FIRE AT LIMERICK NUCLEAR PLANT CAN LEAD TO A MELTDOWN

FIRE SAFETY IS LAX AT LIMERICK NUCLEAR PLANT

NRC'S FIRE SAFETY POLICIES JEOPARDIZE OUR REGION

Fire At Limerick Nuclear Plant Can Lead To Meltdown!

Limerick Is NOT Required To Follow The SAFEST Fire Safety Regulations

WE CANNOT AFFORD A MELTDOWN DISASTER AT LIMERICK NUCLEAR PLANT IN TERMS OF HUMAN, ENVIRONMENTAL, OR FINANCIAL COSTS.

A Limerick Nuclear Plant Fire Is One Of Our Worst Nightmares.
Fire Can Ignite In So Many Ways Leading To Meltdown and Catastrophic Disaster.

Yet, For Decades NRC Failed To Enforce Limerick Nuclear Plant's Compliance With The Safest Fire Safety Regulations.

As Long As Limerick Nuclear Plant Operates, The Entire Philadelphia Region Faces Unnecessary Catastrophic Risk From A Fire Related Nuclear Meltdown Disaster.

URGE YOUR ELECTED OFFICIALS TO DEMAND THAT

NRC IMMEDIATELY REQUIRE FULL COMPLIANCE WITH THE SAFEST FIRE SAFETY REGULATIONS AT LIMERICK NUCLEAR POWER PLANT

ACE CALLED ON NRC TO:

REQUIRE THE SAFEST FIRE SAFETY EQUIPMENT AND PROCEDURES OR SHUT LIMERICK DOWN NOW!

LAX FIRE SAFETY
At Limerick Nuclear Plant

April, 2011

Japan shows us that a nuclear power plant fire can ignite a disaster beyond our technological control and our worst nightmare. Fire at a nuclear plant can lead to a meltdown and catastrophe.

After careful review of NRC fact sheets on fire safety regulations at nuclear plants it seems clear that NRC has caved in to the nuclear industry on important fire safety issues. There appears to be little difference between MMS and NRC when it comes to enforcement of important safety regulations related to extremely dangerous threats.

Liability limits encourage cutting corners to save money. It appears that is exactly what is going on with fire safety at nuclear plants. Like BP, nuclear plant owners enjoy financial liability limits dwarfed by damage they could do. NRC's most recent estimate of damage from a nuclear plant catastrophe is $1 Trillion, only $11 Billion of which would be paid by nuclear plant owners. Taxpayers would be liable for almost $1 Trillion for one nuclear plant disaster.

The consequences of failing to fully comply with fire safety regulations could cause unthinkable devastation, yet the casual NRC attitude expressed to ACE about a nuclear plant fire was both amazing and alarming. There is little difference between lax regulations, enforcement, and attitude of MMS with deep sea drilling and NRC's lax regulations, enforcement, and attitude related to fire safety regulations for nuclear power plants.

PROBLEM: NRC fire safety handouts obtained by ACE at NRC's 5/25/10 meeting in Limerick reveal that NRC repeatedly caved in to nuclear industry resistance to avoid full compliance with the safest fire safety regulations. NRC regulations include protection involving fire barriers, fire detection and suppression systems, and spatial separation, all to make safe shutdown possible if fire erupts in the many ways it can at a nuclear plant. Yet, after decades Limerick has still not been required to use the safest materials or procedures in regulations. In fact, NRC established a different set of fire safety requirements followed by Limerick, which NRC calls "safe enough".

The Japan disaster reveals some of the potential consequences of loss of water from the reactors or fuel pools, which could be triggered by a fire at Limerick Nuclear Plant.

NRC should not allow weakened nuclear plant fire safety regulations or accept any Exelon claim that Limerick is "safe enough" without being full compliance with the most stringent fire safety regulations. NRC needs to require Limerick to be brought into full compliance with the most stringent fire safety regulations immediately, and not just declare Exelon's wish list "safe enough".

The actual potential risk has been dismissed by NRC, to benefit Exelon's bottom line. The truth about nuclear plant disasters has been distorted and hidden by the industry, their regulators, supporters, and even the corporate owned media. Documented facts below make it clear that NRC should consistently require all the most stringent fire safety regulations to be followed without exceptions, to prevent a nuclear plant disaster.

Below are summaries published by the New York Academy of Sciences, based on 5,000 studies on Chernobyl, in order to better understand potential consequences of a Limerick catastrophe for people and the environment.

Impacts from Chernobyl's radioactive fallout are disclosed in a book based on over 5,000 studies, written by Russians: "*CHERNOBYL: Consequences of the Catastrophe for People and the Environment,*" published in English in 2009. To purchase a copy contact The New York Academy of Sciences. www.nyas.org.

- The Chernobyl explosion released hundreds of times more radiation than bombs dropped on Hiroshima and Nagasaki. Radioactive contamination spread across the entire northern hemisphere, exposing 400 million people.
- By 2004, studies show 985,000 additional deaths worldwide were caused by this disaster.
- Other illnesses increased, including heart, thyroid, kidney, bone, lung, cataracts among the young, accelerated aging, and immunological abnormalities.
- Children were most impacted. Before Chernobyl, 80% of children were considered healthy. Just 20% of children are healthy in some areas after Chernobyl. Many experienced poor development, learning disabilities, and endocrine abnormalities.
- Prenatal and infant mortality and birth defects increased among those born long after Chernobyl.
- Cuba, one of dozens of countries treating the sick, treated over 25,000 children for leukemia from the Ukraine and Russia.
- Impacts to 600 clean-up workers were ignored.
- Many life systems were changed irreversibly from radioactive fallout, including humans, wolves, livestock, birds, fish, plants, mushrooms, etc.

