PR 50, 72 and 73
(71FR62663)

Pilgrim Watch

148 Washington St., Duxbury MA 02332
Tel 781-934-0389 Fax 781-934-5579 E-Mail Mary.Lampert@comcast.net

(24)

Secretary, U.S. NRC
Washington, DC 20555-0001
Attn: Rulemakings and Adjudications Staff
SECY@nrc.gov

RE: RIN 3150-AG63 - Power Reactor Security Requirements

Consequences – too great for NRC to do essentially nothing

A successful terrorist attack on a nuclear reactor could release massive radioactivity, capable of producing tens of thousands of immediate deaths and hundreds of thousands of latent cancers, as well as contaminating an area the size of a large state for generations.

Spent Fuel Pool: As an example, estimates of the costs and latent cancers following an attack of the Pilgrim Nuclear Power Station's elevated and densely packed spent fuel pool were recently estimated for the Massachusetts Attorney General. [1]

[1] The Massachusetts Attorney General's Request for a Hearing and Petition for Leave to Intervene With respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Pilgrim Nuclear Power Plants Operating License and Petition for Backfit Order Requiring New Design features to Protect Against Spent Fuel Pool Accidents, Docket No. 50-293, May 26, 2006 includes a Report to The Massachusetts Attorney General On The Potential Consequences Of A Spent Fuel Pool Fire At The Pilgrim Or Vermont Yankee Nuclear Plant, Jan Beyea, PhD., May 25, 2006.

Template=SECY-067

SECY-02

Estimates of Costs and Latent Cancers Following Releases of Cesium-137 from Pilgrim's Spent-Fuel Pool

	10% release C-137	100% release C-137
Cost (billions)	$105-$175 billion	$342-$488 Billion
Latent Cancers	8,000	24,000

These estimates are conservative. They focus only on the release of one radionuclide, Cesium-137, and only on cancer, ignoring expected other heath effects such as birth defects, reproductive disorders, heart disease –to name a few.

Core: In 1982, the Sandia National Laboratory calculated reactor accident accidents for US Nuclear Plants and those calculations extended well beyond 10-miles and were conservative. For example, a core melt at Pilgrim NPS, calculated by the federal government, would result in a 20 mile peak 1st year fatal radius; a 65 mile peak 1st year injury radius; and 23,000 peak cancer deaths.[2]

These estimates are conservative. The federal study, CRAC II:

- used census data from 1970;
- assumed entire 10-mile EPZ would be evacuated within at most six hours after issuance order;

[2] Calculation of Reactor Accident Consequences U.S. Nuclear Power Plants (CRAC-2), Sandia National Laboratory, 1982. "Peak" refers to the highest calculated values – it does not mean worst case scenario. This is due to uncertainties in the meteorological modeling acknowledged by Sandia. The model only considered one year's worth of data and does not model for precipitation beyond a 30-mile radius. This is significant because the highest consequences are predicted to occur when a radioactive plume encounters rain over densely populated area. Peak Early Fatalities are deaths that result within the first year. Peak Early Injuries are radiation-induced injuries occurring in the first year that require hospitalization of other medical attention – such as sterility, thyroid nodules, vomiting and cataracts. Peak Cancer Deaths are predicted to occur over a lifetime. However, this is not the case with leukemia which is assumed to have occurred within the first 30 years following the accident.

- assumed aggressive medical treatment for all victims of acute radiation exposure in developing numbers for early fatalities;
- used a now obsolete correlation between radiation dose and cancer risk that underestimated the risk by a factor of 4 relative to current models; and current models need to be recalculated again based on the National Academy's BEIR VII Report (June 2005) that reconfirmed that there is no safe level of radiation, risks are greater that previously thought and health risks other than cancer must be considered –such as heart disease and birth defects;
- sampled only 100 weather sequences out of over eight thousand (an entire year's worth), a method that underestimates the peak value over the course of a year by 30%

Yet the NRC is proposing to essentially do nothing of significance to improve the security of the nation's nuclear plants. The proposed rulemaking explicitly is designed to codify the status quo, which is woefully inadequate, with no meaningful upgrades from the situation currently in place.

