Blue Ridge Environmental Defense League

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July 7, 2011

Annette Vietti-Cook, Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemakings and Adjudications Staff
E-mail: Rulemaking.Comments@nrc.gov

RE: Docket ID NRC-2010-0267

Dear Ms. Vietti-Cook:

On behalf of the Blue Ridge Environmental Defense League, I write to provide additional information on the pending rulemaking. These remarks will supplement those of Rev. Charles Utley, the League's representative at the June 2011 public meeting in Augusta.

Background

The US Nuclear Regulatory Commission is planning to revise the regulatory framework for licensing potential new commercial reprocessing facilities.[1] The Commission directed the NRC staff in SRM-SECY-07-0081 (ADAMS Accession No. ML071800084) to identify what changes in regulatory requirements would be necessary to licensing facilities associated with reprocessing of so-called *spent* nuclear fuel;[2] that is, nuclear fuel which has been irradiated in a nuclear power reactor and is contaminated with intensely radioactive by-products.

Comments

Reprocessing is the separation of irradiated nuclear reactor fuel into new fuel. Presently, there are no reprocessing facilities in the United States. For decades the United States has rejected reprocessing technology because of the environmental and proliferation dangers. Today, with the addition of known and suspected nuclear weapons states, international security is even more complex. Nuclear reactors and fuel factories which combine potential military and domestic uses of fissile materials—uranium and plutonium—would add to the risk of nuclear proliferation.

First, the principal goal of reprocessing, "to enhance efficiency and effectiveness for regulation of the backend end of the fuel cycle,"[3] is not realistic:

> [R]eprocessing does not reduce the need for storage and disposal of radioactive waste, and a geologic repository would still be required….After reprocessing, the remaining material will be in several different waste forms, and the total volume of nuclear waste will have been increased by a factor of twenty or more,

[1] Overview of NRC Activities for Development of a Reprocessing Regulatory Framework, October 2010 Reprocessing Workshop at 6, http://www.nrc.gov/materials/reprocessing.html
[2] Federal Register Volume 76, Number 112, June 10, 2011 at 34007
[3] Overview of NRC Activities for Development of a Reprocessing Regulatory Framework, October 2010 Reprocessing Workshop at 4, http://www.nrc.gov/materials/reprocessing.html

> including low-level waste and plutonium-contaminated waste. The largest component of the remaining material is uranium, which is also a waste product because it is contaminated and undesirable for reuse in reactors.[4]

The nation's only commercial reprocessing facility, New York's West Valley, was an economic failure and an environmental disaster. The Western New York Nuclear Services Center used the Plutonium Uranium Extraction process (PUREX), dissolving the uranium, plutonium, and radioactive products in acid, separating uranium from plutonium, and storing the wastes. The State of New York accepted the federally-initiated, public-private partnership and purchased the land; the facility operated for just six years (1966-1972) and reprocessed about 640 metric tons of irradiated fuel. The 250 acre sites is heavily contaminated with radioactive poisons including cesium-137, plutonium-238, -239, -240, and -241, uranium-238, iodine-129, tritium, thorium-234 and hazardous wastes. Cleanup cost estimates range from $10 billion to $27 billion.[5]

Second, plutonium, which comprises about 1% of the irradiated fuel, can be used for either nuclear power or nuclear weapons. Because of its dual nature, the United States banned the use of plutonium in commercial nuclear power plants in the 1970's.

Since the mid-1990's, the United States and Russia have attempted to re-open this door with the Surplus Plutonium Disposition program. Although the program would use dismantled nuclear warheads instead of irradiated nuclear fuel, an arms control expert nevertheless warned that other countries "would hear only one message for the next 25 years: that plutonium use for generating commercial power is now being blessed by the United States."[6] Today, the security risk and the potential proliferation of nuclear weapons posed by reprocessing are greater than ever:

> U.S. reprocessing would undermine the U.S. goal of halting the spread of fuel cycle technologies that are permitted under the Nuclear Non-Proliferation Treaty but can be used to make nuclear weapons materials. The United States cannot credibly persuade other countries to forgo a technology it has newly embraced.[7]

Recognizing the danger of plutonium, the Nuclear Non-proliferation Treaty's Thirteen Steps calls upon nuclear weapons states to place fissile material no longer required for military purposes under international verification. Expanding the scope of a Fissile Materials Cutoff Treaty would include a ban on reprocessing.

