MELTDOWN

THREATS ARE INCREASING!

LIMERICK NUCLEAR PLANT CAN'T BE MADE FAILSAFE

A LIMERICK NUCLEAR PLANT MELTDOWN COULD TURN THE ENTIRE PHILADELPHIA REGION INTO A DEAD ZONE FOR GENERATIONS. MILLIONS COULD LOSE THEIR HEALTH, HOMES, AND ALL THEIR POSSESSIONS.

LIMERICK MUST BE CLOSED, NOT RELICENSED!

TOO MANY THINGS CAN TRIGGER A MELTDOWN

1. **EARTHQUAKES, TORNADOES, HURRICANES, FLOODS** Getting Stronger and More Frequent
2. **LIMERICK'S STRUCTURAL VULNERABILITIES** Too Big and Too Costly to Correct
3. **CYBER ATTACKS** Could Be Difficult To Stop
4. **TERRORIST ATTACKS WITH PLANES OR MISSILES** No Protection
5. **DEADLY HIGH-LEVEL RADIOACTIVE WASTES STORED IN POOLS AND CASKS**
   Vulnerable to Combustion, Pools Are Vulnerable To Loss Of Cooling Water
6. **CORROSION, DETERIORATION, AGING EQUIPMENT, BURIED PIPES, CABLES**
   All Are Increasing Threats That Could Lead To Loss Of Power, Loss of Water, Then Meltdown
7. **HUMAN ERROR** - Both Chernobyl and TMI Disasters Are Blamed On Human Error

Lessons From Japan's Nuclear Meltdowns

1. Inspections and Oversight Don't Make It Safe. Regulators are Ineffective to Stop a Meltdown. "Redundant" Safety Systems Don't Prevent Meltdowns.

2. Loss of Power Can Cause Loss of Cooling Water and Meltdown In Nuclear Plant Generators And Fuel Pools

3. It Doesn't Take An Earthquake to Cause Loss of Power and/or Loss of Cooling Water, Then Meltdown
   Loss Of Cooling Water Could Also Happen At Limerick Due To:
   - ✓ **Loss of Power** Limerick back-up power is inadequate (only hours, not days).
   - ✓ **Fire** Limerick is not required to follow the safest fire safety regulations
   - ✓ **Terrorist Attack** Limerick is not required to guard against a 9/11 type terrorist attack
   - ✓ **Human Error** Accidents Happen

4. Limerick's Power Back-Up Is Inadequate – Just Hours Available, Not Days, As Could Be Needed

5. We Can't Trust Nuclear Plant Owners To Provide Full Timely Disclosure Or Stop Disastrous Radioactive Releases From Poisoning Everything

6. We Can't Rely On Government To Take Immediate Protective Action

7. Limerick Nuclear Plant's Evacuation Zone Should Be At Least 50 Miles - Safe Evacuation Unrealistic
   Over 8 Million People Live Within 50 Miles Of Limerick - Philadelphia Is 21 Miles Away

EVIDENCE SHOWS WHY
LIMERICK NUCLEAR PLANT IS "A TICKING TIMEBOMB"

- Limerick Has Increasing Signs of Aging

Repeated Problems and Shutdowns

- ✓ **June 4th, 2011 the Mercury reported 3 Limerick shutdowns in 1 week**
- ✓ **February 2011, a shutdown lasted over 2 days**
- ✓ **June, 2010 a shutdown occurred**
- ✓ **2007-08 there were 5 shutdowns, one with loss of cooling water.**

- Complicated Aging Equipment With Miles of 25-Year Old Corroding and Deteriorating Underground Pipes and Cables, All Vulnerable to Failures Leading To Accidents/Meltdown From Fire, Human Error, Natural Disasters

- 3rd on Quake-Risk List - With Unreliable Systems For Protection

- Deadly And Vulnerable Overloaded Radioactive Waste Fuel Pools With Inadequate Back-Up Power For Cooling Water

- Dangerous Casks - With Design Flaws and Corrosion Concerns

- NO Protection Against Terrorists' Planes and Missiles

- Lax Fire Safeguards

LIMERICK NUCLEAR PLANT MUST BE CLOSED, NOT RELICENSED

MELTDOWN THREATS ARE INCREASING

- ✓ **EARTHQUAKES** - Limerick is 3rd on the earthquake risk list. Earthquakes are becoming stronger and more frequent. Earthquakes can lead to loss of power, loss of cooling water, then meltdown. When things shake, things break. Miles of buried corroding, deteriorating pipeline and cables can be broken, leading to disaster. See ACE Earthquake Summary for Details.

- ✓ **TORNADOES, HURRICANES, FLOODS -** As we have seen recently, increasingly stronger natural disasters have disrupted power at nuclear plants across the U.S. and could have led to meltdown. Let's hope Limerick closes before it becomes the first to meltdown from the consequences of extended loss of power from one of these events. Limerick's back-up power only lasts for hours, not days.

- ✓ **CYBER ATTACKS -** Are now declared an act of war. A cyber attack on Limerick could disrupt power for an extended period, eventually leading to meltdown. If hackers can get into computers at the Pentagon and other well guarded facilities, terrorists could get into Limerick's systems NRC is complacent about cyber attacks.

- ✓ **TERRORIST ATTACKS WITH PLANES OR MISSILES -** Limerick is not guarded against a 9/11 type terrorist attack because Exelon has not been required to spend the money to provide protection. Limerick's fuel pools, which can be turned into weapons of mass destruction, are especially vulnerable to aircraft penetration according to a 2000 NRC study, stating public health consequences of a nuclear fuel fire in a fuel pool caused by loss of cooling water could result in tens of thousands of deaths up to 500 miles from the damaged facility.

- ✓ **DEADLY HIGH-LEVEL RADIOACTIVE WASTES STORED AT LIMERICK IN POOLS AND CASKS**
  Large volumes of Limerick's highly radioactive wastes (fuel rods - spent fuel) are stored in densely packed fuel pools, elevated five stories above and outside the reinforced containment structure for the reactor. Roof top nuclear waste storage pools are highly vulnerable to a variety of attacks from above, below, and on three sides. There are also concerns about a radioactive fire starting in Limerick's casks from NRC allowing Exelon to remove fuel rods before 5 years of cooling in pools to move them to dry cask storage.

- ✓ **DOCUMENTED CORROSION, DETERIORATION OF EQUIPMENT AND BURIED PIPES, CABLES -** Aging equipment and miles of corroding aging hard to inspect pipes and cables buried under Limerick, present too great a risk for lost power, fire, and meltdown. Limerick is not even required to follow the safest fire safety regulations.

- ✓ **LIMERICK'S STRUCTURAL VULNERABILITIES CAN NO LONGER BE TOLERATED**
  A reactor with the same design as Limerick would never be built today. It can't be made failsafe. Why would it be relicensed? Limerick, a GE Mark II boiling water design, is similar to those in Japan's catastrophe. In addition to vulnerable fuel pools and earthquake risk design flaws, a 2006 report shows Limerick's containment is substandard, meaning Limerick would release even more radiation in a disaster.

Exelon Wants 20 More Years (60 Total) for Limerick Operations - To 2049

NRC MUST SAY NO
TO MINIMIZE MELTDOWN THREATS

Limerick Nuclear Plant CANNOT Be Made Failsafe by Exelon or NRC
Neither Can Prevent A Limerick Meltdown

This Ticking Time Bomb Needs to Close Before 2029, NOT Be Relicensed Until 2049.

Limerick Nuclear Plant Is Far Too Dangerous! Look At The Facts!

1. **Why Limerick Nuclear Plant Is A Ticking Time Bomb That Could Result In Meltdowns**
   - Repeated Problems and Shutdowns 2007 thru 2011
   - 2 Near Misses - 1995 and 2001
   - Aging and Deteriorating Equipment
   - Overloaded Fuel Pools and Storage Casks
   - Threats of Meltdown from Fire, Equipment Failure, Natural Disasters, Human Error
   - Threats of Terrorist Attacks
   - NRC's Lax Standards and Enforcement

2. **Limerick's Deadly Radioactive Wastes**
   - Least Bad Solutions - Store It Safer On-Site - Stop Making It
   - LLRW, Low-level, still high risk - Incineration increases threats
   - Taxpayers and ratepayers foot the bill - possibly forever

3. **Spent Fuel Pools**
   - Contain Most Of Limerick's Spent Fuel Since It Started Operating In 1985
   - OVERLOADED with massive amounts of high-level radioactive waste rods.
   - Radioactive wastes held in fuel pools exceed design expectations
   - Hold more high-level radioactive wastes than Japan's fuel pool in meltdown
   - Vulnerable Targets for Terrorists or Cyber Attacks - An attack on spent fuel pools could potentially result in a worse disaster than Chernobyl

4. **Above Ground Casks**
   - Threatened by natural disasters like earthquakes, tornadoes, and floods
   - If air flow vents get clogged for an extended period, rods can overheat and combust
   - Corrosion of steel holding wastes is a huge concern
   - Containers are expected to last 50 years - wastes stay dangerous over a million years
   - Likely to stay on site for decades, if not forever - must be made safer

5. **Transportation of Limerick's Radioactive Wastes Too Risky, Deadly, and Dangerous**
   - Loading and Unloading presents extraordinary health, environmental, and financial risks on-site and along the route,
   - Train and truck accidents are of major concern, especially for fire from fuel

6. **NRC Weakens Safety Standards and Rules**
   - "Safety" - Dangerous Deception Can Lead To Meltdowns
   - Pattern of Collusion Between NRC and the Nuclear Industry to Weaken Regulations and Standards To Relicense Old Nuclear Plants Like Limerick

LIMERICK IS VULNERABLE

TO MELTDOWNS FROM EARTHQUAKES

1 FAULT - 9 MILES AWAY 1 FAULT - 17 MILES AWAY

- ✓ **Some Limerick Systems, Structures, and Components Are Potentially Unreliable If An Earthquake Hits**
- ✓ **Flood and Fire Prevention Seals May Not Tolerate a "Seismic Event"**
- ✓ **Limerick's Design Flaws Can Result In More Radiation Released In A Disaster**

BECAUSE EARTHQUAKES ARE GETTING STRONGER AND MORE FREQUENT LIMERICK MUST BE CLOSED TO TRY TO PREVENT A MELTDOWN TRIGGERED BY AN EARTHQUAKE!

Fact Sheet Compiled by ACE October, 2011

1. **Limerick Is Highly Vulnerable To Earthquakes** - Limerick ranked 3rd worst of 65 U.S. nuke plants by federal officials for potential core damage from earthquake risk, which could result in a disastrous meltdown.[i] Earthquakes are becoming stronger and more frequent.

