models (Page 13), which include the PRESTO code (Pages 4 and 5).

79. As a result of the input received, the NRC raised the limit for TRU waste from 10 to 100 nanocuries per gram as is indicated in Section 61.55 of the 10 CFR 61 regulations which were promulgated on December 7, 1982.

80. From the discussion in the above paragraphs it is evident that Congress established the TRD waste criteria in the West Valley Demonstration Project Act on the basis of regulatory criteria and a consensus of the scientific community in effect at the time, but which changed after the legislation was enacted. This is evidenced by the fact that the original draft of the 10 CFR 61 regulations, which was issued a year after the WVDP legislation was enacted, still used the 10 nanocuries per gram limit.

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81. In Paragraphs 25 through 30 and 33 through 35 of his affidavit, Dr. Resnikoff presents a series of arguments which are purported to demonstrate that much of the WVDP Class B and C waste is actually TRU waste. Paragraphs 31 and 32 of the Resnikoff affidavit also address this issue, but in relation to disposal of the Class B and C waste. In accordance with the agreement identified in Paragraph 17, the disposal of this waste is no longer in dispute. In the following paragraphs, I will demonstrate why each of these arguments are either baseless, incorrect, a misinterpretation of the facts or based on incomprehensible logic.

82. <u>Re:</u> Faragraph 25 of Resnikoff Affidavit: This paragraph which alleges that much of the WVDP waste is TRD waste is untrue because it is based on the validity of subsequent paragraphs which will be shown to be untrue. The Environmental Assessment did not mislabel transuranic waste as low-level waste.

83. <u>Re: Paragraph 26 of Resnikoff Affidavit</u>: This paragraph quotes Section 6(5) of the WVDP Act which was quoted in Paragraph 68. It is correct to that extent. However, it should be noted that as this quotation from the Act indicates, the Act defines transuranic waste as wastes which contain transuranic isotopes in

> "concentrations greater than 10 nanocuries per gram or in other concentrations as the (Nuclear Regulatory) Commission may prescribe to protect the public nealth and safety." (Emphasis supplied.)

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As was demonstrated in Paragraphs 68 through 74, the Nuclear Regulatory Commission and the scientific community changed the definition of transuranic TRU waste to be based on a 100 nanocurie per gram concentration, rather than 10 a nanocurie per gram concentration limit for transuranic radionuclides. Therefore, all of the remaining discussion in Paragraph 26 of the Resnikoff Affidavit is incorrect.

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84. <u>Re: Paragraph 27 of Resnikoff Affidavit</u>: Dr. Resnikoff gives the opinion that the DOE substitution of the 10 CFR 61.55 definition of the criteria over the Congressional definition as being arbitrary and capricious. Considering the legislative and regulatory history surrounding this issue as outlined in Paragraphs 68 through 73, it seems perfectly reasonable that the DOE would adopt the NRC's revised definition of transuranic waste for the West Valley Demonstration Project.

85. <u>Re: Paragraph 28 of Resnikoff Affidavit</u>: In this paragraph Dr. Resnikoff alleges that since 10 CFR 61 applies to the siting and designing of facilities for disposal of commercially generated low-level waste, it is not applicable to the West Valley waste. His basis is that 60 percent of the irradiated fuel processed at West Valley came from Department of Energy facilities and therefore is not commercial. This is not a sound technical argument. The potential environmental impact of an atom would be the same whether it originated from a commercial facility or a DOE facility. Therefore, the source of the waste

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NUCLEAR REGULATORY COMMISSION

MAP 1 1993

Ms. Jil. Lytle Deputy Assistant Secretary for Waste Operations Office of Waste Management Environmental Restoration and Waste Management U.S. Department of Energy Washington, D.C. 20585

Dear Ms. Lytle:

Members of the Nuclear Regulatory Commission staff appreciated the opportunity to meet with the Department of Energy (DOE) staff, DOE contractors, and other parties on July 16, 1992, to review new waste characterization data and current DOE plans for management of radioactive tank waste at Hanford. The purpose of this letter is to provide DOE with the staff's assessment of that information as it relates to DOE's program to classify, process, and dispose of Hanford tank wastes. We are also taking this opportunity to respond to the related November 4, 1992, letter from Leo P. Duffy to Chairman Ivan Selin.

During the meeting, DOE presented revised tank waste inventory estimates, based on current characterization data. The information indicated that the double-shell tank activity that would be grouted in near-surface vaults is within earlier range estimates. The NRC staff is concerned, however, that Cs-137 quantities are now near the upper end of the range, rather than at the lower end, as previously believed, especially given that DOE indicated that uncertainties associated with the activity estimates remain because of the limited sampling and analysis that has been conducted to date. Consequently, we encourage DOE to examine available mechanisms for achieving greater radionuclide separation.

In presenting its current plans for waste management, DOE outlined its intention to complete, by March 1993, a broad reevaluation of various treatment options for both single and double-shell tanks. These options include a new facility to be used to separate radionuclides for repository disposal of high-level radioactive waste (HLW).

