

## TurkeyPointCEm Resource

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**From:** Barry White [bwtamia@bellsouth.net]  
**Sent:** Friday, July 17, 2015 12:57 PM  
**To:** TurkeyPointCOLEIS Resource; TurkeyPoint@usace.army.mil  
**Subject:** [External\_Sender] Comments regarding Turkey Point 6 & 7 DEIS  
**Attachments:** CASE PETITION TO INTERVENE WITH TYPOS CORRECTED.pdf; CASE Motion To Reconsider Contentions Following Fukushima Recommendations(1).pdf; FPL as Atlantis glow3 6x4-2.pdf

Please consider the relevant issues in the attached documents regarding the environmental impact of the operation of proposed reactors 6 & 7 at Turkey Point, FL by FPL. That fragile piece of land has already been pushed beyond its limits endangering and destroying rare wetlands and wildlife. There is not enough freshwater in the area and any further demands on available freshwater or loss of it due to plant operation are irresponsible and selfish. There are other ways and places to produce energy. Consider carefully what you are doing and do not impose 6 & 7 and its consequences on this and future generations. I live exactly 15 miles from Turkey Point.

Thank you,  
Barry J. White,  
10001 SW 129 Terrace  
Miami, FL 33176  
305-251-1960

**Federal Register Notice:** 80FR12043  
**Comment Number:** 10451

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**Created By:** bwtamia@bellsouth.net

**Recipients:**

"TurkeyPointCOLEIS Resource" <TurkeyPointCOLEIS.Resource@nrc.gov>

Tracking Status: None

"TurkeyPoint@usace.army.mil" <TurkeyPoint@usace.army.mil>

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CASE PETITION TO INTERVENE WITH TYPOS CORRECTED.pdf		580607
CASE Motion To Reconsider Contentions Following Fukushima Recommendations(1).pdf		
439392		
FPL as Atlantis glow3 6x4-2.pdf		1864100

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

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August 17, 2010

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
  
BEFORE THE SECRETARY

In the Matter of	)	
	)	
FLORIDA POWER AND LIGHT	)	
	)	Docket Nos. 52-040 COL
	)	52-041 COL
(Turkey Point Nuclear Power Station,	)	
Units 6 & 7)	)	
	)	

Citizens Allied for Safe Energy, Inc. Petition to Intervene and Request for a Hearing

This is a petition to intervene filed under 10 C.F.R. § 2.309 and in response to a notice published by the Nuclear Regulatory Commission (“NRC” or “Commission”) at 75 F.R. 34777 on June 18, 2010.<sup>1</sup> Citizens Allied for Safe Energy (CASE) hereby petition to intervene on behalf of CASE members in the application by Florida Power and Light (FPL or “the applicant”) before the Commission for two combined construction and operating license (“COL”) for two new nuclear power reactor units to be called Turkey Point Units 6 and 7, located in Homestead Florida. CASE also requests a hearing on the above captioned matter. As demonstrated below, CASE has representational standing through its members to make this request. This is a pro se Petition; CASE has no counsel. Coordination of the Petition and subsequent communications will be

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<sup>1</sup> The application, submittal documents and reference documents are available at <http://www.nrc.gov/reactors/new-reactors/col/turkey-point/documents.html#appDocuments>

provided by Barry White. See the authorization declaration and notice of appearance of Mr White, at the end of this petition.

This petition includes the details (with particularity) of the contentions that the co-petitioners find to be substantive and vital to NRC's consideration of the applicant's combined operating license application ("COLA"). The purpose of raising these issues is the protection of our members and their interest in this process. The contentions are that

8. The projections for the Turkey Point units 6 & 7 decommissioning fund do not reflect the issues raised in contentions in section 1.

#### DESCRIPTION OF THE PROCEEDING

The COLA for the proposed Turkey Point Nuclear Units 6 and 7 ("TP 6 & 7") was filed pursuant to 10 C.F.R. Part 52 Subpart C by FPL on June 30, 2009. The application requests approval of a COL for Turkey Point Units 6 & 7 located in Homestead, Florida. Notice of NRC's receipt of the application was published in the **Federal Register** on August 3, 2009 (74 FR 38477). The application was accepted for docketing and published on October 7, 2009 (74 FR 51621).

The Turkey Point Units 6 & 7 COL application incorporates by reference appendix D to 10 CFR Part 52 and the AP1000 Design Control Document (DCD) submitted by Westinghouse to the NRC on May 26, 2007, as Revision 16, and updated by Revision 17, on September 22, 2008.

CASE seeks party status in this licensing action since there are specific, harms

that its members would suffer if the concerns identified in this Petition are not addressed.

### STANDING OF PETITIONER

CASE is a Florida non-profit corporation. CASE has 125 members, of which 25 have signed the attached declaration in support of this intervention. The CASE business address is 10001 SW 129 Terrace, Miami, FL 33176. CASE is representing the interests of its members: [names of those who have signed declarations] who live within 50 miles of the proposed reactors and whose declarations are attached (exhibits MNPOPQ).

There are viable alternative energy options in lieu of nuclear power available to meet the energy needs of Florida that are clean, safe and sustainable. Also, there are other sites in Florida which could better accommodate new nuclear reactors. Construction and operation of the proposed new units at Turkey Point would cause irreversible damage to the local environment, and it would pose risks to the health and safety of current and future generations of Florida residents, including members of CASE.

If an accident occurred at the facility it could result in radiological releases and environmental contamination that would adversely affect the health and well being of CASE members, as well as all living beings in the region. The licensing of this nuclear plant will result in the creation of a new, permanent repository for high level radioactive waste, with the costs of its safeguarding and maintenance to be borne by the public in perpetuity. The risks and costs associated with this technology are unacceptable to

CASE and its members, especially given the abundance of alternatives available.

Members of the co-petitioners live, work, travel, recreate, use and enjoy natural resources in the vicinity of the proposed nuclear facility. They breathe the air, drink and use the water, eat food grown in the vicinity of the proposed project. All are customers of electric power companies whose rates will be impacted directly, or indirectly, by this project.

CASE seeks to avoid or minimize the risks posed by this nuclear plant by ensuring that the highest possible safety and environmental standards are imposed on the proponents of this project, and that all of these issues are fully and thoroughly addressed in the NRC's licensing proceeding.

Pursuant to 10 C.F.R. § 2.309, a request for hearing or petition to intervene is required to address (1) the nature of the petitioner's right under the Atomic Energy Act ("AEA") to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order that may be entered in the proceeding on the petitioner's interest.

Other standing requirements are found in NRC case law.<sup>2</sup> In *Diablo Canyon*, the Atomic Safety and Licensing Board noted that petitioners who live within 50 miles of a proposed nuclear power plant are presumed to have standing in reactor construction permit and operating license cases, because there is an "obvious potential for offsite consequences" within that distance.

Further record, as summarized by the Atomic Safety and Licensing Board

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<sup>2</sup> *Pacific Gas & Electric Co.* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), LBP-02-23, 56 NRC 413, 426 (2002).

(“ASLB”), on standing requirements are as follows:

In determining whether a petitioner has sufficient interest to intervene in a proceeding, the Commission has traditionally applied judicial concepts of standing. See *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983) (citing *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976)). Contemporaneous judicial standards for standing require a petitioner to demonstrate that (1) it has suffered or will suffer a distinct and palpable harm that constitutes injury-in-fact within the zone of interests arguably protected by the governing statutes (e.g., the Atomic Energy Act of 1954 (AEA), the National Environmental Policy Act of 1969 (NEPA)); (2) the injury can be fairly traced to the challenged action; and (3) the injury is likely to be redressed by a favorable decision. See *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plants), LBP-99-25, 50 NRC 25, 29 (1999). An organization that wishes to intervene in a proceeding may do so either in its own right by demonstrating harm to its organizational interests, or in a representational capacity by demonstrating harm to its members. See *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), LBP-98-9, 47 NRC 261, 271 (1998). To intervene in a representational capacity, an organization must show not only that at least one of its members would fulfill the standing requirements, but also that he or she has authorized the organization to represent his or her interests. See *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 168, *aff'd on other grounds*, CLI-98-13, 48 NRC 26 (1998).

Standing to participate in this proceeding is demonstrated by the attached Declarations of the above named members of CASE, people who live in Florida within 50 miles of the proposed site and who have authorized one or more of the co-petitioners to represent their interests in this proceeding.

The attached Declarations declare that people who live near (within 50 miles, though some live much closer) the Turkey Point site, declare further that they are members of CASE and that they support this petition. Thus, they have presumptive standing in this intervention by virtue of their support for the action and their proximity to the proposed nuclear plants that may be constructed on the site.<sup>3</sup>

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<sup>3</sup> *Diablo Canyon, supra*, 56 NRC at 426-427, citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146, *aff'd*, CLI-01-17, 54 NRC 3

In the case at hand the granting of a combined operating license (“COL”) to Florida Power and Light would permit the construction and operation of two new nuclear reactors, and therefore additional generation of radioactive waste and radioactive emissions in South, Florida. The co-petitioner’s members seek to protect their lives, health and safety and economic interests as customers and ratepayers (directly or indirectly) of FPL by opposing the issuance of a COL to FPL. The co-petitioners seek to ensure that no COL is issued by the Commission unless FPL demonstrates full compliance with the AEA, the National Environmental Policy Act (“NEPA”) and all other applicable laws and regulations.

Further, determination of standing is based on three requirements: injury, causation and redressability. CASE hereby requests to be made a party to the proceeding because: (1) construction and operation of two nuclear reactor units at South would present a tangible and particular harm to the health and well-being of the co-petitioners’ members living within 50 miles of the site and who are ratepayers of the company; (2) the Commission has initiated proceedings for a COL, the granting of which would directly affect the co-petitioners and their members; and (3) the Commission is the sole agency with the power to approve, to deny or to modify a license to construct and operate a commercial nuclear power plant.

### CONSIDERATIONS

The Commission is charged by the AEA with to forego actions that would be “inimical to the common defense and security or to the health and safety of the public.”<sup>4</sup>

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<sup>4</sup> 42 U.S.C. §2133(d).



Public safety is “the first, last, and a permanent consideration in any decision on the issuance of a construction permit or a license to operate a nuclear facility.”<sup>5</sup> As detailed below in the petitioner’s contentions, FPL’s COLA fails to comply with the NEPA requirement that it fully address the environmental impacts of constructing and operating the proposed South reactors.

The AEA sets minimum standards for the operation of nuclear facilities, while NEPA requires the Commission to consider and attempt to avoid or mitigate significant adverse environmental impacts of licensing those facilities. AEA and NEPA overlap to some extent; however they also establish independent requirements.<sup>6</sup> It is “unreasonable to suppose that [environmental] risks are automatically acceptable, and may be imposed upon the public by virtue of the AEA, merely because operation of a facility will conform to the Commission’s basic health and safety standards.”<sup>7</sup> NEPA

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<sup>5</sup> Petition for Emergency and Remedial Action, 7 NRC at 404, citing *Power Reactor Development Corp. v. International Union of Electrical Radio and Machine Workers*, 367 U.S. 396, 402 (1961).

<sup>6</sup> *Limerick Ecology Action v. NRC*, 869 F.2d 719, 729-30 (3rd Cir. 1989) (“*Limerick Ecology Action*”) (holding that the AEA does not preclude NEPA).

<sup>7</sup> *Limerick Ecology Action*, quoting *Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1299 (D.C. Cir. 1975).

requires NRC to go beyond the AEA, by requiring consideration of alternatives to the COLA and for reducing or avoiding adverse environmental impacts of NRC licensing actions.<sup>8</sup>

The NRC staff's responsibility in preparing an EIS under NEPA, and the Safety Evaluation Report under NRC regulations is to conduct a fair and independent analysis of the impacts of the proposed action on the environment, and compliance with NRC regulations, in order to give the decisionmaker a useful tool, based on solid scientific and technical data, to make a decision to grant or deny the COLA. Since neither of those documents is prepared until later in the process, the issues raised by the petitioner must also rise to that same level of import in the consideration of whether to grant or deny the applicant's COL.

### OVERVIEW OF THE CONTENTIONS

A COL is authorization from the NRC to construct and operate a nuclear power plant at a specific site. Before issuing a COL, the NRC staff is required to complete safety and environmental reviews of the application in compliance with the AEA and NEPA. CASE seeks to intervene because operation of the two proposed nuclear reactors would endanger the health and safety and economic interests of their members and other people living within 50 miles of the proposed reactors. The costs and risks of the proposed reactors are unnecessary and wholly out of proportion to any possible

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<sup>8</sup> 10 C.F.R. § 51.71(d).

benefit.

As determined by the ASLB, a contention is admissible when it meets the requirements in 10 C.F.R. § 2.309(f)(1):

(1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted;

(ii) Provide a brief explanation of the basis for the contention;

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

A thorough recitation of relevant case law regarding the admissibility of contentions was recently presented in *Duke Energy Carolinas, LLC (William States Lee Nuclear Station, Units 1 and 2)*, LBP-08-17, 68 NRC \_\_\_\_ (slip op. at 4-10) (September 22, 2008).

A variety of contentions have been admitted by ASLBs at a number of the latest rounds of petitions on the adequacies of COLAs. See for example, *Tennessee Valley*

Authority, (Bellefonte Nuclear Power Plant, Units 3 and 4), LBP-08-16, 68 NRC \_\_\_\_ (slip op.) (September 12, 2008).

For each contention offered here, CASE demonstrates that the issues raised are within the scope of the proceeding, that the issues are material to the Commission's licensing responsibilities, and that there exists a genuine dispute between the petitioners and the licensee. In its contentions, the co-petitioners present the specific issues of law or fact to be raised, the bases for the contentions and statements of fact or expert opinion in support of the contentions.

### **LIST OF CONTENTIONS**

**CONTENTION 1 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR AN ADEQUATE PUBLIC SAFETY PLAN**

**CONTENTION 2 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR THE SAFE AND ORDERLY EVACUATION OF THE POPULATION DURING OR FOLLOWING A NUCLEAR EVENT (UNUSUAL NUCLEAR OCCURANCE)**

**CONTENTION 3 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 BY RELEASING AEROSOL WITH 471.6 TONS OF PARTICULATES INTO THE ATMOSPHERE ANNUALLY**

**CONTENTION 4 - FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO ADEQUATLY CONSIDER AND PLAN FOR ACCIDENTS INVOLVING RADIOACTIVE MATERIALS**

**CONTENTION 5 – FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 ANALYSIS TO CONSIDER OR INCORPORATE ANY SCIENTIFICALLY VALID PROJECTION FOR SEA LEVEL RISE**

**AND CLIMATE CHANGE THROUGH THE END OF THIS CENTURY AND BEYOND.**

**CONTENTION 6 - FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO CONSIDER THE ENVIRONMENTAL IMPACT OF EXTENDED STORAGE OF SO-CALLED "LOW-LEVEL" WASTE AT TURKEY POINT AS REGARD TO PUBLIC SAFETY**

**CONTENTION 7 - FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO CONSIDER TO INCLUDE A SO-CALLED "LOW-LEVEL" RADIOACTIVE WASTE EXTENDED STORAGE PLAN**

**CONTENTION 8 - A REQUEST THAT NRC DENY THE REQUEST FROM FPL TO BEGIN CONSTRUCTION OF THE NON-NUCLEAR PORTIONS OF THIS PROJECT (LIMITED WORK AUTHORIZATION, LWA).**

## **CONTENTIONS**

### **CONTENTION: ONE**

#### **CONTENTION: INADEQUATE PUBLIC SAFETY PLAN**

(i) The emergency plan on file with Miami-Dade County does adequately protect public health of people in the Turkey Point Plume Exposure Zone following an accidental radiation release from FPL's nuclear reactor facilities at Turkey Point.