2. **An Earthquake Affecting Limerick Could Cause More Core Damage Than At 98 Other Nuclear Plants** - Estimate shows Limerick's risk rose 141%, taking into account odds for the chance of a serious earthquake.[ii]

3. **Flaw Found in Safety Mechanism at Limerick Nuke Plant - (Mercury 10-5-11)**
   GE Hitachi issued a warning to the Nuclear Regulatory Commission in September 2010 and confirmed the concern again September, 2011, that a key safety mechanism at Limerick might not work during an earthquake. This malfunction of control rods could contribute to a meltdown. Incredibly, NRC took no action on these warnings. Reason enough, to close Limerick Nuclear Plant as soon as possible.

4. **Japan's Catastrophic Meltdowns Were Caused by Earthquake, Then Loss Of Cooling Water** Fukushima meltdowns started March 2011, and are still not controlled seven months later. Radioactive fallout spread through Japan, across the northern hemisphere, and arrived in the U.S. six days later; millions were exposed, many will become ill, some will die.

5. **Meltdown Narrowly Avoided from Virginia Earthquake** - An earthquake in Virginia on August 23, 2011 cut power to North Anna nuclear plant, 11 miles from epicenter. Four backup generators (one of which failed) prevented another Fukushima. However, 115 ton radioactive waste casks (25) were moved. Cracks were found in the reactor containment building. There are concerns about unidentified leaks in miles of buried pipes and cables.
   A safety alert was prompted at Limerick Nuclear Plant after this 8-23-11 Virginia earthquake.

6. **Earthquakes Actually Occur in Philadelphia** – Two small earthquakes occurred recently in Philadelphia. Philadelphia is just 20 miles from Limerick Nuclear Plant. The most recent earthquake occurred May 29, 2011, causing residents' houses to shake after a big boom.[iii]

7. **Limerick Contains Massive Radioactivity.** Limerick reactors 1 and 2 contain far more radioactivity in their cores, waste pools, and dry casks of waste, than Chernobyl 4 when it melted down in 1986.

8. **A Limerick Meltdown Could Harm Millions**. A government study based on the 1980 census, estimated that a meltdown to Limerick's core could cause 684,000 residents (most of any U.S. reactor) within 20 miles to suffer from radiation poisoning (74,000 would die), and 34,000 cancer deaths would occur[iv]. From 1980 to 2010, the area's population increased by 183%[v].
9. **Philadelphia Region Can't Be Safely Evacuated**. Safe evacuation would be impossible after a meltdown at Limerick, since 8 million people live within 50 miles. Philadelphia is just 20 miles away. In this very heavily populated region for example, just one main road, Route 422, is considered one of the region's toughest commutes, even on a normal day.[vi]

10. **Government Regulations on Earthquakes Can't Eliminate Risks.**
Earthquake threats at Limerick are far greater than expected during construction. 9-22-11 we learned corners were cut during construction.
    - Updated review and regulations won't prevent an earthquake disaster.
    - Limerick was not built based on the most protective earthquake design basis or standards, but instead on outdated seismology science of the 1950s and 60s.
    - The inadequacy is both obvious and dangerous.
    - A new era of seismic understanding shows that earthquakes can go far beyond design basis.
    - After the fact regulation changes cannot correct unprotective design flaws and limitations.
    - Logically, it is not feasible to retroactively redesign inadequate Limerick earthquake design flaws.
    - It is impossible to believe Limerick's inadequate and outdated 30-year old "design basis" construction for seismic activity ever can or will ensure safety.

11. **Emerging Evidence Indicates Earthquakes Are Likely To Become More Frequent In PA -** There is emerging evidence that seismic activity can increase as a result of hydraulic fracturing, which is increasing dramatically in PA.[vii] August 24, 2011, a USGS employee listed how, why and where fracking is causing earthquakes.[viii]

12. **Why NRC's Earthquake Review Won't Prevent A Disaster** – NRC relies on nuclear industry self-evaluations and reports on what Limerick can or cannot withstand.
    - Despite evidence that earthquakes are becoming more severe, NRC blindly accepts claims made by the nuclear industry about their nuclear plants withstanding the largest credible quake.
    - In fact, NRC ignored USGS statements elsewhere that were in direct conflict with nuclear industry claims.
    - Compliance with new NRC regulations is voluntary, not mandatory. Industry will not spend the money on improved safety unless required to do so.

13. **Community Concerns Rise With Recent Earthquakes and Self-Policing** – With Exelon doing its own analysis, our community has little confidence in full and accurate disclosure of earthquake risks at Limerick. Evidence shows that we cannot believe or trust Exelon's self-evaluation. See ACE report on Exelon deception.

After witnessing the Fukushima devastation, other nations like Germany, Switzerland, and Italy have decided to close their nuclear reactors.

- **But NRC has been dismissive of catastrophic threats and continues to relicense dangerous, aging nuclear plants like Limerick.**

[i] U.S. Nuclear Regulatory Commission – Limerick ranked 3rd (Reported by MSNBC)
[ii] 2008 NRC Risk Estimate and 1989 Geological Data
[iii] Recorded by USGS. (Reported by AP 5-29-11)
[iv] CRAC-2 Report (Reported to Congress 1982)
[v] U.S. Census Data, 1980 through 2010
[vi] "Sprawl to Crawl on Route 422," Philadelphia Inquirer, January 2009
[vii] Huffington Post, March 14, 2011, by Sarah Eddington, "Arkansas Earthquakes Decline After 'Fracking' Injection Well closures"
[viii] USGS Guest, on Diane Rehm's Earthquake Update Show, 8-24-11

Limerick Nuclear Plant Is Apocalyptically Unsafe

Nuclear power is coming under increased scrutiny around the globe.

The Six Most Dangerous Aspects

Of Operating Limerick Nuclear Power Plant Harder and Longer.

1. If Limerick Nuclear Plant melts down, the entire Philadelphia region is doomed. Philadelphia is just 20 miles downwind from Limerick. In Japan, the U.S. ordered a 50-mile evacuation zone. Over 8 million people live within 50 miles of Limerick. There will be no chance to evacuate the city to protect ourselves from radiation. People will be ordered to stay indoors, but gamma rays will go right through a house. Vast numbers of people will get radiation sickness and die. Radiation will make the region uninhabitable. Our whole area could become a ghost town that nobody can safely live in for thousands of years. What would that do to the economy? The older Limerick gets, the more risk of meltdown and disaster. Keeping old nuclear plants in business is clearly only motivated by money.

2. Limerick Nuclear Plant is aging and deteriorating. When Limerick went into operation in 1985, it was licensed for, and designed to last 40 years. Everything has an expected life span. After 26 years, troubling signs of problems are already evident, including five unplanned shutdowns in one year (2007 to 2008), one with loss of cooling water. Others occurred since 2008, three in just one week this past June, 2011. Some of the problems could potentially lead to meltdown. From NRC records, a Greenpeace report listed two near misses, in 1995 and 2001. Exelon claims they will replace aging parts, but the nuclear industry admitted that some parts are too big and too expensive to replace. Of particular concern, the reactor vessel becomes too brittle as do miles of underground buried pipes and cables critical for safe operations. Exelon's history suggests they will cut corners to avoid spending money and use dangerous delay tactics. Fire safety is one example. Exelon avoided compliance with important fire safety regulations at Limerick for decades, then recently agreed to only follow weakened fire safety regulations.

3. Limerick Nuclear Plant Has Design Flaws - GE warned the NRC in 2010, and stressed again in 2011, that the design of Limerick's reactors had an inherent danger that could prevent a quick shut-down in an emergency. The mechanism that inserts control rods may not function properly in the event of an earthquake. Limerick's containment has been shown to be substandard, meaning in an accident or terrorist attack, more radiation would be released. Realistically, how can design flaws be corrected, with more inspections, reports, or regulations? This reactor core model is one of the single most observed parts of any reactor system. How many other engineering "gaffes" exist in the thousands of other safety and control systems in Limerick's design?

4. Limerick Nuclear Plant's spent fuel pools are a catastrophe waiting to happen. Limerick's spent fuel pools are like huge swimming pools jam-packed with high-level radioactive wastes stored there since Limerick started operating in 1985. They are filled with radioactive fluids that are threatening to boil away, introducing radiation into the air. They are vulnerable

to a 9/11 type terrorist attack with a plane or missile. That kind of attack could lead to an unstoppable radioactive fire which could impact people hundreds of miles away, according to an NRC study (2000). Negligence could also result in a severe nuclear accident, that could be a horrific disaster by itself. Limerick's Fuel Pools Are Overloaded With All Limerick's Deadly Radioactive Wastes Since 1985. Our Region Is Now A High-Level Radioactive Waste Dump, Providing An Inviting Target For Terrorists.

5. Limerick Nuclear Plant is now ranked 3rd on the earthquake risk list. Limerick is extremely susceptible to a meltdown caused by an earthquake, something that is happening more frequently, and with greater strength. An earthquake could cause catastrophic conditions at Limerick, similar to those in Japan. With power down, Limerick would be forced to rely on emergency diesel generators to continue pumping over 200,000 gallons of water per hour needed to cool the reactors. Limerick's generators for back-up power would function for hours, not days. There is no back-up power for packed and stacked deadly fuel pools. There's not enough water in the Schuylkill River to continue to supply over 200,000 gallons per hour, especially in times of extreme heat and drought. Limerick's cooling towers significantly depleted the Schuylkill River over the past 26 years. By 1999, the river reached record low flows. Limerick doesn't store enough water to keep cooling generators and fuel pools for days. Two recent earthquakes in Philadelphia and the 8-23-11 Earthquake in Virginia that caused an "unusual event" at Limerick make it clear earthquakes are a very serious threat at Limerick Nuclear Plant .

6. The Nuclear Regulatory Commission (NRC) has become a lapdog, rather than a watchdog. NRC's weakened regulations, lax enforcement, negligence and rubber stamp permitting have all destroyed NRC's credulity. NRC "rubber-stamped" 71 of 71 U.S. nuclear reactors for another 20 years, regardless of increasing harms and risks. There's no guarantee Limerick can operate safely until 2029 when its license expires, much less 20 years longer. NRC cannot dispute that Limerick's reactors may crack from being bombarded with high-level radiation, cannot guarantee there will be enough safe usable water in the Schuylkill River for the almost two million people who need it for drinking water from Pottstown to Philadelphia, and cannot guarantee corrosion and deterioration of miles of underground pipes and cables will ever be identified, much less replaced.

