

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**ATOMIC SAFETY AND LICENSING BOARD PANEL**

**BEFORE THE LICENSING BOARD**

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In the Matter of )	
Tennessee Valley Authority )	Docket Nos. 52-014, 52-015
Bellefonte Nuclear Power Plant )	ASLBP No. 08-864-02-COL-BD01
Units 3 and 4 )	July 8, 2008
_____ )	

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REPLY OF THE BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE, ITS  
CHAPTER BELLEFONTE EFFICIENCY AND SUSTAINABILITY TEAM AND THE  
SOUTHERN ALLIANCE FOR CLEAN ENERGY TO THE NRC STAFF ANSWER  
TO PETITION FOR INTERVENTION AND THE APPLICANT'S ANSWER  
OPPOSING PETITION TO INTERVENE, BOTH DATED JULY 1, 2008

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**Introduction**

In accordance with 10 C.F.R. § 2.309(h)(2), the Blue Ridge Environmental Defense League (“BREDL”), its chapter Bellefonte Efficiency and Sustainability Team (“BEST”) and the Southern Alliance for Clean Energy (“SACE”) hereby file their Reply to the Tennessee Valley Authority (“Applicant” or “TVA”) and the staff of the Nuclear Regulatory Commission (“NRC Staff”) in the above-captioned matter.

**Background**

On October 30, 2007 an application for a combined construction and operation license (“COL”) was filed by TVA and supplemented by letters dated November 2, 2007, January 8, 2008 and January 14, 2008. Acceptance of the application for docketing by the Nuclear Regulatory Commission (“NRC” or “Commission”) was published in 73 Fed.

Reg. 4923 (January 28, 2008). Notice of hearing and opportunity to petition for leave to intervene was first published in 73 Fed. Reg. 7611 (February 8, 2008). Subsequently, the Bellefonte Efficiency and Sustainability Team, a chapter of the Blue Ridge Environmental Defense League, submitted a motion to suspend the notice of hearing on February 29<sup>th</sup> and submitted a supplemental motion to suspend the hearing notice or request an extension of the deadline to submit petitions for leave to intervene on April 2<sup>nd</sup>. On April 7, 2008 the Commission issued an order granting a 60-day extension for interested persons to file a petition for leave to intervene in the proceeding. 73 Fed. Reg. 19904 (April 11, 2008). BREDL, BEST and SACE filed a petition for leave to intervene and a request for hearing on June 6, 2008 and, pursuant to the ASLBP's Initial Prehearing Order of June 18<sup>th</sup>, filed a Supplement to the Petition on June 26<sup>th</sup>.

**Bellefonte Efficiency and Sustainability Team Should be Granted Standing**

Neither the NRC Staff nor the Applicant objects to the grant of standing to either BREDL or SACE. The NRC Staff and Applicant rightly characterized the declarants for both BREDL and SACE regarding the question of representational standing for the two organizations. However, both the NRC Staff and the Applicant object to the grant of standing for the Bellefonte Efficiency and Sustainability Team. TVA incorrectly states "BEST's attempt to rely on members of BREDL is misplaced, because each entity seeking to become a party must meet the standing requirements" [TVA Answer at 5] However, it is TVA's objection to standing for BEST which is misplaced. There is no partition between BEST and the League. As stated in our Petition, "BREDL is a league of community groups called 'chapters.' BREDL and its chapters are unitary, with a common incorporation, financial structure, board of directors and executive officer.

BREDL's chapter Bellefonte Efficiency and Sustainability Team was founded in February 2008 to urge the Tennessee Valley Authority to adopt efficient, sustainable energy options." The chapter's members are BREDL members and *vice versa*. BEST members serve on the BREDL Board of Directors. One might say that BREDL is doing business as ("d/b/a") BEST in this matter. The stipulations regarding standing in *Palisades* (CLI-07-18 65 NRC at 409) simply do not apply to BEST apart from BREDL.

Other tribunals have recognized this relationship. In Virginia the Court recognized the representational standing of BREDL and its chapter the People's Alliance for Clean Energy. See Blue Ridge Environmental Defense League, Inc., *et al v.* Commonwealth of Virginia, *ex. rel.*,<sup>1</sup> *slip op* Our corporate arrangement is analogous to, for example, Virginia Electric and Power Company d/b/a Dominion Virginia Power. No objections to standing for DVP have been proposed to or sustained by the Commission in licensing matters for that corporation. Likewise, no objections to standing for the Bellefonte Efficiency and Sustainability Team should be sustained by the ASLBP in the matter now before the panel.

### **The Petition is Timely**

TVA asserts that the Petition to Intervene should be denied for failure to satisfy the Commission's regulations governing timely filings. However, during the submission process of our June 6th Petition to Intervene via the Electronic Information Exchange,

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<sup>1</sup> This case was an appeal under the Administrative Process Act, Va. Code §2.2-4000 et seq., Rule 2A:4 of the Rules of the Supreme Court of Virginia, and Va. Code §62.1-44.29, of a decision of the Virginia State Water Control Board to re-issue a National Pollution Discharge Elimination System Permit to Virginia Electric and Power Company (d/b/a Dominion Virginia Power) for the Dominion-North Anna Power Station in Louisa County, Virginia, Case No. 07-6083 in the Circuit Court of the City of Richmond. The Court found Appellants lacked individual standing but concluded: "The Appellees do not challenge the representational standing of these Appellants." Judge's Order of July 3, 2008 Thus, the League and its chapter People's Alliance for Clean Energy were granted representational standing.

technical problems with the NRC's electronic docketing system delayed the arrival of our Petition. Notwithstanding the EIE notices stating time of arrival for the first part at 00:07:28 on June 7, 2008 and the second part at 00:55:40 on June 7, 2008, the Petition was timely filed by 11:59 PM on June 6, 2008. The staff of the NRC Office of Rulemakings & Adjudications has assured us that our filing was "posted on the 6th." A June 9, 2008 e-mail message from the Assistant for Rulemakings & Adjudications stated, "We will consider the time of submission of the petition for docketing purposes."<sup>2</sup> Further, the June 16, 2008 Memorandum to the Bellefonte Service List states, "The actual date of the petition is June 6, 2008."<sup>3</sup>

As stated above, technical problems with the NRC's electronic docketing system delayed the arrival of our Petition. The EIE was unable to handle our 176-page submission (38.84 MB). The transmission of 45 optically scanned declarations of standing at 300 dpi (as required by the NRC), causing the system to fail. This technical

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<sup>2</sup> ----- Original Message -----

**From:** Emile Julian  
**To:** bredl@skybest.com  
**Cc:** Hearing Docket ; ASLBP\_HI\_W\_Adjudication Resource ; OCAAMAIL Resource ; bredl@skybest.com ; bredl@skybest.com ; Kathryn Winsberg ; maria.webb@pillsburylaw.com ; eivigliucci@tva.gov ; savance@tva.gov ; Maxwell Smith ; Tom Ryan ; Christine Pierpoint ; OCAAMAIL Resource ; Evangeline Ngbea ; Patrick Moulding ; Linda Lewis ; mlemoncelli@morganlewis.com ; Emile Julian ; Ann Hodgdon ; Hearing Docket ; robert.haemer@pillsburylaw.com ; Nancy Greathead ; lgorenflo@gmail.com ; Joseph Gilman ; Rebecca Giitter ; mfreeze@morganlewis.com ; sfrantz@morganlewis.com ; mhdunn@tva.gov ; hacooper@tva.gov ; sburdick@morganlewis.com ; Sara Brock ; sara@cleanenergy.org ; Kenny Nguyen  
**Sent:** Monday, June 09, 2008 11:52 AM  
**Subject:** FW: 2 BREDL submissions

Mr. Zeller,

The Office of the Secretary has received your petition to intervene in the Bellefonte proceeding. However, the NRC document experts (please see attached e-mails) have advised that the majority of the petition is unacceptable for inclusion in the NRC ADAMS record system. We will consider the time of submission of the petition for docketing purposes, but docketing cannot take place until we have received a replacement petition. Kindly resubmit the petition as one document scanned from the paper copies of all documents submitted separately. In scanning please follow the NRC document guidance to which you were directed when we issued you a digital certificate. At a minimum, the resolution should be set to 300 dpi (or 300 ppi) and each page as part of the PDF rendering process should be OCR'd to produce hidden but searchable text. The rendered petition in PDF form should be submitted via our e-filing system. (emphasis added)

<sup>3</sup> Memorandum from Emile Julian to the Bellefonte Proceeding Service List, Docket Nos. 52-014-COL and 52-015-COL Re: Correction to the date of the petition to intervene, June 16, 2008

problem was not resolved until BREDL broke the document into 7 MB packets. Solving the transmission problem took several days of work with the staff of the NRC Office of Rulemakings & Adjudications.

Finally, an order duly enacted by the Commission should in no way be held against the Petitioners. It is pejorative, disrespectful and patently unfair for TVA to state, “Given that Petitioners were previously granted a 60-day extension of time, their failure to submit a timely petition or to address any of the factors listed in 10 C.F.R. § 2.309(c) should be held strictly against them.” The stated purpose of the Commission’s order was “[t]o enhance public participation in the proceeding.” 73 Fed. Reg. 19904 (April 11, 2008) It would be ironic indeed if such an order were to be used as a cudgel against public participation.

In conclusion, technical problems with the Commissions electronic docketing system impeded the posting of Petition documents. Petitioners’ performed due diligence by cooperating with NRC staff to rectify the problems. The NRC Staff have raised no objection to the Petition’s timeliness. And no explanation of untimely filing within the Petition was necessary because the filing was timely.