#### **(ii) BASIS FOR CONTENTION**

The NRC requires the filer to coordinate with local government to adequately protect people in the case of radiation release in a General Emergency. The existing emergency plans on file with Miami-Dade County consists of (1) evacuation and emergency shelter plans, (2) shelter-in-place plans, (3) plans for radiation testing, and (4) treatment of people with potassium iodide (KI) to reduce the significant risk of thyroid cancer. None of these aspects of the emergency plan would be adequate in the event of a significant accidental release of airborne radiation from nuclear reactors at Turkey Point in a General Emergency:

- 1. Evacuation plans are not adequate for timely evacuation of all the people who could be affected in an accidental radiation release.**
- 2. Evacuation screening and shelter provisions lack capacity for the number of people living in the evacuation zone.**
- 3. Potassium iodide (KI) cannot be delivered in a timely manner to provide best**

protection from thyroid cancer.

**4. Reactor design proposed for TPN 6 & 7 elevates risk of radiation release and makes effective evacuation and KI plans more critical.**

**(iii) CONTENTION IS WITHIN SCOPE – NRC Regulations 10(CFR) § 50.47**

**Emergency plans states:** that a new license will not be issued unless the operator can show that all safety plans in place by local and state agencies are sufficient to provide for the safety of the public in the event of a radiological emergency:

***NRC Regulations 10(CFR) § 50.47***

*(a)(1)(i) Except as provided in paragraph (d) of this section, no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. No finding under this section is necessary for issuance of a renewed nuclear power reactor operating license.*

*(ii) No initial combined license under part 52 of this chapter will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. No finding under this section is necessary for issuance of a renewed combined license.*

*(iii) If an application for an early site permit under subpart A of part 52 of this chapter includes complete and integrated emergency plans under 10 CFR 52.17(b)(2)(ii), no early site permit will be issued unless a finding is made by the NRC that the emergency plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.*

*(iv) If an application for an early site permit proposes major features of the emergency plans under 10 CFR 52.17(b)(2)(i), no early site permit will be issued unless a finding is made by the NRC that the major features are acceptable in accordance with the applicable standards of 10 CFR 50.47 and 10 CFR part 50, appendix E, within the scope of emergency preparedness matters addressed in the major features.*

*(2) The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented. A FEMA finding will*

*primarily be based on a review of the plans. Any other information already available to FEMA may be considered in assessing whether there is reasonable assurance that the plans can be implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on questions of adequacy and implementation capability.*

**(iv) DEMONSTRATION THAT CONTENTION IS MATERIAL TO THE NRC DECISION**

The emergency plans in place in Miami-Dade County cannot be implemented in a timely manner because of logistic problems and thus are not adequate to protect public safety in the event of an emergency release of radiation. Therefore the operator, FPL, has not satisfied the stipulations of NRC Regulations 10(CFR) § 50.47.

**(v) STATEMENT OF FACTS & EXPERT OPINIONS:**

**1. Evacuation plans are not adequate for timely evacuation of all the people who could be affected in an accidental radiation release.**

The evacuation routes include only three main roads: U.S. 1, Florida's Turnpike, and Krome Ave. Because the radiation plume may extend 50 miles (Ingestion Exposure Pathway EPZ) or more, people in the Florida Keys and throughout South Dade would further congest the evacuation routes. Even a moderate wind from the south would overtake people fleeing the evacuation area.

The Florida Department of Community Affairs states that up to 17 hours would be required to evacuate coastal areas of Miami-Dade County.

[http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation/MapsProfiles/MiamiDade/Miami-DadeProfile\\_final.pdf](http://www.dca.state.fl.us/fdcp/dcp/hazardmitigation/MapsProfiles/MiamiDade/Miami-DadeProfile_final.pdf)

In only two hours, even the lightest breeze would push the radiation plume over residents attempting to evacuate the 10-mile EPZ.

Miami-Dade County explains nuclear emergency evacuation to parents:

*"Activation of your plan should begin as early as possible because of the time it takes for parents or guardians to respond to your facility to pick up their children."*

[http://www.miamidade.gov/oem/library/preparedness\\_planning\\_sheet.pdf](http://www.miamidade.gov/oem/library/preparedness_planning_sheet.pdf)

Thus, parents working outside the evacuation zone would have to drive back into the zone to retrieve their children, adding to traffic congestion and further delaying evacuation.

**2. Evacuation screening and shelter provisions lack capacity for the number of people living in the evacuation zone.**

The Tamiami Park Emergency Reception Center (ERC) intended to hold evacuees in Miami-Dade County has a host capacity for 1000 evacuees and a reported usage capacity of 2450.

<http://www.floridadisaster.org/Response/engineers/documents/2008SESP/2008-SESP->

[AppxA/2008SESP-AppxA-Miami-Dade.pdf](#)

Thus, plans to evacuate people in the radiation plume could not accommodate 98% of residents in the 10-mile EPZ, approximately 126,000 people according to the year 2000 U.S. Census for the communities of Cutler Bay, Florida City, Goulds, Lakes by the Bay, Leisure City, Naranja, Princeton, South Miami Heights.

### **3. KI cannot be delivered in a timely manner to provide best protection from thyroid cancer.**

According to both the NRC and the World Health Organization, to achieve protection from atmospheric release of radioactive iodine (I-131), KI should be ingested **prior** to encountering the radiation cloud. Quoting the NRC:

*“If radioactive iodine is taken into the body after consumption of potassium iodide, it will be rapidly excreted from the body.”*

<http://www.nrc.gov/about-nrc/emerg-preparedness/protect-public/potassium-iodide-use.html>

FPL explains:

*“If conditions warrant, the Florida Health Department will make potassium iodide available at the reception centers.”*

[http://www.fpl.com/environment/nuclear/pdf/turkey\\_point.pdf](http://www.fpl.com/environment/nuclear/pdf/turkey_point.pdf)

The Modesto Maidique campus of Florida International University, adjacent to the Tamiami Park Emergency Reception Center (ERC), houses the County’s emergency supply of potassium iodide (KI). This ERC is 20 miles from the 10-mile diameter emergency planning zone (EPZ).

In the event of an emergency radiation release, the time required to evacuate the 10-mile EPZ to the ERC at Tamiami Park (up to 17 hours) would be too great to prevent initial exposure to inhaled radioiodines. The county has no effective plan to transport KI from the FIU campus to residents who shelter-in-place in their houses or businesses prior to their exposure from a moving radiation cloud.

### **4. Reactor design proposed for TPN 6 & 7 elevates risk of radiation release and makes effective evacuation and KI plans more critical.**

FPL proposes to build the untested Westinghouse AP1000 reactor design for TPN 6 & 7.

Analysis of the AP1000 by nuclear engineer Arnie Gunderson has revealed an elevated likelihood of corrosion leakage in combination with a “chimney effect” in the containment housing that would rapidly vent radiation into the atmosphere during a core meltdown.

Thus, the needs for more effective plans for evacuation and KI distribution are more compelling for TPN 6 & 7 than for the existing TPN 3 & 4 reactors. [See Exhibit: Declaration of Arnie Gunderson August 13, 2010, Vogtle COL].

**(vi) FPL’s application assumes that the current emergency plans in place with Miami-Dade County for TPN 3 & 4 is likewise sufficient for TPN 6 & 7. It is our contention that the current emergency plans are not adequate to protect public**



**safety for the reasons stated above, and therefore the application should be rejected until plans are in place that are sufficient to assure the safety of the population at risk in a sudden emergency radiation release.**

The US Coast Guard, unlike some other emergency response jurisdictions offered the following statement that their ranks require the level of protection that CASE believes all the residents of the area deserve:

*Emergency Preparedness Manager  
Turkey Point Nuclear Plant  
9760 SW 344 Street.  
Florida City, FL 33035  
Attn: Larry Hardin*

*Dear Sir,*

*The following information is provided in response to your email request on August 28, 2008, in which you requested the United States Coast Guard provide a new letter of support indicating our ability to meet the requirements of your Radiological Emergency Plan. This letter provides current resource and support capabilities for Coast Guard assets located in the vicinity of the Florida City Turkey Point Nuclear Plant. Please note that any emergency assistance that the Coast Guard may provide would be limited by the fact that Coast Guard crews are not equipped or trained for radiological response, and thus, cannot be exposed to radiological contamination. Coast Guard assets will be restricted to activities and geographic locations that are air monitored for radioactive fallout and are certified to be safe without protective clothing or equipment. Consequently, the Coast Guard is unable to act as the primary responder for nuclear power plant disasters.*

*Kenneth C Jones, Commander  
Seventh Coast Guard District  
909 SE First Ave  
Miami, FL 33131  
September 29, 2008*

## **CONTENTION: TWO**

### **A. FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR THE SAFE AND ORDERLY EVACUATION OF THE POPULATION DURING OR FOLLOWING A NUCLEAR EVENT (UNUSUAL NUCLEAR OCCURANCE)**

#### **A. 1. Statement of the issue:**

**The evacuation plan does not meet the criteria of protect(ing) the health and safety of the public prescribed by the Atomic Energy Act of 1954, and as exemplified by 10 CFR 50.47. In addition, the increase in population, and findings of studies of actual population and institutional response to actual emergencies are not adequately reflected in the FPL emergency response plan. The plan, particularly with respect to evacuation / population response is therefore incomplete and also does not follow NUREG 0654 guidelines.**

**ii. brief explanation of the basis for the contention**

According to the population statistics provided by the FPL COL there are 187,374 people in the EPZ within 10 miles of Turkey Point 9; that number will increase to 280,000 by 2080. (ETE Table 3-2 EPZ Permanent Resident Population). The COL information ETE states that it will take from 6 to 11.4 hours to evacuate 100% of the population plus up to 6 hours for some of the population to prepare to evacuate. These evacuation and preparation times are too long to protect the health and safety of the public. If you had to evacuate 187,374 people in Kansas, you would have 360 compass degrees in which to do it. But since they are at the end of a peninsula with Everglades National Park as a western boundary, and Biscayne National Park and the Atlantic Ocean as an eastern boundary, there are only 30 compass degrees into which they can evacuate. Only one way to go: north. And only three roads on which to do it; U.S. Highway 1, The Florida Turnpike and Krome Avenue.

NUREG 0654 advocates evacuation over sheltering yet the FPL COL indicates that sheltering is an acceptable alternative for some part of the population. In addition, the use of the existing Turkey Point evacuation plan does not reflect the LARGE expansion in permanent population that has occurred between 1970 and now.

**TABLE 1:**

## 2000 Census Population of 10 mile evac radius Turkey Point

### Inland Population of Area in a 10-mile Evacuation Radius of Turkey Point

Zip code

33030	27 304
33031	5 514
33032	20 716
33033	31 394
33034	15 402
33035	2 762
33157	61 258
33170	8 460
33189	2 280
33190	4 820
Total	179 910

Please note that these are 2000 census figures which account only for residents. These figures do not include seasonal visitors, migrant workers, or people attending sports events and visiting parks and tourist attractions.

#### TABLE 2 (excerpt from the COL)

Turkey Point Units 6 & 7 Evacuation Time Estimate  
KLD Associates, Inc. ES -6 Revision 0

#### Table 3-2 EPZ Permanent Resident Population

Area	2000 Population	2009 Population
Total	140,668	187,374

Population Growth: 33.2%

The following is a compilation of figures above, and numbers from the 1970 US Census.

	1970	1990	2000	2006-2008 est	2009 est
<i>Florida</i>	5133	5806	7843	na	9935

<i>City</i>					
<i>Goulds</i>	6690	6004	7453	<i>na</i>	7453
<i>Homestead</i>	13674	26866	31909	49818	57936
<i>Lakes by</i>					
<i>the Bay</i>	<1000	525	9055	<i>na</i>	<i>na</i>
<i>Leisure City</i>	<1000	9369	22152	20713	<i>na</i>
<i>Naranja</i>	<1000	1556	4034	<i>na</i>	<i>na</i>
<i>Princeton</i>	<1000	1622	10090	<i>na</i>	<i>na</i>
<i>South Miami</i>					
<i>Heights</i>	10395	8369	33522	34582	<i>na</i>
<i>total</i>	38892		60117		126058
<i>2080 pop estimate</i>			267281		

The 2080 pop estimate is from the FPL ER.

The 1970 – 2009 growth from 38,892 to 187,374 is a 4.8-fold increase in the number of people who will be impacted on any day that Turkey Point has a problem. A four, nearly five-fold expansion is not credible in terms of asserting minor modification to a plan.

**(iii) The contention is within the scope of the proceeding**

The ATOMIC ENERGY ACT OF 1954 (Public Law 83–703 68 Stat. 919 August 30, 1954 TITLE I– ATOMIC ENERGY, CHAPTER 1– DECLARATION, FINDINGS, AND PURPOSE) states:

d. The processing and utilization of source, byproduct, and special nuclear material must be regulated in the national interest and in order to provide for the common defense and security *and to protect the health and safety of the public.* (Empahisis added).

e. Source and special nuclear material, production facilities, and utilization facilities are affected with the public interest, and regulation by the United States of the production and utilization of atomic energy and of the facilities used in connection therewith is necessary in the national

interest to assure the common defense and *security and to protect the health and safety of the public*. (Emphasis added).

NRC Regulation 10 CFR Section 52.79 - Contents of applications; technical information in final safety analysis report, states:

“[t]he final safety analysis report shall include the following information at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of the license.”

From Abstract of NUREG 0654: Studies of severe reactor accidents and their consequences since the issuance of NUREG-0654/FEMA-REP-1, Revision 1, have led the NRC staff to conclude that the preferred initial protective action for a severe (core damage) accident is to evacuate promptly rather than to shelter the population near the plant, barring any constraints to evacuation. The guidance in this document is intended to update and simplify the decisionmaking process for protective actions for severe reactor accidents given in Appendix 1 to NUREG-0654/FEMAREP.

Excerpting from NRC regs:

#### **§ 50.47 Emergency plans.**

(a)(1)(i) Except as provided in paragraph (d) of this section, no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. No finding under this section is necessary for issuance of a renewed nuclear power reactor operating license.

(ii) No initial combined license under part 52 of this chapter will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in

the event of a radiological emergency. No finding under this section is necessary for issuance of a renewed combined license.

Clearly NRC has the intent of fulfilling the charge of the Atomic Energy Act, even to the point of offering to *decline a license* (rare) as in:

(c)(1) Failure to meet the applicable standards set forth in paragraph (b) of this section may result in the Commission declining to issue an operating license;

And paragraph (b) is very detailed in its specificity:

(b) The onsite and, except as provided in paragraph (d) of this section, offsite emergency response plans for nuclear power reactors must meet the following standards:

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

(4) A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

(5) Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

(6) Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

(7) Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

(8) Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

(9) Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

(10) A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

(11) Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

(12) Arrangements are made for medical services for contaminated injured individuals.

(13) General plans for recovery and reentry are developed.

(14) Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

(15) Radiological emergency response training is provided to those who may be called on to assist in an emergency.

