

I, Harold R. Wanless, have the following contentions and concerns over the proposal to add additional nuclear power plant facilities at Turkey Point. The evaluation must be considered invalid because it did not consider and incorporate any projection for sea level rise through this century and beyond. Doing so will dramatically diminish and likely negate the viability of this proposal.

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 scientists⁴ 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 is 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 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