As you recall, NRC indicated to DOE, in 1989, its agreement that the criteria DOE used for classification of grout feed as low-level waste were appropriate, and, consequently, that the grout facility for disposal of double-shell tank waste would not be subject to our licensing authority (R. Bernero, NRC letter to A. Rizzo, DOE, September 25, 1989). This agreement was predicated on our understanding that DOE would segregate the largest practical amount of the total site activity attributable to "first-cycle solvent extraction, or equivalent" for disposal as HLW, leaving behind only a small fraction of moderately radioactive material.

The Commission has recently completed its review of a rulemaking petition from the States of Washington and Oregon on the subject of the double-shell tank wastes and has indicated, in the enclosed petition denial, that it would regard the residual fraction as "incidental" waste, based on the Commission's understanding that DOE will assure that the waste: (1) has been processed (or will be further processed) to remove key radionuclides to the maximum extent that is technically and economically practical; (2) will be incorporated in a solid physical form at a concentration that does not exceed the applicable concentration limits for Class C low-level waste as set out in 10 CFR Part 61; and (3) will be managed, pursuant to the Atomic Energy Act, so that safety requirements comparable to the performance objectives set out in 10 CFR Part 61 are satisfied.

It is therefore essential, in the light of this position, that DOE's present reevaluation of tank waste remediation options, and subsequent periodic evaluations as may be conducted, include the application of these principles. We recognize that there may be significant economic, programmatic, and safety factors affecting the remediation program, but the consideration of such factors as they may relate to the possible jurisdiction of NRC should be made clear.

If, during your periodic evaluations, it becomes apparent to you that any wastes may be subject to NRC licensing, it will be necessary for you to communicate that concern to NRC. It will then be necessary to determine what form of pre-licensing interactions, analogous to repository site characterization, would be needed to define the appropriate disposition of these wastes. We expect that DOE will document the results of the analyses supporting its conclusions and that this documentation will be adequate for an NRC review, should that be appropriate. We believe it would be prudent for any such documentation to be developed with good record-keeping and under an adequate quality assurance process.

I trust that this letter and the enclosed petition denial provide the information requested in Leo P. Duffy's November 4, 1992, letter to Chairman Ivan Selin, regarding NRC's intended response to the rulemaking petition by

Ms. Jill Lytle

the States of Washington and Oregon. If you have any further questions, please feel free to contact me, at 301-504-3352, or B.J. Youngblood, Director of the Division of High-Level Waste Management, at 301-504-3404.

Sincerely,

Robert M. Bernero, Director Office of Nuclear Material Safety and Safeguards

Enclosure Petition Denial

- cc: J. Tseng, DOE-EM-36
 - J. Anttoner, DOE
 - L. Barrett, DOE-RW-1 P. Grimm, DOE-EM-1

 - D. Duncan, EPA
 - R. Stanley, Washington State J. Franco, Oregon State R. Jim, YIN

NUCLEAR REGULATORY COMMISSION

10 CFR Part 60

Docket No. FRM-60-4

States of Washington and Oregon: Denial of Petition for Rulemaking

AGENCY: Nuclear Regulatory Commission.

ACTION: Denial of petition for rulemaking.

SUMMARY: The Nuclear Regulatory Commission (NRC) is denying a petition for rulemaking (PRM-60-4), submitted by the States of Washington and Oregon, which deals with the process and criteria for classifying radioactive waste materials at defense facilities as high-level radioactive waste (HLW) or as non-HLW. (As noted in the petition, certain facilities for the storage of HLW are subject to NRC licensing authority.) The petition is being denied because the NRC concludes that the principles for waste classification are well established and can be applied on a case by-case basis without revision to the regulations.

ADDRESSES: Copies of the petition for rulemaking, the public comments received, and the NRC's letter to the petitioner are available for public inspection or copying in the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Naiem S. Tanious, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 492-3278.

SUPPLEMENTARY INFORMATION:

I. The Petition

The States of Washington and Oregon, and the Yakima Indian Nation, initially submitted a petition for rulemaking on this subject on January 2, 1990. On February 7, 1990, the NRC stiff conferred with the petitioners as contemplated by Paragraph (b) of 10 CFR 2.802. In response to suggestions by the NRC staff, the petition was clarified and resubmitted (by the States of Washington and Oregon) on July 27, 1990.

On December 17, 1990, the Nuclear Regulatory Commission published a notice of receipt of the petition for rulemaking (55 FR 51732). The petition requested that the Commission revise the definition of "high-level radioactive waste" (HLW) so as to establish a procedural framework and substantive standards by which the Commission will determine whether reprocessing waste, including in particular certain waste stored at the U.S. Department of Energy's (DOE) site at Hanford, Washington, is HLW and, therefore, subject to the Commission's licensing authority.