(16) Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

**(iv) The contention is material to the findings the NRC must make to support the action that is involved in the proceeding:**

As is stated in 50.47, NRC will deny a license if the appropriate plan is not in place. The FPL plan is not appropriate. The plans and procedures provided in the subject COL assume a perfect situation where everyone follows them and there is no emotional or situational anxiety present. Experience and studies have shown that in extreme evacuation situations the public will not follow an orderly procedure. Panic and fear prevail and any attempt at planned evacuation is impossible, especially in a nuclear event.

It is also the case that many trained workers on whom the authorities are planning to maintain order and carry out assigned duties do not do so and join the evacuation. If they have families, you must assume that their safety will supersede that of others.

By adding two nuclear reactors to the two already at Turkey Point, the possibility and probability



of a nuclear event is increased exponentially. And an event would not have to be catastrophic; even a rumor of a significant leak of radio active gas or vapor could cause panic in the area. Also, since there are two non-nuclear power plants at Turkey Point, a nuclear event could result in shutting them down also due to lack of workers and operators who would most likely not be willing to stay or return to a radioactive site.

#### **(v) Facts or expert opinions**

**The logistics of evacuating 187,000 people are greater than can be achieved on short notice and in a situation of panic following what is sure to be incomplete and in accurate information. Simply ensuring that there will be sufficient gasoline for that many cars is a major undertaking. Lines at the pumps would be blocks long and the supply of gasoline would soon run out. And who is to guarantee that the station owners or managers will stay around given the threat to themselves and their families. It is an impossible situation. Build the reactors somewhere else.**

Evacuation from a nuclear event is far different from evacuation from other events.

Using evacuations from natural and other technological hazards as a basis for comparison, we can conclude that evacuations in response to nuclear power plant accidents are likely to be characterized by an extreme over-response to limited protective action advisories; this phenomenon needs to be considered in behaviorally-based radiological emergency response planning.

The lessons learned from the Three Mile Island accident provide a very important experience for emergency planners to seriously consider in determining the viability of executing their nuclear accident emergency plan. A study into the human response in the aftermath of TMI was published in "Evacuation Behavior In Response To Nuclear Power Plant Accidents," by Donald Zeigler and

James Johnson, Jr. in the May, 1984 issue of The Professional Geographer.

Here are some of their findings:

**1. To plan for only a 10 mile evacuation is to significantly under plan for a nuclear power station accident.**

The 10-mile emergency planning zone is a politically arbitrary distance. It has no bases in meteorology, radiation releases mechanisms and human behavior. In fact studies of human behavior following the Three Mile Island accident in 1979, where a limited evacuation advisory was issued by Pennsylvania Governor Thornberg, provides evidence that people will be spontaneously leaving their homes well beyond the current 10-mile planning zones. This human behavior phenomenon has been termed the "evacuation shadow effect." This evacuation shadow is determined by people who believe themselves to be at risk who evacuate even though they have not been ordered or advised to do so by officials. The study of human behavior around the Three Mile Island accident showed that if only the government advised people, specifically pregnant mothers and pre-school children, had left a 5 mile radius, that number would have been about 3400 evacuees. Instead, up to as many as 200,000 people actually evacuated, approximately 39% of the population within 15 miles of the reactor. The "shadow" evacuation phenomenon is not expected to begin to diminish until approximately 25-miles out from the reactor. The study found that in addition to the high rate of voluntary evacuation, those evacuees tended to travel distances much greater than has been observed in previous studies on non-nuclear related evacuation behavior (hurricanes, floods, etc.). The TMI study evidenced that the median distanced traveled by evacuees was 85 miles. The NRC commissioned a study (Flynn 1979) that evidenced an average distance of 100 miles of travel.

**· To locate all the public shelters and reception centers immediately beyond the 10-mile EPZ is to invite under-utilization and chaos.**

Currently all shelters and reception centers for evacuees within the current planning zone are located in a 10-20 mile range from the reactor. Anyone who takes shelter in them will likely watch the resident population from that zone pack into their cars and heads farther away. Ionizing radiation is such a dreaded invisible threat people will want to put as much distance as possible between them and the accident site.

**\_ To depend on buses to evacuate populations without cars (school children, the elderly, and prison and hospital populations) is to ignore role conflicts within the emergency personnel designated as drivers and vital to successful evacuation.**

Those people who are depended upon to drive buses are not likely to be professional emergency workers. They may not respond, especially if they have family of their own. They may delay response as a result of role conflict between emergency duty and home. It is reasonable to assume that they are most likely to tend to their families first. Social surveys of personnel with assigned emergency duties indicate the strong potential for role conflict to interfere with the management of a nuclear emergency. Research conducted in the vicinity of the now closed Shoreham nuclear power station

on Long Island, NY questioned bus drivers and volunteer fireman "What do you think you would do first if an accident requiring a full scale evacuation of the population within 10 miles of the nuclear reactor were to occur?"

The results found that 68% of 291 fire fighters, 73% of the 246 bus drivers indicated that family obligations would take precedence over emergency duties. The consequence of such choice would be a failed response to the nuclear emergency.

Additionally, during the TMI accident role conflict was documented among many emergency workers including the exodus of physicians, nurses, and technicians required to staff both the short term and long term medical facilities. At one local hospital, only six of 70 physicians who were scheduled for weekend emergency duty reported for work. None of the hospitals researched in the study were in the 5 mile radius of the evacuation advisory. Other instances where role conflict occurred were the Pennsylvania National Guard and even nuclear power plant workers.

**4. To package information for radiological accident emergency planning as similar to an emergency response to other disasters (i.e. hurricanes) is to ignore that there are major differences in how people respond to these very different events.**

Nuclear power plant operators and emergency planners characterize nuclear power plant disaster planning as no different than that for a hurricane or some other disaster. The public clearly perceives a difference of threat and consequences from a nuclear meltdown and that of a hurricane. But nuclear utilities, emergency planners and the NRC refuse to acknowledge these distinct differences in actual threat, public perceptions and fears of the harm that can occur as the result of a nuclear power accident on scale of the Chernobyl accident in Ukraine, and other catastrophes. The harm derived from a nuclear accident both short term and long term includes deadly radiation sickness, cancer, birth defects and spontaneous abortions. The magnitude of public response to be greater than an evacuation from a natural disaster should be acknowledged and factored into emergency planning.

**5) To expect to "manage" the evacuation response is not realistic.**

People will manage their own evacuation response. They will head out in their own cars as quickly as possible and try to get on the few available roads and will slow the entire evacuation process down. They will end up in traffic jams in bottlenecks that are beyond the evacuation zones that will likely trap the intended evacuees in traffic jams closer to the nuclear reactor and most immediately under any escaping radiation plume.

Ultimately, the only relevant protection, however, is prevention. If you want real civil defense, then we must shut these dangerous and aging reactors down.

**Petitioners' closing statement:**

The answer to this difficult situation is to not put people into it in the first place. Build nuclear power plants where evacuation is not a problem and is not in a confined area which the land and roadways surrounding Turkey Point have created. Turkey Point has outgrown its location as a place to produce power which has any potential for a nuclear incident. It is irresponsible for all authorities involved to put the residents and visitors at risk in this manner; the Atomic Energy Act demands that they not do so. Either build 6&7 somewhere else or use energy conservation and efficiency to reduce the need for power or recommend alternative energy sources and distributed/decentralized production of power. Every home and business should produce its own power. A monolithic, central source of power which must then be transmitted over great distances is nineteenth century technology. Germany and China are doing better. We can do better.

## CONTENTION: THREE

### **A. FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 BY RELEASING AEROSOL WITH 471.6 TONS OF PARTICULATES INTO THE ATMOSPHERE ANNUALLY**

#### **A. 1. Statement of the issue**

The six cooling towers for the two proposed AP1000 nuclear reactors at Turkey Point will release tons of particulates annually from treated waste water or sea water (plus added chemicals for functional purposes) into the atmosphere per day threatening the health and safety of Turkey Point employees and the surrounding population and visitors and could contaminate all land and water surfaces in the area including 65,000 acres of agricultural land.

## **ii. brief explanation of the basis for the contention**

According to information provided in the FPL COL, the six cooling towers for Turkey Point 6&7 will evaporate 41.5 MGD of water which will include 943 tons annually of particulates) when sea water is used and 55 tons annually of particulates when recycled water is used annually which will be suspended in aerosol dispersed over the surrounding area. An FPL model diagram (presented in a power point presentation on August 13, 2010 and not yet available on line) shows the dispersion of that vapor in a neat pattern around the plant assuming average wind conditions. However, the average does not fully reflect the many days when the wind blows from the SE at 15 to 25 MPH for hours on end. That would carry the now condensed and concentrated residue over the employees at Turkey Point and the 187,000 people within ten miles of Turkey Point and over 65,000 acres in agriculture in south Miami-Dade County. And the diagram shows that 63% will fall close to the plant, and on Biscayne National Park which abuts the FPL property to the north.

## **iii. demonstrate that the issue raised in the contention is within the scope of the proceeding**

This operation of the cooling towers will violate the criteria of protect(ing) the health and safety of the public prescribed by the Atomic Energy Act of 1954. The ATOMIC ENERGY ACT OF 1954 (Public Law 83–703 68 Stat. 919 August 30, 1954 TITLE I– ATOMIC ENERGY, CHAPTER 1– DECLARATION, FINDINGS, AND PURPOSE) states:

d. The processing and utilization of source, byproduct, and special nuclear material must be regulated in the national interest and in order to provide for the common defense and security *and to protect the health and safety of the public.* (Emphasis added).

e. Source and special nuclear material, production facilities, and utilization facilities are affected with the public interest, and regulation by the United States of the production and utilization of atomic energy and of the facilities used in connection therewith is necessary in the national

interest to assure the common defense and *security and to protect the health and safety of the public*. (Emphasis added).

NRC Regulation 10 CFR Section 52.79 - Contents of applications; technical information in final safety analysis report, states:

“[t]he final safety analysis report shall include the following information at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of the license.”

**iv the contention is material to the findings the NRC must make to support the action that is involved in the proceeding**

While the aerosol from Turkey Point 6&7 will meet state air quality standards, the absolute concentrated amount of particulate falling in the area will be create health and air quality problems for those who work at the plant and at near by Biscayne National Park and for area residents and visitors. Low levels of pollutants breathed in every day will present health problems for them over time . The FPL analysis (see FPL public notice reproduced below) shows that “there will be 55 tons (110,000 pounds) of particulate matter annually and 21 tons /year of particulate matter with a mean diameter of 10 microns or less (PM10). when recycled waste water is being used. When using saltwater that contains a much higher solids content as a backup source of cooling water, potential emissions for the cooling towers are estimated to be 943 tons/year of PM and less than 10 tons/year of PM10. The project will also result in the following estimated potential emissions increases from the small service water cooling towers and diesel engines: 25 tons/year of carbon monoxide; 36 tones/year of nitrogen oxides; 4 tons/year of PM, 3 tons/year of pm10; less than 1 ton/year of sulfur dioxide (SO<sub>2</sub>); and 4tons/year of volatile organic compounds (VOC)”.

While the particulate concentration will be 5 mcg/cu liter, far below the State permitted limit of 150 mcg/cu liter. But the cumulative impact on local workers and residents from continued exposure to a particulate which includes residue from treated waste must be considered.

**(v) alleged fact on which the petitioner intends to rely to support position on the issue**

The particulate will include pesticides, human and animal growth hormones, home and industrial chemicals, and many carcinogens. Studies of waste water show the following

substances:

The following information describes some of the chemicals which will be found in the particulate in the aerosol from the six cooling towers for Turkey Point 6&7 reactors:

Contaminants found in municipal waste water:

In general, a partial list the contaminants found in municipal waste-water can be found under the general headings of hydrophobic organic compounds, <sup>2</sup> endocrine disrupting compounds, OWCs including surfactant metabolites, steroids, stimulants, metal-chelating agents, disinfectants, antimicrobial agents, and pharmaceutical compounds .<sup>4</sup> The following is an incomplete list of specific compounds typically found in municipal waste water:

Antibiotics - carbadox, sulfachlorpyridazine, sulfadimethoxine, sulfamerazine, sulfamethazine, sulfathiazole, trimethoprim<sup>1</sup> sulfamethoxazole (SX)<sup>3</sup> nonionic surfactant degradation product 4-nonylphenol (NP), the solvent tetrachloroethene (PCE), and the disinfectant 1,4-dichlorobenzene (DCB), and 17 $\beta$ -Estradiol. <sup>3</sup> HHCB(fragrance component), caffeine, cholesterol, DEET(insect repellent), *para*-nonylphenol(surfactant), TBEP(flame retardant), and triclosan(an antimicrobial which may degrade into highly carcinogenic dioxins). <sup>6,8</sup>

1, 7-Dimethylxanthine(caffeine metabolite), Acetaminophen ,Caffeine, Carbamazepine (anticonvulsant), Cimetidine (antacid), Codeine, Cotinine (nicotine metabolite),Dehydronifedipine (metabolite of hypertension drug nifedipine), Diltiazem(hypertension drug), Diphenhydramine(antihistamine), Erythromycin(antibiotic), Fluoxetine(antidepressant), Gemfibrozil (antihyperlipidemic), Miconazole(anti-fungal), Salbutamol(albuterol-anti-asthmatic) Sulfamethoxazole (anti-biotic),Thiabendazole (anti-fungal), Trimethoprim (anti -biotic),Warfarin(anti-coagulant).<sup>7</sup>

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2. Barber, L.B., Keefe, S.H., Antweiler, R.C., Taylor, H.E., and Wass, R.D., 2006, **Accumulation of contaminants in fish from wastewater treatment wetlands**: Environmental Science and Technology, v. 40, no. 2, p. 603-611, doi:10.1021/es0514287.
3. Barber, L.B., Keefe, S.H., LeBlanc, D.R., Bradley, P.M., Chapelle, F.H., Meyer, M.T., Loftin, K.A., Kolpin, D.W., and Rubio, F., 2009, **Fate of sulfamethoxazole, 4-nonyphenol, and 17 $\beta$ -estradiol in groundwater contaminated by wastewater treatment plant effluent**: Environmental Science and Technology, v. 43, no. 13, p. 4843-4850, doi:10.1021/es803292v.
4. Conn, K.E., Barber, L.B., Brown, G.K., and Siegrist, R.L., 2006, **Occurrence and fate of organic contaminants during onsite wastewater treatment**: Environmental Science and Technology, v. 40, no. 23, p. 7358 - 7366, doi:10.1021/es0605117.
5. Kinney, C.A., Furlong, E.T., Werner, S.L., and Cahill, J.D., 2006, **Presence and distribution of wastewater-derived pharmaceuticals in soil irrigated with reclaimed water**: Environmental Toxicology and Chemistry, v. 25, no. 2, p. 317-326, doi:10.1897/05-187R.1.
6. Phillips, P.J., Stinson, B., Zaugg, S.D., Furlong, E.T., Kolpin, D.W., Esposito, K.M., Bodniewicz, B., Pape, R., and Anderson, J., 2008, **A multi-disciplinary approach to the removal of emerging contaminants in municipal wastewater treatment plans in New York State, 2003-2004**: Clearwaters, v. 38, no. 3, p. 48-59.
7. "The 19 Pharmaceuticals in the Study of Pharmaceuticals in Soil Irrigated with Reclaimed Water ", USGS Toxic Substances Hydrology Program [http://toxics.usgs.gov/highlights/pharm\\_soils/listing.html](http://toxics.usgs.gov/highlights/pharm_soils/listing.html)

**Circulating Water Chemical Injection** (source: Turkey Point Units 6 & 7  
COL Application Part 2 — FSAR 10.4-6 Revision 0)



Circulating water chemistry is maintained by a local chemical feed system skid at the CWS cooling tower.

