

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

www.BREDL.org ~ PO Box 88 Glendale Springs, North Carolina 28629 ~ Phone (336) 982-2691 ~ Fax (336) 982-2954 ~ BREDL@skybest.com

September 1, 2005

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop T6-D59
US Nuclear Regulatory Commission
Washington, DC 20555-0001
NorthAnna_ESP@nrc.gov

Re: Draft Environmental Impact Statement for North Anna Early Site Permit, Docket 52-008, NUREG-1811

Dear Sir or Madam:

On behalf of the Blue Ridge Environmental Defense League and our members in Virginia, I write to correct errors in the testimony delivered by an employee of Dominion Power at the February 17, 2005 hearing in Mineral, Virginia.

First, the testimony of the Blue Ridge Environmental Defense League is thorough, sound and well-documented. Our conclusion is that public health records indicate that death rates rose sharply in counties within 30 miles of Dominion/Virginia Power's North Anna plant soon after the nuclear reactors began operating compared with other counties Virginia. Specifically, we find that:

- 1) Deaths of children aged 1-4 years increased 99%
- 2) Deaths of children aged 5-14 years increased 72%
- 3) The differences between the increases in the counties near North Anna and the decreases in the U.S. and the rest of Virginia is statistically significant, with a 95% certainty ($p < .05$).

Our information source is the Centers for Disease Control Compressed Mortality Data at <http://wonder.cdc.gov>. Our analysis included deaths from infectious diseases, immune disorders, cancers and congenital defects. These medical problems are commonly associated with the effects of ionizing radiation.

Second, the allegations directed at us by a Dominion Power employee are untrue and have no basis in fact. At the NRC hearing Delbert Horn, who identified himself as an employee of Dominion Power, accused the Blue Ridge Environmental Defense League of misuse of statistics. Mr. Horn did cite the original source of our data, the Centers for Disease Control at <http://wonder.cdc.gov>; however, he claimed he had found an inconsistency in our analysis. According to the official hearing transcript (Work Order No. NRC-237, pages 157-161), he said, "While the Blue Ridge website says the death statistics exclude accidents, homicides and suicides, what I saw at wonder.cdc.gov proved otherwise. Zeller's before numbers did correctly exclude accidents, but his after numbers did not. This is how Lou makes these numbers appear to actually double." The truth is that Mr. Horn himself is guilty of careless and deliberate misuse of the facts.

At issue were the public health statistics the League used for nine Virginia counties and one city nearest to the North Anna nuclear reactors. We employed the same methodology during statistical periods before and after the North Anna power station commenced operation. We specifically eliminated homicides, suicides, and accidents. On February 17th I submitted written comments, charts and tables which detailed these findings. Much of this information was posted to our own website at <http://www.bredl.org>. I will briefly summarize the method used by the League in our analysis of public health records.

The Centers for Disease Control compiles mortality and population counts for all U.S. counties from 1979 to 2002 in a compressed mortality database. These data are freely available at the CDC website. Access to the data is at <http://wonder.cdc.gov>. At the opening webpage, there is a listing for Deaths with three options: 1) Leading Causes of Death, 2) Mortality - occupational and 3) Mortality - underlying cause of death. Clicking on "Mortality - underlying cause of death" opens the page for the compressed mortality file. Here one sees the following title:

Compressed Mortality File
Underlying Cause-of-Death
Data Use Restrictions

The Compressed Mortality database contains mortality and population counts for all U.S. counties for the years 1979 to 2002. Counts and rates of death can be obtained by underlying cause of death, state, county, age, race, sex, and year. For more information, refer to Compressed Mortality data description.