The petitioners request that the Commission amend 10 CFR 60.2 to clarify the definition of HLW and the definition of "HLW facility." The petitioners specifically request that the Commission:

 Establish a process to evaluate the treatment of defense reprocessing wastes in tanks so that such wastes will not be considered HLW if, prior to disposal, each tank is treated to remove the largest technically achievable amount of radioactivity; and

2. Require that the heat produced by residual radionuclides, together with the heat of reaction during grout processing (if employed as a treatment technology), will be within limits established to ensure that grout meets temperature requirements for long-term stability for low-level waste forms.

The petitioners state that the petition for rulemaking is based, in part, on Section 202 of the Energy Reorganization Act of 1974 (ERA), which provides for the Commission to exercise 1 cersing and related regulatory authority over "facilities authorized for the express purpose of subsequent long-term storage of high-level radioactive wastes generated by [DOE] which are not used for, or are part of, research and development activities."

According to the petitioners, the legislative history of the ERA reveals that Congress intended the Commission to license defense reprocessing tank wastes at the point of long-term storage or disposal. The petitioners note that "low-fraction wastes" resulting from pretreatment of tank wastes are scheduled to be grouted and disposed of in land-based grout vaults on the Hanford site in accordance with regulations developed under the Resource Conservation and Recovery Act (RCRA). The petitioners believe that if these wastes are HLW, they clearly fall under the Commission's licensing jurisdiction under Section 202(4) of the Energy Reorganization Act of 1974 (42 USC 5842(4)).

The petitioners acknowledge that the present definition of HLW in the Commission's regulations is based upon the source of the waste, and that

"incidental waste" generated in the course of reprocessing is not HLW. (The latter point is evident from the proposal to amend 10 CFR 60.2 to provide that a residual fraction would be "considered an incidental waste and, therefore, not HLW.") The petitioners claim, however, that wastes stored in tanks at Hanford cannot practicably be classified as incidental waste (as opposed to HLW) because the tanks contain a mixture of wastes from a number of sources, including reprocessing of reactor fuel. Moreover, the petitioners state that radionuclide inventories are estimates subject to substantial uncertainty, owing to lack of accurate records. Further, the petitioners assert that neither DOE, the Commission, nor the petitioners have adequate information regarding the source and composition of the tank waste. Hence, the petitioners believe that the Commission needs to establish both a procedure and a standard for making an evaluation as to whether wastes are HLW on a tank-by-tank basis.

The petitioners assert that the proposed amendment is essential to provide protection of the future health and safety of the citizens of the Pacific Northwest.

II. Classification of DOE Reprocessing Wastes

At Hanford and other sites, questions have arisen regarding the classification of reprocessing wastes for which DOE must provide disposal. In the long-standing view of the Commission, these questions must be resolved by examining the source of the wastes in question. The reason for this is that when Congress assigned to NRC the licensing authority over certain DOE facilities for "high-level radioactive wastes," the Congress was referring to

those materials encompassed within the meaning of the term "high-level radioactive waste" in Appendix F of 10 CFR Part 50. (For a full statement of this position, see the discussion presented in the Commission's advance notice of proposed rulemaking, "Definition of High-Level Radioactive Waste" (52 FR 5993, February 27, 1987).) Accordingly, any facility to be used for the disposal of "those aqueous wastes resulting from the operation of the first cycle solvent extraction system, or equivalent ..." as HLW is defined in Appendix F to Part 50, must be licensed by the NRC. Most of the waste storage tanks at Savannah River (South Carolina), West Valley (New York), and Hanford contain wastes that meet this definition, and the facilities to be used for disposal of chese wastes are, therefore, potentially subject to NRC licensing jurisdiction.

However, when the Appendix F definition was promulgated, the Atomic Energy Commission specifically noted that the term HLW did not include "incidental" waste resulting from reprocessing plant operations, such as ion exchange beds, sludges, and contaminated laboratory items, such as clothing, tools, and equipment. Neither were radioactive hulls and other irradiated and contaminated fuel structural hardware encompassed by the Appendix F definition. Under the same reasoning, as the Commission has previously indicated, incidental wastes generated in further treatment of HLW (e.g., salt residues or miscellaneous trash from waste glass processing) would be outside the Appendix F definition.

In the cases of Savannah River and West Valley wastes, DOE plans to retrieve the wastes from their storage tanks and to separate essentially all of the radioactive materials for eventual disposal in a deep-geologic HLW

repository.¹ Accordingly, the projected recovery of HLW from the wastes in tank storage at those sites will be sufficiently complete that the decontaminated salts and other residual wastes are classified as "incidental" (i.e., non-HLW). The NRC will have no .egulatory authority, under Section 202 of the Energy Reorganization Act, over DOE's facilities to be used for processing and disposal of the incidental waste.

