ATTACHMENT 3

VIRGINIA ELECTRIC AND POWER COMPANY

PROPOSED TECHNICAL SPECIFICATIONS CHANGES

NORTH ANNA UNITS 1 AND 2

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 45 psig and a temperature of 280°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 157 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4 or ZIRLO. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.2 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.3 weight percent U-235. Fuel assemblies containing fuel rods with other cladding materials or slightly different nominal dimensions may also be used as defined in an approved exemption or license condition. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 48 full length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

CORE OPERATING LIMITS REPORT

6.9.1.7.a Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

1. Moderator Temperature Coefficient BOC and EOC limits, and 300 ppm and 60 ppm surveillance limits for Specification 3/4.1.1.4,
2. Shutdown Bank Insertion Limit for Specification 3/4.1.3.5,
3. Control Bank Insertion Limits for Specification 3/4.1.3.6,
4. Axial Flux Difference limits for Specification 3/4.2.1,
5. Heat Flux Hot Channel Factor, K(Z), N(Z) for Specification 3/4.2.2, and
6. Nuclear Enthalpy Rise Hot Channel Factor, and Power Factor Multiplier, for Specification 3/4.2.3.

6.9.1.7.b The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC as identified in 6.9.1.7.e. Other approved methods may also be applicable as defined in supporting documentation for approved exemptions or license conditions.

6.9.1.7.c The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

6.9.1.7.d The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

6.9.1.7.e REFERENCES

1. VEP-FRD-42, Rev. 1-A, "Reload Nuclear Design Methodology," September 1986.

   (Methodology for LCO 3.1.1.4 - Moderator Temperature Coefficient, LCO 3.1.3.5 - Shutdown Bank Insertion Limit, LCO 3.1.3.6 - Control Bank Insertion Limits, LCO 3.2.2 - Heat Flux Hot Channel Factor, LCO 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 157 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4 or ZIRLO. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.2 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.3 weight percent U-235. Fuel assemblies containing fuel rods with other cladding materials or slightly different nominal dimensions may also be used as defined in an approved exemption or license condition. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 48 full length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is approximately 10,000 cubic feet at nominal operating conditions.

CORE OPERATING LIMITS REPORT

6.9.1.7.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

1. Moderator Temperature Coefficient BOC and EOC limits, and 300 ppm and 60 ppm surveillance limits for Specification 3/4.1.1.4,
2. Shutdown Bank Insertion Limit for Specification 3/4.1.3.5,
3. Control Bank Insertion Limits for Specification 3/4.1.3.6,
4. Axial Flux Difference limits for Specification 3/4.2.1,
5. Heat Flux Hot Channel Factor, K(Z), N(Z) for Specification 3/4.2.2, and
6. Nuclear Enthalpy Rise Hot Channel Factor, and Power Factor Multiplier, for Specification 3/4.2.3.

6.9.1.7.b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC as identified in 6.9.1.7.e. Other approved methods may also be applicable as defined in supporting documentation for approved exemptions or license conditions.

6.9.1.7.c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

6.9.1.7.d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

6.9.1.7.e. REFERENCES

1. VEP-FRD-42, Rev. 1-A, "Reload Nuclear Design Methodology," September 1986.

   (Methodology for LCO 3.1.1.4 - Moderator Temperature Coefficient, LCO 3.1.3.5 - Shutdown Bank Insertion Limit, LCO 3.1.3.6 - Control Bank Insertion Limits, LCO 3.2.2 - Heat Flux Hot Channel Factor, LCO 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).

