

# GEOLOGIC FAULTING UNDER THE NORTH ANNA NUCLEAR POWER PLANT

THE HISTORY OF DOMINION-VIRGINIA POWER'S SEISMIC COVER-UP

## An Investigative Report

October 8, 2005



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### BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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## **North Anna's Nuclear Reactors are Built on Unstable Ground**

Virginia Electric and Power Company (Vepco), now Dominion Energy, was at the center of a decade-long struggle which ended in two nuclear reactors being built on top of an earthquake fault. Vepco withheld documents and lied to federal regulators during license application proceedings for Units 1 and 2 in 1973. Ultimately, Vepco was found guilty of lying and a cover-up in its efforts to obtain a construction license for the North Anna nuclear station near Louisa, Virginia. Despite the deceptions, the US Nuclear Regulatory Commission granted Vepco a license but fined the company \$32,000 for seven materially false statements about the geologic fault under North Anna. Today, the evidence shows that Dominion Energy is attempting a similar cover up in pursuit of two or more additional reactors at North Anna.

### **The First Cover Up**

The story begins in 1967, the year Vepco awarded the initial contract of \$446 million for the North Anna Nuclear Station on the banks of the Pamunkey River in Louisa County. Vepco hired Dames & Moore, an environmental consulting firm, to do geology studies in support of the license application. Within a year evidence of seismic faults were found but Vepco resisted the findings. The truth would not remain hidden for long.

In February 1970 the construction excavation wall for Reactor Unit 1 collapsed. A month later, three independent geologists visited the site, identified a major fault zone, took pictures and reported their finding to Vepco's resident engineer. Disregarding this evidence, Vepco representatives who testified before the Atomic Safety and Licensing Board later that year omitted any mention of these problems. Vepco's comprehensive Safety Analysis report for North Anna stated: "Faulting at the site is neither known nor suspected."

Three years later, on May 17, 1973, the Atomic Energy Commission received notification from Vepco about faulting under North Anna. On that same day the Atomic Safety and Licensing Board closed the license hearing record on public comment. On June 21, 1973 an Atomic Energy Commission memo confirmed faults beneath all four reactor sites.

Inexplicably, in 1974 the Atomic Energy Commission deemed the site acceptable. On April 1, 1978 the agency granted an operating license to Vepco for North Anna Units 1 and 2, the only nuclear plants in the nation located on top of a geologic fault.

### **Citizens' Lawsuit Reveals the Truth**

The details of the violations and cover-up did not come to light until a lawsuit was brought by a group of citizens living in the Charlottesville area, the North Anna Environmental Coalition, which was organized in 1973. The group enlisted the expertise of a geology professor who testified that geologic faults did in fact underlay the proposed reactor site. The group waged a long and expensive legal campaign which resulted in both the Nuclear Regulatory Commission and the Virginia's Attorney General's office joining the coalition in pressing charges against Vepco.<sup>1</sup> The case revealed that Vepco had failed to tell the Atomic Safety and Licensing Board of the faulting problem at construction permit hearings on North Anna units 3 and 4 held on May 7-10, 1973.

Vepco's competence and management were called into question by the NRC. The ASLB's order asked the NRC's staff to evaluate Vepco's performance "in depth to determine whether additional monitoring of the licensee is needed beyond that employed in routine follow-ups to violations and infractions."<sup>1</sup>

On September 11, 1975 the Nuclear Regulatory Commission, the successor to the Atomic Energy Commission, imposed fines on Vepco for making false statements in its licensing documents. The violations were critical because the North Anna nuclear power station site is on top of a geologic fault. Judge Lester Kornblith termed Vepco's failure "entirely inexcusable." He added, "Such blatant disregard of the need of the commission, its staff and its hearing board to have the information necessary to carry out its duty to protect the health and safety of the public is almost entirely beyond belief and is indicative of, at best, extremely poor and unsound judgment on the part of Vepco management."

