UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 52-017
Virginia Electric and Power Company	)	
d/b/a Dominion Virginia Power and	)	ASLBP No. 08-863-01-COL
Old Dominion Electric Cooperative	)	
North Anna Unit 3	)	June 26, 2009
Combined License	)	
	)	

INTERVENOR'S AMENDED CONTENTION TEN

In accordance with 10 CFR § 2.309(f)(2)(i-iii), petitioners may, with leave from the presiding officer, amend contentions or file new contentions upon a showing that: 1) the information upon which the contention is based was previously unavailable, 2) the information is materially different, and 3) the contention is submitted in a timely fashion. Therefore, the Blue Ridge Environmental Defense League with its chapter Peoples Alliance for Clean Energy ("Intervenor") hereby request leave to submit Amended Contention Ten. Contention Ten, if admitted, would supplant Contention One. In this brief we will show compliance with the three requirements for an amended contention.

Background

On May 9, 2008 and pursuant to 10 CFR § 2.309, BREDL filed a petition for intervention and request for hearing ("COL Petition") regarding the application for a combined operating and construction license filed by Virginia Electric and Power Company, doing business as Dominion Virginia Power ("Dominion"). NRC Staff and Dominion filed their respective answers to the petition on June 3rd. On August 15, 2008 the ASLB issued a Memorandum and Order Ruling on Petitioner's Standing and

Contentions, admitting one contention ("Contention One") in part. On June 1, 2009, Dominion submitted its motion to dismiss BREDL Contention 1 with Exhibit A: Dominion Virginia Power North Anna Power Station 3 Combined License Application—Submission 4.

I. AMENDED CONTENTION TEN

A. Statement of the Issue

First, Dominion fails to offer a viable plan for how to dispose of Class B, C and Greater than C so called "low level" radioactive waste generated in the course of operations, closure and post closure of North Anna Unit 3 and fails to address how NRC regulations for the disposal of so called "low level" radioactive waste will be met in the absence of a disposal facility.

Second, Dominion's amended FSAR is ambiguous and in fact does not add any new information to refute BREDL's original contention. Moreover, while achieving so-called improvements in some aspects of storage duration, the Applicant has definitely reduced other storage durations from Unit 3's original design basis.

Finally, reliable scientific data and historical record therefore suggests that fuel failures in this new reactor design are more likely and that more radioactive material will be present in the reactor coolant and spent fuel pool, not less as the Applicant attempts to persuade. By applying the mathematical projections delineated by historical record, the evidence clearly shows that the Applicant's volume estimates for radioactive waste storage are in fact too small, and not at all the conservative estimates they attempt to portray.

B. Statement of Issues of Law and Fact to Be Raised

Intervenor's Contention One stated that Dominion's Final Safety Analysis Report ("FSAR") should have explained the applicant's plan for complying with NRC regulations governing the management of low-level radioactive waste generated at proposed North Anna Unit 3 in the absence of an off-site disposal facility. Among the provisions with which Dominion must comply are 10 CFR Part 20 and 10 CFR Part 50, Appendix I. For example, Part 52 regulations require Dominion to address "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." 10 CFR 52.79(a)(3).

C. Brief Explanation of the Basis for the Contention

The FSAR incorporates the Design Control Document ("DCD") which implicitly acknowledged the basis of Intervenor's original Contention 1; i.e., that the absence of off-site low-level waste disposal requires Dominion to construct additional on-site waste storage capacity and /or develop an on-site waste management plan. Further, the safety and security issues of extended onsite storage must be addressed because the so-called "low-level" radioactive waste for which there is no disposal available is the hottest, most concentrated[1] waste in the category.

D. Demonstration That the Issue Raised by the Contention is Within the Scope of the Proceeding and Material to the Findings the NRC Must Make to Support its Licensing Decision.

At present, there is no off-site low-level radioactive waste disposal facility for the

[1] GAO-RCED-98-40R Questions on Ward Valley pages 49-52, 1998.

Class B and C waste that would be generated by the operation of proposed Unit 3. Dominion has requested a license which would authorize the company to store low-level radioactive waste on site. COLA Part 1. The NRC Staff acknowledged as much in its answer to Contention 1: "The Applicant…has requested a license under 10 C.F.R. Part 30, which would authorize them to possess and store the low-level radioactive waste that is the subject of proposed Contention 1 if the Application is ultimately granted. Application, Part 1, at 1. The material would be stored in accordance with the requirements of 10 C.F.R Part 20. See, e.g., 10 C.F.R §§ 20.1801,1802."[2] The ASLB has determined that Dominion's plans for low-level radioactive waste storage at the North Anna site is material to the findings the NRC must make to support the action that is involved in the proceeding. The ASLB stated, "If Dominion is unable to find a replacement for the Barnwell County facility, Class B and C waste from Unit 3 will have to be stored at the site, and Dominion's plan for providing extended on-site storage will be material to the determinations the NRC Staff must make under Parts 20 and 30." LBP-08-15 at 24.

