

# Blue Ridge Environmental Defense League

---

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

## Nuclear Power in Hot Water

On Earth Day it is well to reflect on one of the major problems facing our society: global warming. Specifically, how should the United States and other industrial nations rapidly reduce greenhouse gas emissions in a safe, economical and practical way? An answer often put forward by some is nuclear power because of its lower emissions of carbon dioxide. However, nuclear power suffers from serious fundamental flaws which make it not only one of the least desirable options; it is not an option at all. The nuclear industry is in hot water in several ways.

### **Nuclear: No Solution to Global Warming**

Nuclear is an impractical method of reducing current greenhouse gas emissions. A nuclear expert stated:

*Nuclear power cannot be a magic bullet answer to climate change. Even if it is scaled up much faster than anything now in prospect, it cannot provide more than 10 per cent to 15 per cent of the greenhouse gas displacement that is likely to be needed by mid-century. Not only can nuclear power not stop global warming, it is probably not even an essential part of the solution to global warming.<sup>1</sup>*

If worldwide nuclear capacity were to triple by mid-century, it would provide just 15% reduction in carbon dioxide emissions. The cost of additional nuclear reactors—200 new units in the United States, plus 100 replacement reactors for the existing fleet—new fuel enrichment plants, and nuclear waste dumps would cost nearly \$3 trillion.<sup>2</sup>

Also, commercial nuclear electric *systems* emit about one-third as much greenhouse gas as natural gas-fired power plants. The problem centers on fuel production. Making uranium fuel requires large amounts of fossil-fueled energy, creating carbon dioxide in the process.

### **Nuclear Economics: Fortunes Evaporate**

Nuclear power is expensive. Without federal subsidies, it would not survive. The Congressional Budget Office estimated the historical default rate on nuclear loans amounted to 30% to 50% of capital costs. Because private capital sources consider nukes a risky investment, the nuclear industry has convinced Congress to approve billions of taxpayer dollars for loan guarantees. The public funding and taxpayer dollars directed to the nuclear industry undermine less costly, cleaner forms of electric power generation.

Nuclear suffers from a liability which makes even Wall Street bankers skittish. Within a matter of hours, the Three Mile Island nuclear plant was transformed from a 2 billion dollar asset to a 1 billion dollar liability. A similar nuclear accident today anywhere in

---

<sup>1</sup> Peter Bradford, former Nuclear Regulatory Commissioner

<sup>2</sup> Natural Resources Defense Council data

the world—in France, China, India, Bulgaria, Pakistan or any of the 31 nations with nuclear electricity—would be broadcast on the nightly news, once again causing nuclear financial investments to become worthless.

### **Global Warming and Drought: Hot Water**

Reduced rainfall in the Southeast is having an effect on nuclear electric power plants. During the last few years lakes have been approaching the minimum levels required by the Nuclear Regulatory Commission in the drought-stricken southeastern states.

*Water is the nuclear industry's Achilles' heel. You need a lot of water to operate nuclear plants. This is becoming a crisis.*<sup>3</sup>

In North Carolina, Lake Norman dropped to within a foot of the level required by the license for Duke Power's McGuire nuclear plant. Progress Energy officials say that the drought could force it to shut down its Harris nuclear station near Raleigh.

Drought did force a partial shutdown of Tennessee Valley Authority's nuclear plant at Browns Ferry, Alabama because of overheated water in the Tennessee River. In 2007 one unit was shut down completely, and the other two were reduced to 75 percent capacity. More drought-related shut downs are forecast.

### **Court Rules Dominion-Virginia Power Plant's Hot Water Violates the Law**

On February 20, 2009, the Circuit Court of the City of Richmond ruled "Virginia law requires regulation of Dominion's thermal pollution discharge because the exception for waste treatment simply doesn't apply here." As a result of a lawsuit brought by the Blue Ridge Environmental Defense League, a decades-old violation of the law was ended. The permit was illegal for several reasons.

First, Virginia failed to limit hot water discharges flowing from the North Anna nuclear reactors directly into Lake Anna. Second, according to the Clean Water Act, heat is a pollutant and the maximum water temperature in cooling lakes is set by federal law: 89.6 degrees-F. Lakeside residents report water temperatures as high as 104 degrees-F. Third, the State Water Control Board erred in concluding that part of Lake Anna was entitled to an exemption for waste treatment facilities. Finally, the state board violated federal law when it applied a less protective Virginia law.



Blue Ridge Environmental Defense League plans to continue its campaign to protect public health and improve environmental quality. Our goal is clean, safe power and the reduction and reversal of global warming.

Louis Zeller, Science Director  
Blue Ridge Environmental Defense League  
April 22, 2009

---

<sup>3</sup> Jim Warren, Executive Director of N.C. Waste Awareness and Reduction Network