Circulating water system chemical feed equipment injects the required chemicals into the circulating water at the CWS cooling tower basin.

This maintains a noncorrosive, nonscale-forming condition and limits the biological film formation that reduces the heat transfer rate in the condenser and the heat exchangers supplied by the circulating water system.

The specific chemicals used within the system are based on water conditions as determined by CWS water chemistry. The chemicals can be divided into six categories based upon function: biocide, algaecide, pH adjuster, corrosion inhibitor, scale inhibitor, and a silt dispersant. The pH adjuster, corrosion inhibitor, scale inhibitor, and dispersant are metered into the system continuously or as required to maintain proper concentrations. The biocide application frequency may vary with seasons.

The algaecide is applied, as necessary, to control algae formation on the cooling tower. The following chemicals are used to control circulating water chemistry:

- Biocide and algaecide - sodium hypochlorite
- pH adjuster - sulfuric acid
- Corrosion inhibitor/scale inhibitor/silt dispersant - High stress polymer
- Scale inhibitor - sodium salt of phosphonomethylate diamine and/or silicate inhibiting polymer

Addition of biocide and water treatment chemicals is performed by local chemical feed injection metering pumps and is adjusted as required.

Chemical concentrations are measured through analysis of grab samples from the CWS.

Residual chlorine is measured to monitor the effectiveness of the biocide treatment.

Footnote:

The following notice appeared in the Miami Herald on April 23, 2010:

Particles trapped in water droplets may be emitted from the cooling tower as "droplet drift" that is carried out with the warm exhaust air. High-efficiency mist eliminators will be installed to minimize drift. When using reclaimed water, potential emissions from the large cooling towers are estimated to be 55 tons/year of particulate matter (PM) and 21 tons/year of particulate matter with a mean diameter of 10 microns or less (PM10). When using saltwater that contains a much higher solids content as a backup source of cooling water, potential emissions for the cooling towers are estimated to be 943 tons/year of PM and less than 10 tons/year of PM10. The project will also result in the following estimated potential emissions increases from the small service water cooling towers and diesel engines: 25 tons/year of carbon monoxide; 36 tons/year of nitrogen oxides; 4 tons/year of PM, 3 tons/year of PM10; less than 1 ton/year of sulfur dioxide (SO2); and 4 tons/year of volatile organic compounds (VOC).

Particles trapped in water droplets may be emitted from the cooling towers as "droplet drift" that is carried out with the warm exhaust air. High-efficiency mist eliminators will be installed to minimize drift. When using reclaimed water, potential emissions from the large cooling towers are estimated to be 55 tons/year of particulate matter (PM) and 21 tons/year of particulate matter with a mean diameter of 10 microns or less (PM<sub>10</sub>). When using saltwater that contains a much higher solids content as a backup source of cooling water, potential emissions from the cooling towers are estimated to be 943 tons/year of PM and less than 10 tons/year of PM<sub>10</sub>. The project will also result in the following estimated potential emissions increases from the small service water cooling towers and diesel engines: 25 tons/year of carbon monoxide; 36 tons/year of nitrogen oxides; 4 tons/year of PM, 3 tons/year of PM<sub>10</sub>; less than 1 ton/year of sulfur dioxide (SO<sub>2</sub>); and 4 tons/year of volatile organic compounds (VOC).

The proposed new cooling tower project triggers preconstruction review pursuant to Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for PM and PM<sub>10</sub> emissions. In accordance with this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) for PM and PM<sub>10</sub> emissions. The draft permit includes the following preliminary BACT determinations for PM and PM<sub>10</sub> emissions: a maximum design droplet drift rate of 0.0005% of the circulating water flow rate from the cooling towers; and the use of ultra low sulfur diesel (0.0015% sulfur by weight, maximum) in the diesel-powered engines.

#### (vi) dispute with applicant/licensee

FPL contends that the absolute percentage of particulate which the aerosol from Turkey Point 6&7 will contain is very small, and even within permitted state limits. However, the Atomic Energy Act requires that all parties involved in producing nuclear energy protect public health and safety. And the particulate will, according to the FPL, average wind conditions, stay near the plant and near Biscayne National Park next door. This will threaten the health of employees at both installations and of visitors to Biscayne National Park. On days when stronger than average wind conditions the particulate will be spread over 65,000 acres of agricultural land to the west and north west where the accumulated particulate could threaten health by being absorbed in the fruit and vegetable growing there. At one time Turkey Point might have been a logical place to place a power plant. Today, with over 187,000 people living within 10 miles of the Turkey Point and a conservative projection of 280,000 by 2080, it is no longer a hospitable home for nuclear power. Do not challenge public health in this area. Either recommend that alternative energy sources be used or build the reactors somewhere

#### CONENTION: FOUR

#### Turkey Point Units 6 & 7 COL Application Part 3 — Environmental Report7-i Revision 0 **CHAPTER 7 ENVIRONMENTAL IMPACTS OF POSTULATED ACCIDENTS INVOLVING RADIOACTIVE MATERIALS** 7.2.3.2 p.7.2-5 Surface Water Exposure Pathways

Contention: The COL fails to completely address the radiation exposure that would be caused by a radiological accident. Specifically, there is no radiation dosage given for persons a) fishing and/or b) consuming marine-based food.

The following COL statements are evidence of omitted dosage calculations:

People can be exposed to radiation when deposited airborne radioactivity runs off into or is deposited onto surface water. The exposure pathway can be from drinking the water,

external radiation from submersion in the water, external radiation from human activities near the shoreline, or ingestion of fish or shellfish. MACCS2 only calculates the dose from drinking the water.

Surface water exposure pathways involving swimming, fishing, boating, and performing activities near the shoreline are not modeled by MACCS2.

Shoreline activities of all kinds represent a large, fundamental part of the Miami-Dade tourist-based economy. Because of the climate conditions, these shoreline activities attract many residents and numerous tourists year-round. There then exists an elevated potential for large numbers of people to receive a higher-than background dose of radiation after a radiological accident. The use of an inappropriate or inadequate computer code to evaluate radiological hazards cannot be used as an excuse to avoid calculating the dosage to large at-risk population through one of the most likely and concentrated exposure pathways. Therefore, omitting the analysis of these exposure pathways for shoreline activities is unacceptable and renders the application incomplete.

#### CONTENTION: FIVE

I, Harold R. Wanless, on behalf of CASE (Citizens Allied for Safe Energy) have the following contentions and concerns over the proposal to add additional nuclear power plant facilities at Turkey Point. The FPL COL application for two new nuclear reactors at Turkey Point must be considered invalid – both the FSAR (for instance Chapter 2) and also the ER analyses (these matters are relevant to nearly every chapter of the ER) because neither considers and neither incorporates any scientifically valid projection for sea level rise through this century and beyond. Doing so will dramatically diminish and likely negate the viability of this proposal.

Such a consideration is expressly required by 10 CFR 52.79

1. Human-induced atmospheric warming is recognized to be rapidly warming the polar regions of Earth (Bindoff et al., 2008; National Research Council, 2010) leading to warming Arctic and Antarctic Ocean waters, accelerating melt of permafrost and tundra (Schuur et al., 2008; and Zimov et al., 2006), destabilization of methane hydrates (Shakhova et al, 2010), and accelerating melting of the Greenland and Antarctic Sheets (Van den Broeke et al., 2009; Velicogna, 2009; Kerr, 2009; and Jiang et al., 2010). This is leading to accelerating global sea level rise.

2. Sea level has been rising at an accelerated rate since about 1930 (Wanless et al., 1994). This has resulted in a about a 9-inch rise of sea level in south east Florida. This rise is about the global rate of sea level rise. Presently global and south Florida sea level is rising at just greater than one foot (30 cm) per century but is accelerating at 0.17 millimeters per year.
3. The Science Committee (of which I am Chair) of the Miami-Dade County Climate Change Advisory Task Force issued a projection of future sea level rise for south Florida, stating that:

“With what is happening in the Arctic and Greenland, many respected scientists<sup>4</sup> now see a likely sea level rise of **at least** 1.5 feet in the coming 50 years and a total of **at least** 3-5 feet by the end of the century, possibly significantly more. Spring high tides would be at +6 to +8 feet. This does not take into account the possibility of a catastrophically rapid melt of land-bound ice from Greenland, and it makes no assumptions about Antarctica” (MDC-CCATF, 2008).

Since issuing this statement, Ice Sheet melting has dramatically increased on both Greenland and Antarctica (Van den Broeke et al., 2009; Velicogna, 2009; Kerr, 2009; and Jiang et al., 2010). More recent projections of sea level rise through the century are at or above the levels of our 2008 statement (Rahmstorf, 2010).

4. All climate and sea level assessments agree that ice melt, and sea level rise will be accelerating into the next century. This means that we will not be adjusting living with a three- or five-foot sea level rise but one that continues rising at an accelerating rate. If we have reached plus five feet by the end of the century, sea level will be rising at a foot per decade.
5. Circular No. 1165-2-211 of the United States Army Corps of Engineers, issued July 1, 2009, specifically directs incorporation of “the direct and indirect physical effects of projected future sea-level change in managing, planning, engineering, designing, constructing, operating, and maintaining USACE projects and systems of projects. Recent climate research by the Intergovernmental Panel on Climate Change (IPCC) predicts continued or accelerated global warming for the 21st Century and possibly beyond, which will cause a continued or accelerated rise in global mean sea-level. Impacts to coastal and estuarine zones caused by sea-level change must be considered in all phases of Civil Works programs” (USACOE, 2009). Surely a major addition to a nuclear power plant facility should fall under similar scrutiny.
6. I am not aware that sea level rise in all its ramifications has been considered and/or incorporated into the proposal for significant expansion of the Turkey Point nuclear facility.
7. It is critical that a realistic projected sea level rise through this century and beyond and an understanding of the rates of sea level rise be carefully considered and incorporated into

the evaluation. Rising sea level will have significantly have changed the coastal environments, base-level elevations, storm surge patterns, and population and demographics of southeast Florida by the time the proposed units come on line – and rising sea level will dramatically diminish southeast Florida and its population by the end of the century.

- a. Incorporating future sea level changes will affect the population trends for the south Florida area and as such the future power needs.
  - b. Incorporating future sea level changes will change the viability of a nuclear power complex that is increasingly isolated from the mainland and sitting in the middle of a combined Biscayne/Florida Bay.
  - c. Incorporating future sea level changes will change the safety of the complex during major storms and terrorist threats.
  - d. Incorporating future sea level changes will dramatically change the ability of the associated cooling complex to function and to remain isolated from and prevent harm to the adjacent marine environment.
  - e. Incorporating future sea level changes will change the ability of the complex to contain any nuclear accidents.
8. Do not see that any of this has been addressed.

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Respectfully submitted,  
Dr. Harold R. Wanless  
1231 Genoa Street,  
Coral Gables, FL 33134

Professor and Chair  
Department of Geological Sciences  
University of Miami  
P.O. Box 249176  
Coral Gables, FL 33124

Registered Florida Professional Geologist #985

## **INTRODUCTION TO CONTENTIONS SIX AND SEVEN:**

### **Introduction to contentions on so-called “low-level” radioactive waste**

So-called “low-level” radioactive waste is the official designation or category for nuclear waste that includes materials generated as byproduct material from the use of uranium. Much of this waste is *not* low risk and can remain radioactively hazardous for literally millions of years. By definition “low-level” radioactive waste is not irradiated fuel, the liquid and sludge from reprocessing irradiated fuel, nor the solid into which that liquid could be converted, but it does include plutonium and other transuranics [up to 100 nanocuries per gram], strontium-90 which concentrates in bones and teeth and iodine-129 which is biologically active and has a 16 million year half life.

So-called “low-level” radioactive waste contains many materials that are far from “low” in terms of measurable radiation, or radiological hazard, thus our use of the phrase “so-called” and the “quotes” on the words “low-level.” Fission products are inevitably generated from splitting uranium atoms to heat water to make electricity. Filters and resins that extract these fission products from the reactor core coolant and fuel pool cooling water become loaded and are classified as “low-level” radioactive waste even though some could give a lethal dose in 20 minutes if a person were exposed unshielded. “Low-level” waste can also include metal components and parts that become radioactive [activated] due to neutron bombardment. These fission product and activated metal wastes dubbed so-called “low-level” wastes are a dedicated outcome of the operation of a nuclear power reactor – it is not possible to operate without generating them as a result.

In July 2008, the one commercial disposal site in the United States open to the whole country for classes A,B and C “low-level” radioactive waste from commercial generators closed



to all but the its 3-state Atlantic compact generators in the states of South Carolina, New Jersey and Connecticut. As discussed below, there is today, no disposal site for the more concentrated Class B and C “low level” radioactive waste generated in Florida. Florida is in the Southeast Compact which does not have a disposal site to which it can send Class B and C, or Greater than C “low level” radioactive waste.

So-called “Low-Level” waste contentions have been filed in interventions on most of the COL applications currently pending before the US Nuclear Regulatory Commission including Calvert Cliffs, North Anna, Bellefonte, Vogtle, Fermi and Levy County. Some of the contentions have been filed with respect to the FSAR, some focusing on the ER, some both. Since one of the early admission of so-called “low-level” waste contentions was at North Anna, and Judge Bolwerk on admitting the concerns created two contentions – one pertaining to environmental, the other pertaining to safety, that convention is followed here.

Due to site-specific environmental concerns tied to the duration of the proposed 40 year license, CASE is filing additional contentions that are associated with the possibility that so-called “Low-Level” radioactive waste generated by Turkey Point 6 and 7 could be stored on-site for decades – indeed for the term of the license. Site-specific concerns include projected sea-level rise as well as issues associated with storm surge.

So-called “low-level” radioactive waste is a class that includes the filters and resins from the processing of liquid and gaseous radioactive waste streams, all components of the reactors that need replacement and/or are removed – including at times very large items, such as steam generators, and extremely radioactive items such as broken control rods or other reactor internals. Some of the radionuclides in this waste will be hazardous (defined as 10 – 20 half-lives) for hundreds of thousands to millions of years.

Efforts to minimize the generation of this waste are laudable – however these processes may, in some cases result in larger volumes of less concentrated waste or even more



concentrated waste that must be stored with care for workers, the public, CASE members and the Turkey Point biome. The accumulation of this waste on the Turkey Point site – potentially for the duration of its generation, and potentially beyond (pending decommissioning) is not trivial. These concerns are material to the issue of granting a COL to FPL for Turkey Point 6 and 7 since the generation of so-called “low-level” waste cannot be severed from the operation of these reactors.

## **CONTENTION: SIX**

### **Environmental Impact of Extended Storage of So-Called “Low-Level” Waste at Turkey Point**

The Florida Power and Light (FPL) COL application is inadequate because the Environmental Report (Chapter 3 section 3.5.3) assumes that the classes B and C so-called “low-level” radioactive waste (LLRW) generated by proposed Turkey Point Units 1 and 2 will be promptly (e.g., in approximately two years) shipped offsite and fails to address the environmental impacts in the event that PEF will need to manage such LLW on the Turkey Point site for a more extended period of time. In addition it is assumed that extended storage and forms of so-called “low-level” waste management on the site that might be triggered by or associated with extended storage, such as processing, treatment or possible burial or incineration will have no environmental impact – and FPL omits any reference to these in Chapter 5 of the ER, Environmental Impacts.

