UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
Progress Energy Florida	)	**Docket Nos. 52-029 and 52-030**
(COL Application for Levy County, Units 1 & 2)	)	
	)	**May 14, 2010**

DECLARATION OF DIANE D'ARRIGO
IN SUPPORT OF INTERVENERS' AMENDED CONTENTION 8 ON
SO-CALLED "LOW-LEVEL" RADIOACTIVE WASTE SAFETY ISSUES

Under penalty of perjury, Diane D'Arrigo does hereby state as follows:

Statement of Qualifications

1. My name is Diane D'Arrigo. I am employed by Nuclear Information and Resource Service as Radioactive Waste Project Director. My business address is 6930 Carroll Ave., Takoma Park, Maryland 20912. I have over 25 years of experience in the technical, policy and economic issues relating to LLRW storage and disposal. I have spoken publicly and published articles on these topics. I have testified as an expert on nuclear waste issues before the NRC. A copy of my curriculum vitae is attached as Exhibit 1.

Purpose of Declaration

2. The purpose of my declaration is to provide factual support for Joint Intervenors' amended contention on safety issues and adequacy of plans for extended on-site storage of so-called "Low-Level" Radioactive Waste (LLRW) at the proposed Progress Energy Florida Levy County 1 & 2 nuclear site.

Operational Status of LLRW Disposal Sites in the United States

3. Currently, there are only two operating commercial facilities that dispose of Classes A, B, and C LLRW: US Ecology at Hanford, near Richland, Washington; and EnergySolutions in Barnwell, South Carolina. EnergySolutions in Clive, Utah, is licensed to dispose of Class A waste and cannot take Class B or C. The Richland and Barnwell facilities can take LLRW only from the Northwest, Rocky Mountain, and Atlantic compacts. Waste Control Specialists (WCS) has a license to store a limited amount of waste (see below) but can dispose of waste only from the Texas-Vermont Compact when its license is approved and it overcomes other outstanding

hurdles (see below). [There is nowhere to dispose of Greater-Than-C "low-level" radioactive waste.]

Limitations on the Disposal Capacity of Waste Control Specialists (WCS)

4. WCS holds a license (License R04100) which would permit it to dispose of LLRW generated inside the Texas-Vermont LLRW Disposal Compact. The facility is not authorized to accept LLRW from outside the two states that comprise the Compact. The Texas-Vermont Compact Commission is currently considering whether to adopt rules that could allow the importation of additional LLRW from outside the Compact. Proposed Rule for 31 TAC §§ 675.21-675.23, published at 35 Tex. Reg. 1028 on February 12, 2010.

5. WCS is not currently disposing of commercial LLRW, because License R04100 has several conditions which remain unfulfilled. According to the regulator, the Texas Commission on Environmental Quality (TCEQ), "[c]onstruction may not begin until several preconstruction license conditions are completed and approved by the executive director. Once construction is approved and completed, additional conditions of the license must be met prior to commencement of disposal."[1]

6. Several pending lawsuits create uncertainty about when and under what terms the WCS facility may open for disposal of LLRW. See Sierra Club v. Texas Commission on Environmental Quality, No. D-1-GN-09-000660 (250th Dist. Ct., Travis County, Texas. March 2, 2009); Sierra Club v. Texas Commission on Environmental Quality, No. D-1-GN-09-000894 (98th Dist. Ct., Travis County, Texas. March 19, 2009); Sierra Club v. Texas Commission on Environmental Quality, No. D-1-GN-09-003492 (200th Dist. Ct., Travis County, Texas. October 7, 2009); Sierra Club v. Texas Commission on Environmental Quality, No. D-1-GN-09-004020 (261st Dist. Ct., Travis County, Texas. November 24, 2009). An Andrews County election for the issuance of a bond to build the WCS facility is also under legal challenge. Pryor vs. Dolgener, County Judge of Andrews County, No. 08-09-00284 CV, Texas 8th Court of Appeals from the 109th Judicial District of Andrews County Texas, Cause No. 17,988 is expected to be appealed to the Texas Supreme Court.

Limitations on Storage Capacity of WCS

7. WCS also holds a license for the processing and storage of LLRW (License R04971). The License was due to expire in 2004, but it is still in effect because of WCS' timely application for renewal. WCS' renewal application currently is under review by the TCEQ.

8. Even if License R04971 for storage is renewed with the present terms, there are limitations on the quantity of LLRW that can be stored by WCS and the duration for which it can be stored.

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[1] From TCEQ website: Waste Control Specialists LLC License Application for Low-Level Radioactive Waste Disposal, Current Status of this Application
http://www.tceq.state.tx.us/permitting/radmat/licensing/wcs_license_app.html#wcs_status

9. For instance, paragraph 23.B of the License requires that within 365 days of arrival at WCS, all LLRW must be placed in interim storage or transferred to an authorized recipient.

10. Paragraphs 7A and 7C of the License also limit LLRW storage at WCS to 2,255,000 curies. Given that WCS is the only offsite facility available for storage of Class B and C waste, that radioactivity limit could be exceeded in just a few years by Class B and C waste that is being generated by facilities without access to disposal. I believe that the storage capacity at WCS could be exceeded well before Levy County Units 1 & 2 begin operation.