### **A Hearing Should Be Granted**

Petitioners have requested that a hearing be granted by the Atomic Safety and Licensing Board Panel in the TVA Bellefonte combined construction and operation license proceeding. We hereby reaffirm that request. The rule changes for commercial nuclear power plants implemented over the last two decades and the even longer hiatus since the last new nuclear power license makes the ongoing COL proceedings particularly important. Public scrutiny has been heightened in part by public relations

campaigns waged by the nuclear industry and its supporters which have pushed for pre-certified reactor designs, early site permits, regulatory schedules and generic safety issues. However, during this process the public has lost important procedural rights including fair access to hearings. At this time the Atomic Safety and Licensing Board has empanelled judges for license requests in Virginia, South Carolina, Alabama and Georgia and elsewhere. In view of the record, Petitioners are convinced that the Commission favors its own case management and procedural convenience over public access. As a result, we believe public confidence is being sacrificed on the altar of expediency. The Commission itself has stated that it “should not have to expend resources to support the hearing process unless there is an issue that is appropriate for and susceptible to, resolution in an NRC hearing.” 69 Fed. Reg. at 2202. The Commission has emphasized that the rules on contention admissibility are “strict by design.” NRC Staff Answer at 8-9 (July 1, 2008)

The recent dust-up regarding *ex parte* communications during the first oral argument held on a COL is a case in point. The public expects and deserves to be included in matters which affects their health and safety. Nuclear reactors are by nature dangerous facilities. Apparently, in a spontaneous response to a public notice individuals from across the nation attempted to participate in a telephonic meeting of the ASLBP for the Dominion-Virginia Power North Anna COL and sent e-mails to the judges. In response the chief counsel of the Atomic Safety and Licensing Board sent e-mail replies to members of the public disputing their authority and stated, “Unless you are a party, you are a silent observer.” The ASLB replies were ill-considered and ill-received, even if

they were legally justifiable.<sup>4</sup> May no member of the public communicate with the ASLB? Are all e-mails to judges prohibited unless copied to all parties?

In 2000 a letter to Commission Chairman Meserve signed by grassroots, consumer, energy and environmental organizations from 33 states and the District of Columbia expressed opposition to the NRC's shift from formal to informal hearings for nuclear reactor and high-level waste repository licensing. The letter included agency history outlined by a former commissioner:<sup>5</sup>

The current NRC adjudicatory hearing process was developed as part of a bargain from which the nuclear industry gained a great deal in the late 1950s. In return for accepting extensive federal hearings, the industry was exempted from any state and local regulation of radiological health and safety and received the limitations on liability that are set forth in the Price-Anderson Act. Thus, citizens in any community in which a nuclear facility was to be located gave up both local regulation of the facility and the additional financial and safety assurances that normal insurance industry operations would have brought . . . In return they got a commitment to the full panoply of trial-type procedures as part of the federal licensing process. Now that memories have faded, the industry is seeking to revoke its share of the concessions in that original bargain.

In 2004 the NRC Office of General Counsel advised the NRC that it could freely alter long-standing practices regarding hearings and administrative procedures:<sup>6</sup>

As part of the analysis of possible approaches, OGC reached the conclusion that, except for a very limited set of hearings—those associated with the licensing of uranium enrichment facilities—the AEA did not mandate the use of a “formal, on-the record” hearing within the meaning of the APA, 5 U.S.C. 554, 556, and 557, and that the Commission enjoyed substantial latitude in devising suitable hearing processes that would accommodate the rights of participants. In contrast to informal hearings for which agencies have greater flexibility in shaping adjudicatory procedures, “on-the-record” hearings under the APA generally resemble adversarial trial-type proceedings with oral presentations by witnesses and cross-examination. The key, statutory provision, Section 189.a. of the AEA, declares only that “a hearing” (or an opportunity for a hearing) is required for certain types of agency actions. It does not state that such hearings are to be on-the-record proceedings. Furthermore, the legislative history for

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<sup>4</sup> E-mail from Anthony C. Eitriem, Chief Counsel, Atomic Safety & Licensing Board, Docket no. 52-017, July 1, 2008

<sup>5</sup> Letter to NRC Chairman Richard A. Meserve from James Riccio, Public Citizen's Critical Mass Energy Project, quoting former Nuclear Regulatory Commission Commissioner Peter Bradford, March 7, 2000

<sup>6</sup> 69 Federal Register 2183, January 14, 2004, Rules and Regulations

the AEA provides no clear guidance whether Congress intended agency hearings to be formal, on-the-record hearings.

The OGC continued:<sup>7</sup>

In a significant change from the existing regulations, the requirement to proffer specific, adequately-supported contentions in order to be admitted as a party is extended to informal proceedings under Subpart L. Under the existing Subpart L, petitioners need only describe “areas of concern about the licensing activity that is the subject matter of the proceeding” (10 CFR 2.1205(e)(3)).

By shutting out the public, the Nuclear Regulatory Commission has moved in the wrong direction. If indeed the Commission has “latitude” to alter its hearing processes, Petitioners respectfully submit that the way to do it now is to open the doors wide, use common sense when it receives communications from the public and its representatives. Commenting on the need for hearings requirements in Atomic Energy Act Section 189a in 1954, the chairman of the Joint Committee on Atomic Energy stated:<sup>8</sup>

[B]ecause I feel so strongly that nuclear energy is probably the most important thing we are dealing with in our industrial life today, I wish to be sure that the Commission has to do its business out of doors, so to speak, where everyone can see it.

Although I have no doubt about the ability or integrity of the members of the Commission, I simply wish to be sure that they have to move where everyone can see every step they take; and if they are to grant a license in this very important field, where monopoly could so easily be possible, I think a hearing should be required and a formal record should be made regarding all aspects, including the public aspects.

Petitioners respectfully request that the ASLBP remember the advice of its Congressional founders and, further, admit all the Petitioners proffered contentions and hold a hearing at a public place near the Bellefonte site.

On the following pages, we further address TVA and NRC Staff Answers.

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<sup>7</sup> *Id* at 2202

<sup>8</sup> Senator Clinton P. Anderson (D-NM), Chairman of the Joint Committee on Atomic Energy, 84<sup>th</sup> and 86<sup>th</sup> Congresses, 100 Cong. Rec. 10,000 (July 14, 1954)



**MISC-A Contention ONE:**

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**Whether Bellefonte Will Improve the General Welfare, Increase the Standard of Living, or Strengthen Free Competition in Private Enterprise**

**The Intent of Congress in the Atomic Energy Act**

The failure of TVA to adequately assess and the Commission to independently assess energy alternatives (See Petitioners' Reply regarding Contention TEN/NEPA-D *infra*) has even broader implications than compliance with environmental law. As stated in Petitioners Contention One (MISC-A), granting a license to TVA for Bellefonte would not improve the general welfare, increase the standard of living, or strengthen free competition per 42 U.S.C. § 2011. In their Answer, TVA responded: "However, that section of the Atomic Energy Act ("AEA") merely provides the general policy for use of nuclear power in the United States. It does not provide the standards for issuance of a license for a nuclear power reactor." TVA Answer at 15, 16 Indeed, the language of the statute in § 2011 does state the overarching purpose of the Atomic Energy Act; it is a Congressional declaration of policy. The advent of new and arguably better methods of generating electricity forces a comparison regarding the use of nuclear power. What it means is that the Commission cannot evade its responsibility by merely considering alternatives under NEPA and proceeding with the issuance of a nuclear power license. The intent of Congress as spelled out in the AEA requires that the Nuclear Regulatory Commission deny a license if it will not serve the inclusive purpose of the Act.

**Building a nuclear power plant should be reconsidered in pure economic view.**

1. It is a misleading statement that nuclear plants are economically beneficial.

*The Economist* observed in 2001 that “Nuclear power, once claimed to be too cheap to meter, is now too costly to matter”—cheap to run but very expensive to build. Furthermore, the nuclear industry has consistently underestimated its capital costs, often by large factors, and then claimed its next low forecasts will be accurate. Of 75 U.S. plants operating in 1986, the U.S. Energy Information Administration found two-year-cohort-average cost overruns of 209–381%.

2. The real estimated costs to build a nuclear plant:

In June 2007, a Keystone Center study group sponsored by eleven organizations—nine of which sell, buy, or are allegedly about to buy nuclear plants—raised the MIT study’s nuclear cost estimates from 7.7–9.1¢/kWh (kilowatt-hour) to 8.3–11.1¢/kWh (all in 2007 \$ at the power plant) By early 2008, industry estimates were creeping even above Moody’s dismaying range. In September 2007, Lew Hay, CEO of FPL Group, said the total cost of a new nuclear plant (all in mixed future dollars as-spent) could be ~\$5,000–7,000/kW, or “on the order of magnitude of \$13 to \$14 billion” for a two-unit plant. Yet just five months later, FPL filed formal cost estimates up to nearly twice that high—\$12–24 billion (again in mixed future dollars) for a 2.2–3.04-GW two-unit plant, equivalent to ~\$4,200–6,100/kW in 2007 \$.

3. How do new competitors’ costs compare with nuclear’s?

New nuclear power was found by the 2003 MIT study to be uncompetitive with other central plants, and has since suffered greater cost escalation. But big coal- and gas-fired plants are not the only competitors. In 2005–06, using the best available 2004 U.S. data, researchers compared the costs of new nuclear plants with the costs of some of their widely and abundantly available competitors.

All costs were expressed on the same accounting basis—real levelized cost per kilowatt-hour *delivered* to the retail meter.