The information, references and bases of Contention 4-SA are incorporated here by reference. Please see the declaration of Diane D’Arrigo in support of this contention.

The extended storage of radioactive waste generated if the COL for TP Units 6 & 7 is granted is likely. The waste storage plan which would result if the merits of Contention 4-SA are won, should be subject to the analysis of both the FPL ER and eventually the NRC’s EIS for Turkey Point. The absence of such a plan leads to the absence of such an analysis.

Of particular importance in an analysis of environmental impacts are any treatment or other processes that FPL may use to concentrate or otherwise alter this waste stream. Of particular concern is any plan to bury on-site or incinerate this material – both of which may be

disguised by other names, such as “heat treat” or “pyro process.” Such activities are not currently reflected in the FPL ER Chapter 3, section 5 nor is the impact of an accumulation of waste longer than the anticipated months or years.

The additional basis is this: a so-called “low-level” waste storage plan must anticipate the possible inundation of the site during a storm surge in the not-so-distant future. The lack of inclusion of this analysis violates 52.79(iii) and would jeopardize the health, safety and well being of CASE member and TP workers as well as the general public and the biome of South Florida.

The elevated inundation of the Turkey Point site with extended storage, and therefore decades accumulation of so-called “Low-Level” waste (either processed or not) has not been adequately analyzed in the FPL ER Chapter 2, section 7 or the site description in chapter 3, or in the sections on radiological consequences in Chapter 5, section 4.

Some so-called “low-level” waste plans considered in the COL process have included storing the waste outdoors on a concrete pad. Such a plan (not mentioned by FPL) is an example of the sort of situation that could result in the unplanned, wide dispersal of radioactive materials from Turkey Point, beyond the Turkey Point site boundary.

The lack of inclusion of a thorough analysis of the potential for elevated storm surge, site inundation and the possible dispersal of so-called “Low-Level” waste off the TP site violates 52.79(iii) and would jeopardize the health, safety and well being of CASE member and TP workers as well as the general public and the biome of South Florida.

Hurricanes, cyclones and other severe weather are well understood in South Florida. What history is teaching us is that we assume that we must be informed by the recent past – but today this is not sufficient – today we must also be informed by future projections – or alternately look at the past in deep time. Sea levels have been significantly different in deep time. We have huge

bodies of government – both local, regional, national and international projecting that the sea level is going to be significantly different at Turkey Point during the term of the proposed licenses for Units 6 and 7. The fact that these issues have not been addressed in the impact assessment of adding two more reactors at Turkey Point points to a large and obvious hole in the analysis.

## **CONTENTION: SEVEN**

### **So-Called “Low-Level” Radioactive Waste Extended Storage Plan Missing**

FPL’s application (FSAR Chapter 11, section 4.6) is inadequate because the Safety Analysis Report assumes that the Class B and C so-called “low-level” radioactive waste generated by the proposed Turkey Point Units 6 & 7 will be promptly (e.g. in approximately 2 years per the AP1000 DCD: page 11.4-6 ) shipped offsite despite lack access for disposal. The FSAR fails to address compliance with Part 20 and Part 50 Appendix I (ALARA) in the event that PEF will need to manage such waste on the Turkey Point Site for a more extended period of time, possibly its entire licensed operating period or longer.

The invocation of a letter with a third party for off-site management of waste generated by Turkey Point 6 and 7 does not validate that an actual transfer of title and physical transfer of the waste will occur; return of such waste to the Turkey Point site is required in the absence of disposal site access. The waste could come back from 3<sup>rd</sup> party processors since they are only licensed to store for 365 days and have limited storage capacity.

In order to meet the requirements of 52.79, NRC staff must be able to assess “a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a combined license,” 10 CFR 52.79(a)(3) specifies that the FSAR must include: “The kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 of this chapter.”

## **Discussion**

Please see the declaration of Diane D’Arrigo of Nuclear Information and Resource Service offered in Support of this contention addressing the non-viability of off-site and “third party” options that FPL cites in the COL for proposal for two reactors at Turkey Point. There is

today no option to send Florida-generated so-called “low-level” waste off site for disposal, and there is also no option, including Studsvik that will deliver an iron-clad guarantee that the same waste will not return to the generator under the terms of the contract.

Section 11.4.6 “COMBINED LICENSE INFORMATION FOR SOLID WASTE MANAGEMENT SYSTEM PROCESS CONTROL PROGRAM” of the FPL Final Safety Analysis Report for Turkey Point 6 and 7 states: “No additional onsite radwaste storage is required beyond that described in the DCD.” DCD means the “Design Control Document” provided by Westinghouse for the AP 1000 – now in revision 17 (so much for standardized designs). The AP1000 DCD, section 11.4-6 states:

The packaged waste storage room provides storage for more than two years at the expected rate of generation and more than a year at the maximum rate of generation. One four-drum containment pallet provides more than 8 months of storage capacity for the liquid mixed wastes and the volume reduced liquid chemical wastes at the expected rate of generation and more than 4 months at the maximum rate.

In consideration of the range of options provided here, CASE has used the phrase “e.g. approximately 2 years” when referring to the FPL short-term plan for so-called “low-level” radioactive waste in an effort to capture the uncertainty in the DCD.

The real-world situation that is not reflected in the Westinghouse DCD nor in the FPL Final Safety Analysis Report (FSAR) is that there is not currently a so-called “Low-Level” radioactive waste disposal site available for any Class B, C or Greater-Than-C so-called “low-level” radioactive waste that would be generated at Turkey Point Units 6 or 7. The three sites that accept so-called “low-level” waste for disposal in the United States are restricted – either to the level of radioactivity accepted (a site in Clive Utah accepts only Class A) or to the geographic area of generation – (a site in Richland Washington accepts waste generated within the Rocky Mountain and Northwest Compacts, a site in South Carolina accepts waste from the Atlantic

waste compact), and a potential new site in Texas has numerous unresolved license conditions and would only be licensed for disposal of so-called “low-level” radioactive waste generated in VT or TX. These restrictions create a barrier to the acceptance of waste generated in Florida at any existing disposal site.

As demonstrated in the D’Arrigo Declaration, PEF lacks a credible basis for its assertion that it will definitely be able to ship so-called “low-level” radioactive waste generated at the proposed TP units 6 and 7 sites off of the site permanently within two years. No such disposal option exists today and two years is not a credible time span to generate a new off-site disposal option.

In violation of 52.79(a)(3) the FPL COLA fails to offer any details whatsoever about waste management and storage beyond two years. As discussed in the D’Arrigo Declaration, neither the NRC nor the public therefore has any basis for evaluating the adequacy of the COLA with respect to long-term radioactive waste storage.

As stated above --

10 CFR 52.79 (a) The final safety analysis report shall include the following information, at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a combined license....

In addition to the matter of storage details, any and all future treatment and processing that could add to the routine and accidental radioactive and chemical releases and exposures from the operation of the reactors, management of high and so-called “low-level” radioactive waste and all of the accompanying activities, is necessary in order to assess the compliance with both 10 CFR 20 (for both workers and the public) as well as ALARA (10 CFR 50 Appendix I). It is

incumbent upon the applicant to provide sufficient information to demonstrate compliance with all applicable regulations for the radioactive waste generated by Turkey Point 6 & 7. The following regulations are offered as a context of the level of consideration and analysis that the NRC must engage with in order to “reach a final conclusion on all safety matters...before issuance of a combined license...” these include: 10 CFR 20, 10 CFR 30, 10 CFR 50, 10 CFR 61, 10 CFR 71, 10 CFR 100, 40 CFR 190 and 49 CFR 171-180. Petitioner is not framing the contention with respect to these regulations, merely noting them since a certain level of specificity is required in a plan in order for the NRC to make a “final conclusion” with respect to all of these relevant regulations.

The FPL FSAR Chapter 11, section 4-2 makes assertions that the waste generated at Turkey Point units 6 and 7 will be transferred to a third party, a Swedish corporation named Studsvik operating in Tennessee:

Consistent with current commercial agreements, a third-party contractor processes, stores, owns, and ultimately disposes of low-level waste generated as a result of operations. Activities associated with the transportation, processing, and ultimate disposal of low-level waste comply with applicable laws and regulations in order to ensure the public’s health and safety. In particular, the third party contractor conducts its operations consistent with NRC regulations (e.g., 10 CFR Part 20).

Under 10 CFR 20.2001, reactor licensees may transfer low-level radioactive waste material to another licensee that is specifically licensed to accept and treat waste prior to disposal. Studsvik, Inc., has a licensed low-level radioactive waste treatment facility in Erwin, Tennessee. FPL has signed a letter of intent with Studsvik to enter into negotiations for a contract for the performance of work by Studsvik to include the shipment, processing, storage, and disposal of low-level radioactive waste produced by Units 6 & 7 (Reference 205). Under the proposed contract, Studsvik would treat the Class B and C waste at its Erwin, Tennessee facility and thereafter take responsibility for storage and final disposal.

Regardless of ownership, the Studsvik license limits storage at its facility to 1 year. Even if Studsvik were to become owner of the waste, neither it nor other TN processors and waste

generators have access to disposal for Class B and C so-called “low-level” radioactive wastes. The Studsvik waste can be stored for one year at the WCS site in TX but waste stored longer than that violates the TX WCS storage license. The WCS commercial disposal site is A) not operating and B) limited to TX and VT waste—not TN or Florida- generated waste. Although any compact can consider accepting out-of-compact waste, they have all rejected it. Importantly, the licensed capacity of the storage and disposal sites at WCS TX are too limited to take Florida’s or Tennessee’s generated nuclear waste. (See declaration of Diane D’Arrigo in support of this contention). Finally, there are still unresolved conditions and a question as to whether the WCS will operate. Texans have raised concerns with the whole licensing of the WCS site with federal agencies.

It is fair to say that FPL has an aspiration to hand-off the so-called “low-level” waste Turkey Point 6 & 7a would generate as quickly as possible, but it has not demonstrated conclusively that this is going to be possible.

CASE is concerned that authorizing the production of this waste (by granting the COL) when there is no disposal site or assured other option, will result in the Turkey Point site becoming a long-term so-called radioactive storage site. It is reasonable to protect CASE members to require a plan that addresses this circumstance in such a way to protect their health and safety, as well as workers at TP 6 and 7, as well as the older existing units.

## **CONTENTION: EIGHT**

### **Limited Work Authorization**

CASE adds to our petition a request that NRC deny the request from FPL to begin construction of the non-nuclear portions of this project (limited work authorization, LWA). As was the case in the Levy County COL that Progress Energy filed in 2008, the damage that could be done to the Turkey Point site under a LWA is considerable. While the Levy site is “Greenfield” the construction in the location of the Turkey Point units 6 and 7 would negatively impact wetlands,

coastal estuary and other sensitive areas. We offer a letter from the South Florida Water Management District (SWFMD exhibit) and the issues raised in it as the basis for this contention. We further invoke the expertise of the local water authority, though we make no claim that it is working on behalf of CASE. Please do not allow any type of construction on Turkey Point without first granting the full COL authority.

#### CONCLUSION

The Petitioner requests that this petition to intervene and request for hearing be granted. The foregoing contentions should be admitted because they clearly satisfy all of the Commission's requirements in 10 C.F.R. § 2.309.

Respectfully submitted this the 17<sup>th</sup> day of August 2010.

\_\_\_\_\_/s/\_\_\_\_\_  
Barry White  
Citizens Allied for Safe Energy  
10001 SW 129 Terrace  
Miami, FL 33176



## CERTIFICATE OF SERVICE

I hereby certify that copies of this CITIZENS ALLIED FOR SAFE ENERGY PETITION TO INTERVENE AND REQUEST FOR HEARING was served on the following via email and via the EIE system:

Office of the Secretary  
ATTN: Docketing and Service  
Mail Stop 0-16C1  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001  
[hearingdocket@nrc.gov](mailto:hearingdocket@nrc.gov)

Patrick Moulding, (301) 415-2549  
*Office of General Counsel*  
*US Nuclear Regulatory Commission*  
[Patrick.Moulding@nrc.gov](mailto:Patrick.Moulding@nrc.gov)

Antonio Fernandez, (561) 304-5288  
*Florida Power and Light*  
[Antonio.Fernandez@fpl.com](mailto:Antonio.Fernandez@fpl.com)

\_\_\_\_\_/s/\_\_\_\_\_  
Barry White  
08/17/2010

**UNITED STATES OF AMERICA  
U.S. NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

Before Administrative Judges:  
E. Roy Hawkens, Chairman  
Dr. Michael F. Kennedy  
Dr. William C. Burnett

In the Matter of	)	
	)	
FLORIDA POWER & LIGHT COMPANY	)	
	)	Docket Nos. 52-040-COL
	)	and 52-041-COL
Turkey Point Units 6 and 7	)	
	)	
Combined License Application	)	

August 11, 2011

Citizens Allied for Safe Energy, Inc. Motion For  
Reconsideration of Amended Contentions 1,2 and 5 And  
New Contentions Following Fukushima Near-Term  
Task Force Recommendations

INTRODUCTION

On April 18, 2011 Citizens Allied for Safe Energy, Inc., (CASE) submitted three amended contentions from its revised petition to intervene in Florida Power and Light Company's COL for Turkey Point 6 & 7 licensure filed on August 17, 2010. Contentions 1,2 and 5 from that petition were amended to reflect events on and after March 18, 2010 in Japan. Although the submission was deemed to be timely, the June 29, 2011 Memorandum and Order Denying CASE's Motion to Admit Newly Proffered Contentions recharacterized the contentions as newly proffered and denied all three. However, at 2, the Memorandum and Order states:

*"If the Task Force's recommendations result in changes to regulations that*

*are relevant to Florida Power & Light Company's (FPL's) Combined License (COL) application, FPL's compliance with those regulations would become part of the NRC Staff's technical review. ... Additionally, such changes, or any other new and material information that emerges from the Fukushima event and its aftermath, might give rise to an opportunity to proffer new contentions in this proceeding."*

CASE now contends that The Near-Term Task Force Review Of Insights From The Fukushima Dai-Ichi Accident and the Recommendations for Enhancing Reactor Safety in the 21<sup>st</sup> Century issued on July 12, 2011 are relevant to FPL's COL for Turkey Point 6 & 7 and do merit the proffering of Contentions 1,2 and 5, as well as two new contentions, 9 and 10, so numbered to avoid confusion with earlier contention numbers.

writing, FPL has responded indicating that it would oppose all such motions and NRC Staff has stated it did not have sufficient information to support or oppose the motions and would await the filing of the motion to do so.

#### Untimely Filing

On August 11, 2011 CASE advised all parties of difficulties regarding its attempt to renew its EIE Certificate and prepared this motion: CITIZENS ALLIED FOR SAFE ENERGY MOTION REQUESTING A ONE DAY FILING DELAY FOR A FILING RELATED TO THE FUKUSHIMA TASK FORCE REPORT. CASE was unable to access the EIE system on August 11, 2011 so all documents, including the referenced motion, related to this filing were filed on August 12, 2011 although the motion was sent to all parties on August 11, 2011. FPL and the NRC staff indicated that they would not oppose the motion.

#### Good Faith Consultation

As directed in the ASLB Initial Scheduling Order of March 30, 2011, at 9, CASE, as a Good Faith Consultation, advised all parties on August 10, 2011 that it will soon be filing motions regarding its Contentions 1,2 and 5, as well as new contentions, in light of The Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident requesting if any of the parties to the subject COL's

wish to discuss CASE's forthcoming filings, to please contact CASE. FPL and NRC Staff accepted the email as Good Faith Consultation.

