



April 15, 2011

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

**Re: COLUMBIA GENERATING STATION, DOCKET NO. 50-397  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
LICENSE RENEWAL APPLICATION**

To Whom it Concerns:

Thank you for including the attached news release in the above docket. I request that this filing also be posted in ADAMS.

When reviewing the license renewal application of Energy Northwest for the Columbia Generating Station, the possible testing and use of plutonium fuel (MOX) must be kept in mind. It is unclear if Energy Northwest will pursue testing and use of MOX but it is incumbent upon the utility to reveal its plans for MOX during the license renewal process.

Sincerely,

Tom Clements  
Southeastern Nuclear Campaign Coordinator

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A143  
HRR



Thursday, February 3, 2011

<http://www.foe.org/secret-plan-exposed-use-surplus-weapons-plutonium-washington-state-nuclear-reactor>

## **Secret Plan Exposed to Use Surplus Weapons Plutonium in Energy Northwest's Columbia Generating Station**

### **FOIA Documents Reveal Energy Northwest Plans Plutonium Fuel (MOX) Experiments While Seeking to Control Information Leaks to the Media**

**Columbia, SC** -- Department of Energy (DOE) documents released to Friends of the Earth reveal that the public utility Energy Northwest hopes to bring experimental radioactive plutonium fuel into Washington State for use in risky tests in a nuclear reactor not originally designed for that purpose. The documents also reveal that the utility has sought to keep information secret about the controversial and risky pursuit of use of surplus weapons plutonium as nuclear reactor fuel.

The environmental watchdog group Friends of the Earth believes that the plutonium mixed oxide fuel (MOX) should be kept out of the state and that such tests would pose unacceptable safety risks and lead to unacceptable costs.

According to a DOE document dated January 6, 2011, and confirmed by documents obtained under the federal Freedom of Information Act, Energy Northwest is "formally evaluating the potential use of MOX fuel" in the company's single nuclear reactor - the Columbia Generating Station reactor - located at the Department of Energy's Hanford site near Richland, Washington. The reactor is a GE boiling water reactor (BWR) and was licensed in 1984. The Hanford site, where it is located, has produced about 65 metric tons of weapons plutonium in now-closed reactors dedicated to military use.

*"It is foolish for Energy Northwest to continue down this costly and risky path and we urge the utility to drop the controversial MOX plans,"* said Tom Clements, Southeastern Nuclear Campaign Coordinator with friends of the Earth in Columbia, South Carolina. *"Due to non-proliferation and safety concerns, weapons plutonium should not be used as fuel in the Columbia Generating Station or any other nuclear power reactor."*

*"It's no surprise that the utility tried to keep its controversial plans to use reactor fuel containing weapons-quality plutonium secret. Myriad technical and public relations problems are posed by the potential use of a fuel that has never before been tested in a boiling water reactor. Bringing plutonium back to Hanford to be used as fuel and stored as waste will set back cleanup efforts at the site. It's hard to see how the public could accept bringing plutonium back to Hanford after most of it has been shipped off the site,"* Clements said.

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MOX fuel made from surplus weapons-grade plutonium has never before been used in any country on a commercial scale and presents a host of political and licensing problems for Energy Northwest. MOX containing approximately five to seven percent weapons-grade plutonium presents technical challenges to reactor operation and fuel management and storage, poses security risks in transport and handling, and presents the threat of larger radiation release in an accident. One of the undated FOIA documents from Energy Northwest states, "It does not make sense from either an economic perspective or risk perspective for Energy Northwest to pursue the use of MOX fuel." But nuclear officials have pushed ahead in spite of those concerns.

Over 200 pages of FOIA documents reveal that officials at Energy Northwest have been developing plans with the Pacific Northwest National Laboratory and the Department of Energy to begin a "three-phased approach to integrating MOX fuel" into the reactor. According to the documents, testing would begin with irradiation of 10 to 20 fuel pins fabricated by the laboratory in 2013 or 2105, followed by the use of up to eight "lead use assemblies" (LUAs) around 2019 for three or more two-year irradiation cycles (a total of six or more years), with loading of up to 30 percent of the reactor's core with MOX fuel beginning around 2025. Each step would require license amendments from the Nuclear Regulatory Commission.

The Department of Energy is currently constructing a \$5-billion facility to make MOX fuel at its Savannah River Site in South Carolina and construction continues even though no nuclear reactor has been identified that will use the MOX fuel. Duke Energy began testing of experimental MOX fuel in 2005 but dropped out of the program after a test in its Catawba reactor in South Carolina failed after two rather than the necessary three 18-month irradiation cycles (the three cycles would have lasted a total of 54 months). Now, the Energy Department, via the contractor Shaw AREVA MOX Services, is focused on discussions for MOX use with the Tennessee Valley Authority and Energy Northwest as wider interest in the problematic fuel is lacking.

A March 2009 Memorandum of Understanding between the Tennessee Valley Authority and Energy Northwest regarding the exploration of whether MOX could be used in boiling water reactors is among the FOIA documents obtained by Friends of the Earth. Fuel fabricator GE-Hiatchi has also been involved in the MOX-use discussions and participated in a secret meeting with Energy Northwest, the Pacific Northwest National Laboratory, Shaw AREVA MOX Services, and DOE at the Savannah River Site in September 2009.

The MOX program laid out in the documents is speculative as it would have to be licensed by the Nuclear Regulatory Commission and would be dependent on capacity to fabricate MOX test assemblies made from weapons plutonium. No such production capacity currently exists, so the MOX plant at the Savannah River site, scheduled to undergo startup testing in 2016 or later (if construction finishes and if it can overcome an operating license challenge by public interest groups), would have to be used to fabricate "lead use assemblies." This means that the MOX plant at the Savannah River Site is at risk of sitting idle for years as no MOX fuel beyond that used in testing could be produced during the test phase as NRC approval for the fuel's quality and performance would be lacking.

Energy Northwest presentations obtained via the Freedom of information Act point out potential problems with MOX use, saying that there must be “no negative impact on reactor operation” and that MOX use must be “cost neutral” for Energy Northwest. An Energy Northwest senior engineer in charge of fuel management wrote in a December 2009 email that those at Energy Northwest and the Pacific Northwest National Laboratory pursuing MOX use “don’t want any unexpected press releases about burning MOX fuel in [the Columbia Generating Station reactor].” That same official commented that the DOE’s lack of utilities interested in using the MOX fuel “doesn’t look good politically.”

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**Notes:**

---- for the links to the items below, see:

**<http://www.foe.org/secret-plan-exposed-use-surplus-weapons-plutonium-washington-state-nuclear-reactor>**

1. FOIA documents from Energy Northwest (partial, final)
2. DOE Presentation on Status of MOX Plant, January 6, 2011
3. Friends of the Earth letter to Energy Northwest CEO Mark Reddemann, Jan. 31, 2011, urging the end of MOX use.
4. Friends of the Earth news release “Duke Energy Abandons Plutonium Fuel (MOX) Testing Program in South Carolina Reactor,” November 12, 2009
5. Alliance for Nuclear Accountability (ANA) MOX fact sheet - “Plutonium Disposition Remains In Disarray”
6. Information on NRC website about Columbia Generating Station
7. Energy Northwest overview

**FRIENDS OF THE EARTH**

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