At TMI in PA, significant radioactive fallout escaped, scattered randomly throughout the region, and landed heavily on parts of the downwind populations. Deniers are largely those with a vested interest who cannot substantiate their deceptive and illogical claims.

- People and wild and farm animals were killed and maimed in great numbers.
- Five years later cancer rates went up 64%.
- By the early 1980s, 2400 central PA families claimed bodily harm and death from TMI fallout. They sued, but never got a hearing in federal court.

Below Are Estimates Associated With A Limerick Nuclear Plant Catastrophe. Precautionary Measures Are Essential.

<u>Limerick Nuclear Plant Accident Calculations - Reported to Congress in 1982</u>

Accident Statistics Calculated For Limerick Nuclear Plant - 1980 numbers

74,000 Early Fatalities
610,000 Early Injuries (most for any U.S. reactor)
34,000 Cancer Deaths

Numbers above would be more than double today. Limerick Area Population Growth - 2000 Census

1990'S 102% INCREASE 1980'S 26 % INCREASE

Estimated Costs For An Accident or Terrorist Attack At Limerick In 2004 Dollars

$417 Billion – Limerick 1 $386 Billion – Limerick 2

NRC recently stated a nuclear disaster could cost taxpayers a Trillion Dollars - The nuclear industry is only required to pay the 1st 12 Billion. A Limerick Disaster Would Be An Astronomical Financial Burden On Taxpayers

We simply can't afford a disaster at Limerick Nuclear Power Plant, in human, environmental, or financial terms or costs. It is unacceptable for NRC to allow Limerick Nuclear Power Plant to avoid full compliance with all of the safest fire safety procedures, materials, and regulations.

The Japan nuclear disaster shows us the imperative need to avoid a fire at Limerick. In order to achieve a safer future for our children and grandchildren whose health, environment, and financial future could be determined by your actions now:
The Alliance For A Clean Environment is urging all elected officials and residents to contact NRC and demand that NRC require full compliance with the most stringent fire safety regulations at Limerick Nuclear Plant.

To review correspondence between ACE and NRC on Limerick's fire safety compliance, NRC fact sheets, or other information, or to schedule a meeting, contact ACE: (610) 326-2387 aceactivists@comcast.net

NRC's Unprotective Fire Safety Policies

BACKGROUND FACTS

- **Nuclear plant fires can lead to a meltdown in a variety of ways.**
- **To assure a fire does not prevent a reactor from safely shutting down,**
  - **NRC fire safety regulations were in place since 1976 and 1980.**
- **3 decades later, NRC is still failing to require full compliance .**
- **125 fires were reported at 54 plants since 1995, an average of 10 per year (2008 GAO report).**
- **NRC should be demanding that the nuclear industry get in full compliance with the most stringent fire safety regulations,**
  - **INSTEAD of demanding compliance, NRC allowed the nuclear industry to weaken fire safety regulations time after time.**

NRC PROTECTS NUCLEAR INDUSTRY PROFITS OVER PUBLIC SAFETY!

- **NRC acquiesced to the nuclear industry's convenience and bottom line.**
- **NRC adopted less stringent regulatory requirements to accommodate the wishes of the Nuclear Energy Institute (NEI) to save the nuclear industry money and time.**
- **NRC admitted rules were developed by NEI and the nuclear industry.**
- **NRC's current "Fire Safety" fact sheets include words to describe NRC positions such as, "Reduced Regulatory Burden", "Enforcement Discretion", "Exemptions", "Flexibility", and "Safe Enough".**
- **NRC is literally playing with fire and setting up scenarios at nuclear plants for disastrous consequences. After watching what happened at Fukushima, it is imperative for NRC fire safety policies to become far more stringent.**
  - **NRC needs to stop blindly dismissing the potential for disastrous consequences from a fire at a nuclear plant.**

Grave and Serious Fire Threats Make It Imperative To Require The Safest Fire Safety Equipment and Procedures Immediately!

- ✓ **NRC is tempting fate with a reckless approach to regulating for nuclear plant fires.**
- ✓ **NRC jeopardizes our health, our homes and possessions by allowing Exelon to avoid full compliance with the safest fire safety requirements.**
- ✓ **NRC abandons its duty in regulatory authority to keep us safe by allowing Limerick to follow a weaker set of fire safety regulations.**
- ✓ **NRC is calling weaker standards "safe enough". With increasing threats and so much at stake, that is negligent and unacceptable.**
- ✓ **NRC fails to require the safest fire safety standards to save Exelon money.**

New Information About Limerick's Design Flaws And Far Greater Earthquake Risk Require The Most Stringent Fire Safety Precautions Immediately!