At Hanford, DOE plans to process the wastes presently stored in doubleshell tanks in a manner similar to that planned for the wastes at Savannah River and West Valley. Such processing would separate most of the radioactive constituents of the wastes for eventual deep-geologic repository disposal and, the residual salts would be dispoled of onsite in a shallow, near-surface concrete-like grout facility. (Plans for processing of singleshell tank wastes have been deferred.) However, classification of the Hanford double-shell tank wastes has proven more difficult than classification of Savannah River and West Valley wastes. At Hanford, many of the primary reprocessing wastes were generated using older separation technologies, which resulted in substantial dilution of those wastes with nonradioactive materials. In addition, many of the tanks at Hanford contain mixtures of wastes from both reprocessing sources and other sources. Finally, recordkeeping at Hanford was not always thorough enough to allow precise determinations of the origins of the wastes now present in specific tanks at

¹See 52 FR 5992, February 27, 1987 (definition of "high-level waste"), n. 1, where the Commission characterizes as "incidental waste," the decontaminated salt with residual activities on the order of 1,500 nCi/g Cs-137, 30 nCi/g Sr-90, 2nCi/g Pu, as described in the Department of Energy's FEIS on long-term management of defense HLW at the Savannah River Plant, DOE/EIS-0023, 1979. Although an EIS has not yet been published for the West Valley Demonstration Project, preliminary estimates indicate the likelihood of an equivalent degree of separation. Hanford. For these reasons, some of the Hanford tank wastes cannot be readily classified as either HLW or incidental wastes using only the definitions and concepts discussed above.

Taking into account these uncertainties and their implications with respect to NRC jurisdiction, the NRC and DOE staff held several meetings to explore the situation in detail. A principal objective of these meetings was to ascertain, to the extent practicable, whether some or all of the wastes should be regarded as HLW and whether, on the other hand, some or all of the wastes should be classified as non-HLW. Several things became clear as a result of these meetings.

First, management records there add, wath for DOE to determine that two double-shell waste tanks do not contain wastes from reprocessing of reactor fuels. Therefore, these wastes clearly do not contain HLW within the Appendix F definition. The NRC agreed with DOE that any disposal facility intended exclusively for these wastes would not be subject to NRC licensing authority.

Second, DOE has carried out a "material balance" analysis of waste management activities at Hanford. This analysis estimated the total amount of "first cycle reprocessing wastes" generated at Hanford and, to the extent practical, the current location of those wastes. The DOE proposed onsite grout disposal of the residual waste from the double-shell tank waste processing would be only a small fraction of the reprocessing wastes originally generated at the site.

Finally, DOE studied possible technologies for additional waste processing, and agreed to remove the largest practical amount of radioactive material from double-shell tank wastes prior to disposal in onsite grout

facilities. This commitment by DOE, coupled with the material-balance study indicating that most of the originally-generated radioactive material would be recovered, led the NRC staff to conclude that the residual waste material should be classified as incidental waste, since they are wastes incidental to the process of recovering HLW. With this classification, DOE could proceed with onsite disposal of such incidental wastes in a grout facility without licensing by the NRC. It should be noted that if the DOE processing nperations go as planned, the residual activity of these incidental wastes would be below the concentration limits for Class C wastes under the waste classification criteria of 10 CFR Part 61.

Following 'ts review, the NRC staf, by letter dated September 25, 1989, from R. M. Bernero, Director, Office of Nuclear Material Safety and Safeguards, NRC, to A. J. Rizzo, Assistant Manager for Operations, Richland Operations Office, DOE, endorsed DOE's plans to sample and analyze the grout feeds before disposal in an effort to control the final composition of the grout feed. However, the staff indicated that if DOE were to find, in the course of conducting the sampling program, that the inventories of key radionuclides entering the grout facility are significantly higher than previously estimated, DOE should notify the NRC and other affected parties in a timely manner.

It should be noted that the appropriate classification of some Hanford wastes remains to be determined -- specifically, any single-shell tank wastes, and any empty but still contaminated waste tanks DOE might dispose of in-place. For both types of wastes, a case-by-case determination of the appropriate waste classification might be necessary.

III. Discussion

The petition for rulemaking presents two basic issues. The question is not whether "high-level waste" should be interpreted by reference to the source-based concepts derived from Appendix F to 10 CFR Part 50. The petitioners agree that this is proper. Nor is there any fundamental challenge to the concept that "incidental wastes" are excluded from the definition of "high-level waste." The issues are much narrower ones. The first issue is a substantive one -- the criteria to be applied in differentiating incidental waste from high-level waste. The second issue is a procedural one -- the process that should be employed by the Commission in arriving at a judgment whether or not it has jurisdiction over particular facilities. These will be addressed in turn.

A. The Standard for Classification

We first address the standard that should be employed in distinguishing high-level waste from incidental waste. In doing so, we strive to apply the policies that underlie the adoption of Appendix F to 10 CFR Part 50 (and, hence, Section 202 of the Energy Reorganization Act).

