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CORRESPONDENCE CONTROL TICKET

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**From:** <Bobleuse@aol.com>  
**To:** <chairman@nrc.gov>  
**Date:** Mon, Mar 24, 2003 12:23 AM  
**Subject:** NRC IGNORES FOULING

Sir:

Below is a recent EPRI press release that is available on [www.google.com](http://www.google.com) by searching under ultrasonic fuel cleaning. NRC should get on top of this situation and produce regulations for monitoring and reporting fouling. Like icing on smaller aircraft, fouling can bring down a system very rapidly. Of course, so far everybody has gotten away with fouling, even the very severe fouling at River Bend.

And the more that the situation is accepted, the greater the risk of runaway. Analogies are never precise, but please read FLYING, April 2003, pages 55-59. The last paragraph on page 58 is particularly applicable: "As a relatively low-time (1800 hours) pilot, the prospective new hire may also have been in awe of the experience of the director of training and may have felt that 'he must know what he is doing.' It is scary to think of the lesson this individual might have learned had they successfully completed the flight, and the risks that he might have taken in the future based on the example set by the Pilot in Command."

Of course, you are aware of my several related Petitions for Rulemaking that your evaluators have at least accepted for publication on the NRC's web site although the NRC has effected no other actions. You may also be aware that beltway lobbyists and others have opposed these Petitions.

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#### News Releases

#### EPRI's Ultrasonic Fuel Cleaning Process Improves Fuel Utilization and Reduces Dose Rates in Nuclear Plants

Palo Alto, Calif. - March 19, 2003 - A new ultrasonic nuclear fuel cleaning technology developed by EPRI removes deposits from reload fuel, allowing higher fuel utilization and reducing worker exposure rates. The process can also lower feed fuel costs and holds promise for additional savings related to spent fuel inventory.

Nuclear plant operators can use higher-enrichment fuel assemblies and longer burn-up cycles to increase megawatt-hour output from reactor cores. However, extended fuel duty can increase the buildup of corrosion-product deposits, shifting the power profile toward the bottom of the core in the phenomenon known as axial offset anomaly (AOA). Severe cases of AOA can require derating of a plant late in the fuel cycle to maintain a safe shutdown margin.

"Removing the corrosion products before reloading the fuel can reduce the risk of AOA in the subsequent fuel cycle, and the lowered corrosion product deposits will reduce the amount of activated material that would otherwise contribute to personnel radiation exposure," says EPRI's Paul Frattini, who co-invented the process and managed its initial development. The EPRI-patented method has been used successfully at AmerenUE's Callaway plant and at the South Texas Project Unit 2 pressurized-water-reactor plants. According to Ameren's Gail Gary, the core at the Callaway plant remained free

of AOA throughout the fuel cycle for the first time in the eight most recent cycles after one fuel cycle in which all reload fuel was ultrasonically cleaned.

"We are including the EPRI fuel cleaning process in an aggressive program of AOA mitigation," Gary said. "We expect to be able to eliminate a 4°F average core temperature reduction imposed earlier as a precaution to minimize AOA." Each degree of recovered core temperature restores approximately 4.5 MW of generating capacity over a fuel cycle.

While AOA has not been a problem for the South Texas Project, the utility purchased ultrasonic fuel cleaners for each of its two units as a proactive measure for corrosion product control after replacing steam generators and uprating both units. All reload fuel for the Unit 2 reactor was cleaned in October 2002. Reload fuel for Unit 1 will be cleaned in April 2003. STP calculates that the fuel cleaning will allow higher fuel utilization and achieve the benefits of lowered worker dose rates.

"STP will save over \$1 million per core in fuel costs because each core can be loaded with four fewer feed assemblies," said Dave Hoppes, STP fuel engineering supervisor. Hoppes projects an added savings of \$250,000 per cycle in present-value dollars as a result of reduced spent fuel inventory and related handling, storage, and disposal costs. He adds that preliminary results promise reduced in-plant radiation levels, producing significant additional long-term dollar benefits.

For more information on the ultrasonic fuel cleaning process, contact Paul Frattini, at 650-855-2027 or pfrattin@epri.com.

EPRI, headquartered in Palo Alto, Calif., was established in 1973 as a non-profit center for public interest energy and environmental research. EPRI's collaborative science and technology development program now spans nearly every area of power generation, delivery and use. More than 1,000 energy organizations and public institutions in 40 countries draw on EPRI's global network of technical and business expertise.

And, another quote from FLYING, last paragraph, page 59.

"Ice (fouling) is nothing to play with. Because of our inability to accurately forecast where and when icing (fouling) will occur and how serious it will be, we will always need to do a careful analysis before a flight (cycle) with possible icing (fouling) conditions to determine the chances that ice (fouling) will be encountered, and if so, how severe it might be. Sometimes you just have to take a look to see what is really going on. In any situation where icing (fouling) is possible, always have a clear exit strategy in mind and be ready to use it as soon as you encounter icing (fouling) beyond your own capability or the capability of the aircraft (nuclear power reactor)."

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