With increasing risk for an unthinkable disaster due to a fire at Limerick Nuclear Power Plant, ACE believes:

- ➢ **NRC has a responsibility to require full compliance with all the "SAFEST" fire safety regulation as a condition of Limerick Nuclear Plant relicensing.**

NRC's Letter To ACE Validates Cause For Concern

1. **NRC admits it has two sets of rules to determine fire safety compliance.**
   - **NRC admits it now has two sets of rules to determine fire safety compliance. One for nuclear plants that adopt the most stringent fire protection plans, and another for those like Limerick that refuse.**
   - **Limerick is NOT using the most protective fire safety materials or plans. Yet, NRC can claim Limerick is in compliance because the NEI and industry developed less protective rules which save Exelon money and time.**
2. **Exelon refused to adopt the more protective NFPA 805 "Performance-Based Standard for Fire Protection" at Limerick Nuclear Plant.**
   - **Yet, because there are two sets of rules, Exelon and NRC can claim Limerick Is in compliance.**

Limerick's 26-Year Old Safety Evaluation Report related to the operation of Limerick, dated October 1984 is filled with alarming deviations from NRC guidelines.

Fire Barriers - Fire barriers are designed and constructed to achieve specific fire resistance ratings, and to limit the spread of heat and fire and restrict the movement of smoke.

NRC fire tests from 2001 to 2005 indicated fire barrier materials being used (including Thermo-Lag) did not achieve the fire endurance consistent with its rating.

- **Yet, NRC still allows Limerick Nuclear Plant to use Thermo-Lag.**

NRC referred us to a 26 year old 1984 Limerick Fire Safety Evaluation document, even though **testing from 2001 to 2005 indicated materials being used by Limerick do not consistently meet rated requirements.**

a. Limerick is still using Themo-Lag 1-hour protection in several fire areas, even though 1-hour and 3-hour rated Thermo-Lag fire barrier material failed to consistently provide its intended protective function.

NRC allows Limerick to use Thermo-Lag even after issuing numerous communications about Thermo-Lag failures and requesting nuclear plant owners to develop plans to resolve any non-compliances.

b. Limerick does not use the safest fire barrier systems in all areas, to protect cables important to safe shutdown.

Evidence shows NRC should have been well aware of the risk of weaker fire safety regulations for many years.

- **Yet NRC continues to back down in negotiations with the nuclear industry, even though the outcome of non-compliance with the "SAFEST" fire safety regulations could be catastrophic.**

NRC recognized risks

- **June 3, 1999 NRC documented problems and issued an Information Notice (IN) 99-17, "*Problems Associated with Post-Fire Safe-Shutdown Circuit Analyse*s".**

Given that fires can damage control cables, causing operators to lose the ability to shut down and cool the reactor:

- **NRC itself estimated that overall meltdown risk from fire hazards is about 50%, roughly equal to all other hazards combined, yet it appears NRC allows nuclear plants to violate fire safety rules.**

An October, 2008 report to Congress, "***Fire When NOT Ready****",* said;

- **All U.S. nuclear plants have been in violation of fire safety rules for more than a decade and therefore at risk of a meltdown from a fire.**

A 2008 Union of Concerned Scientists report suggests that Americans are only protected when fire protection regulations at nuclear power plants are met. UCS's David Lochbaum was quoted saying,

- "***The only thing more tragic than a nuclear power reactor fire killing Americans is the plain fact that those lives could be been saved had only the NRC bothered to enforce- rather than ignore –***

its fire protection regulations. I would not want to be in NRC's shoes when they face a grieving nation following a disaster so easily prevented."

National groups that tracked fire protection non-compliances since the early 1990s, pointed to North Carolina's Shearon Harris plant as emblematic of "*NRC's inept performance as guardian of public health and safety*", and,

- **Called on Congress to wield its power to require NRC to enforce fire safety rules or shut down nuclear plants. They claimed if NRC had been doing its job, dozens of plants would have been shut down until their owners prioritized fixing all the fire safety violations**.

Frustrated NRC Commissioner, Gregory Jaczko, was quoted saying at a public meeting July, 2008:

- "**Simple, straightforward regulations and I don't think there is one plant right now that is in compliance with those regulations."**

Limerick Had Fire Safety Violations

Examples:

1. **Limerick had a fire February, 1997 and other fire safety violations. As of April, 2008 Limerick Nuclear Plant had not adopted all of NRC's fire safety regulations.**
2. **In 2010 Limerick had fire safety violations. NRC's had lax enforcement in response.**

NRC's failure to require full compliance with all the safest fire safety regulations presents unnecessary risks to millions of people that could be impacted by a fire triggering a meltdown at Limerick.

Given what is at stake for our region, there is no acceptable excuse for Exelon to avoid full compliance with the safest fire protections.

Even after watching a nuclear nightmare unfold at Fukushima, NRC continues to make unwarranted assurances defending non-compliance, instead of requiring compliance with the safest fire safety regulations.

In fact, for two years, NRC wouldn't give us straight answers about whether Limerick Nuclear Plant was in full compliance with NRC's fire safety regulations.

January 12, 2009 ACE first wrote to NRC, expressing concerns about compliance with fire safety regulations at Limerick Nuclear Power Plant and asking about Limerick Nuclear Plant's compliance status. NRC's response failed to provide a definitive answer.

May 6, 2010, at Exelon's PR session in Royersford, NRC officials were unable or unwilling to answer our questions about Limerick's fire safty compliance.

May 25, 2010 the expert who was supposed to have an answer for us was vague and unresponsive about a requested yes or no if Limerick was in full compliance with NRC fire safety regulations.

- NRC's "Expert" to answer our questions was unable to do that 5/25/10, but he did give us handouts. After careful review of them, ACE was more concerned than ever.
- They confirmed that NRC caved in to the nuclear industry to allow weaker fire safety regulations.