Specific Concerns About NRC's Weakened and Lax Policies and Standards At Limerick

- Limerick Nuclear Plant Already Had 2 Near Misses - 1995 and 2001 – (Documented by Greenpeace From NRC Files).
- More Radiation Would Be Released Because Limerick Containment Is Substandard.
- Limerick's Miles of Cables and Underground Pipes Are Corroding and Deteriorating
- Many Unplanned Shutdowns Were Reported In Recent Years. One Caused Loss of Cooling Water.
- Limerick Is NOT In Compliance With Safest Fire Safety Regulations, Even Though Fires Can Lead To Meltdown.
- Limerick Is NOT Protected Against 9/11 Type Terrorist Attacks With Planes or Missiles Even Though Terrorists Want To Attack Nuclear Plants - We Are One of the Most Heavily Populated Regions.
- An Al-Qaida Suspect Worked at Limerick During Refueling Each Year from 2002 to 2007.
- Cyber Attacks on Limerick's Computer Systems Could Lead To A Meltdown, and NRC Is Complacent About That.

Nuclear Disaster Can Happen At Limerick.
Many Things Can Trigger Meltdown!

Meltdowns Like Those At Fukushima Can Happen At Limerick Nuclear Power Plant.

The Japan nuclear disaster revealed that nuclear power's so-called "redundant safety systems" fail and when they do the consequences are cataclysmic.

- **The whole idea of "redundant safety systems" preventing a meltdown at Limerick Nuclear Plant is a baseless huge leap of faith.**

Many things could trigger a Limerick meltdown. A nuclear disaster at Limerick Nuclear Plant can be triggered by a fire, terrorist attack, hurricane, tornado, human error, or equipment failure, like at TMI. Each could cause loss of power and/or cooling water that can lead to a meltdown. While Limerick is ranked 3rd on the earthquake risk list, a Limerick disaster with generations of devastating unthinkable consequences can be caused by many other factors.

ACE identified great cause for concern at Limerick. Many in our region have long been concerned about an accident or terrorist attack causing a nuclear disaster at Limerick Nuclear Plant.

NRC ignored valid concerns including reported accidents which fortunately didn't result in a meltdown:

- ✓ Limerick Nuclear Plant had two "Near Misses" (1995 - 2001), according to a 2006 report based on NRC records called "American Chernobyl". That report reveals that Limerick has "Substandard Containment", meaning far more radiation would be released in an accident or terrorist attack.
- ✓ Limerick Nuclear Plant is NOT in compliance with NRC's most stringent fire safety regulations, even though fires are a major factor in meltdowns. Weaker regulations reduce Exelon's regulatory burdens and costs, but increase risk of meltdown.
- ✓ Limerick lost coolant causing shut-down April 24, 2007. 15 days later, NRC still had no explanation. Remember, the disaster in Japan started with loss of coolant.
- ✓ Limerick had five unplanned shutdowns in just over a year. April 9, 2007 – 5 days after refueling there was a problem with a seal on the pump.
- ✓ In one week in June, 2011 Limerick had 3 unplanned shutdowns.

Assertions That NRC Oversight Will Prevent Meltdowns Are Delusional.

NRC's decisions are based largely on their baseless ad nauseum "beliefs". NRC's track record and responses to ACE concerns suggest NRC puts nuclear industry profits ahead of public safety. Don't count on NRC oversight to prevent a Limerick meltdown. NRC's negligence should concern everyone in our region. Examples:

- ✓ Fire - NRC acquiesced to nuclear industry convenience and bottom line by developing a second weaker set of fire safety standards which allow Limerick to deceptively claim compliance. NRC says it's "SAFE ENOUGH". Knowing fires can cause meltdowns, we need the safest fire barriers and other safeguards and object to "Reduced Regulatory Burden", "Exemptions", and "Flexibility".
- ✓ Terrorist Attacks - NRC failed to require Limerick to guard against a 9/11 type terrorist attack by plane or missile. Either could lead to a nuclear fire and meltdown. Limerick Airport is about one mile away.

- ✓ An Al-Qaida suspect worked at Limerick 2002 to 2007. How effective are NRC screening requirements for the 2000 workers that come to refuel each year?

Experts call high level radioactive fuel rods the single greatest security vulnerability in the U.S. An estimate of over 1,000 tons are stored at Limerick in fuel pools and above ground in casks.

Every year Limerick operates about 40 tons more could be produced.

- ✓ Water loss in Limerick pools can heat up spent fuel rods, which can then self-ignite and burn in an unstoppable fire, releasing so much radioactivity they're seen by experts as pre-deployed radiological weapons.
- ✓ Fuel rods are to be cooled 5 years before removal to above ground casks. NRC allowed Limerick to remove fuel rods for transfer far earlier. We're told some were removed in just one year, creating risk of a highly radioactive fire in casks too.
- ✓ One expert said that a nuclear fire in a spent fuel pool would release enough cesium-137 to render about 95,000 square kilometers of land uninhabitable.
- ✓ A 2000 NRC report determined a catastrophic meltdown in spent fuel pools could cause fatal radiation-induced cancer in thousands of people as far as 500 miles from the site.

Prevention Of A Meltdown Is Imperative.

Evaluation plans are unrealistic. There would be complete gridlock. Chaos is inevitable. We are too heavily populated.

- Escape routes are already jam-packed during rush hour.
- Many would flee into the radioactivity.
- Japan proves a 10-mile evacuation zone is ludicrous. Minimally, a 50-mile evacuation zone is imperative.
- Over eight million people live within 50 miles of Limerick.
- Philadelphia is only about 20 miles away in the predominant wind direction. Where would everyone go?
- There aren't enough shelters or food and water waiting for anywhere close to 8 million people.

The 1982 Calculated Risk Accident Consequences (CRAC) report to Congress estimated staggering numbers impacted by a Limerick accident or terrorist attack. Costs would be astronomical.

- ✓ 74,000 Early Fatalities
- ✓ 610,000 Early Injuries (most for any U.S. reactor)
- ✓ 34,000 Cancer Deaths.
- ✓ Estimated costs $417 Billion for Limerick 1, $386 Billion – Limerick 2.

Since 1980, population more than doubled, doubling harms and costs. NRC's current cost estimate could be over a trillion dollars, largely paid by taxpayers. Exelon pays only the first $11 Billion.

Given The High Stakes, and Reality of Actual Risks For A Limerick Meltdown,

- ➢ **Limerick Nuclear Plant Is NOT "Safe Enough", as absurdly claimed by Exelon and their defenders, including NRC**

Exelon and NRC Shamefully claim Limerick Nuclear Plant is "Safe Enough". Facts suggest otherwise.

Japan's "redundant" safety systems failed. So could Limerick's.

We've been lucky so far. A 2006 report, "American Chernobyl", showed Limerick Nuclear Plant had two near misses (1995 and 2001), and that Limerick has substandard containment, that would release more radiation in a disaster.

4-24-07, the Mercury reported Limerick lost coolant causing shut-down. 15 days later, NRC still had no explanation. Limerick had five unplanned shutdowns in one year, and 3 unplanned shutdowns in one week this year. With such problems and ever more violent weather conditions, anything could happen.

It wouldn't take an earthquake or tsunami to cause a radioactive disaster at Limerick that could jeopardize our health and lives forever, and cause us to become nuclear refugees losing everything we own. Our region could become a dead zone for decades, possibly forever. The Japan nuclear disaster was caused by extended loss of power, then loss of cooling water. **That could happen at Limerick Nuclear Plant from a terrorist attack, fire, catastrophic weather event, human error, or equipment failure.**

Accidents happen. It's impossible to make nuclear plants failsafe. But, NRC's reckless weakened regulations increase risk. ACE investigations suggest everyone in our region should be very concerned about NRC's dangerously irresponsible failure to confront safety issues, including fire safety. NRC failed to require Exelon to bring Limerick into full compliance with the safest fire safety regulations. Instead, NRC allowed the industry to make a different risky set of rules with "exemptions", "flexibility", and "reduced regulatory burdens". Why? To save Exelon money.

A 9/11 type terrorist attack with a plane or missile could cause a Limerick disaster, yet Exelon is not required to provide defense against a terrorist's plane or missile. Fuel from a small crashed plane could trigger a fire that could lead to loss of power, loss of coolant, then meltdown. Army testing proves fuel rod containers can be penetrated with a missile. Deadly released radiation could impact miles. An Al-Qaida suspect worked at Limerick during yearly refueling from 2002 to 2007, showing the reality of an insider threat. Feel safe?

Why We Are Worried - Lessons From the Japan Nuclear Disaster

1. The Nuclear Industry Cannot Be Believed
   - Nuclear power kills (deaths from industry related accidents 1961 to 2004)
   - Reports show Limerick had two near misses 1995 and 2001
   - Accident Statistics for Limerick (1980 CRAC Calculations vs. 2000 estimates)
   - Nuclear plant fuel pools pose enormous risk threats
   - A pattern of delayed and intentionally minimized notifications of public threats
   - "Science for sale" is often used to deny, ignore, oppress, or censor the actual facts

2. Governments Cannot Be Trusted
   - History suggests that timely and complete information for the public won't be provided
   - In meltdown situations, exposure risks are not fully disclosed, typically only Iodine and Cesium
   - Harmful impacts of meltdown worst case consequences (1974 Rasmussen Report)
   - Nuclear plant worker safety is not always a high priority during emergencies
   - Examples of Outright Lies - Three Mile Island 1979 - Chernobyl 1986 - Fukushima, Japan 2011

3. Regulators Cannot Be Relied Upon For Protection
   - Japan's regulators failed on many levels to protect their citizens
   - U.S. NRC oversight is a dangerous delusion, based on outdated regulations
   - NRC often openly promotes the industry it is supposed to regulate
   - Evacuation Plans are inadequate (10 mile EPZ vs. 50 mile "safe evacuation" in Japan)
   - NRC is viewed as the most severely compromised federal agency by many experts

4. Culture of Complicity a Pattern in Both Japan and the U.S.
   - Appearances of collusion among nuclear power companies, regulators, and politicians
   -Tokyo Electric Power failed to take action to complete needed repairs reported to them
   - Regulators divulged the identity of the whistleblower to TEPCO
   -Weeks before the nuclear accident, regulators approved a 1-year extension beyond 40 years

- Similar problems plague the NRC including Vermont Yankee Plant and others
- Shortly after releases in Japan, NRC raised radiation dose limits in the U.S.
- The "revolving door" of related employment benefits all participants in both countries

7. Known Health Harms of Radiation Exposure
   - No safe dose of radiation exposure
   - Infants and children are uniquely susceptible to harmful effects
   - Japan raised radiation exposure limits for schools and playgrounds to 2,000 millirems per year
   - Chernobyl's children suffered increased cancers, infant mortality, birth defects ...
   - Cuba treated over 25,000 children from the Ukraine and Russia for leukemia
   - World Health Organization and IAEA have shamelessly understated Chernobyl victims

9. Conclusions for Tri-County Area Residents to Consider
   - The "unthinkable" needs to be rethought - a disaster could happen here
   - Limerick is 3rd on the Earthquake Risk List in the U.S. - a real concern
   - A disaster/meltdown can be triggered as a result of fire, human error, terrorist attack, equipment failure, or a catastrophic hurricane/tornado event
   - Lesson to be learned from Japan - redundant safety systems can fail
   - Radioactive fuel rods are among the most deadly materials on earth
   -Transporting radioactive wastes is too risky to consider (photos of transport)
   - We need to oppose approval of uprates by NRC
   - We need to oppose renewal of Limerick's license for an additional 20 years by NRC
   - Additional precautions are needed at Limerick (Extended back-up power, safest fire
   - regulations, enhance protection against terrorists, extend EPZ to 50 miles, safer storage of spent fuel rods on site in above ground casks ...)