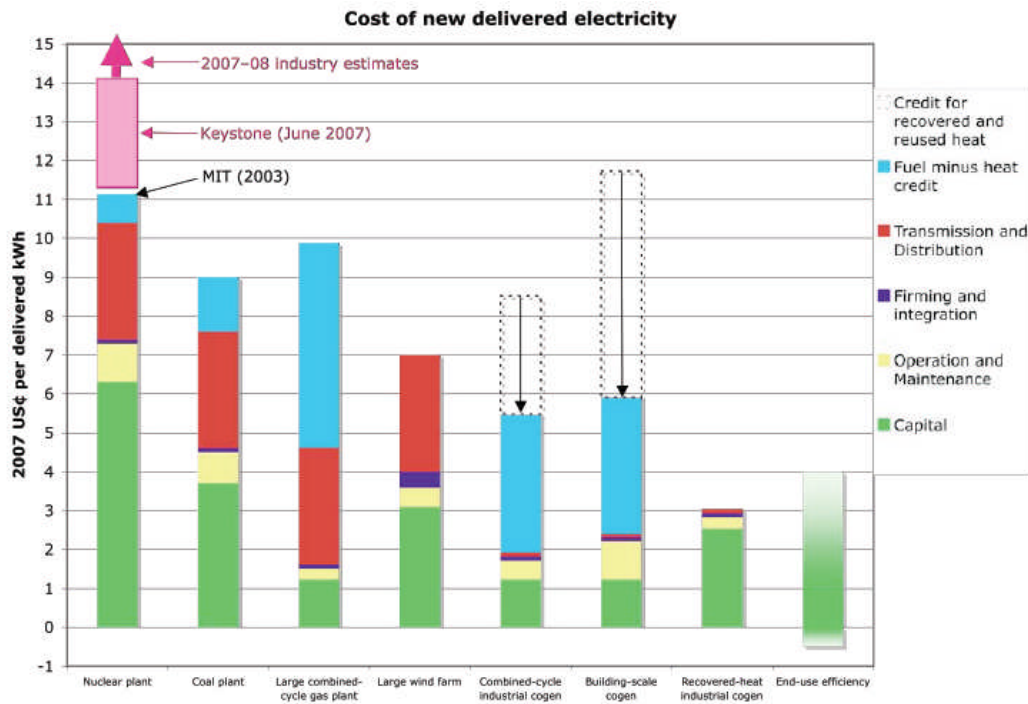


Figure: The representative levelized U.S. cost of saving or delivering 1 kWh of new electricity at the retail meter with comparable reliability by choosing competing technologies.

Making electricity from fuel creates large amounts of byproduct heat that is normally wasted. Combined-cycle industrial cogeneration and building-scale cogeneration recover most of that heat and use it to displace the need for separate boilers to heat the industrial process or the building, thus creating the economic “credit” shown (dotted black lines). Cogenerating electricity and some useful heat from currently discarded industrial heat is even cheaper because no additional fuel (aqua bars) is needed. Just the operating cost (aqua plus yellow bars) of an old nuclear or coal plant can undercut the total cost of most new generators—a misleading comparison often made by nuclear advocates. Efficiency, though, beats everything, often including just running an existing thermal power station even if building it were free. The three bars on the left represent relatively mature

technologies with rising costs, while the rest generally have falling costs and much room for further improvement.

#### 4. Financial performance and markets:

As noted above, it is extremely expensive to build a nuclear plant although the operating costs might be low. Then there is a high demand of company's financing ability. At September 30, 2007, TVA had \$22.5 billion of bonds and notes outstanding, including short-term Discount Notes, electronotes®, PARRS, and other Power Bonds. TVA also had \$2.2 billion of other financing obligations outstanding, including energy prepayment and lease/leaseback obligations. Total bonds, notes, and other obligations were \$24.7 billion at September 30, 2007. These indicate that TVA is reliable to bonds and notes. However, the current financial markets make it harder than before to issue new bonds. You might need to pay higher to get equivalent financing than before. Judging from the current financial performance, TVA should not build a nuclear plants now.

#### **MISC-B Contention TWO:**

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##### **The NRC Fails to Execute Constitutional Due Process and Equal Protection (FSAR, NEPA)**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

#### **FSAR-B Contention THREE:**

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##### **Plant Site Geology is not Suitable for Nuclear Reactors, Geologic Issues Are Not Adequately Addressed**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**MISC-C Contention FOUR.**

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**Failure to Address Impact of Terrorist Attacks (FSAR, NEPA, EP)**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**MISC-D Contention FIVE:**

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**The assumption and assertion that uranium fuel is a reliable source of energy is not supported in the combined operating license application submitted by TVA (the applicant) to the U.S. Nuclear Regulatory Commission (NEPA, TS)**

This contention is properly considered under NEPA since it is addressing a portion of the justification given for the environmental and human impacts that will be incurred by the project: the reliable supply of energy and implicitly the matter of "fuel diversification" since the use of uranium is implicitly a diversification.

Extensive study of the use of uranium as a fuel (Nuclear Power: the Energy Balance, [www.stormsmith.nl](http://www.stormsmith.nl)) shows that like oil, it is not only the presence of uranium -- it is the ability to retrieve it in a cost and energy effective way -- naturally enough the easiest to obtain is used first, leaving resources that require more energy / cost until later. At some point the in-input of money, time and fossil fuels exceeds the energy that will be obtained

from the hard-to-get uranium. For instance, the uranium in sea water would require such a great energy in-put to obtain that it is not a viable energy source. The mere fact that the web site in question contains commentary suggesting that the future will diverge from the documentation of the past and the present does not mean that such a performance will be delivered. It is curious, and not surprising that the comment is from a promoter of the resource in question.

**MISC-E Contention SIX:**

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**Whether Bellefonte Will Adequately Limit Atmospheric Emissions of Radionuclides (NEPA, FSAR)**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**NEPA-A Contention SEVEN:**

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**Excessive Water Use Contrary to TVA's Purpose**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**NEPA-B Contention EIGHT:**

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**Impacts on Aquatic Resources Including Fish, Benthic Invertebrates, and General Aquatic Community Structure of the Project Area, Guntersville Reservoir, and the Tennessee River Basin.**

The following is offered by Petitioners in rebuttal to TVA and NRC Staff Answers by an expert in the field Shawn Paul Young, Ph.D. Dr. Young is Visiting Assistant Professor of Fisheries Biology at Purdue University and Adjunct Faculty at Clemson University. His affidavit is included as Attachment 1.

Response to NRC and TVA's rebuttal to contentions pertaining to aquatic resources

The apparent efforts of both the NRC staff and TVA to discredit the Petitioners ability to properly and fully understand the contents of the ER and to properly cite location of information within the ER are disingenuous and erroneous. The responses by both staffs do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention pertaining to aquatic resources based on expert opinion. Much of the response from NRC and TVA is based upon semantics to mask the fact that the contentions hold merit. The issue at hand remains that Guntersville reservoir and the whole Tennessee River Basin are in very poor ecological health and future BLN operations will cause further decline. The issue is of major concern as the Tennessee River is the most biologically diverse freshwater ecosystem in the United States. Given that both NRC staff and TVA staff provide similar responses, my rebuttals will address both parties to eliminate redundancy and follow format of NRC staff responses.

*Response to NRC staff comments on Proposed Contention 8 – Subpart 1 & 6:*

NRC staff attempts to portray the Petitioners as inept and unable to properly cite the ER . NRC staff argues that Petitioners incorrectly contend there is a lack of information in ER section 2.3 which is the wrong section to find such information.

Petitioners were indeed correct in contending a lack of information in ER section 2.3 pertaining to aquatic communities because section 2.3.3.2.6 “Ecological Health Rating” subsection “Fish” begins the discussion of aquatic communities. No data are presented to determine how TVA arrived at the health ratings.

Petitioners are not mistaken in the mention of new intake and discharge. The term “new” refers to future increased amount of water intake and thermal discharge. As for the statement of “TVA’s plan is to use the existing intake and discharge”, this important information was difficult to discern as it is placed at ER 2.3-34. Given NRC and TVA’s insistence that Petitioners can not properly cite the ER, the Petitioners must ask why this information is found within the Hydrology, Ecological Health, and Aquatic community discussion and not made clearly evident in ER Section 3.4 Description and Operating Modes. Petitioners experienced difficulty following the progression of relevant materials.

The scattered and incoherent flow in combination with general unsubstantiated statements and a general lack of corroborating data lead to difficulty in discerning factual materials of importance from the abundance of uninformative text and unsubstantiated heresy. For example, a statement found in ER section 5.3.2.2, “[d]ue to the discharge plume size and location it is not expected to interfere with migration or breeding areas of fish within Guntersville Reservoir,” is listed in TVA staff response as factual; yet, no reference to any study supporting this statement is given. The Petitioners can not take such statements as fact when no scientific study supports such statements.

*Response to NRC staff comments on Proposed Contention 8 – Subpart 2:*



Statements found in ER sections 2.3.1.2.6 and 2.3.1.3 in question by NRC and TVA staff are not taken out of context nor misconstrued. Petitioners fully understood the statements and correctly understood the importance of those statements in addressing the impacts of BLN on aquatic resources of the Tennessee River and Guntersville Reservoir. Petitioners contention that discussion and elaboration of these statements should be undertaken is reasonable as the concept of the “River Continuum” is an important and legitimate perspective in addressing issues pertaining to aquatic resources. The statements made in the ER correctly address the River Continuum, but fail to discuss specific impacts on upstream and downstream resources that will be affected by BLN operation. NRC and TVA have made an attempt to discredit the Petitioners by framing them as inept in a multitude of ways in order to back-track out of a can of worms they now regret opening by placing those statements in the ER. TVA staff also disingenuously paraphrases those sections to favor their arguments. Again this displays the multitude of disingenuous tactics by both staffs to mask the issues at hand and the validity of the Petitioners contentions. Instead of rejecting the Petitioners contention, elaboration and investigation is warranted as these issues are of paramount importance in the evaluation of impacts from future BLN operations on aquatic resources.