June 7, 2010, ACE again requested detailed written responses to each of our concerns and questions about Limerick's full compliance with fire safety regulations and NRC alarming terms in fact sheets proving NRC's regulations have been weakened.

ALARMING TERMS IN NRC FACT SHEETS ON FIRE SAFETY:

- ✓ **"Safe Enough"**
- ✓ **"Enforcement Discretion"**
- ✓ **"Flexibility"**
- ✓ **"Reduced Regulatory Burdens"**
- ✓ **"Exemptions"**

Fire-Induced Circuit Faults

NRC caved in to the industry, failing to demand full compliance with regulations and failing to hold nuclear plant owners fully accountable through enforcement of violations.

NRC is allowing the nuclear industry to avoid full compliance simply by claiming to demonstrate they are "SAFE ENOUGH".

- ✓ **"Safe Enough" is a highly subjective, unjustified unsubstantiated term.**
- ✓ **These have the potential to cause maloperation of equipment important to safe shutdown.**

NRC has agreed to NOT impose Violations and Fines on the nuclear industry for failing to fully meet fire-induced circuit fault regulations.

- ➢ **Given what is at stake for our region, there is no acceptable excuse for Exelon to avoid full compliance with fire-induced circuit faults.**

"Enforcement Discretion" - Hardly Protective of Public Interests.

For decades, NRC failed to require full compliance of fire safety regulations at Limerick Nuclear Plant, in spite of the obvious potential for disastrous consequences.

NRC claims "enforcement discretion" is not permanent, but allows "enforcement discretion" to continue to this day. That's unprotective and unacceptable.

Alternative Fire Protection Rule

NRC should not provide a "voluntary" alternative to NRC's more protective fire protection rule.
NRC put nuclear industry profits ahead of public safety when acquiescing to nuclear industry convenience over public safety. Allowing less stringent fire safety regulations increases risks of a nuclear disaster.

NRC abandoned more stringent original requirements to endorse NEI and industry developed suggestions For:

- **"Flexibility"**
- **Reduced Regulatory Burdens**
- **Weakened Regulations to Avoid Exemptions.**

NRC eliminated "unnecessary regulatory burdens" and allowed "industry exemption requests" to accommodate the nuclear industry and their bottom line, not for public safety. **"Flexibility" for nuclear plant owners should be a far lower priority to NRC than insuring public safety.**

- "Flexibility" provides convenience for the nuclear industry and likely improves their bottom line, but it clearly does not provide increased protection against fires.

NRC can't even get the industry to comply with weaker regulations. NRC is giving the nuclear industry incentives and/or a 6 month extension to follow weaker regulations with which nuclear plant owners should gladly have complied with over a decade ago.

- NRC provided certain enforcement discretion as an incentive for nuclear plant owners to adopt weaker NFPA 805 requirements than those required under licensing, yet nuclear plant owners are still resisting the weaker requirements.

Fire Barriers Tests indicated the material used by the nuclear industry for fire barriers may not provide their designed fire rating.

- **1-hour and 3-hour rated Thermo-Lag fire barrier material failed to consistently provide its intended protective function.** NRC publicized conclusions that the fire barrier was indeterminate and began NEGOTIATIONS with the industry for an industry-led resolution, which the industry declined to initiate. NRC backed down and concluded corrective actions would not be required

NRC'S 7-13-10 Response to ACE Confirmed:

✓ 2 Versions Of Fire Safety Regulations

✓ NRC Allows Limerick To Follow Weaker Fire Regulations

NRC acknowledged Limerick did NOT commit to adopting even weaker fire safety regulations - NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants."

NRC said Limerick is NOT Required to adopt even weaker fire safety regulations.

1-hr. and 3 hr. rated Thermo-Lag fire barrier material failed to consistently provide its intended protective function.

- **Limerick was allowed to use 1-hour Thermo-Lag when fires could last far longer than 1 hour and could potentially lead to meltdown.**

LAX NRC ENFORCEMENT FOR 2010 FIRE SAFETY VIOLATIONS AT LIMERICK NUCLEAR PLANT

NRC'S 11-9-10 letter to Exelon acknowledged 2 FIRE Violations, but NRC chose to treat them as Non-Cited Violations, even though NRC determined that these violations were "more than minor".

7-29-10

Twice - The latching mechanism failed to function on a required fire door between the reactor enclosure and turbine building.

Exelon failed to take action to address Limerick's degraded condition and failed to set up a required hourly fire watch.

- ✓ **The door hardware was no longer functional for securing the door in a closed position.**
- ✓ **An hourly fire watch was required for the inoperable fire door - BUT EXELON FAILED TO ESTABLISH AN HOURLY FIRE WATCH.**
- ✓ **Exelon workers determined conclusions that the door was operable based on an evaluation performed in 1999.**
- ✓ **In 1985, Exelon determined the mechanical latch for the door was replaced with a magnetic latch.**
- ✓ **The modification invalidated the equivalency to a rated three-hour fire door.**

- ➢ **NRC FAILED TO TAKE MEANINGFUL ENFORCEMENT ACTION FOR LIMERICK'S FAILURE TO SWIFTLY ADDRESS A FIRE SAFETY VIOLATION.**

NRC'S UNPROTECTIVE FIRE SAFETY POLICIES MUST BE ADDRESSED IMMEDIATELY TO MINIMIZE RISK OF MELTDOWN FROM A FIRE AT LIMERICK NUCLEAR PLANT.