Select from following:

Mortality for 1999 - 2002 with ICD 10 codes

Mortality for 1979 - 1998 with ICD 9 codes

Mortality Archives - previous data releases for 1979-2001

Selecting "Mortality for 1979 - 1998 with ICD 9 codes" brings up the data request page which allows one to select a data set for location, date, age range, and other parameters. It also allows the researcher to group the mortality data by county. The data request page for 1979-1998 contains the following heading:

Compressed Mortality Data Request Screen
for the years 1979 -1998 with ICD 9 codes
Data Use Restrictions

The Compressed Mortality database contains mortality and population counts for all U.S. counties. Counts and rates of death can be obtained by cause of death, state, county, age, race, sex, and year. For more information refer to Compressed Mortality data description.

Note: This screen allows you to request data for the years 1979 - 1998, with underlying cause of death specified with ICD 9 codes. To request data for subsequent years, see Compressed Mortality for 1999 - 2002 with ICD 10 codes. For more information on the ICD Revision, refer to ICD Revision.

In our analysis of young children after the North Anna plant began operating, we selected the following value for each parameter:

Compressed Mortality
Data for Years: 1983-1986
Location: Virginia (FIPS=51)
Ages: 1- 4 years
Race: All Races

Gender: Both Genders

Grouped by: County

Crude Rate Calculated per: 100,000

Cause of Death specified by the following ICD-9 Codes: [000.1-799.9]

One of the parameters necessary for the inquiry is to select the cause or causes of death. For this, one utilizes International Classification of Disease (ICD) codes. ICD-9 is the code system used for data through 1998, ICD-10 is used for data from 1999 on. The CDC website information explains the code as follows: "ICD9 is designed for the classification of Morbidity and Mortality information for statistical purposes, and for the indexing of hospital records by disease and operations, for data storage and retrieval. This publication is maintained by the World Health Organization." The International Classification of Disease codes (ICD-9 Finder) list causes of death as follows:

| | |
|-----------|---|
| 001-139.8 | infectious and parasitic diseases |
| 140-239.9 | neoplasms |
| 240-289.9 | endocrine, nutritional and metabolic diseases, and immunity disorders |
| 290-319 | mental disorders |
| 320-389.9 | diseases of the nervous system and sense organs |
| 390-459.9 | diseases of the circulatory system |
| 460-519.9 | diseases of the respiratory system |
| 520-579.9 | diseases of the digestive system |
| 580-629.9 | diseases of the genitourinary system |
| 630-676.9 | complications of pregnancy, childbirth and the puerperium |
| 680-709.9 | diseases of the skin and subcutaneous tissue |
| 710-739.9 | diseases of the musculoskeletal system and connective tissue |
| 740-759.9 | congenital anomalies |
| 760-779.9 | certain conditions originating in the perinatal period |
| 780-799.9 | symptoms, signs, and ill-defined conditions |
| 800-999 | external causes of injury and poisoning |

For the mortality data submitted to the NRC by the Blue Ridge Environmental Defense League on February 17, 2005 and in an earlier compilation posted to our website referred to by Mr. Horn, we utilized ICD-9 codes 001 - 799.9 throughout. Our methodology specifically eliminated homicides, suicides, and accidents (ICD 800-999) during statistical periods *both before and after* criticality at North Anna. Thus, Mr. Horn's charge that our analysis included accidental deaths after the reactors started is bogus.

Our final step was to compile the CDC death statistics in Albemarle, Culpeper, Fluvanna, Goochland, Greene, Louisa, Madison, Orange, Spotsylvania, and Charlottesville City and compare these with the death rates other counties and cities in the state and the nation. So, we see that in the counties nearest North Anna the death rate in children 1-4 years of age increased by 99% between 1979 and 1986 while in the remaining 126 Virginia counties and cities the death rate *decreased* by 8%; likewise, for children ages 5-14, local increase 72%, statewide decrease 3%. A similar pattern is observed in the death rates for children under 1 year of age and in fetal deaths (stillbirths).