*Response to NRC staff comments on Proposed Contention 8 – Subpart 3:*

NRC staff refutes the statement made by Petitioners that a 44% decline in fish species has occurred since 1994 based upon ER section 2.4.2.4. NRC staff states in its response that it is actually a 32% decline not 44%. Both the Petitioners and the NRC staff are correct depending on which sentences are used in extrapolating the rate of decline from this section of the ER. Petitioners use the first sentence, “[T]he TVA

collected 82 different species of fish from Guntersville reservoir between 1949 and 1994,” in conjunction with “[a]nd surveys conducted between 2002 and 2006 identified 46 species in Guntersville Reservoir” to arrive at 44% decline; whereas, NRC used “[M]ore recent surveys (1985-1994) produced 68 fish species” to arrive at a 32% decline. Regardless, whether a 44% or 32% decline is considered, these rates of decline in the fish species are *very alarming!* This is an example of the use of semantics to mask the importance of this information in exhibiting the poor state of aquatic health which contradicts TVA’s assessment. Again, this information was stated in the ER and the Petitioners correctly determined its enormous importance to the current state of aquatic health and the exhibition of TVA’s biased assessments by internal staff, not peer-review. This further supports the Petitioners assertion that expansion of nuclear facilities or other water withdrawals will accelerate decline of aquatic resources to a greater extent than proposed in the ER.

*Response to NRC staff comments on Proposed Contention 8 – Subpart 4 & 5:*

NRC and TVA staff discuss a recent decision by the Licensing Board to mask the fact that no recent sampling of the fish community, including ichthyoplankton has been performed at the BLN site. As both the NRC and TVA staffs utilize a recent decision by the Licensing Board in the case of Vogtle Early Site Permit proceedings to set a precedent to dismiss certain contentions, Petitioners raise the fact that several similar contentions pertaining to aquatic resources were indeed admitted in the Vogtle Early Site Permit proceedings.

Based upon rational human thinking, impacts can not be properly assessed when one does not even know what is present to be affected. At multiple times in NRC and

TVA responses, both parties continue to insinuate that sampling has been performed at the BLN site; yet, within every discussion of TVA's sampling regime, they acknowledge that they have not sampled at the BLN site. For example, ER section 2.4.2.4 states that TVA samples at TRM 350, 375.2, and 424. BLN is located at 391, not a sample site. As stated in Dr. Shawn Young's attached affidavit, the fish community at BLN, TRM 391, is based upon assumptions, not actual field survey. The assumption that fish communities are similar at TRM 375 and TRM 424 are not supported by statistical tests for similarity, nor are fish communities equally distributed in any aquatic system. Further, ER section 5.3.1.2.1 and 5.3.2.2 state ichthyoplankton sampling was performed from 1977-1983 and recent sampling has occurred at another facility 15 miles upstream. Thus Petitioners are again correct that no recent data from BLN has been collected to assess impacts. Finally, TVA monitoring at Guntersville Reservoir is stated as ongoing around BLN, but again not at BLN.

**NEPA-C Contention NINE:**

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**Alternatives to the Proposed Action Lacking**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**NEPA-D Contention TEN:**

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**TVA's Power and Energy Requirements Forecast Fails to Evaluate Alternatives**

TVA's Environmental Report does not adequately evaluate alternative sources of based load power. In its answer to Petitioners, TVA states, "it is well established under

NEPA that environmental reviews need not evaluate “remote and speculative” possibilities.” TVA Answer footnote 237 at page 52 (citation omitted) However, the alternatives which TVA failed to evaluate are far from speculative. Realistic renewable energy sources omitted by TVA include wind energy and solar energy. In rebuttal, we submit the work of Ross McCluney, Ph.D., an expert in the field of solar energy, and a citation and excerpt regarding base load wind energy from an analysis by Amory Lovins, co-founder and chairman of the Rocky Mountain Institute.

According to Dr. McCluney, a recent revolution in photovoltaic solar electric cell manufacturing is producing dramatic decreases in the costs to manufacture and install solar electric generating arrays. Imbedded energy levels are also decreasing, meaning that it is taking far less fossil fuel energy to manufacture the cells. In one new case, the imbedded energy is so low that it takes only from 1 to 3 years for the power output of the solar cell to match the energy input to make the cell.<sup>9 10</sup> Along with this reduction of imbedded energy, the new cells also are associated with very low emissions of harmful pollutants during manufacture, compared with conventional power plants. The report cited concludes, “Overall, all PV technologies generate far less life-cycle air emissions per GWh than conventional fossil-fuel-based electricity generation technologies. At least 89% of air emissions associated with electricity generation could be prevented if electricity from photovoltaics displaces electricity.” Additionally, PV manufacturing

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<sup>9</sup> “Study shows solar cells’ energy payback is down to 1-3 years”, Tuesday, March 11, 2008, <http://www.edn.com/blog/1470000147/post/190023219.html?nid=2432&rid=783958873>

<sup>10</sup> Vasilis M. Fthenakis, Hyung Chul Kim, and Erik Alsema, “Emissions from Photovoltaic Life Cycles” *Environ. Sci. Technol.*, 42 (6), 2168–2174, 2008. 10.1021/es071763q

costs have been decreasing steadily for a number of years, as illustrated in Fig.1, *infra* from a U.S. Department of Energy report.<sup>11</sup>

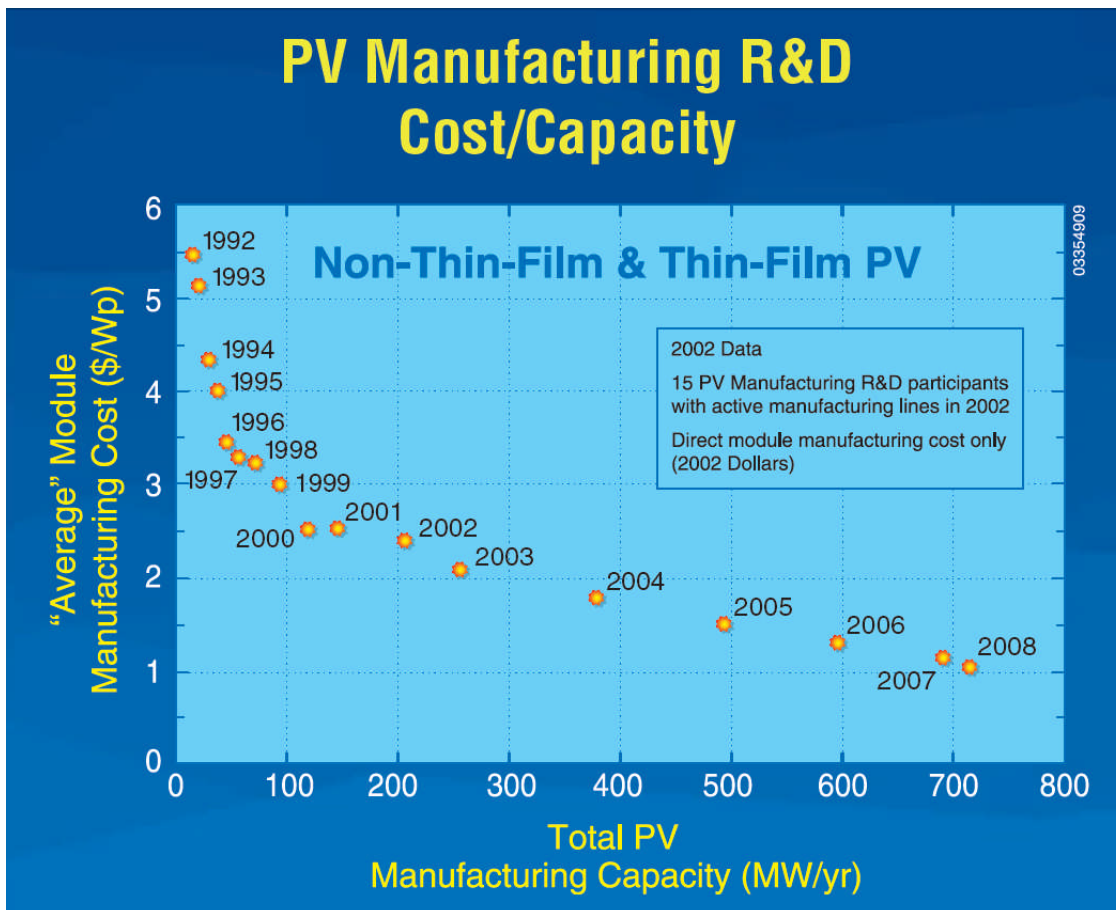


Figure 1. Average manufacturing cost of solar photovoltaic modules versus manufacturing capacity from 1992 to 2008. Source: Information Bridge; DOE Scientific and Technical Information , DOE's Office of Scientific and Technical Information

Along with these improvements, solar cell energy conversion efficiency has also grown from around 14% for conventional crystalline silicon cells to 18.6% for a new Mitsubishi multi-crystalline silicon solar cell. Nanosolar , Inc. has made recent breakthroughs in reducing the cost to manufacture solar cells, based on seven areas of innovation. They began with a thin-film semiconductor material and found a way to abandon the expensive

<sup>11</sup> U.S. Department of Energy, "PV Manufacturing R&D Project" trifold brochure <http://www.nrel.gov/docs/fy04osti/35491.pdf>, accessed 26 March 2008

and slow high-vacuum based thin film deposition processes, by using a proprietary method for printing their solar cells on a highly conductive yet low cost foil as the substrate. This permits a high yield, continuous roll-to-roll printing process that also results in high-power and high-current panels with lower system costs. The substrate can even be a flexible material, making it possible to place solar cells on curved surfaces. With these improvements in the technology of solar cells, it becomes feasible to generate copious quantities of electrical power at modest cost, even when the solar resource is less than optimum.

There is a perception that the southeastern United States has too low a solar resource for economic viability. This is a misconception. Using the National Renewable Energy Laboratory online solar resource calculator PVWatts, version 1, and for solar arrays facing south, tilted to the latitude angle, the annual average solar radiation availability is  $6.57 \text{ kWh m}^{-2} \text{ day}^{-1}$  in Phoenix, Arizona, a region of very high solar availability. It is  $4.95 \text{ kWh m}^{-2} \text{ day}^{-1}$  in Huntsville, Alabama. The ratio of these two values is 1.33, meaning that the Phoenix resource is only 33% greater than that in Huntsville. If the time profiles matched up, all that would be needed to make the two areas fully equivalent is to increase collection areas by 33% for Huntsville installations, resulting in a modest increase in installations costs to achieve the same annual solar energy collection.