The Nuclear Regulatory Commission has a legal responsibility to ensure American nuclear reactors are not operated dangerously. There has been widespread concern that NRC isn't doing what it's supposed to do, especially related to fire safety regulations. Recently, there is proof of NRC dysfunction resulting in potential great danger.

NRC has failed to provide enforcement of important safety regulations related to extremely dangerous threats of fire at Limerick Nuclear Plant. It is inexplicable that after decades Limerick Nuclear Plant has still not been required to use the safest materials or procedures in regulations. It is unbelievable and unacceptable that NRC allows Limerick to follow a different set of fire safety requirements, which NRC calls "safe enough".

NRC regulations include protection involving fire barriers, fire detection and suppression systems, and spatial separation, all to make safe shutdown possible if fire erupts in the many ways it can at a nuclear plant.

Liability limits encourage cutting corners to save money. It appears that is what is going on with fire safety. The consequences of failing to fully comply with fire safety regulations could cause unthinkable devastation, yet the casual NRC attitude expressed to ACE about a nuclear plant fire was alarming.

Given the potential consequences, NRC can no longer cave in to the nuclear industry's demands for cutting corners to save money. NRC must start to enforce important fire safety regulations. Nuclear plant owners enjoy financial liability limits dwarfed by damage they could do. NRC's most recent estimate of damage from a nuclear plant catastrophe is $1 Trillion, only $11 Billion of which would be paid by nuclear plant owners.

NRC must stop from undoing of safety requirements necessary to prevent a catastrophic meltdown at Limerick Nuclear Plant. A summary of the issues and positions is below.

- NRC "exemptions" from fire safety requirements that had been in the regulations and requirements for 30 years.
- In 1980, after a near catastrophic meltdown at the Browns' Ferry Alabama nuclear reactor, the NRC required all nuclear facilities to install fire insulation around the electric cables that allow the reactor to shutdown in an emergency.
- For 30 years the NRC's Rules have required that the fire insulation must protect these cables for at least one hour, enough to order and complete a shutdown.
- Five years ago the NRC discovered that the cable fire insulation in many reactors lasted only 27 minutes.
- Rather than force owners to upgrade the insulation so that it last an hour, the NRC secretly granted an "exemption". Now the insulation has to last only 24 minutes.
- That means that a fire at an electric cable has to be discovered, located and extinguished by fire personnel in 24 minutes. In many cases that is physically impossible.
- A meltdown that could occur would be real and irreversible.
- Battles are being fought to reduce the risk of a catastrophic meltdown, including a lawsuit trying to make the NRC enforce its own fire safety standards.
- The Atomic Energy Act, which gives the NRC all its powers and responsibilities, does not give the NRC the power to issue a fire safety 'exemption.
- The NRC can't make important decisions affecting the public health and safety in secret. The NRC intentionally refused to consider strong evidence that you can't discover, locate and put out a fire in 24 minutes. The "exemption" is a clear and present danger to the health and safety of almost 8 million people who live close to Limerick.

Because NRC's lax fire safety enforcement of regulations could lead to a Limerick meltdown, since 2008, ACE tried to get direct answers about Limerick Nuclear Plant's Fire Safety Compliance.

For two years NRC used stall tactics to avoid direct answers about whether Limerick Nuclear Plant was in full compliance with NRC'S fire safety regulations. Finally, two years after our first request, we got some answers.

July 13, 2010, NRC responded to some questions from our June 7, 2010 letter to NRC. NRC responses to ACE revealed the shocking truth that NRC caves in to nuclear industry demands, in spite of obvious risk to the public.

Fire-Induced Circuit Faults

NRC caved in to the industry, failing to demand full compliance with regulations and failing to hold nuclear plant owners fully accountable through enforcement of violations. NRC is allowing the nuclear industry to avoid full compliance simply by claiming to demonstrate they are "SAFE ENOUGH".

- "Safe Enough" is a highly subjective, unjustified, and unsubstantiated term.
- These have the potential to cause maloperation of equipment important to safe shutdown.

NRC has agreed to NOT impose Violations and Fines on the nuclear industry for failing to fully meet fire-induced circuit fault regulations.

From 1998 to date (12 years) NRC failed to require full compliance, in spite of the potential for disastrous consequences. NRC recognized risks:

- June 3, 1999 NRC documented problems and issued an Information Notice (IN) 99-17, "*Problems Associated with Post-Fire Safe-Shutdown Circuit Analyse*s".
- NRC claims "enforcement discretion" is not permanent, but allows "enforcement discretion" to continue to this day. That's not protective and not acceptable.
- **"Enforcement Discretion" Is Dangerously Irresponsible.**

Alternative Fire Protection Rule

NRC should not provide a "voluntary" alternative to NRC's more protective fire protection rule.

NRC allowed less stringent fire safety regulations, increasing risk of disaster. NRC put nuclear industry profits ahead of public safety when acquiescing to nuclear industry convenience.

NRC abandoned more stringent original requirements to endorse NEI and industry developed suggestions for: "Flexibility" - Reduced Regulatory Burdens - Weakened Regulations to Avoid Exemptions.

