Attachment 1

CASE CONTENTION 9:
FLORIDA POWER & LIGHT COMPANY'S REVISED LONG TERM
LOW-LEVEL NUCLEAR WASTE FROM TURKEY POINT 6 AND 7
IS INADEQUATE TO PROTECT PUBLIC HEALTH AND SAFETY
ALL CIRCUMSTANCES

10CFR Part 2.309(f)

(i) In FLORIDA POWER & LIGHT COMPANY'S (FPL) MOTION FOR SUMMARY DISPOSITION OF CASE CONTENTION 7, filed on January 3, 2012, FPL addresses the issue raised by Citizens Allied for Safe Energy, Inc. (CASE) in its Contention 7, namely that so-called low-level waste produced by proposed Turkey Point reactors 6 & 7 would not find permanent storage elsewhere in the nation. FPL addresses this matter in the January 3 filing. CASE will show that the solution presented by FPL does not address all concerns regarding long term storage of the waste.

LLW. CASE, for brevity, will use the abbreviation LLW for low-level waste but this is a serious misnomer since the readers of this document are well aware that some of the material is highly toxic and lethal.

Florida Power and Light has provided a plan for the storage of LLW radioactive waste. Here is FPL's statement of how it now intends to address the matter of LLW from the proposed Turkey Point 6 & 7 reactors:

> *FPL's FSAR identifies the means by which exposures to radiation from LLW will be maintained within the dose limits of Part 20 of the NRC's regulations because it states "how it intends to handle an accumulation of LLRW." See Levy County, CLI-10-02, (slip op. at 24-25). As explained in FPL's FSAR, FPL intends to handle accumulated LLW by shipping it offsite and potentially employing waste minimization strategies. COLA Rev. 3, FSAR at 11.4-1. If additional onsite storage capacity for Class B and Class C LLW is required because sufficient off-site storage or disposal capacity is unavailable, FPL will expand the capacity of its licensed storage facilities, consistent with existing NRC guidance. Id.; see also id. at 11.4-3. This additional onsite storage would be designed and built utilizing the design guidance provided in NUREG-0800, Standard Review Plan Chapter 11 Radioactive Waste Management Appendix 11.4-A, Design Guidance for Temporary Storage of Low-Level Radioactive Waste. (Attachment 4).8 Id. FPL will be able to utilize the NRC's existing regulatory framework, described in NRC Regulatory Issue Summary 2008-32, "Interim Low-Level Radioactive Waste Storage at Reactor Sites," to conduct written safety analyses under 10 C.F.R. § 50.59. RIS 2008-32 at 2 (Attachment 5). These written safety analyses allow a licensee to "make changes in the facility as described in the final safety analysis report," such as expanding the capacity of the LLW storage facility already described in the FSAR, without a license amendment if certain conditions are satisfied. 10 C.F.R. § 50.59(c)(1). If the conditions of 10 C.F.R. § 50.59 are not met, FPL would still be able to add on-site storage capacity by seeking an amendment to its COL. RIS 2008-32 at 3. AT 8/9.*

This new information made available to CASE on January 3, 2012 reveals that the applicant's plan is not sufficient because it does not consider information that CASE offered in its original Petition To Intervene (Contention 5, Revised Petition, filed August 20, 2010) about the likelihood that the reactor site will be inundated by water, either routinely due to sea level rise, or intermittently due to storm surge related to hurricanes. The applicant's plan for extended storage of LLW waste will not provide sufficient physical safety measures to cope with an aquatic environment. While the applicant plans to elevate the AP1000's, it does not state, nor would it be feasible to elevate the auxiliary extended waste storage structures. Given the true potential for total inundation of Turkey Point public safety in the immediate area and beyond must be considered exhaustively.

Further, as FPL indicates in the January 3 filing, the availability of permanent storage elsewhere in the nation is not assured. At this moment, some limited storage space has been approved in Texas but the matter of storing 60 to 80 years of low-level waste forever is not addressed by FPL in the subject filing. FPL offers an extensive explanation as to how it will address this matter: on-site storage. Based on the AP1000 information attached to FPL's filing, the LLW will eventually require 24,000 square feet of storage space.

(ii) BASIS FOR CONTENTION

CASE has previously raised the matter of sea-level rise and storm surge with respect to the applicant's plan to operate nuclear

reactors far into the end of this century on a site that may not be qualified for that activity. However, the plan to elevate the reactors does not address the extended storage of LLW on the site.