ATTACHMENT 4

VIRGINIA ELECTRIC AND POWER COMPANY

SIGNIFICANT HAZARDS CONSIDERATION

NORTH ANNA UNITS 1 AND 2

SIGNIFICANT HAZARDS CONSIDERATION

Virginia Electric and Power Company plans to irradiate four (4) fuel assemblies fabricated by Framatome Cogema Fuels (FCF) at North Anna. Operation of these lead test assemblies is currently scheduled to begin in North Anna 1 Cycle 13, in the second quarter of 1997. These fuel assemblies will be very similar to the FCF Mark-BW fuel assembly design that has previously been irradiated in other Westinghouse-designed reactors. However, the North Anna fuel assemblies will incorporate several new features, including: an advanced (fine mesh) debris filter bottom nozzle, mid-span mixing grids (MSMGs), a floating top end grid, a quick disconnect top nozzle, and use of an advanced zirconium-based alloy, designated as Alloy 5, for the fuel assembly structural tubing. The fuel rod cladding in these assemblies will be fabricated from two advanced zirconium-based alloys, Alloy 4 and Alloy 5. The majority of the fuel rods will have cladding fabricated from Alloy 5, but two of the assemblies will also contain sixteen fuel rods each (for a total of thirty two fuel rods) with cladding fabricated from Alloy 4. These two alloys have previously been used as cladding materials for limited numbers of fuel rods in demonstration assemblies in the McGuire Unit 1 and Three Mile Island Unit 1 reactors, as well as in several European reactors. The North Anna lead test assemblies will differ from these demonstration assemblies in using advanced alloys as the cladding materials for all fuel rods in the assemblies, as well as using Alloy 5 for the guide thimbles.

Based on evaluations and analyses, no unreviewed safety questions exist as a result of inserting the advanced cladding materials or fuel assemblies of the FCF design into the North Anna Units 1 and 2 reactor cores. However, the Technical Specifications for both North Anna Unit 1 and North Anna Unit 2 define the fuel rod cladding material as either Zircaloy-4 or ZIRLO. Use of a different cladding material in the lead test assemblies therefore requires changes to the Technical Specifications. Exemptions are also required to 10 CFR 50.46 and 10 CFR 50.44, which specifically refer to fuel with Zircaloy or ZIRLO cladding, and Appendix K of 10 CFR Part 50, which requires use of a specific model that was originally derived for Zircaloy clad fuel. In addition, the Safety Evaluation Report approving the use of the Virginia Electric and Power Company standard reload nuclear design methodology (VEP-FRD-42 Rev. 1-A) specified that, in its present form, this methodology could be applied only to Westinghouse-supplied fuel in Westinghouse-supplied reactors. NRC concurrence is therefore also required to apply Virginia Electric and Power Company's standard reload design methodology to cores containing these lead test assemblies.

Virginia Electric and Power Company has reviewed the use of the four FCF lead test assemblies and the associated Technical Specifications changes against the criteria of 10 CFR 50.92. It has been concluded that the use of four FCF Mark-BW17 lead test assemblies with mid-span mixing grids, advanced zirconium-based alloys, and minor mechanical differences from the resident fuel in the North Anna Units 1 and 2 cores does not involve a significant hazards consideration as defined in 10 CFR 50.92. Operation of the four FCF lead test assemblies will not:

1. Involve a significant increase in the probability of occurrence or the consequences of an accident previously evaluated. The FCF lead test assemblies are very similar in design to the Westinghouse fuel that comprises the remainder of the core. The reload core design for North Anna cycles which incorporate the lead test assemblies

will meet all applicable design criteria. In addition, the performance of the ECCS at North Anna Units 1 and 2 will not be affected by the insertion of the four lead test assemblies, so the criteria of 10 CFR 50.46 will be satisfied for use of these assemblies with fuel rods, guide thimble tubes, and instrumentation tubes fabricated with advanced zirconium-based alloys. The use of these fuel assemblies will not result in a change to the North Anna Units 1 and 2 reload design and safety analysis limits. The existing safety analyses based on the resident Westinghouse fuel will remain applicable for cycles which incorporate the lead test assemblies. Therefore, neither the probability of occurrence nor the consequences of any accident previously evaluated is significantly increased.

2. Create the possibility for a new or different type of accident from any accident previously evaluated. The FCF lead test assemblies are very similar in design (both mechanical and composition of materials) to the resident Westinghouse fuel. North Anna cores which incorporate the lead test assemblies will be designed to meet all applicable design criteria and ensure that all pertinent licensing basis criteria are met. Demonstrated adherence to these standards and criteria precludes new challenges to components and systems that could introduce a new type of accident. North Anna safety analyses based on the resident Westinghouse fuel will remain applicable for cores containing the lead test assemblies. All design and performance criteria will continue to be met and no single failure mechanisms have been created. In addition, the use of these fuel assemblies does not involve any alteration to plant equipment or procedures which would introduce any new or unique operational modes or accident precursors. Therefore, the possibility for a new or different kind of accident from any accident previously evaluated is not created.

