

**Mendiola, Doris**

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**From:** Lori Molinari [lamolinari@earthlink.net]  
**Sent:** Friday, October 21, 2011 4:19 PM  
**To:** Regner, Lisa  
**Cc:** Lori (earthlink)  
**Subject:** Concerns regarding Limerick re-licensure  
**Attachments:** Molinari--re Limerick relicensure.doc; Molinari--re Limerick relicensure.docx

Dear Ms. Regner,

I have attached a letter outlining several reasons why I think the Limerick Nuclear Power Generating Station should not be granted a license extension. If you have any trouble opening this attachment, please let me know (it is attached in both .doc and .docx formats).

Thank you for considering my concerns on this issue.

Sincerely,

Lori Molinari

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Template = ADM-013*

*FRIDS = ADM-03  
Call = L. Regner (LHR2)*

1618 Benjamin Dr.  
Ambler, PA 19002

Oct. 21, 2011

Ms. Lisa Regner  
Project Manager  
NRC Environmental Review Project

Dear Ms. Regner:

I am writing to express my opposition to the re-licensure of Limerick nuclear power generating station, which is located about 20 miles from my home. There are several reasons why this re-licensure is not in the best interests of people living in the surrounding community.

If this license renewal is granted, this plant will continue operating until 2049, at which time it will be over sixty years old. Cracks in concrete and corrosion in piping will inevitably develop as this facility ages. While some of this “wear and tear” may be evident to visual inspection, some of it will also occur in less accessible places, such as in underground piping systems. The Associated Press has shown that tritium leaks in underground piping systems frequently go undetected—sometimes for years—in aging nuclear power plants.<sup>i</sup> While no leaks of this kind have so far been documented at Limerick, the odds of these sorts of problems developing will only increase with every successive decade of the plant’s working life.

While the problems associated with age will develop in any nuclear power plant over time, there are additional problems with the reactors at Limerick. Limerick’s reactors are boiling water reactors similar to those that catastrophically melted down last spring in Japan. Although these reactors have a later containment design, they have the same fundamentally flawed reactor pressure vessel design as those that failed at Fukushima.<sup>ii</sup> In the BWR design, the control rods come up through the bottom of the pressure vessel, instead of dropping down from above as in other reactor designs. While the reactor pressure vessel itself is made of very thick steel, the bottom of the BWR pressure vessel contains 60 holes through which the rods enter the vessel.<sup>iii</sup> In the event of a meltdown, however, these same holes can provide a “path of least resistance” through which the hot molten fuel can escape with relative ease; it then only has to melt through connecting pipes that are much thinner and weaker than the metal of the pressure vessel itself.<sup>iv</sup> This apparently occurred at Fukushima, where authorities now admit that reactor fuel underwent not merely a “melt-down,” but a “melt-through,” breaching the inner pressure vessel and in the process releasing considerable amounts of radioactive material into the environment.<sup>v</sup>

One might be tempted to dismiss the comparison with Fukushima on the grounds Limerick in Pennsylvania is unlikely to experience a similar combination tsunami and earthquake. While the tsunami is not an issue, however, recent analysis by the Nuclear Regulatory Commission suggests that earthquakes pose a more significant threat to the Limerick reactors than was recognized at the time of their construction and initial licensure. (Incidentally, it now appears that at least one of Fukushima’s reactors was significantly damaged by the earthquake even *before* the tsunami struck.)<sup>vi</sup> According to the NRC’s own data, Limerick’s two reactors are the *third* and *fourth* most likely in the country to sustain core damage in the event of an earthquake.<sup>vii</sup> There is a fault line called the Ramapo fault line that runs slightly north of Limerick, and two small earthquakes associated with this fault line occurred as recently as February 2009.<sup>viii</sup> The unexpected quake that shook Virginia’s North Anna nuclear plant with *over two times the amount of force that it was designed to withstand* should make us take very seriously the NRC’s data regarding Limerick’s greater than previously recognized vulnerability to earthquake damage.<sup>ix</sup> These concerns are compounded by the fact that the manufacturer of Limerick’s control rods, GE Hitachi,

recently acknowledged concerns that the control rods in its BWRs might not function properly in the event of an earthquake.<sup>x</sup>

Questions about the Limerick reactors' ability to withstand accidents and natural disasters are all the more pressing because so many people could potentially be affected if something catastrophic were to occur. Since 1990, the population within a ten-mile radius of the plant has increased by 45%, from 178,047 to 257,625.<sup>xi</sup> In addition, Philadelphia, with a population of 1,526,006, is only about 28 miles away. How much more might these populations increase by 2049? Bearing in mind that the NRC advised Americans within a *50 mile* radius of Fukushima to evacuate last spring, one can only imagine how difficult it would be to carry out such evacuations if the unthinkable were ever to occur at Limerick.

