

CITIZENS ALLIED FOR SAFE ENERGY, Inc.

South Miami Town Hall information meeting on power line safety and nuclear expansion 7-9 pm

Introduction

Barry White
Citizens for Safe Energy, Inc., www.CASE-FL.org

Health risks from power lines & Turkey Point's troubled history

Dr. Philip Stoddard
Professor of Biological Sciences
Florida International University

Turkey Point expansion and Everglades restoration: contradicting interests

Laura Reynolds
Executive Director
Tropical Audubon Society, www.tropicalaudubon.org

Dawn Shirreffs
Program Coordinator
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Concerns for marine and human life from FPL's Nuclear expansion proposal

Dr. Eric Prince
Chief of Migratory Fishery Biology Branch, National Marine Fisheries Service,
National Oceanographic and Atmospheric Administration (NOAA)

Economics of nuclear power and energy efficiency

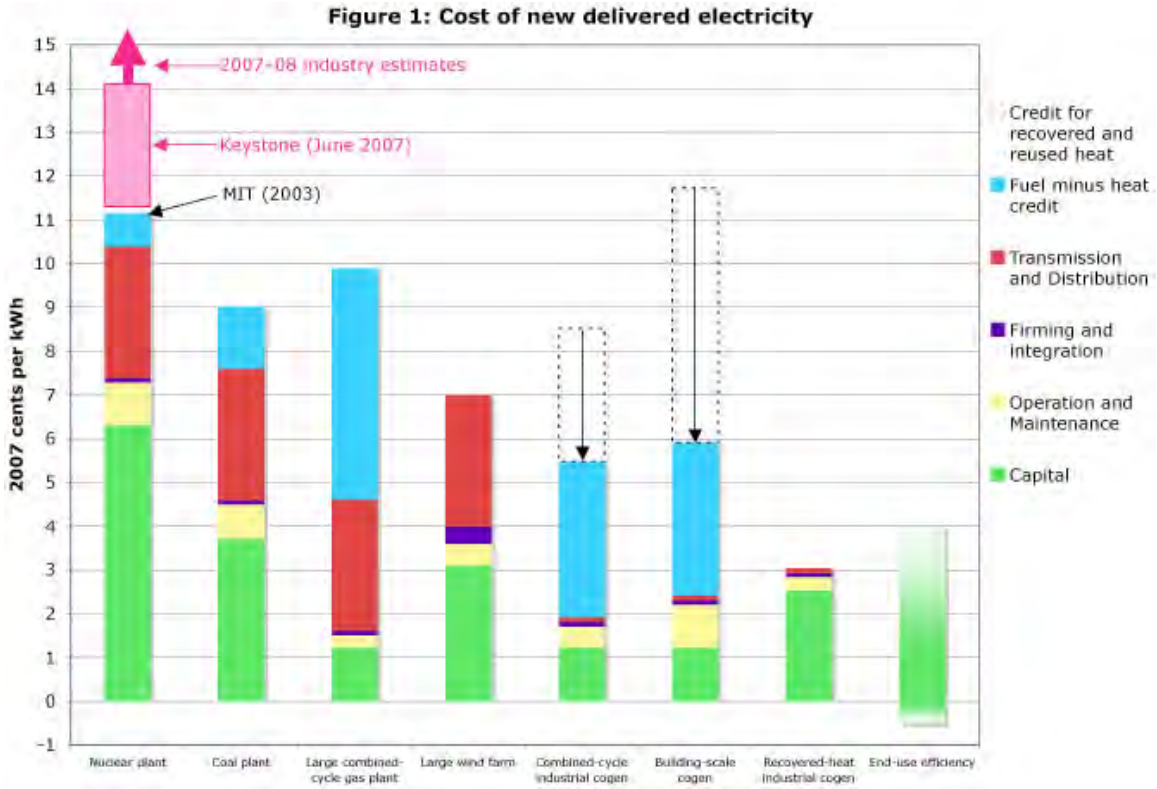
George Cavros, Esq.
Attorney with the Southern Alliance for Clean Energy, Inc.
Knoxville, TN, www.cleanenergy.org

Nuclear power: the most expensive form of electricity

Dr. Jerry Brown
Founding Professor Global and Sociocultural Studies
Florida International University