- NRC reduced so-called “unnecessary regulatory burdens" and allowed "industry exemption requests” to accommodate the nuclear industry and their bottom line.
- “Flexibility” for nuclear plant owners should be a far lower priority to NRC than insuring public safety. “Flexibility” provides convenience for the nuclear industry and likely improves their bottom line, but it clearly does not provide increased protection against fires.

NRC can’t even get the industry to comply with weaker regulations.

- NRC is giving the nuclear industry incentives and/or a 6 month extension to follow weaker regulations with which nuclear plant owners should willingly have complied in the past decade or more.
- NRC provided certain enforcement discretion as an incentive for nuclear plant owners to adopt weaker NFPA 805 requirements than those required under licensing, yet nuclear plant owners are still resisting the weaker requirements.

Fire Barriers

Tests indicated the material used by the nuclear industry for fire barriers may not provide their designed fire rating. 1-hour and 3-hour rated Thermo-Lag fire barrier material failed to consistently provide its intended protective function.

- NRC publicized conclusions that the fire barrier was indeterminate and began NEGOTIATIONS with the industry for an industry-led resolution, which the industry declined to initiate.
- NRC backed down and concluded corrective actions would not be required.

BELOW THE LETTER TO WHICH NRC RESPONDED

Alliance For A Clean Environment
1189 Foxview Road Pottstown, PA 19465

June 7, 2010

Paul Krohn, NRC Branch Chief
NRC, Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

RE: NRC's 5/25/10 Meeting and Unprotective Fire Safety Policies

Dear Mr. Krohn,

This letter is a follow-up to the NRC meeting at the Limerick Township Building May 25, 2010 regarding fire safety. Many of NRC's responses to our concerns and questions need to be clarified. Since different NRC individuals appear responsible for specific issues, we decided to ask NRC to respond to each issue separately about which we have concerns and questions. ACE will be sending separate letters about several issues discussed with us at NRC's meeting plus issues from our review of NRC fact sheets provided at that meeting.

In this letter we will address our long-term fire safety concerns at Limerick Nuclear Power Plant. ACE first contacted you about Limerick's fire safety January 12, 2009. Your response failed to answer our specific questions. At the May 6, 2010 Exelon public relations event, NRC representatives still failed to answer if Limerick was in full compliance with all fire safety regulations. We were told NRC would be prepared to answer that questions at the 5/25/10 NRC meeting.

The NRC official presented to us at the 5/25/10 meeting as the NRC expert on fire safety was vague and unresponsive to our request for a simple yes or no answer to our question about whether Limerick is in full compliance with fire safety regulations. Most disturbing was his casual attitude about what we view as a crucial issue. Full compliance with fire safety regulations can help to prevent a fire that could cause a meltdown and disaster at Limerick Nuclear Power Plant in our region. After what has happened in the Gulf, and knowing that fires at nuclear plants can lead to a nuclear plant meltdown and disaster, we think NRC should be taking a far more serious and protective approach to strict nuclear plant compliance with fire safety regulation.

NRC's fire safety expert said to get a yes or no we would have to be specific. We object to his assertion that the public is expected to know fire safety regulatory details to get a straight yes or no answer about Limerick's full compliance with fire safety regulations. After repeated requests, he finally claimed Limerick was in full compliance. He handed us NRC fire safety fact sheets, none of which turned out to be anything specific about Limerick's fire safety compliance, which was the point of our question.

After careful review of NRC's fire safety fact sheets we are more concerned than ever. It appears NRC caved in to the nuclear industry, just like MMS with deep sea mining safety. ACE identified the issues below. We are requesting detailed written responses to each comment and question.

Fire-Induced Circuit Faults

These have the potential to cause maloperation of plant equipment important to safe shutdown. In 1998, NRC identified inconsistency between positions of the industry and NRC regarding regulations concerning fire-induced circuit failures.

- To avoid NRC enforcement for industry non-compliance, NRC irresponsibility instituted enforcement discretion, allowing the industry to implement compensatory measures, such as staging fire watches for identified circuit failure.
- When NRC or nuclear plant operators identify a fire-induced circuit failure issue, NRC has irresponsibly allowed nuclear plant owners that can't meet requirements, to apply to NRC for permission to deviate from regulatory requirements by demonstrating to NRC they can ensure they are safe enough.

ACE believes it is negligent for NRC to allow nuclear plant owners to avoid full compliance with fire safety requirements for fire-induced circuit faults simply by claiming to demonstrate they are "safe enough".

- ✓ "Safe Enough" is an unsubstantiated term that can't be justified. This highly subjective standard is not sufficiently protective, given the potential for a fire to turn into a meltdown with disastrous consequences. What does "safe enough" mean? Something is only "safe enough" until it isn't, as in the Gulf of Mexico.
- ✓ It seems impossible to prove anything is "safe enough", short of starting a fire. Explain with specific details what NRC accepts from nuclear plant owners as proof that their plants are "safe enough" without full compliance with NRC's fire-safety regulatory requirements.

Violations and fines for failing to fully meet fire-induced circuit fault regulations will not be imposed on the nuclear industry by NRC.

- ✓ Where is the incentive for nuclear plant owners to comply with NRC fire safety requirements?

NRC caved in to the industry. NRC failed to hold licensees fully accountable, allowing the nuclear industry to avoid full compliance with regulations and enforcement for violations.

- ✓ This is yet another example of why the public believes NRC is more interested in protecting nuclear industry profits over public safely.

