

Gallagher, Carol

RULES AND DIRECTIVES
BRANCH
USNRC

From: aceactivists@comcast.net
Sent: Saturday, December 07, 2013 4:01 PM
To: Gallagher, Carol
Subject: ACE Comments for Limerick Docket ID NRC-2013-0233

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December 7, 2013

To: Nuclear Regulatory Commission
Federal Rulemaking
Carol Gallagher

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10/29/2013

78 FR 64541

From: Alliance For A Clean Environment (ACE)
Dr. Lewis Cuthbert

(1)

**Subject: ACE Comments On Amendment Request by Exelon
For Limerick Nuclear Plant Docket ID NRC-2013-0233**

MS. GALLAGHER,

PLEASE SEE THAT THESE COMMENTS ARE REVIEWED AND CONSIDERED.

While the deadline to comment was November 20, 2013 we ask NRC to include and consider these comments based on new and significant information that has come to our attention recently.

ACE strongly disagrees with Exelon's analysis that this issue has no significant hazard.

➤ **Exelon has absolutely NO PROOF of that.**

Neither does NRC. This new fuel has not been used long enough to conclude with certainty that the new Boiling Water Reactor fuel designs will not become more reactive at shutdown temperatures above 68 (deg) F. Logic suggests otherwise.

Many hazards are associated with new Boiling Water Reactor fuel designs. NRC and the nuclear industry have known about them for several years, yet continue to move forward with using this fuel.

➤ **Evidence Shows Use Of New "High-Burn Fuel" at Limerick Nuclear Plant Can Result In Significant Increased Radioactivity and Decay Heat in Limerick's Spent Fuels. There Is NO PROOF This Won't Lead To A Significant Hazard At Shutdown.**

It is illogical to claim fuel assemblies with more uranium can run for 6 years instead of 3 years without creating a significant hazard. Some of the younger fuel already shows signs of degrading with age. High burn fuels which spent longer in the harsh reactor environments, show signs of corrosion and cracking.

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NRC and industry have known for several years there are dangerous risks associated with NEW Boiling Water Reactor fuel designs.

- 2 to 3 Times Higher Radioactive Fission Gas Releases
- Increased Corrosion, Thinning, and Brittleness of Fuel Cladding
- Increased Damage and Rupture of the Fuel Rods in the Reactor Vessels, Leading To Radiation Leaks in Spent Fuel Pools and Casks

With higher burn-up, nuclear fuel rods undergo several risky changes that include:

- A significant increase in radioactivity and decay heat in the spent fuel.
- Higher internal rod gas pressure between the pellets and the inner wall of the cladding leading to higher fission gas release. Pressure increases are typically two to three times greater.
- Upgraded pool storage with respect to heat removal and pool cleaning. Requiring as much as 150 years of surface storage before final disposal.
- Elongation or thinning of the cladding from increased internal fission gas pressure.
- Structural damage and failure of the cladding caused by hoop (circumferential) stress.
- Increased debris in the reactor vessel, damaging and rupturing fuel rods.
- Cladding wear and failure from prolonged rubbing of fuel rods against grids that hold them in the assembly as the reactor operates (grid to rod fretting).
- A potentially larger number of damaged spent fuel assemblies stored in pools.
- Increasing oxidation, corrosion and hydriding of the fuel cladding.
- Oxidation reduces cladding thickness, while hydrogen (H₃) absorption of the cladding to form a hydrogen-based rust of the zirconium metal from the gas pressure inside the rod can cause the cladding to become brittle and fail.

➤ **ACE urges NRC to reject Exelon's baseless assumption of no significant hazard and request to amend Limerick's operating permit.**

➤ **ACE urges NRC to stop Limerick Nuclear Plant's use of NEW High-Burn Fuel, based on the public's unacceptable increased risks associated with it.**

Of utmost concern are unnecessary increased radiation threats to public health. Two to three times higher radioactive fission gas releases are avoidable and unacceptable.

Recent ACE radiation monitoring has revealed far higher radiation levels in our air than the readings we took several years ago.

To date, NRC has refused to tell us when Limerick started using NEW High Burn fuel.

Please inform us of NRC's decision with detailed justification and contact information for the NRC individual responsible for the decision.

Send Information To:

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