NRC Needs To Do Far More, Faster, To Fortify Limerick Nuclear Power Plant.

NRC NEEDS TO STOP MINIMIZING RISKS TO SAVE EXELON MONEY.

NRC OVERSIGHT - A DANGEROUS DELUSION

Many in our region have long been concerned about NRC's lax oversight and enforcement leading to a meltdown from accidents or a terrorist attack at Limerick Nuclear Plant.

- Claims that NRC oversight will prevent meltdowns are delusional. NRC's decisions are based largely on baseless "beliefs", NOT science or reality.
- **NRC's track record** - They put nuclear industry profits ahead of public safety. NRC is too close to the industry. They promote nuclear power, not regulate it.
- NRC's negligence concerns many in our region.

ACE Identified Examples of NRC Negligence at Limerick Nuclear Plant Listed Below:.

- ✓ **FIRE** - NRC acquiesced to nuclear industry convenience and bottom line by developing a second weaker set of fire safety standards which allow Limerick to deceptively claim compliance. NRC says it's "SAFE ENOUGH". Knowing fires can cause meltdowns, we need the safest fire barriers and other safeguards and object to "Reduced Regulatory Burden", "Exemptions", and "Flexibility".

- ✓ **TERRORISTS THREATS** - NRC failed to require Limerick to guard against a 9/11 type terrorist attack by plane or missile. Either could lead to a nuclear fire and meltdown. Limerick Airport is about one mile away.
- ✓ **AL-QAIDA SUSPECT** worked at Limerick 2002 to 2007. How effective are NRC screening requirements for the 2000 workers that come to refuel each year?
- ✓ **RADIOACTIVE FUEL RODS MOVED TOO SOON!** NRC is allowing Limerick's high-level radioactive fuel rods to be removed from cooling pools far sooner than the 5 years originally considered safe.
- ✓ **"REDUNDANT SAFEGUARDS" FAIL** - Safeguards that work on paper don't necessarily work during a real meltdown. Glaring vulnerabilities in the multiple layers of safeguards have become obvious.
- ✓ **LOSS of POWER - INADEQUATE BACK-UP POWER -** A "Station Blackout" (A Threat to All Nuclear Plants), poses the greater proportion of risk compared to all other factors that could lead to a meltdown, according to NRC studies - 2003 and 2005. Yet, there is not enough back-up power at Limerick Nuclear Plant.
  - Limerick needs back-up power available for days, not just hours. A weather event shut down power in a neighboring community for five days recently.
  - Limerick needs enough back-up power for reactors and fuel pools
  - Limerick needs to test all generators more often. Like combustion engines, they don't always start if they have not been turned on for weeks.
  - Japanese batteries had 8 hours of power storage - not long enough
  - The danger of power failure - Total Blackout Risk - National Average 17.5 percent.

  - ✓ Hurricane Andrew - Turkey Point (Florida) lost off-site power for more than 5 days. Because Florida Power & Light Company (FPL) did not bring in a shift change by helicopter, the same crew worked around the clock to keep the generators going.One worker said they held it together basically with paper clips and rubber bands at one point, because diesel generators are really not designed to run continuously.
  - ✓ Hurricane Gustav (2008) - River Bend shut down. Hurricane tore the sheet metal off three sides of the plant's turbine building.

Exelon Is Making A Fortune, While We Are Facing Meltdown Devastation and Financial Ruin.

- **To Reduce Risk Of A Limerick Meltdown - Prevention Is Imperative.**
- **Exelon Must Be Required To Pay For The Safest Precautions.**

1. **Extend Back-Up Power To Last For Days, Not Just Hours**
2. **Limerick Needs To Be Guarded Against A 9/11 Type Plane or Missile Attack By Terrorists**
3. **Exelon Must Be Required To Follow The Safest Fire Safety Regulations**
4. **Harden Radioactive Waste Storage On Site**
5. **Extend Limerick's Evacuation Zone From 10 To 50 Miles**
6. **STOP Additional Uprates That Would Run Limerick Harder**
7. **CLOSE Limerick In 2029 - NOT Relicense Until 2049**

CONTACT ELECTED and AGENCY OFFICIALS TODAY

Urge them to demand precautions listed above to reduce risks for all of us becoming nuclear refugees, losing everything we have, including our health.

The Study Below Shows Since 1974 NRC Has Known About The Horrific Estimated Consequences of a Meltdown

ALL ABOUT MELTDOWNS

Excerpts Below from the Reactor Safety Study (WASH-1400) (commonly known as the Rasmussen Report) published by the US Nuclear Regulatory Commission in 1974

BOTTOM LINE MELTDOWN CONSEQUENCES - 1974 NRC Worst Case - Rasmussen Report

- **45,000** **Cases Radiation Sickness** (Requiring Hospitalization)
- **3,300** **Prompt Deaths** (From Acute Radiation Sickness)
- **45,000** **Fatal Cancers** (over 50 years)
- **250,000** **Non-Fatal Cancers** (over 50 years)
- **190 Per Year** **Defective Children Born**
- **$14 Billion** **(1974 Dollars) Property Damage; NOT Insurable**

A MELTDOWN AT LIMERICK NUCLEAR PLANT COULD RELEASE

Over 200 MELTDOWN RADIONUCLIDES

Reactor Safety Study (WASH-1400) (commonly known as the Rasmussen Report)
Published by the US Nuclear Regulatory Commission 1974

The Following 54 Are Among The Most Dangerous Radionuclides Released In A Meltdown With Half-Lives Up To 24,000 Years

No.	Radionuclide	Radioactive Inventory (Source Term in curies)	Half Life
1	Cobalt-58	780 thousand	10.1 weeks
2	Cobalt-60	290 thousand	5.25 years
3	Krypton-85	560 thousand	10.8 years
4	Krypton-85m	24 million	4.4 hours
5	Krypton-87	47 million	1.25 hours
6	Krypton-88	68 million	2.8 hours
7	Rubidium-86	26 thousand	2.67 weeks
8	Strontium-89	94 million	7.4 weeks
9	Strontium-90	3 million 700 thousand	30.2 years
10	Strontium-91	110 million	9.7 hours
11	Yttrium-90	390 thousand	2.67 days
12	Yttrium-91	120 million	8.4 weeks
13	Zirconium-95	150 million	9.3 weeks
14	Zirconium-97	150 million	17.0 hours

15	Niobium-95	150 million	5.0	weeks
16	Molybdenum-99	160 million	2.8	days
17	Technetium-99m	140 million	6.0	hours
18	Ruthenium-103	110 million	5.64	weeks
19	Ruthenium-105	72 million	4.44	hours
20	Ruthenium-106	25 million	1.0	years
21	Rhodium-105	49 million	1.50	days
22	Tellurium-127	5 million 900 thousand	9.38	hours
23	Tellurium-127m	1 million 100 thousand	15.6	weeks
24	Tellurium-129	31 million	1.15	hours
25	Tellurium-129m	5 million 300 thousand	8.16	hours
26	Tellurium-131m	13 million	1.25	days
27	Tellurium-132	120 million	3.25	days
28	Antimony-127	6 million 100 thousand	3.88	days
29	Antimony-129	33 million	4.30	hours
30	Iodine-131	85 million	8.05	days
31	Iodine-132	120 million	2.30	hours
32	Iodine-133	170 million	21.0	hours
33	Iodine-134	190 million	53	minutes
34	Iodine-135	150 million	6.72	hours
35	Xenon-133	170 million	5.28	days
36	Xenon-135	34 million	9.2	hours
37	Cesium-134	7 million 500 thousand	2.05	years
38	Cesium-136	3 million	13.0	days
39	Cesium-137	4 million 700 thousand	30.1	years
40	Barium-140	160 million	12.8	days
41	Lanthanum-14 0	160 million	1.67	days
42	Cerium-141	150 million	4.6	weeks
43	Cerium-143	130 million	1.38	days
44	Cerium-144	85 million	40.6	weeks
45	Praseodymium-143	130 million	13.7	days
46	Neodymium-147	60 million	11.1	days
47	Neptunium-239	1 billion 640 million	2.35	days
48	Plutonium-238	57 thousand	89.0	years
49	Plutonium-239	21 thousand	24,000	years
50	Plutonium-240	21 thousand	6,571	years
51	Plutonium-241	3 million 400 thousand	14.6	years
52	Americium-241	1 thousand 7 hundred	410.7	years
53	Curium-242	500 thousand	23.3	weeks
54	Curium-244	23 thousand	18.1	years

TABLE VI 3-1 Adapted From Appendix VI of WASH-140 - INITIAL ACTIVITY OF RADIONUCLIDES IN THE NUCLEAR REACTOR CORE AT THE TIME OF THE HYPOTHETICAL ACCIDENT

The kind of meltdown accidents envisaged in WASH-1400 require a much more extensive evacuation plan than any that is currently envisaged in Canada, as indicated in this very brief excerpt from Appendix VI of WASH-1400. *[comentary by Dr. Gordon Edwards]*

As Evidenced Above, 200 Different Radioactive Substances Can Be Released In Fuel Rod Melting Accidents

- **Yet, In Japan, Only A Few Radionuclides Were Measured Or Reported From The Fukushima Catastrophe.**

- **Iodine And Cesium Were The Only Two Widely Reported.**

The Whole Truth Seldom Gets Told

Deceptive Stall Tactics Protect Nuclear Industry Profits

When Truth Is Ignored, Precautions Are Dismissed

It's Business As Usual,
While Millions Are Harmed and Jeopardized.

Improved Safeguards Are Imperative, But That Won't Happen Without Your Voice To Get Your Elected Officials Involved.

The Following Articles Show Why You Cannot Depend On NRC To Make The Right Decisions To Protect Your Future.

