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**Comments to the Nuclear Regulatory Commission on** **DOCKETED**  
**Controlling the Disposition of Solid Materials** **USNRC**

July 1, 2003 (10:05AM)

by  
The Florida Chapter of the Sierra Club

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

The Florida Chapter of the Sierra Club respectfully submits comments to the five alternatives proposed by the Nuclear Regulatory Commission (NRC) for the disposition of low level radioactive waste. A sixth alternative is proposed. Solid materials can include furniture and ventilation ducts in buildings; metal equipment and pipes; wood, paper, and glass; laboratory materials (gloves, beakers, etc); routine trash; site fences; concrete; soil; or other similar materials.

Alternative 1 is the continued unrestricted release of radioactive materials, by the NRC, on a case-by-case basis, which is the "no action" alternative.

The Florida Chapter finds Alternative 1 unacceptable.

A. Incidences of cancer, in the United States, are increasing. In the year 1900, the cancer rate in the U.S. was 3%. Today, 40% of American females and 50% of American males are expected to contract cancer in their lives. In the year 1900, the average radiation exposure (background radiation) to Americans was estimated to be 100 millirem per year. A millirem is an estimated amount of cellular damage to a person resulting from exposure to radioactivity. Today, the average estimated background radiation exposure is up to 360 millirem per year. The major portion of this radiation comes from man-made sources, not natural sources. This exposure includes inhaled and ingested radioactivity, as well as direct radiation. Continued releases, by the NRC, of radioactive materials are unacceptable as these releases increase background radiation and increase America's cancer rates.

B. There is no amount of radiation that is safe. All radiation harms human health. Additional radiation exposure to the American population, however small, statistically results in additional cancers. There is emerging evidence that low doses of radiation incur proportionally higher rates of cancer than

the scientific community previously thought.

C. The NRC has purposefully lost control of thousands, perhaps millions of tons of radioactive material. Its purpose is to sell radioactive contaminated materials for recycling. Near proximity, inhalation, ingestion, or contact with this radioactive material increases each individual's likelihood of contracting cancer.

D. The European Committee on Radiation Risk states that, "...releases of radioactivity without consent cannot be justified ethically since the smallest dose has a finite, if small, probability of fatal harm."

E. For scoping purposes, the Florida Chapter requests the NRC to state the volume, type of material, and amount of radioactivity that has been released using the NRC's case-by-case release procedure.

Alternative 2 is to amend NRC regulations to include a dose based criterion for unrestricted use.

Florida Chapter finds Alternative 2 unacceptable.

A. The NRC is overseeing the decommissioning of 19 nuclear power reactors. Additionally, the NRC is overseeing the decommissioning of 24 nuclear facility sites and 3 nuclear complex sites. There will be massive amounts of radioactive materials authorized for recycling if Alternative 2 is adopted. The 46 sites contain contaminated concrete, steel, asphalt, piping, equipment, plastics, trash, and soil as well as other types of radioactive materials. The volume of this radioactive waste at these sites will be enormous. Realistically, some nearby communities will receive large exposure doses over and over while the more distant communities will receive smaller and fewer doses. Alternative 2 is dangerous and unacceptable.

B. Other than zero, there are no dose based standards that are safe. Vast amounts of radioactive tailings from uranium mines, phosphate mines, mills, and enrichment plants may be authorized for uncontrolled release. If the tailings, slag, and other radioactive wastes are too contaminated for release, there is grave concern that clean material will be mixed with contaminated

material to achieve arbitrary dose based standards for uncontrolled release authorization.

C. Uncontrolled recycled radioactive materials may find their way into many consumer products. All new recycling exposures will be added to the estimated 360 millirem dose which increases each individual's expectation of contracting cancer. Uncontrolled recycled radioactive materials could easily find their way into household products, business equipment, automobiles, toys, buildings, and housing. Manufacturers will be hurt if there are perceptions that certain consumer products contain unwanted, dangerous radioactivity.

D. The incineration of radioactive materials can unevenly concentrate gaseous and particulate radioactive material. Some nearby communities could receive heavy radiation exposure while distant communities could receive light radiation exposure from incinerator effluent.

E. Foundry workers, metal recyclers, machinists, mechanics, pipefitters, manufacturers, and merchants would likely incur higher cancer rates than the average American. It is unlikely that these occupations are equipped to adequately protect themselves from this additional hazard.

F. For scoping purposes, the Florida Chapter requests the NRC to state the volume, type of material, and amount of radioactivity that awaits disposition at NRC licensed facilities.