11. The operators of Levy County Units 1 & 2 will not be the only nuclear utilities to need storage for Class B and C LLRW. While the Clive, Utah, site can accept Class A LLRW from across the country (outside of the NW and Rocky Mountain Compacts), only the generators in the Northwest, Rocky Mountain and Atlantic Compacts (which have access to the Richland, WA and Barnwell, SC facilities for LLRW disposal) currently have a disposal path for Class B and C waste. If one assumes that a license will be granted to WCS for commercial waste disposal and that WCS will eventually meet all the other conditions and overcome all legal challenges – which is by no means assured – then Texas and Vermont Class B and C waste will also have a disposal path. All of the nuclear power reactor operators in the states without access to Class B and C disposal will be in an increasingly problematic situation. Hence the viability of the applicant's proposal to store waste at WCS must be analyzed in the context of all Class B and C generators in all states outside of the ones with a disposal path. Let us call these 'no-disposal-path' states for convenience in the rest of this declaration.

12. I looked at the amounts of Class B and C LLRW sent for disposal from nuclear generators in the 'no-disposal-path' states. I used past data as posted on the Department of Energy (DOE) Manifest Information Management System (MIMS) website (http://mims.apps.em.doe.gov/), which allows computation of data for specific sites, volumes and radioactivity as well as specific compacts and states. All sites except Barnwell have been closed to the 'no-disposal-path' states in recent years. On July 1, 2008, the Barnwell site was closed to these states as well. The total amount of Class B and C waste disposed of at Barnwell by these states over a nine-year period ending on June 30, 2008 was about 4.6 million curies, or about 515,000 curies per year. About 95 percent of this radioactivity came from utilities (spreadsheets attached as Attachment B). At this rate, even if there were no non-utility generators or new reactors, the storage capacity of the WCS site would run out in less than 5 years. If at least some of the recently submitted license applications are approved and result in new operating reactors, the storage capacity would run out sooner, in the absence of a disposal site for the 'no-disposal-path' states.

13. Based on the facts and available data, I conclude that the assumption that offsite storage space will be available for the new reactors for the license period or anything close to it at WCS is unwarranted.

Limitations on the Storage Capacity of Studsvik

14. Studsvik holds Material License R-86011-E17 for the processing of LLRW. The Studsvik License contains provisions that rule out the use of that site for long-term storage. Specifically, Paragraph 17 of the License limits the duration of the storage period to 365 days. Paragraph 24 requires that Studsvik "establish in every contractual obligation relating to radioactive materials the ability to return the radioactive materials, processed or unprocessed, to the prior licensed or exempt processor." Thus even if Studsvik takes title to the LLRW, it has the right to send it back to the generator and, in any event, may not keep it for more than a year. In view of these limitations, Studsvik is not a plausible option for storage of accumulating Class B and C wastes for existing or new nuclear power reactors.

Delays and Limitations on LLRW Disposal Capacity

15. PEF claims that it has the capacity to store Levy County Units 1 & 2's LLRW onsite 2 years. But 2 years is not nearly a sufficient period of time to accommodate the potential delay in the availability of offsite LLRW disposal capacity. Currently, there is no LLRW disposal facility that can accept Class B and C radioactive waste from Levy. WCS disposal is not an option that PEF can rely on because WCS is not accepting LLRW from any state at this time and because under its current disposal license it cannot accept LLRW from outside the Texas-Vermont Compact.

16. Even if WCS begins disposing of LLRW and even if it receives permission to accept LLRW from outside the Texas-Vermont Compact, it cannot be relied on for disposal of LLRW beyond the immediate future due to its limited storage and disposal capacity.

17. The licensed disposal capacity of the WCS commercial facility is 2.31 million cubic feet. The Compact States (Texas and Vermont) have estimated their combined need for LLRW disposal under the Compact at 6 million cubic feet: 5 million for Texas and 1 million for Vermont. Adopted Rules, 34 Tex. Reg. 6341 (September 11, 2009); Vermont Health and Safety Code Chapter 403, Sec. 3.04 (11).[2] The total needed storage capacity of 6,000,000 cubic feet, as estimated by the Compact States, exceeds currently licensed capacity under the Compact. Therefore, the WCS facility does not have the capacity to dispose of LLRW generated at Plant Levy 1 & 2 or at any reactor outside the Texas-Vermont Compact. While WCS could in theory apply for a license modification to allow for more waste disposal, basing a disposal strategy on such an assumption for an-out-of-compact state would be speculative at best, since WCS does not even have an operating license for disposal for a much smaller amount of commercial LLRW within the Texas-Vermont Compact.

[2] The Vermont Code states: "The shipments of low-level radioactive waste from all nonhost party states shall not exceed 20 percent of the volume estimated to be disposed of by the host state during the 50-years period." The Proposed Volume Rule states: "Vermont indicated that its needs would probably meet or exceed 1,000,000 cubic feet of capacity based on observed experiences during decommissioning of the Maine Yankee generating facility. There are similar decommissioning requirements in Vermont that indicate the volume could be similar to that generated in the Maine decommissioning process." 34 Tex. Reg. 4279.

