

ENCLOSURE A

Decommissioning Financial Assurance Certification Report

for

Surry Power Station

and

North Anna Power Station

9008030086 900726
PDR ADDCK 05000280
I PDC

DECOMMISSIONING FINANCIAL ASSURANCE CERTIFICATION REPORT

Virginia Electric and Power Company (the Company) hereby submits this Decommissioning Financial Assurance Certification Report in compliance with 10 CFR 50.33(k) and 50.75(b).

1. The Company owns the following undivided interests in these nuclear power facilities:

Surry Power Station Units 1 and 2	100.0%
-----------------------------------	--------

North Anna Power Station Units 1 and 2	88.4% ¹
----------------------------------------	--------------------

2. The Company is responsible for the following percentages of the decommissioning costs for these nuclear power facilities:

Surry Power Station Units 1 and 2	100.0%
-----------------------------------	--------

North Anna Power Station Units 1 and 2	89.6% ²
----------------------------------------	--------------------

3. The Company hereby certifies that financial assurance for decommissioning the above facilities is provided in the amount of \$476.20 million. The calculation of this amount is set forth in Enclosure B and complies with the formula specified in 10 CFR 50.75(c). The Company acknowledges the following interests with respect to the total financial assurance amount:

Surry Power Station Units 1 and 2	100.0%	\$246.36 million
-----------------------------------	--------	------------------

North Anna Power Station Units 1 and 2	89.6%	\$229.84 million
----------------------------------------	-------	------------------

Total		\$476.20 million
-------	--	------------------

4. The method by which the Company will provide financial assurance for decommissioning the facilities will be by the use of established external sinking fund accounts in which deposits will be made at least annually in accordance with 10 CFR 50.75(e).
5. Attached as Enclosure C to this Decommissioning Financial Assurance Certification Report are copies of the Company's Qualified Nuclear Decommissioning Trust and Non-Qualified Nuclear Decommissioning Trust agreements. These documents are the financial instruments which evidence the Company's described method of providing financial assurance. The Company is maintaining two external trust accounts to segregate those funds that qualify for tax deductibility as required by Section 468A of the Internal Revenue Code of 1954, as amended, and those funds that do not qualify for such deductibility.

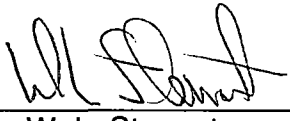
¹ Old Dominion Electric Cooperative owns 11.6% of North Anna Power Station Units 1 and 2.

² Old Dominion Electric Cooperative is responsible for 10.4% of the decommissioning costs for North Anna Power Station.

6. The Company is accumulating funds for decommissioning. As of December 31, 1989, Virginia Electric and Power Company has collected 13.75% of the required decommissioning funds assuming an after tax earnings rate of 6.75% on these funds until station retirement. These collections have been deposited in the external trust accounts and are managed by external investment managers. Earnings are reinvested into investments held by the trusts.
7. Attached as Enclosure D to this Decommissioning Financial Assurance Certification Report are schedules for implementing the Company's method of providing financial assurance for decommissioning North Anna and Surry Power Stations.

I hereby certify that the information provided above is true and correct to the best of my knowledge.

Virginia Electric and Power Company

By: 
W. L. Stewart
Senior Vice President - Nuclear

Dated: *July 26, 1990*

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by W. L. Stewart who is Senior Vice President - Nuclear, of Virginia Electric and Power Company. He is duly authorized to execute and file the foregoing document in behalf of that Company, and the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 26 day of July, 1990.

My Commission Expires: May 31, 1994.

Picki L. Hull
Notary Public

(SEAL)

ENCLOSURE B

**Calculation of the Decommissioning Financial Assurance Amount
for
Surry Power Station
and
North Anna Power Station**

ENCLOSURE B

**Calculation of the Minimum Amount Necessary to Assure
Availability of Funds for Decommissioning
North Anna and Surry Power Stations**

The NRC rule, published on June 27, 1988, provides guidance and contains a formula, based upon reactor type and the thermal megawatt rating of the nuclear unit, for determining the "minimum amount" required to demonstrate reasonable assurance of fund availability for decommissioning. This guidance recognized three major constituents of decommissioning costs, i.e., labor, energy, and burial. The rule also contains a means of adjusting, i.e., escalating, the amount from the 1986 value generated by the megawatt-based formula to current economic levels.