Recommendations Pilgrim Watch, summary

Land: 19 attackers were involved in 9/11. It is unacceptable to require protection for only a small fraction of that number. The LA Times reported that the proposed rule would require only 5 security guards per shift, up from 3. Post 9/11 we need to defend against attacking forces equal to those of the terrorist attack on September 11, 2002, plus a margin of safety, in numbers, teams, capabilities, planning, willingness to die, and other characteristics. The terrorist attack on September 11, 2001, involved 19 attackers in 4 teams. The

DBT regulations should be changed to include at least 19 attackers, plus a margin of safety above that level.

The NRC should also take into consideration the inclusion of multiple coordinated teams. Attackers should be presumed to use a full range of weapons to include shaped charges, shoulder-fired rockets, mortars, anti-tank weapons, large quantities of explosives etc. The explosives, weapons and equipment need not be limited to hand-carried items as stated in current regulations.

The DBT regulations should include a minimum of three insiders, in addition to the 19 external attackers, as opposed to the current one insider as stated in the current security rule. The insiders should be presumed to play both a passive role (e.g., supplying information) and an active role (e.g., directly participating in a coordinated attack or separate sabotage actions).

A land vehicle should not be limited to a four-wheeled drive car or truck, as is the case now, but include the full range of trucks and other vehicles, such boats, a group like Al Qaeda might employ in an attack.

Air: 9/11 involved attacks from the air. Nuclear reactors are highly vulnerable to attacks by air from both large and very small aircraft loaded with fuel and or explosives targeting not just the reactor but critical support structures such as the switch yard or control room. GE Mark I & II reactors, like Pilgrim, with their spent fuel pools in the attic are especially vulnerable to air attack from three sides – the roof over the pool is flimsy. It is unacceptable to exempt air attacks from the kinds of threats reactors must be capable of defending against. Leaving it to federal protection of primary airports does nothing to prevent the use of aircraft from poorly guarded secondary and private

strips nor from the 70 or so aircraft that were reported missing by the GAO. We support either "Beamhenge" shields so planes crash into the shields, not the reactor facilities or ground-based air defense systems operated on site by the military such as the Raytheon Phalanx Close-In Weapon System.

Water: Secure the perimeter with floating water barriers, example, http://www.whisprwave.com/; require a net across the mouth of the intake canal to prevent explosives being sent up such as was recommended and offered to Millstone NPS in CT by the Department of Homeland Security; and increase surveillance.

Training & Tests: Enhanced training of on and offsite back-up security, and training of both together in realistic scenarios; and enhanced and realistic mock-attack drills with requirements to immediately address and fix identified deficiencies.

Spent fuel: Require spent fuel pools to revert to low density fuel assembly storage and place the remaining assemblies in hardened, dispersed dry cask storage until all assemblies are moved offsite.

Emergency Planning: Because risk can be reduced but not eliminated, upgrade emergency planning to respond to a fast breaking accident of significant consequence with planning for those likely to be exposed and also planning for citizens beyond the current 10-mile Emergency Planning Zone. Those outside the EPZ are likely to be impacted; and they will try to evacuate along the major evacuation routes, trapping those closer to the core.

Submitted on February 22,2007

Mary Lampert, Pilgrim Watch – Duxbury, MA

From: "Mary Lampert" <mary.lampert@comcast.net>
To: "SECY" <SECY@nrc.gov>
Date: Thu, Feb 22, 2007 11:21 AM
Subject: RIN 3150-AG63

Attached and pasted below - comments RIN 3150-AG63 - please reply back to indicate receipt - Thank-you

Pilgrim Watch

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Mail Envelope Properties (45DDC314.47E : 24 : 50302)

Subject:	RIN 3150-AG63
Creation Date	Thu, Feb 22, 2007 11:21 AM
From:	"Mary Lampert" <mary.lampert@comcast.net>
Created By:	mary.lampert@comcast.net

Recipients
nrc.gov
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Post Office	**Route**
TWGWPO02.HQGWDO01	nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	8801	Thursday, February 22, 2007 11:21 AM
TEXT.htm	27934	
clip_image002.jpg	7338	
DBT Comment Pilgrim Watch 02.07.doc	70144	
Mime.822	147819	

Options

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Priority:	Standard
ReplyRequested:	No
Return Notification:	None
Concealed Subject:	No
Security:	Standard

Junk Mail Handling Evaluation Results
Message is eligible for Junk Mail handling
This message was not classified as Junk Mail

Junk Mail settings when this message was delivered
Junk Mail handling disabled by User
Junk Mail handling disabled by Administrator
Junk List is not enabled
Junk Mail using personal address books is not enabled
Block List is not enabled