What citizens can do

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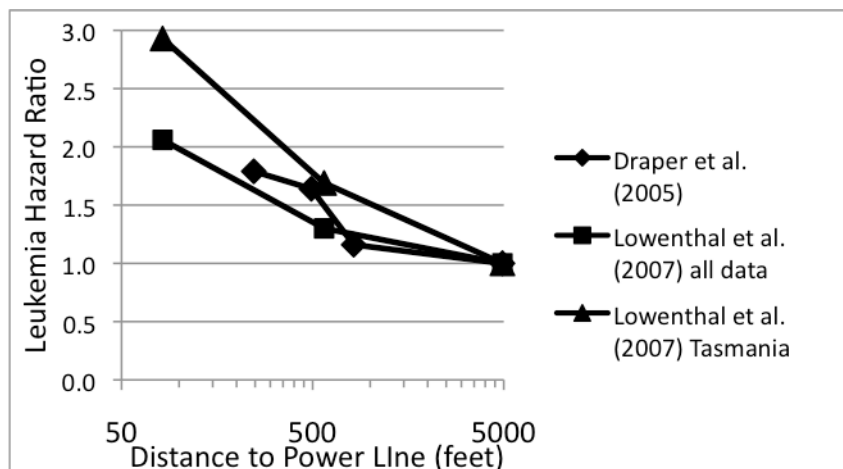
Source: Amory B. Lovins, Imran Shikh and Alex Markevich, "Forget Nuclear," *Solutions Journal*, Rocky Mountain Institute, Spring 2008

Recent Biomedical Literature on Health Risks of Power Transmission Lines

Philip Stoddard, Dept Biological Sciences, Florida International University

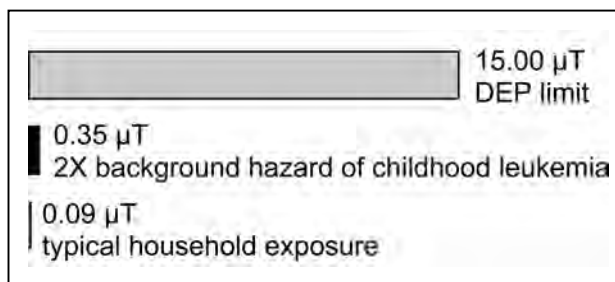
Childhood Leukemia

Over a dozen studies have shown a doubling in the incidence of leukemia in children living near power lines and in children chronically exposed to weak magnetic fields of 0.3 or 0.4 μT . Data from two recent studies on incidence of leukemia in people living near power lines are shown below (Draper et al., 2005; Lowenthal et al., 2007). Hazard ratio is the measured incidence relative to the background population incidence. In the study by Lowenthal et al. (2007) hazard ratios were even higher for people exposed as children during years 0-5. The sub-population from Tasmania (triangles) is more sedentary and thus may have had longer exposure times.



The U.S., the EU, and the World Health Organization all consider 100 μT to be a safe chronic level of exposure to low frequency magnetic fields (LFMFs). Florida Dept of Environmental Protection (2008, DEP chapter 62-814) permits LFMF intensities of 15 μT at the edge of a 115-230 kV power line right-of-way. However LFMF intensities of only 0.3 to 0.4 μT have been associated with a doubling in risk of childhood leukemia (Greenland et al., 2000; Kabuto et al., 2006).

Two new studies have shown that those children who do get leukemia are more likely to die if they reside in LFMF intensities above 0.2 or 0.3 μT (Foliart et al., 2006; Svendsen et al., 2007).



A common issue in the interpretation of childhood leukemia studies is that small number of contributing cases. To get around the “tyranny of small numbers”, multiple studies may be combined in “meta-analysis”, which is not without its own problems because of differences in methods of individual studies. The published meta-analyses of data from the 1990s (Michelle et al., 1995; Daniel, 2001) support the relation between proximity to transmission lines (wire codes), EMF exposure, and childhood leukemia. These findings have been confirmed by more recent results using better methods.

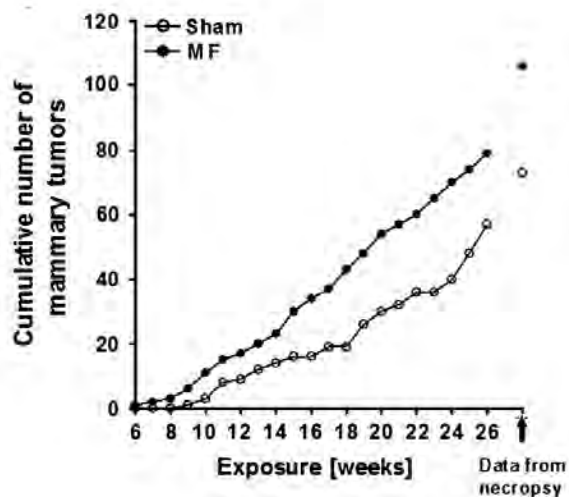
Epidemiological studies have been discounted by the electric power industry and government panels because no lab based animal studies confirm the epidemiological results. This issue is being remedied by elegant new lab studies showing that magnetic field intensities permitted under U.S. and EU law increase cancer rates in rats. In these studies, rats are treated with the carcinogen BDMA to produce mammary cancers in about 50% of individuals. Exposure to magnetic fields of 100 μT increased their incidence of cancers by another 45% in 4 months (Fedrowitz & Loscher, 2008).