Using the NRC formula, the following minimum financial assurance amounts were determined necessary for removal of radioactivity from the facilities. All costs are in millions of dollars.

Minimum Amount Required (as per NRC rule) - 1986 Dollars *

Surry Power Station Unit 1	2441 MWt	\$96.48
Surry Power Station Unit 2	2441 MWt	\$96.48
North Anna Power Station Unit 1	2893 MWt	\$100.46
North Anna Power Station Unit 2	2893 MWt	\$100.46

As discussed in Exhibit A, North Anna Power Station is partially owned by Old Dominion Electric Cooperative. Therefore, the Company acknowledges responsibility for the following interests with respect to the total decommissioning financial assurance amounts. All costs are in millions of dollars.

NRC Minimum Amount - 1986 Dollars - Company Responsibility Portion *

Surry Power Station Unit 1	100%	\$96.48
Surry Power Station Unit 2	100%	\$96.48
North Anna Power Station Unit 1	89.6%	\$90.01
North Anna Power Station Unit 2	89.6%	<u>\$90.01</u>
Total		\$372.98

As evidenced by the NRC report NUREG-1307, "Report on Waste Burial Charges," this minimum financial assurance amount is based on burial costs associated with the Hanford, Washington burial site. Both Surry and North Anna are currently using the

* The formulae and calculations used are presented in Attachment 2 to this enclosure.

ENCLOSURE B

regional burial site in Barnwell, South Carolina. Therefore, it is appropriate to adjust this amount for the relative difference in burial costs.

The following financial assurance amounts were determined by adjusting the amount described above from January 1986 dollars with burial in Washington to January 1986 dollars with burial in South Carolina. This adjustment was made using the NRC cost escalation formula and the values for burial cost escalation as a function of burial site found in NUREG-1307. The values for burial cost escalation taken from NUREG-1307 are used only as a relative escalation factor for the differences in cost between Washington and South Carolina. All costs are in millions of dollars.

NRC Minimum Amount - 1986 Dollars - Adjusted to South Carolina Burial *

Surry Power Station Unit 1	\$103.34
Surry Power Station Unit 2	\$103.34
North Anna Power Station Unit 1	\$96.41
North Anna Power Station Unit 2	<u>\$96.41</u>
Total	\$399.50

As described previously, the NRC rule contains a means of escalating the "minimum amount" from the 1986 value generated by the megawatt-based formula to current economic levels. The references provided as sources of economic indices are somewhat non-specific. In efforts to apply the escalation formula to the NRC minimum amount, a decommissioning consultant firm employed by Virginia Electric and Power Company discussed several potentially pertinent economic indices with the NRC staff.

As a result of these discussions, the appropriate economic indices for escalation of each financial component of the decommissioning cost amount were determined. The labor indices were extracted from the U.S. Department of Labor, Bureau of Labor Statistics' publication "Monthly Labor Review," the Employment Cost Index, Compensation, Worker by Region. The energy indices were obtained from the Bureau of Labor Statistics' publication "Producer Price Indexes," Commodity Group Code 0543 for industrial power by region and Commodity Group Code 0573 for light fuel oils. These two energy indices were combined, for a PWR unit, using the formula:

$$\text{Combined Energy Indices} = 0.58 (P) + 0.42 (F),$$

where (P) is the industrial power index and (F) is the index for light fuel oils. For burial cost escalation for a specific nuclear station, it was determined best based upon a regional site and not an average of the nation's three commercial operating burial facilities. Consequently, the escalation of the burial components for the North Anna and Surry Power Stations was based on the increase in base disposal charges at

* The formulae and calculations used are presented in Attachment 2 to this enclosure.

ENCLOSURE B

Chem-Nuclear Systems' Low-Level Radioactive Waste Management Facility located in Barnwell, South Carolina. Specifically, in January 1986, the base disposal charge was \$27.62/cubic foot. In January 1990, that same charge is now \$38.71. A ratio of the two charges produces an "escalator" of 1.40 for the four year period. This factor was used as "B" in the escalation formula.