The town of Scottsboro, Alabama, near the Bellefonte site, is experiencing economic hard times and is anxious to benefit from an economic stimulus, especially new jobs, which it hopes will result from the nuclear plant construction and operation there. If TVA follows the solar alternative proposed above, it wouldn't take much investment to

attract many more new jobs and provide much more dramatic economic growth in Scottsboro, by making the town a thriving hub of solar electric generation systems and components manufacturing. Green technology is generally very labor-intensive. Though some of the manufacturing processes can be automated, it still takes skilled operators to keep the computers and robotic machines going. There are also a large number of jobs for metal forming machine operators, component assembly workers, and wiring specialists needed for such an industry. Mechanical and electrical engineers will be needed and warehousing and shipping facilities will have to be built and operated. The economic stimulus action of such a development, if the City of Scottsboro will embrace it, could far exceed the expected economic benefits of the proposed nuclear reactors.

Amory Lovins dispels the myth that wind energy is unreliable and unsuitable for baseload capacity. Regarding the expansion of renewable energy in Germany, he wrote:<sup>12</sup>

Recent University of Kassel field experiments have confirmed that just integrated wind, photovoltaics, and biogas generation could reliably provide all German electricity.<sup>94</sup>

The north German state of Schleswig-Holstein, which got 39% of its 2007 electricity from windpower, now aims for 100% by 2020,<sup>95</sup> as it already achieves in windy months.

<sup>94</sup> A nontechnical video is at [www.triplepundit.com/pages/renewables-may-power-100-of-ge-002863.php](http://www.triplepundit.com/pages/renewables-may-power-100-of-ge-002863.php); details are available from Prof Jürgen Schmid at [ired.iset.uni-kassel.de/](mailto:ired.iset.uni-kassel.de/) and [www.iset.uni-kassel.de](http://www.iset.uni-kassel.de).

<sup>95</sup> J. Sawin, "Wind Power Continues Rapid Rise," 2008, [www.worldwatch.org/node/5448](http://www.worldwatch.org/node/5448).

In the United States, growth in wind energy capacity continues to shatter previous records. According to the American Wind Energy Association, wind turbines installed in the US in 2007 alone provide 5,244 megawatts of new capacity and accounted for 30% of all new electric generating capacity nationwide. Thus, last year the wind energy industry

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<sup>12</sup> *The Nuclear Illusion*, Amory B. Lovins and Imran Sheikh, *Ambio* Nov 08 preprint, dr 18, 27 May 2008, DRAFT subject to further peer review/editing

in the United States added new electric capacity equivalent to four AP-1000 nuclear reactors.

### **NEPA–E Contention ELEVEN:**

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#### **TVA’S COLA Power Demand Forecast Fails to Justify Need for New Reactors**

In reply to the NRC Staff and TVA, Petitioners offer the following rebuttal. This part of the reply cites *Impact of Energy Efficiency Programs on Peak Demand* by Bruce Biewald and Kenji Takahashi, which is included as Attachment 2

#### **Role of the Standard Review Plan**

The Standard Review Plan, while not codified into regulation, provides a public expectation that the concerns identified by the Standard Review Plan are addressed by the applicant and important within the NRC review process. For most applicants, most of the Standard Review Plan concerns are also the concerns of public service commissions and a regulated applicant would have to answer to the PSC.

#### **Need for NRC to Act as a Quasi-Public Service Commission for TVA**

TVA has no public service commission to address the concerns outlined by the Standard Review Plan. By default, the NRC needs to provide that additional layer of oversight that otherwise might be addressed by a PSC. TVA's lack of regulatory oversight in its power projections led to its gross overexpansion of power supply during the 1970s which continues to threaten TVA's solvency. Without an independent review of TVA's need for new capacity, there can be no meaningful public and ratepayer challenge to TVA's justifications for the need. The NRC, if it does not want to assume this role itself, could appoint another agency (such as the Berkeley National Laboratory) to conduct such a review.



### Need for TVA to Redo its Power Projections

TVA has based its need for increased demand on outdated economic growth scenarios, with long-term economic growth varying from 3.6% to 2.7%. As we are now in a recessionary period, TVA needs to redo its need for more capacity. TVA's projects that electric power consumption will increase 1.9% annually. The EIA's AEO2008 (p.58) states that "With different assumptions about population and economic growth, average annual growth in delivered energy use from 2006 to 2030 ranges from 0.3 percent in the low growth case to 1.0 percent in the high growth case." It is vital that NRC require TVA to reconsider the need for additional capacity as no other will require TVA to do so. TVA has expressed no urgency in construction of additional capacity. Thus, the NRC acting a in behalf of the well-being of the TVA service area, can ask TVA to take the time and redo its power projection.

### TVA's Energy Projections Do Not Account for Energy Efficiency Resources

TVA's Forecast for Net System Requirements (COL Application 8.2-4) does not include energy efficiency as a resource. TVA states (8.2-8) that energy efficiency is not included in its forecast. Leading electric utilities and states in energy efficiency programs have reduced or are planning to reduce the peak load growth significantly or possibly to zero. The attached memo presents over a dozen examples of peak reduction savings actually happening and planned by these utilities. See Attachment 2 The Lawrence Berkely National Laboratory has reported on the benefits of including energy efficiency as a resource in utility planning. (LBNL 58271.)

### **NEPA-F Contention TWELVE:**

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#### **NRC Failed to Justify Need for New Units**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**MISC-F Contention THIRTEEN:**

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**So-Called Low Level Radioactive Waste, (NEPA, FSAR)**

The following is offered by Petitioners in rebuttal to TVA and NRC Staff Answers by Diane D'Arrigo. Ms. D'Arrigo is Radioactive Waste Project Director for the Nuclear Information and Resource Service in Tacoma Park, Maryland. Her curriculum vitae and affidavit are Attachments 3 and 4 to this Reply.

**IN SUPPORT of BREDL, BEST and SACE in the matter of Tennessee Valley Authority (TVA) Bellefonte Nuclear Power Plant Units 3 and 4**

TVA's application to build and operate Bellefonte Nuclear Power Plant Units 3 and 4 violates the National Environmental Policy Act by failing to address the environmental impacts of the waste that it will generate in the absence of licensed disposal facilities or capability to isolate the radioactive waste from the environment. TVA's environmental report does not address the environmental, environmental justice, health, safety, security or economic consequences that will result from lack of permanent disposal for the radioactive wastes generated.<sup>13</sup>

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<sup>13</sup> BREDL recognizes that this contention raises a challenge to the generic assumptions and conclusions in Table S-3. However, BREDL respectfully submits that the information submitted in its contention constitutes new and significant information, not considered in any previous environmental impact statement ("EIS"), that must be considered in the EIS for the Bellefonte plant because it would have a significant effect on the outcome of TVA's and the NRC's analyses of the environmental impacts of licensing the proposed plant. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989).

The issue of radioactive waste management is barely addressed in TVA's COL application. A short section (3.5) of the Environment Report on page 3.5-1 simply describes the generation of radioactive waste during operations and states that the systems are:

designed to minimize releases from reactor operations to values as low as reasonably achievable (ALARA). These systems are designed and maintained to meet the requirements of 10 CFR Part 20 and 10 CFR 50, Appendix I.

The applicant provides no information regarding the ongoing on-site management and potential environmental impact at the reactor site of keeping so-called "low-level" waste from operations on the site of generation.

Chapter 11 of the FSAR is entitled "Radioactive Waste Management" all of which assumes that there will be a "WAC" (waste acceptance criteria) from a disposal site. The fact that there is not currently a site licensed to take the full range of wastes that Bellefonte 3 & 4 will generate if operated is not mentioned. Section 11.4.5 offers a

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As required by NRC regulations, BREDL intends to submit a rulemaking petition to seek revision of Table S-3. In the meantime, BREDL seeks admission of this contention in order to protect its right to ensure that any generic resolution of BREDL's concerns is made in a timely way and "plugged in" to the licensing decision in this particular case. *Baltimore Gas and Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 101 (1983). *See also Commonwealth of Massachusetts v. NRC*, 522 F.3d 115 (1st Cir. 2008). In *Commonwealth of Massachusetts*, the First Circuit found that although the NRC may make generic determinations regarding the significance of environmental impacts and prohibit challenges to those generic determinations in individual proceedings, it nevertheless must "consider any new and significant information regarding environmental impacts before renewing a nuclear power plant's operating license." 511 F.3d at 127. Moreover, while the NRC may "channel" into a generic rulemaking the challenging party's concerns about the effects of new and significant information on an individual licensing decision, the NRC may not refuse to provide "at least one path by which the [challenging party] may establish a connection" between the rulemaking and the licensing proceeding, thereby ensuring that the result of the rulemaking proceeding will be applied in the individual licensing case. *Id.* at 128. In order to ensure that a "connection" is maintained between any rulemaking petition that BREDL may bring and BREDL's right to seek application of new and significant information to this license renewal proceeding, BREDL requests that this contention be admitted and held in abeyance pending the outcome of the generic proceeding.

perfunctory discussion of a “process control program” (PCP) for radioactive waste management:

Its purpose is to provide the necessary controls such that the final disposal waste product meets applicable federal regulations (10 CFR Parts 20, 50, 61, 71, and 49 CFR Part 173), state regulations, and disposal site waste form requirements for burial at a low level waste (LLW) disposal site that is licensed in accordance with 10 CFR Part 61.

No explanation is offered for how the applicant will meet this plan in the absence of a licensed disposal site.