EXPOSURE RISKS NOT FULLY DISCLOSED

06/16/11 **NRC hearing raises questions about safety at nuclear plants**
http://www.csmonitor.com/USA/2011/0615/NRC-hearing-raises-questions-about-safety-at-nuclear-plants The Christian Science Monitor - CSMonitor.com By Mark Clayton, posted June 15, 2011

A hearing of the Nuclear Regulatory Commission (NRC) pointed to apparent weaknesses in the regulation of nuclear plants. A safety task force staff ... noted that: • In many cases, older "vintage" plants that undergo relicensing examinations to operate an added 20 years are not required to bring those plants fully up to current safety standards.

• NRC regulations have never formally recognized the possibility of an extreme event – like an earthquake or tornado – simultaneously knocking out both on-site and off-site power at a nuclear plant, as happened at the Fukushima Daiichi plant in Japan.

• The nation's nuclear plants have "different licensing bases and associated safety margins," with variations among the plants depending upon their age.

• "Hardened vents" installed to protect US boiling water reactors with the same design as the Fukushima plant were "not included in regulations" and, as a result, were not subject to regular inspections to ensure that they operate properly in an emergency.

• Key valves associated with the hardened vents "were not specifically designed for operation during a long-term station blackout" and therefore might be difficult to open in the event of a Fukushima like incident. [**Editor's note:** *The original version misstated the task force's finding on this point.*]

NRC Whistleblowers

BOSTON (By Scott Malone) – U.S. regulators privately have expressed doubts that some of the nation's nuclear power plants are prepared for a Fukushima-scale... :

U.S. Nuclear Regulators Privately Doubted Power Plants Despite Expressing Public Confidence, Documents Show

Three former members of the Nuclear Regulatory Commission's Office of the Inspector General told ProPublica that the OIG's office has rewritten critical reports, buried other damaging reports and stopped an investigation into whether the NRC is relying on outdated methods to predict damage from an aircraft crashing into a plant. In a report by John Sullivan and PBS Newshour's

Cameron Hickey, the whistleblowers say the OIG has shied away from challenging the NRC right when we need them most in the aftermath of the Fukushima meltdown.

One whistleblower, George Mulley who was an award-winning chief investigator at the OIG, told ProPublica that a report he wrote detailed lapses by several NRC inspectors over six years and cited systemic problems in the way the NRC tries to prevent corrosion. "The revised report shifted much of the blame to the plant's owner, Exelon, instead of NRC procedures. And instead of designating it a public report and delivering it to Congress, as is the norm, the office put it off-limits."

Two other former OIG investigators told ProPublica that the OIG has become reluctant to probe anything that could become controversial or raise difficult questions for the NRC. Each asked not to be named to protect their current jobs.

Read the full account here - http://www.propublica.org/article/whistleblowers-say-nuclear-regulatory-commission-watchdog-is-losing-its-bar - and see all of ProPublica's reporting on nuclear safety here.

- *Thankfully some at NRC value public health and safety over nuclear industry profits. It we are to be protected from deadly, dangerous nuclear plants we need more at NRC to have integrity, soul, and caring.*

Evidence of growing risk from U.S. meltdowns is everywhere, yet NRC is failing to see the urgency of taking immediate action to at least attempt to better guard against a meltdown.

- **The need to shut down old, troubled plants like Limerick to minimize risk of meltdown is clear, yet NRC keeps rubber stamping permits.**

- Our concerns are that NRC's Dual Role as a Promoter and Regulator is a dangerous conflict of interest that can lead to meltdown and disaster at Limerick. NRC's Promotion Far Outweighs Regulation - A fact ACE officers have witnessed all too often over the past 11 years.

- NRC is repeatedly turning a blind eye and falling down as the cop on the beat.

- NRC's check the box attitude can lead to a Limerick meltdown and disaster.

- NRC doesn't take the threats and harms seriously, a fact we have observed over and over.

- NRC is far too soft on nuclear enforcement, leaving us vulnerable to all kinds of risks for meltdown.

- NRC is clearly a captive of the industry it supposedly regulates. NRC executives are too cozy with industry. This has led to weakened safety standards that jeopardize our region's residents and the entire nation.

- NRC abandons its duty to be tough in regulatory authority to keep us safe, using deceptive and irrational terms to minimize risks and to protect industry profits like:
  - ✓ "Reasonably Expected Not to Fail"
  - ✓ "Safe Enough".
  - ✓ "We don't have to worry about particulates landing on us"
  - ✓ "Meltdown is no worry for the U.S. - Industry has an excellent record" - Absurd!!!!!

- NRC is not achieving safety standards due to money. It has happened at Limerick over and over. NRC has made comments and sent us correspondence that minimized risk to save Exelon money.

- NRC is not doing their job effectively when problems are identified, NRC fails to get industry to immediately correct them. Examples:
  - ✓ Instead of requiring fire safety compliance over the past several decades - NRC allowed industry to make a different set of fire safety rules, which is what Limerick is using.
  - ✓ 102 of 104 nukes leaked radiation into groundwater and drinking water. Yet, NRC is allowing nuclear industry years more to come up with their own solution. We are concerned about spreading groundwater contamination at Limerick. Leaks were never cleaned up.
  - ✓ NRC ignored alarming corrosion for decades which ate through steel, yet allowed plant to go back on line.

Culture of Complicity Tied To Stricken Nuclear Plant

New York Times 4-26-11

This Shows How Collusion Between

Nuclear Power Companies, Regulators, and Politicians

JEOPARDIZES REGIONS AROUND NUCLEAR PLANTS

Japan's Nuclear Catastrophe Has Major Implications Related To Limerick Nuclear Plant Relicensing

The MOST SERIOUS SAFETY COVER-UP in the history of Japanese nuclear power happened at Fukushima. It was exposed by an outsider. In 2000, a Japanese-American nuclear inspector who did work for GE at Daiichi, told Japan regulators about a concealed, cracked steam dryer.

- **Tokyo Electric Power didn't want to undertake costly repairs.**

Despite a new law shielding whistle-blowers, the regulators divulged the whistle-blower's identity to TEPCO,

- **Effectively blackballing the whistle-blower from the industry.**

Investigators may take months to decide to what extent:

- **Safety problems and/or weak regulation contributed to this worst disaster since Chernobyl.**

Japanese and Western experts believe non-consistent, nonexistent, or unenforced regulations played a role in the nuclear plant accident.

- **Despite warnings about its safety and subsequent admissions by Tokyo Electric, they failed to carry out proper inspections of critical equipment,**

- **Just weeks before Japan's nuclear disaster, regulators approved a 1-year extension, beyond the reactor's 40 year limit.**

It's all about the money.

✓ Nuclear power's main players are more interested in protection of their interests than increasing safety. Consequences: Lax Inspections, Mild Punishment metered out for past safety infractions.

- ✓ Revolving door - The Political Establishment (beneficiaries of the nuclear power industry), show little interest in bolstering safety.
- ✓ Lax regulations serve political interests. Costly renovations get in the way of building new plants.

ACE Conclusion: Similar dangerous decisions are likely to be made for the same reasons, risking meltdowns at Limerick Nuclear Power Plant unless our elected officials speak up NOW!

NRC MUST STOP JEOPARDIZING OUR FUTURE

The Following List of Articles and Reports Provides Overwhelming Evidence That Residents Of The Philadelphia Region Will Likely Not Be Protected By NRC Now Or In The Future:

- ✓ Ineffective, Unprotective, Negligent Policies
- ✓ Weakened Regulations, Lowered Standards
- ✓ Unsubstantiated Conclusions, Failed Oversight

5-12-11 **"The United States' nuclear reactors are old, faulty and dangerous – but regulators are ignoring the risks and boosting industry profits"** Rolling Stone Magazine article: **"America's Nuclear Nightmare", documents that the NRC is "little more than a lap dog to the nuclear industry".**
http://www.rollingstone.com/politics/news/america-s-nuclear-nightmare-20110427

09/05/11 **NRC Exemptions, aka "No Significant Hazards"** **NRC's Dangerous Exemptions for nuclear plants can be documented in NRC's Biweekly Notices on Applications and Amendments to Nuclear Facility Operating Licenses. NRC posts them as "No Significant Hazard Considerations**

03/25/11 Report: Defects At U.S. Nuke Plants Not Reported WASHINGTON (AP) -- Companies that operate U.S. nuclear power plants are not telling the government about some equipment defects that could create safety risks, according to a report released Thursday. An audit by the inspector general of the Nuclear Regulatory Commission also raised questions about the agency's oversight, saying reporting guidelines for the nuclear industry are "contradictory and unclear."

04/18/11 **U.S. Nuclear Regulator a Policeman or Salesman?** By Reuters - The Nuclear Regulatory Commission exists to police, not promote, the domestic nuclear industry--but diplomatic cables show that it is sometimes used as a sales tool to help push American technology to foreign governments. The cables, obtained by WikiLeaks and provided to Reuters by a third party, shed light on the way in which U.S. embassies have pulled in the NRC when lobbying for the purchase of equipment made by Westinghouse and other domestic manufacturers.

04/22/11 **U.S. Nuclear Regulatory Commission oversight called too lenient** By SHAY TOTTEN New England Center for Investigative Reporting. Internal government watchdogs and outside experts alike say the U.S. Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than safety.

04/22/11 U.S. Nuclear Regulators Privately Doubted Power Plants Despite Expressing Public Confidence, Documents Show

www.huffingtonpost.com/2011/04/06/us-nuclear-regulators-doubts_n_845819.html BOSTON (By Scott Malone) – U.S. regulators privately have expressed doubts that some of the nation's nuclear power plants are prepared for a Fukushima-scale disaster, undercutting their public confidence since Japan's nuclear crisis began, documents released by an independent safety watchdog group show. Internal Nuclear Regulatory Commission e-mails and memos obtained by the Union of Concerned Scientists questioned the adequacy of the back-up plans to keep reactor cooling systems running if off-site power were lost for an extended period.

May 7, 2011 Nuclear Agency Is Criticized as Too Close to Its Industry

New York Times By TOM ZELLER Jr.

Exelon Corporation, had long known that corrosion was thinning...pipes. But rather than fix them, it repeatedly lowered the minimum thickness it deemed safe. By the time the pipe broke, Exelon had declared that pipe walls just three-hundredths of an inch thick — less than one-tenth the original minimum thickness — would be good enough. ...Safety experts say if enough pipes had ruptured during a reactor accident, the result could easily have been a nuclear catastrophe. Exelon's risky decisions occurred under the noses of on-site inspectors from the federal Nuclear Regulatory Commission. No documented inspection of the pipes was made by anyone from the N.R.C. for at least the eight years preceding the leak, and the agency also failed to notice that Exelon kept lowering the acceptable standard, according to a subsequent investigation by the commission's inspector general.

N.R.C.'s decision to back down in a standoff with the operator of an Ohio plant a decade ago meant that a potentially dangerous hole went undetected for months. The number of civil penalties paid by licensees has plummeted nearly 80 percent since the late 1990s — a reflection, critics say, of the commission's inclination to avoid ruffling the feathers of the nuclear industry and its Washington lobbyists.