Since 2000, the mounting tide of evidence has shifted the dominant view of risks from low frequency EMF. The EU and the conservative NIH now list low frequency magnetic fields as a “possible carcinogen”. One of FPL’s own consultants on health risks of transmission lines, a biostatistician and professional skeptic, now says in public that the mass of data on health risks of power lines must be taken seriously.

Alzheimer’s Disease and Senile Dementia

The biomedical literature has many reports of magnetic fields intensifying mental disorders. These effects, even if significant in one study, have proven elusive in follow-up studies.

One particularly worrisome paper shows a strong relation between residence near power lines and the doubling of Alzheimer’s Disease (AD) cases and other forms of senile dementia (Huss et al., 2009). With incidence of AD on the rise, this study begs for replication.



Application

While adhering to Florida DEP standards, FPL’s planned powerlines will legally expose people to magnetic fields 40 to 50 times greater than those associated with a doubling in the incidence of childhood leukemia and Alzheimer’s disease. This year, FPL representatives and the head of the Florida DEP Siting Coordination Office have both stated in public forums that the risks of transmission lines are unsupported by science. Such claims can only be made if one ignores all recent evidence to the contrary. If anyone is to look out for the health of our children it must be us.

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TURKEY POINT'S TROUBLED HISTORY

Philip Stoddard, Dept. Biological Sciences, FIU

Sources include public material from newspapers, NRC filings, and court filings.

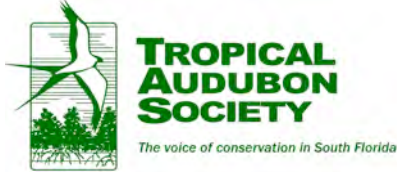
- 1972** The power plant begins commercial operation. The total cost is \$235 million.
- 1974** First problems detected in steam generators. FPL sues Westinghouse for more than the cost of repairs and losses, appeals and loses, takes case to FL Supreme Court and loses.
- 1975** 880 gallons of radioactive wastewater stored in 55 gallon drums is inadvertently pumped into a storm drain from the Unit 4 Cask Wash Area.
2960 gallons of radioactive water in Unit 4 Spent Fuel Pit leaks through a concrete wall into the ground.
- 1978** Unit 4 Spent Fuel Pit Cooling Pump seal failed causing ~150 gallons of radioactive water to spill out to a paved area.
- 1979** Unit 3 Refueling Water Storage Tank leaks ~25 gallons of radioactive water into the soil.
Unit 4 Refueling Water Storage Tank valve misalignment causes Spent Fuel Pit to fill and overflow ~3000 gallons of radioactive water onto the ground.
- 1981** FPL fined \$40,000 after operator is discovered away from controls of one unit.
- 1982** ~600 gallons radioactive water spilled from the B Monitor tank and potentially to the storm drain system.
FPL gets NRC permission to cover 10,000 square feet of radioactive ground with 5.5 ft of earth.
- 1983** FPL fined \$100,000 failure to properly maintain the backup water pumps.
NRC drops \$40,000 fine for 2 workers exposed to radiation.
- 1984** FPL fined \$150,000 for allowing failure of the backup cooling water pumps and violations of rules on electrical design changes. FPL's profits are \$300 million this year.
- 1985** FPL fined \$100,000 for the improper safety margins & open valves in spent fuel pool.
FPL fined \$25,000 for leaving core cooling water line closed for 5 days.
- 1986** FPL fined \$25,000 for allowing worker to enter high radiation area.
FPL fined \$300,000 because the core cooling water system is not fully operable. NRC staff finds violations of six main areas of FPL 's operation of the backup cooling water system, which is designed to keep the reactor core from melting if the primary system should fail. The violations include inadequate control of design modifications, failure to properly evaluate the safety consequences of design changes, inadequate procedures for documenting safety regulations, poor management oversight and failure to promptly correct problems with the cooling water systems, failure to shut down the plant within 72 hours, as required, when tests showed three valves weren't in proper condition.
FPL spokesman says *"We think Turkey Point is on the road to improvement."*
FPL fined \$50,000 for conducting improper tests of accident systems and not conducting startup tests.
The reactor is tripped manually following a loss of turbine governor oil system pressure and the subsequent rapid electrical load decrease. Control rods fail to insert automatically because of two cold solder joints in the power mismatch circuit. During the transient, a power-operated relief valve opens but fails to close. NRC report 12/27/86
- 1987** FPL fined \$75,000 for inadequate security during refueling.
FPL fined \$75,000 for sleeping security guards and failure to escort visitors.
FPL fined \$225,000 for improper operation and maintenance of backup reactor cooling systems.
FPL fined \$100,000 for failing to correct leak leading to corrosion and build-up of 550 pounds of boric acid crystals on reactor head. Steam leak resulting from poorly fit clamp had been observed and ignored.
NRC ponders fine after unlicensed technician allowed to operate reactor.
Turkey Point goes on the NRC's "Watch List" of troubled plants.
- 1988** FPL fined \$150,000 for security violations at Turkey Point.
Unit 4 Spent Fuel Pit Cooling Pump leaked again spilling ~1460 gallons of radioactive water.
The NRC threatens to close the nuclear reactors at Turkey Point.
- 1989** Eleven of 24 reactor operators fail requalification exams. One unit shut down for lack of operators.
FPL fined \$100,000 for security violations.
Leak found in weld of instrument tube in reactor core.
FPL gets serious and invests money to address the problems. The next 15 years are relatively quiet.
- 1990** Turkey Point goes off the NRC "Watch List." Both units set a record for length of operation before scheduled shutdown at the end of the year.