Questions about Limerick:

1) **Is Exelon fully in compliance with NRC's fire-induced circuit fault regulations at Limerick Nuclear Power Plant?**

2) **OR, is Exelon claiming Limerick Nuclear Plant is "safe enough" to avoid meeting the most protective fire-induced circuit fault regulations and what credible specific evidence of "safe enough" at Limerick has Exelon provided to NRC?**

Given what is at stake for our region, there is no acceptable excuse for Exelon to avoid full compliance with fire-induced circuit faults.

"Enforcement Discretion" is NOT PROTECTIVE

With much at stake with fire safety regulations, NRC, the agency responsible for protecting public safety, should end any nuclear industry "enforcement discretion". NRC is playing with fire. After what happened in the Gulf of Mexico, it is time for NRC to stop blindly dismissing the potential for disastrous consequences from a fire at a nuclear plant.

Facts show cause for concern.

- June 3, 1999 NRC documented additional problems and issued an Information Notice (IN) 99-17, "*Problems Associated with Post-Fire Safe-Shutdown Circuit Analyses*".
- December 2005, NRC issued a Regulatory Issue Summary, "*Clarification of Post-Fire Safe- Shutdown Circuit Regulatory Requirements."*
- April 2009, NRC Proposed Revision 2 of Regulatory Guide (RG) 1.189, "Fire Protection for Nuclear Power Plants" – Guidance of analyzing and addressing fire-induced circuit failures.

- ✓ **From 1998 to date (12 years) NRC has failed to require full compliance with its fire-induced circuit fault regulations, in spite of the potential for disastrous consequences.**
- ✓ **NRC claims "enforcement discretion" is not permanent, yet NRC allowed "enforcement discretion" continues to this day. That is both unprotective and unacceptable.**

➢ **It's long past time for NRC to stop caving in to the demands of the nuclear industry to protect their bottom line, and instead demand that the nuclear industry get in full compliance with the most stringent fire safety regulations.**

Alternative Fire Protection Rule

In 2001, in lieu of NRC's existing fire protection licensing basis, NRC modified its fire protection regulations to allow nuclear owners to adopt, on a voluntary basis, National Fire Protection Association (NFPA) Standard 805.

- For NRC to reduce so-called "unnecessary regulatory burdens" and "industry exemption requests" associated with the current deterministic approaches was clearly to accommodate the nuclear industry, not for public safety. NRC should not have provided a "voluntary" alternative to NRC's more protective fire protection rule.

Troubling Issues

NRC abandoned more stringent original requirements to endorse the NEI and industry suggested "flexibility", reduced regulatory burdens, and weakened regulations to avoid exemptions.

➢ **NRC put nuclear industry profits ahead of public safety. NRC acquiesced to nuclear industry convenience over public safety.**

- With a vested interest in the outcome, the Nuclear Energy Institute (NEI) and the nuclear industry developed the guidance accepted by NRC for implementing this new fire safety program involving more nuclear industry flexibility and reducing the regulatory burden associated with fire protection requirements, and reducing the need for licensee exemptions to current requirements.

➢ **"Flexibility" for nuclear plant owners should be a far lower priority to NRC than insuring public safety.**

- "Flexibility" provides convenience for the nuclear industry and likely improves their bottom line, but it clearly does not provide increased protection against fires.

- **Original fire safety regulations were established to prevent a nuclear disaster as a result of a nuclear plant fire. Allowing less stringent fire safety regulations increases risks. NRC reduced regulatory requirements to accommodate the wishes of NEI and the nuclear industry to save time and money. NRC clearly valued nuclear industry profits over safety.**
  - NRC admits rules, developed by NEI and the nuclear industry, are expected to reduce regulatory burdens and the need for license exemptions and amendments, yet NRC approved these rules.

- **NRC can't even get the industry to comply with weaker regulations. NRC is giving the nuclear industry incentives and/or a 6 month extension to follow weaker regulations with which nuclear plant owners should gladly have complied in the past nine years.**
  - NRC provided certain enforcement discretion as an incentive for nuclear plant owners to adopt weaker NFPA 805 requirements than those required under licensing, yet nuclear plant owners are still resisting the weaker requirements.
    - ✓ 2006 NRC endorsed the nuclear industry proposal to provide timely clarification of issues emerging at plants transitioning to NFPA 805.
    - ✓ March 2009, 51 reactor units had sent letters of intent, indicating commitment to adopt NFPA 805. NRC issued Revision 1 of RG. 1.205 December, 2009.
    - ✓ 47 reactor units can request an extension of enforcement discretion time to 6 months after the 2nd pilot plant safety evaluation is issued.

Questions about Limerick:

1) **Is Limerick Nuclear Power Plant in full compliance with the most stringent fire regulations?**
2) **Or is Limerick one of the 47 reactors that won't even commit to immediately adopting the weaker standards?**
3) **Specifically, as of June 2010, has Limerick adopted NFPA 805 and is Limerick in full compliance with that?**

Fire Barriers

Even after review of fact sheets, it is still unclear if NRC caved in to the nuclear industry regarding regulations and guidelines to ensure that nuclear plants can be safety shut down in the event of a fire.

Tests indicated the material used by the nuclear industry for fire barriers may not provide their designed fire rating. 1-hour and 3-hour rated Thermo-Lag fire barrier material failed to consistently provide its intended protective function.

There is widespread use of this questionable effective Thermo-Lag fire barrier material by the nuclear industry.