## BACKGROUND

The lessons to be learned from the tragic events on March 11, 2011 in Japan and their aftermath in relation to the production and management of nuclear energy will certainly continue to emerge well into the future and beyond the Task Force Review issued on July 12, 2011. However the Report, at 69 - 70, does draw some insightful and important conclusions related specifically to physical aspects of reactors as well as giving general direction for re-evaluation of existing regulations and for the process of establishing new regulations. These recommendations seem to apply to CASE's Contentions :

### *Clarifying the Regulatory Framework*

*1. The Task Force recommends establishing a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations. (Section 3)*

### *Enhancing Mitigation*

*4. The Task Force recommends that the NRC strengthen SBO mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events.  
(Section 4.2.1)*

*7. The Task Force recommends enhancing spent fuel pool makeup capability and instrumentation for the spent fuel pool. (Section 4.2.4)*

*8. The Task Force recommends strengthening and integrating onsite emergency response capabilities such as EOPs, SAMGs, and EDMGs.  
(Section 4.2.5)*

### *Strengthening Emergency Preparedness*

*9. The Task Force recommends that the NRC require that facility emergency plans address prolonged SBO and multiunit events.  
(Section 4.3.1)*

*10. The Task Force recommends, as part of the longer term review,*

*that the NRC pursue additional EP topics related to multiunit events and prolonged SBO. (Section 4.3.1)*

*11. The Task Force recommends, as part of the longer term review, that the NRC should pursue EP topics related to decisionmaking, radiation monitoring, and public education. (Section 4.3.2)*

#### *Improving the Efficiency of NRC Programs*

*12. The Task Force recommends that the NRC strengthen regulatory oversight of licensee safety performance (i.e., the ROP) by focusing more attention on defense-in-depth requirements consistent with the recommended defense-in-depth framework. (Section 5.1)*

Some of the above recommendations are already relevant to the three contentions under consideration; some (10 and 11) will become relevant when the longer term review is completed. In this motion CASE will review the substance of each contention as related to the Near-Term recommendations and will submit a similar analysis in a motion following the issuance of the longer term report.

### **CONTENTIONS**

**CONTENTION 1 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR AN ADEQUATE PUBLIC SAFETY PLAN**

**CONTENTION 2 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR THE SAFE AND ORDERLY EVACUATION OF THE POPULATION DURING OR FOLLOWING A NUCLEAR EVENT (UNUSUAL NUCLEAR OCCURANCE)**

**CONTENTION 5 – FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 ANALYSIS TO CONSIDER OR INCORPORATE ANY SCIENTIFICALLY VALID PROJECTION FOR SEA LEVEL RISE AND CLIMATE CHANGE THROUGH THE END OF THIS CENTURY AND BEYOND.**

**CONTENTION 9 (A New Contention) – ALL PENDING LICENSURE**

**PROCEDURES FOR ALL UNLICENSED NUCLEAR REACTORS SHOULD BE SUSPENDED FOR AT LEAST TWO YEARS OR UNTIL THE NRC BOARD OF COMMISSIONERS ACCEPTS THE TASK FORCE REPORT AND ALL NEAR-TERM AND LONGER TERM RECOMMENDATIONS ARE FULLY DEFINED AND IMPELMENTED**

**CONTENTION 10 (A New Contention) – THE COMMISSION MUST ESTABLISH AND ENFORCE NEW GUIDELINES FOR THE SEPERATON OF THE NUCLEAR INDUSTRY FIRMS AND REPRESENTATIVES FROM PARTICIPATION IN STAFF DELIBERATIONS, DECISIONS AND ACTIONS.**

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### **SUBSTANCE OF CONTENTIONS:**

**CONTENTION 1 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR AN ADEQUATE PUBLIC SAFETY PLAN**

To prepare a full and comprehensive critique of the Review in relation to all of CASE'S Contentions would be a monumental task. We can only hope that the Contentions will be admitted so that this can occur thoroughly and objectively. We will comment on some statements from the Review and relate them to previous CASE statements in these proceedings to support our contentions.

From its first filing on this Contention on August 17, 2010, CASE has been concerned with two basic issues, timely evacuation of the almost 200,000 people in the area and the proper pre-distribution of potassium iodide (PI).

From Revised Petition August 17, 2011, at 14:

- 1. Evacuation plans are not adequate for timely evacuation of all the people who could be affected in an accidental radiation release.*
- 2. Evacuation screening and shelter provisions lack capacity for the number of people living in the evacuation zone.*
- 3. Potassium iodide (KI) cannot be delivered in a timely manner to provide best protection from thyroid cancer.*
- 4. Reactor design proposed for TPN 6 & 7 elevates risk of radiation release and makes effective evacuation and KI plans more critical. In the Task Force Review, these subjects are not discussed as direct*

*NRC concerns.*

**Current evacuation plans by offsite officials and emergency planners cannot work.** On August 4, 2011, CASE executive, Dr. Philip Stoddard, a biologist and Mayor of South Miami, Florida (18 miles from Turkey Point) met with Mr. Curtis Somerhoff, Director, M-D County Dept. Emergency Management. A transcript of the meeting is available but here are Dr. Stoddard's summary notes relating to potassium iodide (PI): (Attachment 1)

Mayor Stoddard: County has no plan to get potassium iodide (KI) to children and pregnant women before radiation exposure in a radiological emergency, as is necessary to prevent thyroid damage.

Mayor Stoddard that the World Health Organization calls for predistribution. In Miami, all the KI is to be distributed at the ERCs after an emergency is already in progress. In North Carolina, KI is mailed to people in their houses.

Mr. Somerhoff says pre-distribution options have been tried before, allowing people to pick up KI in advance at distribution points, but that public response For this discussion, we will address Potassium Iodide distribution and general health and safety concerns under Contention 1. We will discuss evacuation concerns under Contention 2.

was very limited.

Mayor Stoddard suggested distributing KI through annual checkups with family doctors and pediatricians who can make sure people receive it, and that anyone allergic to iodine is excluded.

Mr. Somerhoff commented on the difficulties getting people to take the H1N1 flu vaccine.

Mayor Stoddard observed the extreme effectiveness of pediatric vaccination programs, and pointed out that the flu vaccines are usually late, limited in quantity, and require a special appointment. Most children (the most vulnerable to radioiodines) get an annual medical checkup and that would be an excellent and reliable distribution point.

This is the Task Force's final statement on these issues: (at 62)

*11.4 Conduct training in coordination with the appropriate Federal partners, or radiation, radiation safety and the appropriate use of KI in the local community*

What are we missing? Apparently, on one hand, the Review says that the NRC must get more involved with matters beyond the plants and on the other it passes off the details of evacuation and PI distribution to others. A review of the many statements and points of information provided by CASE in these submittals will highlight the failures and short comings at every turn in these concerns.

It is impossible to evacuate the almost 200,000 people in Homestead on three roads on 35 degrees of the compass in time to avoid contamination; it will take less than an hour to cover 10 miles under normal wind speed and usual direction. FPL ETE says it will take 2 to 11 hours to evacuate plus 1 to 6 hours to prepare. FPL and NRC never, repeat, never, directly addressed or acknowledged those numbers nor did they accept the Contention so it could be properly discussed. And shadow evacuation north of Homestead will block the northward movement so any one in Homestead will be trapped.

In the Memorandum and Order (Denying CASE's Motion to Admit Newly Proffered Contention) of June 29, 2011 it is stated (at 6) in regard to Contention 1

"CASE's newly proffered Contention 1 alleges that FPL's COL application "does not adequately protect public health of people in the Turkey Point Plume Exposure Zone following an accidental radiation release . . . ." CASE Petition at 3. In addition to grounding this contention on the same arguments previously considered and rejected by this Board (see supra note 6 and accompanying text),<sup>14</sup> CASE advances the following two new arguments: (1) "[i]t is not clear that critical emergency communications will be viable in the event of a loss of power and back-up power at the site" (CASE Petition at 10); and (2) in the event of a core melt accident, FPL's Emergency Plan should "order an evacuation" of persons within a 10-mile radius of the Turkey Point facility. Id., Exh. 7, Attachment C-1 Risk – 10-Mile [Emergency Planning Zone] and Probability Shenanigans [hereinafter CASE Petition, Exh.7].<sup>15</sup> In our view, CASE has not shown that the two "new" arguments underlying Contention 1 – i.e., ***(1) FPL's emergency communications might not be viable in the event of a station blackout, and (2) in the event of a core melt accident, FPL's Emergency Plan should order an evacuation of persons within a 10-mile radius of the Turkey Point facility – are based on new information that is materially different from previously available information.***" (emphasis added)



**CASE now contends that the Near-Term Review specifically and strongly supports CASES contention and these issues.** The Review states(at ix):

*Enhancing Mitigation*

*In evaluating the expected frequency of loss of offsite power, the guide addresses the expected frequency of high winds, including those from tornadoes not addressed. Nor does the guide address the concurrent consequences on the facility of the external hazards impacting offsite power. Consequently, and hurricanes, and the expected annual snowfall. The impact of other external hazards (e.g., seismic and flooding) on the frequency of **loss of offsite power** is common-cause failures of all onsite and offsite power resulting from a naturally*

*4. The Task Force recommends that the NRC strengthen **station blackout mitigation** capability at all operating and new reactors for design-basis and Further, at 33, Section 4.2.1, Prolonged Loss of Alternating Current Power, it is stated: *Beyond-design-basis External Events. (Section 4.2.1) occurring external event **are not considered.** (at 33)**

*The Task Force concludes that revising 10 CFR 50.63 to expand the coping capability to include cooling the spent fuel, preventing a loss-of-coolant accident, and preventing containment failure would be a significant benefit. The Task Force also concludes that a strategy is needed to provide these functions for a **prolonged period without ac power** from the normal offsite or emergency onsite sources without the vital ac distribution systems within the plant. (at 35).*

*These recommendations for revision to 10 CFR 50.63 would provide additional safety margins for a prolonged SBO as a part of the overall risk-informed, defense-in-depth regulatory framework providing adequate protection of public health and safety. (emphasis added) (At 37).*

**How much clearer can it be that the Review totally supports CASE's contention on this subject? Many possibilities exist for creating a SBO; the Review addressed some. Only a comprehensive analysis of the Fukushima incident plus an objective and thorough of all possible eventualities is warranted. At the very least Contention 1 should be admitted to permit considered and full review of the related issues.**

Existing regulations, procedures and processes are faulty and must, as the Review contends, be re-revised and changed. A new reactor licensing process based on the existing regulations is, in the Task Force's view, inadequate and, CASE's contention, all new licenses should be subjected to the new procedures and regulations once they are established.

*The Task Force applied this conceptual framework during its deliberations. The result is a set of recommendations that take a balanced approach to defense-in-depth as applied to low-likelihood, high-consequence events such as prolonged station blackout resulting from severe natural phenomena. These recommendations, taken together, are intended to clarify and strengthen the further mitigation capability. The Task Force observes that this collection of approaches is largely the product of history; it was developed for the purpose of reactor licensing in the 1960s and 1970s and supplemented as necessary to address significant events or new issues. **This evolution has resulted in a patchwork regulatory approach.** (at 20)*

*The Task Force has concluded that the situation is somewhat different in terms of beyond-design-basis **flooding**. First, flooding can be caused by a number of different phenomena: river flooding; dam failure; precipitation; **storm surge**; tsunami; or internal failures of pipes, pumps, or tanks within the plant. Second, flooding can have a cliff-edge effect; that is, **a small increase in flooding level** regulatory framework for protection against natural disasters, mitigation, and emergency preparedness, and to improve the effectiveness of the NRC's programs. (at viii)*

*The Policy Statement on Safety Goals for the Operations of Nuclear Power Plants (Federal Register in August 1986 (51 FR 30028)) sets forth two qualitative safety goals, which are supported by two quantitative supporting objectives. **The following are the qualitative safety goals:** Individual members of the public should be provided a level of protection from the consequences of nuclear power plant operation such that individuals bear no significant additional risk to life and health. Societal risks to life and health from nuclear power plant operation should be comparable to or less than the risks of generating electricity by viable competing technologies and should not be a significant addition to other societal risks.*

***The Task Force concludes that the NRC's safety approach is incomplete without a strong program for dealing with the unexpected, including severe accidents.** Continued reliance on industry initiatives for a fundamental level of*

*defense-in-depth similarly would leave gaps in the NRC regulatory approach. accidents, both of which involve external challenges or multiple failures beyond the design basis. This beyond-design-basis layer of defense-in-depth is broadly consistent with the IAEA concept of “design extension conditions” (presented in Draft Safety Standard DS 414).*

*The Commission has clearly established such defense-in- depth severe accident requirements for new reactors (in 10 CFR 52.47(23), 10 CFR 52.79(38), and each design certification rule), thus bringing unity and completeness to the defense-in-depth concept. Taking a similar action, within reasonable and practical bounds appropriate to operating plants, would do the same for operating reactors. (at 20)*

## **CONTENTION 2 -- FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 TO PROVIDE FOR THE SAFE AND ORDERLY EVACUATION OF THE POPULATION DURING OR FOLLOWING A NUCLEAR EVENT (UNUSUAL NUCLEAR OCCURANCE)**

As a general statement on planning for a nuclear incident, we read in the Task Force Review, at 60:

*The current regulatory approach for the evaluation of offsite EP following a natural disaster is robust and **has proven its effectiveness following recent hurricanes**, including Hurricane Katrina. An NRC task force examined the lessons learned from the active 2005 hurricane season in a report dated March 30, 2006 (ADAMS Accession No. ML060900005).*

Having lived in Miami, within 25 miles of Turkey Point since 1969, this writer can testify that preparing for **a hurricane has no comparison to** preparing for **a nuclear event**. We knew for days about Hurricane Andrew and had every opportunity to prepare for it. Such a comparison is specious, wrong and dangerous. Any planning order that adopts that premise will not be worth the paper on which it is written.

*As supported by the proposed EP rule, the scenarios described in NUREG/CR-7002 provide a basis for licensees to develop a comprehensive set of ETEs. Performing additional time estimates for natural disasters with unpredictable damage would offer no corresponding benefit to licensee personnel in providing*

*appropriate protective action recommendations to offsite officials or to offsite emergency planners in developing evacuation and other protective action strategies.*

At 61, the Review states: *“The Task Force acknowledges that every situation will differ, so detailed preplanning in this area is not plausible.”*

**Conflicting information between The Task Force Review and FPL statements:**

The Task Force Review, under Emergency Preparedness (at 50 – 62) states:

***ETEs are currently recalculated when the population around a nuclear plant either increases or decreases significantly. (at 60)***

This statement seem to be **at variance** with the following statement from FPL’s September 13, 2010 Response to CASE, at 28: Much of the discussion in

*Contention 2 centers on a prediction that the population in the Plume Exposure Pathway EPZ will increase significantly during the term of the licenses for Turkey Point Units 6 & 7. Revised Petition at 17-18. However, CASE fails to point to any requirement for incorporating potential population increases when evaluating the ability to conduct a timely evacuation. Indeed, U.S. Census data or other reliable data should be made current by adjusting them for population growth as necessary, but **NUREG-0654 only “requires adjustment of census data that is not current and accurate, and not projected evacuation time estimates for future populations.”** Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 NRC 1170, 1179 (1983) (emphasis added). An ETE is an estimate based upon the snapshot of the population at the time the ETE study is prepared;<sup>14</sup> there is no requirement that it incorporate a forecast of the population as of a later date, and CASE has not alleged any such*

SW 152 St, 13-15 miles from TPN. Studies of actual evacuations indicate shadow evacuation frequency does not decline within 25 miles of a reactor.