The subject FPL filing quotes the Appendix to NUREG- 8:

> *For long-term onsite storage (e.g., for several years, but within the operational life of the plant), the storage facility should be designed to the guidelines of Appendix 11.4-A to this SRP section, including updated guidance from SECY 93-323 and SECY 94-198*
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> *Further guidance is provided in Generic Letter No. 80-09, 81-38, and 81-39, and in SECY 94-198 and SECY 93-323. It should be noted that under SECY 94-198 and SECY 93-323, the provision requiring a Part 30 license for the storage of waste beyond 5 years has been eliminated. However, the balance of the technical information presented in Generic Letter 81-38 on the storage of low-level waste remains applicable for the purpose of this guidance.*

Generic Letter No. 81-83 states:

> *For proposed increases in storage capacity for low-level waste generated by reactor operation and maintenance at power reactor sites, the safety of proposal must be evaluated by the licensee under the provisions of 10 CFR 50.59. If (1) your existing license conditions or technical specifications do not prohibit increased storage, (2) no unreviewed safety question exists, and (3) the proposed increased storage capacity does not exceed the generated waste projected for five years, the licensee may provide the added capacity," document the 50.59 evaluation and report it to the Commission annually or as specified in the license."*

FPL's proposed plan for extended on site storage will most required given the lack of LLW storage facilities in the nation. Over forty years ago when Turkey Point 3 & 4 were planned and built, who would have thought that not one ounce of high level waste would not have moved off of the site. And now, following the rejection of more than forty proposed LLW disposal sites over the last two decades, all low-level waste is kept on site due to lack of storage availability anywhere else in the nation. The closure of Yucca Mountain as a nuclear waste storage site is evidence of the prevalent negative attitude in the nation on housing such material. It is unlikely to change in the future.

(iii) 10CFR PART 52.79 still requires the Commission to make a safety finding before granting a COL. The consideration of site-specific features LLW storage has been established by the Commission and other ASLB Panels. It is important that the applicant not only have an extended storage plan for LLW radioactive waste, but it is not sufficient to merely have a plan; it must be a plan that will deliver a basis for a safety finding before granting a COL, therefore it is within scope.

(iv) In its January 3, 2012 filing, FPL highlights two concerns regarding the long term storage of LLW:

1) FPL postulates that there should and will be off-site storage available: NRC statements also assume that this will be the case.

2) There must be a plan for long term storage; FPL addresses this extensively citing extensive relevant regulations which address the subject.

CASE contends that the availability of off-site storage is and will continue to be a national problem. The fact that FPL makes a strong case regarding long term storage in its new filing is new information showing that FPL really does not believe off-site storage will be available in the short term and, probably, in the long term either. CASE also contends that, now that FPL plans to store LLW on site for an extended period of time, climactic conditions present greater problem with increased actuarial probability of a catastrophic could occur at Turkey Point in the 80 year life time of the reactors and beyond. As sea level rises, storm surges will also increase. Add this to increasing weather anomalies around the globe and we have a major set of atmospheric and climate issues which must be addressed when consider long storage of LLW at Turkey Point. The radioactive life of the by products and service materials for a nuclear reactor is from 300 to 240,000 years.

Our experts offer these concerns which we will address one issue at a time:

1) **Lack of off-site LLW storage nationally.**

A declaration from Diane D'Arrigo is attached (Attachment 2) which addresses this subject. Here is an expert from her declaration:

1. Revisions to the Turkey Point Units 6 and 7 application commit to providing for on-site storage for "low-level" radioactive waste for 2 years and plan that there will be offsite disposal after that. It is quite possible and highly likely that 2 years after the commencement of operation that Florida Power and Light or whoever owns and runs Turkey Point 6 and 7 [if they are built] will not have a final disposal place for the so-called "low-level" radioactive waste generated by routine operations and as a result of unexpected accidents, incidents and equipment failures/replacements including large components.

2. Applicant indicates that the proposed radioactive waste disposal site in Texas or processors such as those in Tennessee could be available, but they very well could NOT be available. There are numerous reasons to believe that facilities in Texas and Tennessee will not be able to permanently dispose, or take for disposal, Turkey Point 6 and 7 waste.

3. The Waste Control Specialists site in Texas, as of this writing, is not disposing of compact waste. There are still numerous outstanding issues that have not been resolved.

4. The license is for Texas and Vermont generated waste only, not for out-of-compact waste. Florida is not in the Texas Vermont Compact thus Turkey Point waste is "out-of-compact" waste not acceptable under the current license. Texas state law [S.B. No. 1504] requires that the license must expressly permit out of compact waste, and the current license does not do so. The WCS site license is for TX and VT generated waste only.

5. The Lone Star Chapter Sierra Club legal case calling for a contested-case-hearing is still in the state courts, with the next court date scheduled for March 2012 . The remedy, should Sierra Club prevail, would be a contested case hearing on the WCS license.

6. Texas state law [S.B. No. 1504] limits the volume and curies of out-of-compact waste to less than 30% of the total facility. The current facility licensed capacity is not large enough for the projected amounts of waste from Texas and Vermont. There are dozens of currently-operating reactors whose waste would be considered out-of-compact before Turkey Point 6 and 7 would be up and operating, likely filling that quota. Thus FP&L cannot assume that WCS can accept Turkey Point 6 and 7

7. Dr Marvin Resnikoff has predicted that the projected amounts of waste from Vermont could be much higher due to the tritium leakage and contamination of soil, potentially increasing the amount of space needed for Vermont generators. Dr Makhijani and I have reviewed the inadequate capacity of WCS to take waste from proposed new nuclear reactors.

8. Processors could take Turkey Point waste but there will still be a final waste product that needs disposition. The processors are not guaranteed access to disposal thus cannot guarantee Turkey Point waste has access.