3. Involve a significant reduction in the margin of safety. The use of the FCF lead test assemblies does not change the performance requirements on any system or component such that any design criteria will be exceeded, and will not cause the core to operate in excess of pertinent design basis operating limits. North Anna reload core designs for cycles which incorporate the lead test assemblies will specifically evaluate any pertinent differences between the lead test assemblies and the resident fuel, and will take into consideration the normal core operating conditions allowed in the Technical Specifications. Safety analyses based on the resident Westinghouse fuel will remain applicable for cores incorporating the FCF lead test assemblies. Analyses or evaluations will be performed each cycle to confirm that the criteria in 10 CFR 50.46 will be met. Therefore, the margin of safety as defined in the Bases to the North Anna Units 1 and 2 Technical Specifications is not significantly reduced.

Based on the preceding information, it has been determined that the use of four FCF Mark-BW17 lead test assemblies at North Anna, and design of cores containing these assemblies using standard Virginia Electric and Power Company reload design methodology, satisfy the no significant hazards consideration criteria of 10 CFR 50.92. The proposed changes to the North Anna Technical Specifications to support the use of these lead test assemblies will allow the use of fuel assemblies

that differ from the resident fuel as described in the North Anna Unit 1 and North Anna Unit 2 Technical Specifications Design Features Section, 5.3.1, and which may require the use of approved models and methods in addition to those defined in Section 6.9.1.7.e to evaluate such fuel. However, the changes clearly apply to cases defined by approved exemptions and license conditions, so NRC review and approval will continue to be required for use of any fuel assemblies incorporating such differences from the resident fuel. Virginia Electric and Power Company therefore concludes that the proposed use of the four FCF Mark-BW17 lead test assemblies and the modification of the North Anna Technical Specifications to support the use of such fuel both satisfy the requirements of 10 CFR 50.92 and, accordingly, a no significant hazards consideration finding is justified.

ATTACHMENT 5

FRAMATOME TECHNOLOGIES, INC

AFFIDAVIT

VIRGINIA ELECTRIC AND POWER COMPANY

AFFIDAVIT OF JAMES H. TAYLOR

A. My name is James H. Taylor. I am Manager of Licensing Services for Framatome Technologies, Inc. (FTI). Framatome Cogema Fuels is administratively responsible to Framatome Technologies, Inc. Therefore, I am authorized to execute this Affidavit.

B. I am familiar with the criteria applied by FTI to determine whether certain information of FTI is proprietary and I am familiar with the procedures established within FTI to ensure the proper application of these criteria.

C. In determining whether an FTI document is to be classified as proprietary information, an initial determination is made by the Unit Manager, who is responsible for originating the document, as to whether it falls within the criteria set forth in Paragraph D hereof. If the information falls within any one of these criteria, it is classified as proprietary by the originating Unit Manager. This initial determination is reviewed by the cognizant Section Manager. If the document is designated as proprietary, it is reviewed again by Licensing personnel and other management within FTI as designated by the Manager of Licensing Services to assure that the regulatory requirements of 10 CFR Section 2.790 are met.

D. The following information is provided to demonstrate that the provisions of 10 CFR Section 2.790 of the Commission's regulations have been considered:

(i) The information has been held in confidence by FTI. Copies of the document are clearly identified as proprietary. In addition, whenever FTI transmits the information to a customer, customer's agent, potential customer or regulatory agency, the transmittal requests the recipient to hold the information as proprietary. Also, in order to strictly limit any potential or actual customer's use of proprietary information, the substance of the following provision is included in all agreements entered into by FTI, and an equivalent version of the proprietary provision is included in all of FTI's proposals:

"Any proprietary information concerning Company's or its Supplier's products or manufacturing processes which is so designated by Company or its Suppliers and disclosed to Purchaser incident to the performance of such contract shall remain the property of Company or its Suppliers and is disclosed in confidence, and Purchaser shall not publish or otherwise disclose it to others without the written approval of Company, and no rights, implied or otherwise, are granted to produce or have produced any products or to practice or cause to be practiced any manufacturing processes covered thereby.