The petitioners suggest that the proper standard, to be applied on a tank-by-tank basis, is to consider all processing streams to be high-level waste unless they have been treated, prior to disposal, "to remove the largest technically achievable amount of radioactivity." Adoption of such a criterion would certainly serve the goal, which had been contemplated by the Commission, of removing the hazardous process streams to a geologic repository for
permanent storage. It is not the only standard, however, that would suffice for this purpose, particularly when it is viewed in a broader regulatory context.

The clearest expression of the overall regulatory objectives is the Atomic Energy Commission's (AEC's) explanatory statement when it promulgated Appendix F -- namely, "that the public interest requires that a high degree of decontamination capability be included in such facilities and that any residual radioactive contamination after decommissioning be sufficiently low as not to represent a hazard to the public health and safety." 35 FR 17530, November 14, 1970. As we read the AEC's intent, the reference to "a high degree of decontamination capibility" eaves a substantial degree of discretion. It certainly does not rule out consideration of economic factors as well as technical ones. It was the AEC's contemporaneous practice to consider financial impacts as, for example, in controlling releases of radioactive materials from licensed facilities to the lowest levels "technically and economically practical." AEC Manual Chapter 0511. When the AEC spoke of a "high degree" of decontamination capability, we believe that it was guided by similar considerations. Moreover, from a policy standpoint, this makes good sense, for so long as there is adequate protection of public health and safety, it would not be prudent to expend potentially vast sums without a commensurate expectation of benefit to health and the environment.

Achieving a "high degree of decontamination capability" implies, then, that the facility should separate for disposal as much of the radioactivity as possible, using processes that are technically and economically practical. In addition, however, as the AEC's statement indicates, the residual radioactive

contamination should be sufficiently low as not to endanger public health and safety.

These principles -- high decontamination capability and protection of health and safety -- are the essential benchmarks that have influenced the development of NRC's position vis-a-vis DCc on the question of the proper classification of the tank wastes and grout at Hanford.

When the question regarding classification of wastes was first raised, the NRC staff identified to DOE some approaches that might be used in distinguishing HLW from incidental waste. One approach was expressed as follows:²

As an alternative approach, we Luggest that DOE attempt an overall material balance for HLW at the Hanford site, using the source-based meaning of HLW. It is hoped that this approach might provide a more efficient means of identifying those wastes subject to licensing by NRC under terms of the 1974 Energy Reorganization Act. Under this approach, if DOE could demonstrate that the largest practical amount of the total site activity attributable to "first-cycle solvent extraction" wastes has been segregated for disposal as HLW, then NRC would view the residual as a non-HLW. We would articipate that at least 90 percent of the activity would have been separated in this way. Thus, if it can be shown that DOE has processed the waste with the intent to dispose of the HLW in a repository or other appropriate licensed facility, leaving

²Letter from Michael J. Bell, Chief, Regulatory Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, NRC, to Ronald E. Gerton, Director, Waste Management Division, Richland Operations Office, DOE, November 29, 1988. The letter included some "suggested criteria" involving a "good faith" effort to achieve isolation of HLW from nonradioactive salts, such an effort to be judged, as a practical matter, by considering (among other things) alternative separation processes.

behind only a small fraction of only moderately radioactive material, then the goals stated in 10 CFR Part 50 Appendix F and incorporated in the Energy Reorganization Act would have been satisfied; and the disposal of the residual would accordingly not be subject to NRC licensing.

In response, DOE considered the practicality of various waste processing alternatives and presented the results of its study by letter dated March 6, 1989.3 The results were also presented at a meeting among interested parties, including the petitioners, held on August 4, 1989. (Minutes of the meeting are available for public inspection in the NRC Public Document Room) DOE's "baseline" disposal plans would have recovered all but about 12-13 million curies of cesium-137, together with lesser activities of strontium-90, transuranics, and other radionuclides." DOE's study indicated the practicality of removing an additional 6 million curies of cesium-137 for repository disposal. DOE proposed to remove this additional 6 million curies of cesium-137. DOE also identified additional treatment alternatives, with their associated cosis, which it viewed as not being economically practical. DOE's material balance showed that, after the residue from the double-shell tank wastes is grouted, 2 to 3 percent of the key radionuclides which originally entered all Hanford tanks would be disposed of as LLW in nearsurface vaults. The concentrations of radionuclides in the grout would be

³Letter from A. J. Rizzo, Assistant Manager for Operations, Richland Operations Office, DOE, to Robert M. Bernero, Director, Office of Nuclear Materials Safety and Safeguards, NRC, March 6, 1989.

DOE noted in the March 6, 1989 letter from Rizzo to Bernero that, based on limited available analytical data, the total cesium-137 could be as much as 20 million curies versus the 12-13 million estimate.

comparable to Class C for cesium and transuranic wastes, and to Class A or B for the remainder.⁵ DOE also noted certain engineering and institutional factors that might compensate, especially as to potential intrusion hazards, for the possibility that the total amount of waste that would be grouted would be greater than the amount of Class C waste that might be contained in a typical commercial burial ground.