Using the NRC escalation formula and the identified economic indices the following costs were determined for removal of radioactivity (the NRC's definition of decommissioning) in 1990 dollars. All costs are in millions of dollars.

NRC Minimum Amount - Escalated to 1990 Dollars *

Surry Station Unit 1	\$123.18
Surry Station Unit 2	\$123.18
North Anna Station Unit 1	\$114.92
North Anna Station Unit 2	<u>\$114.92</u>
Total	\$476.20

A tabulation summary of these calculations is provided as Attachment 1 to this enclosure.

* The economic indicators, formulae, and calculations used are presented in Attachment 3 to this enclosure.

ENCLOSURE B

Page 1 of 1

Attachment 1

NRC Minimum Financial Assurance Amount

Calculation Summary Tabulation *

Station	Company Responsible Percentage (See Note 1)	NRC Minimum Amount (1986 dollars) (See Note 2)	NRC Minimum Amount - Adjusted to S.C. Burial (1986 dollars) (See Note 3)	NRC Minimum Amount - Escalated to 1990 dollars (See Note 4)
Surry Unit 1	100%	\$96.48	\$103.34	\$123.18
Surry Unit 2	100%	<u>\$96.48</u>	<u>\$103.34</u>	<u>\$123.18</u>
Station Total	100%	\$192.96	\$206.68	\$246.36
North Anna Unit 1	89.6%	\$90.01	\$96.41	\$114.92
North Anna Unit 2	89.6%	<u>\$90.01</u>	<u>\$96.41</u>	<u>\$114.92</u>
Station Total	89.6%	\$180.02	\$192.82	\$229.84
Company Total	-	\$372.98	\$399.50	\$476.20

* All costs are in millions of dollars.

Note (1) Company's undivided interest in Surry Power Station is 100% and in North Anna Power Station is 88.4%. However, the Company is responsible for 89.6% of the decommissioning costs for North Anna Power Station. Old Dominion Electric Cooperative responsible for 10.4% of the decommissioning costs for North Anna Power Station.

Note (2) Company's percentage of the NRC Minimum Cost Amount as calculated per the NRC rule. Old Dominion Electric Cooperative is responsible for 10.4% of the decommissioning costs for North Anna Power Station.

Note (3) NRC Minimum Cost Amount, adjusted for SC Burial site, calculated as per NRC rule.

Note (4) The minimum cost amount in 1986 dollars is escalated by the formula:
Escalated Cost Amount = [NRC Minimum Amount] [(0.65)(L) + (0.13)(E) + (0.22)(B)].

Attachment 2

**Determination of the NRC Minimum Financial Assurance Amount
For Each Surry Unit (PWR)**

The NRC Minimum Cost Amount ['] * is calculated in January 1986 dollars:

$$\text{Minimum Cost Amount } ^{\prime} = \$ (75 + 0.0088 P) \text{ millions of dollars}$$

where: P = the thermal power rating of the reactor (MWt)

$$P = 2441 \text{ MWt}$$

$$\text{Minimum Cost Amount } ^{\prime} = \$ [75 + 0.0088 (2441)] \text{ millions of dollars}$$

$$\text{Minimum Cost Amount } ^{\prime} = \$96.48 \text{ millions of dollars}$$

The NRC Minimum Cost Amount ['] is then adjusted to compensate for the relative difference between burial costs at Hanford, Washington and Barnwell, South Carolina (Reference NUREG-1307). This adjustment is made by escalating the "minimum cost amount" from January 1986 dollars in Washington to January 1986 dollars in South Carolina using the NRC cost escalation formula:

$$\text{Minimum Cost Amount} = [\text{Minimum Cost Amount } ^{\prime}] [0.65 (L) + 0.13 (E) + 0.22 (B)]$$

where: L = Labor Cost Escalation (Dec. 85 / Dec. 85) = 1

E = Energy Cost Escalation (Jan. 86 / Jan. 86) = 1

B = Burial Cost Escalation (Jan. 86, SC / Jan. 86, WA) = 1.323

$$\text{Minimum Cost Amount} = [\$96.48] [0.65 + 0.13 + (0.22)(1.323)]$$

$$\text{Minimum Cost Amount} = \$103.34 \text{ millions of dollars}$$

* The prime symbol (') designates the NRC Minimum Amount calculated with burial costs at Hanford, Washington.