Finally, my concerns regarding the impact of this nuclear power plant on my community are not limited to catastrophic scenarios that might potentially occur. There have been some recent studies published in health journals that show a higher incidence of certain illness—particularly among children—in communities surrounding nuclear power plants.<sup>xii</sup> While these studies were conducted in a variety of locations, they seem to be consistent with some of the data that Pottstown's local Alliance for a Clean Environment presents on its website regarding increased cancer and leukemia rates—also especially among children—in the greater Pottstown area.<sup>xiii</sup>

For all of these reasons, I am asking the Nuclear Regulatory Association to deny Exelon's request to extend Limerick's operating license for an extra twenty years.

Thank you for your time.

Sincerely,

Lori Molinari

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<sup>i</sup> Jeff Donn, "AP Impact: Tritium Leaks Found at Many Nuke Sites," June 21, 2011 <<http://abcnews.go.com/US/wireStory?id=13890201>>

<sup>ii</sup> Bill Dedman, "General Electric-designed reactors in Fukushima have 23 sisters in U.S.," March 13, 2011 <[http://openchannel.msnbc.msn.com/\\_news/2011/03/13/6256121-general-electric-designed-reactors-in-fukushima-have-23-sisters-in-us](http://openchannel.msnbc.msn.com/_news/2011/03/13/6256121-general-electric-designed-reactors-in-fukushima-have-23-sisters-in-us)>

<sup>iii</sup> "Boiling Water Reactor (BWR) Systems," pp. 3-3, 3-5 <<http://www.nrc.gov/reading-rm/basic-ref/teachers/03.pdf>>; Arnold Gundersen, "Fairewinds Introduces a Japanese Language Edition and Identifies Safety Problems in all Reactors Designed Like Fukushima," Sept. 19, 2011 <<http://www.fairewinds.com/content/fairewinds-introduces-japanese-language-edition-and-identifies-safety-problems-all-reactors->>>

<sup>iv</sup> Gundersen, *ibid.*

<sup>v</sup> *Ibid.*; Justin McCurry, "Fukushima nuclear plant may have suffered 'melt-through', Japan admits," *The Guardian*, June 8, 2011 <<http://www.guardian.co.uk/world/2011/jun/08/fukushima-nuclear-plant-melt-through>>

<sup>vi</sup> Yuji Okada, "Japan's Fukushima Reactor May Have Leaked Radiation Before Tsunami Struck," *Bloomberg*, May 19, 2011 <<http://www.bloomberg.com/news/2011-05-19/fukushima-may-have-leaked-radiation-before-quake.html>>

<sup>vii</sup> Bill Dedman, "What are the odds? US nuke plants ranked by quake risk," MSNBC.com, March 17, 2011 <[http://www.msnbc.msn.com/id/42103936/ns/world\\_news-asia\\_pacific/t/what-are-odds-us-uke-plants-ranked-quake-risk/#.TqGIOMCKXsI](http://www.msnbc.msn.com/id/42103936/ns/world_news-asia_pacific/t/what-are-odds-us-uke-plants-ranked-quake-risk/#.TqGIOMCKXsI)>

<sup>viii</sup> Evan Brandt, "Limerick plant ranked 3rd on U.S. quake-risk list," *The Pottstown Mercury*, March 17, 2011 <<http://www.pottsmmerc.com/articles/2011/03/17/news/doc4d813c6e23dc4838961136.txt>>

<sup>ix</sup> Wendy Koch, "Quake's jolts were double nuke plant's design," *USA Today*, Sept. 8, 2011 <<http://www.usatoday.com/tech/science/environment/story/2011-09-07/Quakes-jolts-were-double-uke-plants-design/50304434/1>>; Matthew L. Wald, "After Quake, Virginia Nuclear Plant Takes Stock," *New York Times*, Sept. 7, 2011 <[http://www.nytimes.com/2011/09/08/science/earth/08nuclear.html?\\_r=2](http://www.nytimes.com/2011/09/08/science/earth/08nuclear.html?_r=2)>

<sup>x</sup> Evan Brandt, "Limerick power plant gets warning about safety during earthquake," *The Daily Local*, Oct. 4, 2011 <<http://www.dailylocal.com/articles/2011/10/04/news/doc4e8b8e3ace082760564982.txt>>

<sup>xi</sup> Evan Brandt, "With 250,000 people near Limerick nuclear, is evacuation plan realistic?," *The Pottstown Mercury*, June 27, 2011 <<http://www.pottsmmerc.com/articles/2011/06/27/news/doc4e086974a8b37085178024.txt>>

<sup>xii</sup> P.J. Baker & D.G. Hoel, "Meta-analysis of standardized incidence and mortality rates of childhood leukaemia in proximity to nuclear facilities," *European Journal of Cancer Care* 16 (2007), 355–363. For abstract see <<http://www.news-medical.net/news/2007/07/20/27840.aspx>>; C. Spixa, S. Schmiedela, P. Kaatscha, R. Schulze-Ratha, M. Blettnerb, "Case-control study on childhood cancer in the vicinity of nuclear power plants in Germany 1980-2003," *European Journal of Cancer*, 44:2 (Jan 2008): 275-84. For abstract see <<http://www.ncbi.nlm.nih.gov/pubmed/18082395>>

<sup>xiii</sup> Alliance for a Clean Environment, "Alarming Statistics, <<http://www.acereport.org/statistics.html>>