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Based on its review of DOE's March 6, 1989 submission, the NRC staff concluded that DOE's proposed processing would remove the largest practical amount of total site activity, attributable to HLW, for disposal in a deep geologic repository. This finding was based on (1) past and planned treatment of the tank wastes; (2) radionuclide concentration and material balance; and (3) cost-effectiveness of additional radionuclide removal. These conclusions reflected DOE's undertakings both to achieve a high degree of separation and to provide protection of public health and safety. As a result, the staff concluded that the expected residual waste would not be high-level waste and would thus not be subject to NRC licensing authority. The staff thereupon advised DOE that NRC agreed that the criteria used by DOE for classification of the grout feed are appropriate and that the grout facility for the disposal

⁵NRC understood this statement to connote that cesium-137 and transuranic radionuclides in the residual waste would be less than the concentration limits for Class C low-level waste, as defined in NRC's requirements in 10 CFR Part 61, and that the concentration of other radionuclides would be less than the concentration limits for Class A or B low-level waste.

of the double-shell tank waste would not be subject to NRC licensing authority.⁶

At a meeting in Richland, Washington on July 16, 1992, DOE staff presented more detailed double-shell tark waste processing options and, based on recent analyses, summarized available information on the characteristics of waste within the tanks. DOE's current estimate of the total amount of radioactivity proposed for disposal in grout in near-surface vaults is within earlier range estimates but is now believed to be nearer the upper end of the range. DOE also clarified its intention to apply criteria comparable to the Performance Objectives set out

in 10 CFP Part 61. Among other things these performance objectives include numerical radiation exposure limits for protection of the general population from releases of radioactivity and requires a design to achieve long-term stability of the disposal site.

DOE intends to complete a reassessment of the tank waste processing options by March 1993. This reassessment, the NRC staff understands, will include a reexamination of the practicality of achieving higher degrees of separation, particularly with respect to those tanks that contain substantial quantities of key radionuclides.

Assuming implementation of DOE's plans as described above, the Commission concludes that any radioactive material from the double shell tanks that is deposited in the grout facility would not be high-level radioactive

⁶Letter from Robert M. Bernero, Director, Office of Nuclear Material Safety and Safeguards, NRC, to A. J. Rizzo, Assistant Manager for Operations, Richland Operations Office, DOE, September 25, 1989. The letter also called upon DOE to advise NRC periodically of the analytical results of samples of key radionuclides entering the grout facility, so that the classification of the waste might be reconsidered if the inventories were significantly higher than DOE had estimated.

waste subject to NRC's licensing jurisdiction. The responsibility for safely managing those wastes rests with the Department of Energy. The basis for the Commission's conclusion is that the reprocessing wastes disposed of in the grout facility would be "incidental" wastes because of DOE's assurances that they: (1) have been processed (or will be further processed) to remove key radionuclides to the maximum extent that is technically and economically practical; (2) will be incorporated in a solid physical form at a concentration that does not exceed the applicable concentration limits for Class C low-level waste as set out in 10 CFR Part 61; and (3) are to be managed, pursuant to the Atomic Energy Act, so that safety requirements comparable to the performance objectives set out in 10 CFR Part 61 are satisfied.

The petitioners also requested that the Commission exercise oversight to assure that the grout meets temperature requirements for low-level waste forms. They acknowledge that DOE's vault design is protective of human health and the environment if heat produced by residual radioactivity, together with heat generated from reactions during the grout process, is kept within defined limits. They present no technical data to suggest that achievement of these temperature controls presents any unusual engineering challenge. In any event, inasmuch as the Commission does not consider the grout produced in accordance with DOE's plans to be high-level waste, it does not have the authority to carry out this oversight function.

B. Procedural Issues

1. Whether Rulemaking Is Necessary and Desirable

The petitioners urge that the Commission initiate rulemaking procedures that would result in the establishment of substantive criteria for determining whether particular radioactive wastes either are or are not high-level waste. Generally, a decision whether to proceed by rulemaking (as requested) or to make determinations in individual, <u>ad hoc</u> litigation lies within the informed discretion of the cognizant administrative agency. Rulemaking is most appropriate where an agency seeks to establish a general principle, having prospective effect, to be applied in a wide variety of factual contexts. Where the issue before an agency involves the application of law to a very specific existing fact situation, especially where that situation is not representative of other matters that may need to be decided by the agency, then it is clearly more efficient and more to the point to decide by a process of adjudication (i.e., on a case-by-case basis).

Applying these principles to the petition at hand, the Commission has little difficulty in concluding that rulemaking is neither necessary nor desirable. Reprocessing wastes are located at only four principal locations in the United States. The Commission has previously determined that the residual contamination anticipated from proposed operations at Savannah River should be characterized as incidental waste and not high-level waste (see 52 FR 5993, Feb. 27, 1987, cited above, at footnote 1.) Wastes generated at the Idaho Chemical Processing Plant are markedly different from those at Hanford and Savannah. Therefore, if questions about classification of the

Idaho wastes should arise, precedents established at Savannah River and Hanford might be difficult to apply. Any wastes at the Western New York Nuclear Service Center will require treatment in accordance with the applicable provisions of the West Valley Demonstration Project Act.