E. Concise Statement of Facts or Expert Opinion Relied on to Show the Existence of a Genuine Dispute with the Applicant and the NRC Regarding the Adequacy of the License Application

Expertise relied upon for Contention Ten based upon the attached declaration and curriculum vitae of Arnold Gundersen.

Dominion does not prove that, "This Class B and C waste is based on a conservative estimate… Good fuel performance will also reduce fission products in the reactor and spent fuel pool water and hence the volume of Class B and C waste generated.

[2] NRC Staff answer to Intervenor's petition, June 3, 2008 at 22.

Implementation of these techniques could substantially extend the capacity of the Class B and C storage area."[3] Specifically,

1. In its May 9, 2008 Petition to NRC For Intervention And Request For Hearing, The Blue Ridge Environmental Defense League noted in Contention One, that Dominion Power Lacks a realistic Low level Radioactive Waste Plan for radioactive waste from the North Anna nuclear power reactors, including the proposed Unit 3, so stating:

> "The applicant fails to offer a viable plan for how to dispose of Class B, C and Greater than C so called "low level" radioactive waste generated in the course of operations, closure and post closure of North Anna Unit 3. The statement of fact is that the applicant fails to address how NRC regulations for the disposal of so called "low level" radioactive waste will be met in the absence of a disposal facility (dump). This issue must be addressed in order for the US Nuclear Regulatory Commission to grant an operating license with credibility. If perpetual or extended onsite storage of these wastes is to be the "fall back," then this must be addressed in the COL application and is not. Since there is no offsite part 61 licensed disposal available, extended on site storage becomes defacto onsite disposal. This could significantly increase the safety and security risks of the North Anna site. Therefore serious consideration must be given to licensing the site itself under 10 CFR Part 61 (licensed permanent radioactive waste disposal) or Virginia's compatible agreement state regulations. It is imperative that the safety and security issues of extended onsite storage, serious consideration must be given to licensing the site itself under 10 CFR Part 61 (licensed permanent radioactive waste disposal) or Virginia's compatible agreement state regulations. It is imperative that the safety and security issues of extended onsite storage, defacto disposal, be addressed prior to generation of the waste because the "low level" radioactive waste for which there is no disposal available is the hottest, most concentrated 1 waste in the category."[4]

2. In my opinion, Applicant Dominion Virginia Power's Response to BREDL's contention is misleading. Paragraph 11.4.1 (SWMS Design Basis) is ambiguous and

[3] North Anna Power Station Unit 3 Combined License Application, Part 2 Final Safety Analysis Report, Revision 2, May 2009, page 11-7, paragraph 11.4.1 *" SWMS Design Basis"*

[4] Petition For Intervention And Request For Hearing By The Blue Ridge Environmental Defense League, May 9, 2008, Page 5.

in fact does not add any new information to refute BREDL's original contention. Moreover, while achieving so-called improvements in some aspects of storage duration, the Applicant has definitely reduced other storage durations from Unit 3's original design basis.

3. The Applicant Dominion Virginia Power states that that the ***"total combined volume of packaged Class A, B and C low-level radioactive waste estimated to be generated during six months of plant operation …In the event that an offsite facility is not available to accept Class B and C waste, the Radwaste Building has been configured to accommodate at least 10 years of packaged B and C waste and approximately three months … of packaged Class A waste..."***. While this statement certainly aims to satisfy the question raised by BREDL in its Contention 1, it does not.

4. In order to meet its goal to assure NRC that there is space to store Class B and C material for ten years, the *Applicant has correspondingly reduced its design basis for storage of Class A material from 6 months to 3 months.* This is simply "Robbing Peter to pay Paul." By creating such a paradigm, the Applicant therefore must make the assumption that a storage facility of some sort will quickly be made available for the Class A waste, all the while assuming that no such facility exists for both Class B and C waste. In following this current scenario, the Applicant's new premise by which it creates only 3 months of storage for Class A waste is even less conservative than the original design basis assumptions of 6 months.

5. Furthermore, while the Applicant claims to be responding to BREDL's contention with new analysis, Dominion Virginia Power has in fact reduced its original design basis assumptions in order to appear to be addressing BREDL's original concern addressed delineated in Contention 1.

6. One of the hallmarks of NRC regulation is that licensees and applicants apply "conservative assumptions" or "conservative estimates" in order to meet its statutory requirement to protect public health and safety. The dictionary defines

"conservative" *as "Moderate; cautious: a conservative estimate"*. The Applicant Dominion Virginia Power claims that its response to BREDL's Contention 1 "**is based on a conservative estimate"**, when in fact its estimate is not at all moderate or cautious.

7. In paragraph 11.4.1 (SWMS Design Basis) the Applicant opines but does not prove that: **"This Class B and C waste is based on a conservative estimate… Good fuel performance will also reduce fission products in the reactor and spent fuel pool water and hence the volume of Class B and C waste generated. Implementation of these techniques could substantially extend the capacity of the Class B and C storage area."**

8. There is nothing on the North Anna Unit 3 Docket that accounts for *any assumption or estimate that there will in fact be good fuel performance.* During my more than 35-years of engineering experience in the nuclear industry the history of new reactor designs has indicated that new fuel designs are less reliable and will leak more than current designs upon which the Applicant is attempting to make its storage volume assumptions.

