

CC: David Solorio; John Hannon; Stephen Klementowicz
From: Steve Jones
To: Capleyd@aol.com
Date: 3/2/04 11:25AM
Subject: spent fuel pools

Thank you for your question about spent fuel pools. I understand you are interested in what is done with the water that is in spent fuel pools.

Right now, spent nuclear fuel from commercial reactors is in temporary storage in either spent fuel pools or in dry storage casks. The US Department of Energy is preparing an application for a license to open and operate a permanent spent fuel disposal facility, but no such facility is currently licensed.

The water in spent fuel pools is continuously cleaned by filters and ion exchangers so it can be recycled through the pool. These filters and ion exchangers remove nearly all impurities and radioactive material from the water. Once the filters and ion exchange media are used up, they are replaced and the old material is sent to one of three currently-licensed low-level waste disposal sites in the U.S.

When a commercial reactor has permanently stopped operating and all nuclear fuel has been transferred from the spent fuel pool to dry casks or another pool, the water from the pool is no longer needed for cooling. Prior to disposal, the radioactivity in the water must be made as low as is reasonably achievable (ALARA). This is done primarily by cleaning the water with filters and ion exchangers and, to a lesser degree, by storing it long enough that much of the radioactive material has decayed away.

Once the radioactive material concentration has decreased and the water has been tested to confirm the radioactivity is below NRC limits and is ALARA, the water can be disposed of by releasing the water as a liquid effluent from the site. With special approval, facilities have used evaporators to release excess water to the atmosphere and disposed of the remaining radioactive solids as low-level radioactive waste. Water is not normally transported from the site for disposal.

Please contact me if you have additional questions by e-mail or telephone at (301) 415-2712.

Sincerely,

Steve Jones

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