The limited practical effect of the decision -- i.e., restricted to the Hanford tanks -- is reason enough to proceed by way of adjudication instead of rulemaking. The Commission is persuaded further by the need to avoid making premature decisions with respect to the wastes stored at Hanford in singleshell tanks that are not the subject of pending treatment plans. If the Commission were to establish rules to apply to the wastes remaining in those tanks, our inquiry would have to be greatly broadened; and it might become necessary to consider a wide range of situations that might or might not ever come to pass in the future.

2. Whether the Commission Is Adequately Informed

Petitioners suggest that their proposed procedures, which include detailed tank-by-tank assessments, are necessary to ensure confidence in the treatment process employed by DOE and to build confidence that the treatment standard is being met.

The issue to be decided by the Commission is a much narrower one: it is merely to determine whether the activities being undertaken by the Department of Energy fall within the NRC's statutory jurisdiction. As in the case of other persons whose activities may fall within our regulatory sphere, the Commission may from time to time demand information so as to be able to determine whether or not to initiate an enforcement action. The NRC staff has

acted in this manner in its inquiries to DOE. It has obtained and evaluated information that is relevant and materia: to a determination whether or not the proposed activities of the DOE are subject to NRC licensing jurisdiction. All the information obtained and evaluated has been made available contemporaneously to the public.

Moreover, as a practical matter, NRC recognized the uncertainties associated with the projected radionuclide inventories in the tank wastes and endo: ed DOE plans for sampling and analyzing the grout feeds before disposal. The objective of these efforts is to control the final composition of the grout wastes. If DOE finds that it can no longer assure that these wastes will be managed in accordance with the criter a previously discussed, DOE should notify NRC.

If a standard of "largest technically achievable amount will be isolated" were to be applied, then the facts submitted by DOE might not be sufficient to conclude that NRC lacked jurisdiction. However, the proper standard includes considerations of economical practicality as well. As indicated in an earlier part of this decision, the Commission has obtained information that is sufficient for this purpose.

3. Future Adjudications

The petitioners contemplate that if a rule were to be adopted in accordance with their proposal, particular determinations of how specific wastes would be characterized would be "left to individual adjudicative proceedings." The NRC infers that the "proceedings" contemplated by petitioners are licensing activities of the kinds specified in Section 189 of

the Atomic Energy Act, as amended, 42 USC 2239. Adjudications in this type of proceeding are in some cases to be conducted in accordance with the hearing provisions of Subpart L of 10 CFR Part 2.

These procedures are often appropriate with respect to activities that are subject to NRC regulatory and licensing authority. However, the NRC is reluctant to employ them in the context that is proposed -- to determine whether NRC has jurisdiction in the first place. To do so would entail the conduct of an adjudicatory proceeding in order to see whether another adjudicatory licensing proceeding must be held. More importantly, the Commission considers that the existing record contains all the factual information needed for a decision and that no unresolved material factual issues remain that would require further proceedings.

4. Other Considerations

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While both NRC and DOE have focused their attention upon the meaning of the statutory term "high-level waste" and its application to the materials in storage at Hanford, other considerations might come into play in determining whether or not DOE activities are subject to licensing. In particular, it should be recalled that NRC exercises licensing authority under Section 202(4) only as to "facilities authorized for the express purpose of subsequent longterm storage of [DOE-generated] high-level waste." The content of individual waste tanks is by no means dispositive of the question whether the facilities for storage of the treated waste are subject to licensing. A number of other factors may be relevant and material as well: (1) what are the limits, geographically and functionally, of "facilities"; (2) have those facilities

been "authorized" (and by whom is such authorization required); and (3) have those facilities been authorized "for the express purpose of subsequent longterm storage of high-level waste" where those who may authorize the facility make no express mention of high-level waste? It is not necessary for the Commission to address these questions at length in order to dispose of the pending petition.

IV. Public Comments on the Petition

The NRC received letters from 12 commenters. Two letters were from other Federal agencies, two were from public interest groups, one was from a nuclear industry corporation, and seven were from private individuals. Most comments were opposed to the petition.

A. Process and Standards Proposed in Petition

Several comments expressed concern that granting the petition would have an adverse effect on the timely disposal of radioactive waste at Hanford. This was a concern because many of the Hanford waste tanks were seen as nearing or exceeding their design life. The provisions of the rulemaking proposed in the petition were viewed as limiting DOE's flexibility in selecting the most effective processes for waste treatment and disposal. The petitioner's request that "best available technology" be used in removing HLW material from the tank wastes was seen as ignoring costs of disposal, exposures to workers, and environmental impacts.