Third, Mr. Horn's accusations reveal a flawed logic. For example, Mr. Horn stated that in the 4-year old cohort of our analysis there was one case of death by criminal neglect and three deaths by fire. Even if these accidental deaths had been incorrectly included in the data which they were not the total number of deaths would decrease but slightly, from 26 to 22. However, the number of deaths among children 1 to 4

years of age before North Anna opened was 12. So, if anyone at the hearing actually accepted Mr. Horn's opinions, the analysis would be as follows:

12 deaths in a population of 49,637 before North Anna opened = 24.18 per 100,000

22 deaths in a population of 54,075 after North Anna opened = 40.68 per 100,000

Here we see that the mortality increase in children 1 to 4 years of age after North Anna opened would still be very high at 68%. Similar points could be made regarding the 5 to 14 year old cohort. Mr. Horn's allegations are not only specious, they do nothing to alter the conclusion that deaths increased significantly after the nuclear reactors began operation.

In summary, according to Centers for Disease Control Compressed Mortality Data, the death rates in Albemarle, Culpeper, Fluvanna, Goochland, Greene, Louisa, Madison, Orange, Spotsylvania, and Charlottesville City increased after North Anna Units 1 and 2 began operation (dates of initial criticality 4/5/78 and 6/12/80) in all the age groups the League studied.

Further, the differences between the increases in the counties near North Anna and the decreases in the U.S. and the rest of Virginia is statistically significant, with a 95% certainty ($p < .05$). Again, in our analysis, we utilized ICD-9 codes 001 - 799.9 throughout, eliminating homicides, suicides, and accidents (ICD 800-999) *before and after* the North Anna power station commenced operation. The following tables detail our findings:

Fetuses and Infants

| | Death Rate Per 100,000 1978 | Actual Deaths 1978 | Death Rate Per 100,000 1979-81 | Actual Deaths (avg.) 1979-81 | % Change in Death Rate Local | % Change in Death Rate Other VA |
|------------------|-----------------------------------|-----------------------|--------------------------------------|------------------------------------|------------------------------------|---------------------------------------|
| Fetal Deaths* | 1398 | 44 | 1432 | 142 | + 3% | - 15% |
| Deaths < 28 days | 763 | 24 | 857 | 85 | + 12% | + 1% |
| Deaths < 1 year | 1112 | 35 | 1231 | 122 | + 11% | - 9% |

*Stillbirths gestation 20 weeks or more

Children Age 1 to 14 Years

| | Death Rate Per 100,000 1979-82 | Actual Deaths (avg.) 1979-82 | Death Rate Per 100,000 1983-86 | Actual Deaths (avg.) 1983-86 | % Change in Death Rate Local | % Change in Death Rate Other VA |
|---------------------|--------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|---------------------------------------|
| All Causes age 1-4 | 24.18 | 12 | 48.08 | 26 | + 99% | - 8% |
| | 1983-86 | 1983-86 | 1987-90 | 1987-90 | | |
| All Causes age 5-14 | 8.40 | 11 | 14.46 | 21 | + 72% | - 3% |

Adults

| | Actual Deaths 1978 | Actual Deaths (average) 1979-82 | % Change in Deaths Local | % Change in Deaths Other VA |
|----------------------|-----------------------|---------------------------------------|--------------------------------|-----------------------------------|
| All Causes, All Ages | 1763 | 1876 | + 6.4% | + 2.5% |

We contest Mr. Horn's false allegations and ask that the NRC note this in the record of proceedings for the Early Site Permit Environmental Impact Statement. Moreover, we believe that the data confirm a need for further investigations into morbidity and mortality in the communities around the North Anna nuclear power station. We hereby repeat our earlier request and ask that the NRC commence a study to examine radiation dose in the central Virginia area surrounding North Anna before taking any action to approve a permit.

Respectfully submitted,

Louis Zeller

Attached to the original document are the complete Centers for Disease Control Compressed Mortality Data for children 1-4 years of age in all counties in the state of Virginia which we used to compile death rates for those who lived near the North Anna nuclear station. Contact BREDL@skybest.com for the attachments.