- 1996** FPL fined \$100,000 by NRC for firing an employee who reported safety concerns. However, between 1988 and 2003, over a dozen employees file retaliation cases against FPL under the ERA.
- 2002** NRC extends Turkey Point's 40-year licenses for another 20 years. Licenses set to expire in 2012 and 2013 will expire in 2032 & 2033.
- 2003** Unknown amount of radioactive water leaked from a temporary pump to the ground.
Radioactive tritium at 10-30X background level is detected by FIU and UM scientists in well 1 mile inland of Turkey Point. This level of tritium is not a danger itself, but indicates saltwater intrusion of aquifer from Turkey Point cooling canals.
- 2004** FPL profits rise 12%.
- 2005** Valve was left partially opened spills radioactive water (~5 gal?) at Unit 4 Tendon Gallery.
Turkey Point reactor is taken off-line after a transformer catches fire outside the reactor building.
- 2006** Turkey Point cited by NRC for failure to adequately assess and manage the increase in risk before performing maintenance on the A-train 480-volt 3C load center.
NRC issues Notice of Violation for 2 year malfunction of feedwater pump caused by improper installation.
Although NRC regulations require supervision of all visitors and contractors on a nuclear site, an unsupervised contractor drills hole in pipe in retaliation over payment issue. FPL charges customers for \$6.2 million in lost revenue while plant is repaired. State orders FPL to return the money to its customers.
- 2007** Senior licensed nuclear plant operator David Hoffman resigns rather than follow FPL orders to restart Turkey Point plants prior to completing NRC-mandated safety checks after emergency shut-down.
FPL announces plans for 2 new reactors at Turkey Point.
- 2008** NRC fines FPL \$208,000 after two security guards found to have disabled their weapons.
NRC objects that Turkey Point is seriously understaffed, with plant operators working overtime, up to 72 hours/week.
NRC fines FPL \$130,000 after security guards are found to be napping on the job and covering for each other.
Turkey Point reactor taken off-line to repair leak caused by structural weld crack.
FPL conducts anonymous survey of Turkey Point Employee Concerns Program (ECP).
In the report: 29% disagreed with the statement: *"I am confident that nuclear safety and quality issues reported through the ECP are thoroughly investigated and appropriately resolved."*
35% disagreed with the statement: *"I can use the ECP without fear of retaliation."*
Narrative of employee interviews reads: *"A lot said that there is retaliation for using ECP."*
The lead author of the report, a licensed plant operator at Turkey Point, was fired after submitting the report to the NRC but won a court settlement against FPL. A respected professional, he now works for a different utility.
Chairman of NRC visits Turkey Point because of chronic safety violations.
- 2009** NRC tightens overtime rules after chronic abuses by FPL.
Turkey Point unit 3 shut down to repair steam leak.
Control rods jam while refueling Turkey Point unit 3, forcing extended shut-down for repairs.
20 plant operators sue FPL for covering overtime with long-term retention bonuses rather than issuing true overtime pay for long hours worked.
NRC finds design flaw in new Westinghouse AP1000 reactors that FPL plans to build at Turkey Point. The reactor is not designed to withstand hurricanes.
Undetected by security guards, 34 Cuban immigrants are dropped off on the Turkey Point grounds. After waiting around for eight hours they phone the control room, requesting that someone pick them up.
Following a shutdown of Turkey Point unit 4 for refueling, the control rods were lifted and tested. When all control rods were supposed to be up, two rods dropped into the reactor core of the shutdown reactor; however the remaining control rods apparently failed to automatically drop into the reactor core as designed and had to be manually released. While this particular malfunction posed no danger, any malfunction of the control rod drive mechanism constitutes a serious failure of the nuclear reactor's most significant safety feature.
FPL is fined \$25 million for mistakes that caused the 2007 blackout, the same one in which Turkey Point operator David Hoffman refused to restart reactors prematurely. This state-issued fine is 10,000 times larger than the largest ever imposed by the NRC.
FPL has accumulated 2,000,000 pounds of nuclear waste at Turkey Point.
Under pressure, FPL agrees to design a program to monitor tritium and salinity in the local aquifer.

