Savannah River Site
Citizens Advisory Board

Recommendation #247

Information for the Administrative Law Court

Background

On March 19, 2007, the Natural Resources Defense Council (NRDC), Nuclear Watch South, the Carolina Peace & Resource Center, Southern Alliance for Safe & Clean Energy, and Blue Ridge Environmental Defense League (the "petitioners"), filed a request to contest the South Carolina Department of Health and Environmental Control (DHEC) permit issued to the Department of Energy (DOE) for the disposal of "salt" waste from the Savannah River Site (SRS) tank farm, after processing to remove some fission products and placing the waste in a grout matrix, into the Saltstone Disposal Facility. On March 26, 2007, the Sierra Club filed a similar request.

The petitioners allege that DHEC has misinterpreted South Carolina law because the agency issued the permit under the South Carolina's Industrial Solid Waste Regulations, instead of the state's authority delegated by the federal Environmental Protection Agency under the federal Resource Conservation and Recovery Act (RCRA). Simplified, the petitioners assert that the question before this Court is straightforward: "Can DHEC issue a final permit for the Z-Area Saltstone Disposal Facility via its Industrial Solid Waste Landfill regulations? Or must DHEC issue a permit for this facility under its federally delegated role to implement and enforce RCRA?" The petitioners assert that DHEC must apply RCRA to permit this facility (Ref. 1).

Unrelated to the petitioners' state-based claims, the petitioners further allege that the State of South Carolina has been ill served by the recent federal developments related to Section 3116 of the 2005 National Defense Authorization Act (NDAA). The petitioners misunderstand Section 3116 and raise a challenge to that federal law in a State permit appeal. They again assert that the question before this Court is straightforward: "Should the Administrative Law Court allow DOE to proceed under a permit that is complicit with allowing DOE to violate the law" (Ref. 2).

The petitioners request relief because members of NRDC, *et al.*, will be forever exposed to the permanent emplacement of highly radioactive and toxic waste(s) adjacent to and in the water table near the Savannah River if the permit is allowed. They further assert that if the permit is allowed that "a national sacrifice zone" of diluted high-level waste will be created (Ref. 3).

All the liquid radioactive waste at the SRS is stored underground in large, carbon steel tanks. The first tanks were put into service over half a century ago, in 1954. Some liquid radioactive waste inventory in the tanks at SRS is stored in "non-compliant" tanks. Twenty-four (24) of the original fifty-one (51) tanks are classified as Type I, II, or IV style tanks, and none meet the standards for secondary containment requirements. A total of thirteen (13) tanks have leaked through stress cracks located near weld joints and have self-sealed by salt deposition. One tank has had a release of waste into the environment. The leak, which occurred in 1960, was from the

primary tank into the secondary pan where it overflowed via a concrete vault joint into the ground. Monitoring wells were installed and the tank was removed from service and cleaned. This tank is empty and waiting decommissioning; however, large quantities of insoluble salts remain in the area around the tank (annulus).

All the liquid radioactive waste stored in these aging tanks is in viscous, liquid or water-soluble crystalline forms. The longer the liquid radioactive waste remains untreated in aging tanks, the greater the likelihood that the tanks will leak to the environment, posing risks to SRS workers, the public, and the environment both in the immediate vicinity and downstream. The potential exists for the Defense Waste Processing Facility (DWPF), the planned Salt Waste Processing Facility (SWPF), and the interim salt processing treatments to be impacted by the petitioners' appeal. These facilities and the Saltstone Disposal Facility are all necessary components of an overall program and related systems to remove this liquid waste from those old tanks. The SRS, in perpetuity, will retain long-lived radioisotopes at various facilities on site that will necessitate institutional controls, e.g. federal control on future development, including exclusion from public use and drilling any drinking water wells.

Comment

The Savannah River Site (SRS) Citizens Advisory Board (CAB) is a non-partisan group of individual stakeholders from South Carolina and Georgia. Chartered under the Federal Advisory Committee Act, the Board provides informed and timely recommendations on waste management, environmental restoration, and other activities affecting SRS. The 25 CAB members represent a broad cross-section of the public, including residents who live, work and play close to the SRS. Fifty-two percent of the Board resides in counties adjacent to SRS and an additional 12 percent live within 50 miles of the SRS. http://www.srs.gov/general/outreach/srs-cab/srs-cab.html

The CAB has extensively reviewed, and made recommendations concerning the treatment and disposal of radiological waste, including the "salt" component of inventory in the Savannah River Site waste tanks. Some of those recommendations have been critical of DOE decisions or performance. The CAB considers the legacy liquid radioactive waste in the carbon steel tanks at SRS as posing the greatest risk to SRS workers, public health and safety, and the environment. The SRS CAB has a stakeholder interest in the effectiveness of the Modified Industrial Solid Waste permit for the SRS Z-Area Saltstone Disposal Facility. The permit not only allows the particular activities that it addresses, but those activities are integrated into an overall program of treatment and disposal of the waste tanks' inventory.

The petitioners' primary basis for seeking relief – ostensibly public health and safety -- lacks merit. There is a greater likelihood that members of NRDC, *et al.*, and the environment will be exposed to highly radioactive waste if the permit is not allowed and waste remains in aging 50 plus year old tanks.

In addition, the delay in the Saltstone permit is having a ripple impact on the overall program for processing, vitrifying and disposal of radioisotopes in tank sludge and, in the future, in the salt component. Because of the integrated relationship of the various treatment methods on different

waste components in the tanks, a stay of the Saltstone permit increases lifecycle costs, potentially delays sludge treatment and disposal due to tank space limitations, extends the time that the waste remains in the tanks (and associated risk of tank failure), and impacts other regulatory obligations and requirements (e.g., a Federal Facility Agreement between DOE, Environmental Protection Agency (EPA), and the State with milestones for waste tank closure). This delay in the Saltstone permit does not preserve the "status quo", which is the intent of the automatic stay provisions in the South Carolina law. Rather, it extends the duration that the waste tank inventory represents a potential risk to public health and safety. The greater public interest is served by continued processing of the waste inventory, including activities allowed by the contested permit modification.