18. Because of the longevity of much of the radioactivity of LLRW and the history of problems at closed LLRW disposal sites, new facilities have been and will continue to be extremely difficult, time-consuming, and expensive. Since the 1980 passage of the Low Level Radioactive Waste Policy Act passed, there have been many siting efforts that have yielded no new full service facilities. According to a 1999 GAO Report: "[s]tates acting alone or within Compacts of two or more, have collectively spent $600 million over the last 18 years attempting to find and develop about 10 sites for disposing of commercially generated low-level radioactive wastes." Yet, states' efforts to license new facilities "have come to a standstill." [3] My own experience has been that localities and states have stopped in the range of 40 proposed "low-level" radioactive waste disposal sites in at least 18 states since the siting effort began with the 1980 Low Level Radioactive Waste Policy Act [Public Law 96-573]. In Texas alone several have been stopped. Although nuclear waste generators may be hopeful that a disposal site will open for them, and remain open, it is by no means a certainty.

Onsite Storage and Processing

19. Referring to guidance documents (such as NUREG-0800 and other NRC and industry guidance) does not substitute for specific plans for onsite storage and management at the Levy County site. PEF fails to provide a realistic plan for its "low-level" radioactive waste. PEF in its response to NRC's RAI and in referencing the AP 1000 DCD indicates that Levy County Units 1 and 2 can temporarily store "low-level" radioactive waste for "greater than 2 years" or "greater than one year at maximum rate of generation" if offsite disposal is unavailable but fails to specify for how long and which storage and minimization options included in the various guidance documents it will in fact pursue.

20. The applicant must provide greater detail about the amount of waste, its condition, the processes it will undergo, how it will be stored and where, considering the likelihood that extended onsite waste management will be necessary. Will storage be in buildings, and if so what will the structures be? If outside, exposed to the elements, how will safety and security be assured? Where will the storage area or building(s) be located? Will they be within the "protected" area? What treatment options will be carried out onsite and where? Simply referring to generic guidance documents does not substitute for responsible planning for virtually inevitable waste management needs at this specific site. There are important basic plans for management and longer term storage of radioactive waste and the accompanying details that need to be provided, considered and evaluated before the radioactive waste is generated.

21. PEF cannot show that it meets any of the standards without supplying details regarding how the waste will be managed and stored. PEF has not shown that it will meet the provisions of applicable regulations including 10 CFR 20, 10 CFR 30, 10 CFR 50, 10 CFR 10 CFR 61, 10 CFR 71, 40 CFR 190 and 49 CFR 171-180 with regard to the radioactive waste Levy 1 and 2 will produce. Site-specific weather, climatic, social and other conditions will affect the safety and acceptability of the options PEF chooses. These must be identified and evaluated before the waste is permitted to be generated.

[3] GAO/RCED 99-238, ***Low-Level Radioactive Wastes: States Are Not Developing Disposal Facilities***, page 26.

22. We need to know how much waste will be processed and stored, what processing will be done, the kind of containers that would be used and how they are certified for storage and transport. Without specifying which of the NUREG-0800 and other guidance options PEF intends to use for processing, management and storage compliance cannot be evaluated or assured by the public or the NRC.

23. PEF fails to specify, if waste minimization is to be employed, which processes they expect to implement. Granting a COL for reactor operation does not automatically guarantee that all treatment and long-term storage options are acceptable and will comply with the regulations. We are concerned that some processing such as incineration and accumulated large amounts of radioactive waste could affect safety, environment and exposure rates.

24. If the COL is approved and the reactors operate, a given amount of source term in radioactive waste will be generated, as well as hazardous waste. Synergistic health and physical chemical impacts have not been considered or evaluated.

25. How PEF chooses to distribute that source term generated by Levy County 1 and 2 in terms of waste form, routine releases to air and water, liquid, gaseous and solid radioactive waste affects the ability to meet the regulations. Long-lasting radioactive and hazardous and mixed waste will be generated. PEF has not met necessary requirements for managing or allowing evaluation of management of that waste.

Conclusion

26. There is no offsite disposal available for PEF at present and none is on the horizon. The above analysis shows that PEF does not have a reasonably assured path for long-term offsite storage or disposal. This leaves long-term onsite storage as the only remaining option. PEF is relying on undependable access to non-existent offsite storage and disposal.

27. Storage of Class B and C (and Greater-Than-C) waste generated over decades at a reactor site is without precedent. In view of the unprecedented nature of such storage, it is essential that PEF provide the design of the storage facility and any plans for onsite processing or incineration as part of the COLA and demonstrate the safety and long-term integrity as part of the COLA process.

I declare that the foregoing facts are true and correct to the best of my knowledge and that the statements of opinion are based on my best professional judgment.

_____/s/_____ May 14, 2010
Diane D'Arrigo Date