Turkey Point Expansion and Everglades Restoration: Competing Interests

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Energy and water issues are inexorably linked. In the United States, energy consumption accounts for up to 80 percent of the cost of pumping, transporting and processing valuable water resources. Florida's energy industry is the second largest water user the state. An application by Florida Power & Light (FPL) to build two new nuclear reactors (6&7) would increase water demands by over **90 million gallons a day**. South Florida already struggles to meet water supply demands.

Meanwhile, our federal and state governments are spending an estimated \$22.5 billion to restore Everglades National Park and Biscayne National Park. The proposed expansion of Turkey Point directly conflicts with planned restoration projects.

Water Impact

- FPL proposes to place radial collector wells 40 feet below Biscayne Bay Aquatic Preserve, in the upper levels of the Biscayne Aquifer (the Fort Thompson Formation). This depth may be within the "take zone" of the Biscayne Aquifer and has not been approved by the South Florida Water Management District for a consumptive use permit.
- FPL proposes to inject 40 million gallons a day (MGD) of waste in the boulder zone, a layer of the lower Floridan aquifer. This assumes infinite holding capacity within this layer.
- The Turkey Point expansion would require either approximately **90 million gallons a day** (MGD) of reclaimed water, **124 MGD** from its radial wells under Biscayne Bay or a combination of both. By comparison, the entire Florida Keys uses about 17 MGD.
- To date, no continuous testing or monitoring of the waste is proposed to ensure that our drinking water supply is not contaminated.

Everglades Impacts

- The availability of reuse water to meet both the projected needs of FPL to operate the new plant and the needs of the Biscayne Bay Coastal Wetlands (BBCW) restoration, part of the Comprehensive Everglades Restoration Plan (CERP), is questionable. The outcome of a reuse feasibility study is expected in 2011.

- The plan includes construction of transmission lines within Everglades National Park and along US1.
 - FPL's proposed transmission corridors impede upon lands within Everglades National Park and the footprint of BBCW and seek to fill more than 300 acres of wetlands.
 - US1 is an important corridor for growth because it is a public transportation route.
- The proposed rock mining project, which is planned within the BBCW footprint, violates Miami-Dade County's Comprehensive Development Master Plan, interferes with planned restoration projects and could worsen saltwater intrusion and chloride contamination in the Biscayne aquifer—South Florida's primary drinking water supply.
- The expansion will impact over 800 acres of wetlands. FPL's plan to mitigate this loss is not sufficient.
- Planned road expansions would block water flow to wetlands within CERP and compartmentalize the areas to be used in wetland rehydration.
- Releasing 30 MGD of steam from the reactor cooling process into the atmosphere (known as aerosol drift) has potentially damaging implications for local climate, wildlife and wildlife habitat, Biscayne Bay and locally grown food.
- The Turkey Point property is a known habitat for endangered or threatened species such as indigo snakes, Florida panther, wood storks and roseate spoonbills and is critical habitat for the American crocodile. Contaminant loading into the Cooling Canal System and loss of habitat through plant operation and construction may negatively impact these species.
- At least 3% of the water to be used in the radial collector wells will come from the Biscayne Aquifer. This will result in a reduction of more than 3 million gallons a day of groundwater flow needed to support the flora and fauna of Biscayne Bay. The proposed expansion is in direct conflict with the Biscayne Bay Coastal Wetlands project, the goal of which is to return the bay to less saline conditions.

Conclusion

In addition to ongoing problems from the existing facility, the combination of losing wetlands and worsening saltwater intrusion could significantly impact the habitats, water quality, surface flow, projected restoration water levels and groundwater hydrology functions that are the object of Everglades restoration plans.

Construction of the plant itself, as well as operation of the facility, will have adverse impacts on water quality, ecology and aesthetics of Biscayne National Park. It will negatively impact the area's protected species, wetlands, and much-needed fresh groundwater input to Biscayne Bay.

The estimated cost of the project is currently \$24 billion. The public is expected to pre-pay the expansion costs, plus interest to FPL, through rate increases with no guarantee that the plant will be built.

Additional costs for future damage to our economy caused by a disrupted tourism industry and water supply shortages will further burden taxpayers. We can meet our energy needs through less expensive means by improving conservation and renewable energy alternatives. Approval of this plan is not in the public's best interest.

FPL's Power Plant Siting application and rate increase requests by the Public Service Commission should be denied.

Proposed Turkey Point Nuclear Reactor Units 6 & 7 – Financially Prudent? George Cavros, Esq.

Why does it matter? – The Florida Legislature in 2006 shifted the risk of building nuclear reactors from the company's shareholders to its customers.¹

Is now the time to spend over \$18 billion of your money on a reactor project given the gathering of the “perfect storm” of economic and regulatory risk factors?