Notwithstanding the above, Purchaser may provide the NRC or any other regulatory agency with any such proprietary information as the NRC or such other agency may require; provided, however, that Purchaser shall first give Company written notice of such proposed disclosure and Company shall have the right to amend such proprietary information so as to make it non-proprietary. In the event that Company cannot amend such proprietary information, Purchaser shall, prior to disclosing such information, use its best efforts to obtain a commitment from NRC or such other agency to have such information withheld from public inspection.

Company shall be given the right to participate in pursuit of such confidential treatment."

(ii) The following criteria are customarily applied by FTI in a rational decision process to determine whether the information should be classified as proprietary. Information may be classified as proprietary if one or more of the following criteria are met:

a. Information reveals cost or price information, commercial strategies, production capabilities, or budget levels of FTI, its customers or suppliers.

b. The information reveals data or material concerning FTI research or development plans or programs of present or potential competitive advantage to FTI.

c. The use of the information by a competitor would decrease his expenditures, in time or resources, in designing, producing or marketing a similar product.

d. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a competitive advantage to FTI.

e. The information reveals special aspects of a process, method, component or the like, the exclusive use of which results in a competitive advantage to FTI.

f. The information contains ideas for which patent protection may be sought.

The document(s) listed on Exhibit "A", which is attached hereto and made a part hereof, has been evaluated in accordance with normal FTI procedures with respect to classification and has been found to contain information which falls within one or

more of the criteria enumerated above. Exhibit "B", which is attached hereto and made a part hereof, specifically identifies the criteria applicable to the document(s) listed in Exhibit "A".

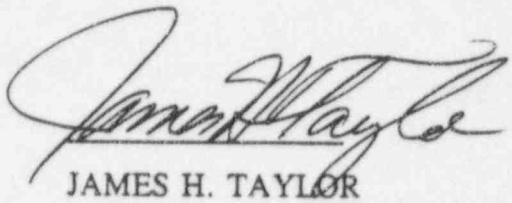
(iii) The document(s) listed in Exhibit "A", which has been made available to the United States Nuclear Regulatory Commission was made available in confidence with a request that the document(s) and the information contained therein be withheld from public disclosure.

(iv) The information is not available in the open literature and to the best of our knowledge is not known by Combustion Engineering, EXXON, General Electric, Westinghouse or other current or potential domestic or foreign competitors of Framatome Technologies, Inc.

(v) Specific information with regard to whether public disclosure of the information is likely to cause harm to the competitive position of FTI, taking into account the value of the information to FTI; the amount of effort or money expended by FTI developing the information; and the ease or difficulty with which the information could be properly duplicated by others is given in Exhibit "B".

E. I have personally reviewed the document(s) listed on Exhibit "A" and have found that it is considered proprietary by FTI because it contains information which falls within one or more of thecriteria enumerated in Paragraph D, and it is information which is customarily held in confidence and protected as proprietary information by FTI. This report comprises information

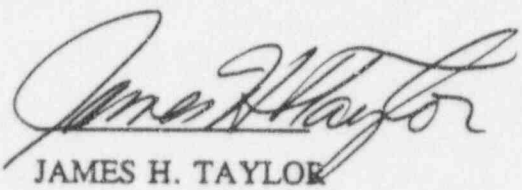
utilized by FTI in its business which afford FTI an opportunity to obtain a competitive advantage over those who may wish to know or use the information contained in the document(s).



JAMES H. TAYLOR

State of Virginia)
) SS. Lynchburg
City of Lynchburg)

James H. Taylor, being duly sworn, on his oath deposes and says that he is the person who subscribed his name to the foregoing statement, and that the matters and facts set forth in the statement are true.



JAMES H. TAYLOR

Subscribed and sworn before me
this 5th day of August 1996.

Brenda C. Cardona
Notary Public in and for the City
of Lynchburg, State of Virginia.

My Commission Expires July 31, 1999

EXHIBITS A & B

EXHIBIT A

1. Attachment 2 of Virginia Electric and Power Company Letter, "North Anna Power Station Units No. 1 and 2, Use of Lead Fuel Assemblies with Advanced Cladding Materials." Serial Number 96-409.

EXHIBIT B

The above listed document contains information which is considered Proprietary in accordance with Criteria b, c, and d of the attached affidavit.