Further, the extant rulemaking itself implicitly recognizes the problems of nuclear

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[4] Lyman, E., "Nuclear Reprocessing: Dangerous, Dirty, and Expensive," Union of Concerned Scientists, January 2006, http://www.ucsusa.org/assets/documents/nuclear_power/nuclear-reprocessing-factsheet.pdf

[5] *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site*, Synapse Energy Economics, November 2008

[6] Arms Control and Disarmament Agency Director John Holum memorandum to Energy Secretary O'Leary, November 1996

[7] Lyman, E., "Nuclear Reprocessing: Dangerous, Dirty, and Expensive," Union of Concerned Scientists, January 2006, http://www.ucsusa.org/assets/documents/nuclear_power/nuclear-reprocessing-factsheet.pdf

proliferation and economic uncertainty.[8]

> Although a reprocessing facility is one type of production facility, its industrial processes are more akin to fuel cycle processes. This framework was established in the 1970's to license the first U.S. reprocessing facilities. The policy decision by the Carter Administration to cease reprocessing initiatives was based, in part, on the proliferation risks posed by the early reprocessing technology. While that policy was reversed during the Reagan Administration, until recently there was no commercial interest in reprocessing and, hence, no need to update the existing reprocessing regulatory framework in 10 CFR part 50.
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> Although commercial reprocessing interest waned, the Department of Energy (DOE) continued to pursue reprocessing technology development through the National Laboratories. The DOE has sought to decrease proliferation risk and spent fuel high-level waste through developing more sophisticated reprocessing technologies.
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> During the Bush Administration, the Global Nuclear Energy Partnership (GNEP) renewed interest in commercial reprocessing. The GNEP sought to expand the use of civilian nuclear power globally and close the nuclear fuel cycle through reprocessing spent fuel and deploying fast reactors to burn long-lived actinides. In response to these initiatives, the Commission directed the staff to complete an analysis of 10 CFR part 50 to identify regulatory gaps for licensing an advanced reprocessing facility.
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> In mid-2008, two nuclear industry companies informed the NRC of their intent to seek a license for a reprocessing facility in the U.S. An additional company expressed its support for updating the regulatory framework for reprocessing, but stopped short of stating its intent to seek a license for such a facility. At the time, the NRC staff also noted that progress on some GNEP initiatives had waned and it appeared appropriate to shift the focus of the NRC staff's efforts from specific GNEP-facility regulations to a more broadly applicable framework for commercial reprocessing facilities.

Once again, the Nuclear Regulatory Commission is seeking to create another West Valley, replete with the economic failure and the inevitable environmental disaster.

Conclusion and Recommendations

Chemical processing facilities for reprocessing nuclear fuel can also be used to make nuclear weapons. We do not believe that new facilities will provide different results from those at West Valley. By encouraging reprocessing, the United States undermines international agreements for nuclear non-proliferation.

[8] Jack Guttmann, Chief, Engineering Branch, Technical Review Directorate, Division of High Level Was te Repository Safety, Office of Nuclear Material Safety and Safeguards, Federal Register Volume 76, Number 112, June 10, 2011

Reprocessing rulemaking should not be confined to technical issues alone. Any decision by the Nuclear Regulatory Commission to advance this technology would have profound impacts on the environment, on nuclear non-proliferation and disarmament, and on energy policy for many decades. The NRC must conduct a comprehensive analysis of the immediate and long term effects of the dual nature of reprocessing and the regulatory entanglements and the multiple jurisdictions of regulating a public-private facility.

The Nuclear Regulatory Commission must evaluate the international implications of reprocessing. Therefore, before altering its regulations, we request that NRC conduct a thorough investigation into the global impacts of reprocessing. As this decision will have far-reaching effects on the nations of the world, this investigation should include many opportunities for public hearings and other types of public input, both here and abroad.

The NRC must evaluate the potential harm to the public caused by project secrecy and for technical information being proprietary. NRC should evaluate both the diminution of the public's right to know and the barriers to full public review.

The NRC must produce detailed accident scenarios and their environmental and health consequences, especially with regard to high activity nuclear waste.

The NRC must include a clear and complete assessment of reprocessing and foreign and domestic terrorism.

The NRC must evaluate the offsite impacts of reprocessing on transportation corridor communities and reactor communities.

NRC should evaluate the harm to American taxpayers, the effects of yet another subsidy for nuclear power in preference to other types of energy production.

Respectfully,

Louis A. Zeller