Arce, Jeannette

From: Iyengar, Raj
Sent: Thursday, July 07, 2011 5:37 PM
To: Arce, Jeannette
Subject: FW: PSR Comment on Docket ID NRC-2010-0267
Attachments: PSR comments to NRC on potential reprocessing rulemaking 7.6.2011.pdf

From: Rulemaking Comments
Sent: Thursday, July 07, 2011 5:06 PM
To: Iyengar, Raj; Sulima, John
Subject: FW: PSR Comment on Docket ID NRC-2010-0267

From: Michele Boyd [mailto:mboyd@psr.org]
Sent: Thursday, July 07, 2011 5:02 PM
To: Rulemaking Comments
Subject: PSR Comment on Docket ID NRC-2010-0267

PSR's comments on Docket ID NRC–2010–0267 are attached.

Please confirm receipt.

Thanks,

Michele Boyd
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July 7, 2011

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemakings and Adjudications Staff
Rulemaking.Comments@nrc.gov

Re: Comment on Docket ID NRC-2010-0267, NRC "Draft Regulatory Basis for a Potential Rulemaking on Spent Nuclear Fuel Reprocessing Facilities"

The following are PSR's comments on the NRC's Draft Regulatory Basis for a Potential Rulemaking on Spent Nuclear Fuel Reprocessing Facilities, published in the Federal Register on June 10, 2011).

Reprocessing Rulemaking Highly Premature

An NRC rulemaking for spent fuel reprocessing facilities would be highly premature. First, although the NRC claims that it does not "set national policy," it would be doing so by writing a reprocessing rule at this time. The draft subcommittee reports by the President's Blue Ribbon Commission on America's Nuclear Future (BRC), tasked with making recommendations on the management of US spent fuel, indicate that the BRC is likely to affirm that reprocessing is, at best, decades away.

> Alternatives to the once-though fuel cycle (as practiced in the U.S, Sweden, Canada, and elsewhere) or to the modified open-fuel cycle (as practiced in France, Japan, and Russia and planned in some other countries) will require decades of development before they are ready for widespread commercial application.[1]

If the NRC goes ahead with reprocessing rulemaking, it would greatly influence US national policy on plutonium and create a dangerous perception internationally that the US is preparing to reprocess its spent fuel.

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[1] Blue Ribbon Commission on America's Nuclear Future, Reactor and Fuel Cycle Technology Subcommittee, Draft Report, June 2011, page 53
http://brc.gov/sites/default/files/documents/rfct_fullreport_rev20june11.pdf

Second, given Congress' desire to cut the US national budget, it is highly unlikely that federal funding will be available to subsidize a new, expensive reprocessing construction program, leaving it to private industry to pursue construction on its own. Private industry has been allowed to construct reprocessing facilities in the US since President Reagan lifted the ban in 1981, and yet have not done so because it is so expensive. Areva's claim that it will apply for a license to construct a reprocessing facility is highly suspect without such subsidies. Moreover, U.S. law clearly forbids such a license for a foreign owned or controlled facility.

There is no need to promulgate regulations for facilities that will not be pursued.

PEIS Required

Before embarking on a rulemaking, the NRC must prepare a Programmatic Environmental Impact Statement (PEIS), as required by the National Environmental Policy Act (NEPA). The PEIS must analyze the overall impacts of reprocessing, as well as all ofhte the associated facilities and processes, including:

- ***Implications for waste management:*** Reprocessing leads to a myriad of hard-to-manage radioactive waste streams, including high-level waste, Greater-than-Class-C waste, low-level waste, noble gases, contaminated uranium, and weapons-usable plutonium. These waste streams are more difficult to manage and isolate from the biosphere than the original irradiated fuel and create a greater volume with no reduction in radioactivity.
- ***Environmental impacts:*** Experience both in the US and in other countries has shown that reprocessing is the most polluting part of the nuclear fuel cycle. Routine reprocessing operations would result in higher radiation doses to the public than not reprocessing. A reprocessing facility would release the highest doses of radiation to the public through the air, water, and food. It is long established that radiation is carcinogenic. The most recent report by the National Research Council's Committee on Biological Effects of Ionizing Radiation, BEIR VII, confirmed that any increase in radiation exposure increases a person's risk of cancer.[2]
- ***Past US and international experience:*** The only private U.S. commercial reprocessing facility, West Valley in New York State, was shut down after only six years of operation, but its radioactive waste still threatens the groundwater and the Great Lakes watershed more than 30 years later and will cost $5.2 billion to clean up. Reprocessing has been a dismal failure in other countries as well. As just one example, Japan has been unable to solve the technical problems with its $20 billion Rokkosho reprocessing facility, which is now 15 years behind schedule.
- ***Security impacts:*** The Atomic Energy Act forbids the NRC to issue a license if it is "inimical to the common defense and security [of the United States] or the health and safety of the public." Reprocessing will make nuclear bomb material more vulnerable to theft and attack compared to leaving plutonium in a spent fuel rod.

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[2] Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, National Research Council, *Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII-Phase 2*, Washington, D.C., The National Academies Press, 2006, http://books.nap.edu/catalog.php?record_id=11340.

Reprocessing of commercial nuclear waste around the world has resulted in the separation of 250 metric tons of plutonium, enough to make 30,000 nuclear bombs.

- ***Cost:*** In 1996, the National Academies of Science concluded that reprocessing and use of plutonium fuel from existing U.S. reactors would cost $500 billion. A meaningful cost analysis must also include the total lifecycle cost of all of the associated facilities, including clean-up and decommissioning.

NRC Should Focus First on Fukushima Lessons

The NRC should focus on determining and incorporating the lessons from Fukushima, especially related to spent fuel storage in dry casks and pools, before embarking on setting up the rules for new nuclear fuel cycle facilities. The NRC is highly unlikely to have enough information from the ongoing Fukushima disaster to promulgate regulations that incorporate these lessons. NRC also has yet to incorporate any lessons into existing nuclear facilities – which should be a priority over the development of premature reprocessing regulations.

No One-Step Licensing

A one-step licensing process for any reprocessing facilities is highly inappropriate for reprocessing and its associated technologies. An important lesson from the Japanese experience at Rokkasho is that unexpected problems will likely arise in construction. Granting of any operating license must involve public participation.

Mixed Oxide Fuel Not Viable

The NRC should not assume that French-style reprocessing that produces Mixed Oxide Fuel (MOX, or plutonium fuel) is a viable program in the United States, given the problems with the Department of Energy's MOX program. Even if the MOX facility in South Carolina is finished, it very well may sit idle, because no reactors in the U.S. are licensed to use this fuel and only the Tennessee Valley Authority is expressing interest in pursuing a license. Duke Energy, the only utility that had a license to text MOX fuel, let its contract with DOE lapse after MOX fuel assemblies failed a test.

Reprocessing is Not "Recycling"

Given that no reprocessing program in the world uses separated plutonium more than one time, and given that reprocessing results in waste streams that have no potential use, it is incorrect and misleading to call reprocessing "recycling." Reprocessing does not recycle spent fuel, but rather separates it into different waste streams and increases the total volume of nuclear waste to be disposed of by a factor of seven. The NRC should not use the nuclear industry's greenwashing term "recycling" to refer to reprocessing or any technology that uses plutonium.

Sincerely,

Michele Boyd

Michele Boyd
Director, Safe Energy Program