The agency's own internal monitors say the N.R.C. is prone to dither when companies complain that its proposed actions would cost time or money. The promise of lucrative industry work after officials leave the commission probably doesn't help, critics say, pointing to dozens over the years who have taken jobs with nuclear power companies and lobbying firms.

David Lochbaum,... who recently worked as a reactor technology instructor there, said the agency too often rolled the dice on safety. "The only difference between Byron and Fukushima is luck," he said.

NO REJCTIONS - Vermont Yankee nuclear plant ...has had several serious operational problems. That reactor is similar in design to the stricken plant in Japan and suffered the partial collapse of a cooling tower in 2007. In January 2010, the plant's operator, Entergy, discovered that nearby soil and groundwater had been contaminated by radioactive tritium, which had leaked from underground piping. Months before, the company assured state lawmakers that no such piping existed at the plant. The Vermont Senate, concerned about the problems, voted overwhelmingly last year to prevent the plant from operating beyond the scheduled expiration of its license, 2012. But one day before the quake and tsunami that set Japan's crisis in motion, the N.R.C. approved Vermont Yankee's bid for license renewal — just as it has for 62 other plants so far. Its fate is now the subject of a federal lawsuit.

- "How does a place like that get a license renewal?" Mr. Lochbaum said. "Because they asked for one. Absent dead bodies, nothing seems to deter the N.R.C. from sustaining reactor operation." No renewal application has been turned down by the agency since the first one was granted in 2000.
- With billions of dollars of revenue and investment at stake for each plant, the N.R.C. changed the rules in 1995, scrapping the requirement that operators prove they were complying with their current license. But James Riccio, a nuclear policy analyst with Greenpeace, said, "The N.R.C. rule change gutted a substantive process and replaced it with a rubber stamp. They placed industry profits ahead of public safety."

N.R.C.'s slowness in addressing serious problems is another concern.

- In 1975, a blaze at Browns Ferry plant crippled electrical wiring used to control critical cooling equipment in one of the reactor units. ...That triggered new fire protection regulations in 1980.
- But over the next three decades, according to two internal agency investigations, the commission approved a succession of faulty or ineffective fire barrier materials. It then dragged its feet in the face of mounting evidence that the materials, even after being installed in dozens of plants, were failing to perform as advertised.
- ...Thermo-lag, which the commission approved based on what turned out to be fraudulent lab tests submitted by an obscure company. "No inspector ever bothered to check out the lab or to question the results," said Mr. Mulley, who investigated the case for the agency.
- Last year, the N.R.C. issued a 355-page report in which it suggested that the fire barrier issue had been finally sorted out, even though most plants were technically still not complying with the regulations.

The agency has little choice but to tolerate violations, said Mr. Lochbaum, who heads the Nuclear Safety Project with the Union of Concerned Scientists, an environmental and nuclear watchdog group based in Cambridge, Mass. "Otherwise, nearly all the U.S. reactors would have to shut down," he said.

Mr. Mulley suggested that the companies themselves played a role in delaying the rules. ...But some plant operators kept complaining that they were too expensive. So tests from a lab that no one has ever heard of tested material cheaper than anything else on the market, and the N.R.C. says, 'Perfect! Use this!'

The agency's deferential attitude also brought Davis-Besse to the brink of the worst American nuclear accident since the Three Mile Island meltdown of 1979. On Aug. 3, 2001, armed with mounting evidence of potentially dangerous cracks and leaks in control nozzles that penetrate the vessel heads at most reactors, the commission asked 12 nuclear plants to conduct inspections. The inspections required a temporary but expensive shutdown, so regulators gave the plants until the end of the year to comply, and most did so. the N.R.C. blinked, agreeing to allow FirstEnergy to operate until mid-February.

- On March 6, 2002, workers finally conducted the inspections and found that acid used in the cooling water had eaten almost completely through the lid of the reactor.
- "They should have just shut them down," said Mr. Mulley, who investigated the case. "But the attitude at N.R.C. was always, 'You can't shut them down. They'll fight us in court.' "

Mr. Lochbaum said the slap on the wrist delivered to Exelon ensured that similar incidents would occur in the future. "There's no real regulatory discomfort imposed, so this sort of thing just continues,"

"The N.R.C. is like a prep school for many of these guys, because they know they've got a good shot at landing much higher-paying work with the people they're supposed to be keeping in line," Mr. Mulley said. "They're not going to do anything to jeopardize that."

05/20/11 **Nuclear power safety: Latest on Japan crisis fuels new concern in US** http://www.csmonitor.com/USA/2011/0520/Nuclear-power-safety-Latest-on-Japan-crisis-fuels-new-concern-in-US Nuclear Regulatory Commission still insists that US nuclear plants with same design as Japan's stricken Fukushima Daiichi facility are safe. **But watchdog groups cite failed venting system, which led to hydrogen explosions.**

05/22/11 **Jaczko [NRC Chairman] says NRC has nothing on station blackout "into the longer time frame"** ***(from NRC April 28 meeting on Japan and station blackouts)** http://public-blog.nrc-gateway.gov/2011/04/22/the-nrc-were-ready-to-respond/ Amy Still May 14, 2011 at 12:36 pm Comments from the NRC Station Blackout Meeting, April 28th, 2011:
http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2011/20110428a.pdf
CHAIRMAN JACZKO: ...And I think...we don't necessarily look beyond 24 hours for this kind of situation, into the longer, longer time frame.'
CHAIRMAN JACZKO:.but in the event that there is a station blackout, that's externally driven, I'm not convinced that, in that situation, four hours is a reasonable time to restore off-site power.

(ADDED by ACE - Limerick appears to only have battery back-up for 4 hours on generators, and no guarantee to keep cooling fuel pools in event of loss of power)

05/24/11 **NRC Exempts Nuclear Power Plant Security (crytome.org)**
http://cryptome.org/0004/nrc052411.htm
NRC Exempts Nuclear Power Plant Security
[Federal Register Volume 76, Number 100 (Tuesday, May 24, 2011)] [Notices] [Pages 30204-30205]
From the Federal Register Online via the Government Printing Office [www.gpo.gov] [FR Doc No: 2011-12784]

06/02/11 **Some fear U.S. nuclear agency is playing 'regulatory roulette'**
http://edition.cnn.com/2011/US/06/01/nuclear.plant.regulation/index.html

Radioactive spills are a problem nationwide. [102 of104 of the country's 104 reactors have suffered significant tritium leaks or spills]. The worst was at Exelon's Braidwood plant, in Chicago, which leaked more than 6 million gallons of radiation contaminated water into drinking water wells Many leaks are the result of corroding underground pipes that have not been maintained. That can lead to a variety of radioactive compounds entering groundwater, but tritium travels fastest through the soil.

New Jersey's Department of Environmental Protection is concerned about tritium entering the underground aquifers, and a plume of tritium headed toward Oyster Creek surface water. The state demanded Exelon clean up the contaminated groundwater. "Once that water moved off the plant into the water supply of the state of New Jersey, we felt that it was in our responsibility to go after and protect that water supply," said New Jersey Department of Environmental Protection Commissioner Bob Martin. "...our number-one job was to protect the health and safety of people in New Jersey."

The groundwater is processed through the Oyster Creek plant's cooling system, where it is diluted. Then it pours into the Oyster Creek.

The commission did not order Exelon to clean up the spill at Oyster Creek, an example, some scientists claim, of the agency's failure to fully protect the public. "The NRC's almost acting like they're waiting till somebody dies till they enforce the regulation. Tombstone regulation -- that's too high a price to pay by Americans," said David Lochbaum, director of the Nuclear Safety Project of the Union of Concerned Scientists. Lochbaum, a nuclear engineer and former instructor for the NRC, claims the commission is playing what he calls "regulatory roulette," sanctioning plant owners and demanding a clean-up in some cases, such as the Braidwood spill, but not in other instances, like Oyster Creek. "The NRC can't have a 'Wheel of Misfortune' that decides when it acts and when it doesn't. The NRC needs to consistently enforce its regulations so that all Americans living in all states are protected," Lochbaum said.

Last year NRC conducted a self-analysis to determine if it was responding adequately to nuclear plant leaks. The commission's Groundwater Task Force found that the "NRC response to incidents could be enhanced to be more reliable." "It's fair to say that we're inconsistent in our response," concedes Martin Virgilio, deputy executive director for reactor and preparedness programs at the commission.

06/16/11 NRC hearing raises questions about safety at nuclear plants

http://www.csmonitor.com/USA/2011/0615/NRC-hearing-raises-questions-about-safety-at-nuclear-plants The Christian Science Monitor - CSMonitor.com By Mark Clayton, posted June 15, 2011

A hearing of the Nuclear Regulatory Commission (NRC) pointed to apparent weaknesses in the regulation of nuclear plants. A safety task force staff ... noted that: • In many cases, older "vintage" plants that undergo relicensing examinations to operate an added 20 years are not required to bring those plants fully up to current safety standards.

- NRC regulations have never formally recognized the possibility of an extreme event – like an earthquake or tornado – simultaneously knocking out both on-site and off-site power at a nuclear plant, as happened at the Fukushima Daiichi plant in Japan.
- The nation's nuclear plants have "different licensing bases and associated safety margins," with variations aMong the plants depending upon their age.
- "Hardened vents" installed to protect US boiling water reactors with the same design as the Fukushima plant we e "not included in regulations" and, as a result, were not subject to regular inspections to ensure that they operate properly in an emergency.
- Key valves associated with the hardened vents "were not specifically designed for operation during a long-term station blackout" and therefore might be difficult to open in the event of a Fukushima like incident. [**Editor's note:** *The original version misstated the task force's finding on this point.*]

When new safety issues emerge, nuclear plants – old or new – undergo an NRC "back fit" review to see if additional safety requirements should be imposed, notes Edwin Lyman, a nuclear expert at the Union of Concerned Scientists, a nuclear industry watchdog group. But any back fit, unless required by existing regulations to bring a facility into compliance, must pass a cost-benefit test they often fail, ending with the recommended changes not being made, Dr. Lyman says. That position runs counter to rising concerns among international experts. A International Atomic Energy Agency, letter called for older reactors to have special oversight. If they could not meet contemporary standards, they should be closed.

At the hearing, other safety issues popped up raising questions about whether the NRC's regulatory system was as tight as it has been portrayed. Miller's testimony that the "hardened vents" were not part of an inspection regime to ensure they would function in an emergency was in contrast to NRC assurances early after the Fukushima event. "It really shows the emperor has no clothes," Dr. Lyman of UCS says. "As it turns out, Japan also had hardened vents, but had issues accessing and opening valves. Now the NRC is admitting they don't have hardened vent inspections. As a result, they haven't actually analyzed the issue of the functionality of the system in extreme events."