9. The applicants proposed reactor design for this COLA is new, has never been built before, and is untried. According to *Review of Fuel Failures in Water Cooled Reactors*[5], new fuel designs initially leak more than, not less than, the fuel for which the applicant has based its volume assumptions.

> *Page 7: "For BWRs and PWRs the rapid introduction of new fuel designs... as well as the introduction of long fuel cycles can significantly increase power peaking factors and thus may also influence fuel failure considerations."*
>
> *Page 3: "In spite of all efforts to find adequate remedies, there seem to be several new aspects and problems that continue to challenge the industry."*
>
> *Page 1: "Improving fuel reliability beyond current levels will be even more challenging for countries involved with programs to further increase fuel discharge burnup."*

[5] *Review of Fuel Failures in Water Cooled Reactors*, International Atomic Energy Commission, IAEA technical report 388, 1998

Page 163: "Failures or problems caused by the introduction of new or modified fuel designs and materials... did occur with partly high local failure rates or other severe consequences."

10. Reliable scientific data and historical record therefore suggests that fuel failures in this new reactor design are more likely and that more radioactive material will be present in the reactor coolant and spent fuel pool, not less as the Applicant attempts to persuade. By applying the mathematical projections delineated by historical record, the evidence clearly shows that the Applicant's volume estimates for radioactive waste storage are in fact too small, and not at all the conservative estimates they attempt to portray.

11. In summation, BREDL's initial contention that the applicant lacks an adequate plan for the long term storage of Class A, B and C waste is confirmed by reliable scientific data and historical record regarding industry-wide fuel failures in newly designed plants.

12. *In conclusion*, my review of the factual evidence and Applicant Dominion Virginia Power's COLA disputes the Applicant's claim of "conservative estimates" applied in its COLA for North Anna Unit 3. Furthermore, it is my expert opinion that as alleged in BREDL's Contention 1,

    12.1. "***The applicant fails to offer a viable plan for how to dispose of Class B, C and Greater than C so called "low level" radioactive waste generated in the course of operations, closure and post closure of North Anna Unit 3".***

    12.2. "The statement of fact is that the applicant fails to address how NRC regulations for the disposal of so called "low level" radioactive waste will be met in the absence of a disposal facility (dump)."

    12.3. "This issue must be addressed in order for the US Nuclear Regulatory Commission to grant an operating license with credibility. If perpetual or extended onsite storage of these wastes is to be the "fall back," then this must be addressed in the COL application and is not. Since there is no offsite part 61

licensed disposal available, extended on site storage becomes defacto onsite disposal."

12.4. "This could significantly increase the safety and security risks of the North Anna site. Therefore serious consideration must be given to licensing the site itself under 10 CFR Part 61 (licensed permanent radioactive waste disposal) or Virginia's compatible agreement state regulations."

12.5. "It is imperative that the safety and security issues of extended onsite storage, serious consideration must be given to licensing the site itself under 10 CFR Part 61 (licensed permanent radioactive waste disposal) or Virginia's compatible agreement state regulations."

12.6. "It is imperative that the safety and security issues of extended onsite storage, defacto disposal, be addressed prior to generation of the waste because the "low level" radioactive waste for which there is no disposal available is the hottest, most concentrated 1 waste in the category."[6]

Finally, the length of time is inadequate for storage of Class B and Class C radioactive waste. The capacity for storage in the additional information is for an estimated amount of waste that would be generated for 10 years. The reactor operating license is for 40 years. From 1980 when the first low-level radioactive waste law was enacted by Congress to find new disposal sites until today, not one new site has opened for Class B and C radioactive waste.

II. SATISFACTION OF 10 C.F.R. § 2.309(f)(2).

The amended FSAR was provided to BREDL on May 27, 2009. It was

[6] Petition For Intervention And Request For Hearing By The Blue Ridge Environmental Defense League, May 9, 2008, Page 5.

unavailable to us before that time, having been submitted by Dominion to NRC only days before. This contention has been submitted today in a timely fashion based on the availability of that information. The information upon which the new contention is based is materially different than information that was previously available. This Contention is supported by expert opinion detailed in the attached *Declaration of Arnold Gundersen Supporting Blue Ridge Environmental Defense League's Contentions.*

III. CONCLUSION

The combined license application of Dominion-Virginia Power still lacks a realistic, specific low-level radioactive waste management plan in its Final Safety and Analysis Report. Therefore, we respectfully request to submit new amended Contention Ten. For the foregoing reasons, Intervenor's Amended Contention should be admitted.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the
INTERVENOR'S AMENDED CONTENTION TEN
were served on the following persons via Electronic Information Exchange this 26th day of June, 2009.

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