Attachment 2

Determination of the NRC Minimum Financial Assurance Amount**For Each North Anna Unit (PWR):**

The NRC Minimum Cost Amount" * is calculated in January 1986 dollars:

Minimum Cost Amount" = \$ (75 + 0.0088 P) millions of dollars

where: P = the thermal power rating of the reactor (MWt)

P = 2893 MWt

Minimum Cost Amount" = \$ [75 + 0.0088 (2893)] millions of dollars

Minimum Cost Amount" = \$100.46 millions of dollars

This NRC Minimum Cost Amount" is then adjusted to reflect the Company's 89.6% ownership of North Anna Power Station:

Minimum Cost Amount' # = \$ [Minimum Cost Amount" (89.6%)] millions of dollars

Minimum Cost Amount' = \$ (100.46)(0.896) millions of dollars

Minimum Cost Amount' = \$90.01 millions of dollars

The NRC Minimum Cost Amount' is then adjusted to compensate for the relative difference between burial costs at Hanford, Washington and Barnwell, South Carolina (Reference NUREG-1307). This adjustment is made by escalating the "minimum cost amount" from January 1986 dollars in Washington to January 1986 dollars in South Carolina using the NRC cost escalation formula:

Minimum Cost Amount = [Minimum Cost Amount'] [0.65 (L) + 0.13 (E) + 0.22 (B)]

where: L = Labor Cost Escalation (Dec. 85 / Dec. 85) = 1

E = Energy Cost Escalation (Jan. 86 / Jan. 86) = 1

B = Burial Cost Escalation (Jan. 86, SC / Jan. 86, WA) = 1.323

Minimum Cost Amount = [\$90.01] [0.65 + 0.13 + (0.22)(1.323)]

Minimum Cost Amount = \$96.41 millions of dollars

* The double prime symbol (") designates the NRC Minimum Amount calculated with burial costs at Hanford, Washington.

The prime symbol (') designates the Company's portion of the NRC Minimum Amount calculated with burial costs at Hanford, Washington.

ENCLOSURE B

Page 1 of 1

Attachment 3

Escalation of the NRC Minimum Financial Assurance Amount

The NRC Minimum Cost Amount is then escalated to January 1990 dollars using the NRC cost escalation formula:

$$\text{Escalated Cost Amount} = [\text{Minimum Cost Amount}] [0.65 (L) + 0.13 (E) + 0.22 (B)]$$

$$\text{where: } L = \text{Labor Cost Escalation (Dec. 89 / Jan. 86)}^* = \frac{147.3}{127.7} = 1.15$$

$$E = \text{Energy Cost Escalation (Jan. 90 / Jan. 86)}^{\#} =$$

$$(0.58) \left(\frac{P; \text{Jan. 90}}{P; \text{Jan. 86}} \right) + (0.42) \left(\frac{F; \text{Jan. 90}}{F; \text{Jan. 86}} \right) =$$

$$(0.58) \left(\frac{119.3}{113.6} \right) + (0.42) \left(\frac{85.3}{82.0} \right) = 1.05$$

$$B = \text{Burial Base Rate Escalation (Jan. 90, SC / Jan. 86, SC)}^{**} = 1.40$$

For Each Surry Unit

$$\text{Escalated Cost Amount} = [\$103.34] [(0.65)(1.15) + (0.13)(1.05) + (0.22)(1.40)]$$

$$\text{Escalated Cost Amount} = \$123.18 \text{ millions of dollars}$$

For Each North Anna Unit

$$\text{Escalated Cost Amount} = [\$96.41] [(0.65)(1.15) + (0.13)(1.05) + (0.22)(1.40)]$$

$$\text{Escalated Cost Amount} = \$114.92 \text{ millions of dollars}$$

* A summary of the escalation factors used for Labor is provided as Appendix 1.
A summary of the escalation factors used for Energy is provided as Appendix 2.
** A discussion of the escalation factors used for Burial is in Enclosure B.