G. For scoping purposes, the Florida Chapter requests the NRC to state proposed dose based exposure rates and the number of postulated cancers that would arise from the different exposure rates under consideration.

Alternative 3 is where the release of radioactive material would be authorized for certain uses where low public exposures would be expected.

The Florida Chapter finds Alternative 3 unacceptable.

A. When recycling options are reduced, fewer industries will handle much greater volumes of radioactive materials. Radiation exposures to certain occupations will be unduly increased. Foundry workers, steel workers,

cement workers, transportation workers, road builders, and building industry workers will unknowingly contract additional cancers from handling the millions of tons of recycled radioactive building materials that will be released.

B. One of the options that apparently fulfills the criteria for Alternative 3 is recycling depleted uranium into missiles, anti-tank ordinance, and bunker-buster ordinance. The Persian Gulf War created horrendous health problems for soldiers and Iraqi civilians that many experts attribute to inhaled depleted uranium dust. Of the 573,000 soldiers that fought in the Persian Gulf War, 160,000 or 28% of the soldiers have received health related disabilities. From the Korean War, 5% of the veterans received disability benefits and from Viet Nam, 9.6% received disability benefits. This does not include the 8,000 veteran soldiers that have died since the end of Persian Gulf War. The NRC needs to include the disability and fatality numbers of recycled depleted uranium use when calculating the cost-benefits of Alternative 3.

C. For scoping purposes, the Florida Chapter requests the NRC to state the number of cancers that would arise from implementing Alternative 3.

Alternative 4 would prohibit the use of radioactive material from general commerce by requiring the material to be placed in an EPA regulated landfill.

The Florida Chapter finds Alternative 4 unacceptable.

A. EPA regulated landfills are not designed for isolating and containing radioactive wastes. The NRC would be violating its mission to adequately protect human health and safety and the environment by storing radioactive wastes in dangerous landfills.

B. The landfills will concentrate the radioactive wastes. In Florida, public health is dependent on pollution-free surface aquifers for drinking water. Alternative 4 would introduce new classes of radioactive contaminants into landfills. The landfills potentially could leak radioactive leachate which would contaminate surface water resources. Even lined landfills create additional health risks. The leachate that collects in the liner needs to be pumped out and safely processed before it can be discharged. The landfill

managers may not even know that radioactive material is being deposited. Alternative 4 would allow the NRC to avoid responsibility by treating radioactive wastes as non-radioactive wastes.

C. EPA regulated landfills are not designed to contain radioactive gases generated from radioactive solid wastes. The radioactive gases could contaminate nearby populations.

Alternative 5 would prohibit solid material from general commerce by requiring it to be placed in an NRC/AS-licensed LLW disposal site and regulated under the NRC's regulations in 10 CFR Part 61.

The Florida Chapter finds Alternative 5 unacceptable.

A. The rules in 10 CFR Part 61, for radioactive disposal sites, do not adequately protect public health and safety. Concentrated radioactive material, too contaminated for low level disposal, can be diluted then placed in a low level disposal site. NRC rules still allow for shallow land burial which could put Florida's drinking water supply in danger. Too many licensed disposal sites are leaking and these disposal sites are only in their first century of operations. The NRC has yet to formulate a site design that can isolate and contain radioactivity for the thousands of years that will be required.

B. The NRC needs to stop its case-by-case uncontrolled release program and adopt a no-release policy.

C. Funds for safe disposal of low level decommissioning wastes have been collected from the ratepayers of nuclear electricity. If funding is not adequate, fees should be increased.

D. Nuclear power companies continue to collect large sums of money for the decommissioning of nuclear plant sites. Nuclear power companies may be pressuring the NRC to adopt the least restrictive, least costly, alternative for the disposing of the contaminated debris. If decommissioning costs could be substantially reduced, this would give windfall profits to the nuclear power companies.

E. Low level radioactive waste is the responsibility of the waste generator. Alternatives 1, 2, 3, 4, and 5 are unacceptable as they eliminate the waste generator's responsibility.

Alternative 6 is being proposed by the Florida Chapter for scoping and study. The NRC is requested to consider interim, retrievable facilities for storing low level waste. Such a facilities would be built to the highest safety standards possible, yet retrievable when radioactivity begins to leak. Monitoring for leakage at these facilities needs to be continuous. There should be maximum protection for groundwater and maximum protection to keep radioactive gases contained. If future generations can devise technologies for neutralizing radioactivity, the wastes could be retrieved and rendered harmless.

June 30, 2003

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