NRC issued numerous generic communications to inform licensees of Thermo-Lag failures and requested nuclear plant owners to develop plans to resolve any noncompliances with fire protection regulations.

- ✓ In 1999 inspectors discovered the fire endurance tests at Shearon-Harris did not satisfy the Generic Letter.
- ✓ NRC publicized conclusions that the fire barrier was indeterminate and began NEGOTIATIONS with the industry for an industry-led resolution.
- ✓ The industry declined to lead this initiative for a fire barrier resolution.
- ✓ NRC backed down and concluded corrective actions would not be required
- ✓ NRC fire tests from 2001 to 2005 indicated that the material used by the nuclear industry did not achieve the fire endurance consistent with its rating.
- ✓ In 2006, NRC issued Generic Letter 2006-03, "Potentially Nonconforming Hemyc and MT Fire Barrier Configurations".

September 2009, NRC published "Draft NUREG-1924, Electric Raceway Fire Barrier Systems in US Nuclear Power Plants" for public comment.

Questions about Limerick:

1. What is the current state of fire barrier use at Limerick Nuclear Power Plant?
2. Is Limerick still using Thermo-Lag or Hemyc anywhere on the site? If so, in what areas?
3. Please provide the complete review done on Limerick's individual use of ERFBS.
4. Has Limerick applied for exemptions?
5. Has Limerick received any exemptions?

Since fires can trigger meltdowns and since fire barriers are designed and constructed to achieve specific fire resistance ratings, and to limit the spread of heat and fire and restrict the movement of smoke, we believe the public deserves clear, easy to understand answers, with full disclosure.

We were told by NRC's "fire expert" in order to get specific answers, we needed to ask specific questions. We spent much time carefully reviewing NRC fact sheets and we have attempted to do that in this letter. Given the potential for an unthinkable disaster at Limerick Nuclear Power Plant, ACE believes NRC now has a responsibility to answer all our specific questions and concerns in this letter, clearly and specifically. Please don't yet again send us more websites, more generic fact sheets, and more non-answer responses. We await your timely response.

Thank You,

Dr. Lewis Cuthbert
ACE President

Cc: Senator Casey
Senator Specter
Congressman Sestak
Congressman Gerlach
Congressman Dent
Governor Rendell
Senator Rafferty
Senator Dinniman
Representative Quigley
Representative Hennessey
Representative Vereb

Below
Original ACE Written Request For Fire Safety Compliance At Limerick Nuclear Plant

Alliance For A Clean Environment
P.O. Box 3063 Stowe, PA 19464 (610) 326-6433

January 12, 2009

Paul Krohn, NRC Branch Chief
NRC, Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

Question: Is Limerick Nuclear Power Plant In Complete Compliance With All Fire Safety Rules?

Dear Mr. Krohn,

Prevention and precaution are imperative. Is Limerick Nuclear Power Plant in violation of any of NRC's fire safety rules? In the heavily populated region around Limerick Nuclear Power Plant, NRC should provide strict enforcement of all its fire safety rules.

An October, 2008 report to Congress, "*Fire When NOT Ready",* said all U.S. nuclear plants have been in violation of fire safety rules for more than a decade and therefore at risk of a meltdown from a fire. Apparently fires can damage control cables, causing operators to lose the ability to shut down and cool the reactor. NRC itself estimated that overall meltdown risk from fire hazards is about 50%, roughly equal to all other hazards combined, yet it appears NRC allows nuclear plants to violate fire safety rules.

Frustrated NRC Commissioner, Gregory Jaczko, was quoted saying at a public meeting July, 2008: "Simple, straightforward regulations and I don't think there is one plant right now that is in compliance with those regulations."

A 2008 Union of Concerned Scientists report suggests that Americans are only protected when fire protection regulations at nuclear power plants are met. UCS's David Lochbaum was quoted saying, "*The only thing more tragic that a nuclear power reactor fire killing Americans is the plain fact that those lives could be been saved had only the NRC bothered to enforce- rather than ignore – its fire protection regulations. I would not want to be in NRC's shoes when they face a grieving nation following a disaster so easily prevented."*

National groups tracked fire protection non-compliances since the early 1990s, pointed to North Carolina's Shearon Harris plant as emblematic of "*NRC's inept performance as guardian of public health and safety*", and called on Congress to wield its power to require NRC to enforce fire safety rules or shut down nuclear plants. They claimed if NRC had been doing its job, dozens of plants would have been shut down until their owners prioritized fixing all the fire safety violations.

Unless Limerick Nuclear Power Plant is in full compliance with all fire safety rules, everything is NOT safe, so please don't try to suggest that full compliance is unnecessary.

If Limerick Nuclear Power Plant is not in full compliance with NRC's fire safety rules, we call on NRC to require Exelon to get into full compliance BEFORE the next refueling. Failure to require full compliance with all fire safety rules exposes this enormous population to unnecessary risks from fire hazards at Limerick Nuclear Plant. If Exelon refuses, we call on NRC to shut Limerick down until Exelon complies.

If Limerick Nuclear Power Plant is not currently in full fire safety compliance, please explain in detail why not and what NRC intends to do about that. We hope NRC will require full compliance with fire safety rules BEFORE the next refueling at Limerick. Looking forward to your timely response.

Donna Cuthbert, ACE Vice President

Cc: Senator Casey
Senator Specter
Congressman Sestak
Congressman Gerlach
Congressman Dent