ENCLOSURE B

Page 1 of 1

APPENDIX 1

Escalation for Labor Costs

The escalation factor for labor costs can be derived from data in the Bureau of Labor Statistics' (BLS) "Monthly Labor Review." The BLS provides this labor data for four geographic regions of the United States (Northeast, South, Midwest, and West). The four nuclear power facilities owned by the Company are located in the Southern Region. The 1986 and the recent 1989 BLS labor cost data are specified by region below.

Labor ("L") Escalation Factor * for December, 1989

Region **	Jan. '86	Dec. '89	"L"
Northeast	130.5	160.0	1.23
South	127.7	147.3	1.15
Midwest	125.0	143.6	1.15
West	130.1	147.5	1.13

* Values used in this chart were obtained from "Monthly Labor Review," published by the U.S. Department of Labor, Bureau of Labor Statistics.

** Regional breakdown by cities and states as set forth in the "Monthly Labor Review."

Northeast -- Massachusetts, New York, Connecticut, New Jersey, Pennsylvania, Maine, New Hampshire and Rhode Island.

South -- Georgia, Maryland, Texas, Florida, Alabama, Mississippi, Kentucky, Indiana (Louisville area), Tennessee, Arkansas, Louisiana, **Virginia**, South Carolina, North Carolina, Delaware (Wilmington area, including part of New Jersey) and the District of Columbia.

Midwest -- Illinois, Ohio, Kentucky (Cincinnati area), Indiana, Iowa, Michigan, Missouri, Kansas, Wisconsin, Minnesota and Nebraska.

West -- California, Montana, Colorado, Oregon, Utah, Washington, Idaho and Arizona.

ENCLOSURE B

Page 1 of 1

APPENDIX 2

Escalation Factor for Energy Costs

The equation for calculating the energy escalation factor for a PWR is as follows:

$$E = [0.58P + 0.42F]$$

The escalation factor for energy costs can be derived from data in the Bureau of Labor Statistics' (BLS) table entitled "Producer Price Indexes and Percent Changes for Commodity Groupings and Individual Items." The NRC's draft Regulatory Guide explains that E consists of two sub-components: electric power ("P") and fuel oil ("F"). When utilizing the BLS data, the values for "P" must be taken from the appropriate regional BLS data for "Industrial Power" (Commodity Code 0543 in Table 6) and the value of "F" must be taken from the BLS data for "light fuel oils" (Commodity Code 0573 in Table 6). The January, 1986 and the January, 1990 BLS energy cost data are specified by region below:

Power ("P") Escalation Factor * for January, 1990

Region **	Jan. '86	Jan. '90	"P"
New England	105.8	106.1	1.00
Mid-Atlantic	111.9	117.3	1.05
East North Central	115.3	115.6	1.00
West North Central	115.6	132.3	1.14
South Atlantic	119.3	113.6	0.95
East South Central	117.4	122.5	1.04
West South Central	111.4	109.9	0.99
Mountain	119.3	107.2	0.89
Pacific	112.2	119.0	1.06

Fuel Oil ("F") Escalation Factor * for January, 1990

Region **	Jan. '86	Jan. '90	"F"
All	82.0	85.3	1.04

Combined Energy ("E") Escalation Factor * for January, 1990

$$"E" (PWR) = 0.58 (P) + 0.42 (F) = 0.58 (0.95) + 0.42 (1.04) = 0.99$$

* The regions by states are as follows:

- New England – Maine, Vermont, New Hampshire, Massachusetts, Connecticut and Rhode Island.
- Mid-Atlantic – New York, New Jersey and Pennsylvania.
- South Atlantic – Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Delaware, Maryland and the District of Columbia.
- East North Central – Ohio, Indiana, Illinois, Michigan and Wisconsin.
- West South Central – Arkansas, Louisiana, Oklahoma and Texas.
- East South Central – Kentucky, Tennessee, Alabama and Mississippi.
- West North Central – Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas.
- Mountain – Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada.
- Pacific – Washington, Oregon, California, Alaska and Hawaii.