One of the violations cited was Vepco's report to the AEC which stated that the North Anna site had no geologic faults. On July 31, 1973 Vepco filed a document with the agency's licensing board; maps which indicated faulting were deleted from the Stone & Webster licensing report.<sup>2</sup>

Regarding the Department of Justice investigation of wrongdoing, Assistant Attorney General Peter Taft said,

"...VEPCO and its consultants knowingly and willfully filed false statements of material fact with the AEC and conspired to conceal from the public and the Board the existence of a fault underlying its nuclear reactor site..."<sup>3</sup>

Vepco officials attempted to deny the charges, saying that they "promptly notified" NRC personnel. However, a memorandum by Bradford F. Whitman, assistant chief of the US Department of Justice pollution control section, does not bear this out. Newspaper investigations in 1977 revealed that:

High-ranking staff members of the Nuclear Regulatory Commission knew the Virginia Electric and Power Co. was building two nuclear plants on potentially unsafe ground at North Anna, but failed for several months to alert the NRC board which had the authority to stop the construction, according to a Justice Department memorandum released yesterday.... Whitman's memo, based on interviews with 12 Vepco officials and one former official, details phone calls and memos that indicate Vepco was told of the fault by its engineer, Stone & Webster Engineering Co., on April 25, 1973—more than three months before the licensing board was told.<sup>2</sup>

Ultimately, civil penalties but no criminal sanctions were levied; the case was tainted by the actions of the Nuclear Regulatory Commission itself. Because NRC condoned Vepco's actions, criminal prosecution was considered all but impossible by the Justice Department. On November 12, 1976 the US Nuclear Regulatory Commission fined Vepco \$32,000 for making seven materially false statements about the geologic fault at North Anna.<sup>2</sup>

Virginia Electric and Power Company should never have received approval to build and operate the reactors at North Anna. In 1977 June Allen testified before the Senate Subcommittee on Nuclear Regulation:

...At North Anna, a construction permit should have been denied in 1970, and it is no more

defensible now just because this is seven years and close to two billion dollars later. A major siting mistake was made in 1968....By February of 1970, the site was in trouble. The wall of the excavation for Reactor 1 was collapsing.<sup>4</sup>

Vepco's deception worked long enough to allow the company to obtain construction and operating permits from the NRC.

## The Second Cover Up

In 2003 Dominion Energy submitted an application for an Early Site Permit for new reactors at North Anna. The company appears to be avoiding a comprehensive investigation of the geology at the first new reactor sites in 30 years. Dominion has again failed to adequately address the seismic history of the proposed ESP site.

The current Early Site Permit draft Environmental Impact Statement says that seismological data will be addressed in the safety evaluation report. But the draft EIS contains only one page on the geology of the ESP site at North Anna. Section 2.4 alludes to two previous environmental reports prepared for North Anna Units 1 & 2 (done by Dames and Moore for VEPCo in 1969) and the never constructed North Anna Units 3 & 4 (Dames and Moore, 1971).

In March 2005 written testimony to the NRC by the Blue Ridge Environmental Defense League requested that the EIS include and consider all documents in the case filed by North Anna Environmental Coalition during the litigation brought during the 1970's. Much of the evidence about Vepco's deceit was recorded in hearings conducted by the US Senate in 1975 and 1977. The hearing record includes the testimony of Chairman Joseph Hendrie and other Nuclear Regulatory Commission officials; June Allen, President of the North Anna Environmental Coalition; and Bradford F. Whitman, Assistant Chief, Pollution Control Section, US Department of Justice.<sup>4</sup>

The ongoing Early Site Permit process for two or more additional nuclear reactors at North Anna can and should prompt the Office of Nuclear Reactor Regulation and the Atomic Safety and Licensing Board to use their authority to do whatever they can to avoid the errors made in the 1970's. The draft EIS plainly omits critical information about seismology in the central Virginia area. The geology under the reactors has not changed in 30 years; new studies cannot alter the facts. The proposed construction of two or more reactors in close proximity to two existing nuclear reactors in an active earthquake zone must not be permitted.

Update: This report was written before Dominion-Virginia Power trimmed its proposal to just one additional nuclear reactor at North Anna. -LZ 8/24/11

Louis Zeller, October 8, 2005

End notes

1. "Vepco Fined; NRC Imposes Licensing Conditions," *The Daily Progress*, September 12, 1975,
2. "Was N-Plant Danger Covered Up?" Sheilah Kast, *Washington Star*, October 1, 1977
3. Statement before the Virginia State Corporation Commission, June Allen, North Anna Environmental Coalition
4. Hearing before the Senate Subcommittee on Nuclear Regulation of the Committee on Environment and Public Works, 95<sup>th</sup> Congress, October 13, 1977.

*Thanks to June Allen for providing important documents.*

*The photo on the cover of this report shows the fault under North Anna, indicated by arrow number 3. Note also arrows 1 and 2 indicating people for size reference.*