06/16/11 "Nuclear Never Safe" - Direct Communication to NRC & US Senate

http://www.greenpeace.org/usa/en/news-and-blogs/campaign-blog/nuclear-never-safe/blog/35323

Despite NRC testimony and the propaganda spewed by industry lobbyists, nuclear is never safe. No nuclear plant in the United States or on the planet can withstand a meltdown of the radioactive fuel rods. All of the containments will fail because they were never designed to withstand the forces unleashed by a core meltdown; they were designed to withstand pipe break. Rather than dither over regulations that are insufficient to protect the public health and safety, the United States should follow the lead of Germany, Switzerland and Italy and begin phasing out nuclear reactors and replacing them with clean renewable energy. Managing the end of the nuclear era is a daunting task but we need to begin the transition now. We need to shutdown nuclear reactors before they meltdown and devastate the US like they have in the Ukraine and now Japan.

06/27/11 New Exposé Reveals Nuclear Regulatory Commission Colluded with Industry to Weaken Safety Standards

Democracy Now! digest@democracynow.org

Three U.S. senators called for a congressional probe on safety issues at the nation's aging nuclear plants following a pair of new exposés.

1. In a special series called "Aging Nukes," the Associated Press revealed that the U.S. Nuclear Regulatory Commission and the nuclear power industry have been working in tandem to weaken safety standards to keep aging reactors within the rules. Just last year, the NRC weakened the safety margin for acceptable radiation damage to reactor vessels.

   The nuclear industry and their government regulators have been working together to lower safety standards as aging nuclear systems and parts and plants come close to violating those standards and those rules. And that's been a pattern for decades now, and we're seeing a lot of it as these plants get older and older.

2. The AP report also revealed radioactive tritium has leaked from 48 of the 65 U.S. commercial nuclear power sites, often into groundwater from corroded, buried piping. Leaks from at least 37 of those facilities contained concentrations exceeding the federal drinking water standard—sometimes at hundreds of times the limit.

   Plants had piping buried underneath, underground, covered underground for so long the piping can't be properly inspected. It's rarely looked at carefully, visually. It's rarely dug up. And it's been so long now that a lot of that is corroding, and you have leaks, that we've documented, at three-quarters of the sites.
   - ✓ A Government Accountability Office, the congressional investigative arm, had a report released a that the Nuclear Regulatory Commission, the federal regulators say there have been either leaks or spills of tritium and other radionuclides at all the plants. Lots of cases you see other more powerful radioactive substances that do more health harm than tritium, in equal amounts, after you see the tritium

Parts or systems are coming close to the standard, even sometimes violating the standard.
Again and again standards are lowered. Regulators sometimes can't get the systems and parts back within the rules, so then they begin issuing waivers or amendments or special exceptions that still allow the nuclear plants to keep running.

GAO report points out that industry and the regulators don't really have a good handle on what's happening in those pipes and vaults and all that equipment under the ground. And they don't have technologies that allow them to see that very well. GAO report says we don't really know about how bad the leaks are and that bears on public health.

It raises questions about the integrity of the plants, about the integrity of their cooling systems. Some piping carries water that's used to cool the reactors. And in an emergency, as we saw in Japan, you desperately need that water to cool the reactors, because the radiation produces a lot of heat, and you've got to keep it cool. What do all these leaks say about the integrity of that piping and, even in a broader sense, about the integrity of a lot of parts that can't easily be seen in nuclear power plants, like all those miles of electrical cable underneath the power plants that are needed by the operators to see what's going on in the plant.

One of the biggest areas of aging difficulties has been in so-called embrittlement of the steel around the reactors. And what that means is that if you bombard something with neutrons from a chain reaction for years and years, like the one that goes on inside reactors, it gets more brittle. As it gets more brittle, it's more likely to suddenly shatter, to break. The vessels are these gigantic steel tubs that surround the chain reaction, the radioactive fuel, and they

provide a shield from it, and they hold it. They keep the area around it safe. And so, over the years, they've got increasingly brittle. One reactor in the early 1990s, Yankee Rowe in Massachusetts, was closed largely because of concerns about its vessel getting brittle.

Government and regulators started to notice that reactors were approaching the embrittlement standard for the vessels, and in some cases even violating that standard. Instead of saying, "OK, what can we do to get the reactors back within the standard? Is it possible to do a process called annealing, that would make them less brittle? Is it possible to replace them?" Industry and government launched another round of research, then decided, "We can back off a little bit on the standard and allow the vessels to become more brittle." That's continued. A second round took place that just culminated in the last year or two, where they raised that safety standard again, claiming "We didn't need to be so strict." In other words, "We didn't need to be so safe. It's safe enough."

06/27/11 Fudging nuke numbers

http://news.bostonherald.com/news/opinion/editorials/view/20110626fudging_nuke_numbers/srvc=home&position=recent
By Boston Herald Editorial Staff | Sunday, June 26, 2011 | **http://www.bostonherald.com** | **Editorials**

Many aging nuclear power reactors have won extensions of their operating licenses. More are trying to. The disturbing news is that a major study by The Associated Press has found that government inspectors have been relaxing standards right and left to permit the award of extensions.

06/28/11 AP IMPACT: NRC and industry rewrite nuke history

07/27/11 Whistleblowers Say NRC Watchdog Is Pulling Its Punches. "NRC Shied Away From Challenging...When We Need Them Most"

Three former members of the Nuclear Regulatory Commission's Office of the Inspector General told ProPublica that the OIG's office has rewritten critical reports, buried other damaging reports and stopped an investigation into whether the NRC is relying on outdated methods to predict damage from an aircraft crashing into a plant.

In a report by John Sullivan and PBS Newshour's Cameron Hickey, the whistleblowers say the OIG has shied away from challenging the NRC right when we need them most in the aftermath of the Fukushima meltdown.

One whistleblower, George Mulley who was an award-winning chief investigator at the OIG, told ProPublica that a report he wrote detailed lapses by several NRC inspectors over six years and cited systemic problems in the way the NRC tries to prevent corrosion. "The revised report shifted much of the blame to the plant's owner, Exelon, instead of NRC procedures. And instead of designating it a public report and delivering it to Congress, as is the norm, the office put it off-limits."

Two other former OIG investigators told ProPublica that the OIG has become reluctant to probe anything that could become controversial or raise difficult questions for the NRC. Each asked not to be named to protect their current jobs.

Read the full account here - http://www.propublica.org/article/whistleblowers-say-nuclear-regulatory-commission-watchdog-is-losing-its-bar - and see all of ProPublica's reporting on nuclear safety here. We hope you will share this story with your audience

07/28/11 Markey: NRC Stands For "No Recommendations Considered"

It is now clear that the NRC will not act quickly to even vote on, let alone adopt, the safety upgrades recommended by some of the Commission's most senior technical staff.

"Commissioners Ostendorff, Magwood and Svinicki have made it all too clear that they believe that the Nuclear Regulatory Commission stands for "No Recommendations Considered," said Rep. Markey. "They have done this country a tremendous disservice in their collective votes to ensure that the NRC will not lead efforts to ensure the safety of the nuclear industry sector in this country, but will instead actively aid and abet the nuclear industry's dilatory efforts to ignore, perhaps indefinitely, the recommendations of the Commission's expert and dedicated staff."

By MATTHEW L. WALD
07/29/11

N.R.C. Lowers Estimate of How Many Would Die in Meltdown

The health effects of a catastrophic meltdown were hypothetical until the 1979 accident at Three Mile Island. That destroyed a billion-dollar reactor but caused no apparent physical harm to nearby residents, immediately or over time. Debate has persisted over whether the United States skirted a disaster or whether that accident was about as bad as it could get.

Edwin Lyman, a nuclear physicist with the Union of Concerned Scientists, contends that the nuclear commission has consistently painted an overly rosy picture and that its latest study does as well. He noted that the study assumed a successful evacuation of 99.5 percent of the people within 10 miles, for example. The report also assumes "average" weather conditions, he noted. But if a rainstorm were under way during a release of radioactive materials, he said, it could wash contaminants out of the air into a small area, producing a high dose there.

Jennifer L. Uhle, the deputy director of the commission's office of nuclear regulatory research, said the report was intended to present the "best estimate" and not the worst case.

Dr. Lyman said the earlier estimate was of a different accident, a major pipe break. The new study considered that accident too unlikely to analyze.

Dr. Lyman suggested that in projections of fatal cancer cases, the focus should be on people who live within 50 miles. The average population within 10 miles of an American nuclear plant is 62,000; within 50 miles, it is about five million.

The commission's old projection of eventual cancer deaths was one for every 2,128 people exposed within 50 miles; the new study projects one cancer death for every 6,250 people exposed, which still comes to hundreds of cancer deaths within the 50-mile circle, in addition to the hundreds of thousands who would be expected to die of cancer from other causes.

Dr. Lyman countered that when dealing with estimates based on so many variables — including more than 100 reactors of different designs and vintage, in areas with disparate population densities — a difference of a factor of three is not important. In his view, the study

07/30/11 UPDATE: US Nuclear Industry Group Backs 5-Year Timeline For Safety Changes (nasdaq)....who's in charge ????

By Ryan Tracy Of DOW JONES NEWSWIRES http://www.nasdaq.com/aspx/stock-market-news story.aspx?storyid=201107261325dowjonesdjonline000358&title=updateus-nuclear-industry-group-backs-5-year-timeline-for-safety-changes

UPDATE: US Nuclear Industry Group **Backs 5-Year Timeline For Safety Changes**

-- Industry group chief supports some changes, questions others
-- Nuclear group CEO Fertel: near-term costs 'not terribly expensive'
-- Fertel: nuclear agency should decide how to proceed by end of week

(Updates throughout including additional background starting in fourth paragraph and additional comment from Fertel starting in fifth paragraph.)

Populations around some nuclear plants have swelled as much as 4 1/2 times since 1980, but some estimates of evacuation times have not been updated in decades. Meanwhile, aging reactors have been operating at higher power, risking larger radioactive releases.

An NRC task force recommended a series of changes last month to increase protection at U.S. nuclear sites, including better response to prolonged power blackouts or damage to multiple reactors. The commission set an Oct. 3 deadline for staff to recommend action on 11 of 12 task force recommendations. Staffers were given 18 months to consider a broader recommendation to revamp the agency's overall approach to regulation and safety.