** Rounded to the nearest hundredth.

ENCLOSURE C

**Virginia Electric and Power Company
Qualified Nuclear Decommissioning Trust
Trust Agreement**

and

**Virginia Electric and Power Company
Non-Qualified Nuclear Decommissioning Trust
Trust Agreement**

**(Copies of the Company's Financial Instruments
for Providing Assurance of Availability
of Funds for Decommissioning
North Anna and Surry Power Stations)**

VIRGINIA ELECTRIC AND POWER COMPANY
NUCLEAR DECOMMISSIONING TRUST
TRUST AGREEMENT AMENDMENT

THIS TRUST AGREEMENT AMENDMENT made the 23rd day of December, 1987, between VIRGINIA ELECTRIC AND POWER COMPANY, a Virginia corporation, the Grantor, and CRESTAR BANK (formerly United Virginia Bank), a Virginia banking corporation with trust powers, the Trustee, provides:

WHEREAS the Grantor and the Trustee made a Trust Agreement dated December 31, 1985, to establish the VIRGINIA ELECTRIC AND POWER COMPANY NUCLEAR DECOMMISSIONING TRUST (the "Trust"),

WHEREAS section 5.01 of the Trust Agreement reserved to the Grantor the right to amend the Trust Agreement subject to certain restrictions, and

WHEREAS the Grantor now wishes to make amendments to the Trust Agreement that do not contravene the restrictions imposed by section 5.01;

NOW, THEREFORE, the Grantor and the Trustee agreed to amend the Trust as follows:

1. Name. The first sentence of section 1.01 of the Trust Agreement is amended to read: "The name of the Trust is the VIRGINIA ELECTRIC AND POWER COMPANY QUALIFIED NUCLEAR DECOMMISSIONING TRUST."

2. Trust committee. Section 1.03 of the Trust Agreement is redesignated as section 1.04, and a new section 1.03 is added to read:

"1.03. Trust committee.

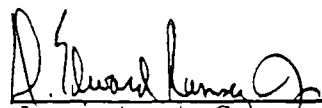
"The Grantor may establish a Nuclear Decommissioning Trust Committee composed of any three or more persons appointed by the Grantor's Board of Directors on whatever terms the Board desires. The Committee has the authority to exercise all of the Grantor's powers under the Agreement, and the Trustee will treat the directions and other actions of the Committee as the directions or actions of the Grantor. The Grantor must certify to the Trustee all appointments to or removals from the Committee, and the Trustee must recognize written instructions signed by any two committee members as a directive from the Committee."

3. Directing the Trustee. Section 3.04(c) of the Trust Agreement is amended to read: "If exercised, the Grantor's right to direct investment and reinvestment includes the right to select investment managers, brokers, salesmen, or agents to handle investments or execute investment orders. The Grantor may give an investment manager any of the Grantor's powers, pursuant to this section 3.04 or otherwise, by so certifying in writing to the Trustee. The Trustee is not responsible for the selection, terms of appointment, compensation, or conduct of any investment manager, broker, salesman, or agent selected by the Grantor, but the Trustee remains responsible for its own actions in its dealings with such persons in accordance with the provisions of section 2.03 of this Agreement."

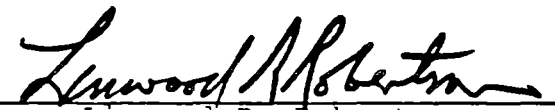
4. Other provisions. All provisions of the Trust Agreement not expressly amended by this Trust Agreement Amendment continue in full force and effect.

IN WITNESS of this Trust Agreement Amendment, the Grantor and the Trustee have signed below on this 23rd day of December, 1987.

ATTEST:


Assistant Corporate
Secretary

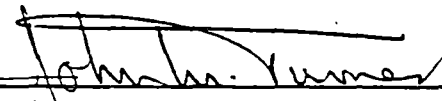
VIRGINIA ELECTRIC AND POWER COMPANY

By: 
Linwood R. Robertson
Vice President,
Treasurer and Corporate Secretary

ATTEST:


ASSISTANT SECRETARY

CRESTAR BANK

By: 
VICE PRESIDENT