TVA apparently assumes that it will be able to send its Class B, C, and Greater-Than-Class-C radioactive waste offsite. After June 30, 2008, however, no facility in the United States will be licensed and able to accept for disposal, Class B, C or Greater-Than-C radioactive waste from the Bellefonte nuclear power reactors. The applicant fails to offer a viable plan for disposal 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 Bellefonte 3 & 4.

The statement of fact is that applicant, TVA, fails to address how so-called “low-level” radioactive waste from the operation and closure/dismantlement and decommissioning of Bellefonte 3 and 4 will be isolated from the environment and permanently disposed of.

There is no disposal site licensed for the Classes B and C or for Greater-than-C radioactive waste that would be generated by operation of Bellefonte 3 and 4. The only operating disposal sites that take Classes B and C waste (and possibly >C on a case-by-case basis) are in Richland WA and Barnwell SC and (after July 1, 2008) neither will accept radioactive waste from outside of the Northwest, Rocky Mountain and Atlantic

Compacts. Processors could change the form of the waste, but the radioactivity will remain, requiring isolation and disposal. Thus it is reasonable to expect that all Class B, C and Greater-than-C radioactive waste from the proposed Bellefonte nuclear reactors will remain onsite indefinitely. However, Table S-3 assumes that these wastes will be disposed of at “land burial facilities”.

The environmental impacts of leaving these wastes onsite must be addressed in order for the US Nuclear Regulatory Commission to comply with NEPA. It is imperative that the safety and security issues of extended onsite storage, de-facto disposal, be addressed prior to generation of the waste because the so-called “low-level” radioactive waste for which there is no disposal available is the hottest, most concentrated [14] waste in the category. The Environmental Report should also evaluate the impacts of licensing the site itself under 10 CFR Part 61 (licensed permanent radioactive waste disposal) or Alabama’s compatible agreement state regulations for Class B and C waste. The Environmental Report should also address the fact that Greater-than-C wastes require disposal requirements that are even more protective than Classes B and C in 10 CFR 61 and must be disposed of in a deep geologic repository unless a specific exemption is granted. For on-site disposal of Greater-than-Class C waste to be carried out, it will have to be shown that shallow land burial there would be equivalent to the more stringent requirements and protective intent of 10 CFR 61.55.

Onsite long-term storage and disposal could significantly increase the environmental, safety and security risks of the Bellefonte site. Therefore serious consideration must be given to licensing the site itself under 10 CFR Part 61 (licensed

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<sup>14</sup> GAO report indicates some of this waste can give a lethal dose in 20 minutes if exposed unshielded. GAO-RCED-98-40R Questions on Ward Valley pages 49-52, 1998.

permanent radioactive waste disposal) or Alabama's compatible agreement state regulations for Class B and C waste. Greater-than-C wastes require disposal requirements that are even more protective than Classes B and C in 10 CFR 61 and must be disposed of in a deep geologic repository unless a specific exemption is granted. For on-site disposal of Greater-than-Class C waste to be carried out, it will have to be shown that shallow land burial there would be equivalent to the more stringent requirements and protective intent of 10 CFR 61.55.

Since TVA might argue that offsite storage and treatment are potential options, it should be noted that radioactive waste sent for offsite storage and processing could be returned to Bellefonte, under certain circumstances. This is not addressed in the COL.

**NEPA–L Contention FOURTEEN:**

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**Waste Confidence—High Level Nuclear Waste from Irradiated Fuel**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**FSAR–C Contention FIFTEEN:**

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**A. Global Warming Impacts Are Omitted from TVA License Application: Severe Weather Impacts Resulting from Global Warming**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**NEPA–M Contention FIFTEEN:**

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**B. Global Warming Impacts Are Omitted from TVA License Application: TVA failed to analyze the carbon footprint of the construction and operation of Bellefonte 3 and 4 in its environment report.**

The responses of TVA and NRC staff to our proffered contention do not include any additional data or discovery to refute Petitioners contentions. The Petitioners fully understand the contents, do not misconstrue any statements, and raise genuine issues of contention based on expert opinion. The contention has merit and should be admitted.

**NEPA–N Contention SIXTEEN:**

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**Environmental Report’s Inadequate Cost Estimates and Cost Comparisons**

TVA argues that Petitioners’ claims regarding the comparative costs of nuclear energy and alternative energy sources are “not material to the outcome of this proceeding,” because TVA’s decision to select nuclear power was made for the purpose of providing baseload power, which cannot be supplied by wind or solar power. TVA Response at 83-84. But TVA hasn’t demonstrated that the higher electricity requirements translate into baseload power requirements rather than peak load or intermediate load increases. Combination of renewable energy such as wind and solar thermal with heat storage together with and natural gas and biogas fueled power units can provide power with the same level of reliability as nuclear or fossil fuel plants to meet the growth that is the supposed basis for the Bellefonte. Such combinations are called hybrid power plants. Further, efficiency measures can reduce electricity demand and peak load, making for a much better, less polluting system overall. There is no basis in technical reality for claiming that a baseload power plant is required for a given level of reliability

rather than combinations of renewable resources and efficiency and standby capacity. The technical criterion for satisfactory electricity operation is not whether a particular type of generating station is available, but whether the system, which consists of all its elements, can provide electricity reliably.

The NRC Staff generally argues that Petitioners have not provided sufficient documentary support for this contention. The Staff ignores the fact that the contention is supported by the expert declaration of Dr. Arjun Makhijani, who is “responsible for the factual content and expert opinions” expressed in Contention N and whose credentials to analyze the costs of nuclear and alternative energy sources are well documented. As he states in paragraph 5 of his declaration:

I have written a number of books and other publications analyzing the safety, economics, and efficiency of various energy sources, including nuclear power and sustainable energy sources such as wind and solar energy. I was the principal author of the first evaluation of energy end-uses and energy efficiency potential in the U.S. economy (published by the Electronics Research Laboratory, University of California at Berkeley in 1971). I was also the principal author of the first overview study on *Energy and Agriculture in the Third World* (Ballinger 1975). This study included consideration of both traditional and modern energy sources. I was one of the principal technical staff persons of the Ford Foundation Energy Policy Project, and a co-author of its final report, *A Time to Choose*, which helped shape U.S. energy policy during the mid-to-late 1970s. I am a co-author of *Investment Planning in the Electricity Sector*, which is an economic model published by the Lawrence Berkeley Laboratory in 1975. I am also the author of *Nuclear Power Deception* (Apex Books 1999), an analysis of the costs of nuclear power in the United States. On behalf of the SEED Coalition, I have assessed the capital costs of proposed nuclear power reactors in South Texas (2008). In addition, I am the author of *Carbon-Free and Nuclear-Free* (RDR Books and IEER Press 2007), the first analysis of a transition to a U.S. economy based completely on renewable energy, without any use of fossil fuels or nuclear power. I have been a consultant on energy issues to several U.N. agencies, the Tennessee Valley Authority, the Lower Colorado River Authority, the Lawrence Berkeley Laboratory, Edison Electric Institute, and the Congressional Office of Technology Assessment. I was elected a Fellow of the American Physical Society in 2007, an honor granted to at most one-half of one percent of APS members.

The contention is admissible because it is supported by “a concise statement of the alleged facts or expert opinions which support the requestor’s petitioner’s position.”

*Entergy Nuclear Vermont Yankee L.L.C. and Entergy Nuclear Operations, Inc.* (Vermont



Yankee Nuclear Power Station), LBP-06-20, 64 NRC 131, 186 (2006) citing 10 C.F.R. § 2.309(f)(v). *See also* Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,171 (August 11, 1989), citing *Connecticut Bankers Association v. Board of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980) (at the contention-filing stage a petitioner must “make a *minimal* showing that material facts are in dispute, thereby demonstrating that an ‘inquiry in depth’ is appropriate.”

**NEPA–O Contention SEVENTEEN:**

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**Inadequacy of Environmental Report’s Analysis of Human Health Impacts of Irradiated Fuel Disposal**

In opposing this contention, TVA claims that Petitioners are making an impermissible challenge to the U.S. Environmental Protection Agency’s proposed regulations for the Yucca Mountain repository, which are outside the scope of this proceeding. TVA Response at 88. *See also* NRC Staff Response at 98, which argues that Petitioners are impermissibly attacking the NRC regulation that relies on the EPA regulation. But Petitioners are not challenging the regulation. Instead, Petitioners are challenging, under the National Environmental Policy Act, the NRC's characterization that the effects of a 350 millirem per year dose are SMALL.

The NRC Staff also challenges Petitioners’ reliance on Dr. Makhijani’s declaration. NRC Staff Response at 99. As discussed below with respect to Contention N, Petitioners have satisfied the NRC’s admissibility standard by relying on Dr. Makhijani’s expert opinion. He is responsible for the contention, and vouches for the accuracy of the statements in the contention and the technical opinions expressed in the

contention. He is a qualified expert, as demonstrated by his declaration and his curriculum vitae. Therefore the contention is admissible.

The NRC also challenges the relevance of Petitioners' challenge to the EPA's proposed regulations. But as discussed in the contention, TVA concludes that the environmental impacts of high level waste disposal are "SMALL," based on TVA's belief that effluents from waste buried in a repository will be within the limits of EPA's proposed standards. Contentions at 93.

**NEPA-P Contention EIGHTEEN:**

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**Inadequacy of Environmental Report's Reliance on Table S-3 Regarding Radioactive Effluents From the Uranium Fuel Cycle**

As discussed in Contention P, the assumption in Table S-3 that wastes other than high level wastes will be "buried on site" is not in conformity with present regulations for Class A, B, C, or Greater than Class C ("GTCC") waste, which require licensed disposal sites. According to the NRC Staff, Table S-3 does not say that GTCC waste can be disposed of in shallow land burial sites. But Table S-3 does say low level waste can be disposed of in shallow dumps. This would include GTCC waste, because it is characterized as low level waste ("LLW"). The category GTCC waste did not exist at the time S-3 was written. Neither was DU from enrichment plants treated as a waste.