A sampling of risk factors includes:

>Demand Drop

The Great Recession has slashed demand significantly, and reversed growth.

***FPL:** “The 2009 forecasted Summer peaks, compared to the 2008 forecasted values, are lower for all years shown. This change will tend to lower the projected economic benefits of additional nuclear capacity, at least in the near term.”²*

***Dr. Mark Cooper** (senior fellow for economic analysis at the Institute for Energy and the Environment at Vermont Law School): “The reduction in peak demand between the 2008 and 2009 feasibility analysis is striking. . . [u]nder the 2009 projection, FPL does not reach the 2017 peak projected in 2008 until 2022, five years later.”³*

>Escalating Construction Cost Estimates of Reactors

2002: \$1,500-2,100/kw
2007: \$4,000/kw
2008: \$6,000/kw
2009: \$7,000-\$9,000/kw

***Dr. Cooper:** “As described in the FPL need study, FPL's cost estimate was derived from an early low estimate for a different type of reactor and its current estimates remain in the low range of projections. . . [t]he two conclusions I would draw from this analysis are (1) the range of costs considered by FPL is narrow and too low and (2) the uncertainty is huge.”⁴*

>Uranium Cost Escalating

***FPL:** “The forecasted uranium costs utilized in the 2009 feasibility analyses are higher than those in the 2008 analyses. This assumption change will lower the projected economic benefits of additional nuclear capacity.”⁵*

¹ § 366.93, Fla. Sta. (2006).

² Testimony of Steven R. Sim, Nuclear Power Plant Cost Recovery, Docket 09-0009, May 1, 2009.

³ Direct Testimony of Dr. Mark Cooper, Nuclear Power Plant Cost Recovery, Docket 09-0009, July 15, 2009.

⁴ *Id.*

⁵ Testimony of Steven R. Sim, Nuclear Power Plant Cost Recovery, Docket 09-0009, May 1, 2009.

>Westinghouse AP 1000 nuclear reactor design not yet approved by NRC.

Design changes and costly delays plagued the nuclear industry in the 1970s and 1980s, leading to enormous cost overruns. How can we best insulate customers from price shocks of conventional energy and risky and costly nuclear reactors?

We need meaningful energy efficiency and renewable energy investment.

>Energy Efficiency

A well-implemented energy efficiency measure has a levelized cost of **\$.02-.04/kwh**. A nuclear reactor's levelized cost is **over \$.12/kwh**. *Seventeen* states have set high goals for energy efficiency intended to help customers lower their bills. These states have set a goal of meeting 1% of annual demand through energy efficiency.⁶ By comparison, FPL has been recording paltry energy savings of about two tenths of one percent per year. In other words, the leading states and utilities around the county are realizing at least 5 times more energy efficiency than FPL.

Analysts of clean energy groups have concluded that FPL could reasonably avoid the unnecessary generation of about 11,000 gigawatt-hours of energy by 2019 through efficiency. Thus, boosting efficiency alone could replace one of the nuclear reactors FPL plans for Turkey Point.

>Renewable Energy

Capital costs are dropping steadily for renewable energy sources. For instance, the price per watt peak of photovoltaic (PV) solar has dropped from \$27 in 1982 to \$4 today. Renewable energy resources have little or no fuel cost and can be developed much faster than conventional plants or nuclear reactors. A Navigant Consulting, Inc. study concluded that Florida could reach 24 percent renewables by 2020 with a moderate investment. It simply requires that the right policies (RPS) be in place. *Twenty eight* states have mandated renewable energy targets, Florida has not.

*Dr. Cooper: "Under a 20% renewable mandate by 2020, FPL does not reach the peak for 2017 projected in the [nuclear] Need Docket until 2036."*⁷

>What next? Influence Policy. Contact your state legislative leaders about the importance of meaningful energy efficiency and renewable energy targets (20% by 2020), especially state House representatives. Find them at: **www.myfloridahouse.gov**

Also, contact all 5 members of the Florida Public Service Commission (PSC) regarding your concerns about the financially risky and almost speculative nature of moving forward with plans to build nuclear reactors. Commissioner contact info: **www.psc.state.fl.us/**

⁶ ACEEE, *Laying the Foundation for Implementing a Federal Energy Efficiency Standard*, March 2009. The states include: VA-2.2%; VT-2%; IL-2%; CA-2%; NJ-2%, CT-2%; WA-2%; MA-2%; OH-2%, RI-2%; MI-1.5%; NY-1.5%; IA-1.5%; MD-3.3%.

⁷ Direct Testimony of Dr. Mark Cooper, Nuclear Power Plant Cost Recovery, Docket 09-0009, July 15, 2009.