The current State Saltstone Disposal Facility permit authorizes disposal of waste with radionuclide concentrations comparable to Class A low-level waste limits (10 nCi/g) as defined in federal Nuclear Regulatory Commission regulations at 10 CFR 61.55 (Ref. 4). DHEC under its industrial solid waste permitting authority issued the permit. The permit requires DOE to notify DHEC if the characteristics of wastes to be disposed in the Saltstone Disposal Facility would change, as will be the case with the higher concentrations of radionuclides (about 0.2 Ci/gal rather than about 0.1 Ci/gal, and about 41 nCi/g actinides rather than less than 10 nCi/g) as a result of the interim salt processing (Ref. 5). Therefore, DOE submitted a request for a modification to the original Saltstone Disposal Facility permit. The simple answer to the petitioners' main question is "**YES,** DHEC can issue and has already issued a final permit for the Z-Area Saltstone Disposal Facility via its Industrial Solid Waste Landfill regulations." The permit in question is merely a modification to an existing permit.

The CAB is familiar with Section 3116 of the 2005 National Defense Authorization Act (NDAA), which -- after consultation with the NRC -- allows the DOE Secretary to determine that waste is not "high level waste" (Ref. 6). The petitioners are using a state proceeding to **collaterally attack** 1) a federal statute (NDAA) and 2) a determination of the Secretary of Energy under federal law. These are not valid grounds for a challenge under state law to the DHEC permit. In fact, on page 12 of its petition, paragraph 31, the petitioners view the state permit as "complicit with allowing DOE to violate the [federal RCRA] law." But the petitioners do not explain why the federal RCRA law has been violated.

Finally, the petitioners request relief "for additional review under RCRA" based on the concern that the permitted activities allow "dilution" of high-level waste are off base. The salt waste will be treated, substantial radioisotopes removed, and the resultant solid waste placed in a disposal facility. The removed radioisotopes will be disposed of in a federal repository, as required by law, after vitrification.

The CAB views DHEC as appropriately and conscientiously applying the law in the granting of the modifications to the permit. By issuing the modified permit, DHEC has applied its regulations in accordance with law, provided due process of law through notice and comment, considered comments submitted by the public, included provisions to address or advance public interests, and complied with its statutory obligations. The CAB considers the permitted activities to enhance public safety and, further, that delay in processing and disposing of the salt

component of the liquid waste in accordance with the DHEC permit has adverse, potential effects to public health and safety.

The CAB understands that only with operation of interim processes such as Deliquification, Dissolution, and Adjustment (DDA) and Modular Caustic Side Solvent Extraction Unit (MCU)/Actinide Removal Process (ARP) will the salt inventory (composed of liquid and water-soluble crystals) in the tanks begin to be reduced, which will provide useable waste tank volume so that: 1) DWPF can continue to vitrify the high-level waste component of the wastes stored in the tanks; 2) tank space can be made available for staging feed from the SWPF ; and 3) tanks can be emptied to support closure to comply with the Federal Facilities Agreement.(FFA) The recovered space in the tanks will allow sludge processing to continue, removing high-level waste radioisotopes from the tanks and vitrifying them in glass. Without the interim processing operation, impacts to the liquid waste activities at SRS will occur, for example 1) slow/stop operation of DWPF; 2) limit operation of SWPF; or 3) jeopardize the FFA tank closure schedules. The petitioners fail to recognize that a stay of the DHEC permit will stop the ongoing reduction of this radiological waste burden.

Activities permitted by the DHEC permit will allow DOE to continue removal of waste, thereby reducing risk to the SRS workers, the public, and the environment. Delay for several years while the Salt Waste Processing Facility is designed, constructed and initially operated, as proposed by the petitioners, is not in the overall public interest. Consistent with well-recognized precedent, the Administrative Law Judge should give deference to DHEC's application of its regulations. As members of the public, the CAB supports the resumption of operation of the "interim" processing of salt.

Recommendation

To minimize the impact to the overall schedule and reduce the risks associated with storing waste in the aging tanks, the SRS CAB recommends that DOE:

1. Request the Administrative Law Court review the merits of this case as quickly as possible and provide a decision in the most expeditious manner that is possible.

2. If a review is not performed in a timely manner, then the CAB requests that DOE petition the Administrative Law Court to lift the stay so operation of the "interim" processing of salt can continue while legal decisions related to this proceeding are being considered.

References

1. Natural Resources Defense Council Petition, *et al.*, Petition page 7-8
2. Natural Resources Defense Council Petition, *et al.*, Petition, page 12
3. Natural Resources Defense Council Petition, *et al.*, Petition, page 14
4. "Classification of Waste" for Near Surface Disposal
5. Federal Register, Volume 71, Number 15, pages 3834-3838, January 24, 2006

6. Federal Register, Volume 71, Number 15, pages 3834-3838, January 24, 2006 (Specifically, in January 2006, the Secretary issued his Section 3116 determination, with supportive basis for concluding that that separated, solidified, low-activity salt waste could be disposed of in the Saltstone Disposal Facility. The Secretary concluded, consistent with Section 3116, that the salt waste is not high level waste because it (1) does not require permanent isolation in a deep geologic repository, (2) has had highly radioactive radionuclides removed "to the maximum extent practical", and (3) meets the NRC performance objectives for the disposal of low level waste set forth in the NRC's regulations (10 C.F.R. 61, Subpart C).)

Agency Responses

Department of Energy-SR