Petitioners intend to submit a rulemaking petition challenging Table S-3. Because of the significant burdens of preparing contentions in this licensing proceeding, Petitioners have not had time to do so. The contention should be admitted and held in abeyance pending completion of the rulemaking proceeding, in order to ensure that the results of the rulemaking are incorporated into the individual licensing decision.

**NEPA–O Contention NINETEEN:**

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**Environmental Report's Improper Characterization of Health Effects from the Uranium Fuel Cycle as Small and Failure to Adequately Compare Them to Health Effects of Alternative Energy Sources**

The NRC Staff argues that the contention should be rejected because Petitioners have not identified any regulatory requirement to compare the health effects of the uranium fuel cycle to the health effects of alternative energy sources. The requirement is based in the National Environmental Policy Act, which requires the NRC (and TVA in its Environmental Report) to make a reasoned evaluation of the environmental impacts of the proposed nuclear plant, and to weigh the costs and benefits of alternatives. Given that the principal adverse effects of a nuclear plant are adverse health effects from its radiological emissions, it is highly appropriate to weigh the relative costs and benefits of other alternatives in terms of their own impacts on public health.

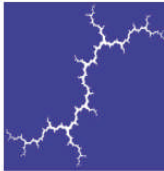
Respectfully submitted,



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July 8, 2008

**Attachment 2**



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***Memorandum***

To: Bruce Biewald  
From: Kenji Takahashi  
Date: March 20, 2008

***Subject: Impact of Energy Efficiency Programs on Peak Demand***

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Leading electric utilities and states in energy efficiency programs have reduced or are planning to reduce the peak load growth significantly or possibly to zero. In this memo, we will present over a dozen of examples of peak reduction savings actually happened and planned by those utilities.

Berkeley National Laboratory evaluated integrated utility planning filings (IRP) by Western electric utilities and found out that some utilities were/are actually planning to reduce peak low over 50% of the projected load growth. Such utilities include BC Hydro, Puget Sound Energy (PSE), Pacific Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E) (See Table 1).<sup>15</sup> Surprisingly PSE has a plan to reduce the peak load growth by 123% during between 2004 and 2008 or 96% between 2004 and 2013.

**Table 1. Impact of Energy Efficiency Program on Peak Load Reduction in IRP**

Utility	2008			2013		
	Average Annual Growth in Total Capacity Requirements (2004–08)	Plan Summer Peak Demand Reductions from Energy Efficiency Programs as % of Growth in Total Summer-Peak Capacity Requirements (2004–08)	Plan Winter Peak Demand Reductions from Energy Efficiency Programs as % of Growth in Total Winter-Peak Capacity Requirements (2004–08)	Average Annual Growth in Total Capacity Requirements (2004–13)	Plan Summer Peak Demand Reductions from Energy Efficiency Programs as % of Growth in Total Summer-Peak Capacity Requirements (2004–13)	Plan Winter Peak Demand Reductions from Energy Efficiency Programs as % of Growth in Total Winter-Peak Capacity Requirements (2004–13)

<sup>15</sup> LBNL 2006. Energy Efficiency in Western Utility Resource Plans: Impacts on Regional Resource Assessment and Support for WGA Policies, August 2006

Avista	2.5%	29%	32%	2.6%	25%	28%
BC Hydro	1.7%	63%	48%	1.6%	48%	36%
Idaho Power	2.7%	6%	—	2.5%	6%	—
Nevada Power	2.6%	15%	—	2.1%	—	—
PacifiCorp	3.3%	14%	—	3.3%	12%	—
PGE	2.0%	36%	41%	2.2%	29%	34%
PSCO	2.7%	34%	—	2.7%	28%	—
PSE	1.1%	123%	90%	1.2%	96%	70%
PG&E	1.8%	62%	—	1.7%	65%	—
SCE	2.6%	53%	—	2.0%	58%	—
SDG&E	2.5%	74%	—	2.1%	67%	—
Sierra Pacific	1.9%	24%	—	1.8%	—	—

We also investigated a few cases of utility efficiency programs for actual peak load reduction and historical peak load to estimate average annual peak reduction as % of peak load. Table 2 provides this data as well as the peak reduction projections from LBNL 2006 study translated into % of peak load. SDG&E has reduced peak load by 1.8% which is about 72% of the average growth rate stated in Table 1, close to the projected value. SCE reduced its peak load by 1.2% in 2005 which is also close to the projected peak load reduction. Finally Connecticut utilities and Efficiency Vermont have also reduced significantly amount of peak load. If peak load growth in Vermont and Connecticut are lower than the majority of the Western states, which is possible, these two states are leveling off the peak load growth.

**Table 2. Actual and Projected Peak Load Reduction by Efficiency Programs as % of Summer Peak Load**

Type of Analysis	State/Utility	Period	Average Annual Peak Saving as % of Summer Peak Load	Source
Actual	SDG&E	2005	1.8%	SDG&E 2006
Actual	SCE	2005	1.2%	SCE 2006
Actual	CT	2003-05	1.50%	CT ECMB
Actual	VT	2003-06	0.80%	Efficiency Vermont
Projected (IRP)	Avista	2004-08	0.8%	LBNL 2006
Projected (IRP)	BC Hydro	2004-08	1.1%	LBNL 2006
Projected (IRP)	Idaho Power	2004-08	0.2%	LBNL 2006
Projected (IRP)	Nevada Power	2004-08	0.4%	LBNL 2006
Projected (IRP)	PacifiCorp	2004-08	0.5%	LBNL 2006
Projected (IRP)	PGE	2004-08	0.7%	LBNL 2006
Projected (IRP)	PSCO	2004-08	1.0%	LBNL 2006
Projected (IRP)	PSE	2004-08	1.4%	LBNL 2006

Projected (IRP)	PG&E	2004-08	1.1%	LBNL 2006
Projected (IRP)	SCE	2004-08	1.4%	LBNL 2006
Projected (IRP)	SDG&E	2004-08	1.9%	LBNL 2006
Projected (IRP)	Sierra Pacific	2004-08	0.5%	LBNL 2006

**References:**

LBNL 2006. Energy Efficiency in Western Utility Resource Plans: Impacts on Regional Resource Assessment and Support for WGA Policies, August 2006

SDG&E 2006. Energy Efficiency Programs Annual Summary and Technical Appendix: 2005 Results, May 2006.

SCE 2006. 2006 Energy Efficiency Annual Report: Summary Report 2005 Results and Technical Appendix 2005 Results, May 2006

Connecticut Energy Conservation Management Board (ECMB). Annual Efficiency Program Reports for Year 2003 to 2005

Efficiency Vermont. Annual Efficiency Program Reports for Year 2003 to 2006.

**Attachment 3**

**Curriculum Vitae  
Diane D'Arrigo  
June 2008**

**OCCUPATIONAL EXPERIENCE:**

1988- present RADIOACTIVE WASTE PROJECT DIRECTOR, Nuclear Information and Resource Service, Washington, D.C./Takoma Park, MD.

1896- 1988 REGULATORY OVERSIGHT COORDINATOR, Nuclear Information and Resource Service, Washington, D.C.

1984-1985 CHEMICAL RESEARCH ASSISTANT, Great Lakes Laboratory, Bflo, NY

1982- 1984 RESEARCH ASSOCIATE, Sierra Club Radioactive Waste Campaign, Buffalo, NY

1981-1982 CHEMIST, FMC, Inc. Research and Development, Middleport, NY

1980 COMMUNITY ORGANIZER, Citizens Alliance, Massapequa Park, NY

**EDUCATION AND SPECIAL STUDY:**

1978 Bachelor of Science in Chemistry with Course Concentration in Environmental Studies, William Smith College, Geneva, N.Y.

1981 State University of NY at Buffalo, Environmental Law Course.

**REPORTS:**

*Out of Control – On Purpose: The DOE's Dispersal of Radioactive Waste into Landfills and Consumer Products*, May 14, 2007 for Nuclear Information and Resource Service.

*Insecure Landfills: The Exhumation Option*, a study of chemical and radioactive landfills, 1982 for the Sierra Club Radioactive Waste Campaign.

Baccalaureate Essay: *Polychlorinated Biphenyls in the Environment: A Biological and Economic Perspective*. 1977

**TESTIMONY:**

Federal Legislative:

September 12, 1991 US House of Representatives Committee on Interior and Insular Affairs Subcommittee on Energy and the Environment, on NRC's policies on *Below Regulatory Concern Radioactive Deregulation*

State Legislative:

Before Legislative Committees with Jurisdiction over Radioactive and Solid Waste:

<u>State</u>	<u>Topic</u>
Arkansas	"Low-Level" Radioactive Waste, Compacts
California	"Low-Level" Radioactive Waste, Compacts
Maryland House	"Low-Level" Radioactive Waste, Compacts
Nebraska	"Low-Level" Radioactive Waste, Compacts
New Hampshire	"Low-Level" Radioactive Waste, Compacts, "Below Regulatory Concern"
North Carolina	"Low-Level" Radioactive Waste, Compacts
Ohio	"Low-Level" Radioactive Waste, "Below Regulatory Concern"
Pennsylvania	High level radioactive waste transport
PA Senate Committee	
Env Res and Energy	Radiation in landfills June 28, 2006
Texas	"Low-Level" Radioactive Waste, Compacts
Vermont	"Low-Level" Radioactive Waste, Compacts

#### SELECTED PRESENTATIONS

Baltimore, MD, *Nuclear Power and Waste in Maryland*, League of Women Voters Annual Dinner, May 12, 2008

Stockholm, Sweden, *Nuclear Waste "Recycling"*. Coping With Nuclear Waste Conference, 27-29 April 2007,

Hull, England *Radioactive Waste Deregulation- Can it be stopped?* Nuclear Free Local Authorities, October 15, 2004

Washington, DC, National Academy of Sciences, Board on Radioactive Waste Management, *NIRS Statement on Scope of Committee on Improving Practices for Regulating & Managing Low-Activity Radioactive Waste*, June 12, 2003

Budapest, Hungary, *Radioactive Waste- The U.S. Experience*, Hungarian Parliament, May 4, 2001

Andrews, TX, League of Woman Voters Debate on "low-level" radioactive waste, Spring 1999



Nebraska Natural Resource Districts Annual Meeting, *History of Commercial “low-level” Radioactive Waste Disposal in the US.*

Boston, Massachusetts, *Critique of 10 CFR 61 NRC’s Regulations for Radioactive Waste Burial*, League of Women Voters “low-level” Radioactive Waste Conference, 1982.