Nuclear Power: The Most Expensive Form of Electricity

Jerry B. Brown, Ph.D., Florida International University

December 10, 2009

A) Past Performance: Free Market Failure - Buyer Beware

- Historically, the utilities did a horrible job controlling costs on massive nuclear power projects, leading to the “malpractice of nuclear economics.” As a result, the bill for 75 first-generation nuclear power plants soared to nearly \$225 billion (in current dollars), *219% more than estimated*, according to a 1986 U.S. Department of Energy study.¹

- A February 11, 1985, *Forbes* cover study on “Nuclear Follies,” portrayed nuclear power as “the largest management disaster in business history.”² *Forbes* observed, “Only the blind, or the biased, can now think that most of the money has been well spent. It is a defeat for the U.S. consumer and for the competitiveness of U.S. industry, for the utilities that undertook the program, and for the private enterprise systems that made it possible.”

- In the early 1980s, following the financial fiasco of the Washington Public Power Supply System’s \$2.25 billion default (the largest default in utility history), Wall Street rated nuclear power plants as “high risk” and cut off access to capital markets.³

B) Current Critique: Most Expensive Form of Electricity

- “Nuclear power, once claimed to be too cheap to meter, is now too costly to matter” – cheap to run but very expensive to build. *The Economist*, 2001

- A 2006 *Business Week* article on “Nuclear Power’s Missing Fuel,” observed, “It’s a nuclear renaissance, right? Not yet. While smart money is placing multibillion dollar bets on ethanol, wind power, and solar, it’s not throwing buckets of cash at nukes.”⁴

- “With \$13 billion in new subsidies, if the government wants to prove that if it spends enough it can build nuclear power plants, it can do that...But, that’s not the same as saying it makes economic sense to do it.” – Christopher Flavin, Worldwatch Institute⁵

- “By 2007, as Figure 1 shows, nuclear was the costliest option among all main competitors, whether using MIT’s authoritative but now low 2003 cost assessment, the Keystone Center’s mid-2007 update, or later and even higher industry estimates.”⁶

- Despite federal subsidies of ~5-9 cents per kilowatt-hour, or ~60-90% of entire projected cost of first new nuclear plants, Wall Street is still skeptical, including

¹ Jerry B. Brown et. al., Chapter 5, “Nuclear Power: A Mistake in Search of a Mission,” in *Freedom From Mid-East Oil* (World Business Academy, 2007), p. 160 (available for download at www.worldbusiness.org)

² “Nuclear Follies,” *Forbes*, February 11, 1985.

³ Jerry B. Brown, “The Ratepayers’ Revolt,” *Profiles in Power* (Simon & Schuster, 1997), pp. 56-87.

⁴ “Nuclear Power’s Missing Fuel,” *Business Week*, July 10, 2006

⁵ Karen Charman, “Brave Nuclear World?” *Worldwatch*, May/June 2006, p. 31.

⁶ Amory Lovins et. al., “Forget Nuclear,” *Solutions Journal*, Spring 2008 (www.rmi.org)

investment guru Warren Buffet, who abandoned a nuclear project because “it does not make economic sense.” The smart money has headed for the exits.

- “In today’s capital market, governments can have only about as many nuclear power plants as they can force taxpayers to buy.”⁷

C) Not the Solution to Global Warming

- Considering the complete nuclear fuel life cycle, it is inaccurate to say that nuclear power is “clean” or “carbon-free.” A study by the Öko Institute of Germany found that when *indirect emissions* are included, nuclear power produces significantly less green house gas emissions than combined-cycle natural gas and coal plants, but more greenhouse gas emissions than wind or hydroelectric plants.⁸

- Comparing all options’ ability to protect the earth’s climate and enhance energy security reveals why nuclear power could never deliver these promised benefits even if it could find free market buyers – while its carbon-free rivals, which won \$71 billion of private investment in 2007 alone, do offer high effective climate and security solutions, soon, with greater confidence.

D) An Alternative: Accelerate Florida’s Green Energy Resources

- “Despite sun, currents and wind, renewable energy is underused in Florida, leading to the state’s ranking of 23rd in a recent energy efficiency study.”⁹

- FPL’s proposed two new nuclear units at Turkey Point will produce an estimated 2,200 MW of electricity – “enough to power more than 745,000 homes in South Florida” – at a cost that could top \$24 billion, with estimated completion dates of 2018 and 2020.

- A Navigant Consulting Study, prepared for the Florida Public Service Commission, found that “between 1.8 and 16 GW of Renewable Energy capacity could be installed in Florida by 2020, depending on the scenario used,” representing up to 24% of Florida’s retail electricity.¹⁰

- The Navigant Report focused on the following renewable technologies: solar (photovoltaics, concentrating solar power, solar water heating); wind (onshore, offshore); biomass (solid, landfill gas, anaerobic digester gas); and ocean (wave energy, ocean current, thermal energy conversion, and tidal energy).