*Our requirement.*

**Clearly, the Task Force and FPL cannot both be correct.** There may have been a change in the regulations since FPL made the statement above. Barring that this is an example of the need to review the guidelines. Too much is at stake here. We are talking about a realistic and possible plan to escape a nuclear disaster; right now it does not exist.

In the statement below, the Task Force seems to have taken the position that

real planning for evacuation is not possible, to too far from CASE's position that for Turkey Point 6 & 7 at Homestead, Florida, it is impossible:

*As supported by the proposed EP rule, the scenarios described in NUREG/CR-7002 provide a basis for licensees to develop a comprehensive set of ETEs. Performing additional time estimates for natural disasters with unpredictable damage would offer no corresponding benefit to licensee personnel in providing appropriate protective action recommendations to offsite officials or to offsite emergency planners in developing evacuation and other protective action strategies.*

At 60, we read:

*As supported by the proposed EP rule, the scenarios described in NUREG/CR-7002 provide a basis for licensees to develop a comprehensive set of ETEs. Performing additional time estimates for natural disasters with unpredictable damage would offer no corresponding benefit to licensee personnel in providing appropriate protective action recommendations to **offsite officials or to offsite emergency planners** in developing evacuation and other protective action strategies.*

#### **REPORT ON A RECENT CASE MEETING WITH THE MIAMI-DADE COUNTY DIRECTOR OF THE DEPARTMENT OF EMERGENCY MANAGEMENT**

##### **Current evacuation plans by offsite officials and emergency planners cannot work.**

On August 4, 2011, CASE executive, Dr. Philip Stoddard, a biologist and Mayor of South Miami, Florida (18 miles from Turkey Point) met with Mr. Curtis Somerhoff, Director, M-D County Dept. Emergency Management. A transcript of the meeting is available but here are Dr. Stoddard's summary notes relating to evacuation: (Attachment 1)

Below, in black, are the concerns I raised at our meeting. Participant responses are in colored italics.

1. Projected evacuation times are invalid. "Shadow evacuation" calculations in Evacuation Time Estimate (ETE) study include no one living farther north than roads cannot handle actual likely evacuation.

Mr. Somerhoff questioned whether studies of evacuation following Three Mile

Island in 1979 are still valid in predicting behavior of people today because have so much more information about actual risks of radiation.

Mayor Stoddard stated that scientific studies of prior behavior are the best predictors of future behavior. Further, because the public now understands that areas 25-45 miles from Fukushima became uninhabitable, he would expect the shadow evacuation area to increase, not decrease from Three Mile Island.

Mr. Somerhoff does not believe gridlock will occur on Florida's Turnpike and other major egress roads (e.g., US 1, Krome Ave.) because emergency managers can exercise highly effective options for traffic control.

Mayor Stoddard believes the artificial boundary of the existing Turkey Point shadow evacuation area produces an unrealistically small estimate of the shadow evacuation population and that actual evacuees would put far more cars on the road than estimated, leading to complete gridlock.

Mr. Somerhoff stated that the County is seeking to become the contracting agent for future ETEs to make them more reliable and accountable

Mayor Stoddard says it can't happen too soon. The current ETE is not realistic and leaves us vulnerable to catastrophe.

2. In one hour, under average winds, radiation plume would escape 10-mile Emergency Planning Zone (EPZ) around Turkey Point. A decision to notify public following a radiological emergency is projected to take 70 minutes.

Mr. Somerhoff explained nuclear accidents do not happen all at once, and that we have time to get people out of the way of a radiation plume.

Mayor Stoddard observed that in every major radiological release from a nuclear plant, people have been exposed faster and farther than the government was aware at the time, that extensive radiation was detected only after fallout had landed, and that most people were warned after they were exposed rather than before. Further, winds wander, and radiation plumes swept over wide arcs following both Chernobyl and Fukushima accidents.

4. The County's radiological plan annex lists radiological shelter space for less than 1/3 of potential evacuees from 10-mile radius Emergency Planning Zone (EPZ) around Turkey Point.

Mr. Somerhoff noted that the County has considerable flexibility in adjusting the number of shelters to match the demand. Other shelters can be opened anywhere in the County, and that Broward and Palm Beach Counties can provide shelters for displaced residents of Miami-Dade County. Mr. Somerhoff's department expects far fewer people than the ~204,000 residents of the EPZ would evacuate



to local shelters, and that most would drive farther.

Mayor Stoddard noted that studies of prior radiological evacuations showed that most evacuees did indeed drive farther, typically 75-100 miles. He asked how many people were expected to actually use designated radiation emergency shelters.

Mr. Somerhoff did not have that number at hand.

5: The County has made no provision for protection or evacuation of people living farther than 10 miles from Turkey Point (including South Miami, Coral Gables, Pinecrest, Miami, Miami Beach, etc.).

Commissioner Suarez noted that this area included his entire district, and felt this matter was very serious.

Mr. Somerhoff pointed out that the 10 miles circle is stipulated in the federal guidelines. He mentioned that the NRC is looking at mandating wider evacuation zones in the future.

Mayor Stoddard noted that the current Federal evacuation guidelines are only a minimum requirement, and they do nothing to protect residents of his city. As for future changes in NRC guidelines, he noted that Congress is being heavily lobbied by the nuclear power industry to delay implementing recommendations of the NRC Fukushima Taskforce.

6. The County has only one Emergency Reception Center (ERC), which could be in fallout path and which cannot handle the full evacuation population of over 200,000 people.

Mr. Somerhoff stated that the equipment was mobile so the County

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the NRC Fukushima Taskforce.

6. The County has only one Emergency Reception Center (ERC), which could be in

CASE Comments on the meeting with Mr. Somerhof:  
fallout path and which cannot handle the full evacuation population of over 200,000 people.

Mr. Somerhoff stated that the equipment was mobile so the County could relocate the ERC to any of several alternate locations on a moment's notice.

Mayor Stoddard wanted to see the alternate locations mentioned in the text of the actual plan.

7. Processing of 200,000 evacuees at Tamiami ERC would be too slow. This concern was expressed in confidence by first responders after a practice drill.

Mayor Stoddard asked for details on the screening of evacuees.

Mr. Somerhoff stated that they could open 6 screening stations on short order, and eventually 50 stations. It takes 30 seconds on average to screen an evacuee for radiation exposure

**There is more to the interview but these excerpts are sufficient to make CASE's point. Miami-Dade County's emergency evacuation plans are perfunctory and superficial. We are in trouble.**

CASE's comments on the meeting with Mr. Somerhof:

This meeting is reported extensively here because so much of the NRC's program depends on local agencies to plan and carry out programs to protect the local population. CASE contends that this responsibility is not affectively executed or planned with sufficient cognizance of the seriousness of the situation.

Regarding Mr. Somerhoffs statements, how much more does the public need about the risks of radiation? Enough to know that if there is a nuclear event you run like hell. If Mr. Sommerhoff does not believe gridlock can occur at U.S.1 and Southwest 344<sup>th</sup> Street, and that you can control 200,000 people fleeing for their lives, he's a better than I, Gunga Din. And, if, as he say, the current ETE's are unreliable and unaccountable, how does that effect FPL's projections and estimates. Back to the drawing boards, right?

**"NUCLEAR ACCIDENTS DO NO HAPPEN ALL AT ONCE"** He actually said that? No comment necessary.



The only emergency response agency which seems to be on the correct page is the U.S. Coast Guard. In CASE's August 17, 2010 filing, a letter attached states that the Coast Guard would not send its forces into a radiological situation. FEMA, The State of Florida, Miami-Dade County and others cavalierly said they would be there. I don't think we saw too many support staff running toward Fukushima. Please admit this contention so we can discuss these issues.

At 61, the Review states: *"The Task Force acknowledges that every situation will differ, so detailed preplanning in this area is not plausible."*

***Exactly! Which is why not only should Turkey Point 6 & 7 not be built at Turkey Point, 3 & 4 should not be there either.***

**CONTENTION 5 – FAILURE AND OMISSION OF THE FPL COL FOR THE PROPOSED TURKEY POINT NUCLEAR REACTORS 6&7 ANALYSIS TO CONSIDER OR INCORPORATE ANY SCIENTIFICALLY VALID PROJECTION FOR SEA LEVEL RISE AND CLIMATE CHANGE THROUGH THE END OF THIS CENTURY AND BEYOND.**

The Task Force Review make many statements regarding flooding, storm surge and other meteorological events and the need to prepare for them. However, sea level rise and climate change are not mentioned once.

*In summary, the major elements of the NRC regulatory approach relevant to the Fukushima accident, or a similar accident in the United States, are seismic and **flooding** protection (well established in the design-basis requirements); SBO protection (required, but beyond the design-basis requirements); and severe accident mitigation (expected but neither the severe accident mitigation features nor the SAMGs are required). In addition, U.S. facilities could employ EDMGs as **can produce a large effect in terms of equipment failure and potential plant damage.** (emphasis added) With respect to this issue, the experience at Fukushima Dai-ichi Units 5 and 6 appears more informative than that at Fukushima Dai-ichi Units 1, 2, 3, and 4. Units 5 and 6 are sited at an elevation of 13 meters (43 feet) above sea level and, based on the information available, the*

*tsunami reached a level of 14 meters (46 feet), producing about 1 meter (3 feet) of flooding on the site. In contrast, Units 1 through 4 appear to have been inundated by about 5 meters (16 feet) of sea water. The extensive damage at Units 1 through 4 is therefore not surprising. However, Units 5 and 6 also experienced extensive damage of critical safety equipment as a result of about 1 meter (3 feet) of flooding, leaving the units at significant risk of core damage. Only one air-cooled diesel generator remained available at Unit 6 and functioned with significant operator action to maintain cooling at the two units. This circumstance illustrates the concept of a cliff-edge effect. (At 36).*

***A beyond-design-basis flood could be established through extensive, probabilistic hazards analysis.*** *As a practical matter, and to prevent undue delays in implementing additional SBO protections, the Task Force concludes that locating SBO mitigation equipment in the plant one level above flood level (about 5 to 6 meters (15 to 20 feet)) or in watertight enclosures would provide sufficient enhanced protection for this level of defense-in-depth. These recommendations for revision to 10 CFR 50.63 would provide additional safety margins for a prolonged SBO as a part of the overall risk-informed, defense-in-depth regulatory framework providing adequate protection of public health and safety. (At 37).*

#### *Enhancing Mitigation*

*4. The Task Force recommends that the NRC strengthen station blackout mitigation capability at all operating and new reactors for design-basis and beyond-design-basis external events. (Section 4.2.1)*

*8. The Task Force recommends strengthening and integrating onsite emergency response capabilities such as emergency operating procedures, severe accident management guidelines, and extensive damage mitigation guidelines. (Section 4.2.5)*

#### *Strengthening Emergency Preparedness*

*9. The Task Force applied this conceptual framework during its deliberations. The result is a set of recommendations that take a balanced approach to defense-in-depth as applied to low-likelihood, high-consequence events such as prolonged station blackout resulting from severe natural phenomena. **These recommendations, taken together, are intended to clarify and strengthen the regulatory framework for protection against natural disasters,** mitigation, and emergency preparedness, and to improve the effectiveness of the NRC's programs. (at viii)*

**subject to storm surge, hurricanes, sea level rise, not to mention that sits on top of the water supply for the entire Given**

**this concern regarding natural disasters, it is difficult to understand why neither the Task Force, the NRC Staff nor FPL has ever acknowledged the Climate Change Study commissioned by the Miami-Dade County Board of County Commissioners and directed by Dr. Harold Wanless, a distinguished professor of Biology at the University of Miami. We live here, not a thousand miles away. Building two new reactors in a flood zone, on land already below sea level Florida Keys, can hardly be the result of a functioning administrative regulatory system divorced from industry influence.**

**CONTENTION 9 (A New Contention) – ALL PENDING LICENSURE PROCEDURES FOR ALL UNLICENSED NUCLEAR REACTORS SHOULD BE SUSPENDED FOR AT LEAST TWO YEARS OR UNTIL THE NRC BOARD OF COMMISSIONERS ACCEPTS THE TASK FORCE REPORT AND ALL NEAR-TERM AND LONGER TERM RECOMMENDATIONS ARE FULLY DEFINED AND IMPELMENTED**

Existing regulations, procedures and processes are, as stated frequently in the Review, wanting and, must, as the Review contends, be re-revised and changed. A new reactor licensing process based on the existing regulations is, in the Task Force's view, inadequate and, it is CASE's contention, all new licenses should be subjected to the new procedures and regulations once they are established. Here are statements from the Review which speak directly to this Contention:

*• ... the Task Force observes that **for new reactor designs**, the Commission's expectations that beyond-design-basis and severe accident concerns be addressed and resolved at the design stage are largely expressed in policy statements and staff requirements memoranda, only reaching the level of rulemaking when each design is codified through design certification rulemaking.*

(at 19-20)

CASE is suggesting that at least two years be the minimum time period to suspend licensure proceedings based, partially, on this Task Force statement (at x):

*Recognizing that rulemaking and subsequent implementation typically take **several years** to accomplish, the Task Force recommends interim actions to enhance protection, mitigation, and preparedness while the rulemaking activities are conducted. (at x).*

Further:

*In the Task Force's deliberations, it became apparent that the existing guidance does not present a completely clear and consistent framework for decisionmaking. (at 4).*

*Starting in the 1980s and continuing to the present, the NRC has maintained the design-basis approach and expanded it to address issues of concern. The NRC added requirements to address each new issue as it arose **but did not change the fundamental concept of design-basis events or the list of those events; nor did the NRC typically assign the concept of adequate protection to these changes.** (emphasis added). (at 15)*

*The NRC has inspected the guidelines and strategies that licensees have implemented to meet the requirements of 10 CFR 50.54(hh)(2). However, there are no specific quality requirements associated with these requirements, and the quality assurance requirements of 10 CFR Part 50, Appendix B, do not apply. The EDMGs are requirements for addressing events well beyond those historically considered to be the design basis and **were implemented as adequate protection backfits.** In order to address the changing security threat environment, the Commission effectively redefined what level of protection should be regarded as adequate. This is a normal and reasonable, **albeit infrequent,** exercise of the NRC's responsibilities of **protecting public health and safety.***

*This (current) regulatory approach, established and supplemented piece-by-piece over the decades, has addressed many safety concerns and issues, using Task Force provide the Commission with its best insights and vision for an improved regulatory framework.*

*The Task Force finds that the Commission's longstanding defense-in-depth philosophy, supported and modified as necessary by state-of-the-art probabilistic*

*risk assessment techniques, should continue to serve as the primary organizing principle of its regulatory framework. The Task Force concludes that the application of the defense-in-depth philosophy can be strengthened by including the best information and techniques available at the time. **The result is a patchwork of regulatory requirements and other safety initiatives**, (emphasis added) all important, but not all given equivalent consideration and treatment by licensees or during NRC technical review and inspection. Consistent with the NRC's organizational value of excellence, the Task Force believes that improving the NRC's regulatory framework is an appropriate, realistic, and achievable goal. (at vii).*