## COMMENTS

Commented on select proposed Radiation Protection Regulations by US Environmental Protection Agency, US Department of Energy, US Nuclear Regulatory Commission, US Department of Homeland Security and US Department of Transportation from 1986 to present.

Commented to the National Academy of Sciences on numerous studies on ionizing radiation and nuclear waste.

Commented to ISCORS Interagency Scientific Committee On Radiation Standards on radiation, nuclear waste and radioactive deregulation/clearance.

Commented to the International Commission on Radiological Protection (ICRP) on its proposed recommendations for radiological protection.

Commented to US Environmental Protection Agency during its rulemaking processes regarding “clean” radioactive metals, management and disposal of “low-activity” radioactive waste and to EPA Science Advisory Board regarding changing the risk basis of US radiation protection standards.

Commented to US Nuclear Regulatory Commission on “Low-Level” Radioactive Waste regulations, Decommissioning regulations, Below Regulatory Concern policies, Enhanced Rulemaking on Residual Radioactivity and others.

Commented to US DOE on proposed changes to DOE Order 5400.

**Attachment 4**

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**DECLARATION OF DIANE D'ARRIGO IN SUPPORT of BREDL ET AL  
In the matter of Tennessee Valley Authority  
Bellefonte Nuclear Power Plant Units 3 and 4  
Docket Nos. 52-014 and 52-015**

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I, Ms. Diane D' Arrigo, hereby declare as follows:

1. I am the Radioactive Waste Project Director at Nuclear Information and Resource Service (NIRS) at 6930 Carroll Avenue, Suite 340, Takoma Park, Maryland 20912, and have been at NIRS for 22 years.
2. I am an expert on the policy aspects and general technical characteristics of so-called "low-level" radioactive waste. I hold a Bachelor of Science degree in chemistry with a course concentration in environmental studies and a postgraduate environmental law course. My work experience has been with industry research and development, academic research, laboratory analysis, public interest research, and environmental advocacy. I have closely followed the so-called "low-level" radioactive waste issue since the passage of the Low Level Radioactive Waste Policy Act and its Amendments, including efforts to site new waste repositories and to deregulate/declare "below regulatory concern"/release/clear the waste from radioactive regulatory control. I regularly make presentations and occasionally provide testimony to legislators and regulators on related topics. For over twenty five years I have been tracking and participating in policy-making and implementation of policies regarding the generation, disposal, management and deregulation of nuclear waste and materials, primarily from the operation of nuclear power plants and their fuel chain. My work has included research and public education on safety and environmental risks posed by wastes from the

operation of nuclear power plants and the fuel chain and the regulations for disposal. I have spoken publicly and published articles on these topics.

3. I am familiar with the current situation in the United States with regard to “low-level” radioactive waste and with the legislative and regulatory history from the early 1980s up to the present. I am generally familiar with NRC policies and regulations with respect to “low-level” radioactive waste.

4. There is clear public concern about so-called “low-level” radioactive waste especially the highly concentrated, long-lasting, biologically active waste in Classes B, C and Greater-Than-C. The majority of the radioactivity in this waste comes from nuclear power reactors, such as the proposed Bellefonte 3 and 4 nuclear units.

5. As of July 1, 2008, the Barnwell, South Carolina disposal site will be limiting its access to waste generated within the Atlantic Compact (SC, NJ, CT). The US Ecology-run commercial radioactive waste disposal site at Hanford/Richland Washington already limits access to generators in the Northwest and Rocky Mountain States only. For the rest of the country, then, including Alabama, generators of Class B and C radioactive waste will have no licensed disposal site to which to send their waste. In addition, there is no disposal site for Greater-than-C radioactive wastes.

6. The nuclear utilities and the NRC are developing guidelines for extended long-term on-site storage of so-called “low level” radioactive waste at nuclear power reactors. This is not a responsible permanent solution for isolation of these long-lasting, highly concentrated radioactive wastes. As with high level radioactive waste, the outcome could likely be de-facto permanent onsite storage at the reactor site. Rather than

assume off-site disposal will become available, TVA should show that the Bellefonte site can meet licensing criteria for disposal of the waste it generates. A likely and completely realistic scenario is that the waste generated by Bellefonte 3 and 4 will not leave the site.

7. In its application, TVA has failed to address how its “low-level” radioactive waste will be disposed according to NRC regulations. If perpetual or extended on-site storage of these wastes is the “fall back” then this must be addressed in the COL application, and it is not. This could significantly increase the safety and security of the site. Serious consideration must be given to meeting the NRC criteria for nuclear waste disposal at 10 CFR 61 or Alabama’s compatible Agreement State regulations.

8. Absent any known disposal means, the applicant should at least analyze the impacts of alternatives for its “low-level” radioactive waste disposal in light of new information that disposal access will be unavailable. The application is incomplete because there is no "realistic" alternative for nuclear waste isolation and disposal proposed.

9. Some so-called “low-level” radioactive waste can give high doses of radiation if one is exposed unshielded. According to the Government Accounting Office (GAO/RCED-98-40R Questions on Ward Valley, 5-22-98 pp. 49-52) some so-called ‘low-level’ radioactive waste can give a lethal dose at one meter, unshielded, in approximately 20 minutes. In addition, so-called ‘low-level’ radioactive wastes

“contain every radionuclide found in ‘high-level’  
radioactive waste...low-level radioactive wastes constitute

a very broad category containing many different types and concentrations of radionuclides, including the same radionuclides that may be found in high-level radioactive wastes.”

These include plutonium-239 (hazardous life 250 to 500 thousand years), iodine-129 (hazardous life 170 to 340 million years), strontium 90 (hazardous life 280-560 years) and cesium-137 (hazardous life 300 to 600 years).

10. It is imperative that the safety and security issues of extended on-site storage/de-facto disposal of radioactive waste be addressed in TVA’s COL application. A short section of the Environmental Reports on page 3.5-1 simply describes the generation of waste during operations stating that the systems are:

“designed to minimize releases from reactor operation so values are as low as reasonably achievable (ALARA).

These systems are designed and maintained to meet the requirements of 10 CFR 20 and 10 CFR 50 App. I.”

These are the routine release levels and the applicant provides nothing regarding the ongoing onsite management and potential impact from storage of all the B, C and >C radioactive waste from operations on the site of generation.

11. Despite mention in Chapter 11 of the FSAR “Radioactive Waste Management,” the assumption appears to be that there will be a site that accepts the full range of waste generated at Bellefonte. A perfunctory discussion of “process control program” does not explain how the application will comply in the absence of licensed

disposal facilities. Even waste sent offsite for processing could be returned for storage in the absence of permanent disposal. This is not addressed in the COL.

12. The special location of the Bellefonte site on water deserves deeper evaluation from the perspective of exorbitant water use, to potential contamination by routine releases and unintended possible radioactive and heat releases from reactor and waste operations. The fact that numerous other reactors are in the same watershed should be factored in.

13. There is no justification provided for producing long-lasting, intensely radioactive wastes for which no disposal exists. There is no realistic plan for isolation of the wastes or permanent disposal of the wastes. Considering the long history of failed so-called “low-level” radioactive waste disposal sites in the country, assumptions that new ones will be available are not justified.

I declare under penalty of perjury that the foregoing statements of fact are true and correct to the best of my knowledge and that the opinions expressed herein are based on my best professional judgment.

\_\_\_\_\_/s/\_\_\_\_\_  
Diane D'Arrigo  
Nuclear Information and Resource Service

Dated: June 6, 2008

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**ATOMIC SAFETY AND LICENSING BOARD PANEL**

**BEFORE THE LICENSING BOARD**

In the Matter of	)	
Tennessee Valley Authority	)	Docket Nos. 52-014, 52-015
Bellefonte Nuclear Power Plant	)	ASLBP No. 08-864-02-COL-BD01
Units 3 and 4	)	July 8, 2008

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the July 8, 2008 REPLY OF THE BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE, ITS CHAPTER BELLEFONTE EFFICIENCY AND SUSTAINABILITY TEAM AND THE SOUTHERN ALLIANCE FOR CLEAN ENERGY TO THE NRC STAFF ANSWER TO PETITION FOR INTERVENTION AND THE APPLICANT'S ANSWER OPPOSING PETITION TO INTERVENE, BOTH DATED JULY 1, 2008 were served this day on the following persons via Electronic Information Exchange.

US Nuclear Regulatory Commission  
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Washington, DC 20555-0001  
Hearing Docket  
(E-mail: hearingdocket@nrc.gov)

Office of Commission Appellate  
Adjudication  
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US Nuclear Regulatory Commission  
Washington, DC 20555-0001  
(E-mail: ocaamail@nrc.gov)

Administrative Judge  
G. Paul Bollwerk, III, Chair

Atomic Safety and Licensing Board Panel  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

(Email: gpb@nrc.gov)  
Administrative Judge  
Dr. Anthony J. Baratta  
Atomic Safety and Licensing Board Panel  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001  
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Administrative Judge  
Dr. William W. Sager  
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July 8, 2008