⁷ Amory Lovins et. al., “Forget Nuclear,” *Solutions Journal*, Spring 2008

⁸ Uwe R. Fristche, *Comparing Greenhouse-Gas Emissions and Abatement Costs of Nuclear and Alternative Energy Options from a Life-Cycle Perspective* (Berlin: Öko-Institut, Nov. 1997).

⁹ “Green energy mostly untapped in Florida,” *Miami Herald*, November 28, 2009, 5B

¹⁰ Navigant Consulting, “Florida Renewable Energy Potential Assessment,” December 30, 2008.

CASE Public Contact Information

Here are the organizations and individuals responsible for energy creation and distribution in Florida and the nation and for providing public information regarding energy matters. CASE will contact its members asking them to contact them with specific requests or suggestions. Individuals are, of course, free to contact them at any time to express their concerns or to request information or clarification on an issue.

Telephone calls are encouraged but written letters and emails are also effective. **One letter is worth one hundred emails.** Write to any commissioner at the NRC. Letters To The Editor and call-ins to radio programs will also help to bring our perspectives to public attention. Do something; make a difference.

The Governor and his cabinet can stop the nuclear expansion at Turkey Point:

www.myflorida.com/myflorida/cabinet/members.html

The Honorable Charlie Crist, Governor

Office of Governor The Capitol
Tallahassee, Florida 32399-0001
(850) 488-4441

The Honorable Bill McCollum, Attorney General

Department of Legal Affairs
The Capitol
Tallahassee, Florida 32399-1050
(850) 414-3300

The Honorable Alex Sink, Chief Financial Officer

Department of Financial Services
The Capitol
Tallahassee, Florida 32399-0300
850-413-2850

The Honorable Charles H. Bronson, Commissioner

Department of Agriculture and Consumer Services
The Capitol
Tallahassee, Florida 32399-0810
(850) 488-3022

Your state representative and senator must hear your views instead of just FPL's:

FLORIDA HOUSE REPRESENTATIVES: www.myfloridahouse.gov

FLORIDA STATE SENATE: www.flsenate.gov

It's a good time to tell the PSC what you think about nuclear vs. renewable energy, and about increasing economic incentives for renewable energy (e.g., rooftop solar):

PUBLIC SERVICE COMMISSION, STATE OF FLORIDA (PSC)

2540 Shumard Oak Blvd. Tallahassee, FL 32399-0850 www.psc.state.fl.us

Commissioner Nancy Argenziano

Phone: (850) 413-6038 Email: Commissioner.Argenziano@psc.state.fl.us

Chairman Matthew M. Carter II

Phone: (850) 413-6046 Email: Chairman@psc.state.fl.us

Commissioner Lisa Polak Edgar

Phone: (850) 413-6044 Email: Commissioner.Edgar@psc.state.fl.us

Commissioner David E. Klement

Phone: (850) 413-6040 Email: Commissioner.Klement@psc.state.fl.us

Commissioner Nathan A. Skop

Phone: (850) 413-6042 E-mail: commissioner.skop@psc.state.fl.us

NUCLEAR REGULATORY COMMISSION, FEDERAL (NRC)

www.nrc.gov/about-nrc/contactus.html

NRC has several special contacts so it would be helpful to visit their website.

Mailing Address: U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001
1-800-368-5642, 301-415-7000 TTD: 301-415-5575

FLORIDA POWER & LIGHT (FPL): www.fpl.com

Chairman and CEO: Lewis (Lew) Hay III

FPL Group, Inc. 700 Universe Blvd., Juno Beach, FL 33408

FL Tel. 561-694-4000 Fax 561-694-4620

For more info, and to keep up with developments, follow: www.CASE-FL.org

C.A.S.E.

CITIZENS ALLIED FOR SAFE ENERGY, Inc.

Citizens Allied for Safe Energy, Inc. is a Florida non-profit corporation. CASE is an all-volunteer organization dedicated to informing the public, elected officials, and professional staff regarding safe energy concerns. CASE sponsors research and will, when appropriate, file law suits in pursuit of proper action by responsible parties. Public support is sought by letter and email writing and by funding of our work through \$50 membership per household, more or less, depending on circumstances.

MEMBERSHIP FORM Please print clearly

NAME _____

ADDRESS _____

TELEPHONE(S) _____

EMAIL ADDRESS _____

For CASE to do our work providing information to the public, we need some financial support from our fellow citizens. We are requesting \$50 per household but this amount is a personal matter based on one's financial circumstances. The amount of your contribution will never be disclosed. CASE will never release or share the names or contact information of any of its members. Contributions are not tax deductible.

Thank you for your support of our work.

**This form and contributions payable to C.A.S.E. can be mailed to:
10001 SW 129 Ter, Miami, FL 33176**

Visit: www.CASE-FL.org

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