09/02/11 **Nuclear Energy Advocates Insist U.S. Reactors Completely Safe Unless Something Bad Happens**

http://www.theonion.com/articles/nuclear-energy-advocates-insist-us-reactors-comple,19740/ - UCS and the ONION -eerily similar in interpretation of NRC's reckless, unsubstantiated reassurances about U.S. nuclear plants.
WASHINGTON- Nuclear Regulatory Commission sought to reassure nervous Americans that U.S. reactors were 100 percent safe and posed absolutely no threat to the public health as long as no unforeseeable system failure or sudden accident were to occur. "With the advanced safeguards we have in place, the nuclear facilities in this country could never, ever become a danger like those in Japan, unless our generators malfunctioned in an unexpected yet catastrophic manner, causing the fuel rods to melt down," said NRC chairman Gregory Jaczko, insisting that nuclear power remained a clean, harmless energy source that could only lead to disaster if events were to unfold in the exact same way they did in Japan, or in a number of other terrifying and totally plausible scenarios that have taken place since the 1950s. "When you consider all of our backup cooling processes, containment vessels, and contingency plans, you realize that, barring the fact that all of those safety measures could be wiped away in an instant by a natural disaster or electrical error, our reactors are indestructible." Jaczko added that U.S. nuclear power plants were also completely guarded against any and all terrorist attacks, except those no one could have predicted.

09/16/11

WSJ-Financial Pressure Reduced E'quake Standards

"We were under a lot of pressure to ease up on standards from nuclear-plant engineers who felt the 2006 revisions were too strict and weren't practical or economically feasible for commercial reactors," he said..... While industry pushed the standard-setters to ease up in 2006, some critics at the time said they were too lenient.

"We didn't focus on worst-case scenarios, but rather what were believed to be the most likely outcomes," said Mr. Irikura, 71, who coedited a book on advanced seismic-hazard assessment published earlier this year. "The risk of outliers like tsunamis was evaluated, but our advice...was that plant operators should be aware of these—not necessarily to expect them to occur."

NRC's Failure To Value Human Life and The Environment By Taking Immediate Action Is Mind-Boggling, Given Documented Evidence Of Increased Risk.

The risk that an earthquake would cause a severe accident at a U.S. nuclear plant is greater than previously thought, 24 times as high in one case, according to an AP analysis of preliminary government data.

The nation's nuclear regulator believes a quarter of America's reactors may need modifications to make them safer.

Limerick is among 27 in the eastern and central U.S. that a preliminary Nuclear Regulatory Commission review has said may need upgrades.

Those plants are more likely to get hit with an earthquake larger than the one their design was based on. It is negligent for NRC to allow and wait for operators to recalculate their own seismic risk.

- **SELF-EVAULATING BY THOSE WITH A VESTED INTEREST IN THE OUTCOME IS INSANITY, ESPECIALLY WHEN AN APOCALYPTIC OUTCOME IS IN THE BALANCE.**

Meltdowns Are An Apocalyptic Threat To Our Environmental, Health, and Financial Future

Actual Harms and Damage From Meltdowns Have Been Covered-Up Devastating Consequences Are Being Hidden Right Now In Japan

THE TRUTH NEEDS TO BE RECOGNIZED NOW - LOOK AT REALITY

Three Mile Island Partial Meltdown March, 1979

Radioactive fallout escaped from TMI, scattered randomly throughout the region, and landed heavily on parts of the downwind population. Radiation monitors in that direction were not working, so when anyone claims not much radiation escaped, that is an unsubstantiated claim. Human beings (as well as wild and farm animals) were killed and maimed in great numbers http://www.ratical.org/radiation/KillingOurOwn/KOO.pdf

- Cancers, leukemia, stillbirths, birth defects and malformations, sterility, emphysema, asthma, heart attacks, strokes, skin lesions, and other radiation-related diseases erupted throughout central PA. Such ailments also ripped through the animal population.

- By early 1980s about 2400 central Pennsylvania families claimed bodily harm and death from TMI fallout and sued, but never got a public hearing in federal court. To this day there has been no public hearing to compensate some 2400 central Pennsylvania families who claimed bodily harm and death from the plant's fallout.

- 1991 - Dr. Hatch, Columbia University, published journal articles showing a huge 64% increase in cancer rates within 10 miles of TMI. **S**ubstantial increases were documented in each type of cancer studied, including

leukemia, lung cancer, non-Hodgkins lymphoma, and child cancer. (1975-1979 - 1731 cases) (1981-1985 - 2831 cases)

- This remains one of the most heavily censored secrets of the nuclear age. The true story of what really happened to TMI's downwinders has never cracked the corporate media.

- Three decades of the "BIG LIE" continue to this day with epic distortions to deny the truth about the consequences of the Three Mile Island meltdown. The industry and their paid consultants continue to falsely claim that "no radiation escaped" and "no one was harmed".

In Reality, TMI May Be Responsible For Thousands Of Deaths

According To:

"Deadly Deceit: Low Level Radiation - High Level Cover-up"

By Jay Gould and Ben Goldman, 1990 Gould Suggests Between:

50,000 To 100,000 EXCESS DEATHS Occurred After The TMI Accident

- **Infant Deaths Soared In Counties Surrounding TMI - 53% 1st Month - 27% 1st Year**
- **Birth Defect Deaths Higher In 10 Counties Closest to TMI - 15% to 35%**

TMI Is Still Operating - Accidents Are Still Happening
November, 2009 - Another accidental radiation release at Three Mile Island.

Exelon, owner of TMI, was forced to evacuate 150 workers**.**

- Exelon said radioactive dust "unexpectedly blew out of a pipe being cut by workers."
- A November 23, 2009 Philadelphia Inquirer article said some state and local officials, including Governor Rendell, were upset that notifications were not made in a timely way to authorities.
- Even though measurements were not taken off-site for all types of radiation released, at various distances and directions, TMI and the Nuclear Regulatory Commission (NRC) claimed yet another "perfectly safe" accidental radiation release.

CHERNOBYL MELTDOWN April, 1986

The Chernobyl reactor exploded, spewing radiation across the earth.

Chernobyl: Consequences of the Catastrophe for People and the Environment,
a newly translated report originally in Russian and published by the New York Academy of Sciences shows that;

- By 2004, 985,000 additional deaths worldwide were caused by the Chernobyl disaster.
- This report summarizes published data from many regions contaminated by radioactive fallout, and is based on over 5000 studies. www.nyas.org. Consulting Editor - Dr. Janette Sherman: toxdoc.js@verizon.net
- This book proves the Chernobyl reactor explosion effects were far greater than claimed, especially for children. Children have been and continue to be particularly affected with multiple adverse health outcomes. Before Chernobyl exploded, eighty percent of children were considered healthy. After the explosion only twenty percent of children are healthy in some areas.
    - Many children experienced poor development, learning disabilities, and endocrine abnormalities.
    - Of great concern are increased prenatal and infant mortality and birth defects among those not even born at the time of the catastrophe.
- Cuba, one of dozens of countries treating the sick, put out a completely ignored news story this year that they have treated over 25,000 children for leukemia from the Ukraine and Russia. Cuba's data have been ignored simply because the pro-nuclear IAEA can get global coverage that only 50 people died using claims that are now over 20 years old.

- Other illnesses increased, including those of the heart, thyroid, kidney, bone, lung, cataracts among the young, accelerated aging, and immunological abnormalities.
- 2005 estimates by the Chernobyl Forum (a group of UN agencies) misleadingly claim 9,000 cancer deaths in the same areas over the same time.
- The Chernobyl nuclear power explosion released hundreds of times more radiation than the bombs dropped on Hiroshima and Nagasaki. Radioactive contamination spread across the entire northern hemisphere, exposing 400 million people.
- Impacts to the 600,000 workers who were forced to clean up Chernobyl without proper protective gear have been ignored.
- Large numbers of people were never removed from contaminated regions.
- Many life systems were studied including humans, wolves, livestock, birds, fish, plants, mushrooms, bacteria, and viruses. Most all were changed by radioactive fallout, many irreversibly.

1986 to 2006 - A report revealed nearly 200 U.S. Nuclear Plant near misses.

A report was released in 2006 by Greenpeace, based on NRC documentation, titled,

"***An American Chernobyl: Nearly 200 Nuclear "Near Misses" at U.S. Reactors Since 1986.***

- Jim Riccio, Greenpeace nuclear policy analyst said, "This report shows that nuclear power plants are a clear and present danger and that each reactor is a potential Chernobyl. To call nuclear reactors clean and safe is the height of hypocrisy,"

One of those almost evacuated Detroit
October, 1966 - Fermi Fast Breeder Reactor Accident in Monroe Michigan
Human error led to a coolant stoppage at the Fermi Reactor in Monroe, Michigan, 45 miles south of Detroit

- John G. Fuller's WE ALMOST LOST DETROIT, published by Reader's Digest Press, provides hair-raising details. Fuller reported on the horrifying story of an entire industry's incompetence, dishonor, fallout and cover-up.
- For a full month area law enforcement weighed the possibility of evacuating Detroit.
- It could have quickly killed thousands of people and permanently poisoned most or all of the Great Lakes, the world's largest bodies of fresh water.

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.

- **THE TRUTH MUST BE TOLD FOR PRECAUTION AND PREVENTION!**

We simply can't afford a disaster at Limerick Nuclear Power Plant, in human, environmental, or financial costs. It is unacceptable for NRC to continue to be evasive about Limerick Nuclear Power Plant's full compliance with all of the most protective, stringent regulations.

Think What A Meltdown Would Mean At Limerick Nuclear Plant

Limerick Nuclear Plant Accident Calculations - Reported to Congress in 1982
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 from 1980 would be more than double today.

2000 Census Shows Limerick Area Population Growth

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

POPULATION HAS INCREASED BY 183% SINCE 1980.

Estimated Costs For An Accident or Terrorist Attack At Limerick In 2004 Dollars
$417 Billion – Limerick 1 $386 Billion – Limerick 2

COSTS ARE NOW ESTIMATED AT OVER $1 TRILLION

EVERY PRECAUTION SHOULD BE TAKEN NOW, INCLUDING CLOSING LIMERICK

LIMERICK CAN'T BE MADE FAILSAFE

There Is Too Much At Stake For Too Many People!

- **Over 8 Million People Live Within 50 Miles Of Limerick Nuclear Plant**
- **Philadelphia Is Just Over 20 Miles Downwind, Downstream**
- **Limerick's Evacuation Zone Should Be 50 Miles – NOT 10**

History Shows A 10-Mile Evacuation Zone Is Not Protective.

- **Residents Within 50 Miles Of Fukushima Were Told to Evacuate or "Shelter In Place".**

Safe Evacuation Is An Illusion

- Traffic Gridlock Even In Rush Hour Shows Why
- There Is Not Enough Shelter and Supplies
- In The 10 Mile Zone There Has Been Enormous Population Growth Since 1980
  183% INCREASE in Population From 1980 to 2010 (2000 and 2010 Census Data)