9. Turkey Point must make plans for very long term storage of the radioactive waste it generates.

2) Long term on-site storage increases the chance of a catastrophic climate related event occurring.

In the January 3, 2012 filing, FPL offers long term on-site LLW storage as a likely solution to the problem so we must be more concerned with the increased actuarial possibility of inundation of Turkey Point due to a combination of sea level rise, storm surge and hurricanes. FPL starts with mean low tide but this is a best case estimate. Prudence would require beginning at a worst case scenario of mean high tide which could be 5 feet higher. The storm surge experienced at Turkey Point is usually estimated at 10 to 20 feet (3 to 6 meters) for a big slow moving major hurricane. Sea level rise over the next 60 years is estimated at 2 to 3 feet. So, taking this together we could expect an event which would see a storm surge at 28 feet above mean low tide. This figure must be compared to the planned platform for Turkey Point 6 & 7 and to the level of all current plant and equipment at Turkey Point.

This statement, and the information above, is from one of CASE's experts:

"The four counties of SE Florida, after much consultation and debate, have settled on a projection that puts sea level at 2-5 feet higher by the end of the century. This is in general agreement with most of the published (refereed) research of the last 5 years. Many experts are inclined toward the upper end of that range, based on what is happening with land-based ice in both polar regions. Miami-Dade inundation maps based on LIDAR surveys indicate that with only 2 feet of SLR, Turkey Point will be an island surrounded by salt water (Biscayne Bay) connected only by a causeway to the westward receding coastline. Two feet will most likely occur sometime in the second half of the century, within the expected lifetime of the proposed nuclear plants. This will have a number of consequences for plant operation including (1) reduction of reactor height above mean low water (MLW); (2) increased salinity of the aquifer, which along with an expected decrease in rainfall will stress the fresh water supply; (3) physical complications for cooling water canals, access road, communications and other infrastructure, etc.

On the hurricane side, I can say that FPL's favorite refrain about Turkey Point having weathered a cat-5 hurricane (Andrew) and accompanying 16-foot storm surge is self-serving pap. The surge at the plant was only 2-3 feet above high tide because the plant was on the south (weak) side of the storm center. The winds were only cat-4 at Turkey Point (<155 mph) and yet caused extensive damage, cutting off access and communications, and causing plant shutdown. More disconcerting is that Andrew was not typical for a major hurricane because it was compact and fast-moving and therefore had a smaller surge than is typical. If you go to <http://www.nhc.noaa.gov/ssurge/ssurge_overview.shtml> you will see a list of notable historical surge events associated with major hurricane landfalls. Andrew is not even on the list and the SLOSH model animations show that these storms typically had maximum surges of 5-8 meters (16' to 26') above mean higher high water (MHHW). It is true that the continental margin deepens steeply offshore of the Florida east coast and that this will in general result in a less severe surge. But it is also true that when a surge of any kind enters Biscayne Bay, the Bay will in all probability amplify the surge. If you subtract from the present reactor base height (20 ft/MLW) the difference in reference level (2 feet) between MHHW and MLW, and the minimum future SLR of 2 feet, a future storm surge can easily inundate the base of those reactors."

Now that FPL offers long term on-site LLW storage as a likely solution to the problem, we must be more concerned with the possibility of inundation of Turkey Point due to a combination of sea level rise, storm surge and hurricanes. FPL starts with mean low tide but this is

a best case estimate. Prudence would require beginning at a worst case scenario of mean high tide which could be 5 feet higher. Storm surge experienced at Turkey Point is usually estimated at 10 to 20 feet (3 to 6 meters) for a slow moving major storm. Sea level rise over the next 60 years is estimated at 2 to 3 feet. So, taking this together we could expect an event which would see a storm surge at 28 feet above mean low tide. This figure must be compared to the planned platform for Turkey Point 6 & 7 and to the level of all current plant and equipment at Turkey Point."

(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 evidence and knowledge regarding climate change is increasing rapidly. Sea level rise, increased severity of weather events, bizarre geological events and catastrophes are being seen to often with disastrous consequences. Storm surge at Turkey Point has been addressed by many experts. CASE has polled several who offer the following summary of the situation at Turkey Point. In addition, Miami-Dade County is taking increased notice of climate change but has little or no opportunity to relate it to operations and functioning at Turkey Point. Only the NRC can address it.

(vii) The quotes above from our experts and the increased concern of local authorities indicate that climate change will have a major impact on South Florida before the end of this century, probably earlier. For regulatory authorities who must make decisions which will never affect them but which will impact hundreds of thousands, if not millions, of people who live near Turkey Point, this is a tremendous responsibility. At what point do public health and safety concerns trump economic considerations? Can we even conceptualize inundation of a LLW on-site storage facility at Turkey Point. Yet, with parts of Turkey Point actually below sea level, such an event is not only possible, it is probable.

CONCLUSION

Licensing two additional nuclear reactors at Turkey Point in view of the lack of off-site storage nationally for their LLW and the resultant mandatory on-site storage of the LLW which will be subject to inundation during their planned lifetime cannot possibly be consistent with public health and safety. Taken together with other reasons, CASE contends that Turkey Point Reactors 6 & 7 should not be licensed.