*... the Task Force also concludes that a more balanced application of the Commission's defense-in-depth philosophy using risk insights would provide an enhanced regulatory framework that is logical, systematic, coherent, and better understood. Such a framework would support appropriate requirements for increased capability to address events of low likelihood and high consequence, thus significantly enhancing safety. Excellence in regulation demands that the*  
*Improving the Efficiency of NRC Programs*

*12. The Task Force recommends that the NRC strengthen regulatory oversight of licensee safety performance (i.e., the Reactor Oversight Process) by focusing more attention on defense-in-depth requirements consistent with the recommended defense-in-depth framework. (Section 5.1) (at ix). explicit requirements for beyond-design-basis events.*

*... The Task Force has concluded that a collection of such "extended design-basis" requirements, with an appropriate set of quality or special treatment standards, should be established.*

*The Task Force recommendation for an enhanced regulatory framework is intended to establish a coherent and transparent basis for treatment of the Fukushima insights. It is also intended to provide lasting direction to the staff regarding a consistent decisionmaking framework for future issues.*

#### *Clarifying the Regulatory Framework*

*1. The Task Force recommends establishing a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations. (Section 3) (at ix).*

*Recognizing that rulemaking and subsequent implementation typically take several years to accomplish, the Task Force recommends interim actions to enhance protection, mitigation, and preparedness while the rulemaking activities are conducted. (at x).*

***As new information and new analytical techniques are developed, safety standards need to be reviewed, evaluated, and changed, as necessary, to insure that they continue to address the NRC's requirements to provide reasonable assurance of adequate protection of public health and safety.***

*The Task Force believes, based on its review of the information currently available from Japan and the current regulations, that the time has come for such*

*....the Task Force concludes that continued operation and continued licensing activities do not pose an imminent risk to the public health and safety and are not inimical to the common defense and security. (AT 18)*

*change.*

- In response to the Fukushima accident and the insights it brings to light, the Task Force is recommending actions, some general, some specific, that it believes would be a reasonable, well-formulated set of actions to increase the level of safety associated with adequate protection of the public health and safety.*

- The Commission has come to rely on design-basis requirements and a patchwork of beyond-design-basis requirements and voluntary initiatives for maintaining safety. (At 18).*

*The Task Force therefore concludes that the future regulatory framework should be based on the defense-in-depth philosophy, supported and modified as necessary by state-of-the-art PRA techniques. The Task Force also concludes that the application of defense-in-depth should be strengthened by formally establishing, in the regulations, an appropriate level of defense-in-depth to address requirements for "extended" design-basis events. (at 20)*

)

Existing regulations, procedures and processes are faulty and must, as the Review contends, be re-revised and changed. A new reactor licensing process based on the existing regulations is, in the Task Force's view, inadequate and, CASE's contention, all new licenses should be subjected to the new procedures and regulations once they are established.

**CONTENTION 10 (A New Contention) – THE COMMISSION MUST ESTABLISH AND ENFORCE NEW GUIDELINES FOR THE SEPERATON OF THE NUCLEAR INDUSTRY FIRMS AND REPRESENTATIVES FROM PARTICIPATION IN STAFF DELIBERATIONS, DECISIONS AND ACTIONS.**

Apparantly Charman Jaczko anticipated the problematical relationship



between the NRC and the nuclear industry. In his Tasking Memorandum of March 23, 2011 on of his issues for Near Term Review stated:

“The task force efforts should be informed by some stakeholder input but should be independent of industry efforts.” (at 77).

Even the adversarial posture assumed by FPL is reflected in the NRC Staff response. As a naïve pro se intervenor, this writer originally assumed that

we are all in this together, working for the public good. After all, FPL is a public utility. It is not necessary to spell out here the many ways in which nuclear

In the year that CASE has been an intervenor in the FPL licensure of Turkey Point 6 & 7, it has become apparent that there is a close relationship between the Company and the NRC staff. Responses to petitions from the two entities arrive simultaneously and are frequently almost verbatim copies of each other.

companies can and do influence nuclear policy and procedures.

To relate the events at Fukushima to the Task Force Review, the following report is enlightening. On April 28, 2011 the following report was published:

*Japan: Industry-government collusion in Fukushima?*

Via Slate.com: [Japan's nuclear disaster and industry-government collusion: the price of compromised safeguards](#). Excerpt:

“As Japan struggles to regain control of its Fukushima Daiichi power plant, there's lots of talk about which technical safeguards the plant lacked and which should be required in future nuclear facilities. But a new report points to another kind of safeguard that failed: public institutions.

Nuclear power plants are designed for what the industry calls defense in depth: the inclusion of backup safeguards in case the primary safeguards fail. No single layer of protection should be trusted entirely.

The same is true of people. No power plant operator should be trusted to maintain the safety of its reactors. We need multiple layers of scrutiny—inspectors, regulators, independent nuclear experts—to double- and triple-check the operator's work.

These layers of scrutiny failed in Japan, according to a story in Wednesday's *New York Times*. The report, by Norimitsu Onishi and Ken Belson, details a web of collusion among Japanese regulators, politicians, and power companies.

It's a sobering illustration of what can happen when institutions that should be checking one another merge into a complacent team."

April 28, 2011 at 09:39 PM in [Disasters](#), [Politics and health](#), [Radiation](#) | [Permalink](#)

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## INDUSTRY INFLUENCE

It is well known that some industry organizations actually draft legislation and laws that are passed by governmental agencies which regulate those industries. Also, many functions in the nuclear industry are passed off to quasi governmental agencies, sometimes with dire results. One such agency was fined heavily in Florida when they passed off actual supervision to FPL when a systemwide blackout occurred. Needless to say, things have gone too far. The NRC operates almost with no higher level supervision when it should actually be more closely aligned with the Department of Energy. Nuclear energy should be one seat at the energy table with an administrative body determining the best balance of energy sources for any given situation.

**It should be noted that, although several industry organizations were consulted in the preparation of the Task Force Review, there was no provision for public input.**

The Review states:

*• The primary responsibility for safety rests with licensees, and the NRC holds licensees accountable for meeting regulatory requirements. In addition, voluntary safety initiatives by licensees can enhance safety if implemented and maintained effectively, but should not take the place of needed regulatory requirements. The NRC inspection and licensing programs give less attention to beyond-design-basis requirements and little attention to industry voluntary initiatives since there are no requirements to inspect against. Because of this, the NRC gives much more attention to design-basis events than to severe accidents.*



- *With the exception of a few special cases, licensees of operating reactors are not required to develop or maintain a PRA, although all licensees currently have a PRA. These PRAs are of varying scope and are generally not required to meet NRC-endorsed quality standards. New reactor applications must include a description of a design-specific PRA and its results and must address severe accident protection and mitigation features.*

- *Lastly, the Task Force observes that for new reactor designs, the Commission's expectations that beyond-design-basis and severe accident concerns be addressed and resolved at the design stage are largely expressed in policy statements and staff requirements memoranda, **only reaching the level of rulemaking when each design is codified through design certification rulemaking.** (at 19-20)*

*The Task Force concludes that the NRC's safety approach is incomplete without a strong program for dealing with the unexpected, including severe accidents. Continued reliance on industry initiatives for a fundamental level of defense-in-depth similarly would leave gaps in the NRC regulatory approach. The Commission has clearly established such defense-in- depth severe accident requirements for new reactors (in 10 CFR 52.47(23), 10 CFR 52.79(38), and each design certification rule), thus bringing unity and completeness to the defense-in-depth concept. Taking a similar action, within reasonable and practical bounds appropriate to operating plants, would do the same for operating reactors. (at 20)*

## CONCLUSION

Taken together, the many cautionary, advisory, forward looking and sometimes totally negative statements by the Task Force can only lead us to the conclusion that the NRC and its supervision of the nuclear industry have arrived where they are with questionable guidelines and standards. To go forward using the same regulatory standards and tools hardly seems prudent. One must question how, with all of the negative observations in the Review, the following statement can be made:

***...the Task Force concludes that continued operation and continued licensing activities do not pose an imminent risk to the public health and safety and are not inimical to the common defense and security.***

CASE submits that in making this statement, the Task Force was over reaching.

Such a conclusion should only come after a full and comprehensive review not only of the implications of the Fukushima incident, but also after a soul searching analysis of the NRC, the way it does business and its relation to the nuclear industry. Possibly the most important lesson to be learned from Fukushima is the danger of having a situation where the government and industry are so intertwined and dominant in providing energy. In Japan, 80% of their energy comes from nuclear. The truth is, Fukushima was not an accident. It was the result of one form of energy being, in reality, the only form of energy. Putting six reactors together in a Tsunami prone area does not make for an accident; it makes for an actuarial inevitability. It was only a matter of time. Putting two more reactors at Turkey Point is preparation for exactly the same senerio; it is only a matter of time.

Please admit CASE's contentions and permit a real dialogue on nuclear energy in this nation.

and resolved at the design stage are largely expressed in policy statements and staff requirements memoranda, only reaching the level of rulemaking when each design is codified through design certification rulemaking.

The principles of “independence” and “openness” focus on the importance of obtaining inputs from the full range of stakeholders, including consideration of many and possibly conflicting public interests, and open channels of communication. The duration and scope of the Task Force’s effort have necessarily limited the degree of stakeholder interaction that was possible. The implementation of Task Force recommendations will require additional effort by the NRC staff to conduct stakeholder outreach through its normal processes (e.g., rulemaking, licensing, public meetings, and workshops). (at 5)

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before the Licensing Board:

E. Roy Hawkens, Chair

Dr. Michael F. Kennedy

Dr. William C. Burnett

In the Matter of )  
 ) Docket No. 52-040 and 52-041  
Florida Power & Light Company )  
 )  
Combined License Application for )  
Turkey Point Units 6 & 7 )  
\_\_\_\_\_ \_ )

**CERTIFICATE OF SERVICE**

I, Barry J. White, hereby certify that copies of the document above and all documents related to this motion were served upon the following persons by Electronic Information Exchange and/or electronic mail.

U.S. Nuclear Regulatory  
Commission  
Atomic Safety and Licensing Board  
Panel  
Mail Stop: T-3 F23  
Washington, DC 20555-0001  
Joshua Kirstein, Law Clerk, ALSB  
Email: [josh.kirstein@nrc.gov](mailto:josh.kirstein@nrc.gov)

E. Roy Hawkens  
Administrative Judge, Chair  
Email: [roy.hawkens@nrc.gov](mailto:roy.hawkens@nrc.gov)

Dr. Michael F. Kennedy  
Administrative Judge  
Email: [michael.kennedy@nrc.gov](mailto:michael.kennedy@nrc.gov)

Dr. William C. Burnett  
Administrative Judge  
Email: [william.burnett2@nrc.gov](mailto:william.burnett2@nrc.gov)

U.S. Nuclear Regulatory  
Commission  
Office of the General Counsel  
Mail Stop: 0-15 D21

Washington, DC 20555-0001  
Robert Weisman, Esq.  
Marian Zobler, Esq.  
Sara Kirkwood, Esq.  
Sara Price, Esq.  
Joseph Gilman, Paralegal  
Karin Francis, Paralegal  
Email: [Robert.Weisman@nrc.gov](mailto:Robert.Weisman@nrc.gov);  
[marian.zobler@nrc.gov](mailto:marian.zobler@nrc.gov);  
[sara.kirkwood@nrc.gov](mailto:sara.kirkwood@nrc.gov);  
[sara.price@nrc.gov](mailto:sara.price@nrc.gov);  
[joseph.gilman@nrc.gov](mailto:joseph.gilman@nrc.gov);  
[karin.francis@nrc.gov](mailto:karin.francis@nrc.gov)

U.S. Nuclear Regulatory  
Commission  
Office of Commission Appellate  
Adjudication  
Mail Stop: 0-7H4M  
Washington, DC 20555-0001  
Email: [ocaamail@nrc.gov](mailto:ocaamail@nrc.gov)  
OGC Mail Center: Members of this  
office have received a copy of this  
filing  
by EIE service.

Florida Power & Light Company  
700 Universe Blvd.  
Juno Beach, Florida 33408  
Mitchell S. Ross  
Vice President & General Counsel –  
Nuclear  
Email: [mitch.ross@fpl.com](mailto:mitch.ross@fpl.com)

Florida Power & Light Company  
801 Pennsylvania Ave. NW Suite  
220  
Washington, DC 20004  
Steven C. Hamrick, Esq.  
Mitchell S. Ross  
Email: [steven.hamrick@fpl.com](mailto:steven.hamrick@fpl.com);  
[mitchell.ross@fpl.com](mailto:mitchell.ross@fpl.com)

Counsel for the Applicant  
Pillsbury, Winthrop, Shaw, Pittman,  
LLP  
2300 N Street, N.W.  
Washington, DC 20037-1122  
Alison M. Crane, Esq.  
Stefanie Nelson George, Esq.  
John H. O'Neill, Esq.  
Matias F. Travieso-Diaz, Esq.  
Maria Webb, Paralegal  
Email:  
[alison.crane@pillsburylaw.com](mailto:alison.crane@pillsburylaw.com);  
[stephanie.george@pillsburylaw.com](mailto:stephanie.george@pillsburylaw.com);  
[john.oneill@pillsburylaw.com](mailto:john.oneill@pillsburylaw.com);  
[matias.traviesodiaz@pillsburylaw.com](mailto:matias.traviesodiaz@pillsburylaw.com);  
[maria.webb@pillsburylaw.com](mailto:maria.webb@pillsburylaw.com);

Counsel for Mark Oncavage, Dan  
Kipnis, Southern Alliance for Clean  
Energy and National Parks  
Conservation  
Association Turner Environmental  
Law  
Clinic Emory University School of

Law  
1301 Clifton Rd. SE  
Atlanta, GA 30322  
Lawrence D. Sanders, Esq.  
Mindy Goldstein, Esq.  
Email: [lsande3@emory.edu](mailto:lsande3@emory.edu);  
[magolds@emory.edu](mailto:magolds@emory.edu)

Counsel for Mark Oncavage, Dan  
Kipnis,  
Southern Alliance for Clean Energy  
and  
National Parks Conservation  
Association  
Everglades Law Center, Inc.  
3305 College Avenue  
Ft. Lauderdale, Florida 33314  
Richard Grosso, Esq.  
Email: [richard@evergladeslaw.org](mailto:richard@evergladeslaw.org)

Counsel for the Village of Pinecrest  
Nabors, Giblin & Nickerson, P.A.  
1500 Mahan Drive, Suite 200  
Tallahassee, FL 32308  
William C. Garner, Esq.  
Gregory T. Stewart, Esq.  
Email: [bgarner@ngnlaw.com](mailto:bgarner@ngnlaw.com);  
[gstewart@ngnlaw.com](mailto:gstewart@ngnlaw.com)

Citizens Allied for Safe Energy, Inc.  
10001 SW 129 Terrace  
Miami, FL 33176  
Barry J. White  
Email: [bwtamia@bellsouth.net](mailto:bwtamia@bellsouth.net)

U.S. Nuclear Regulatory  
Commission  
Office of the Secretary of the  
Commission  
Mail Stop: O-16C1  
Washington, DC 20555-0001  
Email: [hearingdocket@nrc.gov](mailto:hearingdocket@nrc.gov)

Dated: August 12, 2011

/signed electronically by/

Barry J. White

Authorized Representative

Citizens Allied for Safe Energy, Inc.

10001 SW 129 Terrace

Miami, Florida 33176

Email: [bwtamia@bellsouth.net](mailto:bwtamia@bellsouth.net)

# Turkey Point...the future Atlantis

