

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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April 18, 2001

Mike Lesar
Chief of Rules and Directives Branch Division of Administrative Services
Office of Administration
Mail Stop T6D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Lesar:

Following are the initial written comments from the Aiken Office of the Blue Ridge Environmental Defense League (BREDL) regarding the Nuclear Regulatory Commission's (NRC) Plutonium (MOX) Fuel Environmental Impact Statement (EIS) scoping period.

I. The hazards of plutonium make this a local, regional, national, and international issue

Last night at the NRC public meeting in North Augusta, South Carolina, several local elected officials submitted repetitious comments that were largely irrelevant to the subject at hand. At the top of that list is the notion that the decision on whether to grant an NRC license for the construction and operation of a Category I Plutonium (MOX) Fuel Fabrication Facility is a local decision.

Nothing could be further from the truth, because when it comes to plutonium there are no outsiders. Plutonium is arguably the most dangerous substance on earth for three synergistic reasons:

1. *Plutonium is the preferred fissile material of nuclear weapons designers around the world.* The use of weapons-grade plutonium in nuclear weapons of mass destruction continues to pose the most severe threat to life on earth as we know it. There remain more than 6,000 nuclear weapons deployed by the United States alone, with a few thousand more in reserve, and similar numbers in Russia. Because only 1 kilogram (2.2 pounds) of plutonium is sufficient to make a nuclear weapon (although it appears that 2-4 kilograms is preferred by designers), plutonium must be heavily guarded by armed protective forces and accounted for at the scale of grams.

While weapons-grade plutonium is preferred in the nuclear arsenals of nuclear-weapon states, it is arguably easier to build a nuclear bomb with "reactor-grade" plutonium. The presence of high concentrations of Plutonium-241 in reactor grade plutonium eliminates the need for a neutron generator in the nuclear device, thus eliminating a major technical obstacle to making the weapon work. Reactor-grade plutonium has high amounts of plutonium-241.

Scoping Request: In this Environmental Impact Statement, the NRC must evaluate the

proliferation impacts of converting weapons-grade plutonium to fuel-grade or reactor-grade plutonium through irradiation of the fuel in light water reactors.

2. Plutonium is one of the most toxic substances known to humans. The acute lethal dose for plutonium oxide inhalation is 20 milligrams, and 30-60 micrograms inhaled is estimated to significantly increase the risk of lung cancer. The fact that plutonium can damage stainless steel over time is reason enough to worry about the impacts of plutonium particles emitting energetic alpha radiation on human tissue.

Scoping Request: NRC must provide a clear accounting of the hazards of the various isotopes and decay products of plutonium; and the hazards of the plutonium compounds and solutions that are proposed for use in the plutonium fuel factory. This accounting must discuss inhalation, criticality, and external radiation hazards.

The 24,000-year radioactive half-life of plutonium also makes the term "plutonium disposition" a bit misleading. There are no technologies for destroying or disposing of plutonium at the present time, and the proposals for developing such technology--known as "Advanced Transmutation of Waste," but referred to also as the "Los Alamos Reactor Concept"--has an initial cost-estimate of 250 billion dollars, or one-quarter of a trillion dollars.

Scoping Request: NRC must acknowledge that the plutonium disposition program will not render plutonium unavailable for re-use in nuclear weapons, it will only make it less available and less attractive by diluting the concentration of the plutonium with other materials and placing it in a radioactive storage environment.

3. Plutonium is the most complex metal in the periodic table. Please reference Exhibit A, Unusual Properties of Plutonium, from Los Alamos Science No. 26.

Scoping Request. NRC must explain the chemical complexities of plutonium in a clear manner and discuss how each unusual property in Exhibit A will impact the operations of the plutonium fuel facility. This is as much a credibility issue as a public information issue. NRC must prove that it understands the material it proposes to regulate.

II. The Proliferation Impacts Must Be Evaluated.

The primary official justification for the plutonium fuel program is to encourage Russia to begin "disposing" of its surplus plutonium. However, the Department of Energy has failed to inform the American public of several problems with funding a plutonium fuel infrastructure in Russia as well as in the United States:

1. The Russian Ministry of Atomic Energy (Minatom) is a major export agency:

"By expanding its international contacts and aggressively promoting the export of nuclear technology, Minatom hopes to compensate for its budgetary shortfalls. These export activities, however, are a cause for U.S. concern since most of the states Minatom is doing business with desire

weapons of mass destruction or have questionable commitments to nonproliferation. Over the past few years, Minatom has reached "cooperative nuclear agreements" with Cuba, Iran, Libya and Syria. In addition, there are ongoing projects with China and India and proposals to establish projects on the Korean Peninsula."

Minatom is the #2 exporter (in terms of revenues) in Russia. This is a hi-tech industry versus oil and gas industry (#1 exporter). According to the export agency, Minatom is almost the only industry that increased its production over the past several years."

Scoping Request: NRC must evaluate Minatom's intent in regard to exporting plutonium fuel and the proliferation risks involved with these proposals.

Exports are not the only problem. The plutonium disposition program is also an effort to provide accurate accounting and international safeguards for plutonium. While there have been advances in Material Protection, Control and Accounting in Russia, the problems are still very severe with the safeguards system there:

"There are numerous cases of the MPC&A equipment and systems that were delivered and installed at the Russian facilities but were never actually put in operation or were not properly operated...Under the MPC&A program, the US side is dealing with a stronghold of the last regime—the most conservative elements within Russian society...But the MPC&A program relies heavily on knowing what is where and in what amount. It goes against all Russian production culture that has been established at the facilities."

Scoping Request: The NRC must evaluate whether proper plutonium accounting and control can be conducted at Russian facilities as well as the U.S. facilities in order to insure that the goals of plutonium disposition are reasonable and achievable.

3. What is the real safety record?

Duke Cogema Stone and Webster (DCS) have not reported their compliance history (see BREDL letter to Chairman Meserve, 3/22/01) and are basing their license application on the experience of the Savannah River Site (SRS). The NRC must reject this approach because SRS is not the licensee.

Scoping Request: The NRC must provide a detailed accounting of the environmental, safety, and health records of the DCS partners and affiliates. This must include not only a review of the records at the La Hague and MELOX facilities in France, but also a review of Cogema's Cadarache facility, Belgonucleaire's Dessel facility, Siemens' Hanau facility (given the recent merger of Siemens U.S.A with Framatome and the French-German-Russian partnership on MOX), Duke Power Coal Plants and Nuclear Power Plants, and Stone and Webster's history of work on "first-of-its-kind" facilities.

4. Tell us the hazards and remove all secrecy.

Exhibit B contains information from Sandia National Laboratory regarding safety cultures. At this time, nearly every indicator of "how to recognize the absence of a safety culture" is present in the license application. Most deplorable is the fact that the information upon which the NRC must complete a Safety Evaluation Report has been declared off-limits to the public under the ruse of the "proprietary information" classification.

Scoping Request: The NRC must clearly define how it can inform the public of the hazards when the hazards are being kept secret from the public. The NRC must not play God and tell us the risk is acceptable or within regulatory limits. It must report what the hazards are, then provide its interpretation of the risks.

This completes the first round of written comments.

Thank you,

Don Moniak

Community Organizer

Blue Ridge Environmental Defense League

PNNL-13197. *The Russian Federation's Ministry of Atomic Energy: Programs and Developments*. C.M. Johnson, February 2000.

LA-UR-01-1683. *Sustainability Issues. Russian Aspects*. Galya Balatsky. Los Alamos National Laboratory