Some comments disputed the petitioner's claim that the rulemaking proposed in the petition would offer a better process for classification and disposal of the Hanford tank wastes. These commenters did not see any advantage in the proposed process over the process for classification and disposal currently in use. One comment suggested that the Commission's rulemaking requiring disposal of Greater-than-Class C waste in a geologic repository or Commission-approved alternative (53 FR 17710, May 19, 1989) might force DOE to allocate resources to handle the hazards, rather than to waste further time fruitlessly searching for ways to remove more and more activity from one part of the waste. The action proposed by the petitioners was viewed as not increasing the safety ... disposal of the waste.

The Commission believes that adherence to the standard of technical and economic practicality generally reflects agreement with these comments.

B. Creation of a Risk-Based Classification System

Several comments, while noting that the rulemaking proposed by the petition would not do so, favored creation of a risk-based system of radioactive waste classification.

The Commission has previously addressed the costs and benefits of creating a new system of radioactive waste classification. Its rationale for not doing so is outlined in the statement of considerations to the proposed Part 61 rulemaking on disposal of Greater-than Class C waste (53 FR 17709, May 18, 1988). Further consideration of these issues is beyond the scope of this proposed rulemaking action.

C. NRC Licensing Authority

Some comments focused on the licensing authority of NRC over the Hanford tank wastes. DOE stated that the rulemixing suggested in the petition would involve NRC in regulation of DOE's predisposal waste treatment and processing activities, which would be inconsistent with NRC authority to license specific DOE facilities under the Energy Reorganization Act of 1974. Another commenter stated that the proposed rulemaking was inconsistent with the statutory responsibilities of DOE and NRC. These arguments have already been discussed, and require no further response. It may be emphasized, however, that even if the Commission were found to have juri diction over the disposal facilities, it would not regulate either the tanks themselves or the facilities being used to process the wastes in these tanks; and there is reason for concern that implementation of the petitioner's proposal might draw the Commission improperly into regulation of those facilities.

A commenter concluded that DOE was currently in violation of 10 CFR Part 30 requirements for a license because various near-surface waste disposal facilities at Hanford are being used for "long-term storage" of highlevel radioacrive waste. The issue is not pertinent to the subject matter of the petition. However, in any case, the comment does not take into consideration the judicial interpretation of the term in <u>Natural Resources</u> <u>Defense Council. Inc. v. U.S. Nuclear Regulatory Commission</u>, 606 F.2d 1261 (D.C. Cir., 1979). The D.C. Circuit Court of Appeals ruled in this case in support of NRC's position that the tanks have not been authorized for use as

long-term storage or disposal and are, therefore, not subject to NRC licensing.

D. Public Input

A number of comments stressed the importance of adequate public input into decision making regarding disposal of the Hanford tank wastes. Some called for public hearings on this subject to be held in the Pacific Northwest. One commenter noted that the EIS which was done for Hanford provided the opportunity for public commert. Another commenter believed that the Commission's rulemaking procedures did not offer the public a better opportunity for input than does the current licensing procedure.

As indicated in the Discussion above, the NRC's review of the situation with respect to the double-walled tanks has been carried out publicly from the start. Meetings with DOE have been open, and at least one of the petitioners (the State of Washington) has been provided advance notice and an opportunity to attend. Documents have been placed in the Public Document Room and have been made available for public inspection. It appears to the Commission that the essence of the issue concerns the appropriate standard for evaluating whether certain wastes should be regarded as high-level waste or not. Sufficient factual information is available to carry out these evaluations. Also, the petition for rulemaking has afforded an opportunity for views to be expressed with respect to the appropriateness of the standard.

A decision that NRC lacks licensing jurisdiction does not mean that opportunities for public input will be denied. As DOE undertakes its waste management activities, it will afford opportunities for public participation to the extent required by its own enabling statutes, regulations, and orders.

E. Other Comments

One commenter took exception to the petitioner's claim that the radioactive inventory of the Hanford tank wastes was inadequately known. The commenter believed that the contents of the tanks can be bounded well enough to judge the relative safety of various disposal options.

The Commission considers the avai'able information to be sufficiently bounded to enable it to conclude that DOE's proposed operations (with respect to the material stored in the double-shell tanks) can result in the removal from the Hanford double-shell tanks of as much of the radioactive waste as may be technically and economically practical, and that the applicable regulatory objectives have been satisfied. Once these judgments are made, it is not the NRC's role to judge the relative safety of various disposal options, and we decline to do so.

One comment stated that while the petition was aimed solely at the Hanford tank wastes, its provisions could potentially affect all radioactive wastes from reprocessing, including those at Savannah River, West Valley, and the Idaho National Engineering Laboratory. As the waste management programs at these other sites are in different stages of implementation, the impacts of the provisions would vary from site to site. As indicated above, the Commission is sensitive to this consideration yet believes that the specific case at hand only needs to be addressed at this time.

Some comments urged the Commission not to change the present definition of HLW. The Commission is not changing the present definition.

V. Conciusion

For the reasons presented in this document, the petition for rulemaking is denied.

Dated at Rockville, Maryland this 26 day of Column 1993.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,

Secretary of the Commission.